

LIVE SERVICES FOR CITIZENS WITH LIVE TECHNOLOGIES

e-Payment in Romania as First Step to an Effective e-Government

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Keywords: e-Payment, Virtual payment office, Interoperability, Live services, Web based.

Abstract: The European Commission's i2010 strategy aims to build on the increasing convergence of the Internet, telecommunications and broadcasting to reap the benefits of Europe's strength in ICT research and development. One of its priorities is to provide all of Europe's citizens with access to the information Society, a society that delivers better public services and quality of life. The development of the Web has created opportunities to improve efficiency and meet users' expectations. Interactive web technologies have enhanced online collaboration and sharing among users. These innovations have resulted in a shift towards a more dynamic and interactive web experience and the increasing provision of online service delivery channels. This paper will explore how the public sector can use the Internet and intranet more effectively, optimizing usability and increasing public engagement and loyalty and also focuses on emerging business and technology developments, investigating how the Web will drive business in the future and how this will impact on the citizen's life and for the internationalization processes in the world economy.

1 INTRODUCTION

E-government is the term that describes the use of information and communication technology in public administrations. Combined with organizational change and new skills, e-Government has the potential to significantly improve public services and democratic processes (Stefan, 38-40 2006). E-government promises to deliver better, more efficient public services and improve the relationship between citizens and their governments. A targeted R&D effort is the key to achieving these goals.

Web technologies will also explore the internal systems which support the way we work. Organizations have spent millions of pounds on managing and organizing information, and with tools such as portals and intranets, employees are better able to find the information they need, when they need it. Public sector websites need to become more transactional, giving the public more channels to work with government.

The Web applications are working to deliver more efficient and effective communications between the Council and the citizens and businesses. More platforms provides citizens with their own secure electronic account to access view and interrogate complete Council Tax and Business Rates statements and balances online. This presentation will explore how they have introduced information systems that improve services and customer satisfaction in public services. In the same time, public sector IT managers need to be able to tackle inclusion issues, and provide a website that is available for all user groups. Our paper considers the challenges faced by the public sector and discusses how to make e-Services more accessible and useful to citizens.

One of the key objectives in modernizing public services is to make state interventions and the actions of public authorities as efficient as possible, while improving the quality of public services provided to users. New technologies play a vital role in meeting this challenge.

One of the objectives is to observe the reasons determining the organizations to apply those new

technologies, if they do that and how have changed the performance level.

In an economy in transition, a solution regarding those imperatives can be the application of many instruments, such as an efficient information technology and communications (ITC) strategy, proposed by a good policy of IT Governance (ITG). The authors present many kind of obstacles with implementing this policy and discusses different cases about how the ITC can sustain and assure the achievement of general aims and provide information to management decision making. To reach these objectives, we will analyze some type of specific software application in the fields and also the specific Romanian market.

Is there some specificity for the Romanian organizations or are they generally valid problems? What conditions must be made for realize this objectives? There are the themes of interest, whose presentation will be made.

2 NEW WAYS OF RELATING WITH CITIZENS

In conformity with (egovmonitor), it indicates three possible relationships between local authorities and their citizens:

- *An informational/transactional relationship;*
 - *An insightful relationship: council-driven;*
- Recent research reveals that no councils are engaged in this kind of relationship with their citizens yet.
- *An insightful relationship: citizen-driven;*
- This could, for example, be via web-based community portals linked to Geographical Information Systems, which enable citizens to find out more about local services (and their performance) and to challenge service providers to improve performance, through greater citizen involvement in service design and delivery. Early examples of community portals are appearing in some local authorities, exploring what it means to be held 'accountable' to its citizens

Administration must adapt to the IT&C solutions for managing infrastructure and relationships with citizens/ users. Combined with organizational change and new skills, e-Government need to become more transactional, giving the public more channels to work with government in a 'live' way using live technology Web based (Online Availability of Public Services), (Des citoyens partenaires , 2002).

3 ELECTRONIC PAYMENT

3.1 Law Conditions

The project started because of Law 89 from 1998 stipulating Public Administration's activities decentralization, imposed passage for collecting fees and taxes from Finance Ministry to Local Public Administration (mcti.ro).

We will present in this paper the e-Payment module of an integrated system for public administration, ATLAS (ats.com). For its facilities and adaptability, ATLAS was recognized as being innovative in its domain, things proved through its implementations since launching date.

The application had to follow step-by-step the law and its many changes. As Romanian market imposed ATLAS development, it was the same which agreed that launching it for exploitation was a premiere on ITC market. In such a short time and having to face lots of law changes, ATLAS has succeeded to answer Government's demands for society's informational development using the latest ITC discoveries. Law 291 from 2002 stipulating local taxes and fees electronic payment, a MCTI project, led to Romania's cities compulsories on deployment of electronic systems for local tax collection. The project's specific objectives contributed to European Community's strategies bringing their benefits in development for ITC society.



Figure 1: Electronic payment module.

An important characteristic of ATLAS application is that it can be provided in ASP (application service provider). Thus, the application would be installed, for example in a County Council. There will be needed a database server that could administrate all small towns.

3.2 Architecture and Technology

The application architecture was developed based on TCP/IP also taking into account the publication of data on the WEB.

ATLAS is an integrated system and web based solution for Public Administration to facilitate real time management and to sustain the interaction between Citizens, Enterprises and Government.

- E-Payment
- Vocal System
- Urban planning
- Financial Accounting
- Document-Management

The application is built on Client/Server architecture because it offers large capacity of work and storage as well as fast reply time. Another reason for which we have chosen the Client/Server architecture is the offered data security mechanism.

The applications 3-Tier architecture:

For electronic payment connectivity with Banc Post, we used a server based on SOAP (Simple Object Access Protocol) standard as well as XML standard for data transfer.

ATLAS can use as database, any database that respects the ANSI SQL 92 standards. The Web portal of the application was written using PHP 4.3 using the APACHE 2.0 web server to allow installation on both Windows and Linux platforms.

As regards to scalability, we took into consideration the large number of users that can connect to the SQL Server using ATLAS application. Taking into account the limited budget of the Town Hall, we chose a database server that allowed scalability and interconnectivity. At present, there are almost 370 internal users, the rest of the users being external ones (tax payers) connecting through the Internet. When purchasing the system, the Town Hall took into account a large number of users, but presently it is not used on its full capacity. We also use a distributed computing server that handles processing in case the client has a modest hardware configuration and cannot do the processing on his own. This server can utilize the unused processing power of other computers from local network. In this case too, the computations are done based on the formulas in the database, keeping the application adaptability.

ATLAS is an open application, capable of exchanging data with other applications or to use them in common. Furthermore, ATLAS offers statistical data on-line about the transactions carried out by users to the departments of concerned ministries.

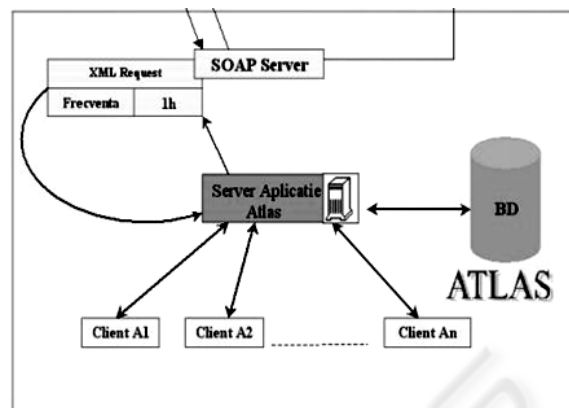


Figure 2: Architecture overview.

Data protection is assured by means of:

- Database level security systems.
- 3-Tier architecture that makes users connects to an intermediary application server and not directly to the database.
- Secured communication protocols (ex: SSL).
- Asymmetrical key encryption algorithms (the communication between banks and the Town Hall).
- VPN over the Internet for payments made through On-line Post.
- Backup database servers.
- Local network firewall.

3.3 Local Taxes On-Line Payments through Post Offices

For payments on-line through the Postal Offices the solution supposed installing the ATLAS application in every Postal Office in Bucharest and connecting them to the database server. This way, all the 67 Postal Offices from Bucharest are connected on-line at the Sector 2 town hall, making possible the consulting and collecting of taxes and fees for the taxpayers registered in this database, without having to go to the town hall anymore.

For payments made through Bucharest's 67 Post Offices, the data transfer security is done using a VPN created over the Internet. For data transfer with Banc Post (one of the banks allowing electronic payments), the data is encrypted using asymmetric keys. The data exchanged between the two servers (Town Hall's and banks) is made by means of a SOAP (Simple Object Access Protocol) server that encrypts and decrypts the requests and the replies using the asymmetric key structure above mentioned. The access is unlimited, being a customizable application.

The application allows different access, depending on the operation level. There are access levels for different parts of the application and the rights can be assigned on groups as well as on functions.

Bucharest's 67 Post Offices (each having 2-4 work stations) are on-line connected to Sector 2 Budget Incomes Direction, thus making possible taxes and fees consulting and payment for these database taxpayers.

This solution has proved to have a greater impact than Internet payment because it is addressing to a bigger population segment which doesn't have an Internet connection.

4 VOCAL SYSTEMS

The application also offers a vocal taxes and fees consulting system through the telephone. It allows the informing by telephone of taxpayers about the amount of taxes and fees, payment possibilities, remaining sums to be paid, programming of hearings, exchange of vocal messages between citizens and the Local Public Administration, etc.

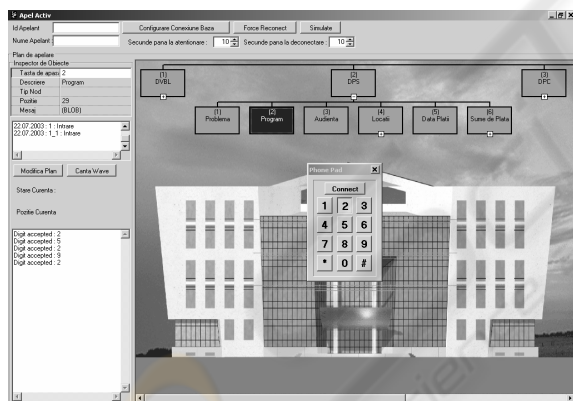


Figure 3: Vocal system.

This system is the first of its kind in Romania, and it can be tested by calling from any telephone with DTMF capabilities (Stefan, 2007), (Stefan, 2006).

5 CONCLUSIONS

Whereas the European integration of Romania in 2007, one of the main objectives of our Government has been to provide an adequate legislative framework in order to sustain the reform process within central and local public administrations, but

although the information technologies develop very fast and they offer a wide range of complex applications.

Research has indicated that there are significant difficulties in implementing e-Government projects in the public sector. As in the private sector, the real benefits of such projects can only be gained if the introduction of technology is combined with organizational change and a sufficient focus on new skills that may be needed.

Building of eServices will take a long time. The main challenge is to have a common framework, as it begins to be established at European level, to guarantee interoperability, critical mass and economies of scale. This process must be widely promoted and supported by all levels of administrations and the private sector.

Open and transparent local and regional government is a prerequisite of local democracy. The technology offers an exciting opportunity for the citizens to control and have ownership of the personal information managed by administrations and to receive personalized services. In this regard, security and privacy are important quality indicators of public service delivery and must be taken into account in e-Government planning.

REFERENCES

- Stefan, V., 2006. *Tehnologii de interoperabilitate pe Web pentru servicii online*, Revista Tribuna Economica 38-40, Bucuresti, ISSN 1018-0451
- Stefan, V., 2007. Les systèmes informatiques d'interface et l'espace collaboratif dans l'UE. *International Conference "Integration économique, concurrence et coopération"*. Rijeka, Croatie
- Stefan, V., 2006., Le role des TIC pour un mondialisation juste et pour la participations des citoyens aux mecanismes publics. *XVIIème Colloque Fédérateur de l'Institut CEDIMES*. l'Université Valahia du Targoviste, Romania
- <http://www.egovmonitor.com/node/1055>, Citizen Relationship Management: The Rocky Road from Transactions
- Online Availability of Public Services: How is Europe progressing? Web based survey on electronic public services, October 2004, Prepared by Capgemini for European Commission
- Des citoyens partenaires - Information, consultation et participation à la formulation des politiques publiques, Éditions OCDE 2002
- <http://www.ats.com.ro/products>
- <http://www.mcti.ro/index.php?id=45&L=0>