Strategic Alignment through Organizational Modeling: A Case Study in a Public Institution

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Abstract. The results-oriented management, performance evaluation systems and operations alignment entails the creation of a new organizational environment with novel management practices. This paper addresses organizational strategic alignment issues and offers a modeling technique as a possible solution. A case study of Information Technology alignment in a public organization was developed to test and validate the technique. The study uses a methodology to link the information systems with organizational objectives. The modeling technique proposed by this methodology can be used by managers to formulate, communicate and align the strategy with operations execution. Thus, the methodology applied in this case study can assume a central role in the transformation process of public organizations trying to achieve efficiency and providing quality services to the citizens and society. Finally, this paper presents a new alignment management practice based on organizational engineering.

Keywords: Organizational modeling, strategic alignment, operations management, information technology alignment.

1 Introduction

In the present unstable economical context, public and private organizations are faced with a number of challenges, compelling those to rethink the management practices for better achieving their missions.

Executives use many management tools [1] in the organizational development management processes such as strategic planning, performance management, quality management, business process management, information technology management and others. However, the remaining challenge is to formulate an integrated management process that combines all these processes and tools.

This paper aims to present a methodology usage, named MLearn [3], for assuring strategy and operations management alignment. Based on a case study involving the modeling of a public institution, this paper illustrates how it helps to achieve strategic alignment of Information Technology – IT.

This paper is structured as follows: next section (2) introduces some references that evidence the awareness for the need of strategic alignment approaches; in the third section (3) the alignment approach is presented; the fourth section (4) covers an example of the methodology implementation in a public organization; in the last section (5) the conclusions are presented.

2   Strategy and Execution Misalignment

Management practices adopted by different organizational units usually are unrelated among themselves because they do not share the same base conceptions. Kaplan and Norton [4] presents a study where more than 60% of the organizations do not link their Budget, Human Resources – HR and Information Technology – IT plans with corporate strategies and usually they are unsynchronized with the enterprise calendar agenda.

Luftman [6] has been conducting surveys annually that show IT alignment is one of IT managers top concern for many years. Another related concern, also a top priority, is the IT strategic planning. Luftman [7] also presented a well-known methodology that accesses a company´s alignment. His instrument evidences the complexity of the alignment effort by presenting a methodology and a Tally Sheet, providing 38 practices organized into six criteria of maturity: communications, competency/value measurement, governance, partnership, technological scope and skills.

In public administration this unrelated management practices is also highlighted. OECD [8] mentions that only 18% of their members link expenditures to all of their output targets and many said it was not common for politicians to use performance results in decision-making.

2.1   Information Technology Alignment

The Strategic Alignment Model (SAM) proposed by Henderson and Venkatraman [9] is the most referenced approaches to the Business and IT alignment problem. Its main objective is the integration of the strategic and functional alignment. It evidences the complexity of this problem, by underlining the need to align the functional dimensions (business and IT) and the need to align both strategies with both infrastructures and processes.

Other more recent models also evidence this complexity. Examples of this are the Benbya and McKelvey [10] and the Gutierrez models [11].

3   Strategic Alignment Using MLearn Methodology

Several management practices can be used for strategic alignment. Kaplan and Norton [5] introduced the closed-loop management system. The Hoshin planning [12] is widely used in Japanese industries. In the public sector, some efforts for strategic alignment can be seen in projects using quality management assessment tools (CAF, ISO 9000, etc.).

One of characteristics that distinguish MLearn [2] from those practices is the use of modeling techniques that allow the design of the organizational architecture where the competencies structure are intrinsically linked with the strategic objectives.

The MLearn methodology was developed by Coelho [2] to integrate the various existing management systems, enhancing their performance through the use of a modeling technique of the organizational competencies.

According Coelho [3], the MLearn is a methodology that guides the organizational development through the design of the organizational strategy based on modeling techniques and interactive workshops. It is a top down, integrated, and systemic approach, strategy-focused and service oriented.

The purposes of MLearn methodology are: (i) to assist the definition, control and communication of business strategy, providing organizational agility; (ii) to integrate the various organizational management practices; (iii) to create a clear picture of organizational and individual accountability: (iv) to contribute for the effective change of behaviors.

The MLearn methodology process can be divided into stages:

- Stage 1: Formulation of the strategic vision of the organization (ought to be):
    1. Clarification of the organizational medium range strategy: mission, vision, objectives and measures,
    2. Discovery and definition of the organizational competencies
    3. Deployment of the organizational architecture in terms of the decomposition of the organizational competencies and respective objectives.
- Stage 2: Operational plan definition (to be):
    4. Review of short term strategy: objectives and measures of competencies,
    5. Design of competence activities, tasks, operations, instructions and rules,
    6. Design of scenarios and processes as workflows
    7. Identification of organizational development initiatives and process improvement projects,
    8. Planning of human resource capacity and individual objectives and measures
    9. Planning information systems applications needs
    10. Planning financial resources needs

The organizational modeling begins with the "ought to be" framework design. Based on this framework it looks at the "as is" trying to define a "to be", according to the capabilities of the organization, closer to the "ought to be".

3.1   Organizational Strategic Vision Formulation (Ought to Be)

This methodology stage is focused on the discussion of the following issues: Definition of the mission and vision of the institution, understanding of the business strategy and of the organizational strategy.

The process of clarifying the organization's strategy defines a unique guideline, conveniently shared with the two highest levels of the organizational hierarchy, and specifically through: (i) indicators and targets, (ii) model of organizational competencies (the organizational architecture); (iii) priorities for improvement, (iv) guidelines for establishing the institution's business plan and budget.

Identifying the organizational competencies means to discuss what the organization needs to know how to do, in order to respond to the clients, according to the business strategy. An organizational competence is a system that provides business capabilities to respond to internal or external stimuli.

The short term strategy is expressed in terms of objectives related to the strategic stakeholders. The conditions to assure the business strategy should be created near the external context (set of strategic stakeholders) and internally by means of the organizational competencies.

In this stage it is important to define the strategic role of information systems.

3.2   Operational Plan Definition (To Be)

According to the organizational strategy defined in the previous stage and having in mind the strategic priorities, it is possible to move forward to the stage of operational plan definition (to be).

In this stage, the operational or short term objectives and measures of the organizational competencies are defined as well as the organizational change initiatives needed to achieve them. Thus, the organizational competencies framework is the driver of human resources allocations and subsequent definition of the individual objectives. This methodology reveals itself to be an important instrument for the human resource management, allowing alignment between individual and organizational objectives and goals.

Modeling the organizational competencies into activities and tasks helps choosing the best process scenarios to have the work executed. This is the contribution of the methodology approach for process improvement initiatives.

The information needs for each organizational competence can also be defined in terms of requirements for information systems that define the alignment technique presented in the next section.

3.3   Information Technology Alignment of MLearn Methodology

The organizational strategy, expressed in terms of the organizational architecture by means of organizational competencies, play the key role of linking the information systems and processes to the business strategy.

The alignment can be achieved going down in the organizational architecture. From first level the organization competencies and strategic objective going down to second level and operational objectives until activities, tasks and processes.

From activities is possible define information needs of people and establishing the process automation opportunities and its impacts on operational and strategic objectives.

4 Organizational Modeling Case Study

The public institution chosen for the case study is the Army Geographic Institute (Instituto Geográfico do Exército – IGeoE) which is internationally recognized for having good management practices such as quality management and process management, among others.

4.1 Organizational Strategic Vision Formulation (Ought to Be)

The strategic formulation starts with mission and vision statements. The Institute mission is conceiving, producing and selling geographic information. The vision is to be the Portuguese leading provider of geographic information and to be considered an international reference by the quality of its products and services.
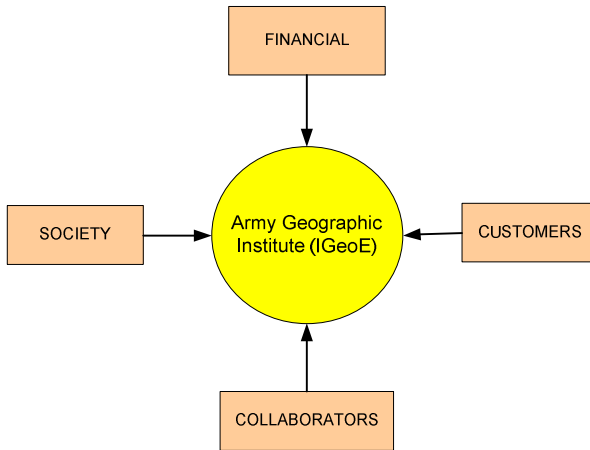

Fig. 1. Motivation model

Once clarified the mission and defined the vision, it is necessary to translate it into medium term strategic objectives and indicators. However, first it is necessary to identify the Institute motivations or the reasons for its improvement and development. Fig. 1 shows the motivation model proposed by MLearn methodology.

Thus, in table 1, with reference to those motivations it is possible to define the strategic objectives and how they will be measured (indicator, periodicity and type of evaluation).

Table 1. Strategic objectives and measures

Strategic objective	Indicator	Periodicity	Type
Customers motivation			
To increase customer satisfaction	percentage of satisfied customers	annual	quality
To increase products sales	sales	monthly	profitability
To increase product quality through innovation	success of new products releases	annual	quality
Financial motivation			
Reduce costs	cost of each product	monthly	profitability

In this stage, the step of clarifying the business strategy seeks to identify the model of the external context, i.e. identify the strategic stakeholders of Institute. Strategic stakeholders mean all external entities that affect the strategy of Institute and simultaneously may be influenced by the institution, in order to facilitate achieving its strategy (Fig. 2).
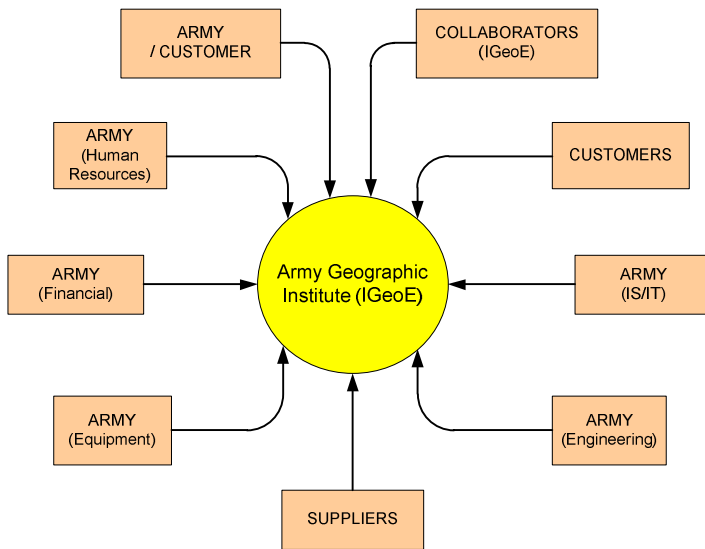

Fig. 2. Strategic stakeholders

The Army (and some of its units), is both the main customer and the main supplier. Customers are identified as some private firms and other public organizations such as municipalities, central government entities, etc. Other suppliers represent companies that provide the necessary materials for the production chain of the Institute.

The Fig. 3 shows the Institute first level model of organizational competencies. These competences can be divided in two types: the core (inner circle) and support competencies (outer circle).

The core competencies are those that are linked closely to the added value chain of Institute products and those that are responsible for the organizational commitments to customers. Like "Manage and Promote Product / Service", a competence which has expressive visibility by customers.

The support competencies aim to create conditions for a proper organizational functioning through the issue of guidelines and provision of resources and infrastructure, like "Managing IS / IT".
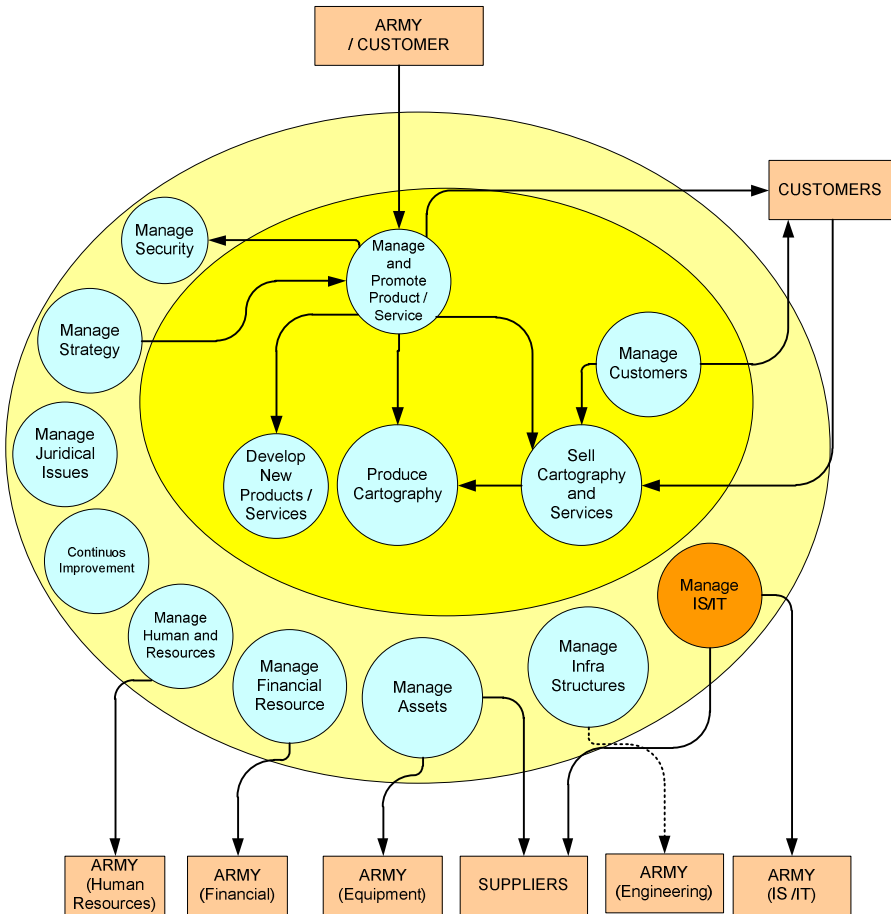
Fig. 3. First level model of organizational competencies

Each organizational competence must be organized in terms of sub-competencies of lower levels, until resulting in the most elementary process.

4.2 Operational Plan Definition (To Be)

At this stage, the operational objectives are defined based on the critical success factors to attain strategic objectives and the relationship of the organization with its strategic stakeholders.

The organizational competencies are detailed into activities and tasks and the best process scenarios are chosen to achieve the operational objectives.

As mentioned previously, the Institute has been using several of the known management best practices. MLearn is a supporting methodology that allows link these operational practices.

The quality management is one of these operational process covers the Institute annual quality targets, the improvement plans for development of new processes and promoting changes in the products. The quality management process has ISO 9001 certification. The continuous improvement is the Institute modeled organizational competence responsible to link of quality initiatives with operational and strategic objectives.

The human resource is another modeled competence responsible for the alignment of organizational goals with individuals' goals. Portuguese Central Government has an initiative for organization performance evaluation at three levels: entity, managers and servant. MLearn methodology has capability to address this initiative in integrated way.

Manage Information System competence is responsible for definition of contribution of information technology to the operational objectives. This alignment technique explained in the next section.

4.3 Institute Information Technology Alignment

The design of different scenarios supports the processes improvement practices and accordingly potential improvement contribution of information systems. The methodology assists in the identification and specification of information needs to the implementation of Institute systems applications.

For instance, considering Institute warehouse where a worker receives a material from a supplier. The tasks that he would perform are (1) validation according to the order, (2) update of the material database and (3) range the material in the warehouse. With the modeling technique we design a workflow with the three tasks. Then to implement an information system, is necessary to identify the information needs and the information requirements. The question is how to assure strategic alignment. In fact, the worker in the warehouse normally knows neither the business strategy nor the whole organization.

Some questions can be formulated: what is the impact of applying IT on that workflow? What is the return of the investment? Who should validate the contribution of the worker? Normally is the manager of the warehouse who is in charge of validating the results of interviewing the worker. But the issues raised to the worker are the same, as the warehouse manager also has a partial view of the organization.

But if you model the organization in terms of organizational competencies you get a great help. The first task belongs to the organizational competence "Buying" and, the second one to the "Materials Management" and, the third one to the "Warehouse

Management". The negotiations with suppliers may depend on the time of clearing the invoices, which depends on the time of validating the material in the warehouse.

So the information requirements coming from the first task should be validated by the buying manager and not by the warehouse manager. The second task should be validated by the materials manager. MLearn uses the business objects to define the information system needs. These are expressed in terms of objects, services, attributes, status diagrams and object contexts.

The information systems requirements are not gathered by interviewing the users. The users don't have the necessary conditions to identify their own information requirements; they have neither the knowledge of the entire macro process nor the expertise on IT potential to support it. It is the continuous improvement coordinator of each macro process that do that job with someone from the information systems area to assure integrated and aligned business and information systems strategies.

The business objects and the organizational competences are used to define the applications systems in an business specifications of the information systems, systematized by organizational competences, will be useful to support the acceptance tests of the software applications and the users training on the procedures and new software. The information needs can be identified based on the Operations, Instructions and Rules or even on the processes or workflows designed with them.

The Institute organizational architecture modeling allows the ease identification of information systems impacts on operational and strategic objectives.

5   Conclusions

The MLearn methodology as organizational alignment practice is the result of a combination of various contributions to support operations and continuous improvement initiatives.

It offers a common language and an integrated approach to several organizational practices beyond information technology management: strategy management, quality management, reengineering, control management, knowledge management, human resource management, operational risk, and innovation and process management [2].

The adoption of MLearn allows: a model for expressing objectives levels and its indicators, to facilitate the understanding of the strategy and the collective commitment, and defining the essential foundations for the strategic alignment across the organization.

In this exploratory case study demonstrates the importance of adopting an organizational model, even in organizations referenced management practices. The methodology is effective in diagnosing and organizational alignment.

This study also demonstrated how information technology can be aligning to the organizational strategy and objectives. This study contributes to the implementation of a continuous improvement approach using of information technology. That provides a quantum leap in the maturity of public services and a significant increase in its efficiency, responsiveness and quality reflected in the organizational performance.

This study, therefore, tested the MLearn methodology application, validated the implementation process and provided guidance to public organizations that want to begin the practice of organizational improvement process through organizational engineering.

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