

Introducing the First Management Control System in Independent Professions: A Qualimetric Enquiry

Laurent Cappelletti, ISEOR*

Miguel Delattre**

Florence Noguera***

*University of Lyon 3, France

**CERRAL, University Lumière Lyon 2, France

***ERFI - University of Montpellier 1, France

ABSTRACT

This paper examines the question of introducing the first management control system in independent professions through the case of French notary public offices. In order to provide elements of response to the research question, a qualimetric approach which combines qualitative and quantitative models has been chosen to improve the validity of observations. The qualitative approach selected was based on an action research program carried out in 350 notary public offices between 1998 and 2004. In parallel, 5 explicative variables for measuring the successful set-up of the management control system were tested and analyzed, primarily by factor analysis.

Keywords: management control, qualimetric approach, independent professions, very small businesses.

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Introduction

The paper examines the problematic of introducing the first management control system in independent professions through case study of 350 French notary public offices. The research question of the paper could be summarized in these terms: what are the contributions of a management control system in independent professions and what are the key factors of success in introducing such a system? Much is at stake with management control issues. Practical stakes, first of all, since law-related offices, like most very small businesses, are often equipped with rudimentary or very informal management control systems (Parson, 2004). Yet, with rising globalization and hypercompetition, to cite Richard D'Aveni's expression (D'Aveni, 1994), which characterize contemporary economy, even very small businesses such as independent professions are confronted with the problematic of controlling their costs.

Secondly, from a theoretical point of view, if the field of management control is well documented in its application to large firms, thanks to groundbreaking work by Anthony (1956, 1965, 1988) and Simons (1987, 1995, 2000), independent professions are less studied, such as lawyer, bailiff and notary public offices in particular. Through cases of socio-economic management control, this paper focuses on control systems that combine tools of regulation and measurement of material phenomena with tools that impact actor behavior and measure immaterial phenomena.

In order to provide elements of response to the research question of this paper, an innovative methodology was chosen: the qualimetric approach (Savall, 1974, 1975, 2007; Buono and Savall, 2007; Savall et al., 2008). The qualimetric approach combines qualitative and quantitative models to improve the validity of observation. The qualitative approach selected was based on an action research methodology (Baker, 2007). It consisted in setting up a socio-economic management control system in 350

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notary public offices between 1998 and 2004. In parallel, 5 explicative variables for measuring the successful set-up of the management control system were tested and analyzed, primarily by factor analysis. The results presented, in response to the research question, were obtained through observation in the course of intervention-research carried out in 350 notary public offices. These findings were then supplemented by a quantitative study. They show that in 75% of the tested cases, setting up a socio-economic management control system improved both social and economic performances of very small businesses such as notary public offices. Furthermore, they showed that one of the key variables of successful set-up is involvement on the part of the company CEO during the set-up phase.

Theoretical framework: Management control system in independent professions

This section positions socio-economic management control inside the field of management control. It also discusses the strategic constraints of independent professions, beyond those common to all very small businesses, explaining the specific needs of these enterprises for innovative methodologies of management control.

Socio-economic management control: Concepts and tools

Socio-economic management control respects the basic concepts of management control as exposed in the founding theories. Its particularity lies in the conception of the tools it proposes, which are aimed at improving both social and economic performances of the organization.

Traditional conceptual framework of management control

Numerous actors have contributed to developing management control. Our goal here is not to draw up an exhaustive inventory of authors having contributed to the domain of management control, but rather, to introduce those authors whose work entertains a relationship to the socio-

economic theory and to the socio-economic management control it inspires. Management control, seen as a set of frameworks that help managers, has two essential dimensions (Simons, 1987, 1995, 2000)

- An economic and strategic dimension that consists in choosing the operational rules and regulations that permit attaining fixed objectives;
- An organizational and psycho-social dimension that enables inciting individuals to behave in accordance with operational rules and regulations.

Anthony is considered an author of reference in the field of management control. He first defined control as "the process that consists in assuring that the organization does what management wants it to do" (Anthony, 1956). Anthony includes management control in the problematics of convergence between goals and guarantees that strategies are implemented. He subsequently defines it as "the process through which managers obtain confirmation that resources are obtained and utilized in effective and efficient manner to accomplish the objectives of the organization" (Anthony, 1965). Anthony defined, in a third period, management control as "the process through which managers influenced other members of the organization to implement company strategy" (Anthony, 1988). For Anthony, management control is the control of managers by other managers, these being heads of teams with objectives to attain. Simon also situated his research work within the field of strategy and considered control systems as potential vectors for change (Simon, 1987).

The specificities of the socio- economic management control system

Socio-economic management control (Savall, 2003a; Buono and Savall, 2007), can be seen as a continuation of work by Anthony and Simons, with the particularity that it aims to improve the enterprise's socio-economic performance. Indeed, the fundamental hypothesis upon which it is based recognizes compatibility between

social and economic performances. According to this fundamental hypothesis, sustainable development of performance is only possible by reconciling social performances, namely the satisfaction of involved actors in the large sense, and the economic performances of the organization. This fundamental hypothesis heralds the work of Pfeffer (1995, 2005) who shows that social performance and management quality strongly contribute to an organization's economic performance. The tools and methods of socio-economic management control are organized around three axes: the tool axis, the change and cost management axis and the policy axis. This tri-axial methodology is called the HORIVERT method. It has been tested and successfully implemented in hundreds of businesses and organization is more than 30 countries around the world since 1974 (Savall, 2003b; Buono and Savall, 2007; Zardet and Harbi, 2007).

The objectives of the HORIVERT method are comparable to those attributed to management control by Simons (2000), Kaplan and Norton (1996, 2001, 2004). It concerns equipping the enterprise with an appropriate control system for measuring performance and determining strategy effectively and efficiently. However, the method differs from the Simons model by proposing its own measurement and piloting tools. It also differs from the Kaplan & Norton in that it equips the controller with management tools situated along the three axes, to enable describing and explicating performance. Thus, this method is descriptive, explicative and prescriptive, which places it in the hybrid framework called "generic contingency" (Savall, 2007). This median positioning between constructivism and positivism is open to debate. Indeed, it is unique in management control where one typically finds either positive and normative methodologies, or constructivist and interpretative methodologies (Baker, 2007). Thus, Péron and Péron (2003) wrote an article in JOCM in which they bring out the numerous connections that can be established between the socio-economic

approach to management considered as an architecture and the postmodern movement. We invite the reader to refer to this article for more details on the connections between socio-economic management control and postmodern movement.

The axes of the socio-economic management control system

The tool axis of socio-economic management control is composed of six tools:

The periodically negotiable activity contract formalizes the objectives of qualitative, quantitative and financial results available to the organization.

The internal-external strategic action plan is a strategic tool that takes into account both external targets (the Products-Markets pair, clients, suppliers) as well as internal clients (technology, material and immaterial investments, adequate training/employment for Humans, from the CEO to workers).

Priority action plans is an inventory of priority actions, up-dated bi-annually, to be carried out by a group of teams (services, workshops, board of directors and management, etc.) in order to attain the organization's strategic objectives, following decisions defining those priorities and feasibility testing.

The piloting logbook combines all pertinent indicators, qualitative, quantitative and financial, utilized by all members of the management team to concretely pilot staff and activities in their zones of responsibility.

The self-analysis of time management grid is a coherent set of time management instruments that facilitate more efficient organization of individual and collective time management.

The competency grid maps out competencies currently available in a team. It facilitates developing a collaborative training program adapted to the evolution of everyone

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in the enterprise, according to needs and in keeping with the objectives of company strategy.

These tools assist company actors in orienting company strategy toward the development of human potential, while at the same time, fostering the attainment of short-, medium- and long-term economic objectives.

The change and cost-management axis constitutes an iterative process of socio-economic intervention in four phases: diagnostic, project, implementation and evaluation. The socio-economic diagnostic is a diagnostic that reveals the organization's dysfunctions and the hidden costs they generate. The diagnostic is carried out through semi-structured interviews conducted by interveners with the various categories of actors: managers, supervisors and staff. The following stage entails formalizing a socio-economic project, based on information provided by the diagnostic, to reduce dysfunctions and convert hidden costs into value-added. These projects are developed in participative fashion and include the calculation of an economic balance where material and immaterial investment costs are balanced by the economic performances of the projects under consideration. Following implementation, a socio-economic evaluation permits analyzing the qualitative, quantitative and financial results obtained.

Such a procedure could not take place without the strategic determination of managers. **The policy axis** serves to stimulate strategic decision-making on the part of senior managers gathered in the steering committee. Senior management's strategic decisions influence actions that contribute to the implementation of the strategy and the reduction of dysfunctions.

Independent professions: The case of notary public offices

Independent professions such as notary public offices, like other small businesses, are subject to new strategic constraints that oblige them to implement

management systems in order to better control their costs, activate their human resources and develop their strategy. In sum, independent professions need effective and efficient management control systems just as much as large business do, but they need control systems tailored to their size (Altman and Weil, 1996; Boutall and Blackburn, 1998 ; Cappelletti, 2007).

Notaries: Liberal professionals, small business heads and government representatives

France has approximately 4,600 notary public offices, managed by over 8,000 notary publics and employing 40,000 salaried staff. On the average, notary public offices employ 8 staff members and are managed by a notary or several lawyers working as associates. Together, such offices turn over a total of some €3 billion annually. Approximately 80% of this revenue is generated from legal activities connected with family law (e.g., inheritance, marriage, divorce) and real estate law (e.g., real estate purchase and sale). Within these areas of activity, notary publics enjoy a state-regulated monopoly in which charged rates and fees are fixed by law. However, they are in competition with each other, since clients have a free choice of which notary they use. The remaining 20 % or so of revenues is derived from non-monopoly activities, where fees are unregulated (e.g., company law, asset management, real estate negotiation). In this market, notary publics are in competition not only with each other, but also with other independent professionals, such as lawyers and certified public accountants (Daudé, 2006).

To ensure compliance with these regulations, notary publics are members of the regulatory organizations that control them, promote the profession and help it develop. Notary publics are also appointed by decree of the Department of Justice and belong to a Chamber, a body containing all the notary publics in the same geographical *département* (there are 95 such Chambers in France). The Chamber is the basic unit of the profession,

elects a notary as President every two years, and plays a disciplinary, promotional and management role within the profession. These bodies act within policy guidelines that are set and monitored by a national authority, the *Conseil Supérieur du Notariat* (CSN) which plays an institutional role by setting policy and a single set of regulations for the profession. In summary, the notary is a public official, but works within the legal framework of independent professions and receives his or her income from the business (Daudé, 2006).

The management control needs of notary publics

Since the French property crisis of the early 1990s, notary public businesses have had to cope with new strategic constraints that have required them to improve the quality of their management control system. This requirement, which is also being felt in other professions such as health care and law, is a recent development in a world where, for many years, the lawyer's expertise had been sufficient to ensure the survival and development of notary public offices (ISEOR, 1998-2004).

In terms of their monopoly activities, notary publics have tended to be rather somnolent when it comes to strategy: their working methods have evolved very little and have rarely focused on improving effectiveness and efficiency. Very few notaries have introduced any form of management control to monitor the profitability of their monopoly activities, preferring to manage by focusing primarily on a single source of revenue. The growing reality is that notary offices need to exercise management control over both their monopoly and non-monopoly work if they are to improve the profitability of their offices. They also need to apply innovative management methods to reduce their costs, increase their value-added initiatives, and invest in new product development like other independent professions and small businesses (Parson, 2004; Maister, 1993, 1997).

As in other professions, notary publics have to cope with increasing competition and rising client expectations. Despite the discipline imposed by the profession, there is fierce competition between notaries for monopoly sector business. There is also intense inter-professional competition from lawyers, certified public accountants and realtors in the free market sector for services such as company law and real estate negotiation. Notary publics must also cope with the rising expectations of staff who are demanding to have a direct interest in financial results and to become more involved in the business. However, they must now become true managers with the ability to lead a team of staff members who are much more demanding in terms of training, promotion, career prospects and profit sharing. Notary publics are often confronted with poor staff motivation and commitment and are even finding it difficult to attract new skills. As businessmen, notary publics are literal beginners when it comes to management. As with other professions, they did not receive any formal management training during their time at the university and are typically ill-equipped to respond effectively to these expectations (Parsons, 2004).

Research Methodology

Encouraged by the Superior Council of Notary Publics (*Conseil Supérieur du Notariat*), Regional Councils and Chambers, notary publics requested the assistance of the ISEOR in helping to improve management quality and control and accelerate office development, which between 1998 and 2004 worked with 350 notary public offices in 9 regions of France. Socio-economic management control was introduced using a scaled-down implementation method adapted to suit the needs of very small businesses and professional practices.

This method is referred to as Multi-SB (small business) HORIVERT (Savall, 2003a; Buono and Savall, 2007; Cappelletti, 2007). In order to supplement observation carried out during intervention-research, in particular by identifying the variables that exert an impact

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on successful set-up of socio-economic management control, the variable Y (entitled "successful set-up of socio-economic management control in a law-related enterprise") was studied by examining five explicative variables. The final results of the study are thus a product of the qualimetric methodology, which combines the qualitative model and the quantitative model with 350 cases of direct observation.

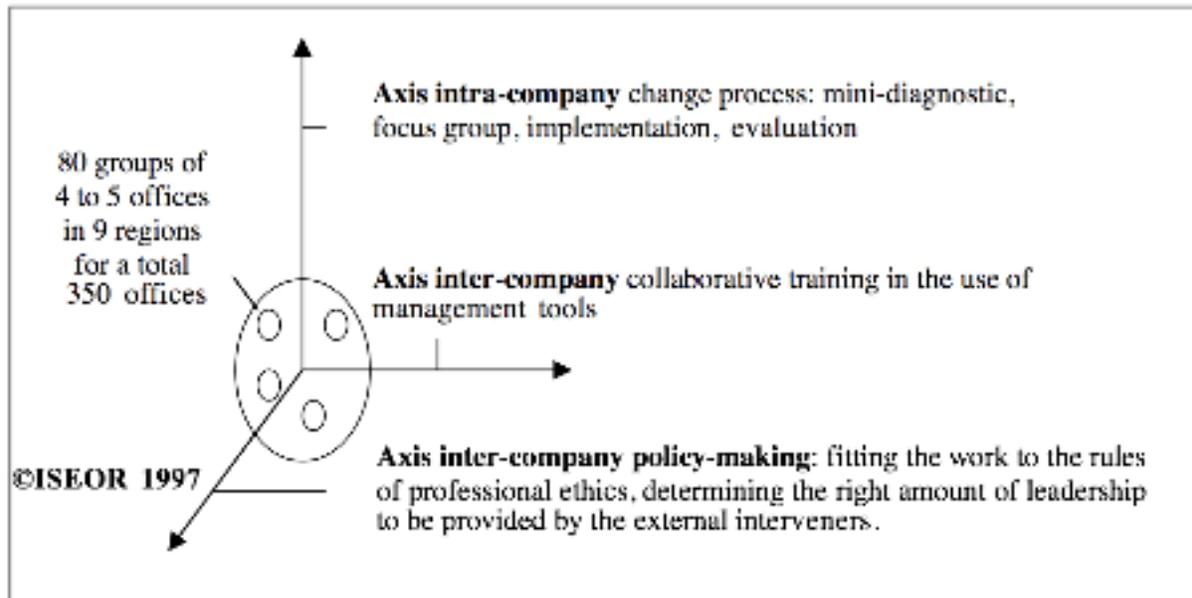
The set-up method of socio-economic management control

The socio-economic management method was introduced into 350 offices in 9 regions of France, involving a total of 3,000 notary publics and salaried staff. This sample is representative of the total population of 4,600 French notary public offices in terms of size, geography and areas of business. The offices making up the sample have between 1 and 55 staff members, with an average of 8 employees (which reflects the national figure). The offices in the sample are both city-based (urban) and country-based (rural) offices. The sample contains equal numbers of traditional practices, focused primarily on monopoly business (mainly family law), and

more innovative practices involved in significant levels of competitive business (mainly real estate negotiation).

The offices in each region were brought together into groups of four. Each office within a group was involved in an intra-company action plan (work done within the office) and an inter-company action plan. This was coordinated in each region by a steering group made up of notary publics elected to represent their region. The Multi-SB HORIVERT approach comprises three dimensions: (1) bringing about change through intra-company action plans, (2) collaborative training in the use of socio-economic management tools through inter-company action plans, and (3) the development of an overall synchronization policy. The Multi-SB HORIVERT method follows the same principles as the HORIVERT method, but uses action plans that are scaled down to suit SBs and professional offices. All the action plans were coordinated by twenty or so ISEOR interveners distributed across the 350 offices.

Figure 1: The three axes of the scaled-down Multi-SB HORIVERT method



Intra-company framework

Intra-company frameworks were similar in all 350 offices. They consisted of carrying out a mini-diagnostic focusing on the problems responsible for disrupting office effectiveness and efficiency. These problems were grouped into six themes that model the quality of management within a company. In each office, notary publics and staff were interviewed separately about the problems relating to these six topics. A collective evaluation meeting, bringing together the notary public and his or her staff, was then held to evaluate the hidden costs of these problems (i.e., the amount of value-added lost due to dysfunctions). The qualitative, quantitative and financial results of these mini-diagnostic sessions were used as the basis for the work done by a two-tier focus group: a small group containing only the notary publics, and a larger group involving the notary publics and all office staff. The personal assistance sessions designed around the management tools introduced in the collaborative training sessions were combined with the intra-company focus group sessions.

Inter-company framework

Each of the 350 offices was also involved in an inter-company framework built around groups of 4 offices of different sizes. The purpose was to organize collaborative training sessions focusing on the six basic tools of socio-economic management: time management, competency grid, the internal-external strategic action plan, the priority action plan, the strategic piloting indicators and the periodically negotiable activity contract. Each office is represented by the notary public and one, two or three members of staff, depending on the size of the office.

A steering group of between 4 and 6 Chamber-appointed notary publics and one Superior Council (*Conseil Supérieur du Notariat*) representative was set up in each of the 9 regions. The interveners were responsible for leading these steering groups and presenting anonymous assessments of the work accomplished in the offices. The

steering groups for 2 of the 9 regions (Region 3 and Region 7) asked their interveners to help provide maintenance action plans to support the continuation of the initiative after completion of the project. The result of this request was that the interveners led a day-long workshop in each office 6 to 10 months after the original initiative ended in order to stimulate the use of these management tools, consolidate dysfunction resolution processes, and increase the financial value-added created by the office.

Intervention schedule of the scaled-down Multi-SB HORIVERT method

The specifically scaled-down Multi-SB HORIVERT method was designed to optimize the effectiveness and efficiency of these initiatives in each office. It was felt that for each office in a group of 4, the involvement should be spread over a period of 8 months to allow for the integration of management and design tools and the implementation and evaluation of the selected improvement initiatives. For each group of offices, 4 inter-company collaborative training sessions on socio-economic management tools were held every two months, alternating with 5 intra-company diagnostic sessions, followed by focus group and tool implementation sessions. Each office in every group of 4 was involved in the same number of inter-company sessions as intra-company sessions (2_ days). Three steering group sessions provided the opportunity to monitor how work was progressing in the various groups of offices within the region.

Observation carried out and variables tested

The variable explained in our Y model is entitled "successful set-up of socio-economic management control in a law-related enterprise". This variable is determined by five explicative variables:

- (a) The competency of the intervener who sets up the socio-economic management control system;
- (b) The size of the enterprise;
- (c) The involvement of the CEO;
- (d) The CEO's competency in

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management control;

(e) The management team's competency in management control.

The analysis model is as follows: $Y = \pm.a + ".b + \geq.c + \times.d + \alpha.e$

The work concerns setting up of control tools, such as those of Kaplan & Norton (1996), and management modes in small businesses, such as those of Parsons (2004) or Davila and Foster (2007), stressing CEO involvement for successful set-up and the company-size effect (variables b and c). However, this work makes little reference to the role played by the management competency of company actors and interveners competency in successful set-up (variables a, d and e). The study presented here defines competency in the way Hamel and Prahalad (1994) defined it: as know-how and aptitudes implemented in satisfactory fashion. In this sense, actor competency in management control supposes both theoretical and practical mastery of that discipline. Indeed, good theoretical mastery does not necessarily guarantee satisfactory practice. And conversely, satisfactory practice should be based on theoretical foundations if it is to evolve.

Measurement of the Y variable

The success of socio-economic management control set-up was assessed one year following set-up launch, or four months after the set-up phase, which lasted eight months. This one-year period seemed sufficient for evaluating the success of the management control system implantation in a small-sized company. On the other hand, assessing the endurance of such a system over several years would call for further investigation, notably including reporting by researchers in every office after two or three years of tool set-up.

The measurement of the Y variable concerns sustainable hidden cost reduction and effective management control tool utilization, according to the prescribed mode of utilization. Indeed, the SEAMES knowledge-base shows that cost reduction and tool utilization are linked. Yet, SEAMES also

shows that an ephemeral reduction of costs can be provoked, in the absence of tools, by the frameworks of the change process axis (diagnostic, project, implementation and evaluation). The tools contribute to the process of sustainable cost reduction; for example, with the implementation of new priority action plans every six months, broken down into individual objectives and piloted thanks to the piloting logbook. Conversely, without the frameworks of the change process axis, the tools progressively lose their relevance in the absence of on-going identification of dysfunctions and the costs they generate. SEAMES reveals, ultimately, that costs do not "behave" in Malthusian fashion in businesses and organizations, since they are the results, as are performances, of human activity.

Data collection was carried out in every office where a researcher had not yet intervened, in order to avoid the risk of bias (for example, the manipulation of measures to show success). Data collection was done through interviews of notary publics and their collaborators, as well as direct observation of the tools. A 1-to-4 scale was attributed to every enterprise in the sample to evaluate the degree of set-up success or failure:

- Value 1 : high cost reduction (more than 20,000€ per person per year) and generalized utilization of the tools (all six socio-economic management control tools utilized frequently according to the prescribed utilization) ;

- Value 2 : significant cost reduction (between 5,000€ and 19,000€ per person per year) and rather general utilization of the tools (at least three socio-economic management control tools utilized frequently according to the prescribed utilization);

- Value 3 : low cost reduction (between 500€ and 4000€ per person per year) and low utilization of the tools (one or two socio-economic management control tools utilized according to the prescribed frequency) ;

- Value 4 : little or no cost reduction (less than 400€ per person per year) and no utilization of the tools.

The Y variable is thus a discrete variable, since the assessment attributed to Y can assume no more than four values, corresponding to the four referenced states.

Measurement of the explicative variables

Explicative variable a: the intervener's competency was measured on a scale of 1 to 4. 1: very high level of competency, 2: high competency, 3: medium competency, 4: low competency (beginner). Competency levels are dependent on the formal training the intervener has received and on his or her professional experience in the studied fields. In terms of intervention organization, beginning interveners were placed in small notary public offices, but rarely in medium or large offices.

Explicative variable b: size of the organization, led to classifying the studied businesses into four categories, each category attributed a value from 1 to 4: 1: very large (more than 50 employees), 2: large (from 21 to 50 employees), 3: medium-size (from 6 to 20 employees), 4: small (5 employees). Most notary public offices are either small or medium-size businesses; however, some large offices do exist. The 350-office sample was representative of that distribution.

Explicative variable c: the CEO's involvement was measured on a scale of values ranging from 1 to 3: value 1: high involvement, value 2: medium involvement, value 3: low involvement. Evaluation of the CEO's involvement was based on the amount of time the CEO spent with interveners and then collaborators using the socio-economic method and tools that had been set-up. Indeed, SEAMES shows that actors' involvement cannot be evaluated solely on the basis of their observed behavior, but demands more conclusive, formal data collection. In this sense, the reserving of time spans by liberal professionals in their appointment books is a very conclusive sign of involvement. Evaluation of notary publics'

behavior was done on the basis of observation of their behavior toward the socio-economic management control tools. Evaluation of monthly time devoted by notary public to tool utilization was done through interviews of notary publics and consultation of their appointment books. At the end of the 8-month set-up, each researcher had assembled data collected in view of evaluating CEO involvement. Thus, that evaluation was not carried out *ex post*, which could have been a source of bias, but through consolidation of data collected throughout the set-up process. A 1-to-3 scale of values was attributed to every enterprise in the sample:

- Value 1: high involvement (positive behavior on the part of the notary public during work sessions and monthly time devoted to tool utilization superior to 8 hours)

- Value 2: medium involvement (rather positive behavior on the part of the notary public during work sessions and monthly time devoted to tool utilization between 4 and 7 hours);

- Value 3: low involvement (passive behavior, even resistance, on the part of the notary public during work sessions and monthly time devoted to tool utilization inferior to 3 hours).

Explicative variables d: « management control competency of the CEO » **and e:** « management control competency of managers » were measured in every office where the researcher was in charge of the office. The researcher evaluated, at the beginning of the intervention, the management control competency of the CEO and the managers through interviews and direct observation of management control practices inside the office. An *ex post* competency evaluation, at the end of the 8 months of set-up, could have been a source of bias, CEO and manager competency in management control having been modified through the intervention. A 1-to-4 value scale was attributed to every enterprise in the sample reflecting the measurement of CEO and manager competency:

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- Value 1: very high competency (excellent theoretical mastery of management control and very regular and relevant utilization of management control tools);

- Value 2: high competency (good theoretical mastery of management control and regular and relevant utilization of some management control tools);

- Value 3: low competency (little or no theoretical knowledge of management control and utilization of some basic management control indicators);

- Value 4: very low competency (little or no theoretical knowledge of management control and absence of management control tools and indicators).

Results of qualimetric research: discussion

The results of the qualitative study are first presented and explained. Then, the results of the quantitative study are discussed and connected with that of the qualitative part of the research.

Results of qualitative research

The results of the study permit evaluating the effects of introducing socio-economic management on office management quality and the consequent recovery of value-added. The study makes a distinction between immediate results (those which have had an effect on performance during the current year) and the creation of potential (the investments - most of them intangible - that will have an effect on future performances).

Quality of management results

In nearly 75% of the offices in the sample of 350 offices, the introduction of socio-economic management produced positive effects that significantly improved the quality of management, operation, products and services. These positive effects had an immediate result in terms of performance, as well as a deferred result in terms of the creation of potential. Significant levels of success were achieved with the introduction of socio-economic management tools into the 350 offices studied. The time management

and competency grid tools were implemented in over 80% of offices. The management indicators, internal-external strategic action plan and priority action plans were implemented in 60% of offices. In nearly 70% of the offices, the focus groups implemented management quality improvement initiatives, which emerged during the first month and were developed throughout the 8-month project period. These activities considerably strengthened the offices' ability to survive and develop.

The positive effects observed in the study were viewed in reference to four dysfunction categories:

- o **Personnel management:** Changes included the development of training plans and career plans for staff, the introduction of monthly office meetings and bi-annual meetings between individual staff members and the notary, and notary public offices setting individual targets for staff members.

- o **Business management:** Initiatives encompassed introducing mini-management controls, drafting and monitoring of quality procedures, and creating action plans to address the need for synchronization between the notary and those staff responsible for legal drafting in complex cases.

- o **Client relationship management:** Actions involved reorganization of client reception areas and telephone answering procedures, introduction of personalized client relationships, clients receiving regular updates on the progress of their cases, and greater accuracy in the fee quotation process.

- o **Strategic actions:** Efforts focused on the definition and implementation of strategies for new activity development (in areas such as company law) and the definition and implementation of strategies to upgrade office computer systems.

However, in approximately 25% of the offices, management quality improvements, although real, were not so well-established. This 25% rate can be analyzed in the following fashion. In approximately 15% of

the offices, utilization of tools and cost reduction was low (values 3 and 4 measured for variable Y). In 10% of the offices, despite cost reduction and significant utilization of tools, the results remained low. In these cases, the introduction of management tools, the reduction of dysfunctions and loss of value-added, and the solutions developed by the focus groups did not result in a lasting improvement of management quality. Analysis demonstrates that the offices concerned were those that did not volunteer for the initiative and simply took the passive route of following the policy instructions issued by their professional Chamber, which had decided to make the initiative compulsory for all offices within their region. In these cases, the lack of involvement on the part of the notary managing the office impeded introduction of the management tools, restricted the creativity of the focus group, and caused considerable disappointment among the staff. Intervention-research has shown how important it is that the managing notary public sets an example by welcoming

the initiative and that this type of role modeling behavior has a direct effect on the qualitative and financial results obtained.

Financial results

These positive effects resulted in improved financial performance in the offices (immediate results). These improvements were evaluated financially at the end of the process in each office, by measuring the reduction in hidden costs, i.e. the growth in value-added. The study demonstrated that, on the average, the positive effects of introducing socio-economic management produced a 37% reduction of value-added loss, resulting in value-added gains of some €40,000 per office, or approximately 10% of the variable cost margin. Our intervention-research revealed that the majority of notary public offices contain the ability to conduct proactive endogenous strategies to cope with an environment that has become highly competitive.

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**Table 1: Financial results of setting up socio-economic management control
in 350 offices**

Region	Number of offices	Hidden costs (= lost value-added) per person and per year	Reduction of hidden costs (= lost value-added) after 8 months
1	34	10 000 €	36 %
2	24	12 000 €	29 %
3	27	10 000 €	27 %
4	81	11 000 €	37 %
5	31	Not evaluated *	Not evaluated *
6	54	16 000 €	45 %
7	57	12 000 €	38 %
8	14	15 000 €	36 %
9	28	10 000 €	47 %
TOTAL	9	350	an average 13 000€ 37 % or an average 40 000€ per office

* Not evaluated due to the limited time allotted to the study.

The Hourly Contribution to Margin on Variable Costs (HCMVC), the margin on variable costs divided by the number of workhours, was the object of evaluation in every office at the beginning, then at the end of the set-up. The HCMVC, as an indicator of an organization's economic efficiency, appeared to be a relevant control variable for verifying that cost reduction was actually transformed into increased performances. The measurements carried out showed that the HCMVC were established on the average in the sample offices between 30 and 50 Euros per hour. They enabled identifying two types of offices following one year of set-up:

offices with a stable HCMVC that chose to utilize cost reduction for undertaking creation of potential actions; offices with increasing HCMVC that chose to utilize cost reduction for their immediate results.

Results of quantitative research

The significant results presented below were obtained through multi-variable analysis of data collected in 350 notary public offices. In order to identify the explicative variables of successful or failed socio-economic management control set-up, data collected were subjected to principal component analysis, dynamic cluster analysis, regression analysis and discriminate analysis.

The combination of these different methods of statistical analysis was aimed at better describing (principal component analysis) structuring and classifying (dynamic cluster method) and explicating (regression analysis and discriminate analysis).

components is a descriptive method that enables positioning the notary public enterprises in relation to one another in function of their proximity, and the variables in function of their correlations. The variables selected were Y, a, b, c, d and e. Principal component analysis was carried out based on the following correlation matrix:

Principal component analysis

The analysis of the principal

Table 2: Analysis of the principal component based on the correlation matrix

	Y_SUCCESS	A_COMPET	B_SIZE	C_INVOLV	D_CEC	E_MANAGT
Y_SUCCESS	1,00					
A_COMPET	0,17	1,00				
B_SIZE	0,02	0,35	1,00			
C_INVOLV	0,74	0,24	0,03	1,00		
D_CEC	-0,00	0,42	-0,00	0,04	1,00	
E_MANAGT	0,10	0,45	0,06	0,07	0,85	1,00

The first analyses enables reading a manifested correlation between CEO involvement and set-up success, which

confirms qualitative observation carried out. The results of principal component analysis are given in the table below.

Table 3: Factor Analysis (before rotation)

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2,315	38,583	38,583	2,315	38,583	38,583
2	1,683	28,046	66,629	1,683	28,046	66,629
3	1,127	18,790	85,419	1,127	18,790	85,419
4	,482	8,038	93,457	,482	8,038	93,457
5	,263	4,375	97,833			
6	,130	2,167	100,000			

Extraction Method: Principal Component Analysis.

Two-thirds of the initial variance (66.6%) was mapped out on the first two axes:

The map displays positions of the 6 criteria and positions the 350 observations analyzed using Sphinx software. 66.4% of the variance is mapped out on the two axes represented.

The dots are proportionate in size to the number of observations for every section of the grid. The mapping can be interpreted *de visu*:

- Strong correlation exists (attributed to CEO cosine) between success and CEO involvement,
- Strong correlation also exists between

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CEO competency and Management Competency,

- However, the two axes are almost perpendicular, which presupposes the existence of an independent linear system.

- The "geometric" axes (horizontal and vertical) offer little significance for

interpretation, thus it is preferable to reprocess the analysis employing the "Rotation" option which facilitates interpretation by maintaining maximum variance (« Varimax » Rotation).

Table 4: Factor Analysis (with Varimax rotation)

Total Variance Explained

Component	Initial Eigenvalues			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2,315	38,583	38,583	2,088	34,793	34,793
2	1,663	28,046	66,629	1,778	29,629	64,422
3	1,127	18,790	85,419	1,260	20,997	85,419
4	,482	8,038	93,457			
5	,263	4,375	97,833			
6	,130	2,167	100,000			

Extraction method: Principal Component Analysis

One notes, for the first three axes, that rotation leads to different distribution of the variance:

- Axis 1 (34,8%) : Competency axis (CEO and Managers)

- Axis 2 (29,6%) : Success axis linked to CEO involvement

- Axis 3 (21,0%) : Size axis

The correlations between successful intervention and CEO involvement on one hand, and between CEO and manager team management control competency on the other

hand, are confirmed.

Dynamic cluster analysis

The dynamic cluster method makes it possible to identify 4 classes:

- Class 1: 52 businesses

- Class 2: 49 businesses

- Class 3: 156 businesses

- Class 4: 93 businesses

The results obtained by this method are summarized in the following table.

Table 5 : Typology 1 Averages

Typology_1	A_COMPET	B_SIZE	C_INVOLV	D_CEO	E_MANGT	Y_SUCCES
Class n° 1	2.68	3.02	3.82	3.30	3.27	3.50
Class n° 2	1.21	2.76	1.43	1.51	1.49	1.75
Class n° 3	1.55	2.58	1.09	3.30	3.12	1.61
Class n° 4	2.92	3.64	1.18	3.09	3.02	1.83
TOTA	2.07	3.01	1.52	2.91	2.81	1.95

The values of the table are averages calculated without taking into account non-response.

The names of the discriminate criteria are in column headings. The highlighted numbers correspond to the averages par category that are significantly different (test t) from the overall sample (95% risk). Remember that for the set-up success variable Y, the more its value is close to 1, the greater success is. For variable a « intervener competency », the closer its value is to 1, the greater competency is. For variable b « size of the office », the closer its value is 1, the greater size is. For variable c « CEO involvement », the closer its value is to 1, the greater involvement is. And finally, for variables d and e « management control competency of CEO and mangers respectively », the closer their values are to 1, the greater competencies are.

Interpretation of the table above shows, first of all, that enterprises in class 1, or 52

offices out of 350, that is 14.8%, are major failures (mean value of Y at 3.50), corresponding to the 15% evaluated in the qualitative research. The other three classes being total success or relative success. The “failure” of class 1 enterprises is explained through all variables except size. The “success” of class 2 enterprises (mean value of Y between 1 and 2) is explained with regards to all variables. The “success” of class 3 enterprises is explained by CEO involvement and intervener competency. Finally, the “success” of those in class 4 is thanks to CEO involvement.

Regression analyses

In attempting to determine the factors of success, a multiple regression of the variable "Success" (quantitative) was carried out in reference to other quantitative variables in the model. As before, the analysis was conducted "ascending stepwise", which made it possible to identify the three most significant variables.

Table 6: Coefficients

Coefficients^a

Mode	Unstandardize Coefficients		Standardize Coefficient	t	Sig.
	B	Std.	Beta		
1 (Constant)	1.006	.116		8.649	.000
c: Involv_CEO	.607	.029	.733	20.720	.000
d: Compet_CEO	-.272	.068	-.273	-4.021	.000
e: Compet Mangt	.287	.070	.279	4.091	.000

a. Dependent Variable: Y: Success

The following observations can be made:

- The error risk is very low for each of the three variable (inferior to 1/1000);
- The most influential variable is CEO

involvement (the Beta coefficient represents the marginal contribution of the variable, *ceteris paribus*)

- The CEO's perceived competency has a significantly negative influence. This statistical outcome was unexpected. It appears that notary publics who were

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already well-experienced in management control less willingly accepted the introduction of new tools inside their enterprises. Two interpretations can be invoked. First, notary publics were reticent to the intervention because they believed they already had sufficient management control knowledge and tools. Secondly, notary public could have thought they had already undertaken sufficient action to reduce costs and did not need additional action.

One can thus predict the degree of success following the regression equation obtained:

$$Y_SUCCESS = +0.607 * C_INVOLV - 0.272 * D_CEO + 0.287 * E_MANGT + 1.006$$

By order of significance, the following variables can be identified:

- C : CEO involvement
- E : Management competency
- D: CEO competency (in Management Control).

Discriminant analysis

Table 7: Classification results

In this approach, reliability can be improved with the aid of discriminant analysis that attempts to explain success (a two-class qualitative variable: Success-Failure) through reference to other variables previously taken into account. Discriminate analysis is carried out with SPSS using the « Ascending Stepwise » method, whose criterion maximize the le *Wilks Lambda* defined with reference to the determinants of the variance/covariance matrix.

The matricial structure of the discriminant function shows in descending order the crucial importance of CEO involvement. Another significant indicator is the rate of success, which is the percentage of observations properly reclassified by the discriminant functions. The following table (called the "confusion matrix") indicates by columns the success or failure predicted as compared to reality. Only 4 offices were poorly reclassified, resulting in a rate of success close to 100% (98.8%).

Classification Results^a

		Success: S+ (1 or 2) S- (3 or 4)		Predicted Group Membership		Total
		S+	S-	S+	S-	
Original	Count	S+	296	3	299	
		S-	1	50	51	
	%	S+	99.0	1.0	100.0	
		S-	2.0	98.0	100.0	

a. 98.8% of original grouped cases correctly

Analysis of results and discussion

Certain results of the qualimetric research call for more in-depth analysis in order to bring to light its originality or its limits. Generally speaking, intervention-research shows that it is possible to set up a management control system inside very small

companies, on the condition of an appropriate methodology, a well-structured intervention team and a favorable policy and strategic context. With regard to this point, it would seem that mobilizing political representative of the profession to sustain management control tool set-up could be a factor of success, notably in regulated liberal professions. One

could perhaps distinguish a “political” *Hawthorne effect* that could characterize the introduction of management inside regulated liberal enterprises. For notary publics, the fact of being observed by representatives of their political authorities doubtlessly plays a role in the intensity of their involvement.

Results also show that a well-adapted management control system is a vector of social, economic and strategic improvement in small enterprises. This outcome is in contrast with certain other research work that recommends informal management control modes for small companies, such as Jorissen et al. (1997). Instead, it would be closer to work that recommends combining informal control, guaranteeing flexibility with formal control, factor of development. For example, Davilla and Foster (2007) established a correlation between the development of a small enterprise, measured with financial variables and size, and the utilization of formal *management control* such as budgets and piloting logbooks. In the same way, Parsons (2004) showed that a formal, well-adapted management control system enabled small structures to achieve the margin of internal maneuver necessary to survive and develop. In other words, and yet this hypothesis requires further research, the absence of formal, well-adapted control inside a small enterprise would probably constitute a brake on its development.

The statistical results do not show, of course, that variables not tested by the research - the conception of a control system, the set-up methodology, the political and strategic context - do not affect the success or failure of a management control system set-up. Indeed, statistical analysis was not focused on those variables, since research was centered on discriminating variables that could reveal different measures from one office to another. However, every office in the sample was immersed in the same policy context and included the same management control tools set-up according to a similar methodology. The statistical results show quite clearly that the size of an office

does not play a significant role in the success or failure of a management control system set-up. Thus, they relativize size as a factor of contingency in the case of a management control system set-up; even though size difference among the offices in the sample was not very significant (no office had more than 55 employees). Furthermore, the results confirm across a large sample that CEO involvement was a central factor in the success or failure of the management control system set-up inside a small structure, bearing out the conclusions of Maister (1993, 1997), for example. However, those findings relativized the importance of intervener competency, which is surprising. That observation could perhaps be explained by the intervention team constituted for the research, composed of researchers well-experienced with intervention. Indeed, it is vital to avoid, notably in setting up a research program, thanks to a recognized “veteran” team, the rejection of interventions on the part of notary publics.

Conclusion

The results presented in response to the research question were obtained through direct observation carried out in the course of intervention-research conducted in 350 notary public offices and supplemented with a quantitative study. They show that, in 75% of the tested cases, setting up a socio-economic management control system permits durably improving social and economic performance in very small enterprises such as notary public offices. Intervention-research revealed that failure in setting up the methodology resided, first and foremost, in a lack of CEO involvement, namely insufficient time spent with interveners, and with collaborators to incite utilization of the tools. Research showed that mobilizing political authorities undoubtedly contributes to stimulating CEO implication.

These observations were refined by a quantitative study combining principal component analysis, dynamic cluster analysis, regression analysis and discriminate analysis. The findings were confirmed by a

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quantitative study that permitted testing five explicative variables of successful socio-economic management control set-up: CEO involvement, business size, intervener competency in management control, CEO and Management competency in management control. These variables were selected for testing because, following research-intervention, they appeared to contribute to explaining successful set-up of a socio-economic management control system. The quantitative study showed that CEO involvement, and to a lesser degree his or her competency in management control, were the most significant variables at the crux of set-up success. Finally, the results of a qualimetric study permitted concluding that management control system set-up in independent professional business such as notary public offices depended, *nonobstant* its design, on the attentiveness and participation of the CEO. The sizes of businesses and intervener competency in management control play lesser roles in successful set-up. This result could signify that management control methodology should include a political dimension in its design, to incite the adhesion and involvement of CEOs.

In the end, this research makes a double contribution. On one hand, it shows that management control is a source of performance for small structures, on the condition of relevant miniaturization. On the other hand, it positions, within the management control debate alongside the usual problematics of tool design, the technical problematics of their set-up and the political problematics of CEO involvement. Moreover, this study raises certain hypotheses that constitute an incentive to pursue further research; for example, research addressing the causes of enduring management control systems over several years, or addressing the generalization of the results to other liberal professions, and beyond small enterprises. This complementary research could contribute to the debate on small French enterprises, often more focused on reduction of their visible charges and less attentive to exploitation of

their endogenous resources through well-adapted management control. It could also contribute to analyzing the rejection of certain management control methods for small structure, such as the *Balanced Scorecard* method, whose application seems reserved, perhaps erroneously, to large enterprises (Rampersad, 2005).

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Laurent Cappelletti is Assistant Professor of management at the University of Lyon 3 (France) where he received his PhD in 1998. He leads the Master Program in Management Consulting of the University of Lyon 3. His research interests are change management in independent professions, corporate performance and management control. He wrote more than twenty articles in different French academic reviews. He received the 2005 Best Paper Award of the Management Consulting Division (Academy of Management) for his paper: *Designing and processing a socio-economic management control*.

Miguel Delattre is an Associate professor at the Lumière University of Lyon. His PhD in management sciences was devoted to organizational performance development. As a researcher at ISEOR research centre, he has conducted intervention-research in

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organizations. He led the professional bachelor in human resources management at the University Lumière Lyon 2 and has experiences in designing academic programs. His current research work focuses on the management of collaborative organizational systems and performance development in loosely-structured organizations or process.

Florence Noguera is Assistant Professor of management at the University of Montpellier 1 (France) where she received his PhD in 2001. She leads the Master Program in Human Resources Management of the University of Montpellier 1. Her research interests are human resources management and change management in independent professions. She wrote more than twenty articles in different French academic reviews and published a book in 2006: *Management of human working time*, Dunod, Paris: France.

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