

“Electronic Services in Public Administration”

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Abstract

The central theme of the present article is to analyse the importance of information and communication technologies in public administration during the overall change in socio-economic paradigm. The idea of electronic services and its development perspectives will be described. Some case studies of electronic services in Estonia are also overviewed.

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1. Introduction

Starting the beginning of 1990's we all have seen remarkable developments that are associated with the fusion of information and communication technologies (ICT) into everyday life. The impact of ICT on economic sphere, culture, politics and social relations has been extraordinary. The rise of networked systems has created the need for government action in order to shape such developments causing the rise in the importance of relevant public policies. With appropriate innovation policy a government has a possibility to accelerate the rise of economy that is competitive in the global economic system. But besides supporting economic development the need to develop appropriate information policy is at least with same importance. State information policy should regulate amongst other things the issues like how the ICT is used in administration and how the information flows are arranged; how are the prices for information determined, etc.

One way to develop State information systems (an information processing system, together with associated organisational resources such as human, technical, and financial resources, that provides and distributes information) in accordance with overall developments is to implement *electronic services*. While services are defined as activities which do not produce a tangible commodity, but which take the form of a service provided to someone, then electronic services could be defined as services that are produced and delivered to clients using modern ICT. So, by *electronic services* the author means the systematic performance of operations upon information that includes data processing and may include operations such as data communication and office automation, with the emphasis on information being in digital form. When before The Second World War paperback copies and communication by post were widely used, then nowadays we have seen the use of computers and related communication devices everywhere. The electronic services could be oriented to the people inside government, as well as to citizens and enterprises.

2. Developments of Information Society

The developments that are taking place could be analysed in different ways. There are several authors who have concentrated on technological developments when explaining the overall change in socio-economic paradigm. For the others the key-element has been the change in occupational structure, i.e. people are moving away from the industrial sector to the sector that is dealing with services. Great changes have been as well in economic system emphasising the importance of R&D and overall innovation process; changes in organisational structures and management techniques; a move from Fordist production to post-Fordist production where there is higher level of flexibility in the production process. For the others the compression of time/space appears to be the central concept, while several theorists are mainly dealing with changes in cultural sphere. Certainly very common approach is to describe the emerging society through the evolution phases of societies: the agricultural societies were replaced with industrial societies that are moving during the 20th century into the systems that is called with term *information society*. Still, the concept of information society is not clear, because of hardly quantifiable elements through which the nation's development into information society is measured.

A number of authors have concentrated only on one aspect when analysing the change. Those theorists that consider for example the on-going events as determined by technology are mislead, as when analysing social changes we have to analyse the economic, social and cultural aspects as elements of integrated system.

Then, present century is described as a century when remarkable jump in productivity occurred. Again, is it really such a big step that we have to start using the term that indicates the arrival of new type of society?

Although the author of the article accepts the idea that information is fully considered as a symbol of the age in which we live, still we should not use absolute categories when talking about the power of information and the power of technology. Instead of talking about bits and bytes much more attention should be paid to the meaning of information. This all is to say that although we have had information explosion, we should not talk automatically about the emergence of information society. The on-going events are better explained through the *informatization of social, political and economic relations*, i.e. the largening use of ICT in all these spheres.

In the context of the subsequent approach to electronic services in public administration (PA) several assumptions must be agreed with:

- ICT is already largely used in all sectors of society;
- Citizens have access to ICT and possess relevant knowledge about how to use them;
- ICT enables to handle everyday tasks more effectively and efficiently;
- There are specific threats arising from the largening use of ICT.

This all lets to state that governments are being urged to take active measures in shaping the development of information societies. The overall goal is to support economic development and to improve the well-being of citizens by forming a society and a state that serve citizens and promote their participation.

3. Changing System of Governance

As government is largely information-processing organisation in its character, government has to modify its existing information systems in order to achieve increase in effectiveness and efficiency.

This involves a computerisation phase (equipping the personnel with computers and elementary software) and related automation procedures (to make existing data processing activities more efficient), the aim being to develop a qualitatively different informatization in which all interested parties have access to information and it is possible to process and communicate information with the use of ICT. This results in the production of added-value information.

The comprehensive use of ICT enables to develop electronic services both inside system of governance as well as for the units outside of it. Attached table (table 1) illustrates some of the possible activities to which attention should be paid and relevant electronic services developed.

Table 1. ICT and Electronic Services, some examples

The task of ICT	politics	public policy	administration
inside organisation	communication between MP's; policy modelling	communication between relevant bodies; policy modelling	keeping data – registers; integrated text-processing and communication tool; communication with relevant bodies;
in managing information flows from citizens/ enterprises/third sector	electronic democracy (electronic voting, referenda, polling)	public opinion polls; participatory democracy	information provision (kiosks, Internet; automatic tellers); submitting
in managing information flows to citizens/ enterprises/third sector	information provision;	information provision;	information electronically; electronic transactions

The highest level of communication and information management is within and with public administration, where policy formulation and management is conducted. The aspects that form a bases for such conclusion are as following. Public administration is responsible for delivery of some public goods, local governments playing here important role. As citizenship is a contract between a State and a person, this contract includes two parties. From one side the State has to provide some services and goods to the individuals who need them (e.g. welfare services), thus the precondition of the process is to have information about the individuals and enterprises. Units of the society (citizens and enterprises) have to provide information about themselves to public administration in order to make available policy planning and delivery of services and goods. Very important is also the aspect of control of fulfilling obligations. Citizens and enterprises must have information everyday activities of government, as well as government has to monitor the activities of citizens (payment of taxes etc.)

To conclude, the system of State governance can take benefit of ICT in different ways. In order to achieve short-term goals, attention must be paid to administration, because the number of people working in public administration is the highest as well as the number of contacts form outside of system of governance is the highest. So, the result of the use of ICT is the most visible.

4. Informatization of Public Administration

By the term *informatization* the author means the process of modernising ones information systems with using modern ICT. Informatization of PA has to support the development of public administration that is effective, oriented to fulfil the needs of citizens and enterprises, and capable to implement policies. The other important goals are to increase the transparency of decision-making and implementing as well as to increase the possibility of control.

Electronic services enable to reach those goals, and for the following analysis electronic services are grouped into two categories:

- Electronic services inside organisation of government;
- Electronic services to communicate with organisations that are outside of government.

Electronic services inside public administration should support the achievement of objectives that are set up for public administration. ICT could improve the overall process of planning, organising, staffing, co-ordinating, implementing and controlling as the use of ICT makes it possible to have more efficient communication and data-processing. Some of the examples are computerised data-processing, automated office systems, government credit cards for some small purchases to reduce the number of invoices received etc. The understanding of importance of ICT is also an integral part of modern management philosophies implemented in different countries. Business Process Re-engineering and New Public Management theory and similar other approaches all include these features.

The following paragraph concentrates on more detailed way on implementation of electronic public services that have crucial role if the rise of the legitimacy of a State is on agenda.

4.1. Electronic Public Services in Public Administration

The ideas behind the reasons to develop electronic public services could be separated into two categories. One of them links ICT to provision of additional information to wider public, the other one explains the power of ICT to improve the delivery of existing public services. Or, to put it other way, the first set of ideas (improvement of information management) emphasises the necessity to use ICT in order to create higher participation in overall management process

that leads to higher levels of control and thus qualitatively different level of management. Providing information in digital form and through electronic channels must be considered very deeply as modern ICT offers an excellent opportunity to create rapid open access at low cost to all official documents and government information. The second set of ideas (process-improvement ideas) relate ICT to make the provision of existing services (e.g. transactions) more efficient and client-oriented. The concept of e-commerce has been developed in private sector and its possible implementation has to be analysed in public sector as well.

While developing electronic service the possibilities of Internet as widespread network must be utilised, because Internet (or its follower) is to become the world's *de facto* only (electronic) mail system, or even the main channel through which information is transmitted. Internet is also a system of two-way communication, whereby one can be both an originator and a consumer of information. Moreover, the developed technical standards are universally supported by manufacturers. After all, all modern organisations are using computers in their everyday life and if connected with communication network then the result is dramatic gains in the functionality of existing computer systems. Some of the Internet-based on-line services are described in Table 2.

Table 2. Possible Uses of Internet-based Electronic Services. Information Flows

	from one	from multiple
to one	web-pages with restricted access, e-mail: citizen provides an personal opinion on policy issues; civil servant informs a person about a committee decision.	data-registers: individuals fill out and send tax-forms electronically; checking out the status of application in different areas.
to multiple	lists, public web-pages: business company is looking for business contacts, its request will be forwarded to several lists; all interested parties are informed about government decisions.	lists, public web-pages, public data-registers: public discussion about government programs; access to public data.

It can be derived that there is a part of information that has to be accessible to everybody. All important government decisions, policy reports and similar documents fall into this category. The second class consists of not so important documents and documents that include personal information fall as well into this rank. Information issuing of which is in public interest, has to be provided *actively*, i.e. government has to take initiative and make it public. Different channels could be used for this purpose: television, radio, newspapers, web-pages etc. The second set of information is delivered *passively* meaning that information is issued on demand.

The previous paragraph was about information flows from government. In order to carry its everyday tasks government requires clients (people and organisations) to provide various departments with a lot of information. Creating a possibility to submit this information electronically results with a higher level of efficiency for data providing subject as well as for government. Also, frequently the same information (name, address, tel no, etc) is passed many times over (some may be local government, some is central government), causing to be a big overhead for SMEs (it is also a burden to large organisations but they are better able to cope with the demand) and a great irritation to members of the public. The principle of collecting information once and sharing it between users is a basic principle of information management theory, but in reality very often not followed.

There is a clear link between this 'information sharing' project and the 'one stop shop' project. It is necessary to understand the information flows and common business processes to tackle both of these projects. When a member of the public seeks a service, they may need to deal with more than one department. When that individual provides some information that information may be relevant to more than one department.

The implementation of electronic services should start with investigation of all aspects of formal transactions both within government and between public or business and government. Formal transactions are those that have prescribed or recognised clear procedures. They include purchasing and procurement, dealing with taxes and notifying assessments, making benefits claims, dealing with them and notifying entitlements etc. These and other services have to be analysed whether they have the potential to be dealt with electronically (on-line).

Most of the implemented electronic services are to do with digitalizing information flows. For example, in the Total Acquisition Process incorporating security technology in an electronic mail system helps substitute paper-based communication with digital information movements. The exchange of data and documents between computer systems according to standard rules (EDI) could be implemented as well in a lot of different areas.

It is obvious, that not all processes can be computerised. Especially those that are carried out in an ad hoc manner, without reference to rules or procedures, including general enquiries and searches for information or those transactions which have little prospect of being carried out on-line.

5. Preconditions and Means to Build Electronic Services

In order to succeed in building electronic services, at first internal information systems must be developed and afterwards information flows with citizens and enterprises must be modernised. The result is the best when during the planning of internal information systems the needs of outsiders are already considered and the appropriate solutions were found.

When talking about the development of State information systems, the first precondition is the existence of basic infrastructure. This includes the communication network that covers the whole state and enables to develop interorganisational electronic communication and client-oriented services. Usually the central governments are better equipped with ICT and relevant knowledge. Thus the central topic is to improve the situation of local governments.

As a state information system is largely based on registers and databases, their system must be systematically developed. Special attention has to be paid to data acquisition, and the issues of data protection must be continuously on agenda as well.

Human factor and their skills to use ICT are very important to develop information systems. There has to be critical mass of people who are experienced with ICT and are able to introduce the positive effect of the use of ICT as well as to act as user-support when the ICT is used. So, the necessary precondition in order to introduce modern ICT is to educate people about it. And, as the development of information systems is integrated task and must be done all over the organisation, the support from top officials must be obtained. Also, all of the users of information system must be involved in order to achieve the implementation of the system that satisfies the needs of all users.

As the development of electronic services includes sometimes big investments then the trend to work out innovative solutions must be accepted by politicians as well. Political support also guarantees financing as usually information systems development projects run through several years. Thus, there has to be vision about modern state and existence of relevant program-document(s) and action plan(s).

In order to succeed in developing electronic services, systematic and comprehensive approach has to be used. There has to be good co-operation between private and public sector to find best practises, and besides developing technological basis the other important elements of

information system (e.g. legislation) must be developed in line. So, there has to be information systems development plan, development of which has to be in accordance with overall goals of organisation, takes into account the characteristics of existing information system and information flows etc.

Development of human resources has to be on agenda. This involves providing additional education to Chief Information Officer, if needed, and making him responsible for strategic planning. Everyday technical problems must be solved by support staff, number of which has to be increased if needed.

All over the world good results have occurred from the co-operation with private sector in the area of contracting-out. Besides outsourcing the overall system of ICT procurement and its efficiency has to be analysed considering the special status of information systems procurement for which the usual procurement law must reviewed.

To support commercial and governmental transactions the electronic services infrastructure must offer a secure environment in which such transactions can take place. If public trust remains low and some government agencies will not become involved, then the result is failure. In addition to security, an increase in electronic commerce as well as other types of transactions raises concerns about privacy. These and other issues must be regulated with appropriate legislative framework.

If access to the Internet becomes essential for conducting ordinary day-to-day business, then it will be necessary to ensure that the average citizen has such access. The doctrine of universal access has, for example, been behind regulatory efforts to maintain low local phone rates at the expense of business users who pay the bulk of long distance charges. The strategy has been successful in a number of countries, with near universal access for phone services being achieved in many of the industrialised nations. At present, the costs of obtaining Internet access (including the hardware) are too high to bring about universal access and the computer systems used are too difficult to set up and manage.

The minimum functionality that will constitute access has been changing and will continue to do so. On the one hand, access is becoming easier, with options to use TV sets for display and alternate access methods such as satellite and coaxial cable. On the other hand, data transfer requirements continue to rise with the complexity of online materials. Universal access, therefore, is a moving target. Whilst access rates are likely to improve, universal access is still a long way off. So, if governments are going to encourage use of the Internet for access to information and services, then there is a corresponding obligation to ensure that public access points exist throughout the country.

6. Conclusions

Many governments today operate in an environment of ever-increasing public need and declining, or at best, stable revenue streams. Citizens, taxpayers and all sorts of government constituents and special interest groups are crying out for increased government accountability. They want government to improve services, cut waste, streamline existing activities, and provide greater public access to information. The use of the Internet is already beginning to change the way government operates in response to these constituent mandates.

Attitudes to democracy will be a key driver in the level of openness and accessibility to information provided by government. Such a process would define all programmes government-wide, aid in collecting meaningful data, provide universal access for citizens to information, and ultimately offer a relatively simple mechanism for the provision of many state services at a much lower cost to the taxpayer.

The implementation of electronic services results with higher quality of government services which are produced much more effectively and efficiently. Access to government information raises also transparency of the governing process and supports the development of overall society.

7. Case-Studies of Electronic Services in Estonia

The following case studies are linked with the developments around the Internet. The Internet, being extremely quickly developing network and offering a wide range of services, has found its role in everyday life. And, at least in Estonia the electronic services are widely used. For example, there are ca 30 000 users of Internet-banking proving the need for State electronic services, several examples of which are listed below.

7.1. Single Point Entry for Government Information

Single Point Entry (<http://www.gov.ee>) is a port for the net-surfer looking for the Estonian governmental information. Tending to be the first contact address it presents a multilingual classified guide with an aim to improve the accessibility of Estonian government organisations, information and electronic services. This page includes overviews of all main public institutions and links to their web-pages.

7.2. Estonian Legislation

The database of full texts of Estonian legislation (<http://seadus.ibs.ee>) is also available from the Internet. The database contains comprehensive collection of national legislation and delegated legislation (decrees of government and local governments).

When amendments are promulgated, those changes are incorporated and this way the database contains always the applicable version of acts. Administrators also preserve the old versions of acts and the customer is provided the opportunity to reconstruct the development of legislation.

7.4. Forms on the Internet

Most of the organisations that have so far established fixed procedures use standardised forms, but people often have to waste time standing in line in order to get necessary forms. Furthermore, when they fill out the forms, people frequently find out that they are missing one or more necessary documents. In order to avoid these shortcoming the client-oriented special web-page (<http://www.rk.ee/blanketid/>) was developed.

The pages are available in Estonian, English and Russian, including necessary software for viewing and printing out the forms. In future the electronic submitting of forms will be available, also.

7.4. The Parliament of Estonia

The homepage of the Parliament (<http://www.riigikogu.ee>) is often rated as being one of the most outstanding and comprehensive among web pages of main government institutions. In addition to the overview of history, MP's, administration, procedures, stenograms, schedules etc. one is also given the possibility to attend the parliamentary sittings by listening to the live broadcast on the Internet.