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ENTERPRISE RESOURCE PLANNING IN THE PUBLIC SECTOR: THE CASE OF INVESTMENT PLANNING

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Abstract

In the last few years, the public administration (PA) underwent deep changes from a bureaucratic model to a managerial model. The administrative action is now based on principles of transparency, effectiveness, economization, efficiency, and wants to support the active participation of the citizens.

Therefore, the P.A. needs to have an information system (IS) which is able to support this process of innovation of the public sector

The present work in progress explores the introduction of the Information Communication Technology (ICT) as part of the transition of the Public Sector to the managerial model.

The PA uses plans that organize the hierarchies, the tasks, the roles and the relations: it is the visible and “official” organizational structure that is known by the managers of the public sector. The introduction of an ERP is able to transform the relations, the procedures, the activities, the tasks, the minds, the mood of the persons that works in the organization in an invisible and surreptitious way.

During our analysis of ERP systems in use, and in specific, the module of planning and programming, our hypothesis is that the organizational relations enacted by the new system are not limited inside of PA, but they go beyond. The technology is a platform which fixes the social relations that can be interpreted as an organizing flow that cannot easily portrayed by managerial charts. The technology organizes work structure in a technical, sociological and psychological sense, and the organizational structure can't be separated from the technology, which, in the event of large scale infrastructures like ERP, is oriented to replace the explicit structure of the organization with an other, based on the software and on the exchange of electronic data, less visible and less declared.

Keywords: Enterprise Resource Planning, Public Administration, managerial model.

1 PUBLIC ADMINISTRATION: THE CHANGE

The public administrations are characterized from the heterogeneity of the products of their activity, which laws, regulations, administrative procedures, goods and services publics, transfers (several contributions to the families, financial incentives and subsidies to the enterprises), programs, actions of coordination of the economic and social behaviors.

In the last years, the system of the public sector is going through a deep change from a bureaucratic model, based on the legitimacy and on the production of laws and regulations, which assure the legality, to a managerial model, based on representative subjects of the community and on principle of subsidiarity.

This last model is a system that's developing logical and managerial instruments for the management, with important innovations that regard the business functions: from the strategy to the programming and control, the organization, the staff, the budgets, the finance, the procedures, the relationships with the citizens. The administrative action is now based on principles of transparency, effectiveness, economization, efficiency.

In the specific, the transformation process regards (Dalmonego 2004):

- in order to application the principle of vertical subsidiarity, the public administration (PA) is putting into effect the process of administrative decentralization;
- in order to application the principle of horizontal subsidiarity, the PA is carrying outside the activities that were directly managed from the public sector;
- the introduction of logical and managerial instruments of the private sector ("New Public Management"), which have interested aspects of the administration such as the reduction of the dimension of the great apparatuses publics, the reduction of the role of the public participation through processes of privatization of services, introduction of controls on the economic equilibrium in order to catch up the quality total through the introduction of result pointers and standard of reference;
- the deep modification of the relationships between the PA and the citizens, such as the participation to the administrative activity, the papers of the services, etc.;
- the fast development of Information Communication Technology (ICT), that plays a strategic role in the processes of modernization of PA, such as the interaction data transmission between PA and the citizens, between PA and the enterprises, or inside of PA (between the various agencies, or between the headquarters and peripheral departments of the same PA).

In order to realize such processes, PA must put into effect (Dalmonego 2004):

- the distinction, inside of every institutional level, between role of government that has the task to define the rules, the political address and the verification of the outcomes, and role of management, that it regards the realization of the final product, destined to the community and to the single persons, in order to put into effect the principles of effectiveness, efficiency, adequacy and subsidiarity;
- the redefinition of the organizational and managerial models. For example, for the accounting methods, it comes introduced, beside the accounting financial institution, also the economic-patrimonial accounting, for determines types of public agencies.

2 THE ENTERPRISE RESOURCE PLANNING IN THE PUBLIC ADMINISTRATION

Therefore, the PA needs to have an information system (IS) which is able to support this process of innovation of the public sector. The present study regards a work in progress and explores the introduction of the ICT as part of the transition of the public sector to the above-named managerial model.

The importance of the new technologies in the public sector grows very quickly, the ICT is an essential support for (Dalmonego 2004):

- to innovate the informative, organizational, decisional and control models of PA. Moreover it helps the introduction of new managerial instruments;
- to facilitate the informative exchanges with the external world with improvement of the efficiency of the services and one greater active participation of the citizens, of the enterprises to the political and institutional life;
- to redesign the administrative procedures;
- to facilitate the decentralization of the functions towards the agencies and the organizational structures near the citizens.

In order to favour a fast development of the ICT, the PA has put into effect important normative reforms, such as digital signature, e-government, e-procurement, and so on.

Consequently many PA have decided to use the systems Enterprise Resource Planning (ERP) to support this important change.

When we speak about the systems ERP, we often refer both their flexibility (customizations) through a process of mutual adaptation (Orlikowski 1992) between organizational changes and reconfigurations of the software through several techniques, and their rigidity such to force modifications of the organizational structure of P.A. in order to adapt it to systems ERP, the “vertical standardization” (Davenport, 1998).

The reasons of this appearing contradiction in which systems ERP appear both rigid and flexible is due to various considerations.

The processes of PA must be effectively adapted to models defined with a degree of rigidity, but inside of these, there is a high possibility to personalize the development of the single activities (customizations). There are various modalities of customization. One method consists in developing new applicative routines in order to automate the parts of process not supported from the ERP, connecting them with the product original standard. Some ERP, have opportune predispositions that concur to easily connect added developments without having to bring modifications to the programs. Such developments, however, if extensive and too much numerous, can create ties and problems in occasion of the new passage release (in average there is a new version of product every 3-5 years). The plan of organizational change about the introduction of a system ERP must be confronted with the rigidities and the models (best practice) that the package software imposes.

The PA uses plans that organize the hierarchies, the tasks, the roles and the relations: it is the visible and “official” organizational structure that is known by the managers of the public sector. The introduction of an ERP is able to transform the relations, the procedures, the activities, the tasks, the minds, the mood of the persons that works in the organization in an invisible and surreptitious way. Workplace activities are re-engineered and modified in order to fit the new technology. Hierarchies that define roles and tasks get rapidly outdated.

3 TECHNOLOGY IN USE

Observing technology in use is considered in this research as a way to uncover the relations, the structure and the information flows as they are modified by the use of large scale information infrastructures in the public sector. During our analysis of ERP systems in use, our hypothesis is that the organizational relations enacted by the new system are not limited inside of PA, but they go beyond. The technology is a platform which fixes the social relations that can be interpreted as an organizing flow that cannot easily portrayed by managerial charts. An additional attention will be put on the level of visibility and control of the relations enacted by the new system.

3.1. Hypothesis and methodology

Our hypothesis is that technology organizes work structure in a technical, sociological and psychological sense.

ERP technology is seen as a fixing device for the social structure of the organization. It can make it stable and temporarily observable. Key organizational actors are defined by following the ERP technology linkages with production, adoption and usage sites. In depth interviews will be carried out with key actors in order to understand the direction that the organization is taking.

The organization unveiled through the analysis of the technology is different from that explicit, official one, because ERP imposes specific procedures, relations, ties: how the PA's key actors understand this mismatch?

The hypothesis that we are going to investigate is that the organizational structure can't be separated from the technology, which, in the event of large scale infrastructures like ERP, is oriented to replace the explicit structure of the organization with an other, based on the software and on the exchange of electronic data, less visible and less declared. To test this hypothesis we'll investigate a specific module of ERP: the one that manages the activity of programming and planning of the PA, in order to go to discover this less visible structure.

In order to carry out a comparative study, we'll examine three PA that has implemented ERP, and in specific the module in issue.

We'll study the PA and the ERP through the following methodology.

In the first place we will go to characterize one or two departments of everyone of the three PA that adopt the activity of programming and planning, like prescribed by the relative laws about the planning and programming activity, and therefore they use, for their activities, the module of ERP about the investment planning.

The methodological instruments that we'll use in order to carry out this organizational analysis in progress are:

- the matrix of Bales (1950), extended to the interactions between humans and not-humans (in order to comprise the directionality of the exchange of the data);
- organizational ethnography, in order to comprise the extension of the organizational actors:
 - we'll observe the physical context when the persons use ERP: offices, disposition of furniture, of the computers. We'll analyze the movements of the persons: face-to-face communication, phone calls, mail exchanges. In such way we want to discover the relations that they are not official, but it is normal that they are when the technology takes the place of practical working in use. Our aim is to discover the relations between the persons, to understand the keys actors;
 - analysis of the mediated communication, like as analysis of the content of the circular letters, mails, who is sending a communication and why, which is the receiver. In adding, the persons will compile a module (medium log), in which they will mark the activities executed through telephone and mail in a fixed time.
- analysis of the architecture of ERP, and in specific, the module of planning and programming: the connections of the several software, the networks of the computers;
- analysis of the computer licences, in order to comprise the relations between the organizational actors;
- In depth interviews to the key actors that emerge from the above-named analysis of the field so to understand the feelings on the relationships, and to comprise the story of organization.
- Analysis of the technical literature of the ERP and software providers documentation.

The individualization of the organizational actors, operated through the theoretical perspectives over mentioned we think that will evidence that:

- the organization is not limited to its same borders, because the technology is an organizing platform that fixes social relations that go beyond the borders of the single PA, but it comprises

the constructors of the technology used, the laws that regulate the activity and their legislator, and so on;

- the real organizational structure doesn't correspond to that declared in the interviews to the managers or portrayed by managerial charts. It instead will be discovered by the analysis of the relations that are fixed from the technology. That will mean that the flows of the analyzed relations will not be only limit to those of computer science (coded data traffics binary), but also to the contracts, the interactions that occur between the elements that are defined by the organizing platform (technology);
- The analysis of the daily activities of who works with these systems is founded on the improvisation, on the application of remedies, in a continuous process of adjustment, comparable to the bricolage (Ciborra 2004).

3.2. Analysis of the results

After to have carried out the above-named analysis for every PA, we'll make a comparison between the three PA, in order to see:

- if everyone PA has implemented the system ERP in a different way (for example, different customization, different control system, and so on), and if this different implementation has determined one different organizational "invisible" structure, this confirms our hypothesis that the organizational structure can't be separated from the technology, which, in the event of large scale infrastructures like ERP, is oriented to replace the explicit structure of the organization with an other, based on the software and on the exchange of electronic data, less visible and less declared.
- If the different organizational structure that is organized by the technology, is able to influence the relations between the persons (sociological sense) and the minds and the mood of the persons (psychological sense), it is an ulterior confirmation of our hypothesis.

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