

## MANAGEMENT CONTROL IN ALGERIAN UNIVERSITIES : CONSTRAINTS AND PERSPECTIVES

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### ABSTRACT

The organization and management of Algerian universities are marked by failures that thwart their mission, which is essential to meet the expectations and demands of a growing number of users and partners. The latter, by expression their needs and expectations, can contribute to better define the purposes of the universities, which aims to help turn the process of decline that we must lead on the exercise of missions. The steering of these processes requires the use of instruments that could form the basis of a new management model to serve actors whose primary concern is the conduct and development of their action in a collective approach. This article poses the problem of obsolescence of the business model in practice in the Algerian universities and its inability to take care of the needs of users and partners.

### KEYWORDS:

Objectives, decision-making autonomy and organizational framework, accounting framework and budgetary management control system.

**JEL CLASSIFICATION :** I23

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## **LE CONTRÔLE DE GESTION DANS LES UNIVERSITÉS ALGÉRIENNES, CONTRAINTES ET PERSPECTIVES**

### **RÉSUMÉ**

L'organisation et la gestion des universités algériennes sont marquées par des dysfonctionnements qui contrarient leur mission essentielle qui est celle de répondre aux attentes et aux exigences d'un nombre croissant d'utilisateurs et de partenaires. Ces derniers, par l'expression de leurs besoins et attentes, contribuent à mieux définir les finalités des universités, lesquelles permettent à leur tour de définir les processus qu'il faut conduire pour l'exercice des missions. Le pilotage de ces processus nécessiterait le recours à des instruments qui pourraient constituer le socle d'un nouveau modèle de gestion au service d'acteurs compétents dont le souci primordial est la conduite et le développement de leur action dans une démarche collective. Cet article pose le problème de l'obsolescence du modèle de gestion en pratique dans les universités algériennes et de son incapacité à prendre en charge les besoins des utilisateurs et des partenaires.

### **MOTS-CLÉS :**

Objectifs, autonomie de décision et cadre organisationnel, cadre comptable et budgétaire, système de contrôle de gestion.

**JEL CLASSIFICATION : I23**

## نظام مراقبة التسيير في الجامعات الجزائرية، قيود وأفاق

### ملخص

يتسم التنظيم والتسيير الإداري للجامعات الجزائرية باختلالات عديدة تعيقها عن أداء مهامها الأساسية، والمتمثل في الاستجابة لتطلعات ومتطلبات العدد المتنامي للمستخدمين وللشركاء الذين يساهمون من خلال إفصاحهم عن احتياجاتهم وتوقعاتهم في تحديد أمثل لأهداف الجامعات، وتسمح هذه الأهداف بتحديد المسارات التي يتوجب اتباعها خلال ممارسة المهام.

يستوجب الإشراف على هذه المسارات الاستعانة بأدوات يمكنها أن تشكل قاعدة جديدة لنموذج تسييري يوضع تحت خدمة الفاعلين الأكفاء الذين يكون شغلهم الشاغل أداء أعمالهم وتطويرها ضمن مسعى جماعي.

يتناول هذا المقال مشكلة تقادم نموذج التسيير الإداري المعمول به في الجامعات الجزائرية وعدم قدرتها على التكفل بانشغالات المستخدمين والشركاء.

### كلمات مفتاحية:

الأهداف، استقلالية اتخاذ القرار والإطار التنظيمي، إطار المحاسبة والميزانية، نظام الرقابة الإدارية.

تصنيف جيل: I23

## INTRODUCTION

The 21st century knowledge economy places knowledge at the forefront of economic competitiveness resources. The university which produces and disseminates knowledge must evolve and adapt to the constraints linked to a strong evolution of its running and its environment as well as to the emergence of the knowledge economy. Good governance and a set of mechanisms implemented to achieve effective coordination based on relevant political choices, is the condition that ensures a successful evolution and adaptation strategy.

The need for an optimal model of governance for the university must be the main concern decision-makers; it implies the need to reflect on the design and implementation of an information system adapted to the expectations and requirements of users and the university partners. Planning, management and budget control, management accounting, dashboards, etc. are all means to achieve a better management and a better informing of the concerned actors.

This article raises the question of the adequacy of the management model in practice in Algerian universities in relation to the needs of users and partners.

A reflection on the major obstacles and constraints that would oppose the development of a performance management system in universities would constitute the essence of the underlying problem.

The identification of these obstacles and constraints should in its turn make it possible to identify the prerequisites for drawing the outlines of a renewed management model considering the major concern to reconcile quality of training and economic efficiency.

Our approach will revolve around the following points:

- Management control in managerial literature
- Presentation of the current management model in Algerian universities
- Prospects for the development of management control in Algerian universities

## **1- THE ASYMMETRICAL DEVELOPMENT OF ALGERIAN HIGHER EDUCATION**

For a number of years, there has been a development of university infrastructure (the university network has 107 establishments; see appendix, graph 1), a significant increase in student numbers (More than 1,500,000 students, 60% of them are girls for a staff of 54,000 teachers, see appendix graphs 2, 3, 4 and 5), the development of post-graduation in many fields (see appendix graphs 6 and 7) an increase in budgetary allocations allocated to universities (see appendix graphs 8, 9 and 10), the creation of several research laboratories, the development and anchoring of the LMD system in the education system.

Recently, the MHESR set up an ERP (Integrated Information System of ESRS-PROGRES) currently operational at the level of higher education institutions. This ERP made it possible to bring a qualitative leap in terms of facilitation of procedures, visibility, transparency and governance of the sector. Currently, it takes care of the business areas (mainly the management of education) and support (university works and human resources management, in the process of generalization) of the sector.

Other fields such as management of scientific research, asset management, financial and accounting management will gradually be taken over by the ERP.

Paradoxically, the system of governance which induces the distribution of powers and the manner of exercising them has not seen any significant improvement; information systems and operational management tools remain essentially focused on public accounting and responding to the MHESR requests, to the detriment of management. It should be noted that this situation is not specific to the MHESR and in fact concerns all the sectors that come under state governance.

## 2- MANAGEMENT CONTROL IN MANAGERIAL LITERATURE

### 2.1-Definition and role of management control

The role of management control in the coordination of behavior has been extensively developed in organizational theories. Definitions have been given by R.N. Anthony<sup>1</sup> and A. Burlaud and C. Simon<sup>2</sup>; It follows from these definitions that management control refers to a process that aims to ensure that the strategic decisions of managers are applied consistently at all levels of the organization with the aim of controlling *performance*. There is a consensus on the concept of performance: an organization is efficient when it is effective (*the set objectives have been achieved*) and efficient (*optimization of the means mobilized for the achievement of the objectives*).

Diagram N ° 1 highlights the major role of management control in managing performance; this management is based on four traditional management phases as described in the same diagram:

- Forecasting: strategic and operational planning process
- Action: implementation of planned objectives
- Assessment: comparison between planned and realized and possibly corrective actions
- Learning: crystallization of the planning experience with a better knowledge of the sector and the environment in which it operates (objectives set close to the realm of the achievable)

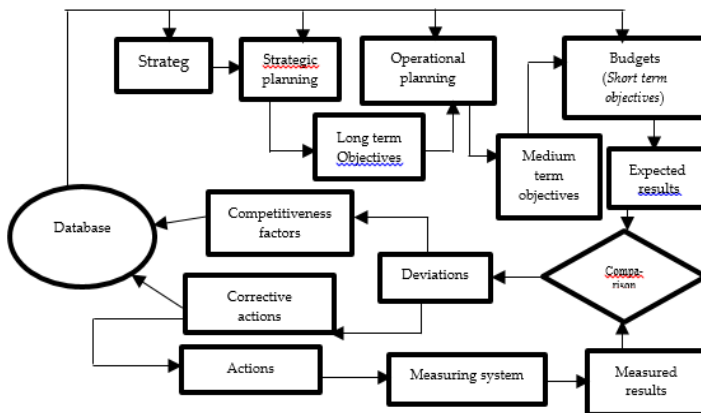
The clarification of this process is fundamentally marked by strategic choices which globally concern the development of higher education as it is perceived and envisaged in government policies.

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<sup>1</sup> R.N. Anthony, *La Fonction Contrôle de Gestion*, Publi-Union, 1993

<sup>2</sup> A.Bulard, C.Simon, *Le Contrôle de Gestion*, Editions La Découverte, Collection Repère N°277, 1977

**Diagram No. 1.** Process of management control



## 2.2- The influence of organizational control on management theory

Management control has been shaped by the different schools which have succeeded one another, and which have contributed to the development of the theory of organizations. The main schools are:

### *The Classical School*

This school of thought was marked by theorists such as Max Weber<sup>3</sup>and Frederick Winslow Taylor<sup>4</sup>. According to these authors, the best managerial model is one based on centralization with rules and procedures as the main means of regulation and coordination. There is no delegation. It is clear that this model is not very favorable to the development of management control. But paradoxically, F. W. Taylor helped to create one of the main management control tools known today as management accounting.

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<sup>3</sup> Max Weber, *The Theory of Social and Economic Organization*, Simon and Schuster, 2009-448 pages

<sup>4</sup> F. W. Taylor, *The Principles of Scientific Management*, Harper and Brothers Publishers, New-York, and London, 1919

### *The School of Human Relations*

This school came in response to the dysfunctions induced by a bureaucratic or Taylorist type organization (absenteeism, non-quality costs). Faced with the theoretical deficiencies conveyed by the classical school. Authors, such as A. H. Maslow<sup>5</sup> and F. Herzber<sup>6</sup>, have taken an interest in the study of motivating factors. Their research has found practical applications in the field of management control such as the DBO (direction by objectives) which has evolved into the PDBO (participatory direction by objective). The PDBO is a management system based on the principle of decentralization which involves the members of the organization in setting objectives and choosing the means necessary to achieve the objectives.

It is part of the organizational theory. R. Coase<sup>7</sup> and O. E. Williams on approach the company as a particular form of economic organization. This theory advances the idea that the company is an alternative form of economic coordination superior to that of the market since it includes systems that bring together the different know-how and that contribute to increasing the cognitive capacity of the organization necessary for the decision-making process. Management control is one of the organization's systems for coordinating decision-making.

Also, Williamson advocates decentralizing the decision-making process when the organization reaches a critical size and has a very diverse and complex business. He demonstrates that the M-form divisional structure is the most appropriate form for developing a

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<sup>5</sup> A. H. Maslow, *A Theory of Human Motivation*, Create Space Independent Publishing Platform (2013)

<sup>6</sup> F. Herzberg, B. Mausner and B. B. Snyderman, *The Motivation to Work*, Transaction Publishers, 31 dec. 2011, 180 pages

<sup>7</sup> R. Coase, *The Nature of the Firm, Origins, Evolution and Development*, Edited by O. E. Williamson, S. G. Winter, New-York, Oxford University Press, 1991



management control system. The Transaction Cost Theory defines the main characteristics of a management control system: identify separable activities, leave sufficient autonomy, create responsibility centers, set up a supervision system, and evaluate responsibility centers ...etc.

### **The Agency Cost Theory**

Developed by Michael C. Jensen and William H. Meckling<sup>8</sup>, the Agency theory puts forward the idea that the convergence of interests between the different actors of the organization can only be achieved through a system of coordination and regulation.

The elements underpinning this theory, namely: asymmetry of information, uncertainty about the attribution of results, disparity of roles, the existence of agency costs, have contributed in some way to the evolution of management control tools.

As examples, we can mention the budget and the scoreboards, two tools of management control that allow monitoring of actions and results achieved, but also regulate the relations between the different actors in the decision-making process.

### **2.3- Management control in the non-commercial sector**

It must be acknowledged that the managerial literature on management control has focused mainly on the commercial sector. By comparison, there is little written about management control in the non-commercial sector.

Numerous authors<sup>9</sup> have endeavored to identify the specific characteristics of public organizations and to define public management. Most of them agree that public management is different from a firm's management. The existing literature emphasizes that

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<sup>8</sup> M. C. Jensen and W. H. Meckling, *Theory of the Firm: Managerial Behavior, Agency Costs and Ownership structure*, *Journal of Financial Economics* 3 (1976) 305-360

<sup>9</sup> P. Gibert, *Le Contrôle de Gestion dans les Organisations Publiques*, Ed. D'Organisation, 1980

public organization management has features that are distinct from those found in the firm's management. Some distinctive features are:

- ❖ The existence of a specified field of action;
- ❖ The existence of a delimited geographical territory;
- ❖ A non-competitive situation;
- ❖ The absence of gainful activities;
- ❖ activities are Financed from the State budget;
- ❖ Regulation is carried out by legal rules and administrative and regulatory standards, ...

On the other hand, companies do not have a defined geographical territory. They are mobile and can access new markets, finance their activities through their resources, and regulate their market activities.

These firm-specific characteristics (different from those found in the non-commercial sector) have largely shaped management control.

The question that arises is that of the relevance of the tools and instruments of control to the context that regulates the non-commercial sector in general and the higher education sector in particular.

Works carried out at the level of public management converges to the conclusion that faced with a wide range of situations, management control proposes a methodology and instruments of a general nature that can be appropriate and adapted to the specific characteristics encountered (*definition of strategy, objectives, the definition of the expected level of performance, the definition of action plans and mobilization of resources, monitoring of achievements, readjustment of objectives, ...*).

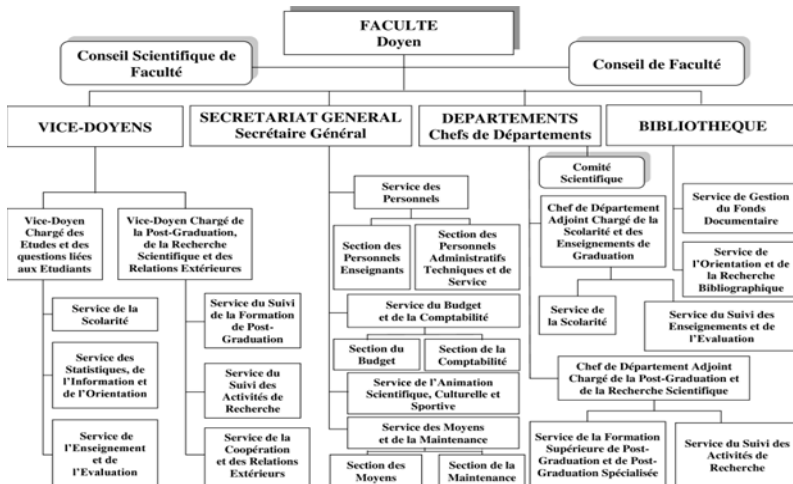
### 3- PRESENTATION OF THE CURRENT MANAGEMENT MODEL IN ALGERIAN UNIVERSITIES

#### 3.1- Model of generic organizational structure in Algerian universities



Source: MESRS

#### 3.2- Model of generic organizational structure in an Algerian faculty



Source: MESRS

The organizational structure is an instrument for coordinating different and interdependent activities and missions.

The purpose of the structure, as highlighted by the organizational charts above, is to implement the training offers that have been validated for higher education institutions. It is a pyramid-type structure. The decision is centralized in the rector's hands (State appointed official) assisted by vice-rectors and deans of faculties proposed by the rector and appointed by the State. Bodies with advisory opinions (university board, scientific boards) assist the rector.

### **3.3- Education system in Algerian universities**

The education system existing in Algerian universities is the LMD system (bachelor's degree-Master-Doctorate), which is characterized by:

- An architecture of teaching.
- An organization of teaching.
- An evaluation and habilitation of education programs.

Three actors operate at the level of the education programs and at three different levels:

#### **The strategic level**

The Ministry of Higher Education defines the overall strategy and draws up the guidelines of the national master plan for higher education.

#### **The operational level**

Higher education institutions propose, within the global strategy, education programs (teaching programs, human, material, and financial resources to be mobilized) carried out by pedagogical teams.

### The level of control and regulation

The Regional Evaluation Commissions (REC) and the National Habilitation Commission (NAC) evaluate and validate the education programs offered by higher education institutions.

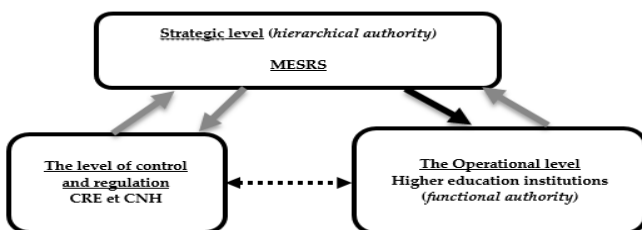
The sharing of authority in the education system is reminiscent of the sharing found in a matrix structure<sup>10</sup>; one finds:

*A functional authority:*

Exercised by the institutions of higher education and which are responsible for:

Relations with students and other external partners, results related to implementing education programs (achievement of training objectives, production of the desired output in quantity and quality, respect of the budget, minimization of costs).

**Diagram No. 2.** Evaluation and validation process for education programs



### 3.4- Tools used for the governance of Algerian universities

A legal and regulatory system (consisting of a set of decrees and circulars) governs the functioning of universities in Algeria. The range of management tools provided for in this system and on which the university's governance is based is not very extensive; one distinguishes between:

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<sup>10</sup> R. Jacob, Gérer en mode transversal, Présentation au colloque CII-CIR-OIIC, HEC Montréal, 7 mai 2014

### *The Board of Directors*

It consists of a president representing the minister of higher education and scientific research, representatives of teachers, students, administrative staff of the institution, representatives of local administrations.

Theoretically, it is a decision-making body responsible for strategic planning and general education policy for the overall research and development of the higher education institution.

In practice and according to a study carried out by the World Bank in June 2012 and based on a sample of 22 higher education institutions in Algeria, the board of directors focuses mainly on budgetary issues; it rarely addresses academic and strategic issues, human resources policy, and relational and partnership aspects.

### *The Quality Assurance System (SAQ)*

In principle, each higher education institution has a quality assurance unit with the task of setting up an evaluation process for all the institution's activities. According to the same study conducted by the World Bank, the SAQ, when it exists, is internal to the institution; when it is external, it is always under the aegis of the administrative authorities. It rarely examines the granting of institutional accreditation or certification. As for the accreditation of educational programs, this is generally carried out by the institution's scientific council and then validated centrally. Only 50% of educational outcomes are evaluated by the SAQ.

### *The Budget*

The purpose of the current budget, which is a budget by nature (revenue and expenditure), is above all to ensure consistency with the public accounts. It represents a sequential reading of organizational actions, respecting a hierarchical procedure set by the central administration. Its structure and operating logic, which are entirely subordinate to the logic of public accounting, do not allow the key

elements of modern management to be highlighted, such as: the value of assets, costs (per student, per course of study, per module, etc.), results, self-financing capacity, etc.

These essential elements for the management of university structures are not produced by the accounting and budgetary system in force.

### *Accounting*

The accounting available to universities is public accounting. The accounting and financial logic underlying this accounting consists of following standardized and recurrent budgets. Its essential mission is the a priori control of the expenditure incurred by the higher education institution, expenditure normally provided for in the budget. This mission results from the decisive contribution of the State in the financing of the activities of higher education institutions.

Public accounting, as it exists and operates at present, is single-entry accounting and, therefore, ignores the double-entry principle. Consequently, it produces neither a balance sheet, nor an income statement, nor a cash flow statement. Key financial elements such as: assets and liabilities, working capital, working capital requirement, net cash position and profit or loss for the year, are absent from the statements produced by the public accounting system.

Algerian universities do not have a cost accounting system (cost accounting). Consequently, vital information which is the basis of budget forecasts such as: the cost and its structure per student, per course of study, per entity (department, faculty ...) remain unknown.

To sum up, it can be seen that the range of management tools is relatively poor, which necessarily reduces the steering capacity of universities and makes it difficult, if not impossible, to assess performance.

#### 4- THE PROSPECTS FOR THE DEVELOPMENT OF MANAGEMENT CONTROL IN ALGERIAN UNIVERSITIES

##### 4.1- The objective

The objective is to transpose management methods widely used in the non-market sphere to; this will involve building management and steering systems that go beyond the sole concern of establishing financial control, systems adapted to the needs of each structure with the aim of initiating decision-making support practices and guiding the behavior of stakeholders. This objective implies that the problems, contents, and challenges of the activities to be managed and controlled must first be identified.

In principle, such a management model, apart from being an undeniable step forward in the introduction of an internal management and steering approach for university structures (*previously placed on the path to autonomy*), will bear the seeds of new powers and new legitimacy for the groups of stakeholders concerned.

It will be the accounting expression of the educational and scientific policies of university structures (*their aims, their strategic line*) within a revitalized organizational framework.

Management control, perceived as the articulation between the operational and the strategic, should then give rise to management systems that can be used by the organizational interfaces that make up the university entities both for the steering of their own activities and for understanding the necessary interdependencies and articulations.

In addition to rationalizing costs and thus optimizing the consumption of resources, it is also necessary to seek better quality for the services provided. It is, therefore, not just a question of setting up a single instrument aimed at budgetary rationalization, but also of initiating a process of collective action in order to meet the expectations of users and partners as well as possible. In addition to taking account of budgetary constraints, it is also necessary to take into consideration the requirements of users, which certainly concern the main mission of



the establishment, education, and teaching, but also its surroundings, reception, documentation and catering...

*It will be necessary to model the resources implemented, the activities and the services offered.*

The model will be able to integrate an analysis in terms of "cost-effectiveness", which implies an analysis of the activities and their organization in order to form the desired processes that will allow :

- To achieve the expected results.
- To identify and put in tension the factors generating costs.
- To identify the activities which add value to the services provided by the university structure, this value being defined in each context with regard to the requirements set by considering the expectations of the users and this according to the services which the university structure provides.

The advantages of such a model are numerous, for information purposes only:

- It would introduce a type of transversal management of activities and would facilitate the creation of pedagogical projects and teams.
- It would facilitate the steering of activities, taking into account their interdependence.
- It would provide the State with additional data to assess the allocation of resources to university structures: cost could be considered as a criterion for allocating resources (drawing up budgets) and conducting pricing policies.

#### **4.2. The university as an organizational entity**

According to Musselin<sup>11</sup> , the transformation of universities into producers of public actions, the emergence of the notion of excellence (*Shanghai ranking*) and of privileged financing, the increasing intervention of stakeholders, the diversification of financing sources,

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<sup>11</sup> Musselin C. 2009, Les réformes des universités en Europe : des orientations comparables mais des déclinaisons nationales, l'Université en crise : mort ou résurrection ? Revue du MAUSS, N° 33, La Découverte, p. 69-91

have meant that knowledge has become a means and not an end, a resource of international economic competitiveness. Seen from this angle, the university is then an organization that implements a training and research policy within a general framework and principles defined by the State, which sets its strategy and objectives. Consequently, it is obliged to evaluate the results achieved and, to do so, it must introduce new steering instruments.

### **4.3. Considering the concerns of the University**

The literature on management control implies the implementation of strategic management accompanied by operational management<sup>12</sup>.

It should not be forgotten that in the case of universities, the implementation of strategic management is guided by public policies in the field of higher education and scientific research.

From a theoretical point of view, management control constitutes a steering model that can integrate the concerns of universities in terms of strategic and operational management, namely:

- To provide quality services and checking the needs of users and partners (students, teachers, companies, etc.).
- To ensure that actions are consistent with the objectives pursued.
- To consider the resource constraints.
- To adapt the organization to the evolution of its environment.
- To crystallize organizational learning through collective feedback on the organization's actions.

Taking these concerns into account by management control makes it possible to legitimize it with users and partners (students, teaching staff, the administration, businesses, etc.).

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<sup>12</sup> Bollecker, M. et G. Naro 2014, « Des Théories pour repenser le contrôle de gestion : des dispositifs discursifs et instrumentaux ancrés dans un contexte social et institutionnel », dans Bollecker, M. et G. Naro (dir.), *Le contrôle de gestion aujourd'hui. Débats, controverses et perspectives*, Paris, Vuibert, p. 11-29.

#### **4.4. Obstacles to the development of management control in universities**

Several difficulties may hinder the process of developing management control in Algerian universities; these difficulties may be:

*a. Of a legal nature*

Absence of a legal mechanism that would crystallize and clarify the mission of management control in Algerian universities.

*b. Linked to the specificity of teaching and research activities*

The activities are not repetitive, the outputs are difficult to measure; the qualitative, non-hierarchical, and multiple objectives of the research activities make formalization and evaluation difficult<sup>13</sup>.

It should be emphasized that a central role is given to the teacher-researcher within the university. He or she remains attached to scientific and academic communities that extend beyond the place where he or she carries out his or her activity.

Some authors<sup>14</sup> tend to consider that the teacher-researcher "is not an employee of the University, he is the University; the only employees of the University are the professional administrators, and these do not direct the academics, they are at their service".

This is an important specificity that does not exist in the commercial sector.

Any approach to management control in the University that does not consider the pivotal role of the academic within the organization would have limitations:

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<sup>13</sup> BURLAUD A., (2008). Reflections of a Management Controller on the Evaluation of University Research, International Conference Accounting and Management Information Systems, Bucharest, Romania.

<sup>14</sup> 14 Leys, 2006, cité dans Beaud, 2009, in L'Université en crise : mort ou résurrection ? Revue du MAUSS, N° 33, La Découverte

c. *Subjective in nature*

The reluctance for various reasons by teaching units (*faculties, departments, research laboratories*) to transmit formal and public information, which would generate a situation of informational asymmetry which, in the absence of formal tools, may be to the advantage of the heads of teaching units without necessarily being to the advantage of the organization.

d. *Of a technical nature*

The accounting and budgetary framework is obsolete. The purpose of the current budget, which is a budget by nature (*revenue and expenditure*), is above all to ensure consistency with public accounting. Its structure and operating logic do not allow the key elements of modern management to be highlighted.

Moreover, the practice of systematically renewing resources has annihilated any management control procedure and has reinforced the dominant problem: to account for the use of public funds in compliance with the specific standards of public accounting. With regard to this point, it is easy to see that the budgetary logic is subordinate to the logic of public accounting as it currently exists and operates.

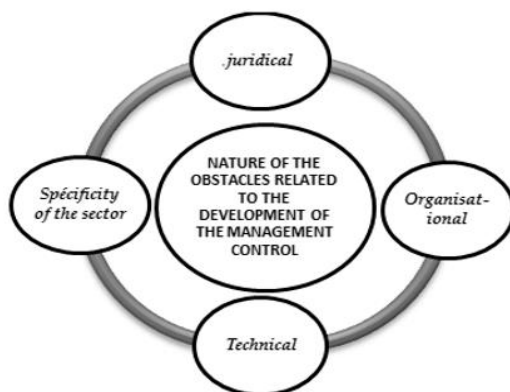
To sum up, it can be stated that the accounting and budgetary procedures and techniques in force do not integrate and do not favor a logic of animation and coordination of activities and are insufficient to initiate a managerial reflection in line with the expectations of users and partners (students, teachers, administration, companies, etc.).

e. *Of an organizational nature*

The pyramidal structure at the University and Faculty level is in opposition to the paradigm that underpins management control, and which favors decentralization and, therefore, delegation in the decision-making process. The existing budget is a University wide budget that is deconcentrated (*fragmented*) at faculty level. The budget

unit is the University. The current organizational model is disconnected from performance.

**Diagram No. 3.** Obstacles to the development of management control within the university



#### 4.5 Conditions for the development of management control in the university

Research<sup>15</sup> has shown that management control in the public sector is called upon to develop "steering tools to link tools to professional practices and to have better clarity between the activity carried out and the resources consumed".

The archetype of management control that will be developed must be built on the notion of performance. In this optic, it is necessary to:

*a. Clarify the notion of performance*

Performance is linked to the achievement of objectives and the creation of value, which in the university sector corresponds to an optimization of the services provided. Performance measurement at the

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<sup>15</sup> Nobre, T. 2014, « L'évolution du management de la performance à l'hôpital : du contrôle de gestion au contrôle organisationnel » dans Bollecker, M. et G. Naro (dir.), Le contrôle de gestion aujourd'hui. Débats, controverses et perspectives, Paris, Vuibert, p. 11-29.

university level should provide information on both the achievement of objectives and the creation of value, which in the university sector corresponds to an optimization of the services provided:

- On the relevance and effectiveness of policy choices.
- On the effectiveness and efficiency of economic choices.
- On the satisfaction of users and partners (students, teachers, companies, etc.)

*b. Building a system of relevant indicators*

The possibility of implementing management control within the university is based on an appropriate choice of indicators (of a quantitative but also qualitative nature) measuring performance; the relevance of an indicator is associated with its ability to project an undistorted image of reality.

*c. Building a quality information system*

The information system must be the cornerstone of performance measurement, which implies the circulation of reliable and regular information to inform the indicators. The information system would be constituted:

- *A renewed budgetary framework*

This renovation must be one of the priorities in the modernization actions. Determining objectives, estimating costs, and controlling expenditure must be obligations to be assigned to university structures which, in response, will have to progressively adopt more relevant management instruments while taking care to focus exclusively on their technical aspects and ignore their impact on structural and organizational arrangements.

The essential elements for the management steering of the university structures are not produced by the budgetary system in force and for this reason it is necessary to reflect on the construction of a management budget (next to the budget by nature) which would

represent the beginning of a process of management control and at the same time would trace the management objectives corresponding to the development axes of the university structures.

*An asset accounting system and a management accounting system*

The aim is to move from public accounting (single-entry) to asset accounting (double-entry) and management accounting in order to have information on:

- The evolution of the University's assets and liabilities and the associated aggregates (working capital, working capital requirements, income, self-financing capacity, etc.).
- The evolution of costs and their structure.

In the end, the financial system would be constituted of:

- An asset accounting system.
- Management accounting.
- Budget.

It will, therefore, be a question of in-depth reform of the financial and accounting management area, which is already scheduled to be taken over by ERP PROGRES.

**Diagram No. 4.** Transition from public accounting to asset and management accounting

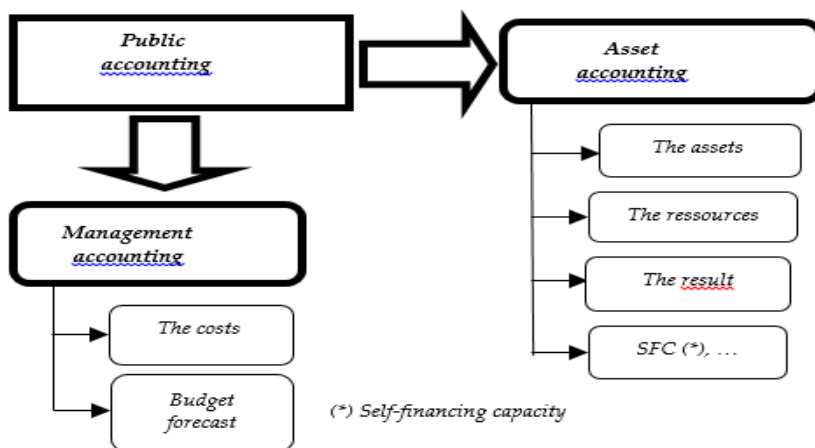
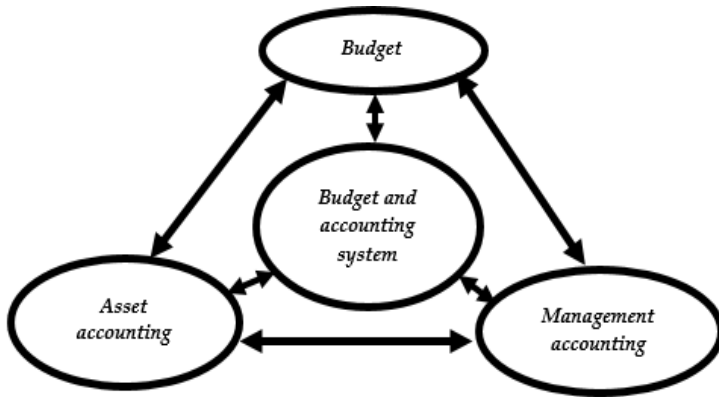


Diagram No. 5. Budgeting and accounting system



The quality of the management system as well as its operating logic depends in principle on the project conveyed by the university structure. It is essential in this respect to reflect on the missions of the structures concerned so that the objectives and the means necessary to achieve them can be specified.

A good knowledge of the environment and an anticipation of its evolution would help to better define these objectives.

The definition of medium- and long-term objectives would enable the Algerian university to escape from the grip of the sole logic of "graduate production", and to integrate other logics related to the vast movement of restructuring of the world economy which imposes a refocusing of the priority of development at the level of the education system.

Globalization, technological changes, the profile of the new enterprise, the scale of challenges of all kinds, amply justify this refocusing. In this sense, government development policies would undoubtedly help to clarify trends in the field of training and research.



e. Reviewing the organizational framework

Seeking to make rational use of resources will increase the requirements in terms of efficiency, which must lead to the necessary consideration of the demands of users and partners. This requirement in terms of efficiency must be reflected in greater autonomy in decision-making, both in terms of the actions to be taken and in terms of funding.

It should be noted that the exercise of autonomy will lead the players to better interpret and deal with the demands of users. For university structures, the objectives pursued will have to be refined, made consistent with the expectations of users, in the light of the general tasks set by the supervisory authority, and then translated into activities to be implemented (choice of training courses, training programs, duration of training, teaching methods, research areas, etc.).

This autonomy is a prerequisite for the local definition of the various development projects and, above all, for the use of management tools aimed at "steering the performance" of university structures.

Moreover, modern management implies that the various parties involved in the management of public finances must be made accountable and it is for this reason that we believe that a tiered structure of institutions is essential if this accountability is to be effective.

As an indication, if we consider the current reform based on the implementation of the LMD system, the structuring of the faculty (autonomous establishment) could be done according to the following scheme :

First level of decision: a distinction would be made between the faculty, a structure endowed with financial autonomy.

Second level of decision: the different courses implemented at faculty level could represent budgetary units.

Third level of decision: the different courses provided at the level of each pathway would be centers of responsibility.

Each level could be endowed with a degree of independence with respect to the higher level and a capacity for arbitration on the lower levels that may be set up. In this way, each level could define and then

evaluate its objectives before passing them on to the higher level with a right of arbitration. The notion of management responsibility reflects a search for coherence and relevance of activities with regard to the objectives pursued, and then the inclusion of the latter in the strategic line of the university structure.

Of course, a definition of the internal rules of operation, observation, coordination, and cooperation is necessary.

This lighter, cross-cutting organization, consisting of small teams of teaching and administrative staff, has the advantage of flexibility and cooperation (as regards the choice of courses, the choice of majors and their teaching content) and would have a greater capacity for intervention in the field of management (definition and mobilization of the resources to be allocated to the course), unlike the current vertical organization, highly hierarchical, compartmentalized, based on a structure of the faculty into departments (each department constituting a mini-faculty managing a set of modules spread over the common core and each specialty of the university curriculum), the dominant characteristic of which is the low level of exchanges in terms of information.

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<b>Definition of annual objectives evaluation of needs</b>	At the level of each sector (responsibility centres)
<b>Elaboration of the budget</b>	At the level of each course (budget units)
<b>Aggregation and consolidation of the budget</b>	At faculty level

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## CONCLUSION

The renewal of the management system and the management tools that would be adapted in Algerian university structures cannot be simple substitutes and indicators of an instrumental rationality with which the actors would manipulate. They are more a result of a new social representation (establishment of new relationships) and refer to

an analysis of the competencies of individuals in these organizations (need to assimilate new knowledge and aptitudes for change).

The objective would be to identify the foundations of the management control system that has yet to be built in Algerian university structures. The interactions between activities and autonomous agents, the structure of powers, the interpretations of individuals and the meaning they associate with the tools are elements that condition the success of modernization operations.

The task is arduous, and the desired evolution is far-reaching. Academic structures fulfil their mission and participate in the functioning of a society while being confronted with the expectations, and even the demands, of a growing number of users and partners. By expressing their needs and expectations, the latter participate, externally but progressively, in defining and understanding the aims of these structures. It is these aims that will make it possible to define the processes that need to be carried out in order to carry out the professions and missions. The instruments adopted to help steer these processes are the technical foundations of an interpretative management model.

Beyond the management of public resources and the constraints of public accounting, the management tools must be understood, not as simple scientific tools whose legitimacy would derive from their capacity to deliver a reduced but nevertheless faithful and deterministic image of reality, but rather as evolving supports, adapted and interpreted by actors. The latter must be perceived as competent actors who aim to lead and develop their action in a collective approach.

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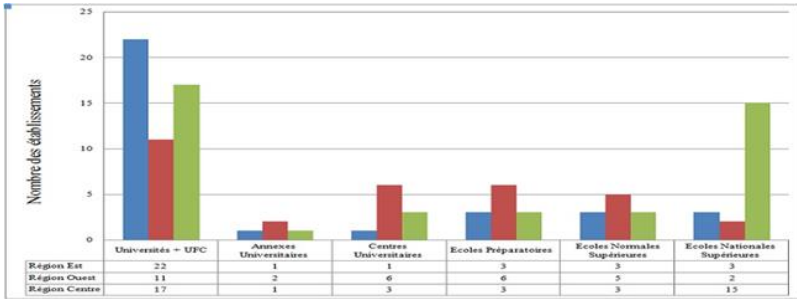
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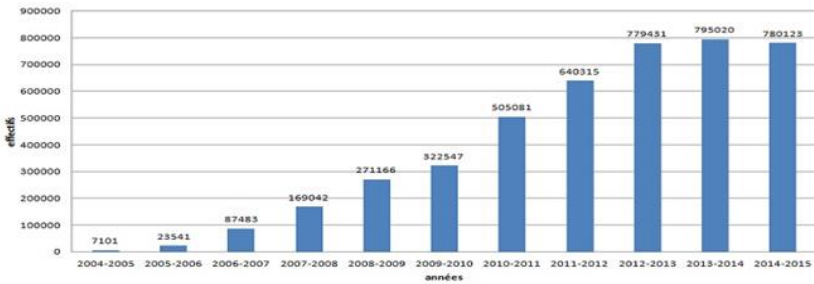
APPENDICES

Chart No. 1. University network of 107 institutions (2015)



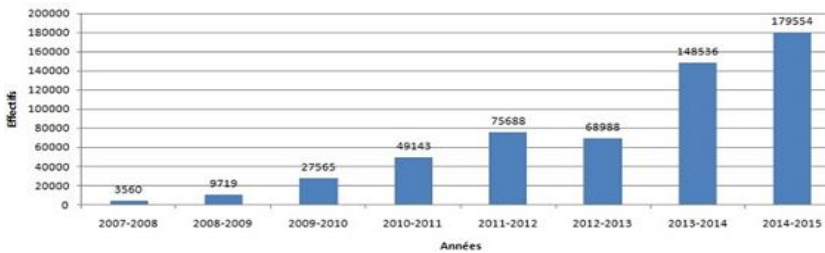
Source: MESRS (\*)

Chart No. 2. Statistics of registered students (2004-2015)



Source: MESRS

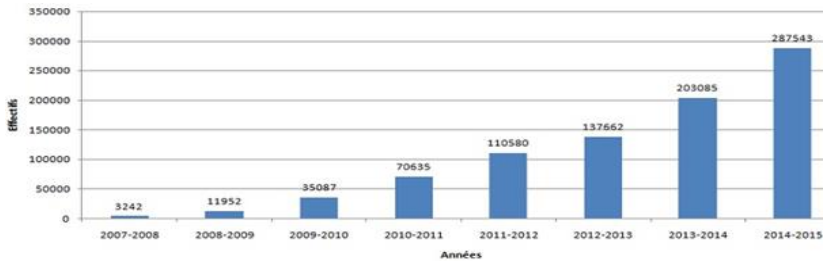
Chart No. 3. The number of bachelor's graduates (2007-2015)



Source: MESRS

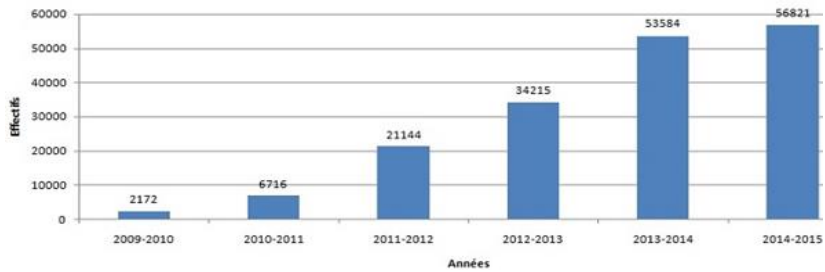
Ministry of Higher Education and Scientific Research

**No. 4. Statistics of students enrolled in master's programs (2007-2015)**



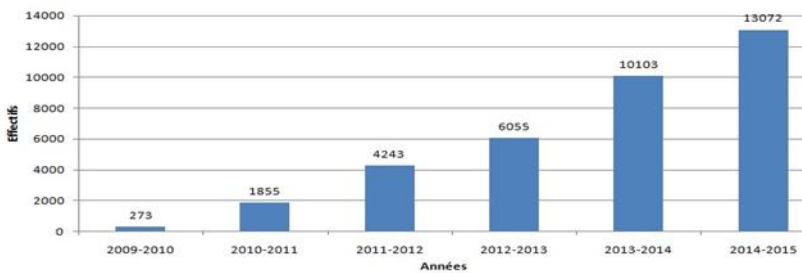
Source: MESRS

**Chart No. 5. The number of master's graduates (2009-2015)**



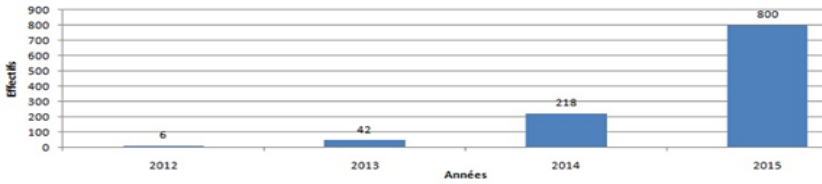
Source: MESRS

**Chart No. 6. Statistics of students enrolled in the LMD PhD program (2009-2015)**



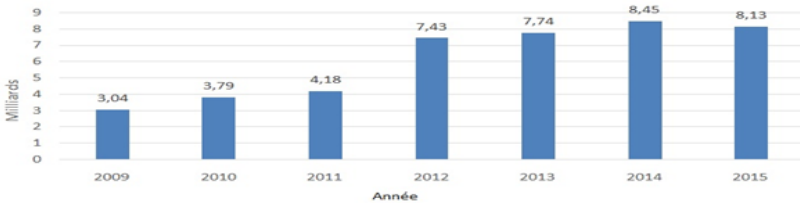
Source: MESRS

No. 7. Statistics of Doctoral theses (LMD) defended (2012-2015)



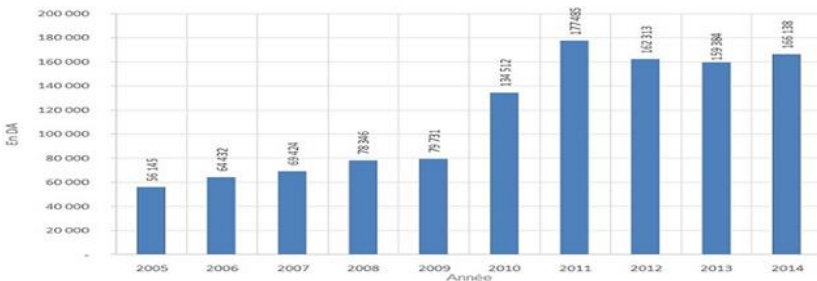
Source: MESRS

Chart No. 8. Evolution of the budget for training and short-term further training (2009-2015)



Source: MESRS

Chart No. 9. Evolution of the annual allocation to students within the framework of the operating budget of Higher Education Institutions (2005-2014)



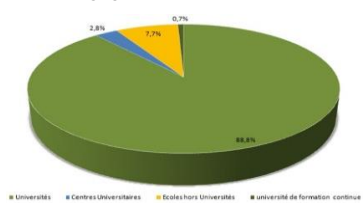
Source: MESRS



**Chart No. 10. Annual allocation to the student within the operating budget in 2016 by type of establishment**

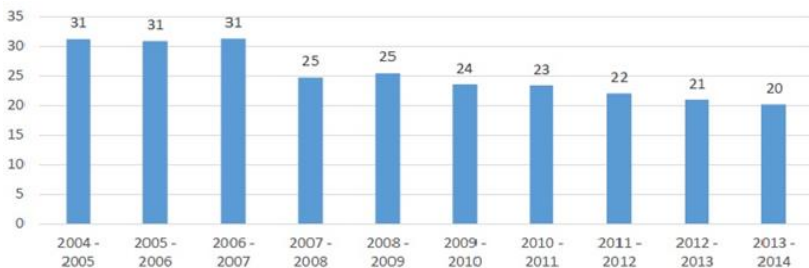


**Chart No. 11. Percentage of operating budget by type of establishment in 2016**



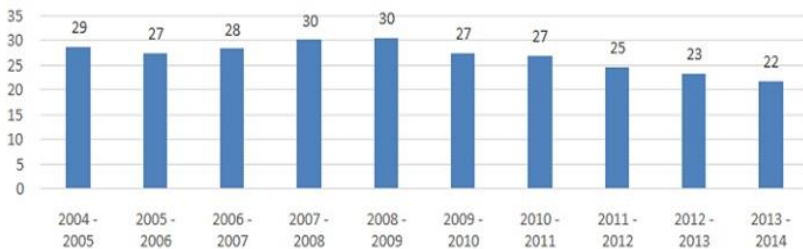
Source: MESRS

**Chart No. 12. Evolution of the rate of administrative and technical staff (2005-2014)**



Source: MESRS

**Chart No. 13. Trend in the rate of teaching staff (2005-2014)**



Source: MESRS