



Information System Governance in Moroccan Universities: Case of Student Affairs

El Mostafa Rajaallah ^{#1}, Youmna El Hissi ^{*2}, Abdelkrim Haqiq ^{*3}

Data Analysis and Information Security Team

Systems Engineering Laboratory,

Ibn Tofail University, Kenitra, Morocco

¹rajaallahelmostafa@gmail.com

Computer, Networks, Mobility and Modeling laboratory

Department of Mathematics and Computer

FST, Hassan 1st University, Settat, Morocco

²younnaelhissi@gmail.com,

³abdelkrim.haqiq@uhp.ac.ma

ABSTRACT

Good governance of information systems is a guarantee of an optimal contribution of these systems to the overall performance of an organizational being. The aim is to ensure that the information system in ction is well managed and that it meets the expectations of the various internal and external stakeholders.

The governance of information systems consists of mastering information, processing it in a timely manner and making it available to decision-makers and users. It can be considered as steering and alignment of the information system on strategic orientations and Design, implementation and maintenance of the information system and its quality.

In this work we are interested in the governance of the information system of universities and in particular the management of student affairs by focusing on APOGEE as an Application for Organization and Management of Teaching and Students. Because, since its implementation in 2003 APOGEE could not play its role as an information system in Moroccan universities and frequently critiqued by users, students or teachers.

Our objective is to contribute to the good exploitation of APOGEE in the Moroccan universities based on the quality of the data entered in the system and the quality of the processes.

Key words: Information System; Governance; Data Quality, Process Quality.

1. INTRODUCTION

A variety of approaches to definitions of the information system (IS) have been proposed in the literature. The agreed approach is one that considers an information system as a combination of a computer system and human activities to support operational branches, management and decision-making in an organizational being [1].

Since the adoption of the LMD system (Bachelor-Master-Doctorate) system in 2003, almost all Moroccan universities are involved in the implementation of an integrated management software package "APOGEE", which is an application for the organization and Management of teaching and students, proposed by the French Agency for the mutualization of universities and institutions (AMUE) since 1995.

APOGEE was the subject of a tripartite agreement between the Ministry, the Embassy of France in Morocco and the AMUE. This project included, among other things, a phase of Development of a version of APOGEE adapted to the specificities and needs of Moroccan universities.

APOGEE is designed for the management of students' affairs, administrative, pedagogical registration (attachment to a diploma, a year, a set of educational elements), exams (planning, transcripts) semester and year (assisting with deliberation) and the production of diplomas (minutes, appendix to diploma, etc.) in an efficient, reliable and flexible manner.

The idea behind the choice of APOGEE is the establishment of a higher education information system in Morocco; this computer tool will be a great use for the retrieval of statistical information. In France, it allowed the exchange of data with secondary schools (via pre-registration), with the Department of Evaluation, Foresight and Statistical Performance of the Ministry ... etc.

But despite the efforts made by Moroccan universities to implement this software solution from the acquisition of hardware and software prerequisites to end-user training, but until now this tool could not play its role as an information system in universities and often criticized by users, students or teachers.

In this work we will address the issue of the governance of information systems in Moroccan universities, focusing on the

governance of student affairs, for this we will begin with the presentation of an evaluation of the quality of the student affairs business process in the Moroccan Universities, based on our professional experience.

This paper is organized as follows, first, we present the evaluation of information systems, the next parts will be devoted to IS Governance, and the discussion of some experiences of Moroccan universities concerning the governance of information systems. Finally, the conclusion is devoted to the presentation of some practical actions to overcome the hindrance and ensure a good functioning of APOGEE.

2. EVALUATION OF INFORMATION SYSTEMS

A. Contexts

This section provides an overview of the state of the art in the evaluation of information systems. For example (Stylianou et al., 2000)[2], the quality of the infrastructure, software quality, data quality, quality of information, administrative quality and quality of services are considered. (Chrissis et al., 2003)[3] emphasize the need for a software process, describing the activities and artefacts generated. On the basis of this work, (Oliveira et al., 2012) consider the following dimensions are considered: the quality of the processes used in an organization, the quality of artefacts generated during development, the quality of the data and finally the quality perceived by the organization, (Comyn-Wattiau et al., 2010) [4] have proposed numerous frameworks for the evaluation of the quality of an IS.

In this work, we focus on the quality of the processes used in Moroccan universities and the quality of the data. We will not consider the quality of artifacts generated during development, as the development part of APOGEE is a black box for the majority of Moroccan universities. Concerning the quality of the final interfaces, there are no unified user profiles and models for IS evaluation.

B. Quality of student affairs information system

1) The quality of the data

The functioning of the majority of large structures today relies on the processing of information, and we know that the value of an information is a data (Figure. 1), and if the data is unreliable then it generates false information. So we are facing a failing information system.



Figure 1: The information [5]

Most Moroccan universities consider the data entered in the pre-registration platforms as a basis for input on APOGEE during the registration period, this data concerns about 42 fields, considering the flow of enrollees at the beginning of each academic year, The input operator can not verify the reliability of all the data entered, and in the best case it can verify the 12 mandatory fields, which justifies the use of student files, almost, at each statistical request of the instances Competent authorities.

Generally, a decision-making system is designed to help decision makers make relevant choices based on historical data, which implies that if the data is incomplete or there is a concern for reliability, the information system will not play properly its decision-making role.

In summary, the quality of data will influence good governance, which requires a clear identification of the reliable information that is desired at the right time. Good governance is about mastering information, dealing with it in a timely manner and making it available to decision-makers and users.

2) Process quality

By definition a process is a set of chronologically structured activities (Figure. 2) whose purpose is to produce a result in the context of an organizational being. So it must be well managed to fulfill its crucial role in the IS.



Figure 2: Process flow [6]

Figure Labels: Use 8 point Times New Roman for Figure labels. Use words rather than symbols or abbreviations when writing Figure axis labels

According to the COBIT (Control Objectives for Information and related Technology) reference framework, developed in 1994 by ISACA [7], the governance of Information Technologies allows to orient and control the management processes [8]:

- Providing strategic directions for the various management processes.
- By using business processes to provide the requested services.
- Each business process must be accountable for the achievement of its objectives.
- Controlling the smooth running of processes, improving them and, if necessary, defining new directions.
- From the four previous points we can deduce the usefulness of the adoption of a managerial approach for the control of the processes and the good governance of the IS, so that they can reach the expected objectives.

At the conclusion of this part, the processes have a more or less important responsibility in the management of resources. The link between processes and resources does not measure the level of use, but the level of management of the resource.

3. IS GOVERNANCE

A. Context

In 1987, the Nobel Prize in Economics Robert Solow pointed out that the mass introduction of computers into the economy, contrary to expectations, did not translate into a statistical increase in productivity [9]. His paradox is formulated as "you can ("You can see the computer age everywhere, except in productivity statistics"). Robert Solow argues his paradox by the time lag between knowledge investment and its impact, due to training time and the effects of obsolescence.

For (Reix, 2005) [10], the management of an IS project is a construction process that is managed by a management of resources (software and human resources) and risks, that is to say an aggregation of three other concepts: Process, resource and risk.

(Georgel, 2009) [11] takes into account the complexity of managing information technology. For them, an IS project is characterized by exploitation of specific resources: actors, information, software components, technical components and financial resources. The availability at the same time of each of the resources may be necessary to accomplish the activities of a project.

Bruno Claude pierre 2010 [12], made a double observation. First, studies have shown that the need of professionals in the governance of IS cover the easier integration of good practice frameworks with the specific situations of companies. On the other hand, current researches does not propose a solution to build a properly urbanized information system to support all the activities of the governance of Information Systems.

B. APOGEE governance

Concerning APOGEE, Marie-Pierre DORVILLE [13] Researcher at the University of Limoges, at the Meeting of November 20th 2001 of the AMUE for the presentation of the guide "Modernizing the schooling and the life of the student". Discussed the point of a good framing of the project, focusing on the practices of institutions that are not only different from one institution to another but also within the same institution.

It is the first stage of the project and must be the subject of special attention by the institution. It is the first stage of the project and must be the subject of special attention by the institution.

The step of a good framing it will therefore rely directly on the motivations that prompted an institution to choose APOGEE [14].

They must therefore be perfectly defined (Figure. 3):

- The missions of the different actors,
- The composition of the teams and their mode of operation.



Figure 3: Working in team [15]

Two major structures can be suggested:

- The Apogee Project Team: the project's operational unit, which will keep the project. This team mainly carries out the tasks of analyzing the work to be carried out and assessing the costs and needs, coordinating the work of all stakeholders (IT services, student affairs, accounting services). The facilitation of functional correspondents in the establishments and the follow-up of the work.
- The steering Committee: a decision-making body, bringing together members of the institution, in charge of policy issues and possible arbitrations.

4. WHAT MODEL OF IS GOVERNANCE IN MOROCCAN UNIVERSITIES?

Attempts have been made in recent years, such as the MISSION project (Establishment a National Operational Information System Service). This project was co-funded by the Tempus Program of the European Union in 2012 under the reference [16] and piloted by the University Hassan 1st. Among its objectives were the institutionalization of information system services in Moroccan universities, the development of a master plan for universities concerning the Presidency and institutions, and the development of an ERP-MISSION software package based on Open ERP.

This project provided for the improvement of university governance through:

- Modernization of administrative management
- The institutionalization of information
- Access to reliable information faster

Several workshops organized within the framework of this project, including a training workshop on the models and governance of information systems services from 24 to 28 March 2013 at the University of Maine Le Mans in France. The objective of this Workshop is to present the experiences of the European universities involved in the project.

The Mutual spirit of this project is worth mentioning, for example, the case of the Tempus Go-Univ, co-funded by the Tempus Program of the European Union under the reference [17] coordinated by the Hassan II University in Casablanca: who has accumulated on the achievements of the MISSION project, in particular the state of the IS in Moroccan universities organizations to accomplish one of its objectives, which is to structure the Information System at the level of universities to make it an appropriate tool for decision-making.

The Tempus RECET project, co-funded by the Tempus Program of the European Union under the reference [17,18], coordinated by Hassan I University, aims at strengthening the competencies in Institutional Assessment by exploiting the information systems of universities set up within the framework of the MISSION project for the implementation of the institutional evaluation of Moroccan universities.

Certainly the MISSION project has introduced and will introduce institutional changes helping to modernize the governance of Moroccan universities which are still experiencing management difficulties.

Concerning successful experiences in IS governance, we can also cite the experience of the Ibn Tofail University of Kenitra in the governance of Information Systems. This university which is considered as a pilot university regarding student affairs management system (APOGEE).

Ibn Tofail University has set up a University IT Resources Center, which is a central service for the common management of IT resources, whose role is to serve and support and their services in the use of information technology. Its missions are dictated by the orientations of the development project of the University and its actions are defined in consultation with the institutions. Because without political porting, the IS has very little chance of developing.

One of the priorities of the center is to ensure the structuring and optimization of the use of APOGEE, as well as the assurance of the quality of the information introduced and generated by this system, through actions among these we quote:

- Elaboration of procedures for all tasks and operations around APOGEE.
- Quality control and data security.

5. CONCLUSION

The university as an educational and research institution is invited to set up a governance model of the student affairs information system, which is a essential for the success of any information system, through the following actions:

- Diagnosis of the existing.
- Ensure the reliability of the data exploited by greater control.
- Alignment of the IS process with the strategy vision. The IS does not imply the juxtaposition of existing tools.

- Establishment of an appropriate organizational structure ensuring the proper management of the IS.
- Periodic meetings on the functional aspect will have a positive impact on the resolution of functional problems.

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