

The Trajectory of the Introduction of Management Accounting in the Moroccan Public Sector: The Role of Human and Non-Human Actors

Najeh Said^{1*}, Heyame Zainab², Oulad Seghir Khalid³ and Espinasse Laura⁴

¹LAREGS, Higher School of Technology, Moulay Ismail University, Meknes, Morocco.

²UVSQ, Paris Saclay University, LAREQUOI, Versailles, France.

³ERMADÉ, Abdelmalek Essaadi University, Faculty of Legal, Economic and Social Sciences of Tangier, Tangier, Morocco.

⁴IUT GEA of Bayonne and the Basque Country, University of Pau and the Pays de l'Adour, Pau, France.

ABSTRACT

The introduction of management tools in public establishments is an unavoidable trend. Like private companies, these establishments increasingly rely on such tools to enhance their performance. However, the introduction of management accounting in Moroccan public establishments is not a neutral process, but the result of complex interactions between human and non-human actors. Using Actor-Network Theory (ANT), this study explored how these interactions shaped and reconfigured the trajectory of this process. Through a longitudinal study of a single case, the research highlights how the introduction of management accounting evolves from a linear to a whirlwind process. The results revealed that the interaction between the various actors, including the objects, not only transformed the trajectory, but also enabled the introduction of management accounting with a transformation in relation to the tool objectives, from a negotiation tool to a simple costing tool. This study highlights the importance of understanding sociotechnical dynamics in the introduction of management accounting in the Moroccan public sector.

Keywords: Trajectory, management accounting, public establishment, actor network theory.

ARTICLE INFO

Article History:

Received: 15 June 2024

Accepted: 28 March 2025

Available online: 1 December 2025

* Corresponding Author: Najeh Said; Km 5, Rue d'Agouray, N6, Meknes 50040, Morocco; s.najeh@umi.co.ma; Tel: +212663077065;

INTRODUCTION

The trajectory of the introduction of management accounting can be studied from two approaches: linear and sociotechnical. According to the first approach, the tool is introduced linearly, based on its intrinsic qualities (Rogers, 1962). This first approach has been strongly criticized by the sociotechnical approach (Callon, 1984; Latour, 1992), which questions the tool's neutrality, objectivity and rationality. The authors of this approach consider that the tool is not independent of the actors' interests. The intrinsic characteristics of the tool do not ensure its introduction. The latter is therefore a collective activity that cannot be reduced to a simple matter of managerial voluntarism.

The sociotechnical trajectory is the result of a complex process involving a whole network of human and non-human actors (Callon, 1984; Latour 1992). The neglect of actors' interests is often cited by researchers to explain the success or failure of innovations (Drevetton & Rocher 2010; Perray-Redslob & Malaurant ,2015; Espinasse and Drevetton, 2021; Najeh, 2023).

The trajectory of the introduction of management control instruments, notably management accounting, in the public sector is well documented (Drevetton & Rocher, 2010; Perray-redslob & Malaurent, 2015; Bollecker, 2016; Anton et al., 2021, Najeh, 2023). Our research follows on from this work by analyzing this trajectory in the Moroccan public context, through a sociological reading based on the Actor-network Theory (ANT) (Latour & Woolgar 1979; Latour 1987; Callon 1984). Our aim is to focus on the roles of actors, human and non-human, in the evolution of the process of introducing management accounting. To this end, we will attempt to answer the following question: How does a management accounting system translates into a Moroccan public establishment? To answer this question, a longitudinal study, based on participant observation, was carried out over a period extending from December 2017 to May 2021.

This article is structured in four parts. In the first part, we present a theoretical reading of the trajectory of introduction of management tools, based on actor-network theory. The second part presents the research methodology and the case studied, while the third part presents the results

obtained. We end with the discussion and a conclusion on the role played by actors in the introduction of management tools in the Moroccan public context.

LITERATURE REVIEW

The aim of this first part is to present the literature on the trajectory of the introduction of management tools, including management accounting, emphasizing the central role of actors in this trajectory, based on the work of actor-network theory.

From Linear to Sociotechnical Trajectories

The notion of trajectory was initially used in the exact sciences, such as mathematics and physics, and later adopted in the social sciences (management, economics, sociology, etc.). Several researchers have mobilized this notion to describe the path followed by an organization to introduce a management tool (Drevetton and Rocher, 2014; Espinasse and Drevetton, 2021; Najeh, 2023).

The literature distinguishes two approaches to explaining the trajectory of adoption and diffusion of a management tool: classical and sociotechnical. The first approach assumes that the trajectory takes place through a linear process that translates into a set of successive phases in which the tool spreads on the basis of its intrinsic qualities. This approach believes in the neutrality of the actor's role throughout these phases. The diffusion of innovation movement, developed by the American sociologist Evertt Rogers (1962), is considered a reference for this approach. According to this author, the innovation diffusion process is divided into five successive phases, as shown in Figure 1.

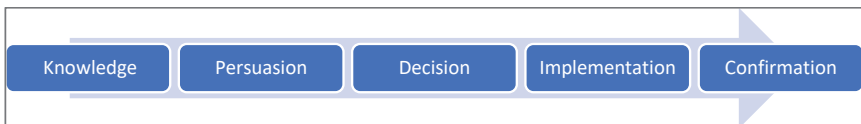


Figure 1: Rogers' Process of Innovation Diffusion
(Source: Rogers, 1962)

Several researchers have analyzed the process of management accounting adoption based on a linear trajectory, showing that the actor has no impact on tool diffusion (Gosselin, 1997; De La Villarmois & Levant, 2005; Becker et al, 2015). The linear approach to innovation diffusion has been strongly criticized by the sociotechnical approach (Callon, 1984; Latour, 1987), which challenges the dichotomous separation between the material and the human. The authors of this second approach assume that the process of innovation adoption is characterized by a series of negotiations between the different actors, constituting what Akrich et al., (1988) call the whirlwind model (Figure 2). This model is characterized by an iterative process, favoring back-and-forth movement between the different phases making up the trajectory (Akrich et al., 1988).

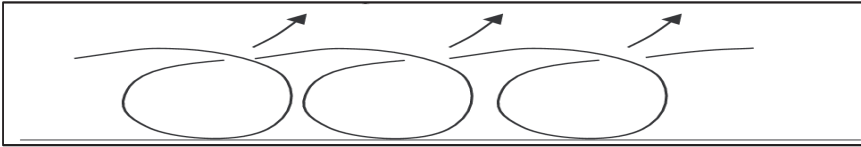


Figure 2: The Whirlwind Model
(Source: Akrich et al., 1988b: 21)

Recent studies have reinforced this criticism by showing that the process of introducing management tools, particularly management accounting, is often influenced by complex contextual and organizational dynamics, in which actors play an active role (Bescos et al., 2020; Gooneratne & Hoque, 2021; Gosselin & Journeault, 2022). This research underlines the fact that the introduction of a tool is not based solely on its technical qualities, but is also shaped by the interactions and interests of the various actors involved. As part of our research, we will study the introduction of management accounting in a Moroccan public establishment, situating it within the context of sociotechnical trajectories. By granting a central role of actors - human and non-human - in this type of trajectory, we mobilized the ANT.

Foundations of Actor-Network Theory

The ANT also known as the Translation Theory, is a current of sociology of organizations developed by Callon, Latour and Law from the 1980s. These authors highlighted the concept of translation from its traditional domain, applied to languages, considering it as a “*set of*

negotiations, intrigues, acts of persuasion, calculations, violence thanks to which an actor or a force allows itself or is given the authority to speak or act on behalf of another actor or from another force" (Callon & Latour, 1981: 279). This approach emphasizes the powerful connection that exists between the actor - human and non-human - and the network. According to this approach, "*An actor-network is both an actor whose activity consists in intertwining heterogeneous elements and a network capable of redefining and transforming what it is made of*" (Callon, 1998: 156).

Applied to organizational practices, the Theory considers that it is practically impossible to understand the success or failure of a practice without reintroducing a network of actors into its structure. This approach reverses the meaning of the relationship between organizational practice and action, ie it is the actions that define the form of these practices.

ANT is based on several key concepts. We retain five in the context of our research: the *primum movens*, the actors/actants, the network, the spokesperson and the controversies (Callon, 1984). The starting point of the translation process is designated by the Latin term "*primum movens*" (Callon, 1984: 180). In Callon's sense, this term can be understood as the original idea, the founding element or the triggering actor of the process, it is with whom the translation begins. The Translation Theory gives a central place to actor-actants. It reintroduces non-human actors (actants) into the translation process by assigning them a role that is symmetrical with human actors (Latour, 1987). The network is considered as a meta-organization grouping together a "*set of human or non-human, individual or collective, defined by their role, their identity, their program*" (Callon & Latour, 1992: 55). A network of actors is represented by a "spokesperson". The latter is considered to be the channel through which the demands and expectations of the actors are expressed. A controversy is characterized by the presence of arguments, ideas or ideologies that challenge the status quo in the network and thus affect and modify the interactions between human and non-human actors (Latour, 2005).

The process of translation has intertwined sequences that are reflected in four moments: problematization, interessement, enrollment and mobilization. Callon insists on the mobilization of the term moment rather than stages to show that there is no chronological link between them.

Problematization consists of formulating needs, sometimes heterogeneous, bringing together a person or a group of persons around an innovation that they wish to introduce. At the level of interessement, the actors behind the innovation seek to find a common interest between the stakeholders that will reinforce their interest in the innovation. Enrolment is “*a set of interrelated roles is defined and attributed to actors who accept them*” Callon (1984: 211). Mobilizing allies is the final stage in the translation process. It fosters the existence of a spokesperson representing a social group, interested in and enrolled in the innovation.

The ANT has shown its value in understanding sociotechnical phenomena. This approach is widely used in management science to analyze various aspects, such as identifying and understanding the role of actors in the technology adoption decision process (Chhina et al., 2023), analyzing the translation of an accounting innovation, Activity-Based Costing (ABC), in the local government sector (Gosselin & Journeault, 2022), understanding the role of concertation in a configuration of change (Anton et al., 2021), studying the deployment path of a management tool in a professional rugby sports club (Espinasse and Drevet, 2021), analyzing the role of controversies in the evolution of the translation of a management accounting tool in the French Army (Perray-redslob & Malaurent, 2015), and also studying the importance of objects in the change, evolution and transformation of actors' behaviors (Drevet, 2014). In our research, we mobilize the ANT to emphasize the central role of actors, both human and non-human, in the evolution of the process of introducing a management accounting system in a Moroccan public establishment.

RESEARCH METHODOLOGY

This second part will be devoted to the presentation of the methodology adopted, as well as the establishment which was the subject of our study.

Case Study Strategy

To answer our research question, we adopted a qualitative method using an ethnographic approach. Based on a longitudinal study -42-month- of a single case (Yin, 2009), we studied the case of a Moroccan public

establishment that had recently embarked on the introduction of a management accounting system. This approach has been widely used in the literature to gain an in-depth understanding of complex phenomena that evolve over time. Yin (2009: 25) considers that *“the case study is empirical research that studies a contemporary phenomenon in a real context, where the boundaries between the phenomenon and the context are not clear, and in which multiple empirical sources are mobilized”*.

The number of cases to be studied essentially depends on the research objectives. Wacheux, (1996: 95) shows that *“when it’s a question of exploring new practices, or of discussion, of original questioning, one or a few cases are enough to enter into this logic of discovery”*. In his book *“Case Study Research: Design and Methods”*, Yin (2009) divided case studies according to research design: the first division concerns the number of cases studied (single or multiple). The second division concerns the level of analysis used within each type of case (holistic or embedded). Our study is a single holistic case study in a public establishment, examining the introduction of management accounting.

Our research, based on ethnography in a Moroccan public establishment, emphasizes increased researcher-field interaction. This approach requires balancing distance and immersion, posing dilemmas about field distance and researcher role (Matheu, 1986; Arnaud, 1996), impacting data authenticity and scientific rigor. Therefore, methodological implications must be carefully considered. This duality allowed us to navigate between distant observation and active participation, adjusting to field dynamics as opportunities for refining our research and methodology (Girin, 1989). Initially, we chose not to disclose our researcher status to maintain trust and professionalism of the established relationships, as well as avoiding any change in the behavior of the actors. After two years, we revealed our research mission, enriching data through heightened organization engagement.

To guard against the risk of subjectivity, and thus reinforce the reliability of the data collected, we opted for two methods of data collection: participant observation and documentary analysis. Participant observation was carried out over a period from December 2017 to May 2021. The use of this technique was justified by our dual role as researcher and member of

the monitoring committee for the introduction of management accounting within the establishment under study, which enabled us to be present on a daily basis in our research field well before the project was launched. This proximity gave us an in-depth understanding of the project’s dynamics, facilitating access to data and enabling us to attend sixteen project meetings, which we have classified into three types (Table: 1).

We therefore used thematic content analysis to understand how actors construct meaning in social reality. This method consists in reading the corpus to identify themes and produce verbatims by theme. The data from these meetings were recorded, transcribed and processed manually. Contrary to the current trend towards the use of software, we opted for a manual content analysis (Fenneteau, 2002) in order to fully immerse ourselves in the data and better contextualize the information. This approach enabled us to ensure a rigorous and detailed analysis of the dynamics observed, while preserving the richness and nuance of the raw data.

Table 1: Summary of Data Collection methods

Participant observation recorded in the logbook	
01-2018	
A single project opening meeting	05-2018 - 05-2021
Duration: 40min	
	Six progress presentation meetings
	Total duration : 335min
	10-2019- 11-2019
	Nine content validation meetings
	Total duration : 440min
Documentary analysis (legal texts, minutes of meetings and external audit reports)	
(Source: Authors)	

The results of the participant observation were supplemented by an analysis of the establishment’s internal documents, including the legal texts governing the establishment and the reports of the external audit and the board of directors. Access to these different sources of data enabled us to cross-check the information gathered throughout our immersion in order to orientate our research (Yin, 1994). In order to put all the information gathered into context, and to overcome the risk of overlooking any data,

we kept a physical logbook in which we recorded all the information we observed, as well as our reflections and theoretical conclusions. This diary enabled us to make a detailed description of all information relating, directly or indirectly, to the project to introduce management accounting.

Case Study Presentation

The organization that is the subject of our study is a Moroccan public establishment, henceforth called the “OMEGA” establishment, for reasons of confidentiality. It was created in 2009 as part of the green Morocco plan, the objective of which is to make agriculture a key driver of growth in the Moroccan economy. It is placed under the supervision of the Ministry of Agriculture, Maritime Fisheries, Rural Development and Water and Forests, as well as the Ministry of Economy and Finance. It has legal personality and financial autonomy. Its financial resources consist mainly of subsidies received from the State, income from services provided to third parties and donations and legacies. OMEGA’s missions can be divided into two distinct categories: the first category encompasses sovereign missions of general interest aimed at the health security of the country, such as the monitoring and control of the state of health of plants and animals. The second category includes current income-generating services. Organizationally, the OMEGA establishment is administered by a board of directors and headed by a general manager. It is made up of ten regional delegations. The accounting system of the OMEGA establishment is essentially composed of budgetary accounting and financial accounting. The latter was introduced in 2013.

RESULTS OF THE RESEARCH

To gain a better understanding of how OMEGA introduced management accounting, we looked at the two attempts that marked this trajectory.

The Process of Introducing Management Accounting: A First Attempt

The introduction of management accounting at OMEGA was carried out by an external consultant, henceforth referred to as the “consulting firm”. During this first attempt, this actor played the role of sole translator.

The introduction of management accounting: the *primum movens*

In Callon's (1984) sense, every translation process has a starting point called *primum movens*. For the introduction of management accounting at OMEGA, this starting point was the external auditor's remark concerning the tax treatment of the establishment's activities in the opinion report for the 2016 financial year. The audit highlighted the tax confusion arising from OMEGA's dual activities (regalian¹ and commercial).

Faced with this observation, the external audit recommended the adoption of a management accounting system enabling the OMEGA establishment to separate between the two activities, regalian and commercial: "[...] *the OMEGA establishment is called upon to set up a management accounting system enabling it to distinguish between lucrative activities and those considered regalian [...]*" [Extract from the auditor's report for the 2016 financial year]. The role of the external audit was decisive in this introduction, in that it prompted managers to accept to introduce management accounting. Managers believed that management accounting will enable them to justify regalian activities that should normally be tax-exempt, and therefore to distinguish between the latter and commercial activities. In addition to this *primum movens*, the designation of the translator or change driver was a precondition for initiating the translation process. In 2017, the OMEGA establishment called on an external actor, the "consulting firm", to set up a management accounting system.

In the light of ANT, the separation of regalian and commercial activities, and the consequent minimization of tax costs, could be described as a problematization. Moreover, a network of actors was organized around this problematization. This "initial" network was made up of central actors who were directly involved in the introduction of the tool, mainly the "consulting firm", the "Chief Financial Officer" and the "monitoring committee", and peripheral actors who were not directly involved in the process of introducing the tool, but who contributed to its acceptance by OMEGA's management, mainly the external auditors. All these actors making up the "initial" network had heterogeneous perceptions of the tool to be introduced. The CFO was looking for a tool that will enable the establishment both to respond to external requests and to enter into negotiations with the DGT

¹ Regalian activities are those whose purpose is to serve the general interest of citizens, and which are linked to the sovereignty of a Head of State (police, defense, health security, etc.).

in order to justify the establishment's surtax. The “monitoring committee”, for its part, was divided into two categories of actors, those who perceived the tool as a means of separating the establishment's activities and those who sought to introduce a tool ensuring correct evaluation of the cost of each program. The “consulting firm”, in its role as driver of change, was expected to make the introduction of management accounting a reality by meeting the requirements of all OMEGA's stakeholders. The separation of activities, negotiation with the DGT, response to stakeholder demands and costing of each program led to an Obligatory Passage Point² (OPP) which was the introduction of management accounting (Figure 3).

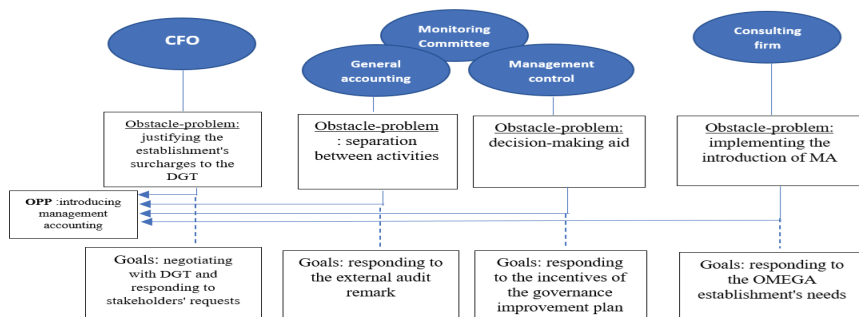


Figure 3: The Obligatory Passage Point for Initial Network Actors

(Source: Adapted from Callon (1986))

A first attempt to introduce management accounting: a process centered on a single translator

The approach adopted by OMEGA establishment management in this first attempt was classic, favoring a linear approach with predictable, chronological phases. The consultancy firm, as unique translator, strengthened the relationship between the network members, and had to respect the clauses of the special conditions (CS), which foresaw five phases over 17 months (Figure 4). After each phase, a progress report was to be presented to the monitoring committee.

² An Obligatory Passage Point (OPP) defined by “the implementation of a movement that leads everyone to engage in an action that brings people together, albeit temporarily and around an intermediate objective still far from what the final project will be” (Herreros, undated, p. 5).



Figure 4: Linear Process for Introducing Management Accounting
(Source: Authors)

The project began in early 2018 with an opening meeting where the CFO presented OMEGA to the consulting firm and the monitoring committee, recalling the problematization behind the introduction of this tool, which was, among other things, the response to the remarks of the external audit and minimize the fiscal cost. The consulting firm began the first phase, diagnosis and benchmarking, by analyzing the organizational structure, the needs of the actors and the activities of the establishment.

A second meeting was held on May 21, 2018 to present progress. The diagnosis and benchmark enabled the consulting firm to identify the establishment’s activities as well as their nature (commercial or regalian) and to analyze the management accounting system of two establishments similar to OMEGA. The second phase concerned the design of management accounting, including the choice of costing method, structuring into responsibility centers, definition of cost objects, allocation of expenses and choice of units of work. To this end, a meeting to present the progress of the provisional results was scheduled on January 08, 2019. During this meeting the consulting firm presented the provisional results, discussing the costing methods and recommending the full cost method.

After choosing the costing method, the consulting firm defined the activity levels for determining the cost objects, decomposing OMEGA’s activities into five levels: program, activity area, activity sub-area, activity and service. The consultant chose the sub-activity area as the main level of analysis, justifying this choice by OMEGA’s current organizational structure. However, disagreement arose over the cost allocation criteria, such as labor hours, square meters or quantity of material used, which correspond to the choice of units of work, leading to an initial controversy. The consulting firm insisted on the importance of mobilizing other internal actors to validate these choices, stressing those internal experts were essential for successful implementation.

The first attempt, although linear and rigid, highlighted the need to mobilize a wider range of actors to make progress in introducing management accounting.

Management Accounting Translation Process: Towards A Second Attempt

The second attempt to introduce management accounting went through a series of intense interactions which, according to actor-network theory, are called controversies. Three controversies lead to the extension of the “initial” network through the involvement of new actors.

The first controversy: the choice of units of work (Jan 2019-Nov 2019)

The disagreement between the consulting firm and the CFO over the selection of work units at the January 8, 2019 meeting triggered the initial controversy. To remedy this, they expanded the initial network by involving specialists from OMEGA’s technical departments, such as veterinarians and engineers. This led to a shift from a single translator to multiple translators. To move the project forward, the monitoring committee organized a meeting with the specialists, in the presence of the consulting firm. The chartered accountant, representing the consulting firm, reiterated the importance of management accounting for OMEGA, reminding them of the problematization involved in the project. The specialists expressed their interest in the tool, becoming spokespersons for OMEGA’s technical departments. They were mobilized in the process of translating the tool, with content validation meetings scheduled in collaboration with the monitoring committee and the consulting firm: *[As consultants, we have the tools and the methodology, but it’s the specialists in the field who really know the business. We need to consult them to validate the units of work, because sometimes new activities emerge that are not reflected in the plant’s reports]* [Consulting firm representative].

A total of nine meetings were held between October 10-2019 and November 25-2019. The purpose of these meetings was to validate the type of services (commercial or regalian) as well as the units of work chosen by the consulting firm. The mobilization of “specialists” thus favored the dissemination and expansion of the initial network, enabling the translation

process to progress (Figure 5). This situation made the network more solid, helping to resolve the first known controversy in January 2019.

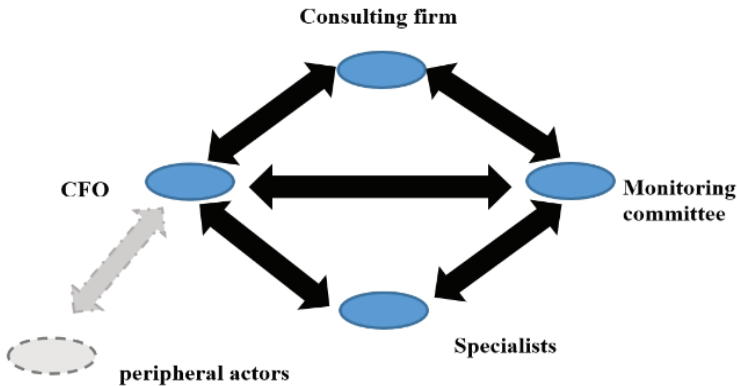


Figure 5: Expansion of the Initial Network
(Source: Authors)

The second controversy: expense allocation (Dec 2019- Aug 2020)

Our on-site observation of the OMEGA establishment had enabled us to identify a second controversy in the process of translating management accounting that took place from December 2019 onwards. This controversy concerned the allocation of costs between the various activities of the establishment, what was known as the expense allocation, in particular personnel expenses, consumable materials and products and depreciation expenses: “[...] we have already encountered some difficulties [...] with the processing of personnel costs [...] monitoring raw material consumption [...] or the processing of depreciation for materials and equipment [...]” [Consulting firm representative].

The analysis of the management accounting design report by the consulting firm revealed that the correct allocation of expenses to the OMEGA establishment depended on the quality of information from other information systems (IS). The consulting firm pointed out that the establishment’s information system, as an actant, was not precise enough and did not invest the necessary information in real time, which could block the introduction of management accounting: “ [...] The existing system does not allow very precise processing of expenses [...] currently,

processing would be discretionary [...]” [Consulting firm representative]. This situation provoked a second controversy over the expense allocation. To deal with this, the consulting firm mobilized new actants. These were the expense allocation canvas, which played an intermediary role. To overcome this controversy, the “consulting firm”, in consultation with the “monitoring committee”, mobilized two new human actors: the Human Department Resources (HDR) and the Property and General Resources Department (PGRD). These actors were required to fill in the canvas, as an actant, proposed by the consulting firm.

The analytical treatment of expenses was carried out via a flat-rate allocation based on the canvas proposed by the consulting firm: “*[...]we proposed flat-rate allocation keys [...] this treatment will be defensible [...] we’ll have a reasonable approximation [...]*” [Extract from the accountant’s speech at the August 2020 meeting]. The mobilization of new human and non-human actors made it possible to overcome the second controversy linked to the expense allocation, thus broadening the initial network of actors (figure 6).

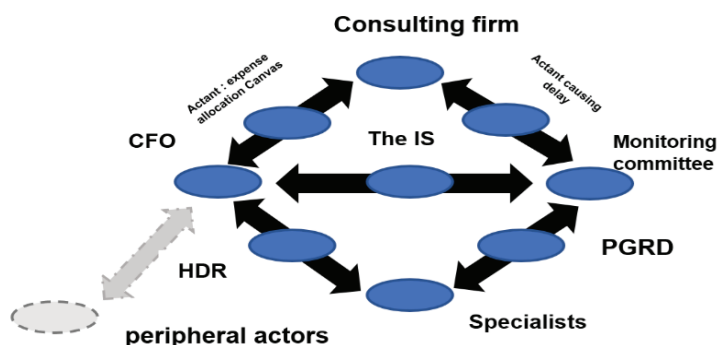


Figure 6: Mobilizing New Human and Non-human Actors
(Source: Authors)

Third controversy: the choice of the tool’s final form (Jan 2021-May 2021)

To move the project forward, the “consulting firm” proposed working simultaneously on all the remaining phases, despite the non-completion of the second phase (the design of the management accounting system). In justifying this proposal, the chartered accountant showed that the

introduction of the tool evolves over time, and its finalization took shape after overcoming all the resistance found throughout the process: “[...] *It is crucial to consider the current concept of management accounting as provisional and open to revision [...] your comments are essential if we are to arrive at the best possible version of this concept [...]*” [Consulting firm representative]. This new approach called into question the classical approach initially envisaged, favoring a whirlwind process (Akrich et al., 1988) (Figure 7).



Figure 7: The Whirlwind Process of Building Management Accounting

(Source: Author)

In order to move the project forward, the “consulting firm” began the phase reserved for the preparation of the procedure’s manual. With regard to IS parameterization, the “consulting firm” suggested testing the analytical processing of income and expenses for the 2018 and 2019 accounting years on Excel tables, and integrating the final results of this processing only after review and revision by network members: “[...] *in order to avoid any potential problems with the parameterization of the information system [...] I suggest starting by calculating the analytical result on Excel [...]*” [Extract from the accountant’s speech].

According to this actor, and given that the project had fallen behind schedule, the aim of this test was to overcome the delay in the project by facilitating the incorporation of improvements, before proceeding with the final parameterization of the management accounting system. During his presentation, the chartered accountant explained the project’s delay by identifying three actants. Firstly, he cited the insufficient quality of information from the various entities of the OMEGA establishment: “[...] *the context of the OMEGA establishment does not present favorable conditions for closing the project on time [...]*”. Secondly, he mentioned the extent of the physical inventory³ mission: “[...] *what is certain is that we had problems carrying out both missions [the management accounting*

3 By way of clarification, in 2019 the OMEGA establishment launched a call for tenders to carry out a physical inventory of stocks and fixed assets. This assignment was awarded to the same consulting firm responsible for introducing management accounting

mission and the physical inventory mission[...]". Finally, the confinement caused by the Covid-19 health crisis also affected the project.

Given the delay in the project, the CFO stressed the importance of putting the effort invested into the project into practice, whatever the level of precision of the tool. He therefore decided that Excel processing should not just be a test, but a final version of the tool, which was criticized by the chartered accountant. The latter stated that the presentation of the analytical result in Excel would not be convincing at the time of negotiations with the DGT. Following this disagreement, a third controversy emerged, in January 2021, over the final form of the tool. In his speech, the CFO reiterated his commitments to the project. For him, the first commitment was to respond to the external audit's remark by separating the establishment's activities. He added that, at this level, the objective was to operationalize the system designed by the "consulting firm": "[...] *my commitment to my hierarchy is to keep management accounts [...] the firm has designed a system that must be operationalized[...]*" [Extract from The CFO's speech]. The "CFO's" second commitment was to optimize tax costs by determining the tax shortfall on the establishment's regalian activities. However, due to the delay in this project and the absence of any obligation on the part of the OMEGA establishment towards the DGT, the "CFO" had made it clear that this commitment is not a priority at present.

The CFO's hierarchical position gave him a position of strength within the network. This position was at the root of the resolution of this third controversy. In May 2021, this led to a consensus on the definitive form of management accounting: a simplified system based on a flat-rate treatment of expenses and presented in an Excel file. The figure below illustrates the widening of the network as a result of the mobilization of non-human actors causing the project delay. The arguments put forward by the CFO favoured the internal use of the tool. Indeed, as stated by the "CFO", management accounting will initially be used internally to meet the demands of stakeholders, then as it improves, the tool can be used as a means of negotiation with the DGT. This change in priority was mainly explained by the delay in the project's progress.

The figure 8 illustrates the network evolution along the trajectory of the introduction of management accounting within the OMEGA establishment.

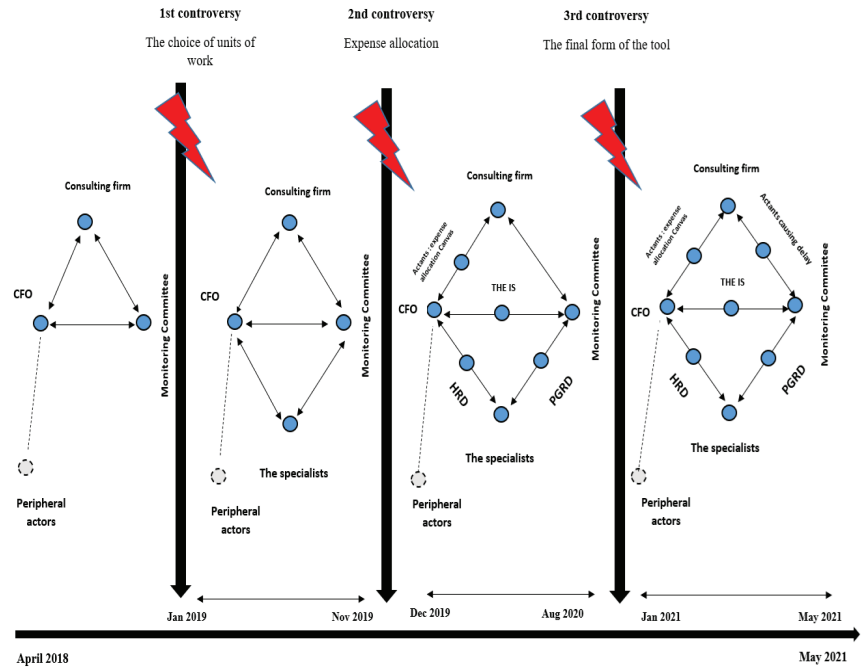


Figure 8: Evolution of the Network Involved in the Process of Introducing Management Accounting
(Source: Authors)

Discussion of Results

The results of our research add to the existing literature on the importance of broadening and strengthening the network in the introduction of the management tools. Our study revealed that the launch of the management accounting project at the OMEGA establishment followed a classic approach. The managers defined the phases to be followed by the consulting firm, following the linear and chronological model (Rogers, 1962). Contrary to the results of Becker et al, (2015), who neglected the role of actors in the process of introducing management accounting, we found that the success or failure of this introduction does not depend solely on the intrinsic values of the tool. Indeed, if factors other than intrinsic values intervene, the linear process becomes inoperative. The results of our research showed that the latter was in fact the main cause of the project's stalemate. We have shown that compliance with the clauses mentioned in the SC was not enough to guarantee the successful introduction of management

accounting. Referring to the work of Callon and Latour, we observed that the extension of the network by mobilizing new human and non-human actors favored the transition from a linear process to a more dynamic and iterative one, characterized by back-and-forth movements between the different phases initially fixed. Here, we join the findings of Gooneratne & Hoque (2021) and Gosselin & Journeault, (2022), who have highlighted the important role of human and non-human actors in the process of translating management tools.

The results of our study have also contributed to enriching the understanding of the role of both human and non-human actors in the resolution controversies by facilitating the construction of the tool (Redslob and Malaurant, 2015; Douma, 2020). By highlighting Callon's (1984) principle of generalized symmetry, our study deepens understanding of the interactions between human and non-human actors, treated with equal importance, in the process of introducing management accounting.

In addition, the trajectory analysis enabled us to give a prominent place to the time variable. Our study, as Pettigrew (2001) has shown, underlined the fact that the time variable cannot be considered as a simple neutral chronology in the process of introducing management accounting. On the contrary, time here represented a fundamental variable that transformed the definitive form of the tool introduced. Generally, empirical studies analyzing the introduction of management tools often neglect the time variable in the transformation of tool perceptions. (Redslob et Malaurant, 2015 ; Gooneratne & Hoque, 2021 ; Gosselin & Journeault, 2022). In our study, the introduction of management accounting, initially scheduled to take 17 months, was considerably delayed, taking it to almost 38 months. The time elapsed thus caused a considerable delay in the project's completion, resulting in the urgent need to introduce a tool, whatever its level of precision.

The results of our research can also be analyzed using other theoretical approaches, such as the Neo-institutional (DiMaggio and Powell, 1991) or Justification Theory (Boltanski and Thévenot, 1991). According to the Neo-institutional Theory, management accounting could represent a "rational myth" (Meyer and Rowan, 1977), perceived as an institutionally legitimized practice whose concrete application may diverge from initial expectations,

as shown by Bollecker (2016). Moreover, it is commonly accepted that the formal structure of an organization is often disconnected from its real practices (Meyer and Rowan, 1977). The misalignment between operational practices and internal organizational effectiveness can lead to the emergence of the phenomenon of decoupling. Thus, this decoupling is likely to appear when the organization is faced with external institutional pressures that are contradictory (Bollecker, 2016; Boxenbaum and Jonsson 2017). In our case, decoupling seems to be encouraged by external pressure, which has led to a transformation of the tool. The theoretical approach of justification (Boltanski and Thévenot, 1991) seems to offer a fruitful perspective to the analysis of our research. It offers the possibility of understanding the reasons justifying the position of social actors in order to overcome a disagreement. This positioning encourages them to join cities, in order to adhere to universal values (Boltanski and Thévenot, 1991).

CONCLUSION

The results of our research showed that the introduction of management accounting within the OMEGA establishment followed a complex process marked by two attempts. Analysis of these attempts has enabled us to highlight the contribution of the sociotechnical approach to the introduction of a management tool, considering the latter as a collective action based on the mobilization of a network of human and non-human actors (Akrich et al, 2002). The implication of our research is that the mobilization of a heterogeneous range of actors in the public sector is crucial to overcoming conflicts and reinforcing the legitimacy of management tools. The presence of managers, specialists, politicians, external consultants and others can generate resistance, but their mobilization in the design and adaptation of tools helps resolve controversies and reach compromises. The mobilization of these actors ensures better acceptance and integration of reforms, making proactive conflict management and recognition of contributions essential to the success of accounting reforms.

Our research focused on a single case study, due to the complexity and scarcity of studies on the introduction of management accounting in the Moroccan public sector context. Although this approach enabled an in-depth analysis of the case studied, it has limitations in terms of the

generalizability of the results. A study of other establishments would be interesting to confirm or refute the role of actors in the evolution of the process of introducing management tools in the public context. The study can also be enriched by mobilizing other theoretical approaches, such as the Grounded Theory (Glaser and Strauss, 1967).

REFERENCES

- Akrich, M., Callon, M., & Latour, B. (1988). À quoi tient le succès des innovations ? (1) L'art de l'intéressement ; (2) Le choix des porte-parole. *Gérer et Comprendre. Annales des Mines*, (11–12), 4–17.
- Akrich, M., Callon, M., Latour, B., & Monaghan, A. (2002). The key to success in innovation. Part I: The art of interessement. *International Journal of Innovation Management*, 6(2), 187–206.
- Anton, P., Grimand, A., Boespflug, M., & Becuwe, A. (2021). Piloter le changement par un projet sur les valeurs managériales : contribution des espaces de concertation comme instrument de gestion et d'innovation de l'action publique. *Gestion et Management Public*, 9(1), 37–57. <https://doi.org/10.3917/gmp.091.0037>
- Arnaud, G. (1996). Quelle stratégie d'observation pour le chercheur en gestion ? Prolégomènes à toute recherche *in situ*. *Économies et Sociétés, Série Sciences de Gestion*, 22, 235–264.
- Becker, S., Wald, A., Gessner, C., & Gleich, R. (2015). The role of perceived attributes for the diffusion of innovations in cost accounting: The case of activity-based costing. *Comptabilité Contrôle Audit*, 21, 105–137. <https://doi.org/10.3917/cca.204.0105>
- Bescos, P. L., Deville, A., & Foulquier, P. (2020). BSC and long-term deployment: An actors' perspective. *Journal of Applied Accounting Research*, 21(3), 383–396. <https://doi.org/10.1108/JAAR-01-2019-0017>
- Bollecker, M. (2016). The adoption of management accounting at university: The presence of internal cleavages in a contradictory institutional

- demands context. *Comptabilité Contrôle Audit*, 22, 109–138. <https://doi.org/10.3917/cca.222.0109>.
- Boltanski, L., & Thévenot, L. (1991). *De la justification : Les économies de la grandeur*. Paris : Gallimard.
- Boxenbaum, E., & Jonsson, S. (2017). Isomorphism, diffusion and decoupling: Concept evolution and theoretical challenges. In R. Greenwood, C. Oliver, T. Lawrence, & R. E. Meyer (Eds.), *The SAGE Handbook of Organizational Institutionalism* (2nd ed., pp. 79–104). Sage.
- Callon, M. (1984). Some elements of a sociology of translation: Domestication of the scallops and the fishermen of St Brieuc Bay. *The Sociological Review*, 32(1_suppl), 196–233. <https://doi.org/10.1111/j.1467-954X.1984.tb00113.x>.
- Callon, M., & Latour, B. (1981). Unscrewing the big Leviathan: How actors macro-structure reality and how sociologists help them to do so. In K. Knorr-Cetina & A. Cicourel (Eds.), *Advances in Social Theory and Methodology: Toward an Integration of Micro- and Macro-Sociologies* (pp. 277–303). Routledge & Kegan Paul.
- Callon, M., Lhomme, R., & Fleury, J. (1999). Pour une sociologie de la traduction en innovation. *Recherche et Formation*, 31(1), 113–126.
- Chhina, S., Chadhar, M., Firmin, S., & Tatnall, A. (2023). The role of actors in blockchain adoption decisions – An innovation translation perspective. *Australasian Journal of Information Systems*, 27. <https://doi.org/10.3127/ajis.v27i0.4489>.
- De La Villarmois, O., & Levant, Y. (2005). La mise en place et l'utilisation d'une méthode d'évaluation des coûts : le cas de la méthode UVA. *Finance Contrôle Stratégie*, 8(2), 175–205.
- Diedrich, A., & Guzman, G. (2015). From implementation to appropriation: Understanding knowledge management system development and introduction as a process of translation. *Journal of Knowledge Management*, 19(6), 1273–1294.

- DiMaggio, P. J., & Powell, W. W. (1991). *The new institutionalism in organizational analysis*. Chicago: University of Chicago Press.
- Douma, F. (2020). *Le contrôle de gestion «médiateur» du changement : Le cas d'un hôpital marocain* (Doctoral dissertation). Université de Montpellier.
- Drevet, B., & Rocher, S. (2010). « Lost in translation » : Étude de la construction d'un outil de gestion dans une région française. *Comptabilité Contrôle Audit*, 16(1), 83–100. <https://doi.org/10.3917/cca.161.0083>.
- Drevet, B., & Rocher, S. (2014). Janus réconcilié : Associer traduction et purification pour analyser la trajectoire des outils de gestion. *Recherches en Sciences de Gestion*, 103, 67–88. <https://doi.org/10.3917/resg.103.0067>.
- Espinasse, L., & Drevet, B. (2021). La trajectographie : Une proposition pour capturer les outils de gestion. *Finance Contrôle Stratégie*, 24(3).
- Fenneteau, H. (2002). *Enquête : Entretien et questionnaire*. Paris : Dunod.
- Girin, J. (1989). L'opportunisme méthodique dans les recherches sur la gestion des organisations. Communication à la journée d'étude *La recherche-action en action et en question*, AFCET, Collège de systémique, École Centrale de Paris.
- Glaser, B., & Strauss, A. (1967). *The discovery of grounded theory: Strategies for qualitative research*. Mill Valley, CA: Sociology Press.
- Gooneratne, T. N., & Hoque, Z. (2021). The fate of the balanced scorecard: Alternative problematization and competing networks. *Qualitative Research in Accounting & Management*, 18(2), 255–281. <https://doi.org/10.1108/QRAM-03-2020-0028>.
- Gosselin, M. (1997). The effect of strategy and organizational structure on the adoption and implementation of activity-based costing. *Accounting, Organizations and Society*, 22(2), 105–122.

- Gosselin, M., & Journeault, M. (2022). The implementation of activity-based costing by a local government: An actor-network theory and trial of strength perspective. *Qualitative Research in Accounting & Management*, 19(1), 18–44. <https://doi.org/10.1108/QRAM-05-2020-0073>.
- Latour, B. (1987). *Science in action: How to follow scientists and engineers through society*. Cambridge, MA: Harvard University Press.
- Latour, B., & Woolgar, S. (1979). *Laboratory life: The construction of scientific facts*. Los Angeles: Sage.
- Latour, E. D. (1992). Les temps du pouvoir. *Cahiers d'Études Africaines*, 32(128), 729–732.
- Leclercq, E. (2004). *Trajectoire : La construction des dynamiques sociales*. Paris : L'Harmattan.
- Matheu, M. (1986). La familiarité distante : Quel regard poser sur la gestion dans notre société ? *Gérer et Comprendre. Annales des Mines*, 2, 81–94.
- Meyer, J. W., & Rowan, B. (1977). Institutionalized organizations: Formal structure as myth and ceremony. *American Journal of Sociology*, 83(2), 340–363. <http://www.jstor.org/stable/2778293>.
- Najeh, S. (2023). *Étude de la trajectoire de l'introduction de la comptabilité de gestion : Le cas d'un établissement public marocain* (Thèse de doctorat). Université Abdelmalek Essaadi, Tanger, Maroc.
- Perray-Redslob, L., & Malaurent, J. (2015). Traduction d'un outil de contrôle de gestion dans le secteur public : Le cas du BSC dans l'armée de terre française. *Revue Française de Gestion*, 41(250), 49–64. <https://doi.org/10.3166/RFG.250.49-64>.
- Pettigrew, A. M. (1990). Longitudinal field research on change: Theory and practice. *Organization Science*, 1(3), 267–292.

- Pettigrew, A. M., Woodman, R. W., & Cameron, K. S. (2001). Studying organizational change and development: Challenges for future research. *Academy of Management Journal*, 44(4), 697–713.
- Rogers, E. M. (1962). *Diffusion of innovations*. New York: Free Press.
- Van de Ven, A. H., & Poole, M. S. (1995). Explaining development and change in organizations. *Academy of Management Review*, 20(3), 510–540.
- Wacheux, F. (1996). *Méthodes qualitatives et recherche en gestion*. Paris: Economica.
- Yin, R. K. (2009). *Case study research: Design and methods* (Vol. 5). Sage.