

Title	Development of an National Information Platform for the Water and Wastewater Public Services
Topic area	Commerce and Competitiveness
Abstract	The European Union directives in the field of municipal services covers three major objectives : the combination of the economical, social and lasting development objectives according to the European standards, through two approaches regarding the continuous evolution of the European social-economical models and the economical and social cohesion in the new Europe; the conservation and lasting management of the natural and artificial resources; the use of environment technologies for the observing, prevention, adapting and restauration of the natural and artificial environment factors. This paper studies the possibilities of implementing an national information network regarding the lasting management of waste and water supply public services, according to the lasting development perspectives for these services. The platform has three components: the eLearning system for the continuous professional improvement of the experts, the Knowledge Management System (KMS) for the knowledge and specialised expertise management and the Group Decision Support System (GDSS), for the specific activities of the participative management, regarding the development of mutual interest research projects.

Prof.dr. Ioan RADU
Conf.dr. Minodora URSACESCU
Assist.prof.drd. Mihai CIOC

The European Union directives in the field of municipal services covers three major objectives : the combination of the economical, social and lasting development objectives according to the European standards, through two approaches regarding the continuous evolution of the European social-economical models and the economical and social cohesion in the new Europe; the conservation and lasting management of the natural and artificial resources; the use of environment technologies for the observing, prevention, adapting and restauration of the natural and artificial environment factors. This paper studies the possibilities of implementing a expert network regarding the lasting management of waste and water supply public services, according to the lasting development perspectives for these services. It will be set up a team of experts which will sustain the Romanian participation at the future program CDT – 7 of the European Union for 2007–2013, adjusting the research activities in accordance with the European technological platform PT25 (WSSTP-Water Supply and Sanitation Technology Platform).

The primer objectives is to involve the most representatives operators in the field of water supply and sanitation public services in an Intranet technological platform with three major components: the eLearning system for the continuous professional improvement of the experts, the Knowledge Management System (KMS) for the knowledge and specialised expertise management and the Group Decision Support System (GDSS), for the specific activities of the participative management, regarding the

development of mutual interest research projects. The informatic system must be integrated in European informational networks, in order to achieve some international research projects.

The starting point for the subject and the objectives of this project has been the fact that, once the European market of public services is extended, the Romanian operators will have to face the competition of the other public services providers/suppliers coming from a more dynamic market than the Romanian one. This evolution will also involve the acceleration of the adjusting and technological integration process for the water supply and sanitation services of the Romanian operators according to the European standards.

The present situation of the water supply and sanitation public services in Romania is represented by: a great number of operators (625 for the water supply services and 450 for the sanitation services); some investments for the rehabilitation of water distribution systems based on external financing programs (MUDP, ISPA, SAPARD, SAMTID); a significant involvement of the private sector in the sanitation services (80% of the 450); small achievements regarding the waste recycling (Suceava, Buzău, Rădăuți, București) and only four public-private partnerships for ecological deposits (Arad, București, Brașov, Oradea). The Romanian market has a complete legal and technical framework regarding the public services setting-up and functioning, the necessary procedures for the setting-up, adjusting and modifying of the prices and tariffs, the public services concession procedures, as well as the operators licensing procedure.

There are also some results in the last few years at national level which are materialized through:

- a. promoting the primary, secondary and tertiary legislation regulating these two public services;
- b. operators with complete and modern technologies, able to achieve a complete water treatment cycle (Bistrița-Năsăud, Cluj, Timisoara, Constanța);
- c. water metering at level of branching for every town consumer;
- d. setting-up waste selection and PETs recycling stations (București, Suceava, Timișoara, Brașov, Baia Mare);
- e. ecological deposits set up based on public-private partnerships (Arad, Oradea, București, Brașov);
- f. a continuous process of concessioning the sanitation public services and promoting the competition in this field;
- g. the licensing and the authorization of the operators for the water supply and sanitation public services;
- h. quality indicators for the public services, according to the European standards.

At international level, the most significant results are the following:

- a. the development of the water distribution process in the big towns through the „water movement centers”;
- b. the two-part tariff, with a positive impact regarding the service payment affordability of the population;
- c. the development of the operators specialized staff through online training processes;
- d. recycling up to 80% of the domestic waste and production of electrical energy, biogas, construction materials and basic materials.

The present situation requires the development of a long-term vision, able to provide solutions for the improvement of the services supply systems, the development of the public-private partnership; the stimulation of the research and resource finding activities in order to provide solutions for the consumers satisfaction; the elimination of all the existing barriers for the achievement of new technologies; setting-up platforms able to involve all the key-factors assuring the system functioning. Presently, the research activities are sustained by The Romanian Water Association (ARA) and The Romanian Sanitary Association, both professional associations. Although, on the sanitation services market, there are operators making efforts to sustain the research activities (SC Retim SA Timișoara, Iridex Grup București, RAGC Târgoviște), for the moment, there is no institution able to assure the processing of all the information resulted from the research and the know-how transfer between the Romanian operators and the operators from the European Union.

The potential users of the national information system are:

- Operators, represented by 625 companies for the water supply public services and 450 for the sanitation field. Their primer interests in using such a system are: to increase the service quality, to obtain external credits for investments and to improve the legal and technical framework. The principal ways of action in order to satisfy operators interests are : fesability studies, business plans and consultancy; on-line training; building partnerships with the main operators acting in this field.
- Public administration authorities, represented by 3420 local councils and town councils, 41 county councils and CGMB (General Council of Bucharest), The Ministry of Administration and Interiour. Their primer interests are: assistance in the correct application of the legal regulations, assistance in the setting-up of the services and their development, specialized technical staff, efficient control regarding the services, high transparency in the relation with the population. The most important way of action in order to satisfy public administration authorities interests are: on-line training, regional structural and management reorganisations, regional strategies, new procedures for the prices and tariffs elaborating modifying and adjustment, studies for the implementation of new technologies regarding the environment protection.
- Physical and legal persons, wich are motivated by interests like: to find new ways to increase of the affordability level regarding the price for these services, to increase of the civic education level, to obtain knowledge regarding the legal framework. The way of action are the following: postfesability studies for the costs decrease, on-line training for the experts, research and studies for the waste recycling through incineration and the obtaining of new material resources.
- Professional associations represented by The Romanian Water Association (ARA), The Romanian Sanitation Association (ARS), The Public Services Patronage (PSP). Ther primer interests are: lack of a material and a research base for the improvement of these services according to the European standards, lack of efficiency of the professional comissions in the elaborating process of the market studies. principal ways of action in order to satisfy professional associations interests are: developing professional partnerships regarding the joint research problems, elaboration of the required studius, on-line training, specifical technical structure.
- Authorities and government agencies, repreyented by The National Authority for The Consumer Protection (ANPC), National Regulating Authority for The Municipal

Services (ANRSC) and environment county agencies, which are interested by: orientation of their own activities especially towards control and monitoring, lack of the market research activity, lack of assistance for the local public authorities and small possibilities regarding the market adjustment according to the legal amendment. These requests can be satisfied through the following way of action: partnerships for know-how transfer, on-line training, studies regarding ways of implementation of the European requirements, access to the database for the negotiations with the international institutions.

At a global level, the water supply and sanitation public services market is facing a complex problem: the inefficient management, the lack of credibility of the small and medium operators facing international financing organisms, the small number of specialized staff for these two services, the lack of new technical regulations providing the compliance with the environment protection indicators, the lack of some national and regional strategies for the two services, difficult access at external credits based on international programs, lack of compliance with the European economical practices, small level of costs affordability for the population. We appreciate that, in order to fulfill all the requests of the beneficiaries, the information architecture must have several measurable objectives.

The fundamental objective of the information system is to set up a national experts network able to accelerate the process of compliance of the water supply and sanitation public services with the European regulations. This objective can be tracked by two monitoring elements: the cooperation agreements and partnerships between the experts group and the beneficiaries, at national and international levels; the number and the quality of the studies, analysis and researches achieved and used by the beneficiaries. The general objective is splitted in several derived objectives:

- Setting-up an efficient management system, able to assure the decision taking process and the fast access to the market information. This requires the identification of the directions and criteria regarding the implementation of the new management concepts and solutions for the water supply and sanitation services, according to the European stipulations. The principal way of action are: setting-up of the roles and responsibilities, the relationships, the work phases and the research group strategy.
- Setting-up a communication infrastructure between the research group, the market operators and the public administration authorities. An initial strong material base and some specialists with great experience in the achievement of WAN networks will determine a high functionality of the communication infrastructure. This objective can be tracked by using the following details regarding the infrastructure achievement, the activity reports, the equipments permission documentation, the tests, the report indicating their functionality.
- Setting-up of a perfecting system for the experts through eLearning techniques. The project and the details regarding the achievement, the activity report, the equipment permission documentation, the presentation manual, the utilisation manual, the tests, the software simulation, the demonstration report are monitoring elements for this objective. We appreciate that the promoting of the eLearning system and the ongoing request for training programs will determine the increase of the online training beneficiaries.
- The development of a certifying system for the experts in this field through international programs of master, postuniversity studies and short-term studies. There is

a high request on the market for this type of forming courses because of the lack of the training programs.

- Setting-up a national expertise and management system for the water supply and sanitation public services (Knowledge Management System). We consider that database at national level will facilitate the Romanian participation at international programs. There is also a restriction regarding the legal issues of the knowledge transfer process.
- The setting-up of the national informatic system of group decision assistance (Group Decision Support Group). The implementation of this system will increase the users interest regarding the participation to joint research projects, organised and coordinated by the research group

The project complies with the national policy for the water supply and sanitation public services, according to the priorities of the Governance Program for the period 2005 – 2008, regarding:

- The access to infrastructure and knowledge: encouraging of setting-up networks for the innovation and cooperation with other universities and research companies; promotion of the innovation and research results transfer towards enterprises.
- Conservation of the natural capital: an introduction program of minimal rules regarding the waste management; increase of the water quality and severe measures for the prevention of the water sources pollution.
- Regional competition: assurance of the environment quality, research stimulation; development of the excellence centers.
- Legal framework: assuring the correlation of the operational plans with the local development plans; promotion of the public-private partnership.
- The information and communication technology: the development of the national informatic infrastructure.

There are also some risks regarding the implementation of the program. First of all, there is the risk of the unefficient communications between the partners wich results into several negative effects like the lack of action coordination and the low level of project objectives achievements. Secondly, there is the low level of the market utility of the research and studies and a lack of compliance with the market real needs. This phenomen can apper because the operators lack of involvement in the activites of the research group. Also, another risk is the weak communication with the local public administration authorities, the professional associations and the compentent government agencies wich determine a lack of knowledge regarding the priorities of the local authorities and the problems in this field. Classic courses with low efficiency, with a low number of participants and the impossibility of setting-up courses at the head-offices of the most known operators, in order to allow their own training and evaluation during these courses are factors with powerful influence on the online training system.

Although those risks exists, we appreciate that the implementation of the system will have a great impact on the municipal services market, especially ofr the water and waterwater public service stakeholders. The impact can be splitted in three categories:

- Technical impact: increase of the services quality; modern methods for improving the operators and local public administration staff; acceleration of the rehabilitation, restructuring and reorganisation process; modern technologies for the water treatment, its distribution monitoring, for the losses reduction and waste recycling; the first eLearning

platform; acceleration of the purifying station setting-up and the acquisition of waste incinerating equipments; preparation of the packaging management systems implementation; preparation of competitive operators, able to face the European competition.

- Economical impact: the correct determination of the investments efficiency within external financing programs; promoting the economical analysis, according to the European standards; a scientific base for the determination of the two-part tariff structure for water supply public services; establishing the organisational and functional structure necessary for the external payment of public services taxes and the introduction of the unique bill; setting-up possibilities for the implementation of specific management methods and techniques regarding the competition conditions or the natural monopoly; introduction of unique indicators of benchmarking in order to monitor the operators activity efficiency;
- The social impact: the correlation of the population affordability level for these public services with their economic costs; the reorientation of the operators activities in order to satisfy the needs of the consumers/beneficiaries; conditions for economical water consumes and waste recycling, environment and limited natural resources protection; promoting the participative studying methods in the training process and increase of the number of persons able to use the continuous training eLearning system.

The general conclusion is that the project is feasible but, in order for it to succeed, it is crucial to involve management research group methods, applicable in two phases: defining the objectives system, mentioning the achievement terms and the necessary resources, finalised with the elaboration of the research network strategy; setting-up activities and monitoring their objectives fulfilment, through evaluations at the end of each phase. In order to eliminate all the communications barriers, there will be developed a WAN network and some informatic applications, which will facilitate the fast transfer of information among the four partners, as well as the beneficiaries access at the joint database of the research network. There will be used a specific instrument for the participative management, including the Delphi method, the workshops technique, the fuzzy theory, the value engineering, the critical road analysis etc.

References

1. Andrei D. *Finanțarea infrastructurilor serviciilor publice de gospodărie comunală*. Ed. Ministerului Administrației și Internelor, București, România. 2004.
2. Andriole S.J. *The 2nd Digital Revolution*. Ed. CyberTech Publishing, Londra, Anglia. 2005.
3. Coakes E. *Knowledge Management Current Issues and Challenges*. Ed. Idea Group Publishing, Londra, Anglia. 2003.
4. Khosrowpour M. *The Social and Cognitive Impacts of e-Commerce on Modern Organizations*. Ed. Idea Group Publishing, Londra, Anglia. 2004.
5. Radu I., Ursăcescu M., Cioc M. *Informatică și management*. Ed. Universitară, București, România. 2005.
6. Radu I., Vlădeanu D. *Analiza diagnostic și strategia de dezvoltare a serviciilor publice de gospodărie comunală*. Ed. Tribuna Economică, București, România. 2004.
7. Singh M., Waddell D. *E-Business Innovation and Change Management*. Ed. Idea Group Publishing, Londra, Anglia. 2004.

8. Van Gremberger W. *Strategies for Information Technology Governance*. Ed. Idea Group Publishing, Londra, Anglia. 2004.