Government Process Management Framework: Algerian Office of Alphabetization and Adult Education Case Study

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Abstract—The enormous and spectacular benefits realized in the industry and the private sectors through the adoption of BPM exert pressure on public authorities. Their introduction is, however, not as simple as that: many of the technologies and techniques that are used successfully in the private sector cannot be transferred directly to government institutions. This is due to (1) aspects of an e-government system and (2) requirements of government processes models. In this work, we show the shortcomings and the difficulty of applying one of the methods used in the business world, namely OSSAD.


I. INTRODUCTION

The utilization of information and communication technologies in public organizations goes back to the beginning of the computing era. The information systems were developed in parallel to those of private companies and organizations. E-government, described as an ensemble of business processes, seems to be the perfect response.

However, the improvement of the efficiency and efficacy of an electronic government system is obviously complicated and requires solutions and development of political, organizational, economical, social and technological nature as well as other requirements. Therefore, a complete revision of the architecture of the information system and probably even more a rethinking and a radical redefinition of work practices and organization modes have been considered with the help of Government Process Management (GPM).

Carry out a reorganization of a business or administration processes requires resources not only to describe the different levels of detail, but also to relate them to the purpose of the organization studied. OSSAD methodology (Office Support System Analysis and Design) provides the means and sets out general rules to use it best in a reorganization plan. This method was originally proposed to assist the automation of office work such as Workflow.

However, for the GPM, the application of such a method is not as simple as that: many technologies and methods that have been used successfully in the private sector cannot be transferred directly to public institutions without taking into account the highly hierarchical and strictly legal basis on which they are based.

In a government institution, the use of such approach must, not only, improve the performance and fulfill the increasing needs of the citizens due to the excellence of the processes, but also tremendously reduce the risks caused by the different factors such as the bad structure of the procedures, the bad consideration of the contexts (social, legal, ...) or more, the bad technological choices.

In this work, we show the inadequacies of applying OSSAD in a context of GPM. To do this, we tried to feed the methodological framework for the GPM previously proposed [16] [18] with different levels and features of OSSAD and show how this method can, or not, satisfy the objectives of framework phases.

The remaining part of the document is organized as follow: A government electronic system being ruled by a number of aspects and requirements, the BPM, in such environment cannot be the same as that in a company. The second part is dedicated to the presentation of the different constraints. In section 3, we present the proposed methodological framework for GPM and its component phases. The OSSAD method, and its different models with their goals are described in section 4. The OSSAD applicability study in the proposed framework is discussed in the fifth section. This one is followed (in section 6) by a case study (in national office of literacy and adult education) to illustrate the various points discussed during the integration. Finally, the article ends with a discussion and conclusion addressing the difficulty of adopting OSSAD in the context of GPM.

II. PROBLEMS OF GOVERNMENT PROCESSES MODELING

The enormous and spectacular benefits realized in the industry and the private sectors through the adoption of BPM exert pressure on public authorities. Their introduction is, however, not as simple as that: many of the technologies and
techniques that are used successfully in the private sector cannot be transferred directly to government institutions. This is due to (1) aspects of an e-government system and (2) requirements of government processes models.

The set of aspects that govern an e-government system can be summarized as follows:

a) The state cannot concentrate exclusively on the needs of customers because the internal procedures of government are generally governed by a fairly strict legal framework [10][12].

b) Many decrees are associated to each business process. These latter do not contain instructions regarding the administrative procedure itself, but regulate how to create some output. Consequently, organizational and technological aspects must be considered [3][5][15].

c) The maturity of e-government can be measured by the level of interaction possible with the authorities, public confidence in the providers of administrative services and their desire, positively, to recommend a service of e-government. These three criteria imply the inclusion of social value [9].

d) The workflow of e-administration needs to develop and improve relations with the citizen as a political actor and holder of the legitimacy. We talk about the political aspect [15].

e) As for each project, an economic plan [14] must be established to ensure that commitments are met and respected.

In addition to the aspects mentioned above, a system of e-government must obey to certain requirements of processes models which some are hereafter [1][10][11][12]:

a) Processes must respond to the objectives described by public authorities and align perfectly with the strategy outlined in the national governmental statement.

b) The processes must be dynamic, easily adaptable to the procedure, and can evolve and support change of the regulation and legal texts.

The analysis of these problems indicates that the team responsible for the establishment of an e-government system is managed and bounded by a set of constraints. Methodological Framework For The Government Process Management

GPM is the thought that derives from the utilization of BPM for the e-government. Let us remember that BPM is a process-centered approach which combines information technologies with the process and governing methodologies in order to achieve targets in perfect alignment with the strategy of the company [2].

The main particularity of the GPM is that it can cover the life cycle of a BPM project while supporting different aspects. The figure 1, present the framework as a transition state diagram. In this model, state transitions correspond to activities of the proposed BPM generalized life cycle [16]. Each of them is decomposed into a set of phases that can support the various constraints of an e-government system.

Figure 1. Proposal methodological framework for the GPM

This framework has been proposed in previous works. His proposition is performed in three steps: (1) the proposal of a generalized life cycle for BPM, (2) the decomposition of each phase of the generalized life cycle into a set of phases, (3) the integration of GCPI / GPR techniques to the framework.

III. OSSAD PHILOSOPHY

Carry out a reorganization of a business or administration processes requires resources not only to describe the different levels of detail, but also to relate them to the purpose of the organization studied. OSSAD provides the means and sets out general rules to use it best in a reorganization plan [18].

It provides a common language easily assimilated by all agents of change. OSSAD thus allows achieving a shared vision of the organization [17]. It is then possible to evolve, more or less radically while taking into account the information technology and communication that provide so many possibilities, but also many difficulties in their implementation. The methodology is based on the use of three types of models that meet well-defined needs (Figure 2).

Figure 2. OSSAD approach

- Abstract Model (AM): aims to conceptualize the objectives, constraints, different functions of the organization and the interrelationships between them
- Descriptive Model (DM): aims to represent the current conditions or envisaged objectives such as the MA have made.
• Prescriptive Model (PM): aims to transform the descriptive model of the chosen solution into technical and organizational specifications.

The major problem of this work is to answer the question «Is OSSAD sufficient to lead a GPM project? ». In other words, we will show how we can integrate the different OSSAD levels in the proposed framework and see if they respond well to objectives fixed for each phase.

IV. OSSAD INTEGRATION WITHIN THE GPM FRAMEWORK

Two approaches can be considered for inclusion: (1) opposite integration, or (2) specific integration. In this work we opted for the first approach. This one is carried by a correspondence between objectives of different phases of the framework and the three levels of OSSAD.

A. Plan

This is the first stage of the life cycle general, it is composed of three phases: organizational strategy, process architecture and launch phase.

1) Organization strategy phase

A government may be considered as a large organization with a legislator power. Indeed, in the government, this phase contributes to the achievement of the vision expressed in the statement of government priorities. It represents a continuous and integrated process of reflection, action, monitoring and adjustment. This process is based on the analysis of internal and external aspects of the governmental institution:

• The Strategic Review analysis: established from the review of the previous plan and annual management reports. At the end of this analysis, we note the guidelines and objectives to be to report, reformulate or modify.

• The social aspect analysis: examines the factors that affect the organization and citizen expectations and key stakeholders. It allows extracting needs, measuring the economic and cultural situation and determining the required assistance level.

• The political aspect analysis: consists of analyzing the factors that govern the relationship with the citizen as a political actor and owner of legitimacy.

• The organizational capacity assessment: is to assess the strengths and weaknesses of the organization, skills and constraints on its activities.

• The economic aspect analysis: is to estimate the cost, time and resources to oversee the project.

• The additional aspects analysis: addresses other important factors for the sector (labor, legislative changes, restructuring of services, etc.).

Therefore OSSAD cannot support this phase and its objectives are supported by the government itself. These are expressed in the form of laws and legal texts.

2) Process architecture phase

Process architecture phase is a prerequisite for any organization wishing to undertake successfully the management of its processes. The results of this phase include: (1) Documented and agreed process architecture, (2) A list of end-to-end processes, and (3) An organization process view.

The first two objectives are met by the decomposition of the business processes function of the OSSAD abstract model (MA). This one is used to represent different levels: functions, sub-functions and activities as well as communication between components of the same level (horizontal linkages) with the notion of information packets. In addition, the tree representation is used to navigate between the different levels through the Zooming technique adopted by OSSAD.

The process documentation is carried out through abstract forms: (1) function/sub-function form, (2) Activity form, (3) Package form and (4) legend form. They consist of a specific set of fields called attributes. Note that the list of end-to-end processes is clearly displayed and illustrated in the fourth form.

In our framework, the pyramid of process architecture, proposed in [8], enables the decomposition of the institution (top to bottom) at three levels: (1) a list of process models, (2) detailed processes, and (3) activities.

The process view shows how the system is presented from the angle of business processes. It is achieved through the relations graph of abstract model. The latter, presents graphically and formally relationships between functions within the organization and its environment. Note that in the government, the different levels, the vertical and horizontal linkages are extracted from legal texts.

3) Launch pad phase

It is often very difficult for organizations to determine where to start a GPM project. The launch pad phase is the platform in which projects are extended, created and launched. It aims to: (1) Definition of the actors involved in the project, (2) Stakeholder engagement and commitment, and documented and agreed expectations, (3) Process selection matrix, (4) Prioritized processes for the Understand, (5) An initial implementation strategy, and (6) Project management.

OSSAD decomposes the actors involved in four groups: (1) OSSAD project team, (2) users, (3) managers, and (4) expert consultants. Each group is composed of several roles, each with a specific mission. For the first objective, this decomposition is insufficient to conduct GPM project. We must therefore associate additional roles that are presented in the case study.

The second, third and fourth objective OSSAD does not have the tools to achieve them.

OSSAD adopts several approaches, namely: Speculation, prototyping, pilot experiment, simulation. They can meet the sixth goal. Whereas, the latter is produced by the <manage project> function offered by the abstract model of OSSAD.

B. Design

This second stage of the GPM life cycle includes: understand phase, innovation phase, person phase, and development phase.
1) Understand phase

This phase is intended for the project team and the organization members. It is to lay the foundation for the study and to future performance. It includes: (1) Appropriate metrics sufficient to establish a baseline for future process improvement measurement and prioritization attribution, (2) Measurement and documentation of the current or actual performance levels, (3) Models of the current processes, (4) Documentation of what works well (for taking into the innovative phase) and what could work better, (5) Identification of any “quick wins”, and (6) Establishing a report on the phase.

The first two objectives can be provided by the «Project Define» function offered by the abstract model of OSSAD. The rest of objectives are carried out through the «Situation Analysis» function of the abstract model.

2) Innovation phase

The purpose of this innovation phase is to develop new options and alternatives for the processes in the project. The various documents that can be created as a result of this phase include the following: (1) Redesigned process models, (2) Documentation supporting the redesigned processes, (3) Business requirements of the new process options, (4) Simulation models, (5) Confirmation that the new process option alternatives will meet stakeholder expectations, (6) Confirmation that the new process options are consistent with the organization strategy and will achieve the designated process goals, (7) A process gap analysis report, (8) The project plan in detail for the People and Develop phases, and (9) Detailed report outlining the steps taken, alternatives and options considered analysis, findings and recommendations.

These objectives are achieved through «Solutions design» function of abstract model.

3) Person phase

During this phase occurs a description of the redefined or created posts, as well as the definition of the business and management staff with their employment objectives. The way in which their performance will be measured and managed is also modified or developed. This phase includes: (1) Redesigned role descriptions and goals that have been discussed and agreed with the people who will be executing them, and (2) Performance management and measures for appropriate roles, which have also been discussed and agreed with the people who will be executing them.

OSSAD covers the first goal through the matrix of activity/role. The second objective is not covered.

4) Develop phase

The development phase includes the steps necessary to take new processes (improved or redefined) from the innovation phase to the implementation phase. Delivered results of this phase are: (1) A high-level overview of the solution, (2) Detailed business requirements, (3) Finalize software selection documentation, (4) Software specification/design, (5) Software development/configuration, (6) Software test scripts and results, (7) Hardware specification, (8) Hardware test scripts and results, (9) Integration test scripts and results.

This phase is supported by the «Achieve the desired solution» function.

C. Deploy

Is to deploy the process in a real execution environment by driving organizational, business and technology change.

1) Implement phase

The implementation phase is the phase where all improvements of designed and developed processes are brought to life. When this phase is completed, the organization can expect to have: (1) Trained and motivated staff, and (2) Improved or new processes that work satisfactorily, according to the identified stakeholders’ requirements and needs, and as outlined in the business case.

This phase is supported with «the realizing the selected solution and control the implementation» function of the abstract model.

D. Pilot and Evaluate

The purpose of this phase is to ensure that the results described are realized. It mainly includes the delivery of the benefits of process management and reporting of benefit.

E. Realize value

The main outputs of this phase are: (1) Benefits Summary, (2) Matrix of delivered benefits, and (3) Registration of realized benefits.

The OSSAD methodology does not provide adequate tools to support those objectives.

F. Sustainable Performance

The purpose of this phase is to ensure the sustainability of process improvements. The considerable investment in throughout the project must be maintained and improved over time and certainly not diminished.

This last phase involves two improvement steps (1) continuous improvement approach (GCPI) and (2) radical improvement approach (GPR). In our framework, the process of radical improvement cycle covers all GPM framework, but continuous improvement covers only phases (design, deploy and evaluate).

V. CASE STUDY (NATIONAL OFFICE OF ALPHABETISATION AND ADULT EDUCATION)

1) Organization strategy phase

As a result of the analysis of internal and external aspects, the government has decided to adopt a new national literacy strategy. This one is delivered in a series of executive decrees (Decree 07-400 completing and modifying the Decree 95-143, Decree 08-28, Decree 08-06 and Decree 07-61). The following table summarizes the overall implementation strategy:
TABLE I. STRATEGY OF THE ORGANIZATION

<table>
<thead>
<tr>
<th>Mission</th>
<th>Fight against illiteracy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Goals</td>
<td>Ensure the culture and give every citizen the opportunity to participate in the country development.</td>
</tr>
<tr>
<td>Strategic Intention</td>
<td>Cooperation of the following departments: Finance Ministry, Education Ministry, Higher Education and Scientific Research Ministry, Communication Ministry, Religious Affairs Ministry</td>
</tr>
<tr>
<td>Implementation Global Strategy</td>
<td>Transformation of the literacy center in a national literacy and adult education office. The office is managed and conducted by a director. His role is to: (1) manage and supervise the activities of local organizations, (2) place to their provisions the teaching methods, and (3) train necessary staff</td>
</tr>
<tr>
<td>Local Organization</td>
<td>Creating a local literacy center in each municipality and data. Each organization is managed by an inspector nominated by the National Guidance Ministry. Next to each organization, a motivation assembly is created.</td>
</tr>
<tr>
<td>Pilot Site</td>
<td>The wilaya of Djelfa</td>
</tr>
<tr>
<td>Enlarging means</td>
<td>Establishment of a web portal. This will be a space for exchange and a source of information, communication and sensitzation which will address all aspects of the office. It will also provide citizens and in particular the relevant tranche the online services that brings citizens more close of this institution.</td>
</tr>
</tbody>
</table>

From the GPM perspective, the web portal is divided into several web portals specific to each local center. The difference between a project and another reside in the social and cultural levels of each Wilaya.

2) Process architecture phase

All functions of implementation of the literacy strategy are listed in Decree 07-400. In this work we treat the function «Recruitment of charged of literacy» as an example. The latter is divided into four sub-functions (Decree 08-06), which themselves are comprised of several activities.

For validation, the fact that everything is governed by Decree therefore processes are validated. The documentation is represented by the set of abstract forms.

Figure 3. Overview of the process decomposition

For the first objective, roles to integrate the actors involved in the project are:
- **End users of the system** (in group 2): the services must use a system management process customer oriented in order to provide accessible, transparent, manipulated and trust services.
- **Public authorities mentioned in the legal texts** (in group 3): their integration provides a high-level understanding of the project, establish an approved report and measure the impact of the project.
- **Law specialists and lawyers** (in group 4): GPM project is led by a legal framework. Therefore, their exploration is essential to extract concepts and ensure the adequacy of processes to develop with activities described in legal texts.

For the 5th, government priorities have decided to put the wilaya of DJELFA as a pilot before generalizing to other wilaya. OSSAD provides an approach to implement a pilot approach with GPR vision.

The 6th objective, is to ensure the continuity of the project development, support of internal organization of the project team questions the exchange of the reports between the project team and the management of the organization, the integration of emerging ideas for the project in order to improve communication between members [8]. OSSAD down this goal in seven functions: (1) identify the problem, (2) identify the players motivated for change, (3) create the climate and conflict management, (4) Referee (5) monitoring the process (6) manage documentation and (7) continuously evaluate the state of the project.

4) Understand phase

For the 1st and 2nd objectives, OSSAD addresses these objectives through the «Project Define» function consisting of five activities: (1) contact with a decision maker (in our example this is the director of the National Literacy and Adult Education appointed by the government priorities office), (2)
define the three conditions for success (how to have a common project, clarify objectives, fix the metric evaluation, (3) transforming the methodological rules into method (envisage the analytical tools, for GPM add officials newspapers), define and adapt the roles involved in the project (as defined in the previous phase), establish a timeline (in GPM is fixed by the government itself through the roadmap), sketch the distribution of tasks and deliverables, make an estimate of time and money, (4) sensitize staff, (5) prepare the contract.

The rest of objectives are made by the «Situation Analysis» function is to develop the appropriate tools, collect and process data, make a diagnosis and modeling.

5) Innovation phase

The function «Solutions design» is divided into six activities : (1) update the original contract, (2) confirm the method, (3) provide options (for GPM the options must be approved by government priorities) and (4) create options, (5) modeling the options and (6) evaluate the options.

6) Person phase

The example below is an example of the matrix activity / role of roles corresponding to those responsible for the overview of Figure 5.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Director</th>
<th>Inspector</th>
<th>Counselors</th>
<th>Teachers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Publication Of The Recruitment Notice</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Receive The Folder</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

7) Develop phase

The function «Achieve the desired solution» consists on: the reorganization plan, inform the business personnel, make the steps of hardware and software, develop and train staff and set in motion the system. The «Control implementation» function is to collect and process data, and make recommendations for business personal.

VI. CONCLUSION

We focused in this work to show the difficulty of applying one of the methods widely used in private institutions. This method, called OSSAD, is a method of enterprise graph modeling oriented office. In the following table we present a mapping between OSSAD phases and those of the framework that we propose:

<table>
<thead>
<tr>
<th>GPM Lifecycle</th>
<th>GPM phases</th>
<th>Coverage with OSSAD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plan</td>
<td>Organization strategy phase</td>
<td>does not cover</td>
</tr>
<tr>
<td></td>
<td>Process architecture phase</td>
<td>Covers</td>
</tr>
<tr>
<td></td>
<td>Launch pad phase</td>
<td>Partially covers</td>
</tr>
<tr>
<td>Design</td>
<td>Understand phase</td>
<td>Covers</td>
</tr>
<tr>
<td></td>
<td>Innovation phase</td>
<td>Covers</td>
</tr>
<tr>
<td></td>
<td>Person phase</td>
<td>Partially covers</td>
</tr>
<tr>
<td></td>
<td>Develop phase</td>
<td>Covers</td>
</tr>
<tr>
<td></td>
<td>Implement phase</td>
<td>Covers</td>
</tr>
<tr>
<td>Pilot and Evaluate</td>
<td>Realize Value</td>
<td>does not cover</td>
</tr>
<tr>
<td></td>
<td>Transform Value</td>
<td></td>
</tr>
<tr>
<td>Sustainable Performance</td>
<td>GOPI</td>
<td>does not cover</td>
</tr>
<tr>
<td></td>
<td>GPR</td>
<td>Covers</td>
</tr>
</tbody>
</table>

It appears well that uncovered phases by OSSAD are due to the complexity of GPM projects with a large granularity while OSSAD is basically dedicated to the low granularity. However, it should be noted that the common factor between OSSAD and e-government is the office work that is strongly present in the latter.

VII. REFERENCES