

Accrual accounting as an innovation in the Algerian public sphere

المحاسبة على أساس الاستحقاق كابتكار في القطاع العام الجزائري

Benrahou kada, University of Sid Bel Abbes, Algeria, kada.benrahou@univ-sba.dz .

Djamil Abdeldjalil, University of Sid Bel Abbes, Algeria, [djamilddjalil@yahoo.fr](mailto:djamildjalil@yahoo.fr)

Received:07/04/2020; Accepted for reviewing:27/05/2020;Accepted for publishing: 30/06/2020

Abstract:

After the adoption of the organic law relating to the laws of finance, the general directorate of accounting meter sets up a project of the implementation of the accrual accounting in the public entities. In this article we present the steps to be followed by the Directorate General of Accounting for the application of accrual accounting by comparing these steps and the steps of adopting a new innovation. We note in this study that the adoption of accrual accounting requires more effort in terms of information system and training.

keyword: accrual accounting; innovation adoption; public establishment of an administrative nature; public accounting.

JEL classification code : H11, H24, H83.

ملخص:

بعد اعتماد القانون العضوي المتعلق بقوانين المالية، وضعت المديرية العامة للمحاسبة مشروعاً لتطبيق المحاسبة على أساس الاستحقاق في الكيانات العامة. في هذا المقال قدمنا المراحل المتبعة من طرف المديرية العامة للمحاسبة لتطبيق المحاسبة على أساس الاستحقاق مقارنة بالمرحلة التي يمر عليها تبني ابتكار جديد. ومن خلال هذه الدراسة توصلنا إلى أن تطبيق المحاسبة على أساس الإستهقاق يحتاج مزيداً من الجهود على صعيد نظام المعلومات المحاسبية والتكوين.

الكلمات المفتاحية : المحاسبة على أساس الإستهقاق؛ تبني نظام جديد؛ الهيئات العمومية ذات الطابع الإداري؛ المحاسبة العمومية.

تصنيف JEL : H11, H24, H83.

Benrahou Kada, Email: kada.benrahou@univ-sba.dz

1. Introduction :

Faced with major changes in the environment and new approaches to public management, public action must prioritize the conditions for success in terms of effectiveness and efficiency, which constitute the two vectors of performance. The search for performance is also linked to the idea of seeking consistency and enhanced delegation, based on the premise that centralization does not lead to better results. All this requires relevant, comparable and useful information for the decision-making process. This includes financial and accounting information. And to improve the quality of financial information and the mechanisms necessary for good governance. Budgetary reforms have been initiated in Algeria since 2002, through the project to modernize the budgetary system.

This project led to the issuance of the Organic Law Relating to the Finance Laws published in September 02, 2018. This text fixes the principles and rules concerning the general budget of the State, the accounts of the State and the execution of the laws of finance. This text introduces a new budgetary system, the primary ambition of which is to direct the management of State expenditure according to the results to be achieved, that is to say to move from a logic of means to a logic of results.

From an accounting point of view, this text introduces accrual accounting, alongside budgetary (cash) accounting, the accounts of which must be regular, sincere and faithfully reflect its assets and its financial situation (Loi organique n° 18-15 relative aux lois & Finances., 2018).

The adoption of a new accounting system is an approach aimed at adapting the information system strategy to the public establishment. The aim of this approach is to reinforce the use value of the system and to make it an asset for the public organism. From there, any public organization needs to be reframed in its strategic approaches and its organizational dimensions; priorities should be redefined and analyzed in order to improve its performance.

Several researchers have attempted to demonstrate, through empirical studies, the contributions and advantages of an accounting system based on the heritage approach. Other works have been interested in its implementation and its dissemination. This research was carried out in particular in North America and Europe. Through surveys, they tried to assess the degree to which a new accounting system was adopted and implemented(Gosselin & Quellet, 1999, p. 45).

In addition, some studies have shown that organizations can abandon an information system innovation that is being implemented, and others may use it for a while and then abandon it. These observations have given rise to what is called the paradox of a new accounting system: even if it turns out that accrual accounting is more effective than budgetary accounting (cash accounting), we note that the adoption of this accounting system is far from reaching the expected levels.

For this, we will try through this intervention to examine this problem and to see: *Does the process of adopting accrual accounting in Algeria respect the rules for disseminating innovations?*

To answer this question, two hypotheses will be proposed: first, the procedures envisaged by the Algerian authority for the application of accrual accounting respect the rules for the dissemination of innovations and second, the accrual accounting risks not adoption follows non-compliance with the rules for disseminating innovations.

The objective of this work is therefore, firstly to see the definitions and typology of an innovation and to analyze the principles of diffusion of the innovations. Second, outline the steps to take for the adoption of accrual accounting in Algeria and measure compliance with the rules for disseminating innovations.

2. "Diffusion of innovations" definition and typology:

The diffusion theory of innovations aims to understand the process of diffusion of innovations in order to identify a number of factors that influence their diffusion. It thus constituted a reference for the development of the current of research on the dissemination of innovations in information systems. The latter also aims to study the rate of dissemination of information systems and to identify the factors that influence the adoption and implementation of innovations in this area.

2.1. Definition of basic concepts:

The word diffusion means the special process of "communication by which, an innovation in the form of new ideas, practices or products is propagated, via certain channels, over a period of time, through the members of a social system"(Rogers & Scott, 1997). This definition is made up of four key concepts, the meaning of which must be revealed in order to understand the general theory of diffusion of innovations. These are the words "innovation", "communication channel", "time" and "social system".

2.1.1. Innovation

Innovation is considered to be the engine of economic growth(Hantem, 2019a, p. 82), after a major innovation often described as breakthrough innovation, the economy is entering a growth phase. In management science, this concept has aroused the interest of researchers since the early 1960s, marked by the publication of an interesting work by Burns and Stalker on the management of the innovation (Stalker, 1961). However, the innovations are not all identical; they differ according to a set of criteria that we will see in the next paragraph.

2.1.2. The characteristics of an innovation

The characteristics of innovation that determine its rate of adoption by the social system. There are five of these characteristics (Backer T. E. et Rogers E. M., 1998, pp. 17-18):

- The relative advantage: it is the degree by which a new idea is perceived as better (more advantageous) to the replaced idea. Thus, the greater the relative advantage, the faster the adoption of innovation.

- Compatibility: this is the degree by which an innovation is perceived as consistent with existing values, past experiences and the needs of potential adopters. The more coherent the innovation with the social system in question, the faster the adoption will be because individuals will not need in the first stage of implementation to adopt a new value system.

- Complexity: this is the degree by which an innovation is perceived as difficult to understand and use. A simple innovation will be adopted more quickly than a complicated innovation, because the latter requires before it is adopted to acquire new knowledge and new skills.

- The possibility of testing: this is the degree by which an innovation can be tested and validated in a small area before a full and wide adoption. An innovation with proven validity has less uncertainty and anxiety and will be quickly adopted.

- The "observable" character: it is the degree by which the results of an innovation are visible to its potential adopters. The more easily these results are observed, the faster the adoption of innovation.

2.2. The communication channel

The second main element in the diffusion of new ideas is the communication channel. Communication is the process by which participants create and share information with one another in order to reach a mutual understanding. A communication channel is the means by which messages get from one individual to another. Mass media channels are more effective in creating knowledge of innovations,

whereas interpersonal channels are more effective in forming and changing attitudes toward a new idea, and thus in influencing the decision to adopt or reject a new idea. Most individuals evaluate an innovation, not on the basis of scientific research by experts, but through the subjective evaluations of near-peers who have adopted the innovation (Rogers & Scott, 1997).

2.3. Time

The diffusion of innovations is considered to be a temporal process, and the variation due to the time dimension must be explicitly considered (Bigoness & Perreault Jr, 1981, p. 68). According to Rogers and Scott (1997), the “time” dimension is integrated into broadcasting in three ways:

First, time is involved in the innovation-decision process. The innovation-decision process is the mental process through which an individual (or other decision-making unit) passes from first knowledge of an innovation to forming an attitude toward the innovation, to a decision to adopt or reject, to implementation of the new idea, and to confirmation of this decision. An individual seeks information at various stages in the innovation-decision process in order to decrease uncertainty about an innovation's expected consequences.

The second way in which time is involved in diffusion is in the innovativeness of an individual or other unit of adoption. Innovativeness is the degree to which an individual or other unit of adoption is relatively earlier in adopting new ideas than other members of a social system. There are five adopter categories, or classifications of the members of a social system on the basis on their innovativeness: (1) innovators, (2) early adopters, (3) early majority, (4) late majority, and (5) laggards.

The third way in which time is involved in diffusion is in rate of adoption. The rate of adoption is the relative speed with which an innovation is adopted by members of a social system. The rate of adoption is usually measured as the number of members of the system that adopt the innovation in a given time period. As shown previously,

an innovation's rate of adoption is influenced by the five perceived attributes of an innovation.

2.4. The social system

It is a set of interacting units engaged in solving a common problem and achieving a shared goal(Rogers & Scott, 1997), it constitutes a field in which an innovation is disseminated. Members of the social system can be individuals, informal groups, businesses and / or subsets. They are considered as potential adopters of innovation(Bigoness & Perreault Jr, 1981, p. 70).

One of Rogers' most significant contributions is the relativity of the diffusion of innovation and business innovativeness. For example, a rapid rate of diffusion of an innovation in a given social system can be considered as long for another (Robertson, 1967, quoted by Bigoness and Perreault, 1981), or an innovator in a given social system can be seen as a late adopter or a laggard in another system. In conclusion, the innovativeness of a company depends on innovation, time, the social system and communication.

3. Accrual accounting as an innovation(Hantem, 2019b, pp. 92–93):

After having presented the key principles of the diffusion theory of innovations, we will be interested in this paragraph to discuss on the innovative character of accrual accounting, that is to say in what way accrual accounting can be considered an innovation?

The introduction of accrual accounting in public establishments is a new method of accounting management designed to overcome the limitations of traditional budget accounting tools, which have become unsuited to the current context of public establishments. The novelty in this management tool lies not only in its relevance in accounting recording and improving the reliability and transparency of accounting information, but also in the way of presenting the summary statements and describing the asset situation of the establishment. Its introduction influences the vision of the operation and the accounting management

of the public establishment; we go from traditional cash accounting to an accounting of commitment, established rights, an asset approach and an approach by the results. Based on the accounting principle of independence of financial years by attaching to them their own income and expenses. It is an innovation which influences at the same time the technical and administrative functioning of the establishment:

The Accrual accounting, an innovation with two attributes: accrual accounting is a managerial innovation that greatly influences the way in which the organization's accounting processes are managed and organized. It is a method which at the same time has the technical and managerial characteristics of innovations. According to the classification of Swanson (1994) on innovations in information systems, it belongs to the second category of innovations.

Accounting accounts for a new way of accounting recording and production of summary statements: this novelty lies in the respect of fundamental accounting principles and standards like what is applied in the sector private. Unlike the traditional accounting approach (budget accounting), the aim of which is quite simply to monitor the execution of budgets while respecting budgetary appropriations by chapter. However, the administrative or management accounts only provide information on this aspect. Accrual accounting aims to improve the quality and reliability of accounting information, keep traceability and continuity in the recording of financial transactions carried out by public establishments and above all to put in place the mechanisms necessary for good governance.

4. The emerging accrual accounting in Algeria :

As part of the Barcelona Process and the Euro-Mediterranean partnership launched in November 1995, Algeria and the European Union signed an Association Agreement (AA) which Took effect on September 1, 2005. This agreement defines the legal framework by which the relations between the parties in the economic, commercial, political, social and cultural fields are established. This twinning project is an expression of the European Union's desire to provide

Algeria with significant support for its economic and financial reform efforts.

In addition, for all public entities, the Algerian government has also included in its program through the General Directorate of Accounting (GDA), the transition from public cash accounting to accrual accounting based on the same principles as corporate accounting and aimed at developing more efficient and transparent management of public finances.

From an accounting standpoint, the transition from cash to accrual accounting provides an overview of the assets and the financial situation in accordance with international standards. It allows a dynamic and enriched presentation of public action via an income statement, a balance sheet and its annex.

The objective of strengthening the capacities of the General Directorate of Accounting (GDA) in the preparation of the implementation of accrual accounting is enshrined in Article 1 of the Association Agreement between Algeria and the EU: "promoting cooperation in the economic, social, cultural and financial fields"(GDA, 2019, p. 19).

In early 2018, an essential component of this strategic plan was finalized. The organic draft law on finance laws which founds the budget and the accounting reform has been adopted by the Parliament. The DGC is responsible for preparing the texts implementing its competence, which will ultimately provide the legal framework accompanying the implementation of accrual accounting. In addition, accounting standardization work has been carried out for the State and has been initiated for the EPAs and local authorities.

5. The accrual accounting information channel in Algeria:

The different reforms have opted for the introduction of an information system: SIGBUD for the preparation of budget documents produced by the Canadian design office CRC SOGEMA and SIGB for the restructuring of the expenditure circuit carried out by the office French study GIP- ADTETEF(2018 , قمو, p. 262).

Among the main functionalities of the future SIGB, we can mention in particular (Ministry of Finance, 2009):

- Management of credit availability checks;
- Validation of operations (electronic signatures);
- Manual or automated management of the payment method (which can be configurable);
- Commitment accounting;
- Automated monitoring of expenses by program, by financial year, by objectives;
- Automatic obtaining of summaries upon validation of the last operation;
- The establishment of SIGB interrogation tools (level of expenditure, results achieved in relation to objectives, etc.);
- The implementation of interface procedures:
 - Between budget preparation and execution;
 - Between the SIGB and the computerized debt management tool or that of staff or that of pensions;
 - Between the SIGB and the banks (Issue of payment vouchers, confirmation of payment);
 - Between the SIGB and the Accounting System (automatic generation of accounting entries);

With regard to the implementation of this new accrual accounting, once it has been adopted, the current accounting circuits, which are partially automatized, will have to be adapted. And it is of course to minimize these adaptations because it is not recommended to carry out major work on the current system when a new management system must be installed in the coming years.

Let us now examine the scenarios that we could consider in order to develop these current accounting circuits by integrating the use of the new accounting nomenclature (Ministry of Finance, 2009, pp. 31–35).

1. A first scenario would be to take into account the information processed by the accountants and recorded in current IT applications, but by allocating the general accounts to the expenditure operations in the new accounting nomenclature.

2. Regarding the accounting of receipts, the periodic receipts situations are currently transmitted by the receivers of the financial authorities and the municipal treasurers to the treasurers of the WILAYA of attachment, the latter taking charge of entering the documents received before their transmission. To the Central Accounting Agency of the Treasury (ACCT) for centralization purposes. The upcoming production of the new tax application should make it easier to set up interface procedures between these subsystems.

Another scenario, undoubtedly more easily achievable, would consist in keeping the entire current system as it is, from entering information at the level of the managing entities to feeding the central system. A new accounting environment would be created and populated using a specific interface procedure.

6. The social components of the adoption of accrual accounting in Algeria:

On the basis of the achievements made possible by the investments already carried out by the GDA, in particular for the State, it is essential that the increase in skills of its teams guarantees a relevant definition of the accounting standards. Currently these benchmarks are still the preserve of specialists whose number is limited while public accounting in established rights is called to irrigate all of the activity of public bodies.

The GDA must therefore exercise a role of project owner, by sharing its reform objectives with the various stakeholders while taking into account their expectations. To this end, the GDA must benefit from a strengthening of its capacities, both in terms of skills and in terms of human resources (which are detailed in Table 1) to be mobilized in order to master all of the design, definition and the preparation for the implementation of a public accounting system in accruals.

Table 1: Situation of the staff of the DGC concerned by the project of implementation of the accounting in rights recorded at the level of the central administration, the CL and the EPA adopted on 15/07/2017.

<i>Titel</i>	<i>Central administration</i>	<i>Total deconcenter services</i>	<i>Total</i>
<i>SUPERIOR DUTIES appointed by decree</i>	55	12	67
<i>Senior positions assimilated to a superior function</i>	01	50	51
<i>Framing</i>	226	6179	5405
<i>Application</i>	51	2179	2230
<i>Mastery</i>	58	3356	3414
<i>Exécution</i>	68	895	963
<i>Total holders</i>	459	12664	13123
<i>Contractual</i>	32	2647	2679
TOTAL	491	15311	15802

Source: (GDA, 2019, p. 16)

Following the size of the population affected by the new public accounting system at the level of the general accounting department (15802 agents), we add the number of public entities of an administrative nature which amounts to 9036 establishments including 7041 for the education. So we see that accrual accounting is for a large population, which means that adopting accrual accounting will be difficult. Despite this At least 80% of DGC managers involved in so-called "priority" training have been trained; At least 20% of them are trained as trainers.

7. The sustainability of the project:

According to article 89 of the organic law concerning finance laws, the first year of application of accrual accounting is 2023. But the general directorate of accounting has started the operations of implementation within the framework of the project twinning between Algeria and the European Union, which will start in April 2019 for a period of 27 months (24 months of implementation and 3 months of testing).

At the end of the twinning, the following 3 results must have been achieved(GDA, 2019, pp. 10–12):

- Result 1 (R1): The institutional, functional and organizational capacities of the General Directorate of Accounting are strengthened: on the basis of an analysis of the existing situation, together with a diagnosis and recommendations, the DGC will be able to take the necessary measures, with the support of the Member State, with a view to increasing the competence of its teams called to design and lead the accounting reform. This increase in skills will be defined in a training plan for the benefit of the key players in the reform and future trainers as the reform progresses. The application of this training plan should be designed in a progressive manner in order to usefully support the completion of the planned activities.

- Result 2 (R2): the project for an accruals accounting system is defined for public establishments of an administrative nature (PEA) and local authorities (LA): Result 2 in fact participates in the development of the basis of accounting doctrine for the Algerian public sector.

Several points of attention linked to the context must be taken into account:

- The articulation of general accounts with budget accounts for each type of public body.
- Regular verification of the consistency and convergence of accounting standards, between State, PEA and local authorities.
- The response provided for the information system that will accompany the implementation of the new accounting system.

- The conditions of application by the GDA of internal accounting control for PEA and LA.

- Result 3 (R3). The accounting system is tested on pilot sites:

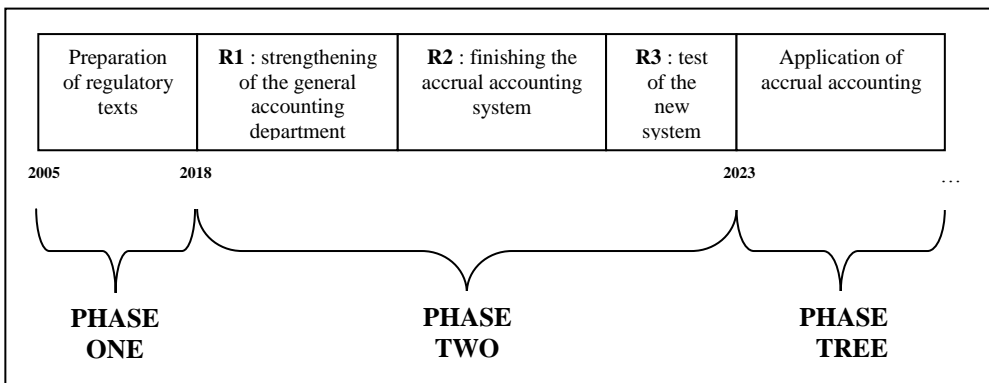
In addition to the deliverables from result 2, the conditions are defined under which an experiment on a limited number of pilot sites can be carried out.

This experiment, lasting a few months, will be the subject of an evaluation making it possible to formulate recommendations for:

- If necessary, improve the deliverables of result 2.
- Specify the rest to be done and the conditions for the deployment of the new accounting system.
- Outline the post-twinning GDA action plan.

We note that the adoption of accrual accounting in Algeria goes through three phases. Firstly, this is the stage of preparation of the project which takes place between the signing of the partnership agreement between Algeria and the European Union in 2005 until the adoption of the organic law relating to finance laws. This is followed by the implementation and testing phase which consists of three stages as shown in Figure 1, this critical phase is a phase of acceptance of accrual accounting in public entities by the parties stakeholders. And finally we find the phase of application of the new system their duration and unpredictable according to the users of the system, the proof the financial accounting system after 10 years of application the user does not manage to master it.

Fig.1 : Steps in applying accrual accounting



8. Conclusion:

After this study we note of the approach provided by the Algerian authorities for the adoption of accrual accounting respects the rule of the adoption of an innovation which confirms our first hypothesis, but these procedure does not mean the success of the project. The most difficult phase is the training phase because the majority of public accountants do not have bases on private accrual accounting. And according to the experience of other paid employees who apply accrual accounting before Algeria, it is proposed that the application is not done in all sectors, but it is preferable to apply accrual accounting in a sector for example education or the health sector. And finally, the university must include the modules of public accounting in law found in higher education programs, to facilitate the integration of new graduates in public entities of an administrative nature and local communities

9. References :

1. Burns T. et Stalker G., 1961, « The Management of Innovation », Tavistock Publications, Londres.
2. Backer T. E. et Rogers E. M., 1998, « Diffusion of Innovations Theory and Work-Site AIDS Programs », *Journal of Health Communication*, Vol. 3, p. 17–28.
3. Bigoness W. J. et Perrault. W. D., 1981, « A conceptual paradigm and approach for the study of innovators », *Academy of Management Journal*, vol. 24, n° 1, p. 68-82.
4. Gosselin M. et Ouelet C., 1999, « Les enquêtes sur la mise en oeuvre de la comptabilité par activités : qu'avons nous vraiment appris ? », *Comptabilité – Contrôle – Adit*, tome 5, volume 1, 1999, p.45-57.
5. Rogers E. M. et Scott K. L., 1997, « The Diffusion of Innovations Model and Outreach from the National Network of Libraries of Medicine to Native American Communities

- », Draft paper prepared for the National Network of Libraries of Medicine, Pacific Northwest Region, Seattle.
6. Schumpeter J., 1939, « Business cycles. A theoretical, historical and statistical analysis of the capitalist process », New York Toronto London : McGraw-Hill Book Company, p. 461, Abridged, with an introduction, by Rendigs Fels. Edition numérique.
 7. Ministère de finance. (2018). Loi organique n° 18-15 du 22 Dhou El Hidja 1439 correspondant au 2 septembre 2018 relative aux lois des finances.
 8. Dérection générale de comptabilité. (2019). Appui à la Direction Générale de la Comptabilité pour la préparation de la mise en oeuvre d'un système comptable en droits constatés.
 9. Ministère de Finance. (2009). Plan comptable de l'Etat Schéma d'adaptation des normes comptables de l'Etat.
10. قمو, آ. (2018). دور ميكانيزمات المعايير المحاسبية الدولية للقطاع العام في محاربة الفساد في المال العام دراسة استثنائية-حالة الجزائر.