THE ROLE OF SUPPORT OPEN SOURCE SYSTEMS TO IMPROVE THE QUALITY OF DECISIONS IN AN EDUCATIONAL INSTITUTION IN ROMANIA

Sorin BURLACU[1]
Daniel JIROVEANU[2]

ABSTRACT (**10pt, bold, capitals, left**)
In the last 10 years has been developed various support systems in order to improve the quality of administrative decisions. Many of these are used by large organizations for their performance to cover the cost of developing the computer system.
Maturation systems made possible the transfer of specific processes and decisions to open source.
In this paper we propose to identify ways of solving administrative issues requiring decisions using such systems. Aware of the risks we balance the benefits and limitations.
We believe that a unit of higher education institutions in Romania can be a good opportunity for the implementation and testing of open source solutions for decision making.

KEYWORDS: *open source systems for decision making, e-services, e-administration, education computerized, management information systems*

JEL CLASSIFICATION: *M15. L8*

1. INTRODUCTION

Modernization generalized training, education and research should focus on the needs of beneficiaries: teachers, students, researchers, businesses (BURLACU, S. 2011). To be truly effective achievements must be available 24 hours a day, 7 days a week. Beneficiaries will be able to interact with the collaborative Platform from home, work or during their travels in the country or abroad.

This should be viewed in the context in which today's economies are in a process of rapid transition from manufacturing and service-based economy, toward a knowledge-based economy. (RADU, I. (coord), URSACESCU M. et al. (2007))

Therefore, dissemination of results through collaboration Platform is multi-channel, both traditionally and electronically, in order to allow beneficiaries to choose between them (COLESCA Sofia Elena 2010). The services can be provided to recipients to date in electronic form are mainly three types, features offered:

• *information services* that allow retrieval of sorted and classified information on request;
• *interactive communication* services that allow interaction with individuals or groups of individuals (eg e-mail, discussion lists, etc.);
• *transactional services* - which allow the transmission of support services to beneficiaries.

---

[1] The Bucharest University of Economic Studies, Romania, sburlacu@man.ase.ro
[2] The Bucharest University of Economic Studies, Romania, daniel.jiroveanu@man.ase.ro

2. RESEARCH METHODOLOGY

In technical and professional literature, there are many approaches to the concept of the electronic system of information management and implementation of concrete ways in collaborative platforms. The view of specialists is that a design methodology classic systems can be success (PROFIROIU, Alina; ANDREI Tudorel (2009) fully applied to develop a collaborative platform.

This situation is due mainly to the nature and dynamics of objectives, outputs and processes specfica information management. It is difficult to know a priori what information will be required, which are groups of people will require or will provide, when and how that information will be used (ANDRONICEANU, A. 2011).

The research methodology used was such an unconventional (POPESCU, R.I. 2007). We have used different laboratory tests currently available platforms such as:

1. *eLearning platform*. Currently the faculty are implemented and tested two systems:
- MOODLE - is used in subjects Introduction to research methodology - the first year, licensed day electronic public services, third year, days can be accessed at www.amp.ase.ro/elearning. Are planned and implemented enhanced functionality for all college courses, bachelor and master cycles. It was successfully tested in the project at the county Professionalism Statistical Institute applicant, recipient UES, available at www.amp.ase.ro/moodle.
- eFront - is used in the project "Improving the quality of the masters program in public administration", Babes-Bolyai University of Cluj-Napoca, Romania applicant. The platform is available at www.amp.ase.ro/eFront

2. A *electronic questionnaires eSurvey* implementation and management, which released the following surveys:
- www.amp.ase.ro/chestionar1 - electronic questionnaire assessing student satisfaction FAMP-UES
- www.amp.ase.ro/chestionar2 - electronic questionnaire assessing teachers FAMP-UES
- www.amp.ase.ro/chestionarpractica - electronic questionnaire to identify practical needs of students FAMP-UES

It was tested with good results in the RIES project incubators network of social economy - strategic approach to human resource development, European Association for Human Development applicant www.amp.ase.ro/ries and www.amp.ase.ro/ries2

3. *ALUMNI collaborative platform* for graduates of the Faculty and specialization of Public Administration and Management Studies, Bucharest. The platform is currently tested at www.alumniamp.ase.ro by third year students in laboratory classes related discipline Electronic Public Services.

Implementation and testing of these platforms we have created an image of the main features. I searched the literature then extended functionality that we have under consideration together with the third year of study students from FAMP.

3. MAIN FINDING

Information management is a systematic process of collecting, organizing and storing information so that those interested could use in order to increase their work efficiency (ANDRONICEANU, A. (2008).). An information management system consists of a set of methods and techniques that becomes operational content management processes, including document retrieval solutions, expertise databases, discussion lists and retrieval systems by content and technology collaborative filtering (ALPOPI, Cristina; BANACU Cristian Silviu; COLESCA Sofia 2009).

Any information management system must meet two basic requirements:
• to facilitate collaborative work between users involved in information management processes and
• to provide management information from the system.

In order to meet these requirements, the electronic management of information using a range of tools to integrate information as the basis of information or collective memory(. Within these, data are structured into units of content that are found usually in the form of documents (articles). Units of content should be structured so as to allow interconnection topology information and the development of type "information tree" and to be related to profile people who will use them.

Moreover, phase information is the result of combining browsing, internalization, socialization and externalization. This dynamic process involves the definition of rules for communication between transmitter and receiver groups. Even if, sometimes, between groups there are different perspectives on the interpretation of information in terms of significance and differences in terminology, communication and resource sharing provides innovative acceleration.

4. PROBLEM IDENTIFICATION

Given the considerations presented, we consider that the main categories of issues that differentiate information management systems are traditional systems:

- *Establish user profiles and their organization in groups*. In achieving a classical system is assumed that users are homogeneous in terms of objectives. For this reason, design methodologies use the concept of representative or typical user to establish the system functional requirements, but the concept is limited information for management (ANDRONICEANU, A. 2011))

- *Define the final objectives of development efforts*. The traditional approach, which has the purpose to create an organizational database may not be appropriate for collaborative Platform, because of the difficulty of defining the structure pre-requisite information. For example, conventional systems, the data is structured in a conceptual schema often rigid and durable, platforms for collaborative model is one that changes every time and involves low dynamic structuring schemes.

- *Operation and system improvement*. Another assumption implicit in the classical case is that system design is developed, in fact, a final product. In the context of information management, usually resorting to an evolutionary approach, which involves implementing a platform and then develop a system constant.

- *Refresh rate content*. Opposed to systems that manage data based on information systems requires more rapid updating of content. For this reason it is necessary that, while implementing collaborative platform, the organization to develop a system to motivate users so they can perform with maximum efficiency actions and combination of keywords and metadata each document or form submissions of data on skills and their personal information.

- *Utilization of human resources*. Because much of the functionality collaborative platforms involve the use of human operators, it is necessary to ensure an effective mechanism to protect them by: Reducing the number of accesses by users in a given sector through the introduction of sections such as "Frequently Asked Questions*",* so that human operators can be accessed only when there are new cases; The timing of the beneficiaries in the monitoring and real-time servicing requests coming from users; Directing requests so they automatically get the waiting list for the operator who is competent to resolve them; Appointment of a classification and indexing of documents and their distribution in the areas of information.

5. SCENARIO

We appreciate that the implementation of e-Services solution at the level of public administration will generate the accelerated growth of the level complexity of the problems approached by ensuring compatibility, standardization, interaction and synergy of all services for every level of public administration involved (ABĂLUȚĂ, O.M.,2006).

In this, context, we consider that for the current state in which the implementation of e-Services technologies the public utilities sector of general interest in Romania, it is necessary to consider a number of strategic priorities.

a. Awareness of problems that characterizes the local and regional strategies for e-Administration and the policies that ensure support sustainable development and social cohesion

b. Development of portals and call centers capable of providing electronic access to all citizens and for business environment

c. Implementation of policies that increase the use of computing technology and Internet networks in rural areas

d. Development of new public-private partnerships for the small and medium enterprises, especially in rural areas

e. Implementation of pan- European services to increase mobility and knowledge in the European area

f. Implementation of systems of benchmarking of e-Administration services at regional level

g. Ensuring sustainable development and social premises by implementing policies and strategies in the field of electronic administration

h. Improving local and central Public Administration staff in the use of ICT technologies(ANDRONICEANU, A, Sabie O 2012)

i. Implementation of management of change and certain modern methods and techniques specific to the leadership and the organizational culture the local public administration

j. Achievement of technologies to provide multilingual support for e-Services systems

k. Securing access to electronic services through the use of smart cards and electronic signature implementation

l. Achieving mathematical economic models for forecasting that allow extrapolation development of the economic indicators specific to services of general interest.

Achieving these priorities in Romania involves aligning regional policies to those of EU and orientation of the structural funds towards areas that allow the implementation of information and communication technologies in public administration central and local. In this context, the main courses of action to which must resort it are (ALPOPI Cristina 2007):

1. Implementation of computerized data exchange and ensuring interoperability of regional platforms. This means that public administration authorities to agree on data types, methods to enhance them of how to operate the e-Services platforms, as well as the procedures and standards for collecting, processing and storing data. This step is necessary to take into account at the same time ensuring the character of interoperability and integration into existing platforms at European level. In order to achieve this goal we appreciate it is required, primarily, the development of Internet platforms that ensure citizens with a first package of electronic services such as: electronic voting, paying local taxes and fees, information on local investments, cadastral information, status information services.

2. Development of software applications dedicated for providing electronic services. For this purpose, public administration authorities must decide whether they want to implement open source applications or their own solutions and perform cost / benefit analysis of their effectiveness.
Because open source platform handles a large amount of personal and confidential data that must be secured against unauthorized access, we recommend the use of software solutions dedicated to the Public Administration, such as those called FLOSS (Free / Libre Open Source Solutions).
Strengthening the e-Services platform involves identifying and determining its functions for each of the following elements:

- Service properties: include general information such as identification data, information about access to service such as the URL location, the maximum conversation time between service and user type of digital signature need at authentication, etc.
- Cost of using the service or information provided through this
- Arrangements for payment of service by the user
- Service users (individuals or legal entities)
- Rights of access, editing and visualization of content and service functions
- The structure of the respectively service attributes and included objects and restrictions relating to their use.
- Possibilities for customization of content service in order to implement new functionalities

3. Modernization of public administration under the aspect of providing integrated electronic services. Currently, at the level of local public authorities in Romania that provide electronic services, information is transmitted through individual communication channels, with no vision at regional level or national (POPESCU, R.I. 2007). This requires redefining administrative procedures and standards for the provision of some electronic services unitary, even if this process is hampered by the existence of some restrictions, such as organizational culture and a series of technical factors (problems with user authentication system, the lack of digital signature and secure electronic transactions. Providing a platform for e-Services unitary at national level is a goal that cannot be achieved unless re-engineering administrative procedures is doubled by the implementation of training programs and bench-learning methodologies.

Among the advantages of integrated electronic service deliveries are:
- Improving the efficiency of public services of general interest provided to citizens
- Adapting existing services for citizens' requirements
- Implementation of electronic techniques capable of providing transparency of the functioning of public institutions

4. The development of some Competence Centers for e-Administration technologies.
These competence centers will act in the form of cores of excellence at regional level for the training of specialists in the field of e-Services and knowledge sharing between local public administration representatives. It should be noted that the operation of these centers of competence can be made on-line, in the form of e-Learning.

5. Implementation of identity management, digital signature and secure transactions. Public information security problem is very important and should be addressed in the context of overall EU policy in this field. In this context, the main courses of action are to promote certified electronic signature developing standards and procedures for authentication of citizens, realization of electronic transactions using secured data storage tools such as cryptographic device (smartcard and reader or e Token).

Although the digital signature is used partly in public administration in Romania, at present there is no question about the existence of some security standards, especially since in most cases are used unqualified digital certificates and conventional storage devices (CD or diskette). Achieving high standards of security at the level of e-Services platforms cannot be done only by qualified digital certificates issued by a competent certifying authority, only ones according to current legislation and that provides both the system authentication and signing electronic documents in conditions that ensure legal opposability of them.

6. Promoting measures that ensure client satisfaction growth for e-Services platform. Delivery services of e-administration should be doubled by the existence of a motivating system of users for the use of electronic services. In this context, the main action concerns the promotion of management systems of customer relationship (CRM) in public administration.

6. DISCUSSION AND CONCLUSIONS

Given the issues outlined above, we believe that developing a eFaculty platforms can structure considering the next phase of implementation progress:

1. *Development by making the basic functionality* for Internet and Groupware platforms which provide support for the integrative and interactive functions with intensive use.

2. *Developing integration functions* that provide facilities for coding, searching, organizing, structuring and relocation information.

3. *Development of interactive functions* that provide opportunities for communication, collaboration and tracking of researchers, making the virtual meeting space communities with common interests or modern instruments of e-Learning.

4. *Development related functions* that enable connections between providers and recipients of information, finding common interests or users with information based on content filtering custom.

In conclusion, we found that, at present, almost all large organizations have access to the Internet, together with extensions and specific tools, provide the basic functionality of collaborative platforms such as easy sharing and access of electronic documents in real time information. Also, some organizations have developed such Groupware platform that facilitates team work and efficient organization of collaborative activities.

Many functions of information management systems are already implemented as components of Internet architecture or specific solutions such as the CRM (Customer Relationship Management). In these conditions, the implementation of collaborative platforms requires increased use of existing functions and developing new features.

Regarding the phrase collaborative platform, it is quite confusing and dynamic due to the fact that currently there is no standard solution with a high level of interoperability. Moreover, buying a standard package could lead to loss of competitive advantage due to the low level of satisfaction of requirements.

Therefore, usually, organizations resort to their own development capacity. Another problem is the integration of collaborative platforms with other applications such as document management and workflow. A technical solution to making use of more companies is the development of information portals that can facilitate data integration by using intelligent features in the handling of information.

REFERENCES

Abăluţă, O.M. (2006). *Researches on the Utilization of it Indicators in the Management of Local Public Services*, Theoretical and Empirical Researches in Urban Management, vol. 1, no. 1, 32-41.

Alpopi C. (2007) *Principiile Dezvoltarii Durabile*, Theoretical and Empirical Researches in Urban Management, Research Centre in Public Administration and Public Services, Bucharest, Romania, vol. 2(3), 1-9, May.

Alpopi C.; Banacu C. S.; Colesca S. (2009). *Considerations About Public Housing Policy*, Proceedings of the Fifth Administration and Public Management International Conference: Public Institutions' Capacity to Implement the Administrative Reform Process, Bucharest, June 23-24, 2009 13, Research Centre in Public Administration and Public Services, Bucharest, Romania.

Androniceanu, A, Sabie O (2012). *Persuasive Communication at the Academic Level and How to Make it More Effective* - Administration and Public Management Review, No. 18, 26-52.

Androniceanu, A. (2008). *Noutăţi în management public*, Editura Universitară, Bucureşti, 2008, ISBN: 973-749-449-8.

Androniceanu, A. (2011). *Public Policies Process in the Romanian Energy Sector along the Last Year*, Administration and Public Management Review, Issue.

Burlacu, S. (2011). *Characteristics of Knowledge-Based Economy and New Technologies in Education*, Administration and Public Management Review, No. 16, 114-119.

Colesca S. E. (2010). *Online Consumer Protection*. Theories Of Human Relativism, The AMFITEATRU ECONOMIC journal, Academy of Economic Studies - Bucharest, Romania, vol. 12(28), 694-699. Management Review, No. 7, 120-125.

Popescu, R.I. (2007). *Challenges and Solutions for the Development of Small and Medium Sized Cities within the European Union*, Administration and Public.

Profiroiu A.; Andrei T. (2009). *Main Actors Of The Romanian Public Administration Reform*, Proceedings of the Fifth "Administration and Public Management" International Conference: "Public Institutions' Capacity to Implement the Administrative Reform Process", Bucharest, June 23-24, 2009 12, Research Centre in Public Administration and Public Services, Bucharest, Romania.

Radu, I. (coord), Ursăcescu M. et al. (2007). *Informatică şi Management - o cale spre performanţă*, Bucharest: Editura Universitară.