THE e-ERA AND BULGARIAN ADMINISTRATION

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ABSTRACT

Bulgarian State administration will have the possibility for transmitting e-documents with building Public Key Infrastructure (PKI). The infrastructure problems in Bulgaria for building PKI and their technical, legal, organizational, cultural obstacles are discussed. Current projects and initiatives improving services and communications for citizens are presented. Big project for building PKI is an initiative of Information Services Corporation, Bulgaria and GlobalSign. An important part of bureaucracy in Bulgaria is the banking system. Delphi System is an information system with a large database for information about Bulgarian firms. The Sofia Health Insurance Fund and the National Health Insurance Fund have established the first stage of the project for information system in the field of health services of citizens. The National Insurance Institute presents and offers on-line some services to citizens in the World Wide Web. Tax information system has introduced in test period. A project for improving administrative services for citizens in 36 Bulgarian districts is initiated. The aim of the project is for the citizens to be served from one desk. Many administrative organizations in Bulgaria have public presentations with their web pages. Call Center technology gives new opportunity for Sofia citizens.

1. INFRASTRUCTURE PROBLEMS IN BULGARIA

The Act for E-Document and E-Signature (AEDES) has already passed from 8th October 2001. It gives the possibility to place new services and optimize the current operations in administrative area. The fact that e-signatures become a legal way of signing will affect in many ways the government. The potential strength that e-signatures give is the opportunity to build Public Key Infrastructure (PKI).

1.1. DEVELOPING PKI INFRASTRUCTURE

PKI is on organizational rather than a technological problem in Bulgaria. From a technological point of view PKI is a system, integrating software, encryption technologies and services enabling to secure business transactions and data transmission of e-documents. Software equipment used in Bulgarian State administration offices is increasingly developing. The premises of the Council of Minister's is equipped with 380 PCs with an installed system software Windows and an application software MS Office, browsers for Internet accesses. There are 11 severs with Windows NT4.0 operating system[2].

The PKI system integrates digital certificates (digital signatures) and a certification system for issuing these signatures. In this way the e-signature is guaranteed from two parts -–the author of the signature and the organization (named Certificate Authority - CA) issuing the certificates. This way the CA "signs" the e-document and verifies the e-document sender authority. An agreement is achieved about the used security tools. Various security tools are the theme of discussion between the members in exchange of e-documents.

The main application of e-signature for Bulgarian State administration is the possibility to transmit e-documents. The obstacles of the wide application of e-signatures in Bulgaria are technical, legal, cultural and organizational.

From the organizational view the governmental agencies do not yet have the needed structure for providing the signed e-documents. One example is municipalities in which the organizational structure does not permit undoubted definition for responsibilities in transmitting documents with e-signature. On the other side - the citizens do not yet have public access for sending and receiving e-documents. The cultural obstacles for using e-signature are a fact in Bulgaria. The insufficient knowledge of citizens on the problems of electronic transmission of documents is a barrier needed to overcome step by step. A national characteristic is the mistrust on the paperless ways of transmission. A verification of the electronic transaction by phone is used now in business transactions.

The main technical and legal obstacles in front of the wide application of e-signatures in Bulgaria are:

1.2. THE LACK OF GENERAL STANDARDS FOR THE FORMAT OF DIGITAL CERTIFICATES

There is need to provide public sector organisations with a simple, standardised way of procuring and contracting a wide range of approved information technologies related to consulting and services. By virtue of the law in Bulgaria e-documents can be signed with common, improved or universal e-signature. The common e-signature is co-ordinated between the author of the e-document and the receiver. The improved e-signature is based on a certificate issued by a vendor of a certificate document (CA). The universal e-signature is based on a certificate issued by a vendor of a certificate document (CA), registered in the State Commission of Telecommunications. The common and universal e-signature is valid as an authentic signature with the exception when the e-document is issued or received by a state body or self-government body. Issuing an e-document needs an author - a physical person, and a titular. Titular means the part on behalf of which the document is signed. The author and titular are one and the same when it is a physical person. When the titular is a judicial part or when the author is the representative of the titular

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2 Kaltchev, D. (2001). "E-government will be reality for all soon." In IDG (Eds.), ComputerWorld. Sofia: Vol.34, part II: 4.

there is no equivalence between author and titular. That way the e-signature issued by a state body, which is a judicial part, is not accepted as an authentic signature. The Council of Ministry defines the subordinate bodies, which could receive documents with e-signature. State bodies not dependant on the Council of Ministry (President, Parliament, Constitution Court) need to regularize the using of e-documents with special acts.

Partners agree on the use of a common signature in electronic data exchange for transactions between their organisations. The applied technology for the improved signature users is defined by the State and the State guarantees the signature holder. The universal e-signature is valid like an authentic signature for all cases.

The AEDES includes these three types of e-signatures. The organisation would make its choice on the base of the security level. The second obstacle is:

1.3. THE INCOMPATIBILITY IN DATA EXCHANGE

This is a characteristic of systems using different digital certificates and establishing a certificate security level. Questions on electronic data transfer occur here. AEDES discusses ways of exchanging and knowing about messages. A good solution is VPN (Virtual Private Network) enabling the organization to determine reliability of connections with its branches or with other organizations, using routed infrastructure of Internet. The data security in VPN is provided through tunneling (encryption of sent information, transferring via Internet and decryption of received information).

The state administrative bodies need regulations for defining the subordinated agencies, obliged to use e-documents with e-signature. Special acts define the regulations in some cases like local self-government bodies, legal system, and a bank system.

1.4. THE ESTABLISHMENT OF CERTIFICATE SECURITY LEVEL

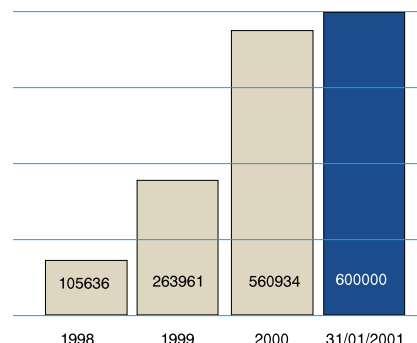is a problem in terms of lack of measures in Bulgarian Criminal Law against violators of AEDES.

Figure 2: Money Amounts according communication channels in 2001[4]
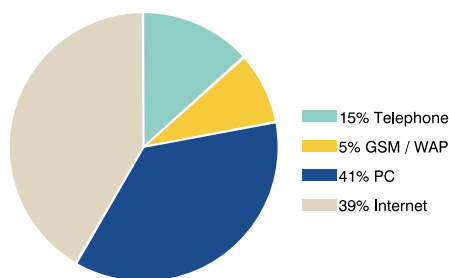

15% Telephone
5% GSM / WAP
41% PC
39% Internet

Figure 1: Bank transactions according communication channels in 2001[3]
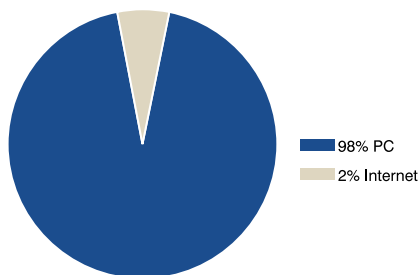

98% PC
2% Internet

Figure 3: Number of issued debit cards in Bulgaria, 1998 - 2001

The Bulgarian Act (AEDES) involves elements of the idea to build PKI - establishing organizations for volunteer accreditation; defining universal e-signature features by the State Commission for Telecommunications; organizing a register of verifying organizations. The instruction in AEDES clause 16/3 on requirements about the algorithms generating couple of keys, will help in achieving standardization.

AEDES is not really applicable yet because of the lack of a regulation set for developing the arrangements in the Act.

2. CURRENT PROJECTS AND INITIATIVES IMPROVING SERVICES AND COMMUNICATIONS FOR CITIZENS

The view of the current situation in Bulgaria is optimistic.

Big project for building PKI is an initiative of Information Services Corporation, Bulgaria and GlobalSign. The project will give the opportunity to the state administration in Bulgaria to improve relationships and correspondence with the citizens. It will lead to the possibility of issuing electronic signature certificates. The messages signed with these certificates will be considered and accepted as valid. And vice versa - the state administration will use universal e-signature in issuing licenses and in correspondence with people.

The Bulgarian Industry Chamber was assigned a year ago in Bulgaria as a Certificate Authority (CA). It issues certificates of the Belgian company GlobalSign. The lack of clients of CA stems from the problem that the certificates do not yet have a wide application because of the poor usage of e-signature.

2.1. BANK SERVICES IN BULGARIA

An important part of bureaucracy in Bulgaria is the banking system. All payments in different directions are made through it. The Bulgarian bank system was fully oriented to paper documentation and paper exchange. After careful and long preparation a change in the standard was realized on the 1st September 2000. The paper document exchange between banks now is changed with electronic exchange intermediated by the Bulgarian inter bank system Bisera.

E-banking services are now adapted to different technological tools for communication with clients like GSM, digital

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3 Georgiev, A. (2001). "Financial e-services - various and flexible." In IDG (Eds.), Accounting & Computers. Sofia: Vol 115: 41.
4 Georgiev, A. (2001). "Financial e-services - various and flexible." In IDG (Eds.), Accounting & Computers. Sofia: Vol 115: 41.

phones, PC, Internet. The e-signature may be saved and used on various technical carriers – diskette, smart card, and CD ROM e.t.c. Bulgarian banks need to invest for applying the e-services. The main application of e-services in the banking sector will be between banks and clients - physical persons or companies. The process for dealing with capital and money market is now possible with e-documents, transmitted by e-mail. Financial institutions in Bulgaria were using most e-services before the AEDES. The citizens have the possibility to use e-services like information for the balance, account movements, status of bank operations, rate of exchange, codes of Bulgarian banks. The active e-operations include currency transfer, budget transfer, and encashment processing e.t.c.

From the beginning of 2001 many Bulgarian banks - Bulbank, Biochim, Eurobank, UBB, FIB, Unionbank, CCB suggest better services to their clients with remote e-banking.

A large percentage of e-payment for Bulgarian citizen is payment of public services - central heating, electricity, telephone, GSM. 11 Bulgarian banks are using the system E-Pay for payments with debit cards via Internet. 18 Bulgarian banks suggest smart card payments using the Borika system. Bulgarian citizens use debit cards mainly for cash. They use e-banking services via 434 ATM terminals in 81 towns and 1119 POS terminals (January 2001). Credit cards are not practically used - 2443 cards have been issued till January 2001.

2.2. EXAMPLES OF EXISTING e-SERVICES FOR BULGARIAN CITIZENS.

E-government solutions include also citizen relationship management (CRM), enabling technologies such as data warehousing and document management, and a comprehensive suite of systems integration services.

Delphi System is an information system (IS) with a large database for information about Bulgarian firms, running since 1989. Computer Centers in regional courts and Sofia Court are source of input data for Delphi. At the moment Del-phi provides information for more than 850000 Bulgarian firms and 3 million employees. Delphi System is developed and supported by Information Services Corporation, exploiting 17 mainframes, more than 300 PC, 40 communication processors with local and remote processing. Delphi System provides periodically updated information about firm registers. State institutions have access to Delphi with terminal connection via telephone line. The main Delphi users are state and government organizations, local government offices, banks, and privatization funds. Citizens may also use the system with intermediation of National Statistical Institute or with previously paid registration fee, communicating with PC via Internet.

Delphi system is an example of e-government service, improving administrative control, tax payment and observing current firm status. The system gives every citizen the opportunity for public access to the business activity of firms or well known public people. The system gives citizens and journalists public access to information like participation of well known people in company boards, share holding, their various business activity (legal or not legal). The processed with Delphi data help to improve the administrative control on paying taxes and insurance. In this way Delphi becomes a factor reducing corruption in Bulgaria, widespread in the transition period.

Sofia Health Insurance Fund and National Health Insurance Fund have established the first stage of the project for information system in the field of health services of citizens. The buildings of these funds are connected with optic cable. In this way the data traffic between them is fast and secure. Local area networks (LAN's) are built and are now functioning in every building. The future development plans are to establish connections among all offices exchanging information with the Funds. In the future the information system of the Funds will involve on-line connection with general-purpose doctors, building a centralized data base and connection with pharmacies. The high volume of processed documents in these institutions (more than 40 millions per year) demands the application of e-documents. That way the health services in Bulgaria will be part of e-government.

The National Insurance Institute[5] presents in the World Wide Web and offers on-line some services to citizens. A useful e-service in the site is the program for calculating the individual pension coefficient for every person in Bulgaria. The only needed data are input parameters and the program calculates the optimal pension coefficient.

Tax information system is introduced in test period. The system gives the opportunity to the citizens to send via Internet their income-tax return and the registers according to the VAT law, using e-signature. The users of the system are State Tax Administration, taxpayers, state organizations, banks. A part of the information system is the subsystem question-answer. Using the subsystem, the taxpayers may ask tax administration staff questions. The future development of the system will establish a web-based national tax register.

A project[6] for improving **administrative services** for citizens in 36 Bulgarian districts has initiated. The aim of the project is for the citizens to be served from one desk. At this moment the pilot adoption of the project is running in 5 districts. An example is district Dobritch, where in September 2002 all checking services will be made from one desk. For example citizens may pay their taxes, may receive various documents concerning their property or civil status, and may submit various requests to the municipality. The project involves publishing web pages of the Bulgarian municipalities. These pages will help citizens with information for various local services or for receiving and printing tax forms. Because of the high level of unemployment in Bulgaria in such municipalities (like Zlatograd) the Internet access is not a real possibility for all citizens. The project will help the improvement of local services in municipalities with high degree of unemployment.

Many administrative organizations in Bulgaria have public presentations with their web pages. Some **municipalities** have already their own pages - examples are www.domino.bg - site of the National Community of Bulgarian Municipalities;

5 www.nssi.bg
6 Interview with the President of the American Agency of the International Development, Bulgaria, Bulgarian TV, 3 February 2002.
7 www.sofia.bg

www.tzarevo.com - site of the Tzarevo municipality; www.chirpan.com - site of the Chirpan municipality; www.vratsa.com - site of the Vratsa municipality; www.pernik.net - site of the Pernik municipality. The address of Sofia municipality www.sofia.bg is visited by more than 300 - 400 visitors every day, 25% of them are from abroad[7]. The site provides information for the town of Sofia, for members of the Sofia municipality, gives access to laws, informs for public services in Sofia area.

The **President's site** www.president.bg has been updated some weeks ago after the president's elections in Bulgaria. The future perspectives for development of the site are establishing functions for electronic communications between president - citizens. Additionally an electronic key will be set for providing citizens with a direct access to the President's Bureau. These e-government services will improve the contact of the President with the people and will lead to the development of democracy.

The Call Center technology is already present in Bulgaria. The new opportunity for Sofia citizens to access improved services is the Call Center of Bulgarian Telecommunication Company. More than 650000 telephones in Sofia will be served for failures. The e-service is available since November 2001 for all citizens, dialing telephone number 130.

The State Administration Minister Dimitar Kalchev discusses a project as a part of e-government initiative in Bulgaria. The project expects on-line connection between the Council of Ministry in Sofia and regional Centers. An optic cable is lying between Sofia and regional centers. The perspective is for the regional centers to become front offices with bi-directional connection providing services from one point. The citizens can get various reports, print documents, like custom permissions from that front office. The project will end in 2004.

3. SOME OBSTACLES IN SPREADING E-SERVICES FOR BULGARIAN CITIZENS.

3.1.THE LACK OF LEGAL DOCUMENTS FOR SANCTIONS ON VIOLATION OF AEDES.

The lack of punitive measures for computer crimes like discovering personal data and using them for other purposes is an obstruction of the grought of the e-government services.

3.2. INSUFFICIENT FIRM CULTURE IN BULGARIAN FIRMS.

The average Bulgarian citizen is illiterate from a computer and financial point of view.

3.3. BAD COMMUNICATION INFRASTRUCTURE.

The improvement of the communication infrastructure will increase the number of clients of e-government services. The law quality of Internet access decreases the attractive services and increases their costs. Many Bulgarian organizations do not yet have web sites and in this way they are not ready for competitive play. The example is for Bulgarian banks (35 banks), 18 of which haven't got web sites (January 2001).
The future requirements for state administration bodies are connected with the Council of Ministry - to define the subordinated bodies that are obliget to receive electronic announcement signed electronically and accordingly to apply the e-signature for communication to citizens. For judicial system, banking system, bodies of local government the rules are established through internal regulations. Timid attempts in Bulgaria are made in some e-government services for the people. The existing Bulgarian portals offer finding job, property, school or university. The citizens of Sofia can find in the web-site the form of tax declaration and print it. Nowadays they can't send the form electronically.

4. ADMINISTRATION AND e-SERVICES.

The positive effects of e-services for administration is reducing the time for services, reducing the paper documents, public view of on-line transactions and respectively limiting the possibility for corruption and intentionally making longer procedures.
The possible application areas of e-government services in short period for Bulgarians are customs - the custom staff may sign electronically checked custom declarations, using smart cards; the tax administration may use e-services for VAT tax declarations and for more than 40 other tax documents.
The progress of information technologies leads to the absolute transition of electronic exchange of documents in the field of government, administration and state organizations. Some critical enablers: the need for increased authority and leadership towards e-government; enterprise information technology infrastructure; dedicated resources and dependable security products that must be integrated into any e-government plan; government workers with IT and upgrated project management skills. ■

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