

THE GREEN PAPER



ON THE ELECTRONIC GOVERNANCE
POLICY IN UKRAINE

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Kyiv
2015

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The “Green Paper” might be considered the most recent genre for presenting and discussing feedback and suggestions related to the state policy as such. “Green Paper” is a common format for development and coordination of the state policy in democratic countries. This document contains a description of new opportunities provided by information and communication technologies to optimize relationships between citizens, businesses and government. This document also analyzes current problems and the valid state policy regarding electronic governance, while offering the vision of the changes deemed necessary. The “Green Paper” considers various problems and their solutions in four areas: electronic public services, electronic interaction of information and analytical systems, openness of government information and electronic tools for public participation within the state policy.

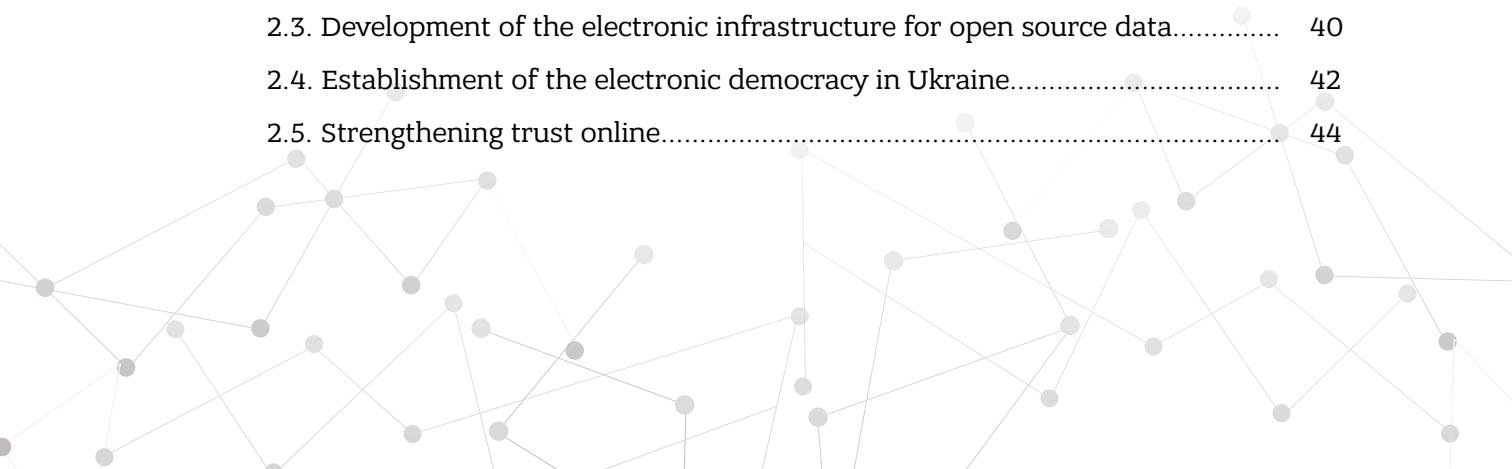
The contents of the Paper have been prepared by the Working Group on E-Governance Policy Development at the Vice Prime Minister of Ukraine and the Minister of Regional Development, Construction and Communal Living of Ukraine in November - December 2014 after extensive public debates.

The publication is intended for civil servants, representatives of the IT business, students, postgraduates, journalists and all those interested in development of e-governance in Ukraine.

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General purpose and objectives of the Green Paper

The “Green Paper” is a document used by governments in many democratic states for declaration and debate over basic directions and contents of the state policy in various fields, as well as its coordination with the public and business.

As of today, Ukrainian legislation doesn't follow any document like the “Green Paper”, while valid administrative regulations and procedures don't consider neither drafting, discussion, finalization, approval of the directions for implementing the state policy in the form of the “Green Paper”, nor its further itemization and specification in the form of the “White Paper”.

The closest to the aforementioned documents in our realities are the so-called “doctrines”, “concepts” and “strategies”, defining the current problems, directions, aims and objectives supported by the state policy, as well as expected results of their implementation. Sphere-related “annual reports” on the state of affairs and development prospects, as well as “analytical reports”, justifying expedience of specific strategic decisions are the closest documents in their essence.

The key element of the Green paper is that this document on implementing the

state policy is a preliminary one before drafting specific legal and regulatory acts and making decisions. It also considers preliminary detailed study and open public discussion of the key problems for a specific sphere of the state policy, as well as their possible solutions. Any White Paper shall be based on a Green Paper results. Specific decisions of public authorities, including regulatory acts, for implementing the state policy suggested within a White Paper shall be prepared and approved in accordance with a Green Paper's results. Hence, we can ensure integrity, consistency and succession in implementing the state policy, as well as transparent preparation process open for proposals of all interested parties.

While drafting a Green Paper, special attention shall be given to public and expert consulting sessions and discussions to define, formulate and set alternative ways to understanding problems and solutions, which are suggested by interested parties, in order to present the most balanced version of the state policy possible in the end. Moreover, a Green Paper is focused on explaining the logics of the suggested course and form expectations on the contents of the policy planned by the state for related

spheres.

It's worth mentioning that while taking the broad scope of the e-governance sphere, and in order to meet specific requirements and results, there shall be a clear framework and basic directions of the survey within the Green Paper, as follows:

- electronic interaction between public authorities;
- electronic services;
- open source data;
- electronic democracy (participation).

Others but no less important directions, which are broadly considered components of e-governance, such as development of information and communications infrastructure, IT-industry, data security, electronic procurements and others are in need of drafting and discussing related documents of the state policy.

The Green Paper draft on electronic governance in Ukraine has been prepared by the Working Group on e-governance policy development at the Vice Prime Minister of Ukraine and the Minister of Regional Development, Building, Construction and Housing of Ukraine – Mr. Groisman V.

After consulting and discussion sessions on this draft, we will prepare the final version of the Green Paper to implement its related policy objectives. There shall be also prepared drafts of specific legal and regulatory acts like the Concept and the Law

of Ukraine “On the state target program of electronic governance development in Ukraine”. There shall also be detailed and submitted to public consulting sessions the suggested implementation mechanisms for specific initiatives described within the Green Paper as related White Papers.

The Green Paper discussion was held from 20 November 2014 till 15 December 2014. It was implemented as regional public events, as well as mediation activities focused on the feedback web-service known as e-zakon.org. All those willing had an opportunity to email their suggestions to info: etran-sua@gmail.com.

Regional public hearings on the e-governance Green Paper were attended by 328 participants in 12 cities and towns of Ukraine:

- Lviv – 20 November;
- Kyiv – 21 November;
- Mykolaiv – 25 November;
- Lutsk – 26 November;
- Vinnitsia – 26 November;
- Uzhgorod – 27 November;
- Odesa – 1 December;
- Kherson – 2 December;
- Chernigiv – 5 December;
- Cherkasy – 8 December;
- Kharkiv – 9 December;
- Dnipropetrovsk – 10 December.

Discussion activities:
Suggestions on the text and contents

of the Green Paper were submitted in writing by the Expert Working Group on introducing policy for e-democracy in Ukraine and the “E-Narod” (“E-People”) e-democracy development project of the Center for Innovations Development at Kyiv-Mohyla Academy, as well as M. Kashkin, I. Yani, S. Zhuravel, O. Mukha, F. Grishchev,

T. Shapovalova, O. Arkhipska, O. Ovcharenko, V. Kozhevnikova, O. Babaninov, V. Lysytsky, O. Yankovsky, Y. Djakonov, M. Ruda, S. Vorobyov, O. Bondarchuk, A. Yaskevich, V. Mokin, S. Antonenko, R. Matvijchuk, Ligita Davidova.

EXECUTIVE SUMMARY

Implementation and use of e-governance technologies is a strong factor towards Europeanization of the national systems of public governance. It will facilitate in developing preconditions for economic growth and competitiveness of Ukraine in today's Globalized world.

Use of e-governance tools will further contribute into finding numerous solutions for the following major problems of the public governance in Ukraine:

- non-transparency in functioning and decision-makings, departmental secrecy; corruption;

- low efficiency of administrative procedures;

- discrepancy in quality of services given to society and business in accordance to European standards;

- lack of democratic control and citizen participation in the development and implementation of state policy;

- low level of citizens' trust towards institutions of public authority.

In accordance with the results of the "United Nations E-Government Survey 2014: E-Government for The Future We Want" (held every two years), Ukraine was ranked 87th among 193 UN members in 2014.

Alongside with that, Ukraine has been

gradually forming necessary prerequisites for the e-governance development. In accordance with several surveys, 19-24 million people across the country are Internet users. 29% of them visit websites of central and local self-governing bodies on a regular basis.

All central executive bodies, oblast state administrations, Kyiv and Sevastopol city state administrations have their official websites. The rates of web-connected working places within the apparatus and structural divisions of oblast state administrations are 92%. Rayon state administrations have their rates at the level of 65%. According to the related survey, the electronic document and records management system at the administrations' apparatus has been established in all oblasts and Kyiv city but Zaporizhzhya, Kyiv, Kirovograd and Ternopil oblasts.

Development and use of state information resources can't be characterized by their coordination, but rather their instability and incompatibility, which only decrease the level of efficiency, effectiveness and flexibility of state resources management. As a result, both public authorities and agencies in Ukraine have a bulk of complex information, telecommunication and information-telecommunication

systems, including state registers, departmental e-document management systems, standard activity automation systems and management decision-making support systems, but the major problem is that they are not compatible with each other and use different technologies, standards and formats. All these lead to lack of coordination, variability and non-compliance use of state information resources, low efficiency and effectiveness, lack of flexibility of public governance. Solution can be reached through the development and adoption of single requirements (standards, formats, protocols) for interoperability and electronic interaction.

It is very important to ensure interoperability in the context of further European integration of Ukraine. For this purpose it is necessary to ensure that eIDAS (the European Parliament and the Council of the European Union requirements on electronic identification and trust services for electronic transactions at the internal market) and EIF (European Interoperability Framework). This would further allow ensuring the cross-border e-interaction and granting provision of cross-border e-services.

The most appropriate way of ensuring the automated electronic data interchange of public authorities' information systems is to develop an integrated system of electronic interaction. The technological sup-

port of an e-interaction process with the use of an integrated e-interaction system might be ensured via the use of a service-oriented architecture, which is a combination of electronic services developed in conformity with standard requirements, as well as the use of integrated data formats and specifications, communication standards and protocols.

The current situation in Ukraine regarding the process of administrative service provision requires prompt reforming activities, including the following:

- consolidation of the administrative service system;
- reengineering for the current administrative processes aimed at their further optimization;
- introduction of electronic administrative services, which is the best tool for such a reforming process;
- willingness and proper motivation of the personnel to provide electronic services.

Introduction of e-services in Ukraine with the lack of the single national e-interaction system, establishment of an integrated state portal for administrative services and e-interaction of public authorities is mostly carried out by public authorities through implementation of specific pilot projects and support to electronic reporting.

In the meantime, business in Ukraine plays a role of the major “powerhouse” and

a “driver” for introducing e-services, just like in many other countries. As of today, Ukraine successfully implements services in the sphere of Internet-banking, Internet-trading and Internet-insurance, selling goods and services on the web (online tickets, clothes and e-goods), as well as electronic payment services like utility service payments, Internet and phone service payments, etc.

Due to the common use of the aforementioned services, citizens have been gradually building up trust and confidence in electronic ways of their provision. According to a public poll, 33% of Ukrainian web users have used e-services offered by business companies, and 42% have made e-payments. However, 96% of users have never tried being covered by public services electronically.

At the same time, the process of transition of public services to the electronic form should be legally approved, methodically supported and administratively motivated. International experience proves that one of the best ways to provide incentives for e-based public services is standardization of their provision process – drafting of clear organizational, technological and technical rules and requirements.

An additional point is that introduction of e-services and e-democracy technologies require development of a national e-iden-

tification system. Due to Ukrainian movement towards the EU integration, there is a necessity to develop the e-identification system by implementing eIDAS Regulation #810/2014.

Access of citizens, NGOs and business companies to public information personal data, which public authorities are running, as well as an opportunity for automatic processing of the open source data from state information resources is considered a key element of a modern democratic state, while information-communication technologies allow making this process as comfortable as possible.

Monitoring of Ukrainian central executive bodies’ websites in 2013 (56 websites analyzed) implemented by the “Regional Press Development Institute” NGO proved that despite some improvements in the level of informational transparency of the aforementioned authorities (49,6% in 2013 in comparison to 48,3% in 2012 or 40,6% in 2011), 50,4% of information related to activities of central executive bodies still remains unavailable for users.

There were the following information priorities for visitors of the aforementioned websites:

- 41% were in search of general information about a related public authority (its structure, location, etc.);
- 40% tried finding out the place, time

and necessary documents for getting specific public services (allowances, licenses, certificates, permits, etc);

- 34% were in search of information about the working schedule and/or reception time at specific structural divisions and civic servants;

- 11% were interested in drafts of decisions planned for related authorities;

- 7,3% were interested in inspection, monitoring and audit results;

- only 8% were curious about public procurements.

Regarding publishing of structured data from state information resources, Ukraine is in need of drafting and implementation of a clear policy on open source data and assurance of their reuse.

Citizens' electronic participation in the governance process is a set of tools, including personal computers, laptops, smartphones and social networks used for development and protection of major democratic values like dissemination of information, communication and participation of citizens in the decision-making process (by meetings and voting) and pooling of citizens' interests. Web-based opportunities and information structures within this sphere are almost unlimited: starting from electronic consulting sessions with the general public and ending with participation of citizens in political forums, e-elections, etc.

During and after the events in the end of 2013 and in the beginning of 2014, Ukraine faced a burst of public activity and raise of demand for new mechanisms and forms of implementing democratic control over activities of public authorities, as well as innovative tools to influence them.

The current tools of e-cooperation between public authorities and citizens, non-governmental initiatives and business companies rather stay declarative and simulative than those provoking public participation in the process of development and implementation of the state policy.

Development of new tools, procedures and services within the sphere of e-democracy should be essentially based on experience of implementing similar pilots and demonstrative projects. Only with active engagement of the general public and social institutions, we may define priorities and implement a piloting process of the aforementioned projects. We should focus on developing such e-democracy tools as sign-ins and presenting petitions related to supporting non-governmental initiatives, references, consulting sessions and polling, electronic voting, etc.

While introducing e-governance tools, we should be aware that an average citizen or a businessman/businesswoman is less likely to care about technical specifics of a process of provision for e-services, access

to open source data or e-participation. He/she would rather pay no attention to them, as the state should focus on making the aforementioned processes as comfortable, transparent and simple as possible. Trust towards an online service and confidence in its security will always play the major role for an average person. Without providing the features like those, we can't even consider any implementation of e-governance. This is the major prerequisite for developing a digital market.

Implementation of e-governance in modern Ukraine is a powerful driver for the EU integration, which provides an active boost for harmonizing the process of interaction between:

- public authorities,
- citizens,
- NGOs,
- business companies and other public authorities in accordance with the requirements and standards posed by the European Union.

I. PROGRESS OF ELECTRONIC GOVERNANCE IN UKRAINE

1.1. Current prerequisites for developing e-governance in Ukraine

Our lives have been drastically changed recently due to active development of information and communication technologies. We can get access to the latest news, listen to music, watch favorite movies, communicate with our friends and get inquiry or professional information much easier now. We also have much more opportunities for finding partners and like-minded individuals. The use of advanced technologies is an impressive factor for raising both personal and national competitiveness, encouraging advanced rates of economic development and improving economic structure of a modern country. Taking all those facts into account, more and more people feel an urge to use new opportunities uncovered by information and communication technologies, in order to change their ways of interaction with public authorities and make this process less costly time-wise, effort-wise and finance-wise.

Introduction of information and communication technologies at public authorities, the sphere of interaction between them and citizens, NGOs, business companies and other public authorities, which in the broader sense means “electronic governance”, will allow modernizing

activities of all interested parties, while making them more open and contributing in fighting against the high level of public distrust towards technologies as such. Hence, implementation of e-governance tools would allow decentralizing services provided by public authorities as much as possible, while making them closer to the general public at the same time. Minimizing the rates of personal contacts with civil servants and an opportunity to track your personal digital “interaction history” will sufficiently decrease the rates of corrupt practices. The use of ICT within the process of interaction between public authorities will allow boosting the process of decision-making and their implementation, freeing a bulk of servants’ working time, while decreasing the need in their general numbers.

The use of e-governance tools will further contribute in finding solutions for the following major problems of the state of Ukraine:

- non-transparency in functioning and decision-making, departmental secrecy; corruption;
- low efficiency of public procedures;
- discrepancy in quality of services provided for society and business in accor-

dance with European standards;

lack of democratic control and citizen's participation in the process of drafting and implementation of the state policy;

low level of citizens' trust in the institutions of public power.

Implementation of e-governance in modern Ukraine is a powerful driver for the EU integration, which provides an active boost for harmonizing the process of interaction between public authorities, citizens, NGOs, business companies and other public authorities in accordance with the requirements and standards posed by the European Union.

Both the authorities and the general public have paid close attention to the development of e-governance in Ukraine recently. This sphere is now regulated by more than 10 Ukrainian laws, more than 30 resolutions and 20 decrees of the Cabinet of Ukraine. However, there is a dispersion of responsibilities for implementation of e-government among public authorities. In 2014, 8 presidential challengers and 10 political parties that participated in the parliamentary elections stated certain elements of e-governance in their programs. It has become one of the "Strategy 2020" priorities – the Presidential plan of comprehensive modernization of Ukraine. According to the results of a survey implemented by the Razumkov Centre in September 2014, 40%

of Ukrainian population support to e-governance development.

The necessary prerequisites for the e-governance development have been subsequently designed as well. According to various surveys, there are 19-24 million web-users in Ukraine. Alongside with that, the level of the Internet penetration in Ukraine is one but the last in the whole Europe. Only Kosovo has the lower ranking in that list.

Regarding the use of Internet for interaction with public authorities, the aforementioned Razumkov Centre's survey shows that:

34% of Ukrainian web-users use legislation databases;

29% visit central and local authorities' official websites;

27% try acquiring information on governmental activities at official websites of the government and other public authorities and institutions.

Public attention towards major directions of e-interaction with public authorities are prioritized as follows: an intention to be provided with a service – 21%; to acquire information on activities of a public authority – 17%; to have some influence on decisions made by public authorities – 7,4%.

All central executive bodies, oblast state administrations, Kyiv and city state administrations have their official websites. The

rates of web-connected working places within the apparatus and structural divisions of oblast state administrations are 92%. Rayon state administrations have their rates at the level of 65%. According to the related survey, the electronic document and records management system at the administrations' apparatus has been established in all oblasts and Kyiv city but Zaporizhzhya, Kyiv, Kirovograd and Ternopil oblasts.

However, structural divisions (units, departments and sectors) are not able to meet all the needs related to IT development and introduction of e-governance in their current state. The number and professional level of their employees might explain this. Among the signs of inadequate authorities' readiness, we can state the following: ineffective arrangement of IT functions, low skill level of IT workers on at central and local governments to IT management, including project management. Unfortunately, worldwide-recognized international standards and best practices for project management, information technology operation and security services are hardly ever used. The information technology audit has not become a part of everyday working practice for central and local governments.

All public authorities are in dire need of personnel dealing with IT management. Low salaries within the state sector don't

allow hiring highly qualified experts. This drawback causes quite diverse levels of development of various state sectors within this sphere, while preventing their wide use. Moreover, there are no specialized structural divisions responsible for IT support at both rayon state administrations and many local self-governing bodies, which forms a system risk factor for implementing e-governance in Ukraine.

In accordance with the results of the "United Nations E-Government Survey 2014: E-Government for The Future We Want" (held every two years), Ukraine was ranked 87th among 193 UN members in 2014. In 2012, our country was 68th and in 2010 – 54th. The negative dynamics is mostly caused by Ukrainian losses related to online service provision indexes.

On the one hand, the state invests heavily into development of IT-infrastructure at public authorities and on the other one – these values are insufficient in comparison with other European countries. Hence, UAH 402 million from the State Budget of Ukraine were spent for this purpose. This includes 296 projects with the total cost of UAH 383 million approved by the general state contracting authority in charge of the National IT Development Program in accordance with the valid law (Art. 48 of the Budget Code of Ukraine). However, 49 other projects of 18 public authorities were

funded in the amount of UAH 18,5 million with violation of the valid legal procedure. The State Budget of Ukraine 2014 includes 190 activities planned by 42 budget programs in the total funding amount of UAH 183,6 million. The state “investments” into development of an e-interaction system for state executive bodies amounted to UAH 17 million, while more than UAH 5 million

was spent on an e-interaction information system for state electronic information resources.

By comparison, South Korea in the lead of the UN e-governance rating plans investing more than USD 3 billion into e-governance development in 2015, while Estonia, the EU leader in this sphere, spends 1% of its State Budget on e-governance annually.

1.2. Electronic interaction between public authorities

1.2.1. The essence of electronic interaction

Dynamic development and changes of the modern information world require new efficient approaches to organization of internal activities and multisectoral (interagency) interaction. Those are mostly achieved via introduction of electronic forms of interaction. Alongside with that, public authorities mostly continue their work with documentation and information on paper, which overcomplicates online data interchange, public service procedures, public awareness and business servicing.

E-interaction between public authorities considers both electronic document interchange and an opportunity to acquire (exchange) electronic data from public authori-

ties' information system automatically and in accordance with pending requests and competences.

In practice, introduction of the e-interaction between public authorities considers an opportunity:

- to transfer and acquire organizational and regulating documents by public authorities in electronic format;
- of automated e-data (message) interchange between information systems of public authorities;
- of automated access of a public authority to electronic data from information systems of other public authorities in accordance with their competences.

Hence, a set of processes related to drafting, processing, sending, transferring, acquiring, storing, using and disposal of

electronic documents or messages must be transferred to e-format, while setting some legal value to the processes as such.

Analysis of the best practice in developing national e-governance systems proves existence of an integrated approach to development of architecture or reference e-governance model with the so-called “governmental gateway” or the “state bus”. In other words, this is a system of interagency e-interaction.

Interoperability and e-interaction between various levels of public authorities was defined as one of the top priorities of the Digital Agenda for Europe 2020 (one of the seven flagship initiatives of the Strategy “Europe 2020”) and the European eGovernment Action Plan 2011 – 2015, as a prerequisite for forming a single European digital market and delivery of cross-border services.

1.2.2. The progress of e-interaction in Ukraine

More than 10 years ago, the Resolution #208 of the Cabinet of Ukraine “On measures to develop the “E-Government” electronic information system” set the main tasks in integrating state information resources for the first time and on the national level.

The task on support to e-interaction between state information resources has been

considered one of the top priorities within the Law of Ukraine “On the basics of information society development in Ukraine in 2007-2015” (as of 2007), the Concept of eGovernment Development (as of 2010) and, finally, the Strategy for Information Society Development in Ukraine (as of 2013) ever since. However, the posed tasks are mostly declarative and rarely set any accurate terms or mechanisms for their fulfillment.

The first real steps in introducing the system of e-interaction between various state resources were only made in 2012, when the Concept of development and functioning for an information system of e-interaction between state electronic information resources was approved. In 2013, there was approved a comprehensive plan on implementing the aforementioned Concept, which considers drafting of a set of legal and technical documents needed to achieve interoperability and ensuring e-interaction for state information resources. However, that plan needs to be updated and finalized today due to its non-fulfillment.

Alongside with that, it’s worth mentioning that Ukraine has formed a powerful common legal basis to implement an e-document management system at public authorities. The Law of Ukraine “On e-documents and e-document management” has been valid since 2003. In 2004, there was approved a Standard procedure on e-document man-

agement at public authorities in accordance with the Resolution #1453 of the Cabinet of Ukraine. In 2011 – 2012, they standardized the issues of an integrated e-document format (the Order #1207 of the Ministry of Education and Science of Ukraine); the procedure of the interagency e-document management (the Order #1600/5 of the Ministry of Justice of Ukraine); the procedure of recordkeeping for e-documents and their further dispatch for archiving (the Order #1886/5 of the Ministry of Justice of Ukraine as of 11.11.2014). However, the issue of setting a format for an e-document remains unsolved.

Creation and use of state information resources can't be characterized by their coordination, but rather their instability and incompatibility, which only decrease the level of efficiency, effectiveness and flexibility of state resources management. As a result, both public authorities and agencies in Ukraine have a bulk of complex information, telecommunication and information-telecommunication systems, including those used within state registers, departmental e-document management systems, standard activity automation systems and management decision-making support systems, but the major problem is that they are not compatible with each other and use different technologies, standards and formats

As of today, there are more than 700 electronic state information resources used

by public authorities in Ukraine, of which 135 are at central executive bodies. However, there is yet no actual information about the actual number of systems and their content, because the information system register doesn't function properly.

The aforementioned situation caused serious difficulties in establishing interaction between several inherited and implemented state information resources, while the lack of mandatory requirements (standards and formats) and a single national coordinator within this sphere caused the fact that certain central executive bodies set their own rules of e-interaction for state information resources developed to fulfill some specific and urgent task, while being incompatible with each other.

For example, only the State Fiscal Service of Ukraine has approved more than a hundred of various e-communication protocols on state information resources for interaction with other central executive bodies. Such personal e-interaction rules have been set by the Ministry of Social Policy of Ukraine, the State Treasury Service of Ukraine, etc.

The "System of electronic interaction for executive bodies" was introduced in Ukraine in 2012 to solve the problem of e-interaction between information systems of various public authorities. It's focused on ensuring the integrated information space for the exchange, processing and storage of e-docu-

ments and prerequisites for transition to internal e-document management. It's planned that the aforementioned system would allow all central and local executive bodies joining the integrated information space for managing legally significant e-documents, regardless of the fact whether an agency has an internal e-document management system or not.

As of today, this system has been established at the basis of specific central executive bodies and contains over 50 thousand e-documents. The implementation process for this system carries on very slowly and mostly due to a high number of comments from public authorities regarding the developed system and the lack of solutions for property rights.

In 2013, there was started a work aimed at development of an integrated e-interaction system for state information resources to ensure automated data interchange between various information systems of public authorities and solve any possible problems of compatibility of the aforementioned resources.

We should also mention some specific projects on development of the "E-Parliament" information system aimed at integrating all current databases at the Parliament of Ukraine and the "E-Court" system of e-document management between courts and trial participants.

1.2.3. Major problems of the e-interaction implementation

In view of the aforesaid, we can define the following major problems and challenges on the way of introducing the process of e-interaction in Ukraine:

1. A great diversity and high numbers of various inherited and implemented information systems at public authorities that can't be used for e-interaction.

Due to the lack of coordination between public authorities and neglect towards general rules, there exist internal information systems, which are not compatible in both technical and regulatory terms.

2. Poor quality of information systems at public authorities.

Vast majority of information systems operable by public authorities were established with violations of the valid law on designing, developing and operating systems as such, as well as violation of information security requirements.

3. Lack of integrated identifiers linking similar information from various state information resources.

The aforementioned problem may cause serious difficulties at the stage of establishment of organizational-legal and semantic interoperability of state information resources.

4. Lack of minimum requirements to interoperability of state information resources.

At the stage of design and development, public authorities should take further electronic interaction of their systems with other ones into account by abiding to minimum technical requirements.

5. Ambiguity of standard requirements to e-interaction between state information resources (format, standard, procedure, etc.).

Due to the lack of integrated approaches to implementing e-interaction, there are still created specific departmental or even regional projects to implement e-interaction systems that are incompatible with each other. In fact, this provokes inefficient use of budget assets, as the final result might never be achieved. Moreover, these projects can be often implemented technically first and only

then legally approved, and not vice versa.

6. Lack of an integrated functioning e-interaction system of state information resources.

Functioning of a system as such should ensure automated information interchange and communication from state information resources in accordance with standard rules and competences of public authorities.

7. Lack of such basic state e-registers as a demographic register and an address register.

Apart from the problems listed above, we may also define those related to regulatory ambiguity of the e-data storage (archiving), closed nature of various agencies and departments, as well as lack of will to connect their systems to an integrated e-interaction system.

1.3. Electronic services

1.3.1. The essence of electronic services

The major public and business requirements to public services is their accessibility and transparency (lack of corruption), which may be efficiently ensured by providing e-services.

An electronic way of delivering a service

considers an opportunity for a citizen or a businessman/businesswoman to obtain necessary information, inquiry, social aid, license or permit online anytime and in accordance with the 24/7 principle, without visiting a public authority.

In practical sense, introduction of e-services considers introduction of the following new services for a customer:

- comfortable and prompt access to complete, timely, accurate and credible information about any service through the Internet;
- download or online filing of e-documents necessary for provision of a service;
- online briefing of a customer on the line of appraisal and result of a service delivery;
- e-generation of the result of a service delivery;
- online payments for provided services, if necessary.

Hence, the whole process of an e-service provision, starting from identifying a customer and ending up with storing (archiving) related documents, should be transferred to the electronic format with setting legal value and legality.

Introduction of e-services is considered one of the top priorities of development in many countries of the world. For example, development of a new generation of open source, flexible and interaction-oriented e-services is considered one of the top priorities of the European eGovernment Action Plan 2011 – 2015 to provide citizens and economic agents with opportunities they need, to raise their mobility at internal markets in 21st century and to cover the future economics with e-based public services.

Moreover, the aforementioned Action Plan also considers no less than 50% of EU citizens being covered with e-services till 2015.

1.3.2. E-servicing progress in Ukraine

The current situation in Ukraine regarding the process of public services provision requires prompt reforming activities, including the following:

- consolidation of the public service system;
- reengineering for the current public processes focused on their further optimization;
- introduction of electronic public services, which is the best tool for such a reforming process;
- willingness and proper motivation of the personnel to provide electronic services.

Introduction of administrative e-services is the major prerequisite of getting the power closer to an average citizen, meeting his/her needs and protecting his/her rights and freedoms.

For the last five years, Ukraine has adopted a set of legal and regulatory acts declaring strategic approaches and setting specific objectives for implementation of public e-services. However, today we can state that most of those plans remain unfulfilled or at the preliminary stage of their implementation in need of revision.

Hence, organization of e-service delivery for both citizens and businesses with

the use of Internet and other tools that follow the so called “points of single contact” (PoSC) principle is one of the basic tasks of the Concept of eGovernment Development (2010).

It’s also worth mentioning that the first definition of the “e-service” term was only provided within Strategy for Information Society Development in Ukraine (2013).

The Law of Ukraine “On public services” (2012) finally defined an opportunity for a customer to submit his/her documents for a service delivery with the use of communication facilities and declared that administrative e-service provision shall be carried out via the Single State Public Service Portal (<http://poslugi.gov.ua>), which is an official information source on public services in Ukraine. It also defines an important standard that prohibits requesting information owned by other authorities from a customer and acquisition of the aforementioned information free-of-charge during a service delivery. As of today, the system doesn’t work properly due to the lack of e-interaction between various state information sources.

The Cabinet Decree #718-p (2013) approves the Action Plan on development of the aforementioned portal till 2016 and the Cabinet Resolution #13 (2013) approves the Rules of Procedure for such a portal. As of today, the portal works in a test mode with-

out providing any online services and the aforementioned documents require revision and updates.

In accordance with the recent UN survey on e-governance (2014), Ukraine was rated the lowest by “online services” index (0,2677), which is twice lower than the same value in 2012 (0,4248).

Lack of sufficient progress or even some regression in introducing e-services doesn’t advance any efficient interaction between the general public or business companies and public authorities. Procedures for providing public services remain complicated and mostly corrupted, while requiring a lot of time, efforts and resources on a customer’s behalf.

Alongside with that, we should mention certain positive dynamics in consolidation of the whole system of public services via establishment of certain public service centers considered by the law approved in 2012. There are 660 public service centers working in Ukraine now (647 without AR Crimea). Despite the fact that these centers now provide various numbers of services, we can observe the running process to design the so called “points of single contact” system and integrated rules. Hence, in accordance with the Cabinet Decree #523 (2014), there are 52 set administrative services planned to be delivered only through public service centers till the end of 2014.

It's also worth mentioning that the Government of Ukraine has valid plans (draft laws) on decentralization of public services related to transition of power and authority in the sphere of basic service provision to the local level. The general purpose of such a reforming process is transition of functions in service quality control, accessibility and transparency to related communities.

Implementation of e-services in Ukraine with the lack of a national e-interaction system, implementation of an integrated state portal for public services and e-interaction of public authorities is mostly carried out via specific pilot projects implemented by public authorities and support to electronic reporting.

There are several examples of such pilots on introducing public e-services: the project of the State Registration Service of Ukraine on implementing e-registration for legal entities and sole proprietors (<http://rp.irc.gov.ua/>); joint project of the State Agency for E-Governance in Ukraine, State Architectural and Construction Inspection of Ukraine and the OSCE Project Coordinator in Ukraine on implementing pilot administrative e-services in the sphere of building and construction (<https://e-dabi.gov.ua/>), etc.

We shouldn't also forget about the project of the Ministry of Education and Science of Ukraine on introducing e-registration

for applications on entering higher educational establishments (<http://ez.osvitavsim.org.ua/>). According to the official Ministry website, it received 797 323 applications during the matriculation campaign 2014. Moreover, electronic applications for pre-school facilities have also become popular in Ukraine.

However, introduction of e-reporting for the State Fiscal Service of Ukraine is the most successful example of e-service delivery on the national level. So, in accordance with the information provided by the SFSU official website, more than 90% of VAT taxpayers and almost 80% of UST taxpayers provide their declarations electronically, which proves the success and popularity of the aforementioned project.

Apart from that, there has been introduced a set of projects on e-reporting to the Pension Fund of Ukraine, the State Statistics Service and the Social Security Fund.

Alongside with that, Ukraine has managed to accumulate some positive experience on the regional level. That mostly relates to establishment of regional (city) portals of administrative services in Vinnytsia (2008), Ivano-Frankivsk and Dnipropetrovsk oblasts (2010), Kyiv city, Kharkiv and Odessa oblasts (2011), successfully providing e-services and introducing pilot administrative e-services. According to the results of various surveys, the e-gover-

nance development in the aforementioned cities and regions goes far ahead of the central level and the valid legal framework.

E-services supporting the process of public services delivery have been successfully implemented on the regional and city level. They can be grouped as follows:

- online pre-appointment;
- online consulting sessions;
- online briefing of a customer on the line of appraisal and result of a case.

Provision technologies and procedures for these services may differ for different regions, which proves the lack of an appropriate state policy in this sphere and integrated open rules (standards).

According to the results of the first Ukrainian survey on the e-service quality at 6 administrative service centers in Vinnytsia, Dnipropetrovsk, Ivano-Frankivsk, Kyiv, Lutsk and Kharkiv implemented during the first half of 2014, information and the “electronic line” services were the most popular out of 33 e-services provided at the aforementioned centers (48,8% and 43,9% users respectively). Alongside with that, 53,8% of respondents called web-based nature of e-services provision without any need to visit a specialized center the major factor of raising the level of e-service use. To some extent, such results may be considered experimental, but they can be used for defining and generalizing the best practice.

In the meantime, business in Ukraine plays a role of the major “powerhouse” and a “driver” for introducing e-services, just like in many other countries. As of today, Ukraine successfully implements services in the sphere of Internet-banking, Internet-trading and Internet-insurance, selling goods and services on the web (online tickets, clothes and e-goods), as well as electronic payment services like utility service payments, Internet and phone service payments, etc.

Due to the common use of the aforementioned services, citizens have been gradually building up trust and confidence in electronic ways of their provision. According to a public poll, 33% of Ukrainian web users have used e-services offered by business companies, and 42% have made e-payments. However, 96% of users have never tried being covered by public services electronically.

1.3.3. Major problems of the e-service implementation

In view of the aforesaid, we can define the following major problems and challenges on the way of implementing e-services in Ukraine:

1. Lack of the legal framework regulating the sphere of e-service delivery.

Despite the fact that a set of important documents aimed at introducing e-services has been approved in Ukraine for the last several years, a systematic and integrate implementation of such services requires definitions for integrated rules, standards and formats in the sphere of electronic services.

2. Lack of proper regulation of the electronic identification issue.

Possibility of a precise identification of a person applying to a public authority for e-services is the major prerequisite for implementing a legally valid interaction between citizens, business companies and public authorities.

3. Lack of e-interaction between public authorities.

The only possible tool to simplify bureaucratic procedures in providing public services in both common (paper) and electronic form is minimization of requirements to a required document package from a customer. In fact, the only requirement should be personal identification of a customer and all other information needed for decision-making may be acquired by a public authority from information systems of other public authorities.

4. Lack of trust towards electronic environment.

This was defined as one of the major problems on the way to widely implement

e-services, which was uncovered by the Digital Agenda for Europe 2020. Indeed, the lack of trust among citizens towards e-interaction with a public authority due to a risk of losing important data, unreasonable disclosure of personal data and cybercrime are the main constraints.

5. Lack of a developed architecture for an integrated state portal of public services, while taking into account e-service provision.

The current architecture of a pilot version for the portal is unfit for providing public e-services.

6. Excessive bureaucratization and complexity of administrative procedures in service delivery, as well as lack of optimality and good reasons behind a document package, which is needed for being provided with the aforementioned services.

7. Ambiguity of the storage (archiving) procedure for e-documents.

Lack of regulation over the process of storing the documents acquired from a customer and evidencing their validity in a specific time period is a serious constraint for implementing e-services.

8. Low willingness level among civil servants and citizens to implement e-services.

According to various surveys and assessments related to e-readiness of Ukraine, there's a quite low understanding level of

e-governance among both civil servants and citizens.

9. Low accounting level for the best in-

ternational practice in introducing e-services in the process of implementing the state policy.

1.4. Electronic access to public information and open source data

1.4.1. The essence of electronic access to information

Access to public information and related data owned by public authorities for citizens, NGOs and business companies, as well as an opportunity of automatic processing of open source data from state information resources are key elements of a modern democratic state, while IC technologies allow making this process as comfortable as possible.

In practical sense, introduction of electronic access to information from state information sources considers the following:

- open and free access to central and local state information resources through the Internet;
- ensuring the right to up-to-date and accurate information of social importance;
- opportunity for reuse of information and software data processing for their further reuse;

- ensuring the public control over activities of national and local self-governing bodies;
- mutual trust between users and public authorities in procedures of provision and acquisition of information.

1.4.2. Electronic access progress in Ukraine

The Cabinet of Ukraine has set procedures of Internet disclosure for the information related to activities of public authorities, which define a list of data to be published on certain websites. This information includes: name of an authority, basic objectives and legal regulations, structure and management of a public authority, basic functions of its structural divisions, samples of documents and other materials needed for application procedures, location, working and reception schedule, news

on available vacancies, state information resources related to the competence of a specific public authority, etc.

As of today, 100% of central executive bodies, oblast state administrations, Kyiv and city state administrations, as well as 72% of rayon state administrations are represented on the web with their official websites.

According to the results of the official monitoring of informational content of official websites for 72 central and 25 local self-governing bodies implemented by the State Committee for Television and Radio Broadcasting in Ukraine in the first six months of 2014, official websites of the aforementioned bodies are not informative enough regarding their systems of reporting on public information, email addresses of their heads, deputies, heads of structural divisions, basic functions of structural divisions, internal labor policy, procedures and conditions to compete for vacant posts, etc. It was noted that information structure of certain websites doesn't ensure sufficient simplicity and ease of reference to information regarding related services.

The monitoring of Ukrainian central executive bodies' websites in 2013 (56 websites analyzed) implemented by the non-governmental organization "Regional Press Development Institute" proved that despite increase in the overall level of information

openness of central executive bodies in Ukraine (40.6% in 2011, 48.3% in 2012 and 49.6% in 2013), 50.4% of information regarding the bodies' activities is still not accessible for users.

According to the public poll carried out by the sociological service at the Razumkov Centre in September 2014, only 6% of Internet users in Ukraine visited governmental databases and registers. 52% out of them report that they found the necessary information more or less successfully, 16% of the respondents could not find the information they needed, and 56% did not face any problems, while 26% of the users experienced technical issues, when a website either didn't work at all or couldn't be accessed at that time. Moreover, 2/3 of the respondents think the information is located more or less conveniently and find the available information full and complete.

There were the following stated priorities for visitors of official websites:

- 41% were in search of general information about certain public authorities (their structure, location, etc.);
- 40% tried defining the location, time and kinds of documents necessary for public service delivery (permits, licenses, certificates, allowances, etc);
- 34% were in search of the information on the working and/or reception schedule at structural divisions or their employees;

- 11% were interested in drafts of decisions of related public authorities;
- 7,3% were interested in results of inspections, monitoring and audits;
- only 8% were interested in public procurements and application of budget funds.

22,5% of the official websites users are in need of updated and accurate information, 32,3% – of more complete data, 19,8% – of indicators to evaluate dynamics or background. Out of those users interested in open source state registers and databases, 43,5% would like to have an opportunity to review their data inputted in various state registers, cadastres and databases, and 49% would like to acquire information on what public authority and when applied for their personal data to various state registers, cadastres and databases.

Regarding disclosure of structured data from information resources, Ukraine requires designing and implementation of a clear policy on open source data and ensuring their reuse. Access to the aforementioned data and their further free use is an important personal right, a tool of democratic control over public authorities, a tool for definition and prevention of corrupt activities, public participation in a decision-making process, an important economic asset capable of motivating business and investment activities, as well as a tool of innovative development. The open data

policy creates a new market of information services.

Development, distribution and use of open source data is actively supported and developed by international initiatives and organizations. The National Portal of Open Data was established in 2014 in Ukraine due to public initiatives (<http://data.gov.ua>). According to a survey by OKFN, Ukraine currently occupies the 64th place on the level of openness of public data.

1.4.3. Major problems of electronic access to information

In view of the aforesaid, we can define the following major problems and challenges on the way of ensuring electronic access to public information and open source data in Ukraine:

1. Declarative legal acts on the problems of ensuring electronic access to information and data of public authorities.

Instead of result-oriented documents or national target programs, there are approved national action plans or simple action plans and activity plans without any real resource support, which results in the lack of real budget financing for the majority of activities defined by the aforementioned documents.

2. Departmental approach towards or-

ganization of electronic access to state information resources.

Public authorities define the way of access to information, their lists, number and frequency of publications, which causes sufficient differences within a plan for ensuring access to information at their sole discretion.

3. Lack of integrated approaches, rules, standards, technical regulations in the sphere of electronic access to information and open source data.

Actions of public authorities are not coordinated or sufficiently based from the

technical and scientific point of view. As a rule, they don't correspond to the modern realities, as well as requests posed by both citizens and the business community.

4. Lack of efficient communications between public authorities, non-governmental organizations and economic agents.

Public authorities are not very eager to implement the tools of public monitoring surveys, inspection and surveillance over their activities for NGOs. As a rule, an initiative on communication building is boosted by representatives of non-governmental organizations.

1.5. Electronic participation in the governance process for the citizens

1.5.1. The essence of public electronic participation

Active implementation of IC technologies within the system of social and political relations expands opportunities of the general public in the spheres of public participation. It creates new opportunities for forming a new level of public activity and participation for those citizens who use advanced information technologies not only for their personal gain but also for social

and political participation on all levels of public governance.

Citizens' electronic participation in the governance process in a broader sense is called "electronic democracy", which is a set of tools, including personal computers, laptops, smartphones and social networks used for development and protection of major democratic values like dissemination of information, communication and participation of citizens in the decision-making process (by meetings and voting) and pooling

of citizens' interests. Web-based opportunities and information structures within this sphere are almost unlimited: starting from electronic consulting sessions with the general public and ending with participation of citizens in political forums, e-elections, etc.

In practice, e-participation of citizens in the process of governance consists of several basic stages and includes the following:

1. E-inclusion consisting of:

electronic consulting: public authorities apply to citizens via the Internet with a clear aim to establish their opinion on designing a specific policy or discussing their decisions;

electronic participation: active participation of citizens based on their feedback and supported by advanced IC technologies within the process of decision-making and policy design.

2. Electronic partnership is an extended stage of public interaction with public authorities, where both of them bear responsibility for decisions made and contribute into development of a civil society.

1.5.2. E-participation progress in Ukraine

During and after the events in the end of 2013 and in the beginning of 2014, Ukraine faced a burst of public activity and raise of

demand for new mechanisms and forms of implementing democratic control over activities of public authorities, as well as innovative tools to influence them.

There appeared a great number of online projects aimed at ensuring self-organization of like-minded individuals, networking to solve daily life problems of the modern Ukrainian society, raising points to consider, preparation, discussion and submission of proposals on the contents of decisions made by public authorities and local self-governing bodies. Members of the public actively use both their own resources and social networks like Facebook, Twitter, VKontakte and others in their practice. Within the frames of a non-governmental initiative called the "Reanimation Package of Reforms", there was established a special group engaged in development of new approaches to building up electronic democracy in Ukraine.

The current tools of e-cooperation between public authorities and citizens, non-governmental initiatives and business companies rather stay declarative and simulative than those provoking public participation in the process of design and implementation of the state policy. This mostly refers to implementation of the integrated informational web-resource created in 2012 for public applications to national and local self-governing bodies

(<http://z.gov.ua>). It was developed for rapid processing of electronic requests and forming responses, ensuring online control on behalf of the general public over processing of their requests, keeping a statistical register of requests and claims by national and local self-governing bodies, as well as control over finding solutions for the raised issues. However, this portal has been working in a testing mode for the last 2 years. The process of registration for public authorities within the system is still far from being over; the works on development of a complex system information security are still on; and the drafting of legal acts on approval of the Statement and the Regulation of activities with an integrated information web resource for public applications to national and local self-governing bodies are still in the process.

Another tool for public discussions via electronic consulting sessions with the general public was establishment of the governmental website “Civil Society and Power”. This tool has been created with the focus on public discussions via electronic public consulting, but it couldn’t become a ground for intense and fruitful dialogue between the Government of Ukraine, representatives of business companies and NGOs, and citizens of Ukraine.

In this context, Ukraine has been gradually drafting and developing successful

projects on electronic democracy initiated by the general public. For instance, the “Open City” project by East Europe Foundation aimed at ensuring efficient e-interaction between local self-governing bodies, communities and business companies during the process of solution for actual community problems. This project has been already implemented in 15 cities of Ukraine.

Hence, Ukrainian society has been boosting demand for various forms of e-participation. According to the poll of the Razumkov Centre carried out in September 2014, 24% of their respondents claimed they wanted to have an opportunity of influencing the importance of various issues for related public authorities through web-based petitions, as well as to submit their own proposals to draft decisions of public authorities. Another 19% expressed their interest in consulting sessions organized by public authorities at their websites regarding local regional and national policy and 11% are ready to spare several hours of their free time for related activities monthly. About 3% of Internet users in Ukraine express their interest in discussing: drafts/reports related to the state and local budget execution, drafts/reports on implementation of national and regional target programs, forecasts/analysis of regulatory impact, drafts of legal acts.

1.5.3. Major problems of e-participation in Ukraine

Overall low efficacy level of available tools for public e-participation in designing and implementing the state policy might be explained by serious problems in organizing public bodies' activities, requirements to their work and current competences of civil servants.

1. One of the major problems to be solved for development of public e-participation in the process of governance is the problem of identification.

In order to ensure some interaction between citizens and public authorities, the former should have an opportunity to identify themselves and the identification process should ensure security of their personal data and to provide an opportunity to take part in web-based discussions.

2. Digital inequality.

Various social groups are not equally engaged in the use of IC technologies. This ranges from total integration to total rejection. Low level of computer literacy doesn't encourage any engagement of citizens in efficient interactive dialogue with public authorities.

3. Formal nature.

E-participation tools and resulting data (surveys, discussions, voting, etc.) are often

neglected. Public authorities don't always respond to electronic feedback and comments from citizens, because these provisions are not legally approved.

4. The status of electronic applications and petitions remains undecided.

A citizen may express an opinion or leave a personal comment related to any problem at an official website of a public authority or email it, but this electronic letter is not considered an official claim. Electronic information sent to a public authority may only be taken into consideration.



II. RECOMMENDATIONS ON IMPLEMENTING THE STATE POLICY ON ELECTRONIC GOVERNANCE IN UKRAINE

2.1. Support to interoperability and electronic interaction between information systems of various public authorities

While creating necessary conditions for e-service delivery for the general public and business companies, optimizing the processes of adaptation and approval of the state policy, making governance decisions and implementing effective control, a great attention should be drawn to ensuring interoperability and e-interaction between information systems established and used by public authorities. Due to unrestricted information interchange between various public authorities, they may penetrate through departmental isolation and their information system would work on the basis of an integrated technological platform, which would allow better dissemination and reuse of information. It would also ensure its ability for further multi-purpose uses.

For average citizens, it would mean they would provide their personal data for public authorities only once and not every time they apply for public services. Public authorities would be able to reuse the acquired data without any additional requirements or inconveniences for those applying to them for a service.

As of today, both Ukraine and the whole Europe face major difficulties in implementing e-governance projects at both national and local level, as well as similar interagency projects, which basically need serious efforts to integrate certain data and programs. The major point is that they should rather organize the process of approval and use of related standards, formats and coordinate the architecture of information technologies of various organizations and agencies than using specific technologies.

European experience shows that e-governance performance is mostly ensured by the national frames of interoperability. Generally, this is a regulatory document of organizational and technical nature, setting and describing specific organizational and technical requirements to projects and systems of public authorities within the e-governance sphere.

In the most cases, such a national document describes the following:

- standards for data, metadata and open source data;
- standards for data security and storage;

- standards of e-interaction and access to registers;
 - electronic signature formats;
 - standards for public e-services delivery;
- It also sets specific requirements related to organizational, legal, semantic and technical interoperability.

Drafting of a related package of new standards for legal-regulatory and technical documents and their further harmonization with European analogues is the major prerequisite for systematic e-governance development in Ukraine. Within the context of further integration with the EU, eIDAS (the European Parliament and the Council of the European Union requirements on electronic identification and trust services for electronic transactions at the internal market) and EIF (European Interoperability Framework) conformity should be of high importance. This would further allow ensuring the cross-border e-interaction and delivery of cross-border e-services.

While ensuring exclusively electronic way of interaction between public authorities, we should gradually implement interoperability principles – setting and use of certain specifications related to interlinked systems, data integration, metadata content management and access to e-services.

Introduction of interoperability standards for public authorities would mean a necessity to revise and improve their

internal functional and interagency processes, while using advantages of raising the interoperability level. Inefficient and excessive processes must be restructured to avoid doubling of resources and efforts by the way of standardization of similar processes and allocation of resources. We must also design and approve general interoperability principles for various devices, applications, data archives, services and networks. The purpose of these principles is to ensure the free flow of information and services between systems. It is reasonable to start the implementation of the interoperability principles with public bodies, where the use of such standards and specifications will be mandatory. The same standards should be subsequently applied to business companies as well. In fact, everybody wins if different programs and applications will be interoperable and based on unified standards and open platforms, so all parties will eventually gain something from this process, as every user of modern IC technologies is interested in appropriately coordinated and integrated operation of digital devices and services.

The state has to ensure the free use of approved open standards and formats free-of-charge, as well as to develop incentives for designing standards and open platforms for new applications and services. The general purpose of such policy is to

design simpler, unified and technologically neutral solutions. While implementing a standardization policy for requirements to interoperability of public bodies' systems and services, it would be reasonable to ensure consulting and guidelines on conformity with interoperability requirements, as well as evidence of conformity with interoperability standards and requirements.

It's worth adjusting supporting mechanisms in drafting regulatory documents based on the best practice, as well as nationally coordinated toolkits and schemes. It's a good idea to develop a specific website containing guidelines based on the best practices, FAQs and advice on interoperability training and toolkits.

The most appropriate way of ensuring the automated electronic data interchange of the public authorities' information systems is to develop an integrated system of electronic interaction. The technological support of the e-interaction process with the use of an integrated e-interaction system might be ensured via the use of a service-oriented architecture, which is a combination of electronic services developed in conformity with standard requirements, as well as the use of integrated data formats and specifications, communication standards and protocols. An integrated system of e-interaction should be based on the following basic principles:

- technological neutrality of information systems linked to e-interaction;

- use of integrated rules of e-interaction for ensuring organizational, technical and semantic compatibility linked to e-interaction;

- reduction of information redundancy and doubling of data, as well as support to the reuse of data from information systems;

- use of open source formats and data structures, protocols and interchange standards;

- subsidiarity of technological decisions to ensure system linkage to e-system with no need for any compatibility-related updates.

Alongside with that, the basics of e-interaction support, obligations of public authorities and a single coordinator on e-interaction issues should be legally approved.

To ensure that these objectives will be carried out there is a need to introduce obligatory public discussion and validation of architecture of system planned for implementation in the work of national and local governments involving public and independent experts. There is a need to work out recommended organized IT structures for authorities in Ukraine and establish an independent regular audit of their respective IT functions with mandatory report on its results.

2.2. Electronic service development

The global practice of e-service introduction proves that while developing certain tools and their further provision, we should aim at their personalization and conformity with personal needs of their users. The tools should consider the most flexible opportunities for interaction and contacts with public authorities and should be particularly accessible for persons with disabilities and those with special needs. They should also be technologically neutral and compatible with various platforms.

The user-centricity of e-services should be constantly improved by developing their channeling (i.e., their delivery via various channels, including Internet, phones, mobile devices, kiosks, interactive terminals or intermediaries, where appropriate). The maximum user-centricity should also include a simple and general explanation of users' rights and obligations in the sphere of e-services. E-service tools should be available for customers on the national, as well as both regional and local level.

Alongside with that, the process of transition of administrative services to the electronic form should be legally approved, methodologically supported and administratively motivated. International experience proves that one of the best ways to

provide incentives for e-based administrative services is standardization of their provision process – drafting of clear organizational, technological and technical rules and requirements.

The best international practice on introducing e-services proves that in the most cases each public authority may individually develop and introduce their own services in electronic format. The major requirement is abiding to integrated rules and integration of e-services with the national e-service portal. Hence, a central executive body responsible for designing the policy of e-governance drafts approves the aforementioned integrated rules, requirements and open source formats, which may be relatively used for introducing e-services. Moreover, the national e-service portal ensures centralized access to e-services, as well as integrated information services and authorization services. At the same time, the national portal also operates as the front-office for the e-interaction system.

The e-governance requirement to e-service delivery is both a requirement and a tool to improve organizational processes within the system of authorities and to decrease related expenses, to simplify and to shorten administrative processes. Introduc-

tion of e-services considers their revision in the way that all redundant, low-efficient, fragmentary or outdated processes should be removed, while current processes and services should be regrouped to ensure maximum comfort, minimum expense rates and faster interaction between citizens, business companies and public authorities. Hence, introduction of e-services will not only create more comfortable conditions for customers, but also serve as a powerful driver for modernizing existing administrative services via reorganization of related operating processes. There should be also developed and implemented clear and comprehensive standards of public services. Due to that, there will be a real opportunity to estimate the actual quality of service delivery by relevant individuals in quantitative values. It is also necessary to develop the principles of payment form and implement expert assessment of the cost of providing the electronic services in case such a payment is needed.

In order to implement the aforementioned approaches, it's essential to draft and approve a set of legal acts regulating procedures of transition for public services, and to prepare plans on introducing high-priority e-services. Moreover, there's a need of prompt definition of a list of public services on the legislative level, including those oriented on the EU service lists.

There are the following drafting objectives of the aforementioned documents:

- unification and optimization of the e-service delivery process;
- solutions for the problem of compatibility between information systems supporting e-service delivery processes;
- reduction of transition terms for e-services.

Moreover, introduction of e-services needs development of a national e-identification system, as no legally valid e-interaction can be built without it. Each e-interaction participant should be identified or authenticated in accordance with integrated rules and standards with a guaranteed level to ensure security and interoperability of such an interaction.

Due to Ukrainian movement towards the EU integration, there is a necessity to develop an e-identification system by implementing eIDAS regulations (the European Parliament and the Council of the European Union requirements on electronic identification and trust services for electronic transactions at the internal market).

In accordance with the aforementioned document, e-identification of both individual persons and legal entities shall be carried out by providing them with special personal e-identification tools (electronic cards, passports etc., i.e., electronic identifiers related to a specific person or entity)

in conformity with a set procedure and scheme. The major eID-related requirement relates to ensuring technological capacity to authenticate an owner of an electronic identifier during any of his/her electronic transactions. These two aspects are mandatory for introducing e-services and implementing electronic transactions.

Within the context of planning for further eID development in Ukraine, provision of cross-border services and cross-border eID, it's important to focus on regulatory requirements to the level of security assurance. The Regulation defines three assurance levels: low, sufficient and high, depending on a critical service level. Definitions for requirements, standards and possible technologies to ensure the aforementioned levels are mandatory prerequisites to introduce e-services. For example, there's no need in an e-signature for paying fines, but it's critical for getting targeted social assistance.

Implementation of the Regulation would allow Ukraine integrating into the European digital market and access cross-border e-services very fast.

Alongside with that and within the context of further development of electronic keys and signatures as identification tools for electronic documents, it's worth mentioning that the Regulation transfers the electronic signature from the unique tech-

nology status and into the category of one of the multiple available e-services freely accessible at any market. Moreover, a list of such services will be expanded in accordance with development of the market itself and the customers' interest in such services. Today we can say that there are laid basics for designing some infrastructure for a single market of e-services, which will integrate open key infrastructures, e-identification infrastructures and other "infrastructures". The Regulation defines the following services:

- issue and management of open key qualified certificates for assurance of e-signatures and e-stamps;
- validation services for e-signature and e-stamp;
- time stamp provision;
- website authentication;
- e-document registration and mail confirmation;
- secure storage (including archived storage) of signed e-documents.

Hence, for wide dissemination of e-services, a customer should be provided with its clear and unambiguous definition, as well as advantages that a customer may acquire with the use of a specific service. A set of surveys shows a low motivation level of a customer to use the aforementioned services. On the one hand, public authorities and free markets are posed with a task

to form necessary incentives and spread e-services in both private and public sector. On the other hand, a principle of trust and confidence should be the major one in e-service delivery.

Alongside with that, modernization of relations between citizens, business companies and public authorities with the use of electronic tools considers a necessity in forming related knowledge, skills and capacities among civil servants and officials at

local self-governing bodies. So, we should consider training, retraining and capacity building activities for civil servants and officials at local self-governing bodies, while planning development of the civil service as such. It is also essential to form an active incentive-based system for civil (state) and municipal servants. Inclusion of related requirements into the list of professional competences may play a principal role here.

2.3. Development of the electronic infrastructure for open-source data

Public authorities collect, process, generate and store a lot of information on social processes, as well as data about individuals and legal entities. This information is often critical for various public and business needs (personal security, scientific and research needs, democratic control, etc.) and it's not always accessible for them. On-line access to public information and open source data from state information sources is an absolute advantage for Ukraine as a democratic state.

Dissemination of information of public authorities must be carried out transparently, efficiently and discrimination-free. The most advanced, low-cost and efficient

way of ensuring openness of public authorities is complete access to related information at their official websites. The list of information which should be public need to be outlined, to make its standardization of formats and provide responsibility for officials for not providing such information.

Citizens shall have an opportunity to access those documents containing information about them. We should ensure expanded electronic access for citizens to their personally related data. The next step should contain introduction of an active electronic reporting system for citizens on the use and automated processing of the data as such. With this, the state shall also

ensure security of personal data. There should be approved a single general rule that datasets containing personal data (data of a physical individual, who is or may be identified by the aforementioned data), may only be disclosed/provided only under the following conditions: implementation of anonymizing (extraction of those data that allow identifying a person), consent from the subject of the aforementioned data requested only when disclosure of such data is prohibited by the Law and when the Law prohibits limiting access to certain information about a physical individual.

In accordance with the set procedure, public authorities shall disclose their data and information for creation and development of services and applications. For that reason, such information shall be represented as open source data – a structured dataset of approved format, which allows their automated software processing (machine reading) for further reuse. Public authorities may and shall develop and contribute in development of interesting online services and content, as well as support to their free circulation. In order to do that, public authorities shall be obliged to disclose their information in the open source format at both their official websites and specially developed and established integrated state web portal of open source data. We should also define a list of datasets, which are re-

quired for disclosure as open source data, set rules that every central executive body shall publish no less than 3 sets of data “valuable” for both citizens and business companies on a monthly basis.

Definition and establishment of technical requirements (formats) to information to be disclosed/provided in the open source format, including those related to metadata and data compatibility, introduction of a set of indicators on reuse of information provided by public authorities is of extreme importance.

The integrated state web portal of open source data shall become the central dataset depository, including the register of documents available as open source data, which will also assure information quality and updates. Access to information available as open source data at the integrated web portal shall be provided free-of-charge. It's important to avoid any limitations on possible reuse of information available as open source data. We should also set certain obligations for public authorities related to the widest disclosure of open source data in accordance with approved open source formats. There should be set a mandatory requirement to development of information systems for public authorities related to an opportunity to define information content of e-governance defined independently from a specific supply chan-

nel and their accessibility for people with disabilities and those with sight disabilities in particular.

In order to organize disclosure of information by public authorities as open source data, we should define structural divisions or civil servants responsible for this work. We should define an authorized body responsible for open source data within the system of central executive authorities to

ensure: maintenance of the state web portal of open source data, check of dataset conformity with the set requirements for those data submitted to further hosting at the portal, provision with methodological assistance for managers of issues related to disclosure of information in the open source form, implementation of monitoring and analysis of disclosure and delivery of open source data.

2.4. Establishment of e-democracy in Ukraine

Information and communication technologies open new opportunities not only for modernization, optimization and expanded reporting over activities of public authorities, but they also ensure the increase in the level of citizens' democratic participation in political life of their country. Democratic governments are more often to bear responsibilities over development of e-democracy tools, which is considered a certain form of social organization, where citizens and business companies are engaged in the process of state governance and nation-building, as well as local self-government with the aid of information and communication technologies.

Introduction of e-tools for democratic participation of citizens aimed at expan-

sion of personal capacities of citizens, business companies and other organizations to take an active social position at the cost of advanced technologies and tools. Any state needs to develop and provide services to encourage maximum engagement of all interested parties in public discussions and decision-making processes of public authorities and local self-governing bodies. E-participation tools should strengthen people's abilities to ensure that their priorities should be taken into account and they can submit their proposals on development of specific programs of the state policy. This would be of practical use for such a new way of social organization as "crowdsourcing". According to the crowdsourcing principles and methods, wide ranges of the

general public shall be engaged in finding solutions for social and global problems.

E-participation of citizens in the governance process opens new opportunities for full-fledged formulation of their requirements and proposals about the state policy for those people who face sufficient barriers in their everyday lives. This refers to citizens with disabilities and special needs in the first place. E-democracy tools may become efficient ways of social reintegration. Similar problems may be common for those people who spend the most of their time for daily care over people with special needs and dwellers of small towns, villages and settlements that are quite remote from political and administrative centers.

It's essential to ensure formation of all components of development and implementation of the state policy: initialization, design, expertise, coordination, planning and implementing related activities, monitoring, evaluation of results and adjustment. All of the aforementioned activities should be accessible to all interested parties. An opportunity to submit alternative proposals electronically should be also provided for citizens and business companies in the spheres of development and reformation of the legislation system at the national, regional and local levels. Implementation of such approaches would require substantial restructuring and modernization towards

expanded openness of current state policy design procedures.

In order to expand the sphere of interests to be taken into account during the design and implementation of the state policy, public authorities would need to use social networks and advanced online cooperation tools (web technologies 2.0) extensively. Particularly, they should organize and moderate discussions of important issues related to the state policy among the citizens, civic institutions (community groups, associations, non-governmental organizations and establishments, mass media, etc.) and business representatives in social networks. A need in ensuring and considering positions of the widest circle of interested parties possible would require from public authorities their personal presence in social networks and constant tracking of public interests at least in the close to real time mode.

An important advantage of e-participation in the process of design, implementation and evaluation of the state policy is lowering the price of democratic procedures. This relates not only to financial but to time expenditures as well. Hence, such new discussion forms as videoconferences, live link-ups, message boards with further voting process allow lowering both financial and time expenditures for the decision-making process.

We are in dire need of developing such forms of electronic democracy as:

1. Sign-ins and presenting petitions related to supporting non-governmental initiatives. Public authorities should be obliged to take into consideration and provide a motivated answer to those questions that are troubling for people, business companies and non-governmental institutions.

2. Appeals. Public authorities should ensure providing all interested parties with electronic proposals on the contents of the state policy and respond to specified facts of violations and abuse.

3. Consulting sessions and polling – an opportunity to get feedback on plans and evaluation of activities of public authorities and their officials.

4. E-voting. Implementation of an electro-

nic form of voting during national, regional and local elections and referendums.

Development of new tools, procedures and services in the sphere of e-democracy should be essentially carried out at the basis of the current experience in implementing related pilots or demonstrative projects. Engagement of the general public and the most proactive citizens, as well as non-governmental institutions would contribute in defining priority spheres and piloting related projects. It's better to start this process from revision and generalization of numerous non-governmental initiatives within the sphere of e-democracy, create the base of "best practices" to define the most successful and critically important ones in need of development and support with a related legal framework.

2.5. Strengthening trust online

While introducing e-governance tools, we should be aware that an average citizen or a businessman/businesswoman is less likely to care about technical specifics of a process of provision for e-services, access to open source data or e-participation. He/she would rather pay no attention to them, as the state should focus on making the aforementioned processes as comfortable,

transparent and simple as possible. Trust towards an online service and confidence in its security will always play the major role for an average person. Without providing the features like those, we can't even consider any implementation of e-governance. This is the major prerequisite for developing a digital market.

European experience in this sphere

shows that users won't be interested in online services unless they are assured that they and their children can have full confidence in online networks. During introduction of the e-governance in Ukraine, we should pay special attention to solving the problem of a new type of crimes – cyber crimes in their various forms: starting from sexual violence against children and ending with identity thefts and cyber attacks. We should also develop related strategies, rules and ways of protection. Development of ICT systems that allow controlling people's lives remotely results in new challenges related to protection of civil rights, security of personal data and privacy. Internet today becomes a very important element of an informational infrastructure for citizens and business, so information systems and networks belonging to public authorities should be reliable and secure from all types of new risks.

Lack of trust towards online environment may pose serious barriers on the way of e-governance development. Ukraine requires prompt revision of legal regulations for data security and its further advancement. Regulatory acts in the sphere of information security and cyber crime prevention

should meet all current global challenges and create technologically neutral ways to improve the level of trust by expanding and strengthening citizens' rights.

Hence, central executive and local self-governing bodies should ensure reliable security for personal data and their privacy. Their information systems should be reliable and secure from all new types of risks. Generally, Internet is an extremely safe, steady and stable network, but information-technological networks and users' equipment are vulnerable to a wide range of risks and their number is on the constant rise. In order to protect against the latter, we should set new requirements for network operators and service providers. We should particularly set requirements to report about any facts of security breaches of personal data. It would be also efficient to encourage initiatives and forms of self-regulations for service providers related to assurance of personal data security and privacy. Joint efforts of public authorities and business companies may be used to implement wide-range awareness raising campaigns on Internet security and cyber-crime.



All central authorities have their official websites. There are the following rates of web-connected working places on different levels:



Implementation of the electronic governance system in Ukraine is focused on solving the following issues:



Non-transparent, closed nature, high corruption level at government authorities;

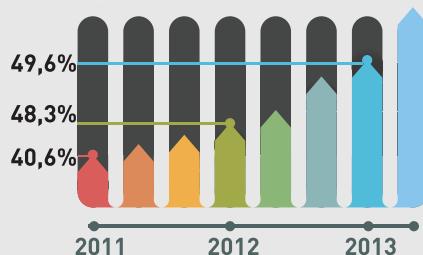


Development of decentralization mechanisms, democratic control and citizens' participation in development and implementation of the state policy;



Regaining citizens' trust to public institutes and civil servants at both state authorities and local self-governing bodies

The level of informational transparency of the aforementioned authorities



Informational priorities of users on authorities web-sites



Internet use for interaction with public authorities:



34%

use legislation databases and sets of regulatory acts

29%

visit websites of national authorities and local self-governing bodies

27%

search for related information on activities of specific public authorities, institutions

There the following citizens' interests on e-interaction with related public authorities:

1

Service provision



21%

2

Information on public authority's activities



17%

3

Influence on some governmental decisions



7,4%

IT development for public authorities

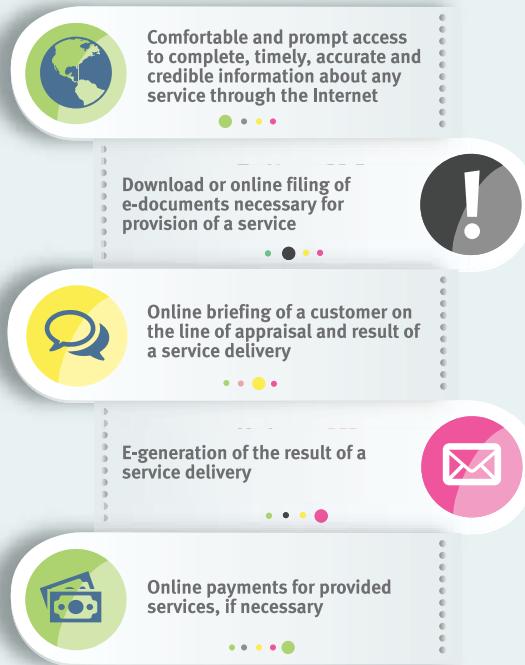
87

In accordance with the results of the “United Nations E-Government Survey 2014: E-Government for The Future We Want”.

Ukrainian cities providing quality e-services



Introduction of e-services shall cover users with the following new services:



Hence, the whole process of an e-service provision, starting from identifying a customer and ending up with storing (archiving) related documents, should be transferred to the electronic format with setting legal value and legality.

The situation with public services in Ukraine requires urgent reforming activities, while considering the following

consolidation of the public service system



introduction of electronic public services, as a tool for a reforming process



reengineering for the current public services aimed at their further optimization



willingness and proper incentives for the personnel related to e-service provision

Official website visitors:

32%

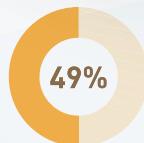
Require more accurate and complete data

22%

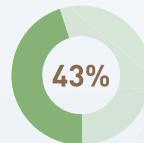
Require more accurate and updated information

19%

Require indicators for evaluating dynamics and tracking background



Would like to have information on what public authority applied for their personal data for various state registers, cadastres and databases, and when



Would have an opportunity for reviewing the data input to various state registers, cadastres and databases, and when

SOCIAL-POLITICIAN EDITION

THE GREEN PAPER

ON THE ELECTRONIC GOVERNANCE

POLICY IN UKRAINE

Responsible for publication: Hnatyuk M.

Editor: Ovsienko O.

Computer layout and design: Aviaryanau D.

Layout: Kobets R.

Translation: Shpak V., Overchenko K.,
Ovsienko O.

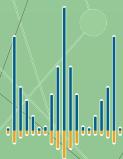
Signed for publishing ??05.2015. Format

Printed pages...Cover page...

Original layout by Aviaryanau D.

Printed Address 03... Kyiv, ...

(Certificate of registration of publishing in the State Register of
publishers, manufacturers and distributors of publishing prod-
ucts series.... N^o.... since)



THE STATE AGENCY
FOR ELECTRONIC
GOVERNANCE IN UKRAINE

INTERNATIONAL
Benaissance
FOUNDATION



SWEDISH INTERNATIONAL DEVELOPMENT
COOPERATION AGENCY



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