THE CURRENT STAGE OF THE DEVELOPMENT OF G2B AND B2G ELECTRONIC SERVICES IN ROMANIA

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ABSTRACT: The paper begins with an introduction defining the characteristics of G2B and B2G services, and it continues with the analysis of their stage of development in Romania. Thus, as far as G2B services are concerned we have examined them starting from the general approach in order to determine the degree of development and the use of online public services and from the specific approach in order to examine the quality of this type of services. The quintessence of these types of services is the National Electronic System, for which the second part of the paper presents, in detail, the main modules of this system allowing: routing messages, integrating information systems of government agencies, user management.

KEY WORDS: electronic services; public online service; G2B service; B2G service

JEL CLASSIFICATION: L32

1. INTRODUCTION

Currently, in a growing number of areas, the use of information technology is a normal tool of ongoing activities, this is why more and more specialists admit that in ten years’ time every worker will be a user or will be logged on, in one way or another, to a computer system.

As a consequence, we can estimate that a multiplication of ICT sectors - statistics show that the number of PC users will increase 10 times every five years, and their performance will double every 18 months (Intel) - has direct implications on the development of the information society and an efficient use of these technologies is the next step towards the social-economic evolution, which produces value and knowledge

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by using the existing infrastructure. It is certain that the development of information technologies has positive impact on the productivity growth, on reducing regional gaps, on reducing unemployment, on increasing the quality of health systems, education or administration, on increasing the level of information, etc.

Nowadays, the access to a minimum set of communication services is considered a fundamental right of citizens, which is essential for their integration into the community and, more broadly, in the information society.

Electronic communication services go beyond the personal and the business side of communication and they represent an important tool for supplying all types of information, goods and services to the public both by the government (social services, education or health) and by the private sector. Those without access to electronic communication services are likely to be outcast from the 21st century society.

All over the world there is an increasing interest in new information technologies and particularly in electronic applications over the Internet. These instruments have gradually become effective tools to improve services for individuals and businesses, so that Romania currently benefits by various electronic services used in administration such as: sites for the presidency, senate, parliament, ministries, prefectures, municipalities, public institutions and portals: e-government, e-democracy, pay points, e-auction etc.

Thus, portals have replaced and completed the sites due to the increased volume of information required to be published, to its dynamics and to the ease with which it can be processed automatically by internal applications. Governmental or administrative portals are the most visited of many portals and they provide “the ease of communication among different departments and citizens” (Batagan, 2008, pp.67-69).

2. TYPES OF ELECTRONIC SERVICES IN ROMANIA

The efforts to determine precisely the existing relations within the informational process conducted by e-Government in Romania enable us to identify four types of delivery models (figure 1):

- **relations between government and citizens – G2C (Government to Citizen)**. This component of e-Government includes, beside public relations regarding information about everyday life, necessary to separate certain public information and to read certain political and legislative documents, interactive communication which provides communication services such as e-mails, blogs/portals and transactional services which send certain forms to citizens and stock them over the internet;

- **relations between Government and the business environment – G2B (Government to Business)** represent the most important component of e-Government due to the fact that their efficiency has significant implications in the high costs of traditional data and document transmissions. Thus, G2B includes beside public acquisition and auction systems over the internet, services offered to legal entities regarding the transmission of data and documents or the registration of companies;
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- relations between Government institutions – G2G (Government to Government) can be maintained through information changes on various security levels between the computers of the institutions which interact. This interaction is necessary among public institutions because in order to solve some complex situations it is necessary to process some of the information held by various institutions;
- relations between Government and employees – G2E (Government to Employees) and their interaction based on computer systems represents the essence of public management improvement and it is going to determine in a very short period of time the forming of an organizational culture characteristic for e-Government. The applications used by G2E are represented mainly by internal data bases which make it easier and faster to carry out tasks and responsibilities and specific applications for employees.

![Diagram](image)

**Figure 1. Present and Future in e-Government Relations**

3. ONLINE SENDING SYSTEM OF FISCAL DECLARATIONS AND ANNUAL FINANCIAL STATEMENTS

The purpose of accounting operations materializes in summarizing the data in reports, such as annual financial reports which include, basically the balance sheet, the profit and loss account and other annexes, and it can be obtained from the general ledger, from the trial analytical and synthetic balances and registers.
These financial reports must be drawn up by economic units and sent to local financial administrations annually and bi-annually, together with the declarations regarding payments towards the state budget, the social insurance budget and the unemployment budget. In this respect, in order to eliminate the route between economic units and these institutions it is important to create Internet connections which are able to collect all this data (Ghilic-Micu & Stoica, 2006, pp.119-121).

Figure 2. Fiscal information online sending systems

The first compulsory condition for sending these financial declarations on-line is the Internet connection through one of these variants: dial-up connection – it implies the existence of a modem installed on the computer and of a telephone line for connecting the computer to an Internet provider; ISDN connection (Integrated Services Digital Network) and ASDL connection (Asymmetric Subscriber Digital Line) which provide high speed internet connections, better than common telephone connections; cable TV and DSS connections (Digital Satellite Systems) supplied by companies which offer beside cable TV services, access to the Internet using the same cable and special modem.

Thus, with the help of the Internet the data should be electronically transferred from an application that runs on a computer to the application that runs on another computer, located at a certain distance, without being printed out or manually stored on a magnetic support.

After the electronic processing of the accounting information in summarizing reports such as the trial balance, the ledger or other financial books, the information is uploaded in the fiscal declarations found on the site of the National Agency of Fiscal Administration; then they are sent to the SICPU system (Computer System for
Collecting, Processing and Tracking Fiscal Declarations and Annual Financial Statements).

4. ELECTRONIC SERVICES B2G FOR SMALL BUSINESSES

Due to the influence of information transmission using Internet services, to the benefits of using network protocols e-government has direct influence on reducing bureaucracy. Thus, one can identify some public online service with bidirectional availability, such as the statements and social security or tax payments, including VAT; providing information to statistics offices; company registration; obtaining transportation licenses and environmental permits, mostly customs statements, etc..

Filling out online fiscal statements is a major goal of implementing the information society and the achieving of B2G services has several advantages:
- providing a high degree of information security by using digital certificates to identify the users;
- minimizing the time of filling out, submitting and processing the forms by collecting institutions;
- permanent access for submitting statements without following a timetable or schedule; there is no longer needed to go to the collecting institutions,
- users have access to all applications within the system, they can check and even modify the information submitted, if there is the case.

The analysis of the efficiency of B2G transmission should be based on several criteria, such as the period in which data is transmitted, the transmission speed and the complexity of data entry by traders, the frequency of submitting situations, criteria to be met by companies that submit some information, etc.

Based on these factors and on the type of online public service we can make an analysis, we can say that we are in an advanced stage to reach the objectives of the electronic transmission B2G but none of the e-Government services has yet completed the stage. The most advanced electronic transmissions allow legal entities to submit offline fiscal statements, without filling out forms that must be sent immediately in order to be processed by the receiver.

The most commonly used electronic services for small taxpayers regarding fiscal statements are:
- electronic data processing of nominal records of the insured and the payment obligations to the state social insurance budget or other statements that companies must submit to the National House of Pensions and Other Social Insurance Rights;
- submitting statements recording payment obligations to the National Health Insurance House;
- monthly statements of employers recording payment obligations to the unemployment insurance budget, managed by the National Agency of Employment;
- the submission of employers’ monthly tax returns and asset statements to the Labour Inspectorate.

In addition to these four ways of submitting financial statements, there is the service which receives these electronic forms within the National Tax Administration
Agency using the e-government portal, which will be presented in the following paragraphs.

5. B2G ELECTRONIC SERVICES FOR BIG TAXPAYERS USING THE E-GUVERNARE.RO PORTAL

The development of electronic transmission services within the public administration, the administrative portals, namely e-Government services, represent a priority for Romania, and it is supported by the legal and institutional framework outlined by direct or indirect effect upon the setting up of sites and information portals.

Currently, according to GD no. 862/2009, the electronic submission of statements can be made through the portal using Unique Forms for big taxpayers, by accessing [https://formularunic.e-guvernare.ro](https://formularunic.e-guvernare.ro). Thus, corporate taxpayers have access to nine electronic services like the ones presented in the following table:

<table>
<thead>
<tr>
<th>No</th>
<th>Institution</th>
<th>Name of the form</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The National House of Pensions and Other Social Insurance Rights</td>
<td>Statement regarding payment obligations to the social insurance budget</td>
</tr>
<tr>
<td>2</td>
<td>The National Agency for Employment</td>
<td>Statement regarding nominal records of insured parties and payment obligations to the unemployment insurance budget</td>
</tr>
<tr>
<td>3</td>
<td>The National Health Insurance House</td>
<td>Statement regarding the payment of health insurance</td>
</tr>
<tr>
<td>4</td>
<td>The Ministry of Public Finance</td>
<td>Statement regarding payments to the state budget (100)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Statement regarding payment obligations to the social insurance budget and special funds (102)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Deduction on VAT (300)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Statement regarding tax on profit (101)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rectifying statement regarding intra-community deliveries/purchases of goods (390)</td>
</tr>
</tbody>
</table>

The quintessence of governmental electronic services is the *National Electronic System*, which is the central point of access to information (Figure 1), to forms and administrative procedures that ensure a high degree of security, trust and transparency to users.

The system consists of several main modules which allow: routing messages; integrating information systems of government agencies; user management.

The main subject of the application is the taxpayer, as individual or legal entity - and the application works as follows:

- An e-service is added by a system administrator;
- The user registers in the system;
- The user chooses one or more services and subscribes to them;
The user sends the documents;
The user receives responses after the documents have been processed.

Figure 3. Transmitting and routing information within the National Electronic System

The development of electronic governance, the role of the National Electronic System is to provide a comprehensive infrastructure services for the users (public institutions, businesses, citizens, etc.):

- the only point of access to public services provided electronically,
- single Sign On for e-Government services,
- trading engine for e-Government services,
- secure message routing engine for e-government services,
- messaging engine for e-government services,
- reporting engine for electronic government services,
- common standards and interoperability Layer for electronic government services (including interoperability PKI),
- a collection of documents, services, software libraries that are available to any independent developer who wants to create applications that integrate with the National Electronic System (SEN SDK).

The technological platform and other technical means necessary to ensure interconnection and interoperability of e-Government services with the e-government component of the National Electronic System for the period 2007-2009 were provided by the Agency for Information Society Services whose business and duties were taken over by the National Centre for Information Society Management and the National Digital Romania Centre.
For this interconnection there is a common functional technical platform (SEN SDK) that provides minimal means of standardization, interconnection, interoperability and secure data transfer between both public institutions and between public institutions and recipients of services they provide. Thus, SEN - SDK facilitates the creation of a national standard interface, able to provide interoperability of e-government applications, ensuring reduced costs of infrastructure, development and maintenance for both public institutions and private companies benefiting from the services offered by SEN and providing private companies with access to electronic government services.

In essence, SEN SDK is a collection of documents, services, software libraries that are available to any independent individual who wants to create applications that integrate the National Electronic System.

In order to operate SEN SDK libraries and sensdkWrapper the concept of Strong Naming has been used and in order to register them in the system, the first step is to run a file called install.bat. The second step is to set the SENSDK library via a configuration file sensdk.dll.config of XML type.

The System Development Kit is organized as a library which consists of several public classes (authentication classes, which may use the outgoing mail functions, classes that identify SEM messages, other classes used in exceptional cases or for data storage), the most important of them being:

- **UserToken class** is a public class used to identify credentials used for authentication at a service;
- **SENMes class** is an abstract class; all the other classes used for communications with SEN derive from this class;
- **SENService class** - is a public class that deals with a particular service and it is used to validate the functions of the outgoing mail;
- **Exception classes** - the most common being: NullParameterException used to identify an invalid parameter exception; UnauthenticatedException indicates if authentication was performed successfully in a particular service using the given credentials; WebCommunicationException identifies any other exception within SENService public methods;
- **other classes**: StatusRecord identifies a message recorded within the National Energy System; Connector class used in an auditing mechanism; Resource class saves resources used by various SENSDK libraries.

For the functionality of SEN SDK, the "serviceSENSDK" Web is also used and it is based on a C # application, with the support of a class derived from the System.Web.Services. Class After installation, the service will take the form of a file: serviceSENSDK.asmx located in "C: \ Inetpub \ wwwroot \ sensdkWS.

Another architectural component, used by the system is SensdkWrapper, which is a .DLL library forming an interface with .NETsdk.dll library designed for non .NET like Microsoft Visual Basic 6.0. and consists of three public COM classes:

- **authenticateSen class** which makes the interface for UserToken, SENService and AuthenticateUser method;
- **castSen Class** designed for the interface of various NET objects returned by the public properties of the classes contained by sensdk.dll;
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- sendSen Class which makes the interface for SendDocument and writeBodyContent of the SENService class.

An extension of the sensdk.dll library that allows developers to integrate the functionality of the National Electronic System in Java applications is the SENDSK Web service. It can be installed on another location on the network, if we change the configuration file "setari.ini" within the Java application.

Regarding the type of method used, they can be grouped by type of operation, such as: authentication:
- Log in operations (simpleAuthenticationRequest, initialCertificateAuthenticationRequest, finalCertificateAuthenticationRequest) - Authenticate User - send the request to the log in by using ADM_AUTHENTICATION_REQUEST message;
- operations for sending documents (simpleSendRequest, certificateSendRequest) SendDocument - send a document by using the message SUBMISSION_REQUEST;
- operations to verify the status of a transaction (simplePollRequest, certificatePollRequest) GetDocumentStatus - verify the status of a document by sending a SUBMISSION_POLL message,
- operations to delete a transaction (simpleDeleteRequest, certificateDeleteRequest) DeleteTransaction – send the request to delete a document by using DELETE_REQUEST message,
- operations for listing active transactions (simpleDataRequest, certificateDataRequest) GetTransactionList - get the list of transactions by sending a DATA_REQUEST message,
- operations for interpreting the response from the National Electronic System (readResponse).

6. CONCLUSIONS

As an European country Romania is required to align the objectives of the Lisbon strategy and the i2010 initiative "An European Information Society for economic growth and employment" in which one of the priorities is to promote an information society through a comprehensive set of services "e-government" citizen-oriented and the business environment. In this context taking online tax returns and annual financial statements is an important step for streamlining the relationship between state institutions and economic agents and to eliminate bureaucracy from the system. On the other hand the generalization of information systems for collecting, processing and tracking of various information about the economic agent and the creation of interrelations databases is an easy tool for obtaining information and interaction with government services.

Thus, trends that are evident for the time period immediately following have the jump from static web to a dynamic and interactive web development methodologies to target and streamline internal processes to determine efficiency and shared services, standards for consistent use of information technologies and communication services.
transform classical oriented program in e-Government services integrated and not least the education and training of citizens of a culture based information.

In conclusion, the agency provides e-Government application users with software libraries, code samples, detailed descriptions of the electronic components and technical documentation specialized in interconnection and interoperability with the National Electronic System. On principle, the SENSDK package has three available applications - Java, NetBeans, Visual Basic 6 and Visual Studio C# - each of them is organized as a project and is accessible within that environment.

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