An Information Systems Architecture Model for Public Sector: from data processing state enterprises

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Abstract

This paper describes a new framework for information systems (IS) design in public sector. The main goal is to present an information systems architecture (ISA) that comprises the integration of information flow, technology and business processes in public sector environment. First, we discuss the main differences between public and private sectors and their impact on the design of information systems. Issues such as different business goals (profit versus social achievements), discontinuity of administration policies and of staff commitment have direct impact on the success of information systems.

This research is composed by three phases: theoretical foundation (information systems; ISA and public sector); case studies and the development of the information systems architecture model for public sector. Two basic questions are addressed:
1. How does an information systems architecture contributes for the information systems development in the public sector?
2. How to combine ISA and software in private and public organizations?

The case study is carried in this research to verify the scenery of ISA and IS development process in enterprises. From the evidences fonts of the case study were selected: semi-structured interview and documents. People interviewed were: information managers; software developers and users, to obtain information about the IS development and utilization. Before begin the research, a pilot study was realized to verify the methodology adopted.
Too, some questionnaires were sent to enterprises which development IS for public sector, relating case study and questionnaires that can contribute to minimize generalization problems. Finally, the ISA model developed will be presented for professionals of the IS area and applied in an organization with the objective to verify its viability.

Results obtained

The case studies realized in the public sector present problems and their impact in the IS, which can be grouped in:

? **Institutional questions:** government changes; politic interference; financial resources scarcity; not integration of IS;

? **IS questions:** IS and information redundancy; absent of Decision Support Systems; preoccupation with technological architecture and hardware; resistance to the changes

? **Organizational culture:** distrust in the new managers; ignorance of the user’s necessities

These problems impacts in the development and implementation of the IS such as: cancellation/modification of IS; employers’ lack of motivation distrust in the IS and in the information; slowness in the decision process; delay in the IS development and implementation; misunderstanding of information; systems do not supply the user’s necessities; inadequate evaluation of the necessities of information and its integration.

The contribution of this research can be showed by presentation of an initial structure of the ISA model, which is supported by:

? The elements: organization view, business view, systems, technology and users, which integrate the ISA how is defined in this research and give the basis for elaborate an ISA model for public sector;

? Specific problems in the sector public found in the literature and in the case studies.

The ISA model structure for public sector is composed by: external community and internal community; organization mission, management and planning IS; users and technological structure (hardware, software, telecommunications etc).

The external community involves citizens and internal community involves information systems users as managerial as operational. The mission, management and planning are related to the IS by two ways: the first, by information taken from IS and second, by the necessity of an IS that supports the management and planning activities.

In the user case, it is necessary to observe: an adequate training; to improve the vision of integration by the users and make information systems that give information to the top management.

Some recommendations related to research development and their results are essential: (1) the necessity to configure an information systems architecture as liaison to software development process, that must integrate business, systems and technology, including organizational view and human resources; (2) the definition of ISA here presented that is different from the definition usually accepted in the area, as technological architecture, data etc; and (3) the unknown future of the public structure by privatization wave.