Translation from Bulgarian.

STRATEGY

ON THE DEVELOPMENT OF E-GOVERNMENT

IN THE REPUBLIC OF BULGARIA 2014 – 2020

CONTENTS

Introduction

In the contemporary information society the information and communication technologies constitute a core, around which the most successful organizations and administrations build their businesses and management systems. E-management, e-government and e-services are inherent for the countries of the highest economic and political development. A natural goal of Bulgaria as an EU member state is the further development of e-government to a level, corresponding at least to the mean EU indices.

The e-government is a government in an electronic medium of normative interrelations, administrative processes and services, and interaction with users, upon the application of information, statistical and mathematical models and methods of processing of data, information and knowledge ensuring much higher level of managerial efficiency. The e-government is a tool for an overall increase of efficiency of processes in the administration, as well as facilitating processes upon interactions between the administration, employees, citizens and the business, through the use of e-services.

The e-government covers four major lines of communication and services:

- "Administration – Citizens" – includes contemporary Internet and Intranet WEB based solutions, combined with the traditional means for ensuring wide access, which shall result to qualitative changes in the conditions of communication and rendering of services to the citizens.

- "Administration – Business" – includes contemporary solutions which optimize the processes and business relations between the administration and the various economic subjects.

- "Administration – Administration" – includes development of the information technologies in a national and inter-governmental aspect in view of the efficient interaction between the different administrative structures.

- "Internal institutional effectiveness and efficiency" – includes organization and optimization of business processes, of the relations "Administration – Employees", and of the communication in the individual administrative structures.

The strategic document in the sphere of e-government covers the development of all four lines. The user stays within the focus of attention, being the major factor in these processes. The development of e-government is predetermined mainly by the users, and not so much by the technologies for its realization.

The present document is bound with the following strategic documents:

- National Development Program: Bulgaria 2020;
- National Reform Program 2012 – 2020;
- Strategy on Governmental Administration Development 2014 – 2020;

- Basic Model of complex administrative servicing;
- National Program "Digital Bulgaria 2015";
- National Cyber Security Strategy;
- Declaration of Ministers in charge of EU e-government policies, adopted in 2009 in Malmo;
- "Europe 2020" Strategy;
- Program in the sphere of digital technologies for Europe.

1. Analysis of the existing conditions

The first steps, aimed at implementation of e-government, have been commenced 13 years ago, and though the development of e-government has been constantly amongst the priorities of all political cabinets, its real implementation has been pursued with variable success.

- Institutional framework

Since 2001, in the Republic of Bulgaria constant efforts have been paid on the establishment of e-government. Initially the implementation of this policy was coordinated by the Minister of the Governmental Administration, supported by a Coordination Center of Information, Communication and Management Technologies.

In the year of 2005 the functions were allocated between the Ministry of Governmental Administration and Administrative Reform and the State Agency of Information Technologies and Communications.

During the last 5 years, the activities on the development of e-government are concentrated with the Ministry of Transport, Information Technologies and Communications, and the policy in the sphere of rendering of administrative services – with the Council of Administrative Reform and the administration of the Council of Ministers. The insufficiently efficient coordination between the general policy on rendering of administrative services and rendering of e-services has exercised negative impact on the development of the e-government. A problem, where the absence of good coordination hampers the development of rendering e-services, is the payment of fees for internal administrative services. The lack of a definitive solution on the question, tending to the establishment of free internal services, and the budgeted high revenues from governmental fees do not stimulate the administration to work for the provision of inter-register connection and official exchange of information.

Another problem is the insufficiently good coordination on the matter of electronic identity, which is not synchronized enough and on which there is no managerial decision taken by the Ministries of Transport, Information Technologies and Communications and the Ministry of Interior.

- Economic framework

Because of the partial introduction of e-government in the Republic of Bulgaria, the benefits for the administration, the business, the citizens and the society in general are restricted, though some administrations, e.g. the National Revenue Agency, the National Statistical Institute and the Ministry of Finance, have reached substantial progress in the introduction of administrative e-services. The results from an analysis performed by the Ministry of Economy, Energy and Tourism show that the administrative burden on the business in 2011 amounts to more than BGN 2 (two) billion per annum. Upon a coordinated, standardized and practical development of e-government valuable resources

will be spared (time, people and finance), which at the time being are used inefficiently for administrative servicing.

- Legal framework

The currently applicable normative base in the sphere of e-government covers a number of normative acts, the most substantial of which are the E-Government Act, the Law on the electronic document and the electronic signature, the Trade Register Act, the E-Trade Act, the Law on the protection of personal data, and some others, as well as individual provisions of laws. There are a number of by-laws stipulating in detail the legal base of the e-government and arranging rendering of various administrative services in electronic format.

The existing normative base binds on but does not stimulate the development of e-government in the administration, in view of the fact that the applicable legal framework arranges the requirements on electronization of existing "paper processes", without addressing the methodology on organizing of processes and resources in the administration.

Some of the acting laws and by-laws, for example the Law on civil registration and Ordinance Nr. РД-02-20-9 dt. 21.05.2012 on functioning of the unified civil registration system, not providing legal faculty for the submission and acceptance of documents in electronic format, the Law on BULSTAT register, not providing possibility for electronic exchange of documentation on enlisting in the BULSTAT register, are contradictory and inapplicable.

There are normative problems regarding the use of the electronic document and the electronic signature in the judicial system, rendering of electronic administrative services (verification statements) by the bodies of the judicial power, electronic exchange of documents between the judicial and the executive powers, and exercising of procedural rights in electronic format.

A number of special laws establish provisions on rendering of individual administrative services, in view of their concurrence with the E-Government Act and ensuring of possibility for rendering of the relevant services in electronic form.

The Law on the electronic document and the electronic signature is not brought in conformity with the requirements of Directive 1999/93/EC to guarantee accessibility of the electronic administrative services also for citizens from the other EU member states.

There are no by-laws to regulate archiving of e-documents in the administration, in conformity with the Law on the National archive fund.

- Technological framework

The information and communication technologies provide a base for efficient business processes. In Bulgaria, the administrations still often consider purchasing of computer

equipment to be the very essence of IT's implementation, and not the active use of specialized software systems. Though till the time being significant funds have been spent for the establishment of e-government, the expectations are not covered by the achieved results. Very often projects are fulfilled independently, and after the completion of their financing no further finance and resources are provided to maintain the established systems. Therefore, the requested sustainability is lacking. There is no possibility provided that the central and the local infrastructure for e-government, hardware, system and application software shall be maintained by a specialized organization, which could have guaranteed the complete functionality of project developments.

The absence of unified, common for the entire administration information system for organization and management of processes on rendering of services leads to high expenses for the introduction of e-services. This results in distracting the attention from the activities simplifying the working processes of administrative services which, even when rendered electronically, still keep their bureaucratic character.

The processes with electronic identity and electronic signature are not well developed and refined, which poses exceptional difficulties to their users. As regards electronic identity, different identification codes are provided for using the services of the different institutions, and the absence of universal electronic identity is of substantial importance. The electronic signature is used by a very small part of the e-services' users – the process of its acquisition and maintenance is complicated.

- **Operability**

There is a substantial problem existing with the achievement of operability in the work of the administration in the Republic of Bulgaria in a digital environment, and in often cases it's impossible to achieve integrity of the obtained project results and high efficiency. To a great extent this is due to the absence of a systemic approach upon carrying out of the process on building of e-government, which could have permitted centralized imposing of standards on operability, as well as coordinating the activity of the units in charge of e-government's operability. The inadequate operative condition of the e-government in the Republic of Bulgaria is not only an internal problem for the country, but also for the commitments adopted on our part for electronic systems' operability in the EU and outside it. Amongst the major impediments is the existing inoperability between the available systems in the individual administrative structures that has to be overcome. The users are often asked to provide documents issued by other administrations. The individual institutions do not have access to the available information massifs of other administrations. Requested is the development and provision of an efficient solution to implement the principle of "the official cause", expressed in one-time collection and multiple use of information by the state and the municipal administration.

- **Comparative evaluation of e-government in the Republic of Bulgaria**

The latest edition of the United Nations' Report on the condition of e-governments all over the world "E-Government Survey 2012", entitled "E-Government for the People",

provides analysis of the results from the work of 190 countries. The major trend, typical also for the year of 2012, is that e-government is introduced actively by the countries of a high-level economic development. According to the e-government development index, mentioned in the United Nations' Report, Bulgaria occupies the 60-th place; only for the last 2 years the country has stepped 16 places back. This is due to the greater dynamics in the development of the other countries. The assessments for Bulgaria on all indices (on-line services, telecommunication infrastructure and human capital) are lower than the average ones for the region.

During the last 2 years, all countries falling within the top 20 of the index, have been investing in their national e-government systems, practically following one and the same model. As a result thereof, the role of a major criterion for the development of on-line services of the e-governments proves to play the so-called "one-stop-shop portal", or the portal from the "one counter" type.

In Bulgaria, the progress in the development of e-government is mainly connected with the development and upgrading of the infrastructural elements and the major systems, as well as the equipment of the central, judicial and local administrations with ICTs, the availability of Internet sites, and the information and e-services proposed via them, as well as the large-scale training of governmental employees aimed at acquiring IT's skills.

- **Rendering of administrative e-services**

Problematic is the fact that in spite of the existing normative e-government framework, the realization of e-government infrastructure does not always develop in accordance with that framework.

According to the Report on the condition of the administration in 2012, only 80 from totally 562 administrations propose administrative e-services, i.e. 15 more compared to the preceding year, allocated respectively between 19% of the central and 13% of the territorial administrations. Yet 482 administrations do not provide administrative e-services.

The Report also shows that the Bulgarian administrations have proposed 1 231 e-services in total, or with 192 more than in the year of 2011, of which 1 171 are primary services and only 60 are complex services. Complex services are provided by 14 administrations, including: the National Revenue Agency, the National Agency of Professional Education and Training, the Railway Administration Executive Agency, as well as few district and municipal administrations.

The services, rendered by 82% of the entire administration, have been accessible via a portal specially developed for the relevant administration, 8% of the administrations have rendered their services via the Unified E-Government Portal, 10% via a portal developed for a group of administrations.

Complete integration of data in the administration and full operability between the existing and the systems yet under construction are not yet achieved. Provided is interconnection of a small part of registers in the governmental administration.

Of exceptional importance is building of all systems guaranteeing data safety. This includes: identification and authentication, data protection, cyber protection, protection of users, etc.

Not yet ensured is the overall provision of administrative e-services, including submission and payment, as is the e-government ideology. The fact that the procedure on rendering some of the services requires personal attendance and/or submission of original documents is amongst the major reasons for which the Bulgarian users do not utilize actively the proposed administrative e-services via the Internet.

Another reason is the absence of an adequate popularization of the offered services and the resulting bad acquaintance with information of the citizens and the business.

2. E-government vision in the Republic of Bulgaria

The vision for the e-government in the Republic of Bulgaria is that till the year of 2020:

- Efficient business models will be introduced in the work of the administration – from routine activities to services for the citizens and the business;
- Digital administration will be built – an administration structured in conformity with the contemporary management technologies and the achievements of the information and communication technologies;
- Operability at a national level will be achieved – from fragmented and closed to integrated and technologically independent solutions;
- Mechanism for coordinated planning and realization of all initiatives on the development of e-government will be established;
- Provision of administrative services via the Unified e-government portal will be ensured at any time, from any place and through different devices.

3. Strategic targets

Target 1: Provision of qualitative, efficient and easily accessible e-services for the citizens and the business.

Target 2: Transformation of the administration into digital administration through integration of information processes.

Target 3: Popularization, access and participation.

The implementation of the strategic targets shall be carried out in conformity with the contemporary trends in the sphere of e-government, through the application of the latest technological solutions and upon observance of the following principles:

- Political leadership and succession upon the realization of the long-term policy;
- Centralized determination of policies and carrying out of management and control, and decentralized fulfillment of such policies;
- One-time data collection for citizens and companies and multiple use of such;
- Strict observance of all requirements on operability and information security;
- Development of e-government, concurred with the implementation of the administrative reform, and refinement of the administrative business processes;
- Introduction of unified systemic approach for the achievement of high efficiency of investments in the building and maintaining of e-government tools;
- Transparency of the adopted decisions, constant control and assessment of fulfillment upon realization of priority services and projects, with a clear effect for the society, on the basis of methodology accessible for the public;
- Equal-standing usage of "classical", "virtualized", "cloudy", "mobile" and other types of technologies, upon provision of choice between them, based on technological and economic appropriateness;
- Active provision/publishing of data, freely accessible for the administration on all levels, upon observance of the specified requirements on confidentiality and security;
- Guaranteeing the rights of citizens in the electronic world, through implementation of constant supervision, to ensure legality and security upon personal data processing.

4. Sector policies for e-government

The present E-Government Strategy serves as a base for the establishment of sector policies, strategies, goals and activities at the level of ministries, agencies and municipal administrations.

Level 1 – National level. This level describes the e-government framework and defines the strategic targets, the expected benefits from the establishment of the medium, and technologies for e-government development, that serves as a base of all initiatives and projects at the level of ministries and agencies. Maintaining and updating of this framework shall be carried out at the Ministerial Council's level. At this level an analysis of the common aspects and interconnections of sector strategies shall be made, to determine organizational, process, systemic and technological activities which may be used by several sectors together. Thus, the efficiency of investments in organizational engineering and ICTs will be substantially increased.

Level 2 – Sector level. This level defines direct targets and final results that have to be achieved by the institutions - first-tier and second-tier disposers of budget credits. This is achievable after decomposition of the objectives of the present Strategy at the level of ministries, agencies and municipalities, and in connection with the relevant programs and budget, in accordance with the logics of program budgeting. Upon the fulfillment of sector strategies, each institution may use a number of assets and components, connected with the e-government, which are developed at Level 1 (e.g. the integrated medium for rendering of e-services, the e-government portal, etc.).

The sector strategies shall be oriented to the establishment of conditions for a qualitative change in the work of the administration, which shall contribute to the higher efficiency of the administrative servicing, better provision of information to the citizens and the business, and ensuring fast and easy access to the administrative services in the relevant sectors.

Upon the development of the sector policies' model, the major elements of the present Strategy shall be applied, which include three strategic targets: organizational, information and technological model. This aims ensuring of better succession and more clear outlining of the connection of strategic policies with the national strategy.

An example of sector policies in the sphere of e-government, for which sector strategies shall be elaborated, are: e-health care, e-education, e-training, e-agriculture, e-culture, e-police, e-customs, e-municipalities, e-democracy, e-justice, etc.

Level 3 – Project level. At this level the management of particular projects is defined for the implementation of the sector policies with the relevant budgets, guaranteed by the overall budget for fulfillment of the strategy, deadlines and responsibilities.

The concrete activities for the achievement of the targets implied by the National Strategy are defined by Road Map to the E-Government Strategy 2014 – 2020. It covers also the further development and upgrading of the achieved results on the fulfillment of the overall Strategy on e-government in the Republic of Bulgaria 2011 – 2015. The Road Map shall specify the provided budget per years and sources of financing, requested for the performance of the activity.

The creation of individual, concurred with the targets of the individual administrations road maps on the basis of the Road Map to the E-Government Strategy 2014 – 2020 shall ensure connection with the common goals, shall facilitate understanding and acceptance of indices, and shall allow data detailing and/or summarization. Thus, each administration shall determine its objectives on one common basis, to guarantee flexibility and shared interpretation upon assessment of results – based on clear criteria and indices. Such logics is illustrated on Figure 1:

. . . .

Figure 1: Decomposition of the E-Government Strategy 2014 – 2020

The achievement of the e-government strategic goals shall be guaranteed also by the fulfillment by the relevant institutions of the central and local government, whose responsibilities and engagements shall be particularly defined in the Road Map.

5. Activities for the achievement of goals

Upon the establishment and management of e-government, the authorities shall try to satisfy the real needs of users. Preferred services, the manner of their provision, and

ensuring possibility for feed-back and influence shall be determined on the basis of performed inquiries.

The imposing of an unified approach shall stop the over-spending of funds for overlapping, inappropriate and non-completed projects, thus ensuring more value for the users, investment efficiency and real results.

Prioritized services and projects will be implemented, with a clear effect for the society, based on a publicly accessible methodology. Constant control and assessment of fulfillment shall be carried out. The results shall be measured via a system of key indices, the most important of which being the long-term public benefit. In this process good practices shall be applied, such as a requirement for certification of contractors, objective professional evaluations on a peer-review basis, self-control on the part of the industry.

5.1 <u>Activities on strategic target 1</u>

Provision of qualitative, efficient and easily accessible administrative e-services for the citizens and the business

- **Development of the base infrastructure for e-services' implementation**

A basic prerequisite for the use of e-services by the citizens and the business is the implementation of measures promoting the construction of a wide-band infrastructure in the remote and badly populated areas, so that the transmission infrastructure shall be brought more closely to the users. During the last years building of extra-high speed communication connections was commenced to provide next generation access (Next Generation Access – NGA). Connections shall be provided to the municipal hall of each municipal administration, as well as to the buildings of the public institutions (judicial power, prosecutor's office, police, schools, hospitals).

In the year of 2013, the construction of the basic e-government technical center was completed, and the major components were upgraded: the Unified portal for access to administrative e-services and the Unified medium for exchange of electronic documents. To respond to the necessity for rendering of qualitative services, upon guaranteeing of data safety, safety of connections in an entirely protected environment, of exceptional importance is the further development of the basic and the reserve technical centers up to basic and reserve data centers. This will put the beginning of the construction of a governmental "Cloud".

Unique, common for the entire administration information system shall be developed and introduced, to organize and manage the service rendering processes.

Conditions shall be established for normal functioning of the primary electronic registers and their accessibility.

-   **Development and wide-scale rendering of e-services with high public effect.**

For the implementation of services, providing higher added value to the customer and responding to the "hot spots" in the life cycle of life and business, and gaining of significant benefits from the integration with other administrative services, requested is the definition of priority e-services portfolio at a national level and at the level of ministry/agency and municipal administrations.

The introduction of e-invoicing shall facilitate decreasing the number of tax frauds, better control of the revenues entering the budget, and reduction of administrative expenses.

Increasing the use of e-services by introducing of e-payments, as a preferred method for payment of state and municipal fees and services, rendering of support to the citizens and the business upon payment of their liabilities, and establishment of an instrument for the administrations for preliminary calculating of the cost of a particular complex service before its requesting in electronic format.

In the year of 2013, the construction of a national spatial data portal for rendering of services with spatial data to national and European users and the connection with the European geo-portal was commenced. The portal ensures public access for sharing of operable spatial data, in conformity with the European standards and the Directive on the establishment of infrastructure for spatial data in the European Community (INSPIRE).

Expected results:

-   Established extra-high speed communication connection for next generation access (NGA) to 264 municipal centers;
-   100% consolidation of the major common e-government resources in the central administration;
-   100% integration of the major e-government components;
-   Determination - establishment of a body in charge of the electronic identities register;
-   Established infrastructure of the public key;
-   Established safety infrastructure;
-   Established e-government resource register;
-   Provision of an unified point for exchange of correspondence between the administration, the citizens and the business via the Unified portal for access to administrative e-services;
-   Provision of entirely electronic communication up to and including the stage of submission of electronic bid (e-submission), as part of the transition to an entirely electronic public procurement – 50% of the procedures in the state and the municipal administration – electronic (2017) and 100% of the procedures in the state and municipal administration – electronic (2020), 100% for the central administration and 80% for the business organizations, electronic invoicing introduced till 2020;
-   60% payments from/to the state and municipal administrations in electronic format;
-   Ensured access via the National spatial data portal and realized 3 services under the Law on spatial data access.

5.2 Activities on strategic target 2

Transformation of the administration into digital administration through integration of information processes.

- **Integration of information processes. Development of systems and services for implementation of efficient electronic circulation of documents and archiving.**

During the last years the overcoming of irrational use of resources, doubling of data, multiple logging of repeated information, the absence of automated data exchange between individual systems, even within the frames of one and the same administration, was oriented to the establishment of models and standards for digital administration and the provision of technological capacity for transition from paper document circulation and multiple collection of information from the users to optimized processes, where the communication between the administrations is carried out via unified strata for exchange of electronic documents. Capacities were provided enabling tracking of each electronic service as a process and stage of execution in the particular administration, and in case of complex services – in each participating administration. Possibility is also provided for using of this system by administrations which do not dispose of a document circulation system, for the purposes of their records keeping. During the next years all these tools will be used by each administration, upon provided connection. The process of concurrence of documents in the administrations will be supported by stagely implementation and integration of central document circulation system. This will enable tracking of each electronic service as a process and stage of execution in the particular administration, and in case of complex services – in each participating administration, to ensure 100% electronic document circulation between the administrations.

Re-engineering of processes in the administration will continue with accelerated speed, as a necessary and important step for the provision of integrated e-services, through the application of the Methodology on perfection of working processes for rendering of administrative services, which in its part will result in increased satisfaction of the requirements of the citizens and the business, the achievement of greater transparency, saving of resources and lightening of the administrative process. Re-engineering of working processes at all levels in the state and municipal administrations and their provision as unified services and procedures shall allow optimization of business processes and raising the quality of administrative servicing, through administrative e-services, as for the period the efforts will be focused on the implementation of priority administrative e-services.

To guarantee the delivery of a result from performed administrative e-service, more reliable than the e-mail delivery, of key importance is the provision of possibility for checking the validity of a document, issued by a particular administration, via a system for delivery of e-documents and a documents' validation service.

For the unification and formalization of documents, which the central administration requests from the local administrations, provided is definition of an end number of specialized reports, checks and other similar documents. These shall be developed in electronic variant; tools shall be established for comprising of such documents.

Possibility shall be provided, to support the work of the administration, for keeping of descriptions and provision of access to publicly accessible business processes and web services, rendered by the administrations, in registers of different functionality (of business processes and web services, etc.). Each administration shall be able to develop services, according to specified criteria on compatibility and following a process defined in advance, to publish services in the register.

Developed shall be a system for processing of events/logbook of actions and its integration with other major components of the infrastructure. A bus of events shall be established which shall enable integration, processing, filtering of events, their correlating and analysis. The logbook of the actions in the system shall maintain the history of access to resources and the performed actions with them. Through it, the functionality of control on the part of the citizens to the access to their personal data shall be implemented.

To ensure realization of the authorization process, an e-government system shall be implemented following the process of identification.

- **Provision of own operative capacity**

For the provision of own operative capacity, connected with e-government and integration of results, as well as managing and allocation of the common e-government resources, of special importance shall be the fast completion and implementation of the concept for e-government Unified System Integrator (USI).

- **Development of the e-government central systems and infrastructure, in conformity with the requirements on operability and network and information security.**

This shall be achieved through the provision of the complete functionality of the major e-government resources, created till 2013, and establishment of conditions for the integration of various components in the e-government infrastructure.

In 2012 and 2013 a pilot project on the construction and testing of a system for electronic identification and a validating body was implemented. The provision of comfortable mechanism for electronic identification of physical persons in the electronic world, ensuring easy, comfortable and maximally protected checking of identity of physical persons in the electronic documents circulation will guarantee the accession of the Republic of Bulgaria to the European initiative for mutual recognition of identity of physical persons.

In view of the work with certificates (validation and optional issue), during the next years necessitated will be the deployment of the public key infrastructure, where the relevant cryptographic artifacts will be managed.

The provision of a unified point for correspondence between the administration, the citizens and the business. Optimization of expenses on the maintenance and development of the web sites of the central administrations and municipalities via federated portals. Possibility for easy access by mobile devices, upon the implementation of a completely mobile version of the Unified portal.

Provision of possibility for completely transparent and objective carrying out of public procurement procedures and their next control/fulfillment, as the information shall be accessible for all parties in real time. This shall significantly help the participants in the public procurements.

- **Building of capacity and adopting of abilities by the administration.**

In the period there an unified model of policies, processes and working methods (instruments) for the implementation of future e-services shall be developed and implemented.

Of exceptional importance shall be the provision of possibility for mobility, keeping and recruiting of the requested experts and professionals, maintaining of the administrative capacity and the efficiency of work though the management of knowledge; training of employees in the administrations during their entire career, aimed at maintaining of their knowledge and skills in the context of the created e-government means. This shall guarantee that the information from different components within the e-government framework is managed and is accessible for future analysis.

- **Introduction of a high degree of responsibility and accountability**

In order to ensure more value for the users, investment efficiency, fast and real results, requested is the improvement of the current administrative model for e-government management. In that respect of special importance is the institutionalization of the managing statute of the Secretary on Information Provision (SIP) in the structures of the central, district and municipal administrations.

Requested shall be also:

- The introduction of an improved normative base (laws and by-laws) supporting the e-government development;
- The provision of strong leadership and development of an appropriate organizational culture;
- The provision of the requested statute of highly qualified IT specialists in all institutions of the central administration, which shall guarantee fast achievement of results;
- The establishment of a functioning central e-government unit.

- Active participation in the significant European project initiatives and integration with the European institutions and the Member States.

The development of e-government will be strongly difficult without the active performance in international projects and the international scientific exchange, connected also with the exchange of good practices.

- **Implementation of services with high public effect**

In the next period the establishment and development of internal administrative e-services, supporting integration, will continue with accelerated tempo, as a prerequisite for the future development of complex administrative services of good operability. The connection of registers shall provide for the use of data already available in any of the systems. In 2013, to provide connection of 32 registers and 2 information systems, developed were more than 50 internal administrative e-services. The question of fees for internal administrative services will be legally settled, by providing free inter-register exchange and eliminating fees for the official provision of information.

Complex administrative servicing will be introduced on a stagely basis.

Rendering of e-services shall develop within the frameworks of the general policy on rendering of complex administrative services. Rendering of e-services shall be a part of the new approach for rendering of services at one point by more than one administration, upon ensuring of possibility for the establishment of service centers, organized by district and municipal administrations, territorial units of the central administration and other public institutions. On territorial level, unified centers for the provision of information and services to the citizen, by the municipalities, as well as by the territorial units of the central government shall be established.

In the next years the percentage of e-services at the stage of transaction, including payment and delivery, will increase. It will be applicable for all major and mass offered services.

To facilitate using of services, possibility will be provided for automated generation of standardized electronic forms, through the establishment of electronic forms' generator.

For inclusion in the electronic data exchange between the EU member states and integration of e-services at a regional level, which shall increase the use of e-services by foreign citizens or by Bulgarians living abroad, basic trans-boundary e-services shall be implemented and IPv6 protocol shall be introduced.

Expected results:

- 100% of the document circulation in/between the administrations shall be carried out in electronic format (except for the cases stipulated by law);
- Reduced time 30% of the cost for realization of e-services;

- Elaborated and fulfilled plan on implementation of priority administrative services;
- Developed service for validation of documents;
- Establishment of register and information services to the register;
- Established bus and logbook;
- Implemented electronic authorization system;
- Established electronic forms generator;
- Connection of up to 200 registers of key importance for rendering of complex e-services;
- Elimination of obstacles of procedural and normative character. Elaboration of reference model;
- Functioning unified system integrator;
- Current preparedness and development of technologies, reflected in the normative base;
- Established and functioning e-government control unit;
- Established package of documents, guaranteeing adequate knowledge and information for the familiarization of administrations with the e-government;
- Provision of minimum 70% of the requested human resources, possessing the relevant competences (in respect of quantity and quality) in the administrations;
- Established portal for management of knowledge;
- Institutionalization of the managing statute of the Secretary on Information Provision (SIP) in the structures of the central, district and municipal administrations.

5.3 Activities on strategic target 3

Popularization, access and participation.

- **Popularization and promotion of participation**

For the recognition and promoting the use of the introduced e-services, provided shall be unified branding and wide-band external and internal communications, through active marketing activity and implementation of internal and external communication plans.

By tracking of the user's behavior at the administrative websites and the unified portal, there shall be achieved better understanding and managing the speed of the user's adaptation. To that end a centralized information system for tracking of user's behavior shall be developed and implemented and incentives for promoting the use of target e-services shall be established. To increase the degree of using e-services as an alternative, mechanisms and incentives shall be developed (including financial ones) for constant increasing the use of e-services by citizens and companies.

- **Electronic inclusion**

In the preceding period each administration has developed at a different stage a system and/or a telephone center for rendering of support upon the use of administrative services. To support and stimulate the usage of e-services, registration and management of inquiries

of the interested parties, as well as timely rendering of support upon the use of a particular e-service, or rendering of additional instructions upon search of particular information, an on-line system and a telephone center for rendering of assistance shall be constructed.

The electronic inclusion is a global approach. To increase the preparedness of citizens and the business for the use of administrative e-services, elaborated shall be programs and specialized training sessions shall be carried out for the population and the business.

In the next period alternative channels for access shall be developed (e.g. mobile devices, terminals) and public access shall be provided (at post offices, libraries, etc.) to facilities, such as e-pavilions, computers, etc.

To increase the use of e-services, the provision of access by the administration through public points (information terminals) and unified service centers shall be promoted. Thus, the access points shall be increased in number, users shall be better informed, and at the same time the expenses for administrative services shall be reduced.

Expected results:

- Unified standards on format and depictions (images);
- Internal and external communication strategy;
- Established mechanisms for designing and dissemination of e-services, responsible for the behavior and usage motives of target groups;
- Performed training.

6. Coordination and management of the Strategy's implementation

6.1 Managing the achievement of planned results

To manage the achievement of the planned results, requested is the introduction of systemic approach for planning and measurement of fulfillment. Through the introduction of a managerial information system for reporting the fulfillment of the e-government strategy and management of resources, a possibility shall be provided for an efficient management of initiatives and results, connected with the e-government, management of projects and resources, and reporting of results at the central administrations.

By introducing of managerial supervision through the performance of audits on compliance and on the level of application of the confirmed policies, the control shall be increased, upon the provision of compliance of the performed e-government initiatives at each individual stage.

The fulfillment of the e-government strategy directly depends on the good coordination between the state institutions.

The proposed structure of management and control on the fulfillment of the Strategy is exhibited on Figure 2.

....

Figure 2: Organizational chart

E-Government Council at the Council of Ministers – plays the role of "a national platform" at the highest level in the country for centralized imposing and coordinated fulfillment of the national and sector policies in the sphere of e-government. This allows practical development of e-government as a national priority, with the clear understanding of all interested parties. The Council confirms draft documents proposed by the Coordination Unit and submits them for adoption to the Council of Ministers. **ICTs Business Council** shall function towards the Council, which shall represent the interests of the Bulgarian ICT companies, through representatives of their organizations on matters, connected with the introduction of e-government. When requested, the Council shall provide specialized technological and technical expertise and shall partake in the elaboration and discussion of policies, strategies and plans on the introduction of e-government.

The Council of the Administrative Reform, together with the E-Government Council, shall ensure coordination with the purposes of the administrative reform and the initiatives on their fulfillment, including the priorities upon the organization of administrative servicing and electronization of the priority administrative services.

The first-tier disposers of budget credits: They shall be responsible for the elaboration and implementation of their sector e-government policies, including the implementation of measures, and in respect of the second-tier disposers in their structure; appoint persons responsible for the implementation of sector policies as part of the national policy; partake actively in the work of the E-Government Council at the Council of Ministers; bear responsibility for the integration of their systems and services with the central e-government systems.

6.2 Provision of resources and financing of the process

By increasing the capacity and skills for financial control over the fulfillment of contracts and ensuring of transparency and accountability of financial management, possibility shall be provided for precise determination of the requested financial resource upon contracting of projects. Guaranteed shall be the efficient management of funds and contracts via the establishment of unified assessment, planning and budgeting procedures. Criteria shall be elaborated on the financial assessment of project needs at the level of ministries/agencies.

Another familiar mechanism of financing for the achievement of efficient management is the long-term financial planning and program budgeting, enabling synchronization of the financial assessment of the requested resources for financing of programs and projects, identification, determination and contracting of financial sources (including external financing).

Considering the priorities for fast realization of e-government, the E-Government Council shall plan centrally the requested funds and shall propose them to the Council of Ministers

for approval. Spending of funds shall be carried out on a de-centralized basis in accordance with the Road Map and the relevant sector policies.

An important source of e-government finance are the European funds. Within the frame of the forthcoming program period 2014 – 2020, the major financial resource for the provision of the measures and activities, connected with the e-government development, and more particularly with the establishment of its general resources and systems, the development and rendering of administrative e-services, as well as increasing the knowledge and skills of the population, the business and the administration about the information and communication technologies, shall be provided by the "Good Government" Operative Program. In respect of the establishment of communication connections as a technological prerequisite for the successful functioning of the e-government, financing shall be provided under the Program on the development of rural areas.

For the provision of finance for the implementation of the goals and objectives, incorporated in the Strategy, funds from other international finance sources shall be used.

A potential source of e-government financing are the public-private partnerships. The requested changes in legislation shall be commenced, to arrange for the legal framework of such partnerships.

The Bulgarian government's intention is to provide in the manner, described above, annual financing for the fulfillment of the National Strategy within up to 0.2% of the Gross Domestic Product for e-government development and construction of infrastructure, but not less than 0.5% for the entire period.

The e-government financial provision shall be applied for by the ministries responsible for the sector strategies. On this basis the E-Government Council shall plan and control the implementation of the Strategy on the development of e-government in the Republic of Bulgaria 2014 – 2020, as well as of the Road Map for its realization.

7. E-government model

Figure 3 exhibits a block scheme illustrating the model after which the e-government functions, with the relevant levels and constituting components.

....

Figure 3. E-government model

7.1 Information model

The establishment and application of an unified information model in the administrations is a key constituting element in the e-government implementation.

Digitalization of administrations shall cover a number of actions, connected with the introduction and use of data bases, overall transition to electronic registers and register

production, modeling of data exchange processes, forming of complex administrative e-services, to achieve the final goal – "connected administration".

7.1.1 Data bases

A fundamental element is the construction of electronic data bases which shall maintain:

- All data and unstructured electronic documents, as objects of the administrative document circulation;
- All data required by law to be brought and processed in digital form;

Data shall be in compliance with the following criteria: primary source information, authenticity, comprehensiveness.

7.1.2 Electronic registers and register procedure

Each administration - primary data registrator - shall introduce e-register and the relevant register e-services. Such registers shall be connected with the centralized infrastructure of the e-government. In such a way each administration shall be able to receive the requested official information from the primary administrator in electronic format. Thus, the principle for one-time collection and multiple use of information shall be realized.

7.1.3 Processes and services

For the establishment of contemporary government, functioning in its major part in a digital environment, requested is substantial transformation of services. Mere electronization of already existing services proves insufficient, requested is complete re-engineering of administrative processes. All administrations shall model the processes of their administrative services, to enable transition to rendering of services in electronic format.

Upon the implementation of new systems and e-services, interfaces and services shall be published in an appropriate manner, so that upon further upgrading an adequate use shall be provided not only of the interfaces but, where requested, of the upgraded existing services.

7.1.4 Connected administration

The integration environment shall be refined through the establishment of process management system for rendering of complex administrative services in electronic format. Thus, completely automated electronic data exchange between the administrations shall be achieved gradually.

All components building the e-government infrastructure shall be integrated in a common architecture, oriented to services providing conditions for connection, based on open industrial standards.

7.2 Technological model

The technological model shall be established on the basis of open standards, guaranteeing expandability and flexibility. The applied technologies and approaches shall enable fast change and putting in operation of new business processes – quick introduction of business applications, optimization of their use in accordance with the constantly changing needs of users – the citizens, business organizations and administration.

The technological framework of e-government in the Republic of Bulgaria envisages for the application of contemporary solutions for optimization of the information & communication resources through remote access to shared resources, including the data centers of the state administration.

Changing of technologies will take place gradually, and not revolutionary, where possible. In some cases realities shall require basic reconstructions. Thus, stability and topicality of the technological model shall be achieved for a long period of time. The interested parties shall be able to develop their processes, services and data by themselves, conforming only to common frameworks of design and technologies.

7.2.1   Infrastructure

Infrastructure is the e-government backbone and a critical factor for all initiatives in that aspect. The major structural elements of the infrastructure are expresses in the provision of:

- Own and outsource centers for deployment of equipment, including data centers;
- Communication connection;
- Hardware provision;
- System software provision;
- Software for management and surveillance of central and local systems of the e-government.

A necessary condition for the implementation of the e-government centralized integration system is the establishment of guaranteed and reserved high-speed communication connection, upon stagely integration of all administrations. The government shall manage and develop unified critical communication infrastructure, aimed at the achievement of sustainability, quality of services and minimization of public expense. In respect of the infrastructure, the government considers important the introduction of instruments for measurement, surveillance and optimization of the use of available resources, as well as precise forecasting of the requested hardware and communication resources for further deliveries or development of information solutions. One of the possible approaches is the implementation of centralized systems for virtualization and resource management.

For the provision of correct planning, construction and utilization of the infrastructure and the major resources of the e-government, requested shall be the institutionalization of e-government system integrator, to which the responsibilities for the existing centers shall

be transferred, together with the obligations for their servicing and development, as well as on the provision of such centers' resources to different administrations.

To that end, requested is the definition of resources subject to provision, and the levels of maintenance and availability of such resources. This will ensure an operable environment of the e-government central systems and possibility shall be provided for utilization of unused resources, which could be provided to administrations in need of them. Prerequisites shall be created for the establishment of an environment of shared resources (Cloud), able to render services/ resources to the relevant organizations.

Surveillance and management software is a necessary condition for qualitative management of hardware and communication resources, maintaining the indices on the quality of infrastructural services at high levels, which on its part shall lead to more qualitative servicing of users.

The unified system integrator (USI) is an organization whose major function is the provision of continuity in the functioning of the ICT systems in the state administration, upon a predetermined level of servicing (different for the different systems – 24/7 for the critical ones). USI shall dispose of divisions in the country and shall provide the functioning and maintenance of:

- The communication systems in the state administration;
- Servers and basic hardware;
- Operational systems and data bases;
- Software applications, results from implementation of projects;
- Information systems;
- Operability of used resources;
- Information and network security.

USI shall provide management and coordination of ICT projects on the part of the central and the local administrations.

USI shall maintain a unit for modeling and optimization of business process for the organization, as well as for the needs of the tax administrations and the municipal administrations. Also, USI shall maintain a small team of programmers who shall perform tasks on the maintenance of the implemented systems in the tax administration. In individual cases, USI shall perform overall projects where external contracting is inappropriate.

7.2.2 Succession

The implementation of ICT solutions in the country shall be regulated through the development and application of procedures ensuring succession and upgrading of already implemented solutions.

In respect of software provision of delivery and the development of data bases, specialized products, system and application software, the already delivered systems and resources shall be taken in consideration, their multiple usage and upgrading shall be searched for.

To guarantee future upgrading and development, each system development shall be provided with a standardized minimum number of technological instructions and data, such as: output code and compiled modules; documenting of the data base, at the level of tables and all fields; documenting of the output code (basic modules, classes, architecture); installation and configuration instructions with level of particularization allowing fulfillment by experts of a lower level of specialization; instructions on operation and maintenance of the information solution.

7.2.3 Security

Network and information security (or cyber security) is defined by the European program document "Digital Agenda for Europe" as one of the eight pillars of the modern digital society. Following that concept, the European Commission developed in 2013 the EU Cyber Security Strategy and a draft Directive of the European Parliament and the European Council regarding measures to guarantee a high common level of network and information security in the European Union.

In accordance with these documents, the developments of the European Network and Information Security Agency (ENISA) and the gathered experience, requested is maintaining of secure, sustainable and reliable cyber environment; mitigation/ overcoming of the risk upon using of information and communication technologies; promoting confidence and achievement of conditions for economic and social growth.

To guarantee e-government security, applied shall be a totality of methods and means for protection of information and information systems from unauthorized access, modification and data destruction, etc.

Security management is a continuous process and one of the priorities upon work in a digital environment. The purpose is ensuring of balance between accessibility and confidentiality upon data exchange between the individual interested parties in the e-government.

The achievement of the above goal shall be guaranteed by realization and rendering of services, such as: services managing access to business processes, e-services and e-data, services on the protection of data from unauthorized access, etc.

In addition, implementation of services shall be accompanied by definition of different security levels, to achieve reliable communication upon the use of public access channels.

In this connection, priority shall be given to the development of information, reactive and preventive services, protecting users' rights in the e-government and Internet environment.

Guaranteed shall be the establishment of a network of allocated virtual Disaster Recovery Centers. Such Centers shall provide backing-up of data, which shall allow fast recovery of the operation of critical information systems of significance for functioning of the administration, affected by various disasters and malicious actions.

7.2.4 Operability

The efficient data exchange between different systems in the administration shall be provided through the application of the developed European and national operability frameworks, and the relevant international standards. It is an important prerequisite for successful communication with users of e-services, rendered by the e-government systems. Operability guarantees exchange of e-documents between different systems and facilitates the development of new e-services. Semantic, syntax, technological and organizational operability, conforming to internationally recognized (open) standards referent to the European operability framework, guarantee for the establishment of unified information & communication infrastructure. It is the base for building of administrative service oriented to the user.

The problems of operability are not only technological, they include a wide range of aspects connected with the adoption of institutional, inter-sector and trans-boundary legal grounds for operability, insufficient information or political will, or absence of agreement on the requested e-government structures.

The lack of an overall approach to operability imposes risks in a national aspect, as well as at the EU level, for choosing of mutually incompatible solutions, which would not only be inefficient and infeasible but would impose new obstacles to the provision of public services.

The inter-sector operability is hampered by the absence of generally accepted data models, different interpretations of one and the same data, as well as the absence of common reference data. One of the priorities is harmonization of metadata for specific spheres or, where possible, between domains. Examples for such standardized data definitions are developed through the ISA program; they are called "Asset Description Metadata Schema" (ADMS).

7.2.5 Technological neutrality

The speed of development of devices, systems and solutions in the IT sector is very dynamic. Thus, the e-government systems and solutions shall conform to acknowledged international standards, being maximally independent from concrete operational systems, platforms, technologies, software and providers.

Such standards in the sphere of e-government are developed by a number of international organizations, amongst which are:

- International Organization for Standardization (ISO);
- Internet Engineering Task Force (IEFC);

- United Nations Center for Trade Facilitation and Electronic Business;
- Organization for the Advancement of Structured Information Standards (OASIS);
- World Wide Web Consortium, etc.

Upon the construction and implementation of a new system, its parts relevant to the interfaces with other systems and rendering of services shall be registered in the relevant format at storage areas for future use/ reuse. The regime of registration shall be free, as far as a standard format of information is required.

7.2.6 Standardization

The introduction of standardization is requested in respect of the provision, development and maintenance of software solutions. Systematic approach shall be introduced, guaranteeing the high quality of information solutions and regulating the minimum requirements at each phase upon software delivery or development.

Standardization is a major prerequisite for the multiple usage of the available technologies, solutions and knowledge (infrastructure, applications, solutions, licenses and technological tools). This shall increase the stability and maturity of the existing solutions, shall spare time and sources for the development of new ones, and shall also reduce maintenance and servicing costs.