Răzvan Ion CHIȚESCU
Valahia University from Targoviste, Romania
Ph. D. Candidate at the Doctoral School of Economics and Humanities

INFORMATIONAL MANAGEMENT SYSTEM AND ITS CHALLENGES AT DECISION LEVEL

Theoretical Article

Keywords
information transmission
public administration
IT management

JEL classification:
D83, H83, M15

Abstract

The presented research in this study highlights the impact of the changes that took place by the implementation of the informational system management at the level of taking decisions in a public institution. In this frame, with the opportunities and limitations, the manager's role becomes the binder that the combination between the influences of the informational technological influences and the involved human resource in the transformations of the Romanian public sector needs for a successful and efficient evolution.

Based on an empirical study, there were highlighted a series of challenges that a manager must answer so he can overcome all the shortcomings that are involved by the projection and implementation of an informational system in a public institution, and to make the most of all the facilities that this process offers, offering a maximum of efficacy, analysis, perspective and communication.

Introduction

The system represents a mix of interdependent elements (components) which interacts dynamically, on the base of settled rules, with the purpose of touching a specific objective. In the managerial domain three systems like that had been defined: the decisional system, the informational one and the operative system. The informational system is a binder of the other two, whose role identifies in three directions: ascending – assures the necessary information for taking decisions at all responsibility and leading levels, descending – sends to the execution factors the taken decisions at leading level, horizontal – it has the communication role inside the same subsystem

The informational system is the technical-organizational ensemble of elements involved in the collection, transmission and processing information process. The informational system's role is to send the information, as honest and fast as possible, between the different components of an organization with the purpose to facilitate the decisional processes and to streamline the needed informational fluxes for the development of that organization's specific activities. The use of an informational support, centered on the fast data transfer in the conditions of some minimal costs, represents a need in any institutional activity's development in the contemporary society. The main characteristics of the informational system are accuracy, concision, relevance and consistence.

The informatics system represents a part of the informational system that allows the making the collection, transmission, storage, processing operations of the data and the distribution of the information obtained by using the information technology's ways and the staff specialized in the automatic processing of the data.

The information represents the motor of an organization. Its quality assures the success of the operation. The decisional process is influenced by the type of analyze to which the information is submitted in relation to the beneficiary's nature, of its analyses and values capacity of its results. Therefore, the analyze must take account of opportunity, accuracy – by permanent update, of the time in which it is realized in relation to the perishability grade, of the relevance, completeness and the presentation mode.

The diversity of the challenges that an organization, especially at decisional level, must manage efficiently took to the development of some informational systems, classified according to 16 criteria (Oprea, 1999 fide Strâmbei, 2005:237). The informational system for the management (MSS - Management Support Systems) have the role to offer the needed information for sustaining and ensuring the managers in taking decisions and they include:

- *Systems for the current management* (MIS - Management Information Systems) – they support the managerial process by delivering information structured as reports. These are for the tactical and operational management for support in solving some structural problems. (Ghicajanu *et al.*, 2002).
- *Decision Support Systems* (DSS - Decision Support Systems) – they offer support for decisions after the semi structured and structured models at all the levels of the organizations. The decision support systems (DSS) have an important role in the offered assistance to the managers in strategic plan for solving some problems by using models and data bases specialized on defined problems. These systems do not make decisions, but they offer reports and different types of analysis. They are considered to be the high level of the applications designed for the management, making possible the testing of some scenarios through dynamic graphics, simultaneous modifications of many variables. The drawbacks that reside in their heavy use or thanks to the omission of some important variables in the model taking to a description that does not match the reality and to influence negatively the decision.
- *GDSS* – it supports the elaboration of the group decisions having and communication and negotiation facilities (DSS extension).

The insertion of the technology's information at a sufficiency level must take into account the managerial strategy type, of the organization's culture and of the professional quality of its employee. The equilibrium of these components, which are not static or are not in a constant report, grants the power to an organization. So, the dynamic of the IT component with quality implications over all the components causes, on the main function, constancy and stability representing a catalyst of the existing resources.

The Romanian public administration is translated specifically through structural and functional rigidity. The thinking in the public administration marks a static, linear, conservative model which, many times becomes an obstacle in the development and implementation of some transition strategies to the modern management, management in which the informational system takes an important place.

The chaotic modifications of the managerial strategies, with implications at the structural level, cause noncoerent changes of the managers' visions which, for maintaining the winning position, develops, not little time, strategies that don't respect the social and economic context, but rather the political one. Thereby, the implementation and development of the informational system in the

local public organizations, present even advanced in some activity domains become incoherent and its transformation into reality raises another serious problem.

****

The implementation of the informational systems in the Romanian health system represents a certainty. The results are visible, but the problems appear along with the development of these systems in relation to the needs imposed by the local realities. Using "the leading styles grid" developed by Blake and Mouton (Blake&Mouton 1964), we consider that the health system's management falls in *the middle horses management (human-organization)* typology – defined as a compromise between the concern for obtaining some acceptable production levels and the recognition of the staff's problems that lead nor to a high productivity, nor generates special motivation of the employee – or in *resistant minimum management* – characterized through the avoidance of the responsibilities or personal involvement of the manager, no matter if he does the same daily work for a long time or refuses to implement a new solution in the institution's activity.

The accomplished study discusses the main advantages that were generated by the insertion of the informational system in the Romanian health system, at the medical stuff and patients' level, and the correlations that can be made between these and the managerial type.

Methodology

The achievement of the study contained many stages, specific stages to an investigation meaning the elaboration of the questionnaire, its distribution, the collection of the results and their analysis.

There have been proposed two different questionnaires as a way of questioning, one for the medical personnel and another one for patients. These contain closed questions that offer necessary data for establishing the involvement of the medical computerization and implicitly of the appreciation grade for the informational management in that institution. The classification is made with points from 1 to 10 (prognostic).

The questionnaire was sent by email to 150 doctors from Bucharest which work in hospitals and polyclinics, taking in consideration that there are a minimum of 30 questionnaires at each unit so there is a big part of the personnel representative for a study like a poll to be covered.

There were delivered 150 questionnaires for the patients that were either hospitalized, or in ambulatory in the same hospitals where they were sent and the questionnaires for the doctors.

In the questionnaires addressed to the medical personnel there were issues as:

- The effects over time granted to the medical act by implementing the informational systems in the institution
- The effects over the quality and efficiency of the medical act by implementing the informational systems in the institution
- The effects over the decisional processes, the medical's activities planning and the ones regarding the monitoring and mobility of the patients through the implementation of the informational systems in the institution
- The efficiency of the interdepartmental communication in the institution
- The generation of better work conditions through the implementation of the informational systems in the institution
- The flexibility and function in special conditions of the informational systems

In the questionnaires addressed to the patients there were issues as:

- The influence of the programming mode of the consultations, investigations and analyses, including the waiting time and the one given to the patient through the implementation of the informational systems in the institution
- The promptness in the evaluation and diagnostic process through the efficiency of the information access about the medical past of the patient
- The control and transparency of the medical assistance's costs through the implementation of the informational systems
- The confidentiality of the medical information of every patient

Results and discussions

From the 300 questionnaires, equally divided between the medical personnel and the patients, there have been completed a number of 209, with a distribution of 87 questionnaires among the medical personnel and of 122 at the patients. The justification for the small number of received answers from the medical personnel has been the indifference, the inertia and maybe why not the wish of not disturbing in the case of finding out the submitted options in the questionnaire, although these were anonymous, the used email address was the official one of the institution and in the form was no question through which it could be founded

out the function of the one that completes the questionnaire.

Among the patients that refused to complete the form were those that were still hospitalized in a hospital unit and were under the medical's personnel attention, the justification being the same fear of not disturbing the medical personnel through the given answers and of receiving a bad treatment at the moment or in the future.

At the whole group's level of questioned persons there has been inserted an additional question "other problems you noticed". A percentage of 76.5% of the respondents (medical personnel – 64% and patients – 89%) identified as another major problem the weak funding of the sanitary system and the high costs that an efficient management process assumes, translated to the patients through the high level of taxes (the high percentage is represented by the health social assurance, analysis, investigations, treatment) reported to the quality of the offered services.

Generally, the use of the informational systems is not considered a priority, from here the ignorance or leads of information, focusing on projects that target the medical infrastructure, the equipping with professional medical gear and the professionalization of the medical personnel. Although a number of 88.76% of the respondents considers that the informational system unique number of emergency works correctly, efficiently, it is well inserted, useful and they consider that the investments in this are primary and welcomed. These are, mainly, due to the fact that the rather high age of the patients respondents (70% over 55 years), the lack of institutional culture and the lack of knowledge regarding the informational systems, a part of the received answers were referring mainly to the system emergency number, the only one they could identify.

The data analysis from the point of view of the respondent's gender medical personnel didn't lead to a significant differentiation of the given answers by the two genders. Still, we must amplify that the medical personnel is represented in a higher percentage by the women especially nurses – 68% from respondents, but this does not influences the received results.

The age of the ones that participated to the study, from the medical system, overlaps with the preparation level. So, a number of 72% from the respondents has an age between 20 and 50 years and it is represented mainly by the group with high school and graduated studies – 84% and only 16% with university studies, while a percent of 26% have the age between 50 and 70 years and are, the majority, with superior studies. There also exists a percentage of 1.6% of respondents that still frequent a form of medical study (college) and which were in the specialization practice.

Along the respondents medical personnel was identified a percentage of 1.2% with management functions (medical chief assistant, section chief).

The patient respondents were aged between 15 and 70 years, mostly women, with a percentage of 68% over 50 years and 32% between 15 and 50 years. Their educational level is, at a percentage of 71%, at high school. From the point de view of the reason for which they applied to medical services, 13% were emergencies, 56% chronic diseases, 16% for medical investigations and the rest for obtaining medical certificates, prescriptions.

The answers' impact was analyzed on two sides: the one of the questions from the questionnaires specific to each group of respondents and another one, the common questions of the two groups. The answers given by the respondents are as follow (the percentage between respondents/ the appreciation from 1 to 10 – not favorable – favorable, the implementation of the informational system and its effects regarding the problem in question): Appendix A and Appendix B

There have been identified a series of selected problems among the ones remembered by Chițescu (2014) which make the cause of the informational system's implementation in the medical system, as a justification of the received answers before. Their hierarchy is: Appendix C.

The respondents from the medical group, as users and part of the informational systems, have identified other problems of their efficient implementation. These are:

- The facilitation of the organizational learning and the use of the information management system's technologies use;
- The strategic planning of the information management system's technologies;
- The promotion of the efficient use of the data as a resource;
- The use of the informatics systems for obtaining competitive advantage;
- Organizational programs. The management of the data resources

Making an analysis of the questionnaire's results and lapping these answers over the particularities of every group we interviewed, we notice that the efficiency and operation of the informational systems is visible in the decision processes, of planning the medical activities and the ones regarding the monitoring and mobility of the patients (7) and regarding the interdepartmental communication in the institution (7), as well as the assurance and confidentiality of the data (7). At the other side there is situated the impact of the informational systems over the quality and efficiency of the medical act (2) which in the

respondents' opinion depends on the medical's platform quality, without considering the offered advantages by the access' facility to the information from the medical file of the patient, of the interconnection possibility and making a second opinion regarding the diagnostic or the methods of medical intervention, as well as the control and transparency of the medical services' costs (2).

The subjectivism of the respondents in this context is situated into normality because it comes from the fears or the aspirations of the persons provoked by the transformation processes of these processes.

The guilty ones have been identified as being the high costs necessary for the implementation of the informational systems and of the bad informational management. The respondents with a university degree situated the issue to the data management's level and to the advantages obtained from the efficient manipulation of these resources. We consider that these results are due to the fact that this kind of respondent has another point of view over the perspectives offered by the organizational transformations.

From the justifications that we found, we can conclude that the sanitary system, in its complexity, is still in the implementation stage of a correct management, noninvasive in the expression opinion, targeted to the professionalism and with an efficient communication on the level employee-employer and patient – medical personnel, on the integration of the ascendant flux of the information in the informational management.

Conclusions

The effects of the Romanian economy in the actual context do not allow a notable financial support for the development of the final working instruments, of the development projects of the medical infrastructure, of these institutions' endowment and of the stuff's professionalization. This thing does not allow an accent on the manager's quality and of his decisions, including the importance of the assisting systems for him. The communication between the involved ones in the system and situated on different levels is made hardly, there being breaks of a normal flux of information. Therefore the characteristics of an informational system and the equilibrium that should exist are interrupted by the cognitive characteristics of the system, of the accuracy, concision, relevance, consistence and its way of presentation.

The optimization of the management system through the development of the international systems takes to the *pushing* strategies' overtaking and of the *attraction and compensation* strategies prevented which can be made through modeling and offered scenarios of decisional assistance. These are more exact and valuable but they depend a lot on the intelligence and creativity of the manager in the elaboration of those models that lead to an exchange with visible effects around all involved, but at the base of all there is ***the information that has the power to change***. The insertion, understanding, optimization and use of the informational systems, concomitant with a transformation of the manager from chief to leader are the premises of a complex and sustainable development of the Romanian society.

Acknowledgements

This work was supported by the project "Excellence academic routes in doctoral and postdoctoral research - READ" co-funded from the European Social Fund through the Development of Human Resources Operational Programme 2007-2013, contract no. POSDRU/159/1.5/S/137926

References

1. Blake R., Mouton, J.S. (1964) *The Managerial Grid: The Key to Leadership Excellence*, Houston, Gulf Publishing Co.
2. Chițescu, R.I. (2014), *The informational systems in the public administration,* Holistica – Journal of Business and Public Administration, ISSN 2067 – 9785
3. Ghicajanu, M., Dolea, G., Fodor, E. (2002) Sisteme informaționale pentru management, *"Constantin Brâncusi" University – Engineering Faculty, University's day, 8 th international conference* Târgu Jiu, May 24-26, 2002, p.1-6. Accesat http://www.utgjiu.ro/conf/8th/S3/20.pdf
4. Oprea, Dumitru (1995) *Analiza și proiectarea sistemelor informaționale economice*, Polirom, Iași
5. Strâmbei, C. (2005) Aspcte privind evoluția și tipologia sistemelor informaționale, *Analele Științifice ale Universității Ioan Cuza din Iași*, Științe economice, tomul L/LI, 2004/2005, p.235-239.

Appendices

Appendix A:

Nr.	Percent/ prognostic	Issue
1	78/7	The effects over the decisional processes, the medical's activities planning and the ones regarding the monitoring and mobility of the patients through the implementation of the informational systems in the institution
2	74,3/4	The effects over the time granted to the medical act through the implementation of the informational systems in the institution
3	67,5/2	The effects over the quality and efficiency of the medical act through the implementation of the informational systems in the institution
4	81,4/7	The efficiency of the interdepartmental communication in the institution
5	79,7/5	The flexibility and the function in special conditions of the informational systems
6	69,3/4	The generation of better work conditions through the implementation of the informational systems in the institution

Appendix B:

Nr.	Percent/ prognostic	Issue
1.	87/6	The influence of the programming mode of the consultations, investigations and analyses, included of the waiting time and the one given to the patient through the implementation of the informational systems in the institution
2.	79,6/5	The promptness in the evaluation and diagnostic process through the efficiency of the information access about the medical past of the patient
3.	87,2/7	The confidentiality of the medical information of every patient
4.	64,2/2	The control and transparency of the medical assistance's costs through the implementation of the informational systems

Appendix C:

Nr.	Percent	Issue
	83,7	High costs needed to insert the informational systems
	81,3	The informational system's management
	72,8	The build of an adequate infrastructure needed for the system's implementation
	49,7	The recruitment and development of the human resource
		Other observed problems