

**Performance Management & Control Systems in Public Services:  
Interpretation and Assessment Based on Mixed-Methods Case Studies**

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U N I V E R S I T É   L I B R E   D E   B R U X E L L E S

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*To the love of my life,  
for her unconditional support.*

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## Introduction

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*“Good workmen never quarrel with their tools”*

This verse, taken from the poem *Don Juan* by Lord Byron (1837, p. 702), is filled with double meanings. For one, does it imply that a good workman can work with any tool, or rather that he should always select the right tool for the job ahead? Does it mean that he should never complain about what he has to work with and always make the best of it?

The proverb above and its more recent adaptations<sup>1</sup> are used, nowadays, to imply that blaming tools is a sign of incompetence. It would be unfair, however, to pigeonhole every worker – or managers, in this case – as lacking basic competence when they are asked to juggle with tools as complex as modern performance management and control systems. A cursory glance at the scientific literature reveals that when it comes to these systems, managers are expected, for best results, to balance difficulty with feasibility (Mawritz, Folger, & Latham, 2014a; Welsh & Ordóñez, 2014), competition with co-operation (Poortvliet & Darnon, 2010), and short- and long-term performance with one another (Soman & Cheema, 2004; Welsh & Ordóñez, 2014); they also have to enable autonomy or creativity while retaining control over results (Adler & Chen, 2011; Mundy, 2010; Nielsen, 2014), use technical controls while accommodating human behaviour (de Waal, 2010), balance effort and rewards among team members (Cohn, Fehr, Herrmann, & Schneider, 2014; Horton, 2010), all the while keeping an eye on strategic and operational agreement (Ho, Wu, & Wu, 2014) and maintaining a good sitting posture

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<sup>1</sup>Such as “It’s a poor workman who blames his tools” or “Bad workmen always blame their tools”

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(Edmondston, Sharp, Symes, Alhabib, & Allison, 2011). Does using performance management systems always create such a headache for managers? And should it?

These are not easy questions to answer. Performance management could be the defining contemporary challenge facing public organizations (Arnaboldi, Lapsley, & Steccolini, 2015). There are few answers available to managers and many potential pitfalls in the use of performance information. In particular, performance management can have severe negative effects on public service staff:

*a whole range of negative psycho-sociological and organisational effects, such as: increase in occupational stress, illness, low morale, decline in job satisfaction and motivation, alienation, fear, resentment, the distorting intellectual effects of writing for audit, a competitive, adversarial and punitive ethos, as well as wasteful, stressful, over-bureaucratic, and expensive audit procedures, increased tensions, more distrust between people, forms of symbolic violence and institutional bullying, a rougher working climate, an invisible net of managerial power and domination. (Diefenbach, 2009, p. 905)*

This is far from an exhaustive list of all problems that can surface from the use of performance measurement and management in public organizations. What is common of all these problems, however, is their social nature. Therein lies the key to successful performance management use.

Examining the relationship between the managers and employees of public organizations and performance information is the starting point of our analysis. We endeavour to explore how the reliance of organizations on performance information affects managers and employees. Conversely, we explore how managers use performance information, and how they create value for the organization by doing so. Instead of asking what are the performance management tools that have practical appeal to managers, we take a look at what managers actually do with the tools at their disposal, how they use them and what for, and how they adapt them to their needs. How are interactions between managers and employees shaped by the resulting use of

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performance information? Is the “quarrel” of the workmen creating value for the organization?

This thesis aims to provide insights on the use of performance information in public organizations. Contrary to many other studies in public administration (O’Toole & Meier, 2015), we focus on internal managerial processes and on hierarchical relations to explain the consequences of performance information use. As we dig deeper in organizational dynamics, we integrate frameworks and theories from three main currents of scientific literature: public administration research on performance management, management accounting and control research, and psychological theories such as goal-setting and organizational learning. We mean to use this aggregation of different scientific points of view to enrich public performance management literature.

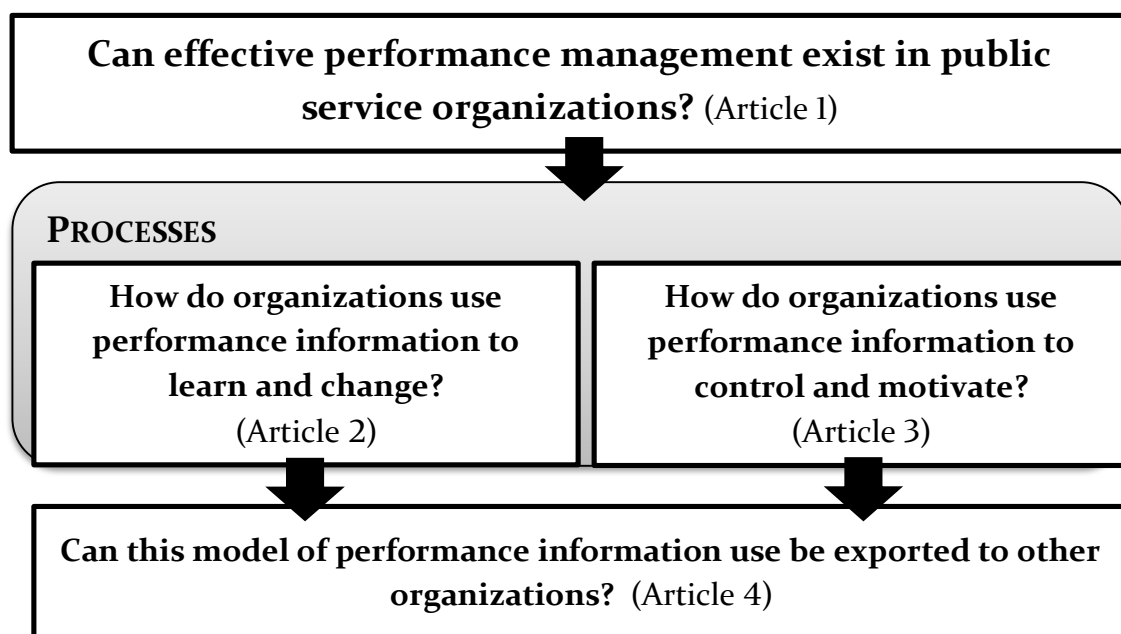
This aggregation of multiple theories calls for a deep analysis using mixed methods. In this thesis, we focus our attention on one particular organization, the National Employment Office (NEO), which appears in all four articles. This organization was chosen for its reputation for management excellence in both the professional and the scientific world. As a leader in the use of performance management, recognized in Belgium and in Europe, the NEO was a prolific terrain for an in-depth study of the processes of performance management. We first dig deep in the effects of performance management using longitudinal quantitative analysis, then proceeds to analyze the processes that support those effects using semi-directed interviews of managers at multiple hierarchical levels. At the end of the thesis, we also examine a second organization, the Mortgage Registry Offices (MRO), which have begun to adopt the same performance management techniques and systems as the NEO. This second organization offers a tentative outlook at the possible generalization of our conclusions to the larger public management literature.

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A cursory glance at the current public management literature finds a wide array of diverging opinions on the usefulness of performance measurement and management (Kroll, 2015c; Moynihan & Kroll, 2016; Ossege, 2012; Poister, Pasha, & Edwards, 2013; Pollitt & Dan, 2013). This absence of consensus led to our first research question; an inquiry toward the possibility of finding effective performance management in public organization. Given our positive results, we made two attempts to dig deeper into the management processes that are supported by performance information. We examine the process of learning and change in the second article, followed by the process of control and motivation in the third article. As an ending to this thesis, our fourth article examines the possibility of exporting the performance management system in a new organization and the difficulties met in this endeavour. The table below summarizes the main research question of each article and their connection with one another.

**Table 1**

Research questions for each article



## Introduction

In the first article<sup>2</sup>, we make a particular effort to find a good example of effective performance management in a public organization. We chose to base this analysis on goal-setting theory (Locke & Latham, 1990), a psychological theory whose foundations are used implicitly (and sometimes explicitly) by performance management scholars. We chose this theory because it relies on processes and objective data to evaluate the efficacy of performance management systems. It expands upon other modes of evaluation commonly used in public administration research, such as evaluating the use of performance information (Kroll, 2015c) or using surveys of managers (Speklé & Verbeeten, 2014). Given the reputation of the NEO, our target organization, for management excellence in both the professional and scientific world, we had an occasion to validate the theoretical concepts underpinning performance management in a practical setting. The analysis proved fruitful in identifying effective performance management.

To properly contextualize this first article, it is important to note that we chose to examine a specific function of performance management system, i.e. its function to motivate. Thus, we examine the effects of performance management on the productivity of employees, while keeping a particular focus on the sustainability of the effect. The core precepts of goal-setting theory posit that given an effective performance management system, performance indicators should have a noticeable motivating effect when they signal that objectives are further away. This is what we confirm through the analysis of the NEO's dataset, at least in their main activities. But more than just confirming the core foundation of goal-setting theory, we set the stage for a detailed analysis of the processes that leads to effective performance management in a public

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<sup>2</sup> Deschamps, C., & Mattijs, J. (2017). Sustainable goal setting: A large-scale case in management practice. *International Journal of Productivity and Performance Management*, 66(8), 1087-1104. <https://doi.org/10.1108/IJPPM-05-2016-0100>

## Introduction

organization. If it is possible to use performance management in such a way as to have a positive and sustainable effect on the motivation of employees, then it is possible to use performance information for many other functions such as to evaluate, control, budget, promote, celebrate, learn, and improve (Behn, 2003). The assumption we make is merely that the conditions for efficacy are the same irrelevant of the function, which would be the case for many drivers of performance information use that are institutional in nature (Kroll, 2015a). This paves the way for the next two papers where we study the organizational processes that are supported by performance information use.

In the second article<sup>3</sup>, we take a look at a more complex problem tackled by performance information: organizational learning. Organizational learning is a multifaceted problem that should be greatly improved by the use of performance information, but that faces difficulties commensurate with its complexity. We use the 4Is framework to expose the steps required for organizational learning to occur, which allows us to identify the contribution of performance information at each step. We identify specific enablers and blocks that contribute or hinders organizational learning. The most critical impediments include off-topic discussions of performance information, the lack of opportunity to share and discuss management practices, and the limited motivation of managers to change entrenched work processes. Performance information use enables learning by giving ‘credibility-by-results’ to new management practices, by focusing discussions on processes that lead to measurable results, by providing the ability to follow new innovations closely as they are implemented, and by creating a learning culture supported by performance information. With this detailed study of the contribution of performance information, we start to conceptualize the use

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<sup>3</sup> Deschamps, C., & Mattijs, J. (2018). How organizational learning is supported by performance management systems: Evidence from a longitudinal case study. *Public Performance & Management Review*. Manuscript under review.

## Introduction

of information as a common language that helps managers to relate with one another over the shared meaning of their performance results.

In essence, the main contribution of performance information in the process of organizational learning is not about being a source of insights for managers; it is about allowing managers to share their ideas without the need for external credibility. Since the prominence of performance management reinforces the credibility of performance information in the eyes of managers, new ideas that are supported by results benefits from this extra level of credibility without the need for sponsorship by authority figures. Managers can exchange ideas with their colleagues and evaluate their value, provided that they trust the performance information they use. Since they use this kind of information routinely, their familiarity helps them understand the meaning of performance results and to connect information with organizational reality, thereby giving credibility to the experiences shared by their colleagues. The ability of performance information to create common ground in the communication between managers is what helps the propagation of ideas within the organization. The full measure of the implications is discussed in the paper and at the end of the thesis.

Our third article<sup>4</sup> once again dig deep into the dynamics of public organizations. For this paper, we use concepts from the literature on management accounting and control systems rather than the concepts of performance management systems used in the public management literature. This enrich our thesis by changing the focus from organizational-wide mechanics to interpersonal and hierarchical relationships. Thus, we scrutinize the personal intentions that managers have when they use performance information and their associated controls. By breaking down this analysis by managerial

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<sup>4</sup> Deschamps, C. (2017). *Multilevel use of levers of control in a large public organization: From top to frontline managers*. Manuscript in preparation.

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level, we examine the path of information and its evolution along the hierarchy. We find several trends: controls getting stricter as they approach the bottom of the organization, top management favouring the use of controls with more aggregated information while frontline managers prefer to manipulate the relevant data directly, and the constraining aspect of controls becoming enabling for managers when they acquire confidence that they can reliably meet targets and expectations.

The changes from top to bottom exemplifies the tensions between the design and use of performance management systems: dashboards, for instance, and designed to be relevant for top management, but in order to be useful for (and used by) frontline managers, they necessitate a wide range of tweaks and deep customization. The pressure to adapt performance management tools sits at the bottom of the organization, where managers are less likely to have the technical expertise or the relevant experience to know how to do it. But in time and with support from the organization, the effort that middle and frontline managers invest in making performance information work for them greatly raise their opinion of the system and its value. Later on, we argue that it is this process of adapting performance management tools that change the managers' perception of the value of performance information. In turn, it creates a positive feedback loop as managers are more willing to use information, make more effort to collect additional data, and continue to develop better performance management tools. This is an important article as it helps define what organically happens with performance information in a high-performing organization.

Our fourth and last article<sup>5</sup> is different from the first three. To conclude this thesis, we take a look at a second organization to examine whether the NEO's performance

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<sup>5</sup> Deschamps, C. (2018). *What Enable Effective Performance Information Use in Public Service Organizations*. Manuscript in preparation.



## Introduction

management routines can be successfully exported to another organization and what challenges are most prominent in this endeavour. We compare the NEO with the MRO using the same methods that we have used in the first three articles. We begin this study with a quantitative analysis to identify what activities in which organization are the best examples of successful performance management use. For that, we replicate the analysis from the first article after formalizing what we expect from a good performance management system: we expect an impact upon employees' motivation, as demonstrated by an increase in their productivity, and we expect this impact to be effective, timely, and sustainable. The analysis show that the main difference is that performance management has an impact much less uniform within the MRO: the motivational effect is strong in a few offices, but other offices show an opposite relationship than what we expect.

This leads to a comparison of the two organizations according to several factors using qualitative methods similar to what we have done at the NEO. We examine the different ways in which managers use performance information, their intentions in doing so, and their opinions on the use of performance information within their organization. The results reflect previous findings but expand upon the conditions that lead to positive rather than negative outcomes. We explore the central research questions throughout this article: How do managers use and give value to performance information? How can organizations improve using performance information? Are the negative effects unavoidable? What are the differences in performance information use by managers at different hierarchical levels? How do these differences affect the organization? Many practical answers are discussed for the benefit of practitioners, and theoretical contributions are underlined.

Together, these articles provide an intricate picture of the use of performance information in the public sector. There are several elements that contribute to the

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originality of this thesis. First, the organizations studied are particularly interesting cases in the application of performance management. The National Employment Office is a highly successful case of performance management implementation. With over 25 years of experience in management-by-results and performance information use, this organization has been lauded as the most prominent example of good performance management in the Belgian public sector. It has won several awards and accolades over the past 20 years for management excellence. For our second case study, the Mortgage Registry Offices (MRO) was chosen for its numerous similarities with the NEO, thereby allowing an extensive comparison of the two organizations. Both organizations provide a prolific ground for the observations of performance management practices and the evaluation of their impacts.

The second original feature of this thesis is the use of mixed-method assessments to explore the use and effects of performance management in organizations. There are not enough studies that bridge the gap between quantitative and qualitative methods in relation with performance management. The nature of the subject is, however, well suited to both quantitative and qualitative approaches. We use quantitative analyses to examine the effects of performance management across a range of activities and offices in both organizations, thereby comparing the efficacy of performance management across different organizations and different part of the same organization. We then leverage those results using interviews of key managers to explore in detail the reasons behind the efficacy, or lack thereof, of performance management.

The third original feature is the depth of the analysis within the organizations studied. We attempt to scrutinize the actions that take place at every managerial level rather than concentrating on a specific hierarchical level. Our stated purpose is to reconstruct the path of information in each organization and to examine how each managerial level takes ownership of that information and redistributes or uses it. In our

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endeavour to understand how performance information affects managers and employees, the managerial connections that are built on information matters greatly. We explore these relationships in depth in order to find how they provide value and where and why they sometimes lead to adverse outcomes.

The insights drawn for these studies are meant to contribute first and foremost to the public performance management literature. By drawing theories from management accounting and psychological research, we stray away from conventional public management research that focus on political dynamics and general theories of organization. Our work looks at the internal dynamics and organizational processes that rely on or benefit from performance information use. Our focus stays on the manager as a user of performance information; but as our argument progress, we see managers becoming not only users, but also creators and givers of value.

Good workmen do quarrel with their tools. For managers, it is this quarrel that begets their understanding of the tools' value. Performance information connects managers with the reality of their organization; the process of analyzing, reflecting, and juggling with numbers allows managers to better understand what part of the organizational reality is represented by those numbers. From this understanding comes value and appreciation, which positively impacts their ability to relate with one another using performance information. At the same time very technical and highly social, performance information thus upsets long-standing managerial relations in public organizations. But this change does not have to be negative or even difficult; for some managers, it is a blessing to have access to better, more reliable, and objective tools.

While the ultimate goal of performance management is usually to increase organizational performance, the complexity of the task is daunting and success is both rare and precious. This is why studying the successful cases of performance management implementation provides numerous insights for theoretical and practical

## Introduction

applications. It is our hope that these articles will provide such insights to managers and academics and improve their outlook on the use of performance information in public organizations.

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## Sustainable Goal Setting: a Large-scale Case in Management Practice<sup>6</sup>

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**Purpose** – The purpose of this paper is to give evidence of effective, large-scale and time-sustained goal-setting through the use of performance indicators in managing a fairly large and decentralized social-security organization, despite indications that the motivational effects of goal setting are hard to sustain in the long term.

**Design/methodology/approach** – We analyze 5 years of monthly organizational performance data across 30 regional offices and 5 activities to identify the links between performance indicators and productivity.

**Findings** – We identify correlations that demonstrate a cycle where low performance scores on indicators increase productivity in the next period, but high performance decrease it, thus renewing the cycle.

**Research limitations/implications** – While long-term gains in productivity are not the direct product of goal setting, the close relationship between goals and productivity illustrates the motivational potential of communicable targets and close feedback that led to a culture of performance within the organization.

**Practical implications** – The case studied demonstrate how a performance management system can be designed and managed so that long-term fatigue is avoided while maintaining a dynamic workforce who adapts in the face of environmental changes by increasing their efforts as needed.

**Originality/value** – This paper answers a call to connect management control studies with managerial work done in practical settings.

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<sup>6</sup> Co-authored with Jan Mattijs. Published in *International Journal of Productivity and Performance Management*, 66(8), 1087–1104. <https://doi.org/10.1108/IJPPM-05-2016-0100>

### Introduction

Almost half a century of research on goal setting has yielded many insights on the positive psychological effects of having high and clear goals in one's work (Locke & Latham, 2002). The easiness with which such findings were replicated inside laboratories makes goal setting the most popular foundation of performance management (Latham, Borgogni, & Petitta, 2008; Latham & Locke, 2007). At its core, goal setting relies on a set of rather simple behavioural hypotheses: workers work harder when they have clear, focused, and challenging goals. But the apparent simplicity of giving goals to managers and employees evolves into complex social behaviours when confronted with organizational realities. For instance, repeated high goals can antagonize or deplete workers (Mawritz et al., 2014a; Welsh & Ordóñez, 2014), they can create noxious competition (Poortvliet & Darnon, 2010), and even downright gaming and cheating (Ossege, 2012; Pollitt, 2013). Furthermore, one of the most challenging issues in the implementation of goal setting is the collective resistance of workers who elaborate astute strategies to retain a measure of control or influence in the goal-setting process, such as regulating their efforts to avoid ratchet effects or balancing work and rewards among team members (Cohn et al., 2014; Horton, 2010). In the worst cases, goal setting essentially decrease organizational performance (Pollitt & Dan, 2013; Soman & Cheema, 2004).

While the validity of goal-setting theory core results are not put into question, the organizational effects of performance management remain fickle (Arnold & Artz, 2015; Artz, Homburg, & Rajab, 2012). In their review, Franco-Santos, Lucianetti and Bourne (2012a) discuss an array of conceptual frameworks that go well beyond agency and goal-setting, but find that work is still needed to reconnect individual behaviour and organizational effects. Indeed, knowledge about the behavioural effects of performance management fall prey to an interdisciplinary gap (Aguinis & Pierce, 2008), which is even

more blatant for organizational performance management, as opposed to individual performance assessment.

The purpose of this paper is to give conclusive evidence of effective, large-scale and time-sustained goal-setting through the use of performance indicators in managing a fairly large and decentralized social-security organization. By performing statistical analysis of a dataset culled from a mature and detailed performance management system, we highlight the effects of different performance measures on the ensuing productivity of employees. In this organization, the sustainability of the goal-setting system stems from the usage of constant targets. Meanwhile, the performance gains take the form of peaks in productivity following dips in performance indicators' scores in relation to their target level. While these gains are themselves temporary and dissipate as indicators recovers, leading to an up-down cycle between productivity and indicators, the overall organizational performance is much improved by the deliberate use of performance indicators to organize and manage the workforce in response to external pressures. Indeed, the combination of performance indicators with stable objectives lead to long-term gains in performance by providing managers with accurate, relevant, readily available, and easily communicable information that considerably facilitate some of the most difficult aspects of their job.

### **Theory and hypotheses**

We start by presenting first the focused framework of goal-setting theory, which will be checked for validity in our case with an extended statistical analysis, and second a wider performance management perspective within which we can highlight the additional socio-organizational effects of goal setting.

### Goal-setting theory

Goal-setting theory is based on the simple premise that conscious goals affect action and motivation (Ryan, 1970). Over the last five decades, seminal work was realized, notably by Locke and Latham (1975; 1990, 2002), who identified the principal conditions under which conscious goals are the most efficient in raising an individual's motivation toward a certain task. They documented the most important goal characteristics, i.e. their specificity and their difficulty. Having specific goals reduces some of the variation in performance by decreasing ambiguity (Locke, Chah, Harrison, & Lustgarten, 1989), while having difficult goals energizes and leads to greater effort (Locke & Latham, 1990). These effects of goals are seen in teams as well as individuals (Nahrgang et al., 2013).

In mechanical terms, goals affect action through four different mechanisms (Locke & Latham, 2002). First, goals provide direction; they focus the attention toward goal-relevant effort and away from goal-irrelevant efforts (Rothkopf & Billington, 1979). This is why specific goals accomplish more than general exhortations, like doing one's best (Locke et al., 1989). Second, goals lead to greater effort in accomplishing tasks, and harder goals lead to greater effort than easier goals (Bandura & Cervone, 1983). Third, when individuals are allowed to control the time they spend working on a task, higher goals prolong effort (LaPorte & Nath, 1976). This last point is, however, strongly influenced by the type of objectives. For example, giving tight deadlines will lead to faster and more intense work rather than long periods of effort (Latham & Locke, 1975). Fourth, goals encourage individuals to develop and use better strategies to achieve them (Wood & Locke, 1990).

In an organizational context, however, the energizing effect of goals is moderated by several complex factors (Locke & Latham, 2002). Foremost among them is the perceived importance of goals by employees, especially in the context of public services,



where employees' motivation and organizational performance is closely associated with the importance of the work being done (Brewer & Selden, 2000; Ho et al., 2014; Vandenabeele, 2008). A higher sense of importance means a higher commitment to the task, provided that the individual believes in his ability to accomplish his objectives, or self-efficacy (Bandura & Locke, 2003). Eventually, this commitment can lead to a positive high performance cycle, where good performance becomes rewarding and encourages satisfaction and further commitment to the organization (Latham, Locke, & Fassin, 2002).

Other important moderators have been identified, such as the availability of feedback and the complexity of the task (Locke & Latham, 2002). More recently, researchers have also started to address further pragmatic situations, such as repeated consecutive goals (Welsh & Ordóñez, 2014). Since the work to be done rarely changes, repeated tasks are common everywhere, but repeated objectives create additional complications. For example, basic goal-setting theory encourages high goals for their greater motivating value (Latham & Seijts, 1999), but repeated high goals have been found to lead to higher levels of unethical behaviours (Welsh & Ordóñez, 2014). This effect could be, in part, caused by depletion after individuals commit special efforts and perseverance over time (Baumeister, 2002), or by repeated discouragement from failure (Spieker & Hinsz, 2004). Dynamic goals also create peer effects; it is not uncommon to find resistance in the form of pressure by coworkers toward regulation of efforts in order to avoid increasingly harder targets or lesser rewards (Horton, 2010; Roy, 1952). These, and others, are among many unintended consequences of performance regimes that can lead to difficult situations and poor performance (Verbeeten & Speklé, 2015; Zakaria, 2015).

In summary, goal-setting theory has been applied and studied in management for a long time. When the theory is applied outside of the laboratory in complex situations,

many examples of problematic behaviour can occur (see Ordóñez, Schweitzer, Galinsky, & Bazerman, 2009; Pollitt, 2013). It quickly becomes unclear whether goal setting should lead to a positive cycle (Latham et al., 2002) or to depletion and poor performance (Welsh & Ordóñez, 2014). Our contribution, however, finds positive results according to the basic tenets and hypotheses of goal-setting in a given and specific management situation, with substantial ramifications for performance management in general.

### **Performance management sustainability with respect to goal setting**

Current thinking proposes that good, objective performance information should allow managers to urge their employees toward accomplishing goals by providing the necessary feedback to achieve results, thus leading back to motivation and productivity (D. Marginson, McAulay, Roush, & van Zijl, 2014a). While, *in theory*, any performance management system should work in a similar fashion, experience from the public management field shows that in practice, such an efficiently-working system is rare (Halligan, Sarrico, & Rhodes, 2012; Pollitt & Dan, 2013). Most systems suffer from one or many difficulties such as conflict between group targets and individual targets, deficient implementation, poor adequacy between objectives and work, etc. (de Waal & Kourtit, 2013; Kelman & Friedman, 2009; Pollitt, 2013). More than that, there is an inherent division between using performance information as *information* and using it as an *assessment*; when employees, teams, and managers know that they are being evaluated on a specific performance indicator, the interpretation of that indicator changes (Pollitt, 2013). What used to be an objective measure of general performance can quickly become a symbolic tool of communication for a political purpose such as autopromotion or strategic influence (Artz et al., 2012).

At minimum, performance management systems are designed to incorporate targets; at most, they can be designed exclusively around these targets. One challenge is maintaining the information value of indicators, hence their value as decision support systems, while involving goal setting as a motivational tool. While this is only one difficulty in balancing the divergent roles of performance management systems (Mundy, 2010), it exemplifies very well the pattern of challenges that exists in creating performance management systems that are well integrated at the operational and strategic levels in an organization (Chenhall, 2003; Goh, Elliott, & Richards, 2015; Ho et al., 2014). Whether goal setting and performance information work together – or against each other – could be a strong indication of the sustainability of the management system in the long term. Indeed, to be truly sustainable, a performance management system must motivate workers without depleting them by repeatedly pushing unreasonable targets (Roy, 1952; Welsh & Ordóñez, 2014).

### Tested hypotheses

Drawing on the core basis of goal-setting theory, the following three hypotheses are tested in the present study:

- 1. Productivity increases when indicator scores are low and decreases when they are high.*
- 2. Productivity decreases after targets are met; conversely, productivity increases after targets are missed.*
- 3. Productivity increases when targets are more difficult.*
- 4. The effects stipulated in the previous hypotheses are constant over the period studied.*

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A note on the terminology used: an *indicator* or *performance indicator* (PI) represent the abstract metric defined by an object and a method of calculation; the *score* or *indicator score* represent the figure empirically measured for a given PI; the *target*, *norm*, *goal*, or *objective* is the expected target for the score of a given PI; and finally, *success* is shorthand to represent whether or not the target or targets were met for a given period.

These hypotheses all stem from the first observation of goal-setting theory, i.e. that harder goals correlate with better performance (Locke & Latham, 1990). Our intention is to find out whether poor success in the implementation of performance management systems are the result of particularities in organizations that prevent experimental laboratory results to be replicated in a real-world scenario. If the hypotheses are proven false here, we can establish that the conditions that make goal setting true in laboratory are not present in our setting and pursue explanations on the fundamental differences between experimental and organizational settings. However, if they are true, we can conclude that goal setting can be effective in organizations under the specific conditions present in this empirical context and elaborate further on the key factors of this success. Furthermore, an important topic in our study is the sustainability of the motivational effect of goal setting, for which we posit the fourth hypothesis.

## Method

### Empirical context

We carried out the field research in an organization that presented several opportunities, the National Employment Office (NEO), a Belgian public organization employing over 4000 people who administer north of 4 million cases related to

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unemployment benefits every year. Two important factors weighted on our choice of field for testing; the experience and widespread usage of performance management and goal setting within the organization, and the ability to conduct separate testing for both offices and activities, thus giving us the opportunity to test the reliability of the experiment to some extent.

First, the extended experience of NEO with goal-setting performance management and the general satisfaction of high-level management and external auditors with the inner workings of the organization made for a good prospective field to test the direct impact of performance management on productivity in a real-life setting. Over the years, the NEO has generally reported increases in productivity, efficacy, and targets, boasting, for example, the recent fulfillment of 98.6% of its government-imposed objectives (NEO, 2013). External audits have also recognized their success, such as the European Foundation for Quality Management (EFQM) with 5-star excellence rating and the Flemish Policy and Management Association (VVBB) with a lifetime achievement award given to the General Administrator of NEO in recognition of his great contributions to the efficiency of the Belgian social policy system (VVBB, 2011). While the managers and administrators happily point to their extensive performance management system as the source of their success, a direct link between productivity and goal-setting management could yet be debatable. For instance, most of the implementation of large-scale performance management since 1991 was accompanied by widespread computerization of tasks, thus the latter could be argued as the source of most productivity gains. We designed our methodology, presented below, to avoid most interference of this nature.

Secondly, the subdivisions inherent to NEO's mission and the country-level scope of their public offices provided a unique opportunity to test a reliable model across several sections of the organization. The activities of the NEO are spread across 13

activities in 30 regional offices throughout Belgium, which boast 3 main cultural/linguistic groups (Wallonia [French], Flanders [Dutch], and German). Of particular interest in this arrangement is the fact that each office is free to implement their own techniques and processes to meet the common organizational targets. This has resulted in a number of distinct management methods, even though all offices remain focused on common goals and performance indicators, and are subject to deliberate dissemination of good practices.

In our study, we confront our dependent variables against local office variability, repeating the exact same analysis on every cross-section of data to assess the validity and reliability of the goal-setting theory in a practical setting.

### **Procedure and data**

We collected performance data both by querying NEO's database and by scraping performance results from the monthly reports on 5 years of activities, from 2009 to 2013. Most of the data collected this way is monthly, with the exception of certain HR-related variables (turnover and long-term absenteeism), which are biannual.

We use the Arellano-Bond dynamic panel GMM estimators (Arellano & Bond, 1991) as our tool of choice to circumvent a number of specific pitfalls related to the organization of our data. Namely, time-invariant characteristics, such as unobserved office-specific fixed effects, and the possibility of autocorrelations in the error terms created by the use of lagged variables are prevented by the use of Arellano-Bond estimators (Mileva, 2007). In this statistical method, results are presented as the first-order differences of the dependent variable, i.e. variations instead of absolute values.

All statistical analyses were performed using Stata version 13.1.

### Activities

The NEO's core activity consists in approving or rejecting requests for unemployment benefits and calculating the allocated compensation. This task is internally called 'Admissibility' and, like all activities, is monitored through a series of performance indicators at the regional office level. Additional activities at NEO revolve around further aspects or particular cases of unemployment benefits. A total of 13 activities are managed by the organization and are usually handled by specialized employees and managers, with some overlap, especially in smaller offices.

We selected five activities to study based on their relative importance at NEO and on the availability of indicators. As certain activities are harder to separate on a case-by-case basis, a reliable productivity indicator could not always be generated and those activities had to be disregarded in our analysis. The five retained activities – admissibility, litigation, career interruption, certificates delivery, and verification – account for over 45% of the NEO's working hours. They are summarized in table 1 below.

**Table 1**

Description of activities studied (freely translated from the NEO's annual report **(2013)**).

Activities	Description	Processing time target	Statistical process control <sup>1</sup>	# Tasks according to timesheets	Proportion of time
<b>Admissibility</b>	Determining admissibility toward unemployment benefices and calculating indemnity (main activity at NEO)	Varies <sup>2</sup> from 13 to 25 days (95%)	Yes	9	19.88%
<b>Litigation</b>	Treatment of cases where the client has not respected its engagements and application of sanctions	1-2 months (66%) 3-4 months (95-98%) <sup>3</sup>	No	7	9.53%
<b>Career interruption</b>	Full treatment of cases of career interruption, from informing beneficiaries to paying indemnities	1 <sup>st</sup> payment within delays (95%)	Yes	3	3.15%
<b>Certificates delivery</b>	Delivery of certificates for admissible workers in order for them to receive a subsidy on their salary	24h (90%) 7 days (96%)	No	2	2.91%
<b>Verification</b>	Verification that the indemnity is correctly calculated according to relevant conditions and paid to the client	5 months (100%)	Yes	8	9.95%

1. Statistical process control (SPC) is a quality process by which employees review a random sample of cases for errors every day.

2. The targets in Admissibility not only vary by type of case, but were also adjusted multiple times between 2009 and 2013.

3. The targets in Litigation vary only according to the type of case and are constant over time.

Although they use similar and comparable set of objectives, with each activity relying on a processing time target for a given percentile of files, there are many differences in the way each activity is managed and executed. The tasks present varying degrees of complexity, require distinct training, involve various numbers of people and take different lengths of time to complete. Furthermore, each of the 30 offices across the country has its own management style with variations in the use of the shared performance data. We will discuss the details after we test the efficacy of goal-setting theory in each activity.



### Variables

The performance indicator most commonly used for goal-setting at the NEO is processing time (PT). Processing time starts at the reception of a request, case, or file by the NEO and ends when that specific request, case, or file has been handled appropriately. Historically, in the main activity Admissibility, the delay of treatment could run up to 30 to 60 days, but with a constant managerial focus since the implementation of the performance system in the early 1990s, the average processing time was reduced to around 9 calendar days, well past the current objective of 17 days.

As the managers greatly insist upon delays and rely on them for the greater part of their oversight of their workers, we elected to use these objectives for our analysis. It also follows, logically, that processing time should be linked to productivity, as shortening the processing time means augmenting productivity, given constant file intake and resources. This corresponds to our first hypothesis. The series of PT indicators have been lagged by one period for two reasons. First, this reflects the reality, where the PT indicator of the previous month is only known six days after the start of the current month. Second, it deals with endogeneity by excluding the reverse causality of productivity causing processing time.

Table 2 displays a summary of the operational variables used in our analysis. Productivity indicators were generated by dividing the volume of cases processed during the month by the time spent in monthly full-time equivalent (FTE). Indicator scores aggregate all indicators for a given activity (e.g. PT for various subtypes), successes are the number of targets met for a given month, and targets represent the average objective given to managers. For all these variables, we have recoded the data, when appropriate, so that higher always represent a better outcome or a harder target. Target variations could only be analyzed for the activity Admissibility, since it was the only activity where targets changed over the period studied. Biannual variables

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(turnover and absenteeism) were expanded into monthly data by copying the value in each month of the said semester.

**Table 2**

Description of variables used within regression analysis

<b>Variables</b>	<b>Description</b>	<b>Type</b>	<b>Hypotheses</b>
<b>Productivity</b>	Productivity in unit treated by FTE	Dependent	
<b>Indicator scores (t-1)</b>	Score on performance indicators, recoded so that higher is always better. Lagged by one period.	Independent	Negative
<b>Successes (t-1)</b>	Number of targets failed for a month, recoded with a negative value so that higher is better. Lagged by one period.	Independent	Negative
<b>Targets</b>	The targets for a given month, recoded so that higher is always harder	Independent	Positive
<b>Output Quality</b>	Quality control by review of a sample of completed files	Control	
<b>File intake</b>	Number of files received for treatment during the month	Control	
<b>Time on task</b>	Proportion of time spent on this activity	Control	
<b>Turnover</b>	Employee turnover (biannual data)	Control	
<b>Absenteeism</b>	Employees in prolonged leave (biannual data)	Control	
<b>Business Days</b>	Number of business days for the month	Control	

Productivity, as used in our hypotheses, is defined operationally here as the number of files worked by employees over the course of the month, divided by the employee-time spent on this activity. It does not account for the difficulty of each case, but this factor should average itself out over many cases.

## Results

### Descriptive statistics

Table 3 below shows the descriptive statistics for each selected activity.

**Table 3**

Descriptive statistics

<b>Activities</b>	<b>Admissibility</b>	<b>Litigation</b>	<b>Career interruption</b>	<b>Certificates delivery</b>	<b>Verification</b>
<b>Normed indicators</b>	6	10	2	2	3
<b>Nb data points (n)</b>	9728	16560	3578	3600	5400
<b>Results within norms</b>	8777	16140	3410	3534	5349
<b>% within norms</b>	90.22%	97.46%	95.30%	98.17%	99.06%
<b>Avg productivity per FTE</b>	280.3	47.6	335.9	820.8	3854.8
<b>Standard deviation</b>	64.6	12.8	123.5	413.5	1197.4
<b>Productivity min</b>	109.8	12.6	80.3	224.2	1316.6
<b>Productivity max</b>	579.0	106.2	945.9	4557.1	8230.5

The five activities listed should be understood as being different in nature, requiring different expertise, and employing different people, but all agreeing to a common framework for the assessment of results and performance. The average productivity for each activity is defined in cases handled by monthly FTE.

The differences between activities are shown in the statistics presented in table 3. Productivity indicates the average number of cases handled by 1 FTE worker; the number of indicators affected to an activity is linked with the variety of cases; and finally, the percentage of indicators that falls within the norm can be seen as a marker of the general difficulty of each task. The regression model in the next section will reveal further differences.

It should also be noted that the average productivity has increased over the period studied, but generally not by a very significant amount. Admissibility shows the lowest increase with a 3% difference between 2009 and 2013, while Certificates delivery boasts the highest rise at 28%. The other activities have increased in productivity by around 7% in total over five years.

## Regressions by activity

**Table 4**

Regressions between productivity and other variables (indicator scores, successes, targets) with controls, by activity<sup>7</sup>

	<b>Admissibility</b>	<b>Litigation</b>	<b>Career interruption</b>	<b>Certificates delivery</b>	<b>Verification</b>
<b>Indicator scores</b>	-0.54***	-0.31***	0.00	0.00	-0.92***
<b>Successes</b>	0.01	-0.10**	0.00	-0.01	0.02
<b>Targets</b>	0.17***				
<b>Output Quality</b>	0.07**		-0.01		0.01
<b>File intake</b>	0.63**	0.61**	0.61***	1.05***	0.67
<b>Time on task</b>	-0.31**	-0.62***	-0.68***	-0.65***	-0.40***
<b>Turnover</b>	0.12*	0.19**	-0.10	0.02	0.07
<b>Absenteeism</b>	-0.06	0.01	0.02	0.09	0.09
<b>Business Days</b>	0.11***	0.16***	0.11***	0.03*	0.09***
<b>Constant</b>	-2.28***	-3.18***	-2.61***	-0.87*	-1.79***

\* p<.05

\*\* p<.01

\*\*\* p<.001

We present the bulk of our results in Table 4. Here, we see that indicator scores share a negative correlation with productivity, as predicted in hypothesis 1, in three cases out of five. Two of those activities, Admissibility and Verification, are extremely important at the NEO and attract a great deal of scrutiny from all levels of management, which could be a reason behind the higher impact of indicators on productivity. While indicator scores make good predictors of productivity, the same cannot be said of successes, which are the number of targets hit or missed in a given month. Although the activity Litigation shows a small negative correlation as predicted by our second hypothesis, this does not appear to be a reliable result across all activities. When it comes to targets, we find evidence supporting our third hypothesis in the activity

<sup>7</sup> All coefficients are beta coefficients, thus a value of 1 indicates that the dependent variable changes by 1 standard error for each variation of 1 standard error of the independent variable. Multicollinearity does not represent a problem with these models, as the variance inflation factor (VIF) is always below the Neter and Wasserman (1974) suggested cut-off point of 10.

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Admissibility, which was the only activity where hypothesis 3 could be tested since the targets changed over the period studied.

Career interruption and Certificates delivery both present a conspicuous lack of correlation between scores, successes, and productivity which set these activities apart from the rest. We will discuss a number of factors that could explain this difference; however, the most probable cause remains the lesser importance of performance management in these activities.

Still, it is worth remembering that these regressions apply to 30 different regional offices. Correlation analyses suggest that the situation is usually similar throughout the NEO's offices. For example, Admissibility presents correlations between productivity and indicators that range between  $-.24$  and  $-.54$  (mean  $-.42$ ). Thus, there are no suspected outliers among offices. We found similar results for the other activities as well, meaning that the correlation is robust in those activities where it exists. Finally, as the next table shows, the correlations are also robust in time, which supports our fourth hypothesis. There are, however, some notable differences when we separate the data in two periods of equal length; for one, the correlation of successes with productivity in the activity Litigation change sign from negative to positive. Then again, our results with regards to the impact of successes were already frail; this just confirms that productivity is driven much more reliably by indicator scores than failure to achieve targets.

**Table 5**

Regressions between productivity and other variables (indicator scores, successes, targets) with controls, by activity and period

	<b>Admissibility</b>		<b>Litigation</b>		<b>Career interruption</b>		<b>Certificates delivery</b>		<b>Verification</b>	
	2009-2011	2011-2013	2009-2011	2011-2013	2009-2011	2011-2013	2009-2011	2011-2013	2009-2011	2011-2013
<b>Indicator scores</b>	-0.579***	-0.517***	-0.214***	-1.127***	0.012	-0.001	-0.020	0.028*	-0.942***	-0.902***
<b>Successes</b>	-0.065	0.033	-0.101*	0.094*	0.001	-0.008	-0.013	-0.010	0.009	0.055
<b>Targets</b>	0.142***	0.148***								
<b>Output Quality</b>	0.09**	0.05+			-0.01	0.05			0.01	0.00
<b>File intake</b>	0.592**	0.704*	0.543*	0.705***	0.556***	0.661***	1.073***	0.994***	2.223*	-1.056
<b>Turnover</b>	0.05	0.08	0.15	0.01	-0.02	-0.19	0.07	-0.01	0.02	0.06
<b>Absenteeism</b>	-0.025	-0.045	0.046	0.110	0.240+	-0.223	0.204*	-0.021	0.056	0.099
<b>Business Days</b>	0.174***	0.072**	0.194***	0.141***	0.088**	0.128***	0.023	0.037**	0.125***	0.053***
<b>Constant</b>	-3.420***	-1.564**	-3.928***	-2.593***	-2.180***	-3.098***	-0.747+	-0.970**	-2.899**	-0.867*

+ p<.10

\* p<.05

\*\* p<.01

\*\*\* p<.001

Among the control variables, business days are an obvious but trivial factor with a weak effect. Time on task, as a proportion of the total hours worked in the period, is consistently negatively correlated to productivity, which is a by-product of the prevalent management strategy of reallocating employees according to immediate organizational needs, irrelevant of their skills. Finally, file intake is consistently associated with productivity, especially in activities where the main explanatory variables are not significant, a situation to which we shall come back in the discussion.

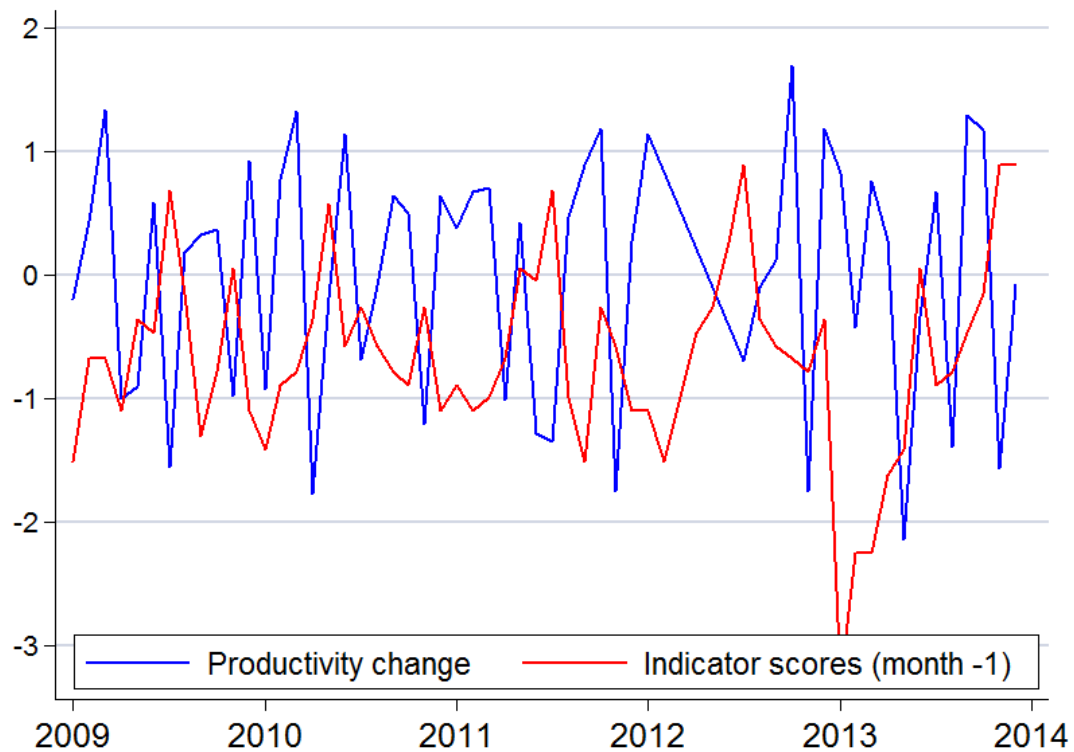
### Productivity-indicators relationship

To properly illustrate the relationship between changes in productivity and performance indicator scores at NEO, we build the following graphs. Both figures present the standardized monthly variation in productivity and in indicator scores of the past month, exhibiting their strong negative correlation; as one gets lower, the other increases, thus forming diamond shapes in the graphs. Figure 1 represents the situation

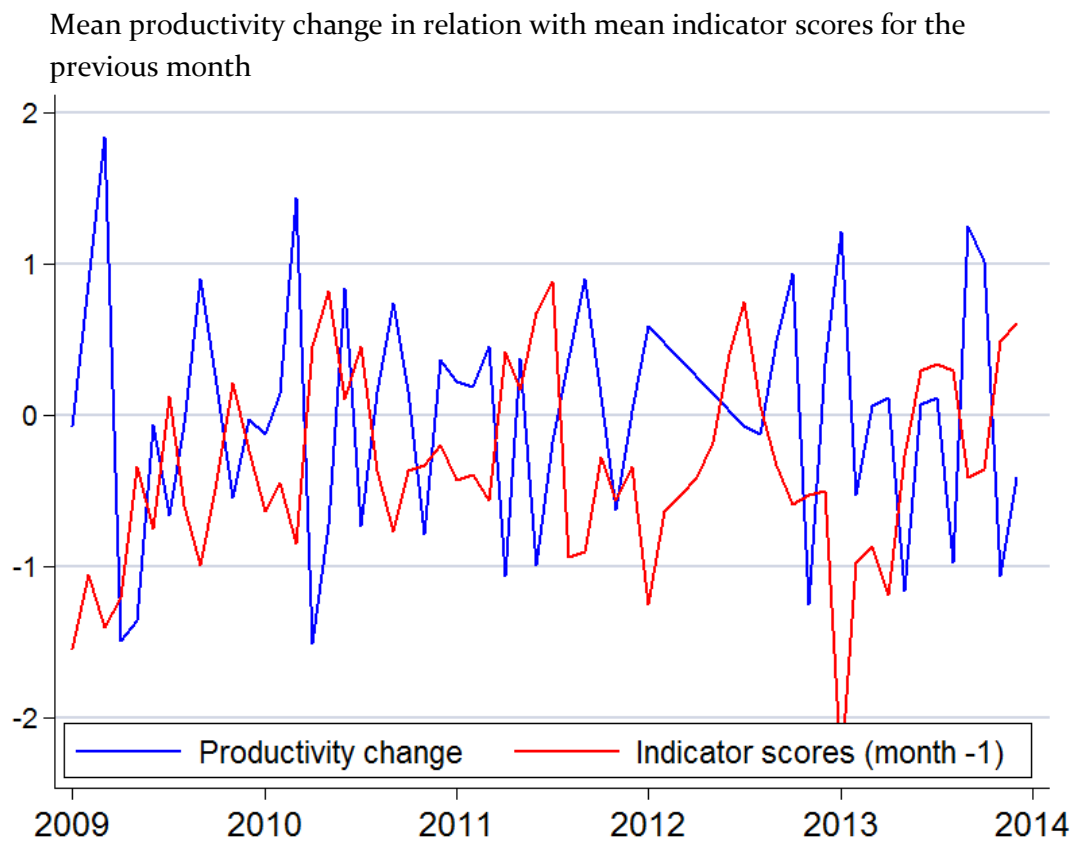
at a typical large NEO office ( $r = -.29$ ) and Figure 2 average the results across all offices ( $r = -.42$ ). Both graphs use standardized values on the y-axis.

**Figure 1**

Productivity change in relation with indicator scores of the previous month in a typical NEO regional office



**Figure 2**



We see similar situations in every NEO office across three major activities, demonstrating a constant impact of performance indicators and goal-setting management toward the productivity of employees. In practice, this negative correlation, combined with stable objectives, creates an up-down cycle of productivity with alternating periods of high and low effort by employees.

To sum up our results, we have found that indicator scores are negatively related to productivity in the majority of activities at NEO. This implies that the better employees do in one period, the more room they have in the next period, and hence the slower they work. By the same token, the harder the targets or the closer the indicators are to missing them, the faster the employees work. Whether the targets were met or not (successes), however, seem to have less effect – almost none. In general, we might consider that the goal-setting and performance management system creates pressure toward working faster to meet the targets, and the employees respond accordingly;



another way to look at it would be that the employees work hard to create some room for themselves, then slack off for a while as a reward. We discuss the implications of this behaviour in the next section.

### **Discussion**

#### **Results and implications**

Our objective was to test the strength of the goal-setting theory's predictions in a practical organizational setting and examine whether there could be a reliable and sustainable effect on employee performance. An important part of our study was our focus on repeated tasks and how objectives can be managed to create an enduring relationship with productivity. Our empirical observations and analysis provide several pointers that should be useful to both practitioners and researchers.

We find a moderate-to-strong negative correlation between indicator scores in one period and the productivity of employees in the next period for most of the activities studied. These correlations are also robust across all 30 regional offices in our study, even if they are managed independently and with a good measure of freedom on how to meet targets. In essence, our results show a persisting cycle between indicators and productivity; as indicators get lower, people start to increase their productivity, which drives the indicators up, allowing people to reduce their productivity, which drives the indicators down and restart the cycle. Several conditions contribute to this effect. Externally, stable objectives combined with variable inputs create the required situation for cyclic production. Internally, much work is done by managers to distribute tasks, to focus and motivate workers, and to engage them collectively into realizing objectives, especially during periods of heavier workload. Managers are essentially translators of performance indicators for their employees, using their leadership to motivate the

accomplishment of objectives. For the organization, this cycle can be a very beneficial pattern, provided that objectives are met even in the low-productivity portion, as it gives employees and managers pause to recover between high-effort periods (Welsh & Ordóñez, 2014). Moreover, the relationship described here serves to strengthen the link between external inputs and productivity, with the indicators acting as a feedback mechanism for managers and employees alike.

From a theoretical perspective, this result stems from one of the first principles of goal-setting theory, which is that harder goals increase performance the most (Locke & Latham, 1990). Consistent goals can have varying degree of difficulty depending on external factors, such as inputs and previous performance, and we demonstrate that they still provide greater motivation when circumstances make them harder to meet. We could also hypothesize that the commitment to the objective can be greater because of one's knowledge that his earlier productivity was lower than it should have.

While we find several hints of a close relationship between indicator scores and productivity, we did not find the number of goals missed to have a significant predictive power over productivity in most activities. There was a small and inconstant correlation in the activity Litigation, but overall, missed goals were not found to raise productivity even if scores do. The explanation is most likely that targets are set at a relatively easy level so that the variation in scores mostly occurs below the threshold set by the objectives. The high percentages of success in the activities studied (between 90 and 99%) support this explanation. This is obviously a design choice by the NEO, to keep the targets at an attainable level rather than a very high level that could be more motivating but unsustainable. We also know that the goals are set with client satisfaction in mind, and not specifically to increase the productivity of employees. In view of our results, the relative importance of this way of setting the targets remains open to debate. However, we would argue that, in repeated tasks, having a high degree

of failure would be damaging toward workers' sense of self-efficacy (Bandura & Locke, 2003) and would most likely lead to worse results in the long-term, as Welsh and Ordóñez have demonstrated (2014).

Finally, when it comes to targets, we have found some indications that higher targets lead to higher productivity as denoted in goal-setting theory. However, as we pointed out just before, it is likely that this is only true to a certain extent before the effect is reversed. Additionally, we tested this effect only in Admissibility because no other activity had any variation in the objectives used, and it should be noted that the changes made to the targets were not in any way random, so our conclusions are to be understood in their proper context. During the period studied, a few configurations of goals were tried, mostly with targets becoming more difficult in the month or months before holidays to create room for these periods where processing targets are always harder to meet. Ultimately, the administration went back quickly to constant targets when no improvement was found. Indeed, the NEO reliance on invariable targets is a long-standing feature of their performance management system.

Productivity – the dependent variable in our study – is *not* used at NEO in day-to-day monitoring of the performance of regional offices and services, but only in a more centralized and less frequent manner. Specifically, the central administration has never used targets to raise long-term productivity. The long-term increase in overall productivity seen at NEO relies on structural measures such as automation, management methods, regulatory simplifications, etc. However, we have, so far, approximated the cycle between productivity and indicator scores as a successful, sustainable implementation of performance management. Our reasons to do so are as follows: first, the administration, as well as external auditors, have credited their performance management system as the source of the organization's widely-recognized successes in efficiency and efficacy; second, the close connection between performance

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as measured by indicators and productivity illustrates the importance that goal setting has taken – and maintained – in the mind of the employees over the years, which is generally considered a success in itself as engagement is difficult to achieve (Ossege, 2012); third, it demonstrates the integration of strategic and operational levels, as the goals that are imposed by the central administration are shown to affect the motivation and productivity of first-line employees; fourth, it creates a culture of performance in the organization, where workers put actual effort in meeting and even exceeding targets.

It might be that goal setting is not an appropriate tool to generate long-lasting increase in productivity by using ever-increasing targets to constantly raise productivity (Welsh & Ordóñez, 2014); even so, it is an excellent tool to create a dynamic workforce that can reliably respond to external pressures with adequate efforts; workers who push themselves because *they feel it is needed*, not just because it is *required*. Indeed, part of the value added of goal setting relies on the communicable information that is integrated in performance management routines. With the help of this information, managers can plan and organize work, motivate workers, and evaluate the efficacy of new processes and ideas. In itself, this information value of indicators could just as easily have been lost because of gaming, cheating, or other forms of manipulation of numbers that occurs because of performance evaluation schemes (Pollitt, 2013). Moreover, performance management in general comes with deep and wide-reaching consequences, such as better and easier communication between hierarchical levels, better integration of strategy, and increased performance (Chenhall, 2003; Ho et al., 2014).

The large number of offices, managers, and employees that were studied here support the robustness of our conclusions for three activities. Yet, two other activities, Certificates delivery and Career interruption, present a striking lack of correlation

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between scores and productivity. In order to explain these differences, we have to rely on the characteristics of these two tasks rather than the characteristics of the management or environment, as the context is mostly indistinguishable in all activities. Indeed, while these activities use the exact same indicators of processing time as their main performance variable, there are some fundamental nuances between these and the other activities that can explain the lack of correlation. Essentially, these two activities are much more straightforward and require fewer steps to be accomplished. As such, they also require less management in general. Certificates delivery is especially simple; cases require only a few minutes to handle, and the objective is to have 90% delivered within 24h and 96% within 7 days. Needless to say, most managers don't bother with any particular system here and just task someone with making sure all demands received the day before have been handled. The second objective is practically irrelevant and the activity output is always determined by the file intake, as our regression shows. In this case, goals do not drive performance as there is no room for any buffer in the processing time, so employees do not have any freedom to adjust their productivity or empowerment to do so (Van Dooren, 2011).

Connecting goals with productivity is a fundamental objective in implementing goal-setting systems in organizations. There is still much to learn on the mechanisms, cultural norms, and management strategy that can improve the link from targets to performance, especially with repeated tasks. In our case study, the organization relies on several key elements to ensure good performance management, notably using invariable targets but encouraging managers to surpass them as a precaution against variable inputs; giving managerial freedom to managers on how to achieve goals; using dissemination effort of best practices; and constant managerial focus on improvement both within and without the performance management system. While these aspects of their management culture only scratch the surface of best practises, the simple

recognition that performance management, repeated goals and productivity can be associated positively and sustainably in a practical setting is significant, especially in public organizations (Moynihan, 2009; Pollitt & Dan, 2013; Welsh & Ordóñez, 2014).

### **Limitations**

Before concluding, we must acknowledge the limitations in our study. First, we use an essentially quantitative methodology to analyze the impact of goal setting on productivity, but such a link can be hard to reduce to numbers. Indeed, we observe many qualitative organizational characteristics upon which this effect may depend, but their analysis cause beyond the scope of the present article. Furthermore, while our claims are based on a 5-year dataset of 30 regional offices, we, in essence, study only a single organization. What we expose here is a case study of an organization's performance system, using quantitative methodology to pinpoint the effects of the system on productivity. The reproducibility of neither the effects nor the management method is guaranteed anywhere else, but the study of additional examples would be very interesting.

More generally, the NEO is also special by the quite restrictive way in which it defines its performance on its core activities, coupled with the very detailed information and objectives system it has developed on this aspect of performance. The tight coupling between productivity (as represented by files' processing) and client service orientation reinforces the importance of reliably attaining targets to accomplish the social mission of the organization. This is exceptional, and the possibility of analyzing other organizations' data in the same way will depend upon the specific definition of performance.

While there are many other organizational features worth discussing about the sustainability of performance management, theory development is restricted here by

the specific perspective induced by the statistical analysis, and the way it hinges on behavioural variables. Further qualitative work is necessary to inventory the specific organizational, cultural, and relational factors that support the sustainability of goal-setting initiatives.

### **Conclusion**

Originally, we set out to analyze the potential impact of goals and performance management in the workplace, hoping to find a hint of a relationship, but knowing that the complexity of a workplace environment could hide the details of such a connection well below the waterline. But by statistically analyzing detailed performance data from the NEO's internal system, we found a generally strong negative link between indicator scores and productivity, revealing that the productivity of employees moved in response to variation in the indicators used to measure performance in most activities. In and of itself, this relationship cannot directly translate into long-term productivity gains, yet it reveals the importance of goals for motivating workers and to strengthen the culture of performance within the organization. Moreover and in particular, this relationship is sustainable indefinitely, whereas ever-increasing performance targets are not.

Most of all, our results describe a situation where one major practical difficulty in using performance management, i.e. the need for long-term sustainability, has been solved to a certain extent by the use of consistent targets. By distinguishing between short- and long-term changes in productivity, and leveraging the performance system toward the former, the NEO has achieved a judicious balance between productivity and indicators. As more and more intricate performance management systems are developed within public and private organizations, this distinction should remain present in the mind of practitioners and researchers alike. An increase in productivity is not, after all, a real success if it comes at the cost of depletion within the workforce

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(Welsh & Ordóñez, 2014). Furthermore, an increase in service quality does not have to depend on constantly raising productivity; it can, just as well, come from a cycle of production that is closely associated with inputs and monitored using appropriate performance indicators, thereby having employees that work harder during peak times and are rewarded with lower pressure the rest of the time. While the nature of its business has probably helped the NEO to find a sustainable system of objectives, its case provides insights into the cultural, organizational, and managerial factors that create a viable environment for a well-performing, goal-oriented and sustainable workplace.



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## **How Organizational Learning Is Supported by Performance Management Systems: Evidence from a Longitudinal Case Study<sup>8</sup>**

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Performance management is meant to encourage organizational change by providing better and more relevant feedback to managers. But there is no denying the complexity of learning and change; how performance management helps this process goes beyond the simple availability of performance information. In this study, we examine the learning processes in a large Belgian public organization through interviews of managers, directors, and administrators. By using Crossan et al. (1999) 4Is framework of organizational learning – from Intuitions to Interpretation to Integration to Institutionalization – we identify critical blocks and enablers of learning and change. Critical impediments include off-topic discussions of performance information, lack of opportunity to share and discuss management practices, and limited motivation to change entrenched processes of work. Performance management also provides reliable enablers of organizational learning such as giving credibility-by-results to new management practices, focusing discussions on processes that lead to measurable results, the ability to follow new innovations closely as they are implemented, and the possibility of creating a learning culture supported by performance information. Finally, we discuss how perceived credibility of performance information is crucial to organizational learning and how it is reinforced by use and dialogue.

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<sup>8</sup> Co-authored with Jan Mattijs. Manuscript under review for *Public Performance & Management Review*.

### Introduction

Consider the following statement: Performance information leads to improvements in organizations. While the truth of it appears self-evident, it is a simplification that ignores most of the difficulties inherent in learning and changing, especially in large bureaucratic organizations. Neither accountability nor performance information does, in and of themselves, bring improvements; there are numerous requirements before accountability can lead to organizational learning. It is a complex process that involves data gathering, performance management, performance information use, intuiting, sharing, planning, elaborating and implementing changes. The difficulty in achieving results tends to restrain the success of performance management initiatives. In this article, we ask how and where does performance management succeed or fail to support learning.

An important part of the answer relies on how performance information is used, or whether it is used at all. There is evidence of cases, for instance, where elaborate performance measurement exists but information is never used by managers (Moynihan, 2005). It has been long observed that managers prefer to spend their time interacting with people rather than analyzing quantitative data (Mintzberg, 1973). Moreover, it is unclear whether statistically savvy managers could find many useful insights simply by looking at available data. Nevertheless, both the accumulation of performance information and its use encourage organizational learning (Barrados & Mayne, 2003; Moynihan & Landuyt, 2009), meaning that a connection exists between the availability of information and learning by managers.

While information brings new insights, learning also requires the implementation of improvements through organizational changes, a feat easier said than done (Rashman, Withers, & Hartley, 2009; Schilling & Kluge, 2009). Strong cultural inertia, especially in public organizations, obstructs the learning process because of old, well-

established, and hard-to-remove rules (Mahler, 1997). In order to change, organizations must first overcome the collective internal challenges of innovation. Influential leaders can use their power to provide the necessary social energy to overcome these challenges (Lawrence, Mauws, Dyck, & Kleysen, 2005). Discourse and information are an important part of this process; it is used to legitimize the need for changes and to increase commitment by demonstrating the benefits of innovation (Frees, van Acker, & Bouckaert, 2015). As such, information has the potential to modulate power relationships in the organization, even becoming a source of power in itself (Cialdini, 2009). How information supports the learning process needs to be better understood to help organizations creating long-lasting improvements.

Where does performance management succeed or fail to support learning? While there have been many studies that explore learning in organizations and that examine the changes that performance management can spur in public organizations (Ebrahim, 2005; Frees et al., 2015; Moynihan, 2005; Schillemans & Smulders, 2015), there are still important gaps in the literature. Most importantly, organizational learning results from a number of successive processes that leads to organizational change, yet few studies have analyzed this longitudinally with performance management. Most studies also look at a specific aspect of performance management and its influence on learning (e.g. Laihonon & Mäntylä, 2017; Moynihan & Landuyt, 2009; Schillemans & Smulders, 2015). However, to properly answer our research question, we need to examine the features or uses of performance management that promotes learning and the impediments that prevent it.

For this, we take a detailed look at how organizations learn through the 4Is framework of organizational learning. Using examples from an extended case study of a large public organization, we demonstrate how each feature of a performance management system affects learning. These examples reveal that managers face many

difficulties in using information as a source of new Intuitions. However, they use information to validate and legitimize the success of their work practices, often by relying heavily on performance information during collaborative forums. Information acts as a source of credibility and mutual understanding with both colleagues and superiors. But not all performance information is credible as is; data and information acquire credibility when managers are familiar with it, when they use it regularly, and when they trust expert analysis. Once performance information acquires credibility, results can lead to or accelerate the Integration and Institutionalization of best practices. Thus, we highlight the importance of performance information as a social facilitator of organizational learning and change and as a source of credibility and power.

It is important to place this paper properly with regard to existing performance management literature and to explain what we mean by a performance management system. What we analyze is the effect of an internal performance management system with indicators and targets that are mostly oriented on outputs. This type of performance management system is common in public organizations that provide direct services to citizens by processing their various requests. While performance indicators are used first and foremost for agency purposes, they provide several opportunities for learning that are leveraged by managers in the organization. We analyze what aspects of the performance management system enables organizational learning and what aspects tend to hinder it.

### **Performance Management and Learning**

The central importance of accountability in the contemporary governance of public institutions has forced many public organizations to design, implement, and use performance management systems to control outputs and, where possible, impacts (van

Thiel & Leeuw, 2002). The main rationale behind performance management is always one of constant improvement:

*The key assumption that underpins MFR [managing for results] is essentially a learning theory: Decision makers will learn from performance information, and, in turn, they will make better informed decisions and improve government performance. (Moynihan, 2005, p. 203)*

This idea that accountability and performance information promotes learning in organizations has deep roots. Feedback has long been known to increase performance (Chenhall & Langfield-Smith, 2007; Matsui, Okada, & Inoshita, 1983; Mausolff, 2004), hence one of the major ideas behind controlling through performance indicators was to enable empowerment and innovation (Simons, 1995). Evidently, warnings were heard about the misuse of performance information and the problems it creates, such as tunnel vision (Behn, 2003), agency-related inefficiencies (Heinrich, 1999), or a tendency toward strict rules that reduce creativity and innovation (Behn, 2001; Ebrahim, 2005).

Still, many studies have managed to find links between accountability or performance management and organizational learning (Hall, 2011; Kroll, 2015b; Moynihan, 2005; Moynihan & Landuyt, 2009; Schillemans & Smulders, 2015). In their analysis, Moynihan & Landuyt (2009, p. 1099) assert that “*Effective* [emphasis added] information systems are positively related to organizational learning”, leaving open the question of what exactly is an *effective* information system. Several authors have acknowledged limitations of similar – and oftentimes imprecise – nature when talking about performance management and learning. Sanger (2008) advocates that time and practice are required before managers learn to use information to test hypotheses about what produces results. Moynihan (2005) acknowledges that managers will learn only if the organizational culture encourages routines of data consideration. Van Thiel & Leeuw (2002) cautions that “a balance has to be found between too much and not enough measure pressure” to avoid perverse effects. Together, they add their voice to

numerous authors that warn about unintended or dysfunctional consequences of performance management (Bevan & Hood, 2006; De Bruijn, 2001; de Waal & Kourtit, 2013; Grabner & Speckbacher, 2016; Micheli & Manzoni, 2010; Pulakos & O’Leary, 2011; Talbot, 2005; Weibel, Rost, & Osterloh, 2010; Welsh & Ordóñez, 2014). The mere presence or availability of an accountability system relying on performance information rarely suffices to produce organizational change; at the very least, change requires the purposeful use of information (Kroll, 2012; Moynihan & Lavertu, 2012; Schermann, Wiesche, & Krcmar, 2012). That is, managers who work with the information, use it to identify performance gaps, to allocate resources, or to test different approaches and evaluate the results. But in the end, the key to an effective use of performance management remains difficult to pinpoint. Not much is certain, except perhaps that unused performance information cannot lead to positive impacts in organizations (Taylor, 2014).

Another key idea of performance management is that feedback from performance information systems can be used as part of an organizational or individual learning process. For instance, performance competition can encourage managers to learn from one another’s experiments (Soss, Fording, & Schram, 2011). Looking at how managers use feedback, Mausolff (2004) made two important observations. First, the author observed that most of the learning process involved solving performance problems raised by data, which recognizes performance management as a precursor or trigger for the learning process. Second, he determined that most solutions worked inside the existing “theory of action”, while only rare instances involved creating a new “theory of action”<sup>9</sup>. We could summarize those results by saying that, at the individual level,

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<sup>9</sup> The theory of action refers, of course, to Argyris’ approach to organizational learning (Argyris, 1990), which we will not explicitly apply, preferring Crossan et al.’s (1999) more pragmatic conceptualization.

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performance information brings attention to specific problems, which are then corrected using the simplest solution available. But this type of learning only portrays a relatively small and self-contained role of performance information.

To find more complex examples of learning, we need to look at larger organizational change. As complexity increases, more people are involved and different dynamics come into play. Performance information becomes an additional factor that interacts with the political nature of decision-making (Moynihan, 2008a). In this, the strength of information resides in its claim to objectivity and impartiality, although information alone is ambiguous (March & Olsen, 1976). This is why Moynihan (2008b) encourages an interactive-dialogue approach to performance management, where information is used as part of learning forums. Learning forums allow managers to share their results and to discuss on *how* they were obtained, thereby promoting learning by exchanging ideas and best practices. They also encourage managers to use performance information to make decisions (Moynihan & Kroll, 2016). Laihonon and Mäntylä (2017) underlines 3 principles for effective performance dialogue: a culture of performance-driven management, a proper structure for the use of performance information, and an initiator in charge of facilitating performance dialogue. Yet, many problems can plague learning forums since goals tend to be ambiguous and communication remains difficult, especially given uneven power relationships. Learning forums can often become confrontational if they are used to assign blame (Moynihan, 2005; Moynihan & Landuyt, 2009). Just like every part of the learning process, success is fraught with peril.

### **Organizational Learning and Change**

Organizational learning is the process by which organizations change in response to insights, new information, and more generally, experience (Argote, 2011). It is more than the accumulation of knowledge; indeed, knowledge in itself does not automatically

lead to positive changes or strategic renewal (Olejniczak & Mazur, 2014). Knowledge is accumulated by individuals, but it must be transferred to the rest of the organization, or Institutionalized, in some way before we can consider that learning has happened (Crossan et al., 1999). As such, organizational learning theories are fundamentally theories of organizational change, but they also focus on one immediate antecedent of change, i.e. the acquisition or creation of knowledge. Therefore, organizational learning occurs when an organization changes an aspect of itself, whether it be its processes, tools, rules, or otherwise, as a result of new information or knowledge acquired by the organization or someone within. Organizational learning thus describes an arduous and gradual process that produces changes in an organization.

By integrating change, we distinguish our definition of organizational learning from other fields such as workplace learning, which concentrates on how individuals learn while doing their job (Van Woerkom & Poell, 2010). Organizational learning is broader in scope, separate but not independent from workplace learning. Indeed, learning by individuals has the potential to change an organization. But as far as large public organizations go, the hurdles are many between individual learning and organizational change. To describe this process, Crossan et al. (1999) developed the 4I framework of organizational learning. The framework encompasses four processes – Intuiting, Interpreting, Integrating, and Institutionalizing – occurring at three different levels: individual, group, and organization. It explains organizational learning as an interactive process, where bottom-up and top-down progressions dynamically affect the emergence of the phenomenon at each level (Crossan, Maurer, & White, 2011). The table below summarizes the framework and the relations between levels and processes.



**Table 1**

Learning/Renewal in Organizations: Four Processes Through Three Levels (Crossan et al., 1999).

Level	Process	Inputs/Outcomes
Individual	Intuiting	Experiences Images Metaphors
	Interpreting	Language Cognitive map Conversation/dialogue
Group	Integrating	Shared understandings Mutual adjustment Interactive systems
	Institutionalizing	Routines Diagnostic systems Rules and procedures

**Intuiting** is a purely individual process. It is the recognition of patterns and possibilities drawn through experience. It is the first hint of learning, often preconscious. It happens at the first realization of a problem or whenever a situation brings in a new insight or awareness.

**Interpreting** occurs at the individual and group level. It is the process by which the Intuitions are explained to oneself or others. In this step, the verbalization is important; verbalizing is what differentiates Interpretation from the non-verbal Intuition, which can be little more than a feeling (“Something is not right”, for instance).

**Integrating** bridges the group and organizational level. In this process, a shared understanding is developed among individuals and coordinated action happens through mutual adjustment. Dialogue and joint action are crucial to this step; it may occur through informal contacts and communication or through formal procedures such as learning forums and pilot projects.

**Institutionalizing** is the last step of the organizational learning process, where actions are routinized, tasks are defined, and organizational mechanisms are put in

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place. Institutionalizing is the process by which change occurs; the learning of individuals and groups is embedded into the organization, and it takes shape as systems, structures, procedures, and strategy.

The 4I framework of organizational learning helps identify, at a micro level, how the process of learning occurs and what enables it (Crossan et al., 2011). Organizational learning starts at the individual level without the presumption of authority; any employee can Intuit and Interpret, *potentially* starting the process of organizational learning (Crossan et al., 1999). There are many barriers that can prevent the process of learning from progressing through each stage and reaching the next level of Integration. Common barriers include bureaucratic restrictions, fear of failure, poor adequacy with performance targets, lack of top management support, and a lack of trust in the innovation (Schilling & Kluge, 2009). Old structures can be hard to de-Institutionalize, as new structures promise only uncertainty (Van Dooren, 2011).

The difficulty in progressing through toward Institutionalization lead some researchers to consider the impact of power on the learning process. For instance, Lawrence et al. (2005) argue that organizational learning is a fundamentally political process and thus, power dynamics within the organization can help understand why some organizations are better than others at learning and reinventing themselves. Power comes from many sources, one of which is the control over sources of uncertainty (Crozier, 1964). Both organizations and members of the organizations seek to protect themselves from uncertainty; as such, those who can control sources of uncertainty yield power within an organization. Performance information is thus a source of power in itself (Bariff & Galbraith, 1978). It is seen as valuable, as is the ability to control it, by managers and employees alike (Stanton & Stam, 2002). Control over information and the ability to use or to present it in a certain way can temporarily shift the power

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structure within an organization, helping managers to push for Integration or Institutionalization of certain innovations.

### **Method**

#### **Research site**

We study a large public organization, the National Employment Office (NEO), whose main responsibility is the allocation of unemployment benefits in Belgium. It also oversees 12 other parallel activities, all related to unemployment. The workforce of around 4000 employees is spread across 30 regional offices throughout the country. The NEO uses a comprehensive performance management system with numerous indicators and targets to oversee the local offices.

We choose this organization as a prospective field for study based on its reputation as a performance management leader in the Belgian public sector. Three main features of NEO's performance management, inducted from the fieldwork, will lay the structure of our analysis.

A) First, managers have access to nearly every piece of information collected over the 25 years that the internal performance management system has been in use. This widespread dissemination of performance information made the NEO an ideal prospective field for examining how managers use this information in the learning process. Notably, office directors have unlimited access to performance information from all offices, not just their own. Lower-level managers sometimes have the same level of access as directors, depending on how many account licences are available in a given office. The NEO works hard to constantly improve access to performance information at every managerial level. The data collected represent mostly performance results, but

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the NEO's policy is also to measure everything that can be measured, which leads to an accumulation of many types of data.

B) Second, local offices enjoy a great deal of managerial autonomy, provided they meet performance expectations. Control and performance management are centralized using a scorecard system with indicators and targets on each activity. Monthly performance reviews bring office directors to the central administration for feedback, discussion, and planning. This combination of autonomy and oversight is meant to encourage managers to innovate in order to meet or exceed expectations. They are also encouraged to learn from one another by discussing their respective strategies during performance meetings.

C) Finally, as part of its strategic management, the NEO has organized explicit processes to oversee change management. A centralized "Change Management Team" is concerned with long-term planning, efficiency gains, strategic projects, and annual action plans, all driven by in-depth analyses of performance information. This unit has pushed the organization through many improvements initiatives with various degrees of success. The team's responsibilities include using performance information to identify best practices and areas of potential improvement. We will analyze how their use of performance data affect their role in the learning process.

### **Data and interviews**

We collected data over two rounds of interviews 5 years apart, in 2009 and 2014, where both research phases sought qualitative saturation for their respective research problems. This qualitative longitudinal methodology allowed us to follow up on various projects and strategic intentions to find out to which degree they became Institutionalized between each round of interviews. The interviewees were selected independently during each round of interviews. Our intention was to avoid following a

single cohort of individuals in order to reduce the risk of confusing organizational learning with individual learning. To complete our knowledge of the organization for the period in-between interviews, we analyzed all available archival documentation of 2009-2014, such as activity reports, balanced scorecards, and control reports. This data forms a comprehensive picture of managerial learning and change in the organization.

During the first round of interviews, in 2009, we focused on the organizational changes that came with performance management, its implementation, and its use. We selected a wide array of managers and staff from federal headquarters and two local offices at different hierarchical levels in order to get a more complete picture of the organizational changes that came with performance management. The semi-structured interviews focused on organizational change (e.g. “What has changed over the years?”), the perception of leadership roles (“What do you expect from your ‘boss’?”) and of management processes (“In your opinion, is the management here rather formal or informal? Do you see an increase in the amount of change projects?”).

**Table 2**

List of interviewed personnel.

<b>Hierarchical position</b>	<b>2009</b>	<b>2014</b>	<b>Total</b>
Administrators	2	-	2
Central directors	3	-	3
Union representative	2	-	2
Office directors	4	6	10
Coordinators	4	15	19
Team leaders	3	4	7
Staff	4	-	4
<b>Total</b>	<b>22</b>	<b>25</b>	<b>47</b>

In 2014, for the second round of interviews, we interviewed a more select group of mid-level managers from team leaders to office directors. This group was identified to be routine users of performance information and offered interesting symmetry and

comparability with one another. According to the initial observations, they were among the participants most involved in organizational learning and in the implementation of organizational changes. We started our questions on how they use performance information, performance management tools, and management controls in general. We then explored learning by asking indirect questions about both actual and desired changes (“What would you improve? What is the best/worst feature of the system?”), problems encountered and solutions found (“Were you ever surprised by results? Did you ever pinpoint a specific problem/solution using performance information?”), and the evolution of performance management in their service (“How has your usage of performance information changed in the last years?”).

Both rounds of interviews were reanalyzed through theory-driven coding, with the second round offering more detailed information about learning with the PMS. As stated above, this method is not longitudinal in the statistical sense of following a cohort of identical individuals, which would only serve to confuse individual learning with organizational learning. Rather, we analyze the evolution of the organization between those two periods by interviewing individuals in relevant positions throughout the organization. The historical depth greatly enhances the validity of the observed continuities and changes in patterns and enables us to better capture organizational dynamics (Pettigrew, 1997).

### **Data Analysis**

We recorded and transcribed all interviews verbatim for analysis. From the managers’ comments, the description of their behaviours, and their impressions, we identified several examples of organizational learning – or attempts at organizational learning. We used text analysis software to label and categorize each example according to the 4Is framework of organizational learning. These occurrences were then clustered,

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based on three parts of the performance management system. We identified two aspects of operational performance management that relate to learning: A) the availability of performance information and B) the coupling of managerial autonomy with periodic performance review. We also examine the impact of C) strategic processes of change relying on performance information.

We will proceed below by reviewing these three parts of the PMS, and for each part, highlight the instances of the 4I learning process. We support each observation with relevant descriptive quotes that help contextualize the learning process in the organization. The examples we have chosen to report represent actions and intervention that are typical for the organization studied. The purpose of our analysis is to show and understand complex management interactions through in-depth examples. We divide these examples into individual learning (Intuiting and Interpreting) and group or organizational learning (Integrating and Institutionalizing). Each situation illustrates a successful or failed attempt at innovation that emphasizes a different part of the learning process and how it was affected by performance information.

### Findings

#### **A) The availability of performance information**

##### **Individual learning: Intuiting & Interpreting**

Performance information is widely available at the NEO and this access is praised by managers at all level. Most managers self-declare as daily users of performance data. In our interviews, examples abound on how this performance information helps to identify problems. In one case, the director of a medium-sized office acknowledged that they had a problem (they referred to it as “a difficulty”) because their office had too many unplanned visitors. As field offices, part of their responsibilities is answering

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questions and enquiries from visitors, but such work distract their employees from their planned workload, thus lowering productivity and production on several time-sensitive activities. They were sifting through the data to find an explanation.

*We are looking, but that takes time. I started looking through the data and I found [that there are many more visitors here than there are at other similar offices]. Then I started to analyze it and to ask around and... I thought it could be that another organization was sending us visitors for help, but that wasn't it. It's not clear why. I think we have a peculiar situation here. (Office Director)*

This is a typical situation where data helps to easily *identify* the problem, but fail at bringing a solution. In fact, it is unlikely that an explanation can be found in the data; therefore, the block is looking in the data for a solution that does not exist. Plus, while this problem is an inconvenience, it might not be right to address any root cause; after all, providing the public with information is part of the mandate at NEO. This example could also caution against solving problems just because some data seems to indicate that something is wrong; time can be wasted on an issue if, in truth, it is either temporary or simply unresolvable.

A different example of Intuition is a case where performance data helped managers to realize the mistake of their assumptions. One strength of performance indicators is their objectivity; as such, they help adjust subjective impressions. One manager had this to say:

*[...] we can remain objective... We can see where each employee stands, and it's something other than my impressions. I realized, sometimes, with [performance data], that I had ideas that were really subjective. When I saw the numbers, I said: "That's really surprising." (Manager)*

These kinds of realizations on the part of the manager are usually – actually, we have no example to the contrary – about employees or services doing better than expected, not about people doing worse. A certain form of perception bias could apply to managers in that they expect things to be worse than they are, and performance



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information helps to correct their assumptions. This requires trust, on the managers' part, in the value and reliability of data, as well as in the data's ability to represent reality. Our interviews sometimes gave us mixed signals on the weight given to data by managers. At times, they rely heavily on data without question. Other times, they question the validity or the representativeness of data, especially when the data they have disagrees with their own impressions. Some disagreement also stems from weaknesses in data collection processes, for example when random sampling or self-reported measures are used. In all cases, however, they believed in the ability of data to ultimately represent the reality of their work, and they would trust the analysis of experts, comptrollers, and internal auditors that rely on the same data.

All in all, it is difficult to find vivid examples of Intuitions gained from data analysis. When asked the question: "Were you ever surprised by results?", no manager gave a spontaneous positive answer. Their data tend to support their perception. Besides, managers are busy and lack both the time and training to dwell into econometric and statistical analysis of the available data, instead resorting to specific enquiries when confronted directly with a problem. Indeed, data rather serves as a tool of *confirmation or disproof* of their own impressions (thus, Interpreting), not as a primary source of Intuition. However, performance data does provide an additional source of information that supports managers in their tasks and prevents certain kinds of mistakes, especially misjudgements. Managers spontaneously admit that performance information helps them in their daily routine and gives them better – or more easily available – knowledge of their unit, which is bound to translate to a more enriching management experience.

### **Group and organizational learning: Integrating & Institutionalizing**

A definite advantage of performance information is the ability to set goals universally, thereby challenging managers to collectively improve. However, the use of

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indicators and associated targets entails its own trials. For example, when performance management was introduced at NEO, the processing time for client cases was very high, sometimes over 30 days. As objectives were introduced and Institutionalized, upper management started discussions with directors and managers to ensure better Integration. Many managers had their own ideas about what targets should be used:

*For example, the processing time, in [the service] admissibility, has to be quick enough so that the first payment of unemployment benefits is done at the end of the first month of unemployment, so as to avoid an interruption of income for the beneficiary. So even if we process each case in 2 days rather than 15 days, it doesn't matter at all. But [office directors] wanted to go beyond 15 days: 10 days, 8 days... I wasn't having it. With this, there was no added value, neither internally nor externally. (General Director)*

For most managers, having an indicator of processing time numbered in days meant that the ultimate objective was to be as low as possible. But this logic only connects performance data and objectives, and forgoes the ultimate outcome for the client. Driving processing time below 15 days (the norm) brings no additional benefits for clients. Managers at the NEO argued about this situation early, while Integrating and Institutionalizing the use of objectives. These discussions showed that different people had different Interpretations about what should be done, and those Interpretations were based on the structure of the indicators used, not on the needs of the clients. Ultimately, the administrator had to intervene to impose a general 15-day norm that went beyond the implicit goal that was widely Intuited and Interpreted from the structure of the performance information used. In doing so, he avoided a misinterpretation of the implicit objectives of performance information. This shows that the simple availability of data can block learning by creating misinterpretations about the organizational objectives, and other processes or leaders have to counterbalance this effect to drive organizational learning.

The general availability of data is a most prominent feature of NEO's performance management philosophy. It further affects learning in a variety of ways that we explore in the following sections, along with other characteristics of the system.

### **B) Coupling managerial autonomy with periodic performance review**

Another characteristic of the NEO is the decentralization of its operations into 30 independently managed regional offices. This creates a textbook situation that agrees with the principles of accountability and control: giving managerial autonomy with accountability for results. But does it enable organizational learning?

#### **Individual learning: Intuiting & Interpreting**

With 30 offices using the same system with the same indicators and targets, there is ample opportunity for mutual comparison. Managers have access to performance data from other offices and can freely analyze and compare their performance, but they seldom do. Mostly, they use the available data to get a sense of their general comparative performance. For this, they prefer comparing themselves to the national average than to any other office. When asked directly about the possibility to compare themselves to others, most managers retort that these comparisons do not reflect reality.

*This, for instance, the cases in [other office], it's different. (Manager in litigation)*

*But the structure of unemployment is completely different. Me, I have to manage [the service called] 'dispo' a lot, but them, hum, they don't. (Office Director)*

*So here, there is a comparison that is made between the regional offices. But, indeed, there are other parameters that, that matter. We can't guarantee that every piece of data is encoded the same in every office. It's a question that periodically comes back. We can't compare with all the other offices. That's why there are other tools, quote, 'management tools', exchange of best practices, etc. So, there are directions at the central administration that are tasked with keeping an eye on results and to compare the offices. (Manager in litigation)*

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This last manager, in his speech, betrays some discomfort with how data is encoded by each office and devalues any comparison based on his feeling. Other managers have expressed concerns over cases of ‘gaming’ the numbers and how it renders moot any conclusions from the data. However, this discomfort is usually directed at the data itself, not against other managers, which is why this manager puts more stock into the work of central administration and into best practices’ exchange forums. Indeed, it seems that the insecurity toward data does not extend automatically to all data users, as managers rely on advice from a direction tasked with analyzing and comparing local offices (the Change Management Team, to which we come back in section C). Perhaps this is because managers believe that it is possible to draw meaningful conclusions from data and comparisons, but they themselves lack the skill to do it.

The problem of data manipulation also seems to be reduced by face-to-face discussions and exchanges between managers.

*As soon as we have precise numbers, the discussion starts. That’s what we do, now, for the reorganization, we put people together by activity and they start to compare their respective productivity. “So, you do that, you phone the payer but we don’t...”*  
(Organizational management analyst)

As long as the discussion focus on processes, routines, and management, managers tend to avoid discussing the value of indicators and numbers or questioning their accuracy. As they pointed out, it does require “precise numbers”, which, in that context, means that numbers have to be reliable, credible, and informative. These kinds of numbers are true enablers of learning. While managers do mention the existence of gaming and errors in performance data, these subjects are shrouded in a veil of plausible deniability and are seldom the focus of discussion in selected groups. There seems to be a certain stigma associated with playing too much with numbers and those who do so end up out of the loop, with less or none to contribute during discussions on

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performance management. For instance, productivity indicators rely on self-reported time sheets, where ‘time spent on task’ can be easily underreported to inflate productivity. But given the familiarity of managers with data and performance indicators, they are quick to identify outliers in productivity and dismiss their input because of their obvious gaming. As such, gaming indicators cause a loss of credibility and influence for those who overdo it, even if a certain level of gaming seems to be the norm on these indicators.

The acquisition of credibility is a long process for any indicator. Additional measures or analysis have been developed specifically to add credibility to certain indicators in order to make them useful for comparison. Using the example above, self-reported timesheets have always been known to be unreliable and easily gamed. In turn, internal control has created detailed analyses of productivity, including various comparison of time reported and time reported per employee that help pinpoint “errors in reporting”. This was used as a way to improve the credibility and the value of these measures, and to persuade managers to adhere to stricter procedures during data collection. As a result, managers tend to renounce to exercise their power over data collection in exchange for a collective improvement in the value of performance information. This increase in centralization is accepted in part because managers come to value comparative information more than control. But having to present and discuss numbers that are obviously gamed comes with a stigma that managers quickly learn to avoid.

### **Group and organizational learning: Integrating & Institutionalizing**

To exchange best practices, the NEO relies heavily on discussions and meetings between managers. During these discussions, managers exchange insights and ideas on the basis of performance results, and afterwards endeavour to Integrate these changes.

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*We took the idea from [other office], but we changed a few things. It's not that different, but it wasn't forced on us by the central administration. It's our own tool. (Manager in admissibility)*

Managers display a great sense of appropriation and ownership from adapting the ideas of others to their own situation. To disseminate changes, the NEO organizes and encourage these exchanges between select managers. For example, managers from all over the country can be brought to an office to observe a new practice in action. Many innovations have been Institutionalized to some degree by this process of voluntary dissemination.

*It meant that there were bits of good practice in an office or another. And that therefore, by generalizing this good practice, or rather by ensuring that other offices would appropriate this good practice – because it is always important to leave the initiative and the final decision to the manager in charge at each office - well, finally we arrived yet at a much higher productivity. (Deputy General Director)*

The drawback from voluntary adoption is the length of the Institutionalization process. Managers have limited motivation to change entrenched processes of work, which is a major block to organizational learning. For instance, an innovation appeared in 2004 in an office, where managers started using a point-value system to assign an equal amount of work to each employee. At the time of the second round of interviews, in 2014, a third of NEO's office were using some version of this system. In 2016, the decision had been made to force the adoption of this change everywhere, thereby fully Institutionalizing this practice over the next couple of years. But this coercive action was taken as part of a larger reorganization, which allowed the central administration to overrule managers' autonomy after a lengthy "due process" and without denying their general autonomy.

Autonomy encourages the creativity of managers, trials and errors in establishing new work processes, and engages managers in pushing changes they believe in. Head office administrators do not consider that the difficulties they face when

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Institutionalizing changes are a real drawback or a dangerous consequence; rather, they see it as part of the managerial culture of the organization. The reliance on compromise and discussion, while difficult at times, brings solutions and innovations that would not exist otherwise. In the end, comparison is important, especially for the Integration of knowledge. But it is scarcely enough to have comparable data, lest managers tend to focus on the wrong things such as the quality of this data. Managers realize the possibilities that they have to Integrate changes when they are put together in one room and asked to discuss what they do and how they do it. Managers will more easily question the credibility of data alone than they would question the credibility of a manager presenting an innovation whose results are supported by data. In short, while data has little credibility in and of itself, it still has the potential to give credibility and influence to managers, as long as they can get others to agree, collectively or individually, that the data represents their reality. Given the heavy reliance on performance indicators, the NEO seems to have developed this collective understanding of the legitimacy of data, although there exist obvious differences between the credibility given from one indicator to the next.

### **C) Strategic processes of change**

The NEO has developed several tactics to promote learning and change. Foremost, they formalize the change process by applying a distinction between strategic improvements and operational management. This is meant to ensure that the Institutionalization of any organizational change does not conflict with operational priorities. It also underlines the strategic importance of change at the NEO.

*Over the years, the NEO has developed an integrated management model characterized by change in continuity. The daily management of key activities is a priority that is now easily combined with the implementation of diversified improvement projects. Staff involvement, the report on results, and feedback are prominent in this model. More than just a passive solidarity, the NEO search the*

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*effective participation of employees in the development and implementation of its strategy. (75 ans de l'ONEM – Official publication)*

When the NEO first started to design its performance management system, they created a project team named the Change Management Team. It soon became a permanent fixture of the organization. Their mission is to stimulate and coordinate continuous structural change. They have been part of most important changes at NEO, both technical and strategic, since 1993. The Change Management Team is tasked with many strategic responsibilities, such as elaborating annual action plans and administration contracts (performance contracts between the organization and the government), coordinating and giving methodological support to change initiatives, advising on management techniques, and validating organizational changes that fit into the NEO's mission and strategy. They are tasked with a strategic mission and rely nearly exclusively on performance data to solve problems and to drive organizational change.

### **Individual learning: Intuiting & Interpreting**

The Change Management Team brings innovation and learning into the organization from several sources. They implement industry-standard methods, such as activity-based costing; they use outside consultants to acquire new methodologies; and they review and analyze NEO's performance data to identify and promote best practices, and to challenge managers on specific performance issues. The Change Management Team has the technical expertise necessary to digest and Interpret the massive amount of performance information generated by the performance management system. They use this knowledge, and input from managers, to continually review and improve processes.

An extensive example of learning and change illustrates the importance of the team's technical knowledge and creativity. For years, indicators on processed files were calculated in a way that caused problems and bad behaviours:



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*Before, in admissibility, they could not work more than 1 or 2% of files on the total caseload. They could not process more than 1 or 2% outside the 30 days, but because they knew when they would reach the limit, then they could say, "Oh no you will not process one more." [...] It was not done because we might not respect the norm of no more than 1 or 2% outside 30 days. (Office Director)*

This sort of behaviour is problematic within public performance regimes. When managers or employees have to choose between meeting their objectives or doing what they believe is right according to the mission of the organization, it means there is a problem between the objectives chosen and the mission. Managers soon spotted the problem by looking at performance data, but the identification of a problem does not necessarily give any insight into a solution. In this specific case, changing the objective also meant changing a major part of their management process. The solution was far away because changing the nature of measurement would potentially create more and worse problems.

It took many years to devise and implement a new method of calculation that would avoid these kinds of problems. Meanwhile, the problem was softly addressed by monitoring extra indicators to avoid a worsening of the situation. The technical nature of the situation necessitated specialized Intuitions and Interpretations. The nature of the change would also require a special Institutionalization process, where both methods of measurement would coexist before one could replace the other. This lengthy Institutionalization process reflects the complexity of the change, the number of alternate solutions that had to be considered and evaluated, and the systemic reach of this modification.

A similar problem affects another activity, litigation, where the current method of calculation of norms can still encourage managers to stop processing the backlog of late files. They cannot complete and close more than a certain number of late files each month if they want to meet their objective. Although people are aware of this problem throughout all managerial levels, the planned solutions are few. A file in litigation can

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be an order of magnitude more complex than a file in admissibility, for instance, so any change is blocked because it could put undue pressure on a fragile system. Directors, for now, deal with the symptoms of the problem by looking at additional indicators pending a systemic change that looks far off. Once again, this is because there is a fundamental difference between an Intuition about a problem and an Intuition about a solution. There are a great many steps between the identification of a problem and the discovery of a feasible solution, which is the more useful Intuition when it comes to organizational learning. To overcome this block, the involvement of specialized project teams with adequate technical expertise is needed. They are the one tasked with finding realizable solutions to problems using their technical expertise. Thus, their value comes from their ability to find solutions and *actionable* Intuitions. Meanwhile, their successes add to the credibility of data by improving the reliability of indicators and by demonstrating expertise in the handling of information.

### **Group and organizational learning: Integrating & Institutionalizing**

No matter the source of the initial idea, the Integration and Institutionalization of learning is a long process of trial and error. For example, activity-based costing was implemented as a performance indicator that gives details on the cost of each service provided at each office. As an indicator of efficiency, the intention was to use objectives to drive costs down. However, this idea had to be scrapped because managers felt that the majority of their costs were simply uncontrollable. The majority of the production costs are salaries determined by collective agreement for state employees. These measures turned out to have limited strategical value for the NEO and caused uproar at several levels. They were eventually replaced by indicators of productivity that were deemed to be better evidence of efficiency.

While this example underlines the difficulty of Institutionalizing change, it also serves as a cautionary tale against changing for change's sake. The Change Management

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Team was able to understand the potential problems caused by putting objectives on activity-based costing – an Intuition that came from managerial experience, evaluation of data, and discussions between actors. These discussions were encouraged by formal processes that were put in place to get feedback on considered changes.

*[...] an important thing in all that, it was the flow of information. We had to talk about everything we were doing, and if possible, get a feedback of information. So here we implemented a series of structures that favoured the rise of information. (Deputy General Director)*

For instance, each year, the NEO organize a seminar where office directors are invited to share and discuss their ideas for change. Comments and opinions are also encouraged in monthly reports. But by and large, the circulation of information depends more upon the listening capabilities of the people in charge than they do upon the speaking capabilities of managers and employees. Formal processes of feedback are only as good as the people who receive it.

These seminars encourage feedback on both current and future processes. They open the discussion toward planned changes and facilitate the Integration process by diffusing information, ideas, and comments about new tools or processes. The formal focus on learning and improvement enables pushing Intuitions through the learning process by way of discussions, Interpretations, and test projects. The NEO's tendency to respect managerial autonomy makes these forums essential to enable change. They are used to present and discuss results, thereby giving credibility to performance information by addressing the concerns of managers directly. The experience of NEO has proven that performance information can only convince up to a certain point, and face-to-face communication, sharing experiences, and discussing problems goes a long way toward creating a learning culture.

### Discussion

Our first conclusion is that the mere production and dissemination of performance information is very unlikely to result in Institutionalized learning. This observation agrees with other studies that have shown that only the purposeful use of performance information enhance learning (Kroll, 2015b; Moynihan, 2005; Moynihan & Landuyt, 2009) or that gains occur only in specific occasions (Hall, 2011). However, as we examine closely what is implied by the purposeful use of performance information, we also find out that managers gain very little by using the information by themselves. The best Intuitions come from discussion and contacts between managers or – more specifically – learning forums where performance information is reviewed and serves as a basis for discussion on potential improvements. In this, our observations differ from Mausolff's (2004) in that managers mostly seem to use data as a confirmation tool rather than as an exploratory tool. Instead of exploring data with fresh curiosity, they ask specific questions and look for specific answers, gaining less Intuitions in the process. Yet, as Mausolff pointed out, data is still useful to reveal problems.

Looking through the lenses of the 4I framework of organizational learning, we can attempt to explain our observations. Whereas information – more, newer, and better information – leads to additional Intuitions, Intuitions are not what is missing for organizational learning to occur. Managers have plenty of relevant experience and ideas for improvement. The weak link of the learning process is to be able to communicate – to *Interpret* and *Integrate* – those ideas, so that they can be *Institutionalized*. Performance information helps in this regard by giving credibility to good ideas and practices, and to the managers who apply them. But this credibility requires credibility of the data itself. Managers who have years of experience using performance indicators trust data more readily, as they are more familiar with what kind of gaming or flaws can

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reduce the data's reliability, and to what degree. They are also more adept at spotting unreliable data and voicing their concerns over it. Data credibility is also improved by experts who share their analysis of indicators, also increasing managers' familiarity with data by improving its presentation.

To put it in better terms, there are specific enablers and blocks that affect the organizational learning process. The 4Is framework of organizational learning highlights that the difficulty in enabling organizational change resides in bringing new knowledge from the individual to the group to the organization level, then back again from the organization to the group to the individual level (Crossan et al., 1999). Thus, enablers are the aspects of performance information use that promote learning at a specific level, while blocks prevent or slow the learning process. The presence of enablers at every level – for Intuition, Interpretation, Integration, and Institutionalization – is what ultimately promote organization learning. At the same time, care must be taken to avoid potential blocks.

The table below summarizes how the aspects of performance management influence the organizational learning process. The most critical parts of the process seem to be at the level of Interpretation and Integration, since most of the failed innovations fizzle out before Institutionalization. Enablers, the drivers of organizational learning, are critical for the successful completion of Interpretation and Integration. Specific performance management practices, such as learning forums and teams dedicated to change, are especially relevant at those levels. By comparison, the simple availability of performance information and comparative data can do little more than acting as a foundation for more complex enablers of organizational learning.

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**Table 3**

Relationship between performance management and the learning process

Operational management			Change management	
Availability of performance information			Planned learning and Change Management Team	
Intuiting	Enablers	Better knowledge of their unit Data help identifying problems	Trial and errors by managers Managers experiment with data	Attempt to solve identified problems Better technical skills leads to more useful statistical analysis of performance data
	Blocks	Data does not provide solutions for problems – can be a dead end Too much data overwhelm managers	Less risk-taking behaviours when the objectives are not sure to be met	Rely on feedback from managers to identify problems
Interpreting	Enablers	Confirming Intuitions using data Performance information helps	Comparing performance of offices Face-to-face discussions based on data helps increase confidence	Listening to feedback and addressing problems Augmenting credibility of data by communication of expert analysis
	Blocks	Danger of taking data too literally Lack of confidence toward data by itself, or toward new data	Danger of misinterpreting the causes of the differences in performance	More conscious of negative consequences Less likely to endorse controversial changes
Integrating	Enablers	Giving reliable information on the results of changes	Sharing the successes through performance results Replicating and appropriating these practices	Sponsoring and evaluating pilot projects Listening to feedback and addressing problems Encouraging the use of data by demonstrating its credibility
	Blocks	Data by itself does not encourage managers to change	Less exposition to other managerial practices limits opportunity for learning	Limited ability to oversee concurrent projects Limited influence over managers
Institutionalizi	Enablers	Helps the credibility of proposed innovations...	Dissemination of best practices through voluntary adoption respects managerial autonomy	Following and adapting innovations as they are Institutionalized Building new data for new Intuitions
	Blocks	...Unless performance information lacks credibility	Voluntary adoption is rarely enough for complete Institutionalization	Formalization of the organizational change process can hinder spontaneous change

## How Organizational Learning Is Supported by PMS

Generally speaking, 3 blocks are critical impediments to organizational learning: off-topic considerations and discussions of performance information, lack of opportunity to share and discuss management practices, and limited motivation to change entrenched processes of work. Performance management also provides reliable enablers of organizational learning: giving credibility-by-results to new or different management practices, focusing discussions on the processes that lead to measurable results, the ability to follow new innovations closely as they are implemented, and the possibility of creating a learning culture supported by performance information. A learning culture comes from the multiplication of performance discussions, learning forums, and a strategic focus on constant improvement. This agrees with other researches that have shown the importance of performance dialogue and performance culture for the organizational learning process (Laihonen & Mäntylä, 2017).

Thus, our observations underline the importance of formal learning processes as enablers of organizational learning. Interpreting and Integrating new ideas occur within groups; formal meetings, forums, and teams are among the best way to bring together people that would not meet and exchange otherwise. Having good performance data fosters constructive discussion by promoting the ideas that are backed by measurable results, but the major enabler is the credibility given to performance data by managers. Data without credibility blocks learning as discussions center only around the reliability or relevance of performance indicators; data with credibility orients discussions away from the numbers and toward the actions that were taken to achieve those results. These discussions devalue cheating and manipulating data by giving weight to *how* results were achieved, not just *what* the results were, further increasing data credibility. It is the ideas promoted in these discussion forums that can be Integrated by other managers, who will adapt these practices to suit the specific needs of their unit. New practices will also be noticed and promoted directly by the upper administration, a

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process that starts their Institutionalization. Formal learning processes that encourage the use of performance information can promote routines of organizational learning (Laihonen & Mäntylä, 2017; Moynihan & Kroll, 2016).

Furthermore, having project teams with strategic missions helps in enabling organizational learning. Project teams and experts contribute to the process of going from performance information to problem solving, creating more useful Intuitions and Interpretations of the data than managers can. A combination of technical expertise and thinking outside the box enable project teams to overcome these common blocks. In large and decentralized organizations, their role is more important as they help legitimizing changes by representing a collective agreement of several managers, experts, and employees. While smaller public organizations can conduct changes without formal processes or project teams, large organizations need an initiator of performance dialogue that can support the Integration and Institutionalization processes (Laihonen & Mäntylä, 2017). Since another important block against organizational learning is the tendency for good ideas to fizzle out before they can be Institutionalized, project teams enables their completion by formalizing the change process and solving problems as soon as new obstacles appear. Constant learning is necessary to maintain the relevance of every innovation in the face of changing environment, different management styles, and entrenched ways of working. By collecting feedback and addressing problems, project teams strongly improve the odds that an innovation will be successfully Institutionalized. They are also able to determine whether an innovation is still a good idea when too many problems materialize.

## Conclusion

There are no shortcuts to organizational learning. Implementing any change requires an Intuition to be Interpreted in groups, then slowly Integrated into the



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organization until it is wholly Institutionalized. Certain aspects of performance information enables each of these steps, but they are several blocks that remain or that appear from the use of data. Among the most notable pitfalls, data without credibility prevents discussions about anything but the quality of measurement, leaving little space for proper learning forums. Data itself, even with credibility, is seldom a proper source of new intuition for managers, which means they tend to waste time sifting through data without the hope of finding a solution instead of asking around or discussing their problems. When it comes to the Institutionalization of new practices, managerial autonomy, a feature that usually enables learning, becomes a burden for the organization as managers fail to understand the need for changes. Even a strategic team dedicated to organizational learning is unlikely to have enough influence over managers to enact changes unless they can prove measurable effects using performance information.

On the other hand, performance management boasts many features that enable and encourage organizational learning. Performance information is a strong foundation for learning forums and discussions of best practices, especially among managers of a decentralized organization. Those managers can talk and relate to one another using data that they are familiar with and they can understand the implications of each other results. Managers are encouraged to adopt new practices when they see good performance results backed by the experience of other managers. Experience and results, therefore, are the 2 cornerstones that can convince managers of the feasibility of an innovation. The back-and-forth conversations between managers over performance results and management practices enable organizational learning through Interpretation and Integration.

In the end, what is clear is that organizational learning is an active process that requires effort and dedication on the part of managers at every level. Performance

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information has to be used purposefully and routinely by managers so that they become deeply familiar with its meaning. Data gains credibility through purposeful and regular use. Once credibility is established, performance information serves as a common language that is the basis of discussions about business processes, management practices, and general improvements. It is, however, up to the upper level of management to establish meetings that encourage learning, such as collective reviews, learning forums, and special project teams.

To some extent, the capacity of an organization to learn is independent of its performance management system and routines. The availability of performance information does not replace managerial experience, non-routine information collection, or strategic planning as a source of intuitions. Rather, performance management is a separate process that enables learning by facilitating communication and understanding between groups and hierarchical levels. This common understanding of performance relies upon the credibility of information and data collected. While credibility is improved by reliability and accuracy of data, managers' familiarity with data usage plays a much more important role. Managers consider data to be credible and useful even when inaccurate, as long as they know the sources and extent of inaccuracies. While they do not take data as hard facts, they consider it useful and representative of their work reality and they use data as a common ground with other managers.

Many questions remain regarding the relationship between managers and data and how they evaluate its credibility. While use and familiarity are a useful start for such an analysis, we know little about the characteristics of performance information, performance management routines, and performance information tools that increase the subjective credibility of data in the eyes of managers. Furthermore, organizational characteristics appear to play an important role, as credibility bears many marks of a

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socially defined and constructed aspect of data. Additional studies are needed to explore in detail the construction of credibility in performance management systems and its impact on the learning process.

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## **Multilevel Use of Levers of Control in a Large Public Organization: From Top to Frontline Managers**

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We examine the evolution of management control systems between hierarchical levels as managers adapt controls to better suit their respective needs. Based on an extensive study in a large Belgian public organization where performance management is a core philosophy, we report data from observations and interviews of managers at different organizational levels. We use Tessier and Otley's (2012) Revised Lever of Control framework to examine the different ways managers use controls at each level. Managers use similar controls with different intentions or adapt controls according to their preferences while working within the boundaries set by the control system. We find 3 principal trends in the use of control systems: controls designed as boundaries tend to get progressively stricter down the hierarchy despite the intentions of top management; top management favours the design and use of diagnostic controls, yet frontline managers prefer to use interactive controls or information directly; and constraining controls used by top management become enabling in the eyes of middle and frontline managers as they develop their confidence in being able to meet or exceed expectations.

### Introduction

The effectiveness of management control systems (MCS) depends on the managers' ability to implement and use the system in a way that is coherent with the organizational strategy, context, and objectives (Otley, 1980). The study and interpretation of "coherence" in MCS has taken a variety of forms in the literature: agreement between strategic and operational management (Ho et al., 2014); balance between short- and long-term performance (Soman & Cheema, 2004; Welsh & Ordóñez, 2014); or internal consistency between control elements (Grabner & Moers, 2013). Looking back on 25 years of research, Otley (2016) identified some major themes in contingency theory: reliance on accounting performance measures, environmental uncertainty, strategy, and culture. Surprisingly, there have been few studies on the hierarchical consistency of MCS, despite the fundamental importance of structure and hierarchy in management control (Chenhall, 2003; O'Grady, Rouse, & Gunn, 2010; Ouchi, 1977, 1979). In this study, we scrutinize the relations and evolution of control systems between different hierarchical levels to examine the characteristics that explain their ultimate effect.

Conceptually, MCS perform the function of influencing the behaviour of employees in desirable ways (Merchant & Van der Stede, 2007). This influence generally relies on defining and measuring performance, on setting objectives, and on engaging employees toward those objectives. This last requirement, creating engagement, falls upon the shoulders of managers. As Van der Stede puts it: "MCSs are principally about alignment. In that sense, middle managers are a critical *hinge* between top management and the entity's employees." (Reimer, Van Doorn, & Heyden, 2016, p. 2, emphasis in the original). From a control perspective, the agency problem can appear at every managerial level (Eisenhardt, 1989). There are not enough studies that focus on the role of middle managers in the organization, despite their unique position as both *controller*

and *controllee* (Reimer et al., 2016), their critical part in the success of management control initiatives (Martin-Rios, 2016), and the importance of their participation in the implementation of a control strategy (Guggenberger & Rohlfing-Bastian, 2016). Their role is crucial in that managers can use their influence positively to promote and reinforce the principles behind controls, or they can harm the coordination by misinterpreting performance objectives, and even game or cheat performance indicators to use them as a source of self-promotion (Ossege, 2012; Pollitt, 2013).

This risk is increased in large, multi-layered organizations by the sheer number of managers that work with control systems. One critical aspect of internal consistency is how controls are used and interpreted by managers at every hierarchical level (Bedford & Malmi, 2015; Malmi & Brown, 2008). Effective control cannot be said to arise from the mere presence of control mechanisms, but rather depends on the coordination of these mechanisms (Otley, 1999; Simons, 1995). This applies not only to horizontal coordination, i.e. between all controls affecting the same managerial level, but also for vertical coordination, i.e. from one level to the next. Coordination is not an easy task; often, managers will use controls according to their own logic and not as an instrument of pure rational organizational logic. Taking into account the adjustments, adaptations, and alternate logics that stem from managerial use of control systems, there is as much potential to create contradiction as there is for coordination (Christ, 2013; Franco-Santos, Lucianetti, & Bourne, 2012b; D. E. W. Marginson, 2002; Webb, 2004). This is especially true when we consider the complete range of formal and informal controls (Berry, Coad, Harris, Otley, & Stringer, 2009; Evans & Tucker, 2015). Moreover, public organizations can be particularly vulnerable to this ambiguity given the difficulty to define organizational performance and to create agreement over measurable objectives (Pollitt & Dan, 2013; Verbeeten & Speklé, 2015).

In this paper, we examine the complete set of controls that affect each hierarchical level, how managers choose to transfer those controls to their subordinates, and how they transform these control systems in the process. Furthermore, we will examine the different information needs of managers, and how the MCS create or fulfill their needs. For this, we study a large Belgian public organization, the federal National Employment Office (NEO). The NEO is known as a leader in performance management, with widespread use of quantitative management control systems perfected over many years. Within the overarching management control framework, managers find opportunities to exert their autonomy by appropriating and adapting controls to their specific needs and management ideals. Other times, they passively or actively resist the use of certain controls, especially when they deem them unfair. In the end, the evolution of the MCS depends upon various explicit and implicit compromises made by managers at every level of the organization.

Our study contributes to the literature by examining the dynamic relations between management control elements and hierarchical tensions that force MCS to evolve. We support our analysis by referencing the Revised Levers of Control framework (Tessier & Otley, 2012) which help us leverage the richness of the case study. In doing so, we answer repeated calls to connect management accounting studies with managerial work to improve the relevance of research for practitioners (Aguinis & Pierce, 2008; Berry et al., 2009; Hall, 2010; Van der Stede, 2015) and we provide empirical material that supports the applicability of the conceptual framework. We also highlight the importance of considering the actions of managers at every hierarchical level when studying the internal consistency of MCS. In the following section, we review the literature on levers of control which we will build upon.

### **Revised Levers of Control Framework**

The Levers of Control framework (Simons, 1995) is a commonly used theoretical perspective to evaluate MCS. It has many strengths, such as its broad perspective and the inclusion of different types of control (Ferreira & Otley, 2009; Strauß & Zecher, 2013). However, its weaknesses are also many; none less than having vague and ambiguous concepts, which leads to different interpretations in different studies (Chenhall, 2003; Ferreira & Otley, 2009; Tessier & Otley, 2012). In turn, those different interpretations generate a fragmented and compartmentalized scientific literature (Bisbe, Batista-Foguet, & Chenhall, 2007; Coaleski, Evans III, Luft, & Shields, 2006). For this reason, we rather use the Tessier & Otley revised framework (2012), which was designed with clear concept definitions and better internal coherence.

Tessier & Otley's framework expands Simons' four levers of control (beliefs, boundaries, interactive controls, and diagnostic controls) into a categorization of the types of control, the objectives of the control, the managerial intentions behind its use, and the employees' perceptions of the control. Each category features a number of dichotomies for classification. The categories that we use in this study are presented in the table below.



**Table 4**

Partial<sup>10</sup> Tessier & Otley Revised Levers of Control theoretical framework (2012).

<b>Types of control</b>	<b>Social</b>	Appeal to emotional elements within employees
	<b>Technical</b>	Specify how tasks are to be performed and organized
<b>Objectives of controls</b>	<b>Strategic</b>	Strategic level
	<b>Operational</b>	Operational level
	<b>Boundaries</b>	What must be avoided
	<b>Performance</b>	What must be done
	<b>Interactive</b>	Focus on promoting discussion and learning
<b>Managerial intentions</b>	<b>Diagnostic</b>	Looked at only if there is some deviation
	<b>Enabling</b>	With the intention of promoting creativity
	<b>Constraining</b>	With the intention of ensuring predictability
	<b>Rewards</b>	With positive consequences
	<b>Punishments</b>	With negative consequences

Tessier & Otley's framework is built on dichotomies, although they should never be interpreted as mutually exclusive opposites; the authors are careful to present each dichotomy as alternate but coexisting elements of a system. So, for instance, while the first classification is between social and technical controls, it should not be forgotten that most controls can and do leverage both sides simultaneously. A good example of this would be an annual performance review for each employee; on the technical side, the review process is realized within carefully designed rules, sometimes even using quantitative indicators and tools such as 360-surveys; on the social side, the review can rely partly or fully on opinions, and it almost always entails a meeting where performance is discussed. Both aspects, technical and social, are inextricably intertwined; they rely upon each other and often cannot be separated. While it might

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<sup>10</sup> We omit the employee perceptions of control (positive, neutral, or negative) for simplicity, as they go outside the scope of our analysis.

seem artificial to categorize them, the point of this exercise is to identify and compare the relative weight or importance of each side. Some managers might rely on their personal impressions even when they contradict an indicator or a survey result; others might swear only by the numbers. Nonetheless, social and technical controls are interconnected and not substitutes (Alvesson & Kärreman, 2004; Ouchi, 1979, 1980). This interconnectedness further reinforces the idea that MCS should be seen as a package of connected systems (Malmi & Brown, 2008; Otley, 1980).

The objectives of control comprise 2 categories: strategic/operational and boundaries/performance. The strategic/operational category is self-explanatory and refers to the scope of the control. Boundaries are limits imposed upon the actions of employees. These limits can be set with social controls (values, codes of conduct, etc.) or through technical controls (rules, processes, access limitations, etc.). Performance controls are indications of what the organization aim to accomplish. Mission statements are a good example of social performance control. More technical performance control includes performance indicators and balanced scorecards.

The next element of note is the most common element being studied in the recent literature, i.e. the interactive/diagnostic notion (Bisbe et al., 2007; Shields, 2015). These terms are borrowed directly from 2 of the 4 levers of control of Simons, but they also are two concepts with very ambiguous meaning, often with different definitions from one study to another (Bisbe et al., 2007; Ferreira & Otley, 2009). Here, like Tessier & Otley recommend, the interactive quality indicates the use of control in a way that promotes discussion, that attracts and directs attention, or that focus on learning or improving. On the other hand, the diagnostic quality applies to control that only require attention when there is deviance from the norm, such as typical green/red indicators that can be scanned rapidly to pinpoint problematic areas. These definitions focus on the intensity of use of controls, where diagnostic use is low intensity and interactive use

is high intensity. Bisbe et al. (2007) identified 3 components of interactive controls related to the intensity of use: intensive use by superiors, intensive use by subordinates, and face-to-face communication. Therefore, the interactive and diagnostic uses of controls could be closely tied with their relative usefulness at each hierarchical level.

The enabling/constraining dichotomy also deserves a closer look. These concepts are present in the literature in various similar forms, such as enabling/coercive (Adler & Borys, 1996; Ahrens & Chapman, 2004), enabling/controlling (Mundy, 2010), loose/tight (Merchant, 1985), and flexible/rigid (Hopwood, 1972). What they share in common is that enabling controls are fuzzier and less restrictive; in sum, more guidelines than rules. They attempt to promote creativity and flexibility rather than restraining options. It should be noted that, although these concepts share a natural relation with performance/boundaries as defined above, it is not always the case that a performance control be also an enabling control, nor that a boundary control be also a constraining one. In fact, well-defined boundaries can have an enabling effect, similar to the empowerment created by the presence of professional and structural boundaries in the workplace (Lamont & Molnár, 2002). Using the same logic, one should not confuse enabling with interactive nor constraining with diagnostic. Mundy (2010), for instance, provides examples where interactive and diagnostic controls are used in both enabling and constraining ways. Furthermore, a control can be both enabling and constraining at the same time, by providing guidelines that enables managers to determine themselves what can be done and what should not (Tessier & Otley, 2012).

The Revised Levers of Control framework provides the starting point of our analysis, which will centre on the actions of managers at different hierarchical level, on their use of MCS, and on their role in the design and evolution of the package of controls. The framework provides the terminology used in our analysis, which we use to explain how controls are used, with what intentions and objectives, and how those

intentions or objectives change from one hierarchical level to the next. The revised framework provides a conceptually sound and mostly complete set of descriptors perfectly suitable for this purpose. Other attributes of MCS will serve to complete the analysis as needed, such as the *ex post* (after the action) and *ex ante* (before the action) characteristics to identify when controls are used.

### Method

#### Research site

The National Employment Office (NEO) is a Belgian public organization responsible predominantly for allocating unemployment benefits, but also for 12 other parallel activities related to unemployment, such as the verification of payments, delivery of attestations, and so on. To manage their 4000 employees distributed in 30 local offices, the NEO use a comprehensible management control system with indicators and targets for every activity. The widespread usage of MCS, perfected over 25 years of practice, made it a good prospective field for examining the experience of managers with control systems. Better yet, the subdivisions inherent to NEO's activities and the separation of their offices provided a unique opportunity to examine how managers exert their autonomy within the overall management control framework. Indeed, the particular interest of the NEO case is the fact that each office is free to implement their own techniques and processes to meet the common organizational targets, which has resulted in a number of distinct management methods, albeit all offices remain focused on the same performance goals and indicators.

### Procedure and data sources

The data used in this article is drawn from close involvement with the target organization, not quite extending to action research or participation, but securing access to relevant documentation and frequent contact with management. The primary source of data is a collection of semi-structured interviews that were performed in 6 field offices in May and June 2014. At that time, we interviewed 25 managers from every hierarchical level at local offices. The table below summarizes the interviews conducted.

**Table 5**

Description of studied offices and managers interviewed.

	<b>Director</b>	<b>Coordinators</b>	<b>Team leaders</b>	<b>Office Size<sup>1</sup></b>	<b>Working Language</b>
Office A	1	3	2	Large	Dutch
Office B	1	2	2	Large	Dutch/French
Office C	1	2	-	Small	French
Office D	1	2	-	Medium	Dutch
Office E	1	3	-	Large	French
Office F	1	3	-	Medium	French
<b>Total</b>	<b>6</b>	<b>15</b>	<b>4</b>		

1. Small offices have fewer than 45 employees; large offices employ more than 125.

In smaller offices, some leadership positions overlap and coordinators also act as team leaders. We chose which offices to study among the 30 local offices by carefully considering their performance data, cultural background, and size in order to study a diverse panel of the organization. The offices thus chosen display average variance in performance and typical size in their category. In statistical analysis of correlations between productivity and performance indicators, the chosen offices presented average or higher-than-average correlations, but were not outliers.

The interviewees were asked to describe how they interact with the organizational management control systems, how they use performance indicators, and how it affects their daily routine and their work in general. They were questioned mostly on their actions and behaviours as they relate to the use of MCS. The aim of the interviews was

to understand the following: 1) how each manager use and understand the features of the management control systems in place; 2) how they use and understand performance information, both for themselves and in their interactions with subordinates and superiors; 3) what they gain from using MCS and performance information, and how; and 4) what their opinion of the MCS and its different features are. In these interviews, we focused on different features of the MCS depending on what was most useful, most appropriate, or most eloquent in the mind of the interviewee, although most conversations tended to start with the technical aspects before evolving to more intricate subjects. Interviews lasted for about 1 hour each with the longest being 3-hour long and the shortest about 45 minutes. All interviews were recorded and transcribed verbatim for analysis.

We coded each element of the answer given by managers during those interviews according to Tessier & Otley's Levers of Control framework. We deemed important to study the framework in its entirety without isolating any part in order to avoid artificially reducing the interplay of the constructs (Henri, 2006). Even so, some aspects of the framework were less present in the target organization, such as rewards and punishments. To avoid creating a bias, the questions asked during the interview process were not based on the studied framework specifically, but rather explored the actions and intentions of managers. We systematically coded and classified these answers to find how managers use each control, with what intentions and for what objectives.

Theoretical saturation of data was deemed appropriate after the analysis was conducted in part because of the repetition found in each office. While the NEO praises the autonomy given to managers and we find several examples confirming this freedom, the management control system still creates pressure toward a single culture of performance and we observe more similarities than differences between offices. Thus,

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we consider that the analysis of additional cases within this organization would provide only marginal benefits (Bowen, 2008).

Secondary data sources and further informal contacts completed the information already collected. Much information about top management teams and central administration's oversight of the local offices was collected via direct observation of performance meetings, presentations by the audit team, and analyses of documents, including 5 years of balanced scorecards, annual reports, productivity reports, and other shared performance documentation. Furthermore, a reanalysis of 20 interviews, performed in 2009 by a second researcher, provided some additional context and historical information about the implementation of management control practices. We describe the major elements of control in use at the organization in the findings.

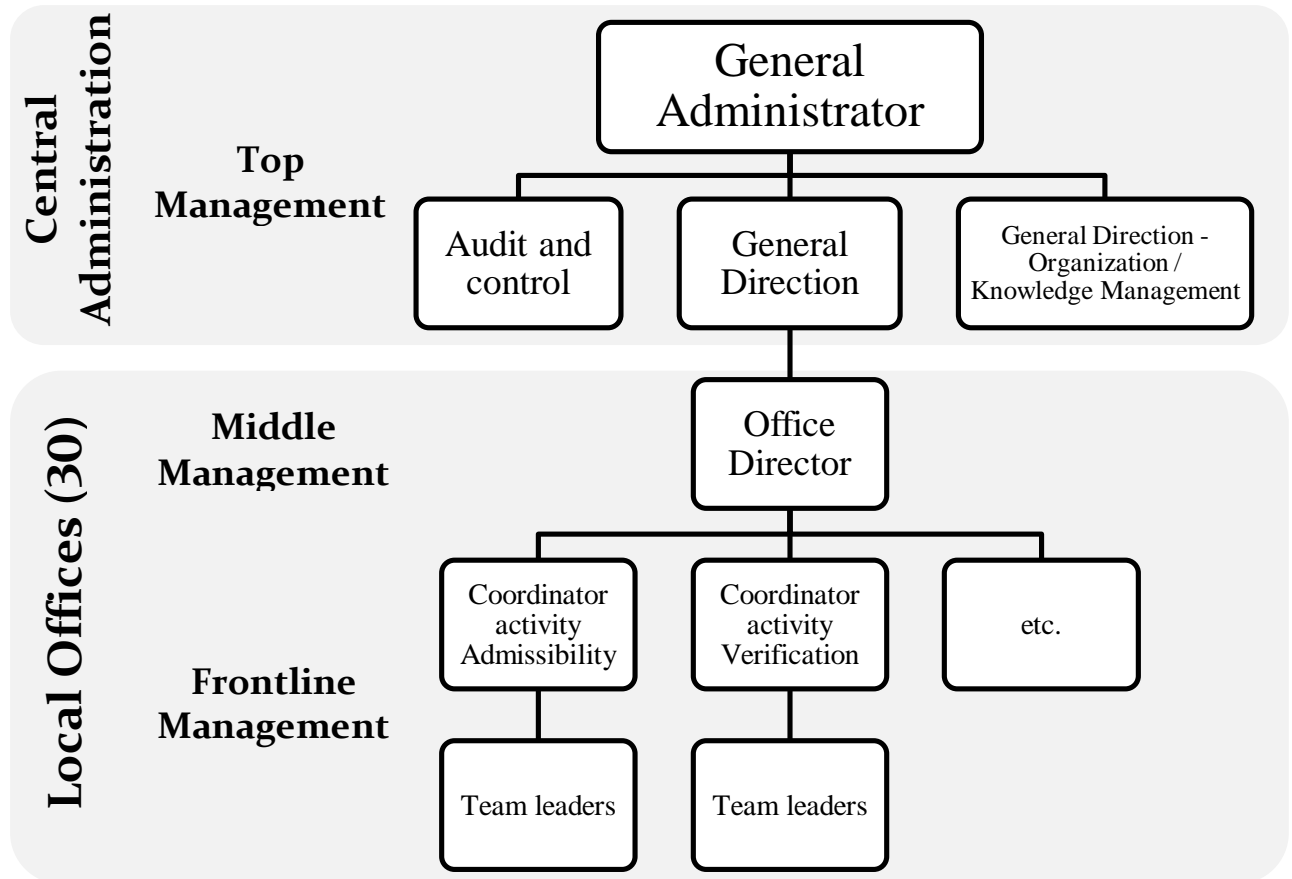
## **Findings**

After a brief explanation of the NEO's formal structure (organization chart), we will examine at each management level (top, middle, and frontline) how the control instruments play out in the organizational structure and in the relationships between hierarchical levels, and then how the specific levers are used in Tessier & Otley's terms.

## NEO's organizational structure

*Figure 1*

Description of NEO's relevant hierarchy.



In terms of structure, the NEO is organized into 30 field offices overseen by a central administration. This leaves a lot of autonomy in the hands of office directors, although the central administration keeps close tabs on every activity through elaborate control systems. The autonomy of each office also extends to their structure; some offices have team leaders, others don't; in some offices, the director is also the coordinator of an activity; and in most offices, coordinators oversee more than one activity, but the specific arrangements vary greatly. The structure is also subject to change: since the interviews, offices are being merged because of rising pressures toward efficiency and continuous budget cuts in the Belgian public sector. Horizontal collaboration between offices has risen, mostly in the form of a process called



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“solidarity”, where an office in difficulty asks for help and resources from another office that is performing better at the moment.

During our observations of the organization, we have inventoried dozens of management control practices: mission statement, values, annual action plans, risk management, environment scanning and SWOT, budgetary control, activity-based cost accounting, surveys using a common assessment framework, working visits by the general administrator and the deputy general administrator, strategic seminars, etc. Each hierarchical level shows its own preferences in management controls. In the following sections, we analyze how the levers of control change as they make their way through the organization from the top to the frontlines. In each section, we describe the major control elements in use at a specific managerial level, then clarify the needs and intentions of managers using the levers of control framework.

### Top management level

#### Controls at the central administration

The central administration was responsible for designing and implementing the management controls, in the early 90s, in a bid to “improve the quality of client cases, services, processes, and communication”. The structure of the NEO was already decentralized, but each local office was functioning with little and infrequent oversight, resulting in unequal performance and quality between offices. While the dominant culture in public services was, according to the direction, one of “top-down hierarchical decision-making, where we simply execute what is decided above”, there was a remarkably uneven application of regulations and a lack of equal treatment of the unemployed depending on their administering local office. The search for improvement was what lead the NEO to adopt the principle that “‘To measure is to know’: reliable information, *preferably numerical*, is essential for the identification, analysis, and

resolution of problems” (75 ans de l’ONEM – Official publication, p. 311, emphasis added).

Working under the assumption that “everything that can be measured, has to be”, the NEO has created performance measurement processes for every activity under its purview. This has resulted in a comprehensive database called the “data warehouse”, where indicators are aggregated by office, activities, year and month, and other attributes. Directors and some managers have direct access to the data warehouse through a system called MISUS, where they can perform queries on the data. Many reports are produced by the audit and control team using the data warehouse, including, and most notably, the monthly dashboards.

To control the management of its decentralized operations, the NEO uses a dashboard that combines a selection of performance indicators from each of its 13 activities. This dashboard is the central tool of control for operations; nearly all other controls add to or surround the use of the dashboard. The dashboard’s key indicators are all attributed specific norms that are enforced as much as possible. Dashboard indicators are colour-coded in red/yellow/green according to their current status. Each office has its own dashboard; they are generated by the audit and control team and distributed to the general direction and office directors at the beginning of every month. They are used in every performance review and monthly performance meeting at the central administration. Management is concerned, first and foremost, about constantly achieving dashboard targets.

*Without the slightest exaggeration, we can say that the "dashboards" and related "norms" have become, for the local offices, the Alpha and the Omega of their daily operation. The emphasis toward results and a coherent set of client-oriented objectives have thus been institutionalized as guiding principles for the functioning of the local offices. (75 ans de l’ONEM – Official publication, p. 312)*

As we can see, dashboards have taken a preponderant role as a MCS. The reason that dashboards are so important for local offices being, of course, because they are important for the general direction. Dashboards and their associated indicators are used to evaluate the performance of directors. Each month, when office directors receive the dashboards from the past month, they have to justify any and all deviations from the norms and specify what course of action is taken to rectify the situation. Although there are very few official consequences associated with bad performance, soft punishment exists in the form of additional training or asking a low-performing director to make a learning visit to a high-performing office. The central importance of dashboards at the NEO nevertheless create considerable pressure for managers to accomplish its objectives.

**Table 6**

Excerpt from NEO's dashboard showing list of objectives for 3 activities (Translated from French).

			Norms	Office 1	Office 2	Office 3	Office 4
Admissibility	Maximum processing time for 95% of applications	C51 applications	<17	8	11	7	5
		1st applications	<17	7	12	7	7
		Normal applications	<= 24	8	21	7	11
	Balance	> 1 month	<2%	0.1%	0.1%	0.0%	0.0%
	Statistical Process Control	Files without mistakes	≥95,5%	97.2%	95.2%	96.2%	97.2%
Dispenses	Processing time per file		<14 d	7	9	3	1
Litigation BZ A	Files processed in last 6 months	< 1 month 6 month	≥66%	99.2%	95.6%	100%	100%
		< 90 days	≥98%	99.8%	99.3%	100%	100%
	Monthly volume balance		≤1,5	0.02	0.00	0.00	0.00

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To consolidate the value of dashboards, top management invite office directors to the central administration every month for a performance meeting. At this meeting, performance indicators are reviewed, deviations are explained, and plans are made to address current or potential problems. These meetings take place, in part, in the “management cockpit”, a meeting room with multimedia infrastructure used to display indicators, graphs, and other reports on all 4 walls. These meetings are attended by the general administrator and his deputy, by the audit director and key members of the audit team, by the general directors, and by a few local office directors. Not all local office directors can attend every performance meeting, but those are generally followed by a more inclusive meeting where conclusions are summarized to everyone. Throughout the year, office directors also take part in several meetings, study days, conferences, and events where performance is addressed and discussed.

The dashboards are only one example among other reports produced using the information from the data warehouse. The audit and control team in charge of performance use available data series for a number of other performance reports, each with its own use. They produce quarterly reports on productivity by office and activity, for instance. These reports address other performance issues that are missing from the dashboards, often because they belong to a more strategic purview than daily operations. Productivity reports are intended more as a learning tool to encourage the sharing of best practices.

In addition to dashboards and punctual reports, top management create annual operational plans that set additional targets for office. Often, these are learning targets that are part of the long-term change management at NEO. Strategic projects can also be included. Operational plans tend to follow the same form as the dashboards: monthly indicators with associated targets. Performance is evaluated more loosely, however.

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Going in the right direction is more important than consistently meeting targets, but these objectives are nevertheless followed with great care.

Finally, performance seminars are organized throughout the year to discuss long-term plans, change management, strategic projects, and other relevant subject with office directors. These meetings are often an occasion for managers to reflect on the current MCS and to suggest improvements. While office directors can send feedback through the monthly reports associated with the dashboards, the seminars are an occasion to ask questions and discuss the NEO strategic and operational priorities with top management.

### **Levers of control as used at the top management level**

At the top management level, we find a heavy reliance on numbers and indicators, or *technical* type of controls, to make up for the physical separation that renders supervision difficult. More importantly, the foremost managerial intention in creating the MCS was one of *constraint*: to ensure a better degree of normalization between offices. This has resulted in creating *boundaries*, which are the minimum service requirements for offices and managers, and defining *performance* as respecting all boundaries such as maximum processing time and minimum service quality. This definition of performance stems from the very nature of the objectives and indicators that are used. Many objectives, such as processing time, are defined in a way that allows a certain amount of slack (maximum processing time *for 95% of applications*, leaving 5% uncontrolled). Another norm, the balance of applications in stock, compensates for the uncontrolled part of the work. As such, both objectives have to be accomplished to prevent gaming by doing only the most convenient task. Thinking of performance as the complete accomplishment of objectives also promotes collaboration between services. However, we also found a degree of competition between services and offices, often subtly encouraged by top management. For instance, many reports are published

that compare offices with the national average. As one general director said: “Everyone naturally wants to beat the average. So things improve by themselves.”

On the other hand, knowing and learning were also important parts of the design. In justifying the collection of data, the *interactive* intention seemed dominant for top management. They promoted measurement and data collection as a way to understand and improve performance. Yet, today’s MCS is saturated with *diagnostic* controls at the top management level, from the ubiquitous dashboards to annual operational plans. Years of use and design have tipped the balance in favour of *constraining* controls, that ensure compliance, and away from *interactive* controls, that promote learning and discussions. Most controls at the top are designed as *boundaries*, to be used in a *constraining* and *diagnostic* way. But the *interactive* intention was neither forsaken nor forgotten. *Diagnostic* controls are easier to use as part of routine management, but the data generated by performance measurement finds numerous *interactive* uses. Indicators are analyzed, discussed, and evaluated as part of a very *interactive* process spawning performance meetings and seminars, improvement projects, and strategic workshops throughout the year. The *technical* controls, while designed to enable *diagnostic* use, also enable curated reports from the audit and control team that fuels debates and learning in the organization.

In those performance reports, we find a different focus than other controls. Since the goal is to provide data and information for the improvement of services, they are focused on *performance* instead of *boundaries*, and are meant to be used *interactively*, unlike dashboards. In truth, these reports are far from a simple *technical* control tool. They work in the *social* context of discussions and sharing between managers, and they are meant to *enable* managers by letting them use data to compare their operations and to promote their best practices. They belong in the NEO’s *strategic* axis of change management.

There is actually more to be said about the *interactive* way in which the audit team use indicators. Their process often begins by identifying outliers with an analysis of data. For instance, evaluating employees' decision-making results by scanning indicators such as the percentage of positive and negative decisions, percentage of accepted reviews, or percentage of rejection post-client interview. An office – or an employee – with statistically high rate of rejection might have to be targeted for training or review. When these control initiatives start to show results, the control can become routinized. At that point, it stops being an *interactive* analysis, and becomes a *diagnostic* tool whose parameters are set according to previous results, bringing attention to any office that exceeds the standard rate of rejection by a set margin. We observe this tendency of top management to move from interactive to diagnostic control, or rather to *interactively interpret* information given by existing controls in order to design or improve *diagnostic* controls. In this, analysis of data is used to accomplish the NEO's goal of uniformizing – *constraining* – practices and promoting consistent results. *Diagnostic* controls are the endgame, however, to facilitate the supervision process. For the NEO, this amounts to their normal progression in the use of controls: first as *interactive* learning tools, more *social* and informal, then progressively as stricter, *constraining* and *diagnostic* controls, more precise and *technical*.

One thing to notice is that the central administration creates controls that target office directors or activity coordinators without distinction. Sometimes, designing tools to help an activity in particular acts as a method of control in itself; for example, *constraining* the management of an activity by implementing a new software with precise technical specifications. The top management do not skip over directors completely, nor do they work to reduce their autonomy. But they will liberally study and influence all levels of management without apologizing for the intrusion. Their degree of influence varies, however, as it relies heavily on compromise for implementing

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changes. So while top managers take a close interest in operational management and oversee monthly results with an iron hand, they are much less strict when it comes to change management. Compromise and “showing, not forcing” have been essential principles to preserve the autonomy of managers. For instance, one office started to use a point-value system to assign an equal amount of work to each employee in 2004. In 2014, during the interviews, 2 of the 6 offices we visited were using a variation of this system. The NEO change management team had been promoting this practice for 10 years, but ultimately, the choice was left to the directors and coordinators of each office. When it comes to change management, the use of control remains definitely *interactive* and *enabling* at NEO. These differences in the *strategic* and *operational* objectives in the use of levers of control could be a key factor in the success of NEO’s performance management, as is the autonomy that it allowed within local offices.

### Middle management level

#### Controls used by office directors

Although managerial autonomy is an important value at the NEO, its control framework exerts a strong pull toward conformism. The core management processes are the same in every office, starting with the predominance of dashboards. Indeed, the first reaction of every office director that we interviewed, when asked about what controls they use on a daily basis, was to explain the dashboard and its prevalence in their management.

*So the basic principle, it’s the dashboard. (Director 5)*

*Here at the level of the direction it is essentially the tools that come from the central administration that are used. Inevitably, we are not on the ground to deal with files, we don’t have the time and we cannot afford to look at all the tiniest details of every management tool for every small process. So we remain fairly general in our analyses. And so what do we do, every day we first take a look at the dashboards, then on different tools... (Director 19)*



But the dashboards mentioned here are not the same as the dashboards used by the central administration to evaluate directors. At the central administration, dashboards are updated monthly, not daily. When the above office directors refer to dashboards, they are talking about their own internal tool, made specifically for their needs. Since directors face constant pressure to meet the dashboard monthly objectives, they have to predict what their results are going to be.

*Here are our indicators... What it is, each service has determined, to avoid problems at the end of the month, because we have indicators and objectives that are not counted until the end of the month, well, we have our own intermediate measurements, all set up internally and not necessarily the same objectives as those of the dashboards. These are other types of indicators to attract attention where we need to [...]* (Director 19)

*[...] there is the scorecard at the end of the month and then there is our own system of indicators for control. And it's mainly with the numbers there that we work* (Director 15)

Every local office has their own set of internal indicators. A common setup, for instance, is to translate monthly objectives into weekly objectives, and to review those once a week with coordinators. When all weekly objectives are met, directors know that all monthly objectives will also be met. This is the directors' answer to the problem of ex post control. They create their own ex ante controls to monitor the situation while they can still act to correct it. As a director puts it:

*If we simply wait to be in the red, "Oh look, we're in the red." Well, we will take corrective actions, okay, that's one thing, but it's best to use the information to anticipate.* (Director 12)

Directors adapt the dashboards from the central administration, sometimes with many modifications, such as additional objectives. While this would seem like an occasion to enforce stricter norms with their subordinates, none of the interviewed directors felt the need to do so. Their concern was foremost over planning to meet the objectives in time, and secondly to meet all the objectives. To do so, directors meet with

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their coordinators on a timely basis to evaluate the performance of their services. The degree of inclusivity of these meetings varies from office to office; some directors always meet with all their coordinators together; others prefer to meet them informally many times; and some organize monthly meetings with all staff, including employees. In all cases, performance meetings contribute to the culture of performance management and the focus on result.

*At that meeting, we analyze our results. Where are we, what are the difficulties we have encountered, and where are we going, what are the challenges, what actions will have to be taken, and so on. (Director 12)*

One of the reason directors have to meet with their coordinators as a team is to encourage collaboration in the pursuit of organizational goals. This attitude stems from the narrow definition that the NEO has of performance. A well-performing office is one that constantly meets every target, without exception. While it is okay to miss a few targets, provided there is a good explanation and corrective measures have been taken, it is still judged negatively. In order to meet all their objectives, directors insist upon teamwork and solidarity.

*When I took office as a director here, three years ago, I said, "We forget the objectives by service. They exist, but for us, all the objectives, are all solidary." So if the admissibility coordinator tells me "I have achieved my objectives", but that the litigation coordinator has not reached them, I say, the admissibility coordinator, he is as much at fault as the other. So, all of these objectives, they are all common to us. (Director 12)*

The involvement of directors in managing their subordinates varies from office to office, but this involvement usually takes the form of establishing management controls or procedures. In certain occasions, however, we have found examples of director taking a more active role by watching the evolution of indicators instead of relying on dashboards.

*I realized, two months ago, that we might, er, that we were about to miss a goal. [...] Well, I had the data, so I watched regularly. Two months ago, I've realized that, by 2*

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*units over 500 or 600 cases, it was, uh, not achieved. So there I obviously alerted the coordinator who then, he developed an instrument. So now every day, he can say: well, I'll get there, I'll get there. (Director 12)*

Digging through the data does not seem to be part of the usual control process for directors, however. While they enjoy nearly unlimited access to data from the data warehouse, performance reports, dashboards, and management applications, the directors we met preferred to work with data curated by their coordinator most of the time. For instance, while directors have access to activity-specific management applications, none of them felt confident enough with these systems to demonstrate their use during our interviews.

### **Levers of control as used at the middle-management level**

The controls used at the director level are, unsurprisingly, very similar to the ones imposed by the top management. The managerial objectives of controls are thus very uniform across offices. The same core *boundary* controls are used, and a very similar definition of *performance* – accomplishing every objective – is repeated by directors. The *constraining* intention remains unbroken by office directors, but it is translated from a monthly review to a shorter period. *Diagnostic* controls are thus adapted to the new timeframe, but they take a very similar form, often the exact same one, of being aggregated into dashboards with red/yellow/green scales. When observing the *technical* tools used by office directors, it seems that the objectives of control are much the same at the top and middle management levels. Directors benefit from the close proximity of their subordinates and leverage this by multiplying meetings, both formal and informal, as part of the control process. The *social* tie-in of the MCS is much tighter between managers of local offices.

Looking at what happens during local offices' performance meetings, however, brings questions about the *diagnostic* nature of the controls used. While they are

*diagnostic* in form, they do not have to be critical to fuel discussions. Planning for results is very important for directors, and they use indicators *interactively* to ascertain the best way to manage the activities under their purview. They use indicators to anticipate problems and build additional tools to help them look ahead, which is far from the simpler diagnostic use of dashboards at the top management level. At this point, the use of dashboards becomes at least as much *interactive* as *diagnostic*.

The difference between *strategic* and *operational* control becomes unclear at this level. Most *strategic* objectives were already *operationalized* at this point and, often, included in the internal office dashboard along other norms. In many cases, there were no indications that an objective belongs to the strategic or operational axis, although managers knew the difference. In practice, *strategic* objectives were less of a priority, meaning that directors would rather meet their *operational* objectives first and foremost. There seem to be less stigma associated with failure to meet a strategic objective, probably because they are considered “learning objectives” and are long-term in nature. *Operational* objectives, by contrast, require detailed explanations and quick responses for every deviation from the norm.

We find that directors greatly insist on collaboration to accomplish their objectives. This reflects the inextricable relation between *boundary* controls and *performance* controls; while exceeding minimum service requirements is seen as performing, it is not seen positively unless all objectives are also accomplished. Having good indicators means that you are ahead, but being ahead means it is time to lend a hand to other services. The way directors insisted upon this point shows that it was a struggle to teach this behaviour to their subordinates, and it involved a serious effort on their part to change the mentality of coordinators.

Finally, it seems that the rework of controls inside local offices is the primary way in which directors ascertain the power they are granted through the MCS. The central

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administration judges their performance according to the measurement of the dashboard, which is a *constraining* tool; but the fact that performance is so well-defined is what *enables* managers to create their own systems and procedures of control. As one director said: “not necessarily the same objectives as those of the dashboards”. As long as they feel confident that their managing style, their tools, and their objectives are going to lead to good performance results, they feel empowered to adapt the objectives of the MCS. More than that, they feel it is an essential part of their job, to be proactive with problems in regards to the objectives. This is where we start to see how these controls transition from their *constraining* role to a more *enabling* one.

### Frontline level

#### Controls used by coordinators and team leaders

The NEO recognizes the pivot role of frontline managers in the control process. In practice, coordinators and team leaders have a much narrower purview with regard to performance; most of them deal with a single activity and only a few indicators from their fraction of the dashboards. Although their objectives are focused in principle, the reality is not always so clear-cut for them:

*I had to ask the directors to know what they wanted from us, because we can have so many objectives but, in the end, we have no clear target. (Coordinator 16)*

At their level, the distinction between objectives is not often very clear, and the constant pressure to accomplish every objective without exception can easily bring confusion toward real priorities. This is not helped by the tendency of NEO to have counterbalancing objectives that offset one another. A combination of indicators that balance each other out can create confusion when, at times, it becomes obvious that in order to meet one objective, you might have to miss another. This can be further exacerbated by the sheer number of norms and indicators. The NEO, in keeping with

its tradition of measuring and quantifying everything, has established, tested, used, and abandoned many different indicators over the years. Some of these indicators are still “monitored, but not so much”, according to a member of the audit and control team. Here, the coordinator relied on his director to help him understand what was expected in terms of performance. Another coordinator mentioned that he tried to do “what was best for the client”. In his case, he had most likely integrated the values from the NEO’s vision and mission statement, although he did not refer to those directly.

This is not to say, however, that coordinators are overwhelmed by the extent of the control system. Rather, they face a different kind of pressure than directors because they are more closely responsible for the results and for the contact with employees and clients. When asked to elaborate on the quote above, the coordinator added:

*In relation to the batch [the processing time indicator], because we do not have a clear objective of the central administration. That is to say, we are not told if, we know that the norms are different, between 01, 02 and 00 [different types of applications], but we are not told, the good situation for batch 01, 02 is so many days and for batch 00 it's so many. We are just told you have to be within the norm. So the first thing I did, when taking over the activity admissibility, was to go and see the director to find out what was his priority. Did he want to set a goal in relation to 01, 02 or 00? And there he told me: "I attach great importance to the first applications [01]." So that's why my objective, which I showed you, for first applications and for applications after C51 [02], is a batch of 7 days. And for the other files a batch of 14 days. But there are offices, when we look at the dashboards that come from the central administration, where we see that it is all the same time. So I mean, they do not make that distinction in terms of deadlines. (Coordinator 16)*

Here, we also find a first example of inflation within controls. The norm of 24 days for normal applications is changed into an objective of 14 days, and the norm of 17 days for first and C51 applications becomes an objective of 7 days. This coordinator explained his choice of 14 and 7 days as a way to simplify objectives for his staff; because the objectives are in calendar days, a 7-day objective means that all applications received on Monday have to be processed by the next Monday. Simplifying controls is a way for managers to engage their employees in meeting targets, something that can involve a

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lot of work. Indeed, while the control systems are ubiquitous at the top of the administration, they are much less so at the bottom. Employees care very little for numbers and indicators:

*Our people, no, they don't care [about results], no. (Team leader 22)*

*Before, when I was staff, I didn't care, no. I was doing my job, but the numbers of the service... I didn't know what they meant, I started to see what they meant when I became team leader. (Team leader 26)*

Managers take considerable amount of time and efforts to explain indicators and norms to workers. They try to make them care about targets, first by making them understand what they mean, concretely, for their clients; then, by making them agree with the importance of those norms. Otherwise, the objectives tend to lose their value as a potential motivator for employees.

*I worked hard to explain to my staff that, behind each performance indicator, there is a reason. It's a beneficiary who is waiting for its benefits, actually. That's why we have norms, that's why we watch them. [...] The staff didn't see, behind the indicators, why we had those numbers. (Coordinator 24)*

There is a reason why top management admits that frontline managers are the “real leaders of the local offices” and “a valuable relay between the agents and the hierarchy”. In practice, most coordinators and team leaders use a control strategy that does not require employees to know or understand performance indicators, but they still spend considerable amount of time explaining and engaging them with the MCS.

Coordinators and team leaders control their employees directly by planning and organizing their workload. We observed a number of different systems in place to do so, with varying degrees of complexity. In the simplest cases, a coordinator would divide incoming files to be processed in equal piles and distribute them among employees. One pile a day, to be done by the next morning. Other systems use a point-value attribution for each file depending on its complexity, from 1 to 10 points per file. The

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coordinator would then ask each employee to process 100 points worth of files per day, or more depending on the number of incoming files. In this latter case, more calculating and planning is necessary to link production with indicators and to ensure that targets are met. To accomplish this, coordinators will use data from a narrow range of controls very intensively. Since most of their work is about preventing problems, they have become surprisingly knowledgeable and proficient when interpreting the data from control systems. Most of them have developed their own tools to interpret data and to plan ahead:

*We considered how we were going to manage it [applications in activity admissibility]. It really involves anticipating, sometimes 1, 2 or 3 months, when we will process the files. It also means that sometimes a dozen files, processed a day early, processed on Friday rather than Monday, can change the indicator by 3 days in a month. So it has a tremendous impact and that's it. We really thought about that here. So we did a follow-up dashboard, it was a sheet of goals saying the inputs from this day are to be processed on that day [...] (Coordinator 13)*

Other controls do not allow the same degree of planning; for instance, the statistical process for quality control is harder to anticipate and, generally, to manage properly. It is a process where employees review a sample of already processed files each day to note and correct all mistakes. As a statistical sampling process, employees see it as random and uncontrollable, especially in smaller offices. It creates information that is harder to act upon, but coordinators nevertheless find ways to engage employees when their numbers drop too far.

*People were not careful, there was more mistakes than normal, 17 errors... And so you see here, in May, we started directly saying "you have to carefully watch your work" and you see it had consequences. [...] The coordinator said you need to put your initials on the form to prove that you have reviewed your file. It was already a rule for a few months but it wasn't applied, so he enforced it more and you see we had good results. (Director 6)*

Frontline managers collect and review actionable information as much as possible. Part of their reasoning in doing so come from the very top of the organization and how



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controls are evaluated. When a director misses a target, he has to produce a report that explains why the target was missed and what are the actions being taken to overcome these issues. The director will rarely be the one answering these questions directly, however. Activity coordinators are the ones that produce the explanations and make plans to bring things back under control. In order to have the answers, they depend upon experience, reliable information, and good understanding of what the controls mean and what actions can improve these numbers. This type of control is actually very helpful for frontline managers. They admit knowing “what to do and when to do it”, because they get “more than impressions, but actual calculations; my own calculations.” The framing created by the MCS is empowering to frontline managers once they start to understand it. Since the expectations surrounding their work is clear and concise, they manage to define their management style through the elaboration of controls that fit the overarching framework.

### **Levers of control as used at the frontline level**

Coordinators seem to have a different view of *performance* than upper managers. They are not satisfied with just meeting the norm. So while the minimum requirements for their activities – the *boundaries* – are clear to them, they expect a little more from objectives to help them define what *performance* is. Another possible explanation for pursuing performance is the expectation of a promotion or another form of reward, in which case meeting all the objectives is not sufficient to stand out from the pack. Frontline managers much prefer to have straightforward goals rather than informal or general instructions. In the same vein, coordinators make very little distinction between *operational* and *strategic* objectives. For them, what matters is understanding the expectations of their director in order to be able to meet them. The principles of the overarching MCS matter very little in comparison.

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As far as the type of control they prefer to use, frontline managers show their personal preference over and above anything else when they are free to do so. Some managers prefer an informal and relational system, much on the *social* side, while others go for very *technical* and elaborate processes. It does not matter so much that many *technical* controls are available to them because they are being promoted by the top management. Usually, when they have a system that give them results, they prefer it over anything new. Because of this, many coordinators in smaller offices are still working with informal systems of control and are using indicators and dashboards only for their own planning needs, and not so much as a lever of control over their subordinates.

Frontline managers use controls with different intentions than their hierarchical superiors. They have less need for *diagnostic* controls because their purview is much smaller and controls are not needed to direct their attention to problematic areas. What they need from controls is additional and objective information that can be used for planning and explaining the performance of their unit when they are asked to do so. Their preference is shifted toward information and *interactive* use of controls. When they use controls *diagnostically*, it's often for the benefit of their director who asks for an early warning system. Coordinators much prefer to gather information and to learn to use this information directly, without bothering for specific threshold at which a situation should start to be considered critical. Frontline managers are sometimes forced to use *diagnostic* controls, however, like the statistical process control to verify the number of mistakes that occur during processing. Since this control serves to identify errors rather than prevent them, coordinators work to adapt these controls to find an *interactive* use for them. For instance, they use data to for training or to justify changing the work process.

Coordinators and team leaders tend to use very *constraining* controls with their employees, whether these controls are *technical* or *social*. They plan their workload very strictly and push for results. They themselves benefit greatly from both *constraining* and *enabling* intentions behind the MCS. The *constraining* elements help them understand the expectations of their directors, and they enjoy a sufficient degree of freedom to organize their employees' workload as they see fit. At this point, control over employees relies as much on personal qualities, such as leadership and charisma, as it does on MCS. In this sense, the final responsibility of translating the organizational objectives to employees falls on the hands of coordinators and team leaders.

### **Discussion: Controls from the Top to the Frontlines**

Thinking in terms of levers of control, there are some nuances between controls used by the top, middle, and frontline management. Controls evolve by the actions and intentions of managers along the hierarchy. The most notable changes that occur are the increasingly stricter boundaries created by technical diagnostic controls and the reversal between diagnostic and interactive use when descending toward the frontlines. Another important element is how constraining controls at the top end up being enabling for middle and frontline managers.

#### **Boundary controls getting progressively stricter**

The technical content of controls, particularly diagnostic ones, encourage their propagation between hierarchical levels. Managers transfer instructions, indicators, and targets to their subordinates as they receive them. In the process, they often revise and adapt those controls to their own needs. The monthly objective they receive becomes a weekly objective for their subordinates; this way, they can react before a target becomes unattainable. In other cases, a target of 24 days becomes 14 days so that missing it by a

few days will not have consequences. As managers endeavour to keep some breathing room, they tighten boundaries around their subordinates and inflate targets accordingly. In the end, the connection between targets used at the top and those used at the frontline becomes dependent upon the number of hierarchical levels between the two, despite efforts from top management to discourage inflation in boundary controls.

This process, however, does not seem to affect the managerial intentions behind controls. The underlying objectives of control remain similar throughout the hierarchy, with very few exceptions. In some rare instances, managers can act in self-interest and “game” indicators to give the appearance of better performance. But in most cases, the precise nature of boundary controls gives very little leeway in their interpretation. Yet, as we move toward the frontlines, managers increasingly ask for precise feedback and reliable answers to the question of what is most important. They require a more detailed and relevant definition of performance to understand how to improve their service. In the absence of a response, they make their own. Making improvements to a constraining and diagnostic system of control, while working within precise technical boundaries, occurs by one of two ways: either by redefining performance within those boundaries (by prioritizing certain objectives over others) or by tightening existing controls as a means to increase service quality or performance. In both cases, managers make controls tighter in order for performance to increase over what was initially asked.

### **Reversal between diagnostic and interactive use of controls**

Top management use controls very diagnostically, especially dashboard, for the operational oversight of local offices. They also use data interactively for strategic purposes, mainly to improve services, to identify and promote best practices, and to develop new and better controls. But their interactive use of controls is occasional while diagnostic use is routine. Office directors also tend to use and design controls that are

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mostly diagnostic in nature. They are responsible for the supervision of 13 different activities, each with their own indicators and targets. They use diagnostic controls to identify which activities deserve attention at any given time and they rely on the expertise of coordinators to use controls more interactively. Frontline managers are more likely to use the information from controls directly without relying too much on diagnostic controls to direct their attention. One of the most striking differences between the top and the frontlines is their respective goals when creating controls for their own subordinates. Top management wants to create markers and indicators; they use controls interactively but strive to create diagnostic ones to help them manage. The closer you get to production and employees, the more managers prefer to use controls interactively. Frontline managers see diagnostic controls as the goals they need to achieve but rather than simply passing them down with a few modifications, as office directors do, they are more interested in leveraging the information value of those controls. They use controls interactively for two main reasons: to plan ahead and to justify their performance. Although managers from all levels use controls both interactively and diagnostically, they mark their preference by the type of controls that they create for their routine use.

### **Constraining controls becoming enabling for middle and frontline managers**

Throughout the interviews of managers, we found certain indications that the *enabling* aspect of controls was promoted by clear and well-defined *constraining* controls. The feeling of autonomy of managers comes from the reassuring sentiment of meeting or exceeding expectations, which can only be accomplished once the top management expectations are well known and well understood. In this sense, the adoption of several constraining controls has increased the feeling of autonomy of managers, while simultaneously improving uniformity and performance. One

interesting finding was that the need for specificity tends to come from the bottom; frontline managers are especially fond of receiving specific goals rather than vague statements, especially when they have to resolve contradictions or misalignments between goals or controls. By contrast, top management is, at times, afraid of creating too much specificity and infringing upon managerial autonomy. Thus, the development of organizational controls is often slowed by compromises, by periods of testing and experimenting, and by the time spent trying to resolve or prevent problems that come with tighter controls.

The original intention behind the development of the NEO's control systems was constraining and uniformizing practices. While the centralization of control has shifted some autonomy away from local office directors, it has also created new opportunities for managers, especially frontline ones. Through a combination of having clear objectives and access to reliable data, middle and frontline managers have redesigned their function around the prevision and planning of results. By taking the results that are expected of them and designing tools to guide them, managers have demonstrated the enabling capacity of the MCS. Managers assert their autonomy and exhibit empowerment when they stop relying exclusively on the data that is presented to them and start creating their own reports or their own spreadsheets to input and analyze data. At the NEO, we see this development at all levels of management, which makes its MCS a collective effort centred on a shared definition of performance.

## Limitations

Even if it has been common, so far, to classify MCS using dichotomies, there are indications that a more encompassing theory or meta-theory remains to be developed (Franco-Santos et al., 2012b). While we have attempted to explain certain key phenomena, most effects of MCS are too far- and wide-reaching to be elucidated in a

single paper. We focus on the effects resulting from the collective design of controls and their use at multiple management levels in the specific setting of a large public service organization. The conclusions we draw have to be interpreted and generalized according to their context. The very elaborate nature of the MCS at the NEO and the particular structure of the organization might play a role in the overall efficacy of the system. Moreover, the specific nature of the conception of performance at the NEO, centred on outputs rather than outcomes, is far from universal in public organizations. In the context of public service, production is not always the best way to measure performance. Still, for those organizations where the production of services is industrialized, the culture of control and performance measurement seems to provide many benefits.

### **Conclusion**

With this case study, we bring attention to the fact that managers at every hierarchical level exploit the opportunity to adapt controls and to change their significance to better suit their own needs. Managers have their own intentions and priorities in using controls. For instance, top management tend to use controls diagnostically to simplify the supervision process, whereas frontline managers prefer to use controls interactively to plan ahead, to organize the work to be done, and also to justify their performance and the performance of their service when they are evaluated.

Being mindful of the progression of controls in the hierarchy is important for the design of MCS. Based on their different needs, managers appropriate and adapt controls in ways that can modify the overall effect of the system, for instance by making controls stricter for their subordinates. Unchecked inflation in boundary controls, multiplied over many hierarchical levels, could become crippling for employees and toxic for the organization.

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What matters most is not so much how or why a control is designed. What matters is how it is used. Even controls that are designed to be constraining and diagnostic, such as dashboards, can be used interactively and be seen as enabling. The same control is used differently by different managers, and controls evolve following the different needs of managers along the hierarchy. The study of the managerial interactions that centre on controls is essential to develop a better comprehension of the effects of MCS in any given organization. We hope that this study will open up additional research on the use of MCS at different hierarchical levels to provide a more comprehensive picture of the effects that controls have on various organizational actors, from the top management to the frontlines employees.



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## **What Enable Effective Performance Information Use in Public Service Organizations**

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We use mixed-method analyses to identify instances of good performance management in two public service organizations, and to find the enablers that increase the effectiveness of managers' performance information use. Among a collection of seven activities in two organizations, we isolate the activities where performance information shows an effective, timely, and sustained effect on the productivity of employees. Then, using interviews of a total of 44 managers and employees across 12 local offices, we analyze the differences in technical systems, performance information use, and control intentions that shape the effectiveness of performance information in each organization. Results indicate that perceived performance information value for middle and frontline manager is a predominant factor in influencing and motivating employees. Features conducive to raising the value of performance information include a just balance between constraining and enabling use of performance controls, having indicators that are easy to adapt at lower managerial levels, and encouraging managers to develop their own tools to improve their instinctive understanding of performance information.

## **Introduction**

How do you find out what drives effective performance information use in a public organization? You could look at successful organizations and find what they have in common. But then, how do you find successful organizations? For that matter, how do you evaluate the success of a performance management reform in a public organization? One could argue it is as simple as looking for improvements in performance. But the circular logic is inescapable: since what is measured becomes the definition of performance, is the organization truly improving or is it only its indicators that are improving? This also forgoes the fact that there exist many different purposes to performance measurement. Behn (2003), for instance, lists eight – to evaluate, control, budget, motivate, promote, celebrate, learn, and improve, while Henri (2006) lists four – monitoring, attention-focusing, strategic decision-making, and legitimization. With so many different purposes, an evaluation can hardly be limited to a single reference plane.

To find what enable effective performance management, we need to find a reliable method to evaluate the efficacy of a performance management system. Looking at the scientific literature, we find many attempts to compare and evaluate the usefulness of performance management in the public sector using different proxies for organizational effectiveness and performance. Many studies directly use archival performance data (Hvidman & Andersen, 2014; Poister et al., 2013; Sun & Van Ryzin, 2012; Walker, Damanpour, & Devece, 2011), with the inherent assumption that performance indicators represent actual organizational performance. Others try to establish the usefulness of performance measurement by examining the use of performance information for decisions (Moynihan & Kroll, 2016; Moynihan & Lavertu, 2012; Taylor, 2014; Wynen & Verhoest, 2016), assuming that what is used, is useful. Finally, some authors use survey-based organizational performance scales (Dunk & Lysons, 1997; Speklé & Verbeeten,

2014; Van de Ven & Ferry, 1980), which they sometimes correlate with quantitative indicators in order to address their subjectivity (Verbeeten & Speklé, 2015).

Which measure best represents organizational performance? We could argue for one or the other, but the reality is that most of the previous authors consider that these variables are all correlated, an assumption that is also tested independently. For instance, Kroll (2015c) examine the link between performance information use and survey-based organizational performance report and finds a strong correlation, but warns that it is dependent on the organization's strategy. Scales are tested for reliability (Van de Ven & Ferry, 1980) and correlate well with performance indicators (Verbeeten & Speklé, 2015). Each of these variables represents a reasonable approximation of organizational performance, but they are limited in scope. Archival performance data cannot serve to compare organizations that use different indicators. Performance information use is dependent not only upon organizational strategy, but also upon consensus (Ho et al., 2014), upon having a focus on strategy or control (de Waal & Kourtit, 2013), and upon many other factors (Charbonneau & Nayer, 2012; Moynihan, 2015; Moynihan & Lavertu, 2012). Surveys of managers only provide the perspective of managers, not that of external actors or employees.

There is a strong case to be made for evaluating performance management effectiveness in the public sector starting with performance information use. Since performance measurement practices have become ubiquitous in public organizations (Bouckaert & Halligan, 2008; Rhodes et al., 2012), there has been little evidence to show that these practices can reliably increase organizational performance (Arnaboldi et al., 2015; Kroll, 2015c; Poister et al., 2013; Taylor, 2009). This has led to a growing number of authors trying to find links between performance data accumulation and their use in managerial decision-making (Moynihan & Pandey, 2010; Taylor, 2011; Van de Walle & Van Dooren, 2009; Wynen & Verhoest, 2016). These authors went from asking the

question “What is measured?” to asking “Is what’s measured used?” because there was only a tenuous link between measuring and performing (Taylor, 2009).

The trend did not stop there, and the questions soon became “Does it have an effect?”, “Is this effect positive?”, and “Do the positive effects outweigh the negative?” These questions keep coming about because despite years of studying performance management in the public sector, no clear answer has yet emerged (Kroll, 2015c; Moynihan & Kroll, 2016; Ossege, 2012; Poister et al., 2013; Pollitt & Dan, 2013). While a definitive answer, applicable to the entirety of the public sector, is bound to remain elusive in part because of the difficulty in finding a common denominator for performance, it is possible to compare certain subsets of public organizations that share the same characteristics.

In this article, we use the common characteristics of the performance management systems of two public organizations to develop a comparison method that assesses the effect of performance management on the productivity of employees. This is a method that does not depend upon the specific indicators used by the organization, but upon whether or not these indicators can affect employees’ productivity in a way that is effective, timely, and sustainable. Even if this criterion is biased toward the ‘control’ and ‘motivate’ functions of performance management, we can safely assume that the conditions for effectiveness are the same notwithstanding the function. That is, what enables effective control and motivation will also enable other functions, such as learning and improving. Performance information use, whatever its goal, is dependent upon factors such as the maturity of the measurement system, the credibility of performance indicators, the culture of management, the routines of performance, etc. (Kroll, 2015a). Thus, when performance information is useful for one purpose, it is also useful for any other purposes.

We endeavour to make this comparison of two public organizations as comprehensive as possible by using both quantitative and qualitative methods. The organizations that we study are closely linked by the similitudes in their performance management systems; indeed, our case #2 based its performance management model specifically on case #1. This makes the comparison especially relevant. More than a comparison, it is also an experiment in exporting a successful model in another organization. To explore the difficulties in this endeavour and the conditions under which performance management thrives, we use interviews of managers that complement the statistical analysis. Thus, we link the actions and opinions of managers with the efficiency of each system to find the prerequisites or correlates of good performance management in public organizations, such as a just balance between constraining and enabling use of performance controls, having indicators that are easy to adapt at lower managerial levels, a system that encourages managers to develop their own tools to appropriate performance information, and a culture where employees see indicators not as a vagary of their managers, but as reliable information on what needs to be done.

It is important to place this paper properly with regard to existing performance management literature and to frame what it deals with and what it does not. First, the public organizations we analyze provide direct services to citizens by processing their requests, be it for unemployment, for information, for certification or assurance, or for any other service within their purview. They are the bureaucratic organizations that are commonly denigrated by the public and the media<sup>11</sup>, despite their critical role and general effectiveness (Rainey & Steinbauer, 1999). They are also very common in the public sector, which is why studying them is important. Second, what we analyze are

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<sup>11</sup> Remember the sloths working at the DMV in Zootopia?

internal performance indicators and targets that are mostly oriented on outputs rather than outcomes. Although performance management, in the public sector, emphasizes a results-oriented culture based on outcomes (Verbeeten & Speklé, 2015), it is often easier and more efficient to work with outputs within the organization, so that managers and employees can relate their efforts with the measured results (Pollitt & Dan, 2013). For the type of organizations that we study, outputs are sufficiently close to outcomes to give the best of both worlds. Although other areas of public intervention will have different needs in terms of performance information, the metrics used here have interesting properties when understood in their context.

### **Literature Review**

There are several topics in academic literature that expose the mechanics at work in a performance management system. It is useful to start by examining the motivations of managers and organizations in using performance information. We review the literature on control, strategy implementation, and organizational learning as different focuses for performance information use. We then explore the basic motivational foundations of performance management by reviewing the relevant aspects of goal-setting theory. Throughout this review, we focus on the public performance management literature to emphasize the particularities of public organizations in their implementation and use of indicators. We rely on these frameworks to compare the expected effects of performance management with the results from their actual workplace implementation.

### **Reasons for using performance information**

Performance management is not the simple and occasional action of a single manager; it is a complex series of interactions between people and systems interacting

toward a common goal. To consider the reasons to use performance information, we have to first consider who is using it. When an organization implements performance measurement systems, their focus can be on a number of different things. For instance, de Waal and Kourtit (2013) list 41 reasons to use performance measurement and management across two broad categories: focus on control and focus on strategy. At the organizational level, strategic alignment and control are two major reasons to use performance management (Simons, 1995; Wynen & Verhoest, 2016). Another fundamental reason is to increase organizational performance by learning from performance information and using it for decision-making (Moynihan, 2005; Wynen & Verhoest, 2016). Those three motives are linked together: implementing a strategy is done to increase organizational performance, and it requires control over managers, staff, and processes. Whatever the main intention, performance management requires a complex combination of organizational processes to be effective.

While strategy, control, and learning are the three key reasons for organizations to implement performance management routines, managers can have their own reasons to use – or to avoid – performance information. According to Behn (2003), there are 8 purposes to performance measurement: to evaluate, control, budget, promote, motivate, celebrate, learn, and improve. But those are only the positive aspects of performance management. Managers can also use performance information passively, either measuring or reporting it without really engaging with it (Moynihan, 2009; Moynihan & Lavertu, 2012). They can use performance information as a tool for autopromotion, often with their own subjective interpretation of the data (Moynihan, Pandey, & Wright, 2012a). Managers can also have perverse objectives in using performance information; they can engage in behaviours such as gaming or cheating data to avoid pressure (Bevan & Hood, 2006; Kelman & Friedman, 2009). If, to all that,

we add the managers who simply avoid using performance information, we find that organizational intentions are not always reflected purely by the behaviours of managers.

This is why usage is so important for performance management: the effectiveness of the system depends upon sound and deliberate use of performance information by managers (Kroll, 2015c; Speklé & Verbeeten, 2014). This has led to a growing number of studies looking for the antecedents of performance information use (for example: Ammons & Rivenbark, 2008; de Lancer Julnes & Holzer, 2001; Folz, Abdelrazek, & Chung, 2009; Moynihan & Pandey, 2010; Moynihan, Pandey, & Wright, 2012b; Taylor, 2009, 2011). In a systematic review of the literature, Kroll (2015a) identifies 31 factors that lead to purposeful performance information use in three categories: environmental, organizational, and individual. Of those, he notes that the most important drivers of data use are stakeholder involvement, measurement system maturity, leadership support, support capacity, innovative culture, and goal clarity. Other promising factors are learning forums/routines, attitudes toward performance measures, prosocial motivation, networking behaviour, general political support, and fragmented environment.

Now the problem with most of these antecedents is that they are not actionable. Stakeholder involvement depends on stakeholders, not on the organization. Measurement system maturity is all well and good, but that takes time and resources in organizations that are crippled by budgetary restriction and austerity. Leadership support, support capacity, and innovative culture are good ideas, but how? How do you support the use of performance information? How do you create an innovative culture? The problem with these conclusions is that they come mostly from cross-sectional surveys, which is the dominant method used so far in performance information research (Pandey & Marlowe, 2015). Cross-sectional surveys rarely examine performance information use at different organizational level; they also tend to provide insights



about the current situation rather than about the evolution or development of performance information use. The complexity of the problem deserves a deeper examination of the processes that lead to performance information use to provide managers with actionable insights.

Actionable insights are hard to come by. For instance, research has shown that performance information use is encouraged by the availability of quality data (Lu, 2007; Wang, 2000). But then, managers who *intend to use* performance information make sure that the data produced by their unit is of good quality (Kroll, 2015b). Which comes first? Or rather, which is most essential to performance information use: managerial intentions or data quality? Another important question is brought by Kroll (2015a) literature review: beside stakeholder involvement, which is at the environmental level, most relevant factors are organizational. Does this mean that organizational factors are more important than individual and environmental ones? Given that Kroll classifies factors as ‘important’ or ‘promising’ based on the number of studies that found positive results and that many ‘promising’ factors are individual, it would seem that not enough research has been conducted yet on individual factors, which is also what Kroll concludes (2015a).

Our study will help answer those questions. By examining the use of performance information by managers of every hierarchical level and by using interviews instead of surveys, we dig deeper into the organizational and individual dynamics that stimulate performance information use. To understand those dynamics, we apply a framework from the management control literature. This framework will help connect the intentions of managers in using performance information with their actual effects. Because even if performance management systems are designed with strategic, control, and improvement intentions, the results of their application depend upon the actual use that is made of performance information by managers. How the control effect of

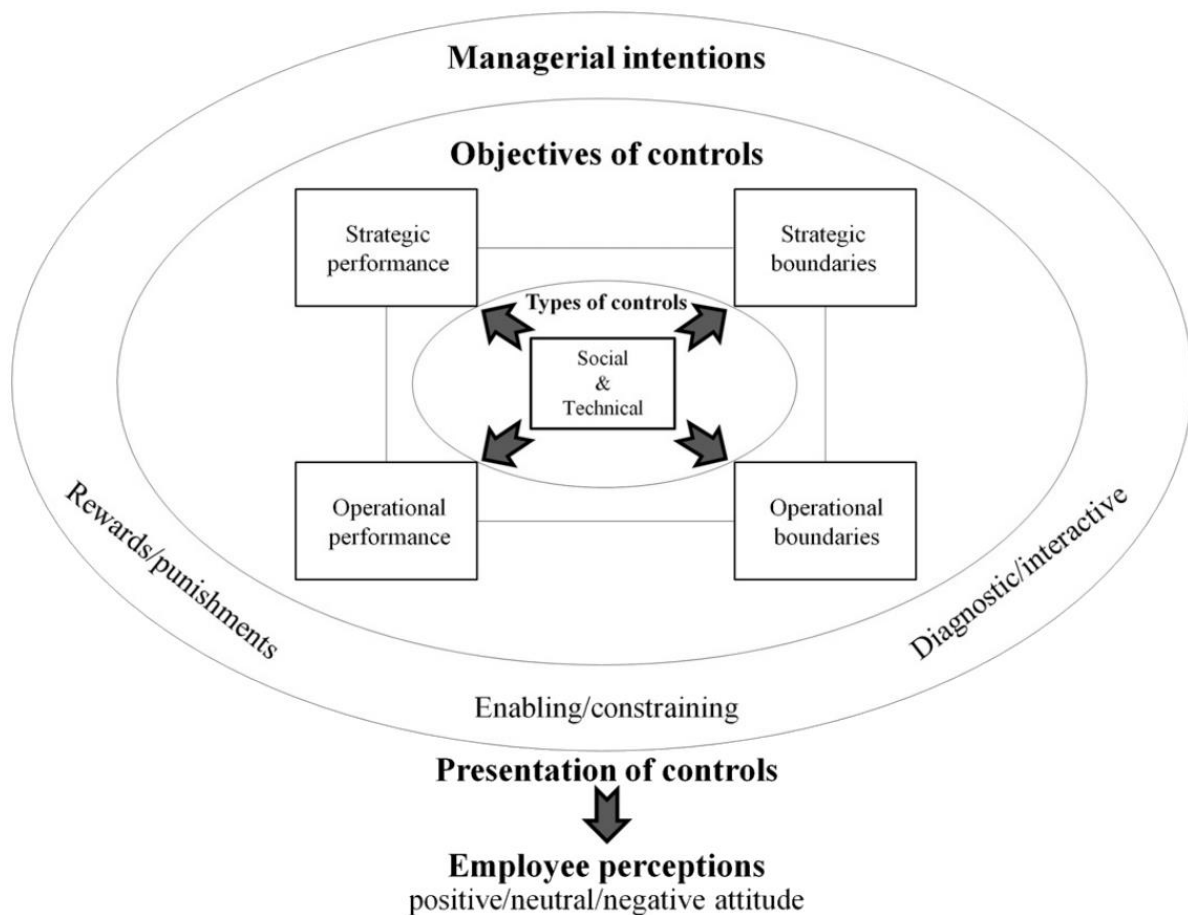
performance management spreads across the organization can explain why performance management systems have unreliable outcomes.

### **Management control framework**

Management control systems, which include performance management systems, are usually conceptualized as the collection of tools and practices that deals with controlling employees' behaviour and influencing them to act in ways consistent with organizational objectives (Malmi & Brown, 2008; Merchant & Van der Stede, 2007). Although this definition seems harsh, control has evolved since Taylorism. Nowadays, no manager believes that prescribing how to accomplish every task and measuring compliance is the best way to influence the behaviour of employees (Behn, 2003). Rather, creating engagement rests on a fragile balance between empowering managers and employees while relying on different levers to align behaviours with organizational strategy (Simons, 1994).

In public organizations, there are a number of constraints that tend to limit the range of available organizational controls to performance management systems. The public sector is recognized as an area of complexity, with uncertain outcomes but high expectations (Lapsley & Skærbæk, 2012). Public services also rely heavily on the expertise and professionalism of their human capital, yet large public organizations often have to rely on a centralized hiring process, which prevents managers from using it as a preventive control (Merchant & Van der Stede, 2007). In the same vein, firing an underperforming employee is often not an option for public managers. More generally, the lack of possible rewards or punishments remove a number of incentives from the public managers' toolbox. Under those conditions, performance management and the creation of a 'result-oriented culture' remain among the best ways to influence and motivate employees (Nuhu, Baird, & Appuhamilage, 2017; Verbeeten & Speklé, 2015).

Control systems in public organizations elicit different responses from the employees that are subject to performance management and goal-setting. Part of what determines their response is the way controls are used by managers as well as the types of controls used. Simons (1995), for instance, identified four Levers of Control that can be used to promote and implement organizational strategy with different effects: beliefs systems, boundary systems, interactive control systems, and diagnostic control systems. His idea was that each lever could be used independently while still reinforcing one another. Further exploring the idea that controls had different mutually-reinforcing effects, Tessier and Otley (2012) extended and refined the Levers of Control framework to address flaws in its initial design and to provide better conceptual definitions (Curtis, Lillis, & Sweeney, 2017; Ferreira & Otley, 2009). We use this Revised Levers of Control framework to explore the difference between performance management controls that lead to the success or failure of a performance management system. This framework helps define the characteristics of performance management systems and the control behaviours of managers that can be correlated with effective performance management.



**Figure 1.** Tessier & Otley Revised Levers of Control theoretical framework (2012).

The central aspect of the framework is the type of control used, social or technical. Social controls are reminiscent of the beliefs systems of Simons, but expand this concept to the social aspects present in every form of control. Specifically, social controls can be core values, beliefs, norms, and symbols, while technical controls are based on rules, procedures, and standards (Alvesson & Kärreman, 2004; Malmi & Brown, 2008; Tessier & Otley, 2012). Performance indicators and goals are technical in nature, but creating a culture of reliance on performance information is a social endeavour. The Levers of Control frameworks expose and underline these forms of beneficial complementarity in the use of control (Henri, 2006; Mundy, 2010; Widener, 2007). Empirical research strongly supports the theory (Simons, 1994, 1995; Tessier & Otley, 2012) that using one form of control to complement another is one of the best ways to improve performance (Goebel & Weißenberger, 2017; Kruis, Speklé, & Widener, 2016). Thus, the degree of

integration of social and technical controls can be an indication of better performance management.

The second level of the framework describes four objectives of controls: Strategic performance, operational performance, strategic boundaries, and operational boundaries. The strategic/operational axis is of little importance to our study because the controls we analyze are all strictly operational. The performance/boundary axis is however noteworthy. Performance controls define what the organization needs to do while boundaries define what must be avoided (Simons, 1995). These controls do not necessarily operate independently from one another, however. Controls can be used to define goals (performance) and to promote accountability (boundary) at the same time (Adler & Chen, 2011). Performance controls can be used to communicate both what is expected of employees and what behaviours or results are unacceptable (Tuomela, 2005). Once again, complementary of objectives is possible and even desirable (Merchant, 1985).

The next level of the framework deals with the intentions of managers when using controls. Three different categories are described, of which we will study the last two: rewards/punishments, enabling/constraining, and diagnostic/interactive. The enabling and constraining intentions come from a combination of the notions of positive/negative controls (Simons, 1995) and enabling/coercive controls (Adler & Borys, 1996). Although authors have previously equated the enabling side with good outcomes and the coercive/negative side with bad outcomes (Adler & Borys, 1996; Ahrens & Chapman, 2004; Hopwood, 1972), more recent literature acknowledges the beneficial impact of constraining controls (Mundy, 2010). This could be due to the fact that risk taking becomes more attractive when limits are clearly defined and goal attainment is secured (Jeffrey, Onay, & Larrick, 2010). Well-defined constraining controls can foster creativity (Adler & Chen, 2011) and reduce dysfunctions (Grabner &

Speckbacher, 2016). As such, there are potential benefits to both using controls in an enabling way (that promotes ingenuity and new ideas) and using them in a constraining way (that promotes predictability and existing patterns).

Managers can also use controls in a diagnostic or interactive way. These concepts exist in the original framework of Simons but are defined slightly more narrowly by Tessier and Otley. A manager who looks at a performance indicator only when there is some deviance from the norm is using it diagnostically, while using the same indicator to promote discussion and learning is an interactive use (Tessier & Otley, 2012). The way controls are used by managers have important ramifications for strategic capability and organizational learning (Henri, 2006; Widener, 2007). Neither interactive nor diagnostic use is more important than the other, but organizational performance is fostered by dynamic tensions between the two (Kruis et al., 2016; Mundy, 2010).

The last part of the framework concerns the way performance management controls are presented to employees and how they perceive them. Perception of employees might contrast with the intention of managers, thereby signalling some form of communication failure between the two groups (Tessier & Otley, 2012). A negative perception of controls can serve as a justification for employees to engage in dysfunctional behaviours, from organized resistance to the manipulation of indicators (Moynihan, 2009; Pihl-Thingvad, 2016; Pollitt, 2013; Roy, 1952). Good performance management is more likely to be seen as a positive aspect of organizational culture (Kroll, 2015a; D. Marginson, McAulay, Roush, & van Zijl, 2014b).

Overall, the Revised Levers of Control framework provides a comprehensive set of characteristics to describe the way performance management systems are designed and used within an organization. We leverage this framework to explain the differences between good or lacking use of performance information and management in the target organizations. According to the literature, a significant part of the effectiveness of

control systems rests on the ability to create complementarity between levers (Bedford, Malmi, & Sandelin, 2016; Simons, 1995; Widener, 2007). Similarly, there is the possibility that levers conflict with one another, and become less effective because of it (Roberts, 2007). The presence of complementarity or conflict between levers of control, as they are used within each organization, could explain their difference in performance, or the difference in managers' will to use them.

Performance management is implemented with the intentions of achieving the organizational strategy, of improving control, and of improving performance. Management control can explain how and why performance management succeeds or fails to accomplish its goals. But there remains the problem of testing the effectiveness of the system before looking for this explanation. For this, we have to look for an easily measurable effect: changes in employees' productivity. We use the goal-setting theory to build hypotheses about how an effective performance management system should affect productivity.

### **Goal-setting theory and sustainability**

The theory of goal-setting begins with the premise that conscious goals energize action (Ryan, 1970). Half a century of work has served to extend this premise with the characteristics of goals most likely to improve motivation (Latham & Locke, 1975; Locke & Latham, 1990, 2002): their specificity and their difficulty. According to the theory, "Answer 95% of all requests within 5 days" is a goal that leads to better performance than exhorting employees to do their best or giving them an easier target, such as "Answer 80% of all requests within 10 days". Specific goals reduce ambiguity and increase focus, leading to higher performance (Rothkopf & Billington, 1979). High goals incite efforts and persistence until the objectives are reached (Bandura & Cervone, 1983; LaPorte & Nath, 1976). Performance management is based on the premise that giving

goals to managers and employees will increase their motivation and thus, increase organizational performance.

The motivational effect of specific and high goals is dependent upon several moderators, such as ability, feedback, task complexity, context, and commitment (Locke & Latham, 2002). Commitment is, however, the principal condition to ascertain. After all, *“Those with little or no commitment to a goal by definition do not have one”* (Latham et al., 2008, p. 387). There are many strategies that have been developed to raise goal commitment in employees, such as having them participate in setting targets, giving frequent praise and feedback, instilling competition, or giving monetary incentives. None of these strategies increase motivation further than the goals themselves do; they merely contribute to people committing to their achievement. There is nothing in the theory or in empirical research to indicate that rewards, monetary or otherwise, are necessary for goal commitment (Latham et al., 2008). This is especially relevant for the public sector, where monetary rewards are highly unusual despite the widespread utilization of goals.

In order to create commitment in the public sector, other factors have to be taken into account. The importance of each goal in relation with the importance of the work to be done, as perceived by the employees, is one of the foremost factors influencing commitment in public organizations (Brewer & Selden, 2000; Ho et al., 2014; Vandenabeele, 2008). Other important moderators, such as the availability and timeliness of feedback and the complexity of the task also affect commitment to goals (Locke & Latham, 2002). It is also dependent on the individual believing in his ability to accomplish his objectives, i.e. on his sense of self-efficacy (Bandura & Locke, 2003). Taken together, these factors can explain why goals have an unequal ability to motivate employees.



The complexity of organizational situations is unkind to simple causal effects, but goal-setting theory is demonstrated by empirical evidence in real-world scenarios (Bipp & Kleingeld, 2011; Crossley, Cooper, & Wernsing, 2013; Deschamps & Mattijs, 2017). Where there is evidence that goal-setting affect motivation, it is fair to assume that employees are committed to the goals in question. But this ideal situation is not as common as theory would suggest. Goal-setting creates or exacerbates problematic behaviours in organizations (Ordóñez et al., 2009; Pollitt, 2013). For instance, dynamic goals can be policed by employees who pressure their coworkers into regulating their efforts to avoid increasing the difficulty of targets (Horton, 2010; Roy, 1952). Other problems include competition from multiple goals (Unsworth, Yeo, & Beck, 2014), reduced job autonomy (Mawritz, Folger, & Latham, 2014b), and a rise in unethical behaviours (Ordóñez et al., 2009). While the goal-setting literature is largely positive, publications in public administration journals offer a more nuanced view of goals and performance management (Bouckaert & Halligan, 2008; Pollitt & Dan, 2013).

One of the problems that plague goal-setting in public organizations originates in the repetitive nature of the work to be done. In a repetitive work setting, consecutive high goals have been found to sharply raise the number of unethical behaviours (Welsh & Ordóñez, 2014). Employees that are depleted after committing special efforts to the accomplishment of one goal need time to recover or they risk turning to alternative (and unscrupulous) strategies to meet expectations (Baumeister, 2002). Consecutive failures to meet targets also lead to discouragement and reduce commitment to goals (Spieker & Hinsz, 2004). The sustainability of a performance management system is an important aspect that, when overlooked during design, can lead to failure (Helmuth, 2010; Moynihan, 2005; Pollitt, 2013).

On the other side of the spectrum, goal-setting has the potential to create a virtuous cycle where goals motivate employees, then the fulfillment of goals provide

satisfaction and motivate employees to accomplish more goals (Latham et al., 2008, 2002). This virtuous cycle, dubbed “high performance cycle”, was found through empirical research in public organizations (Selden & Brewer, 2000; Wright, 2004) and demonstrate that goal-setting can create a positive environment. In the same way that quality data encourage managers to use it and managers using data try to improve its quality (Kroll, 2015b), work accomplishment and job satisfaction can motivate employees to accomplish goals while goals provide both higher performance and higher satisfaction (Latham et al., 2008).

One of the difficulties in effective goal-setting and performance management is using a control system as a way to create engagement. Performance information and goals trigger a response, but not always a functional one; employees can oppose goals, denigrate their importance, or fail to see how they can accomplish them (Pollitt, 2013). Public managers need to translate, explain, and convince employees to work toward goals (Reimer et al., 2016). The timeliness of these managerial actions is important; tardiness can mean missing goals and further losing commitment (Gullberg, 2016; Merchant & Van der Stede, 2007). When performance information is not timely, or managers cannot galvanize employees fast enough and goals are missed, the overall performance management systems risk losing its credibility and the engagement of employees (Latham et al., 2008; Pihl-Thingvad, 2016). But to be timely, middle managers often have to *predict* results, because most control occurs *ex post*, i.e. after the fact (Pollitt, 2006). Middle and frontline managers have to create and use their own set of tools to communicate, in a timely manner, what needs to be done to achieve organizational objectives (Deschamps, In press). This adds another dimension to our evaluation of a successful performance management: timeliness. A system is timely if its motivational effect occurs in due time, *before* targets are missed rather than in reaction to missed objectives.

To recap, goal-setting can lead to either a positive motivational cycle (Latham et al., 2002) or to depletion and poor performance (Welsh & Ordóñez, 2014). We can compare the effect of goals in a practical setting by using a number of criteria. What we expect from an effective performance management system that relies on indicators and targets to provide a motivational effect is threefold: effectiveness, i.e. the ability to motivate employees into working harder or longer; timeliness, i.e. that this effect occurs before goals are missed and not in reaction to missed goals; and sustainability, i.e. that the effectiveness of the system should not be temporary or variable. These characteristics can serve to identify where and why such a system succeeds or fails in public organizations.

### **Tested hypotheses**

Based on the existing literature, we identified three criteria to evaluate performance management in an organization: a successful performance management system is effective, timely, and sustainable. We operationalize these criteria in the following hypotheses:

- 1. A successful performance management system increases the productivity of employees to a level high enough to accomplish organizational goals.*
- 2. A successful performance management system affects the productivity of employees before objectives are failed, not in reaction to failure.*
- 3. A successful performance management system does not diminish in effectiveness over time.*

It should be noted that there is more to performance management than motivation. According to Behn (2003), there are 7 other purposes to performance measurement: to evaluate, control, budget, promote, celebrate, learn, and improve. But

as he notes, the only real purpose is to improve performance and all others are means to achieve this. This is ultimately what we are concerned with. Observing an actual measurable effect on productivity caused by variation in indicator scores presupposes successful control and evaluation practices, gives the possibility to promote and celebrate, and procures the opportunity to learn and improve (Dreveton, 2013; Franco-Santos et al., 2012b; Schillemans & Smulders, 2015). Most of it, however, relies on the relationship of managers and employees as it is defined through performance indicators, goals, and control systems. When it comes to performance management in a public organization, the most dangerous pitfall is generating negative side effects that undermine the motivation and commitment of their personnel (Arnaboldi et al., 2015; Diefenbach, 2009). It follows that good performance management requires an engaging and motivating system to avoid an ultimately negative impact on organizational performance.

The hypotheses that we use serve to empirically distinguish the organizational effect of performance management systems in public organizations. We further confirm the validity of the analysis with qualitative work that assesses the use of performance information by managers and their opinion on organizational performance. Therefore, we compare our method with the most popular methods of assessment used in public administration research. Further work, detailed in the qualitative method, will serve to explain the difference between good and lacking performance management.

### **Method – Quantitative Comparison**

#### **Empirical context**

We study two Belgian federal public organizations using a very similar performance management system. The first organization is the National Employment

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Office (NEO), who is responsible for the allocation of unemployment benefits and several related activities. The organization employs over 4000 people scattered over 30 regional offices that administer more than 4 million cases a year. The NEO has a long history of using performance management and have implemented their first indicators and objectives in the early 1990s. They are recognized by several sources for their particularly brilliant use of performance management. They have received several awards such as a 5-star rating from the European Foundation for Quality Management and special recognition award from the Flemish Policy and Management Association. They boast excellent performance on their mandated administration contract, achieving 98.6% (2013) to 100% (2015) of the government-imposed objectives. In the Belgian public sector, their processes of performance management serve as a guide and example to many other organizations.

The second organization that we study is the Mortgage Registry Office (MRO), part of the Federal Public Service Finances (formerly the Federal Ministry of Finances). The MRO began to implement performance management techniques around 2002, following the “Réforme Copernic”, which put emphasis on results as per the principles of new public management. However, they faced several problems in reforming the organization and many hurdles could only be overcome several years later. In November 2016, the MRO introduced changes in its organizational structure to improve managerial control and streamline management processes. In contrast with the NEO, who has well-established systems and a long-standing culture of performance management, the MRO is a relative newcomer that is still in the process of implementing management practices focused on performance.

Both organizations share similar characteristics and use similar performance management systems. This is by no means a coincidence; the MRO used the NEO as an example when designing its own performance reform. Karel Baeck, who was the NEO's

administrator responsible for the implementation of performance management, served as a consultant to the MRO for its own implementation. The MRO thus implemented strikingly similar dashboards, performance indicators, and objectives. The organization also follow the same principles of results-based evaluation. The MRO can be considered an experiment in exporting the NEO's performance management model to other organizations. Although the NEO and MRO differ on a certain number of points, they both share a model of performance management that is focused on outputs, evaluated monthly through dashboards, and meant to empower managers while creating accountability for results. One of the main differences between the two organizations is that the NEO was the architect of its own model, whereas the MRO choose to adopt the NEO model after being forced to implement a performance management system.

### **Procedure and data**

We collected data at the NEO and MRO by querying their databases and by analyzing monthly results for several years of activities. At the NEO, we collected data from the beginning of 2009 to the end of 2013. Data was also collected outside this range but was not used for several reasons. Before 2009, data on productivity was not available. Starting in 2014, the NEO began a reorganization of its structure, which was up to then based on 30 regional offices, to regroup their processing activities in a smaller number of 'back offices'. Furthermore, productivity, which used to be a variable that was measured, but neither used nor publicized, started to be the subject of quarterly reports in 2014, which could have had an unpredictable effect on our results. At the MRO, we extracted monthly data starting in January 2011, the earliest time when all variables were available, until April 2017 inclusively, the date of data collection for this organization.

## Variables

The main variables collected include, for both organizations, the productivity of employees, indicator scores, and results measuring whether or not objectives were met. These are the same for both organizations. For control variables, we collected different data depending on what was available and what was appropriate for each organization. For instance, the number of business day is a relevant variable for the NEO because their target for processing time is measured in calendar days (so having more holidays in a month means that employees have to work faster to meet the same target). The list of variables used is detailed in table 1, below.

**Table 1**

Description of variables used for the regression analyses

Variables	Description	Type	Organization
<b>Productivity</b>	Productivity of employees in cases processed by FTE	Dependent	Both
<b>Indicator scores (t-1)</b>	Score on performance indicators, recoded so that higher is always better. Lagged by one period.	Independent	Both
<b>Percentage of success (t-1)</b>	Percentage of targets achieved for a month. Lagged by one period.	Independent	Both
<b>File intake</b>	Number of cases received for treatment during the month	Control	Both
<b>Time on task</b>	Proportion of time spent on this activity	Control	Both
<b>Targets</b>	Target level (when the targets change during the period of study)	Control	Both
<b>Output Quality</b>	Quality control by a review of a sample of completed cases (for activities where this is done)	Control	NEO
<b>Business Days</b>	Number of business days for the month	Control	NEO
<b>Stocks</b>	Accumulated stock of unprocessed (late) cases at the beginning of the month	Control	MRO
<b>Difficulty</b>	Difficulty of cases processed (average length of the certificate delivered or type of cases processed)	Control	MRO

Here, an *indicator* or *performance indicator* represents the metric used by the organization, often defined by an object and a method of calculation. The *score* or *indicator score* is the figure measured for a given indicator for a given period. The *target*, *objective*, or *goal* is the expected value for the indicator score for the given period.

Finally, the number of *successes* represents the number of goals that were successfully met in a given period.

Productivity is operationalized as the number of cases processed by employees in a given month divided by the employee-time spent on processing. It cannot account for cases partially processed, nor for the relative difficulty of each case, but this factor should average itself out over one month. Whenever possible, the average difficulty of cases processed and the quality of output are used as control variables.

The performance indicators that we concern ourselves with are all of the same type. The two organizations have several activities where they use processing time as their principal indicator and objective. Processing time starts as soon as a new case is received and ends when processing is finalized. Targets vary from one organization to the other and from one activity to the next, but most of them take the form of a percentage of cases processed within a certain number of days. For example, the NEO aims to process 95% of cases in their main activity within 17 days. We detail the indicators and targets during the qualitative analysis. For the purpose of the quantitative analysis, the differences from one indicator to the next are irrelevant, as each are compared not with one another, but with their own previous level.

Performance indicators and percentage of success are both lagged by 1 period for the purpose of the analysis. We do this to reflect organizational reality, where final scores are known and announced to employees at the start of the following month. Furthermore, including a lag prevent the issue of endogeneity in the data by removing the potential for reverse causality, where productivity causes changes in processing time.



### **Statistical method**

Evaluating the effectiveness of the performance management systems requires to find a demonstrable link between indicator scores and the productivity of employees. We first normalize all variables to facilitate the comparison between organizations. We then use the Arellano-Bond dynamic panel GMM estimators (Arellano & Bond, 1991) to estimate the correlation between indicator scores and productivity. This technique addresses certain pitfalls in the organization of our data, namely the time-invariant characteristics (office-specific fixed effects) and the possible autocorrelation created by lagged variables (Mileva, 2007). This statistical method correlates the independent variables with the first-order difference of the dependent variable. This means that what is explained are the variation in productivity from one month to the next, not the absolute level of productivity in a given month.

The timeliness and sustainability of the system can be evaluated using simpler observations. Given a system effective at motivating employees, we can evaluate the timeliness of this effect by looking at the results over the period. A high percentage of success in achieving objectives indicates that the effect is both sufficient and timely. As for sustainability, we analyze different periods of equal length to establish the variations in effectiveness.

These analyses are then reproduced for different activities and different units within the same organization to give a clearer sense of the areas in which performance management proves most successful. All statistical analyses are performed using Stata version 14.

## **Results – Quantitative Comparison**

### **Descriptive statistics**

Our results are split into a number of different activities for each organization. These activities should be understood as the different missions or responsibilities of the two organizations. They often employ different people, but are managed within the same office using the same framework of performance management. These activities can be the responsibility of the same managers or different ones, depending on the size of the office and the relative importance of each activity in that office.

Table 2 below shows the descriptive statistics for the activities that we study in each organization. The difference in productivity can be used as an indication of the complexity of each task. We will explore in detail the differences between the performance indicators and goals used in the qualitative portion of this article.

**Table 2**

Descriptive statistics for activities at the NEO and MRO.

Org.	Activities	Average productivity per day	SD	Average indicator score	SD	Target	Percentage of results within targets
NEO	Admissibility	24.3	5.6	9.9 days	3.6	17-24 days	89.1%
	Career interruption	29.1	10.7	98.9%	2.5%	95%	95.3%
	Certificates delivery	71.1	35.8	98.5%	1.7%	90-96%	98.2%
	Litigation	4.1	1.1	94.0%	4.1%	66-98%	96.1%
	Verification	333.9	103.7	206%	38%	100%	98.6%
MRO	Mortgage certificates	7.2	1.8	64%	33%	54-72%	61.4%
	Mortgage formalities	7.3	2.1	80%	29%	63-72%	75.1%

The difference in performance between the two organizations is obvious when considering their own set of performance indicators and goals. The NEO achieve 89.1 to 98.6% of its goals while the MRO is hovering between 60 and 75%, even if the NEO's goals are higher than the MRO's. Standard deviation of indicator scores is also much higher, indicating greater differences in performance either between regional offices or between different time periods for the same offices, or both. It should be noted that the MRO seems to have generally more complex activities based on the average productivity of its personnel, a fact that is supported by observations made during interviews.

In our second hypothesis, we posit that good performance management energizes employees in a timely matter, before goals risk being failed. A very high percentage of success is a potential indication that this is true for the NEO. The regression analysis in the next section will further test this hypothesis.

### **Regression analysis**

We present the complete results from seven panel GMM in the upper side of the table below. These analysis covers all available data to assess our first hypothesis. On the lower side of the table, we show partial results from 14 additional panel GMM, each covering only half the available period, to ascertain the stability of the relationship over time. For this last analysis, we only present the coefficients that correlate indicator scores with productivity to ensure legibility.

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**Table 3**

Regressions between productivity, indicator scores, and successes with controls, by activity<sup>12</sup>

	NEO					MRO	
	Admissibility	Career interruption	Certificates delivery	Litigation	Verification	Mortgage certificates	Mortgage formalities
Indicator scores	-0.55***	0.00	0.00	-0.06	-0.77***	-0.10+	-0.23*
% of success	0.05	0.00	-0.01	-0.08**	0.02	-0.06	0.02
File intake	0.35*	0.82***	1.31***	0.57***	0.42	0.12**	0.33***
Time on task	-0.35***	-0.77***	-0.60***	-0.63***	-0.43***	-0.54***	-0.49***
Targets	0.05**					0.16**	0.03
Output Quality	4.87***	-0.01			0.01		
Business Days	0.14***	0.15***	0.03*	0.20***	0.12***		
Stocks						2.02***	1.42***
Difficulty						-0.13***	-0.05*
Constant	-4.63***	0.00	-0.01	0.01	-0.02	0.01	0.01
Indicator scores (first half)	-0.46***	0.02	-0.02	-0.06	-0.79***	0.03	0.01
Indicator scores (second half)	-0.58***	0.00	0.03	-0.32**	-0.74***	-0.17*	-0.22*

+ p<.10 \* p<.05 \*\* p<.01 \*\*\* p<.001

<sup>12</sup> All coefficients are beta coefficients, which represent a variation of one standard deviation for the dependant variable when the independent variable changes by one standard error. Multicollinearity is not a problem with any of these models. The variance inflation factor remains below 10, as suggested by Neter et al. (1974).

According to our first hypothesis, an effective performance management system should have a measurable effect on productivity, as is the case for four activities out of the total seven. For those activities, we can also point out that the previous percentage of success does not have a significant effect, meaning that employees react to variations in indicator scores rather than being prompted into action after failing to achieve targets. This is consistent with our second hypothesis. The last hypothesis predicts that good performance management is sustainable. The NEO's activities admissibility and verification both display consistent effectiveness. The MRO activities have inconsistent results, showing that the results are only significant in the latter period. We believe those results are due to developments in the way performance is managed at the MRO in latter years; the MRO has indeed been working hard on structural reforms to improve the organization. Furthermore, the sustainability analysis is a criterion based on the premise that goal-setting risks depleting the workforce and leads to poor results after a significant effort. In this case, we cannot conclude that performance management has had negative impacts, only that performance management might have been ineffective at first but has probably improved over time.

Interestingly, two activities at the NEO present very different patterns with regard to performance management. The activities career interruption and certificates delivery present particularly weak – essentially nonexistent – correlations between indicator scores or percentage of success and productivity. Although a null result does not lend itself to strict interpretations, we will discuss a number of factors that set those activities apart from the rest in the qualitative section. It is interesting to note that, in an organization known for excellent performance management, there are still activities where we cannot say that performance information account for a significant effect on productivity.

The last activity – litigation at the NEO – is also an interesting case in itself. Not unlike the activities at the MRO, it shows an improvement in latter years. The full results of the panel GMM for the latter half of the period also show that the weak correlation between percentage of success and productivity loses significance ( $-0.05$   $p=.34$ ) as indicator scores become a more relevant factor. Litigation also has many distinctive characteristics, such as using a number of additional indicators other than processing times, and being split into three categories of cases, each with its own workflow. Drawing conclusions from these results is thus a hard bargain. Either performance management has improved greatly in the last years, or other variables muddy the analysis. We discuss the case of litigation in more details in the qualitative analysis.

To get a complete view of both organizations, it is best to push the analysis further by examining these effects in the individual offices. The NEO has 30 regional offices that use the same performance management systems while the MRO has 48 offices. The table below summarizes the results obtained from replicating the analysis using data from individual offices.

**Table 4**

Summary\* of regressions between variation (first-order difference) in productivity and indicator scores with controls (not shown), by activity, for individual offices at the NEO and MRO.

Org.	Activities	Average correlation	Minimum correlation	Maximum correlation	Significant negative correlation	Significant positive correlation
NEO (30 offices)	Admissibility	-0.46	-0.84	-0.16	28	0
	Career interruption	-0.02	-0.82	0.71	2	2
	Certificates delivery	-0.04	-0.47	0.38	3	2
	Litigation	-0.09	-0.30	0.21	2	0
	Verification	-0.61	-1.05	-0.35	28	0
MRO (48 offices)	Mortgage certificates	0.14	-2.57	2.02	2	6
	Mortgage formalities	0.17	-2.52	1.75	2	7

\* See Appendix A for detailed results.

The NEO's activities admissibility and verification stand out by the uniformity of their impact throughout the organization. Those two activities have the most consistently positive results in all our analyses. In contrast, the MRO activities that had positive results when examined globally show extreme variations from one office to the next. Results even move from the expected negative correlations (employees increasing their efforts when scores are further away from goals) to positive correlations (employees decreasing their efforts when scores are further away from goals). Although the MRO results seem positive at first glance, the absence of consistency within the organization is a sign that performance management struggles to make headway in several offices. It can indicate pockets of resistance, ineffective management practices in a proportion of offices, or a misalignment of organizational objectives. Whatever the



cause, this puts into question the overall effectiveness of performance management in the organization, despite the initially positive results.

The quantitative part of this article has served to identify two activities in one organization – admissibility and verification at the NEO – where good performance management is found. In these activities, performance management has an effective impact on the productivity of employees, prompting them into action before goals are failed, and this impact does not diminish over time. Furthermore, this effect is consistent across individual offices. In the following sections, we explore the data from the qualitative analysis to confirm these results and to find the common enablers of effective performance information use.

### **Method – Qualitative Comparison**

To ascertain the accuracy of the quantitative results, we interviewed a number of managers from both organizations. Of the three methods commonly used to evaluate the success of a performance management system, two are based on feedback from managers: asking them if they use performance information, and asking their opinion on organizational performance. Although these questions are usually part of validated scales in a questionnaire, conducting interviews of managers give us the opportunity to explore the reasons behind their opinions. We endeavour to find the conditions under which managers thrive using performance management, and also to note the organizational consequences of good or bad performance management.

### **Data sources**

We performed 25 semi-structured interviews in six NEO's field offices in May and June 2014. At the MRO, we also visited six field offices and conducted 19 interviews over

a period of three months, from April to June 2017. These interviews, which constitute the primary source of data, are summarized in the table below.

**Table 5**

Description of managers interviewed.

	NEO	MRO
Top management	-	2
Office directors	6	2
Middle managers	8	7
Frontline managers	11	5
Employees	-	2
Human resources	-	1
<b>Total</b>	<b>25</b>	<b>19</b>

The same interviewer conducted most interviews, except four (at the NEO) where a translator was required and a second researcher was present to fill that role. The offices were chosen based on availability following our preferences for a diverse panel representing the organizations, after considering performance data from individual offices, their cultural/linguistic background, and the relative size of each office. Most offices were visited only once and all interviews were conducted on the same day, but some offices had to be visited a second time to complete the interviews. We interviewed a different set of managers according to the structure of each organization. At the NEO, a wider organization with more activities, we met a larger number of middle and frontline managers and no employees. Since we had data on only two activities at the MRO, we instead used the opportunity to extend the interviews to additional hierarchical levels.

We used an interview guide (see appendix B) to ensure a comprehensive discussion of similar topics across all interviews. The questions followed two broad themes: the use of performance information for managing employees or to report to higher ups and the opinion on the efficacy of performance management as it is used in

the organization. A third issue was discussed at the MRO, namely the way organizational changes have impacted either of the previous themes. Structural changes and new information systems had been implemented recently enough – including the addition of a new frontline management layer six months before the interviews – that managers could recount their impressions and opinions over those changes. No such reorganization had been undergone at the NEO in the previous years so this topic was not used at the time of the interviews. Most interviews lasted for about one hour. All interviews were recorded and transcribed verbatim for analysis.

A number of additional data is analyzed alongside the content of the interviews. Some managers gave us copies of their own performance management tools, such as the spreadsheets that they use to aggregate data. We also secured copies of most organizational performance reports. We analyze their technical characteristics to further contextualize our results. We also attended monthly performance meetings at both organizations and took notes during those proceedings. These notes are analyzed alongside the interviews.

### **Data analysis**

Following the transcriptions, we studied the content of the interviews to isolate statements and discussions according to each particular topic that was addressed at the time. At the NEO, we isolated 931 comments representing topics of importance and 621 at the MRO. Each comment describes a situation, exposes an issue, states an opinion, or gives an example of behaviour that occurs within the organization, sometimes while noting its consequences. They serve to synthesize key ideas brought up by the interviewees. Those comments were coded according to themes, elements of control in cause, and whether the interviewee saw it as a positive or negative aspect. We also coded the comments according to their source and context to explore the differences in

opinions across each organization. The complete coding grid can be found in appendix C.

With this method, we gather and list examples of managerial behaviours and opinions with regard to performance management. We analyze the prevalence of each behaviour within each organization. Our coding account for repetitions, such as when an interviewee recounts the same anecdote or talk about the same tool at two different points (in which case they are both coded as one instance). What we cannot account for is how exhaustive each manager was when describing his use of performance management, but the answers do provide an accurate description of what is most important for them. With sufficient context, we begin to explore the main enablers of effective performance information use.

### **Results – Qualitative Comparison**

There are several questions raised by the results of the quantitative analysis. Why are only two activities of the high-performing organization showing a significant effect on productivity? Why is the NEO able to motivate employees but the MRO isn't, even while using nearly the same performance management system? For that matter, how is the NEO so much better at meeting its objectives? Finally, why are results within the MRO so inconsistent from one office to the next?

Before we explore the answers to those questions by looking at the relevant success factors in both organizations, we review the overall opinion of managers to examine whether they agree with our analysis of the effectiveness of performance management in each activity.

### Managers' opinion on performance and performance management

Managers at the NEO had many praises for the performance management systems that are in use in the organization. Several of them noted that when they started their career, the organization had many issues that were eventually solved by the use of performance information. Problems such as long processing time, employees hiding completed files for a rainy day, and decisions being taken without reliable criteria were all addressed using performance information. Managers commented things like: *“all these indicators, it's vital”*, *“it's awesome”*, *“it really made us progress enormously”* and *“people ask for more”*. Out of 931 comments, 670 (72%) were positive. By contrast, out of the 621 comments taken from the interviews at the MRO, only 139 (22%) were positive. Table 6 presents the distribution of positive comments by activities and managerial level.

**Table 6**

Percentage of positive comments (excluding neutral and ambiguous comments) about performance management by managerial level and activity.

	NEO					MRO	
	Admis- sibility	Career interruption	Certificates delivery	Litigation	Verifi- cation	Mortgage certificates	Mortgage formalities
Top management						67%	68%
Office directors	80%	81%	81%	78%	83%	54%	56%
Middle managers	83%			66%	81%	21%	17%
Frontline managers	83%	55%		53%	81%	18%	5%
Employees						8%	0%

The managers at the NEO not only have a generally much more positive opinion on performance management, but they also tend to have a positive outlook at any

hierarchical level. At the MRO, the generally positive perspective of top management hardly reflects the negative attitude of employees and frontline/middle managers. There is actually a tipping point between office directors and middle managers where the perspective changes from positive to negative in a dramatic fashion. This is very important; although there are some activities at the NEO where frontline managers are less congratulatory than office directors, we can hardly call this a reversal of opinion. At the MRO, there is most likely something that makes performance information systems useful for office directors but impractical or problematic for middle managers and their subordinates. We will explore this further in the next sections.

Another thing of note is that the opinions of managers are not much different from one activity to the next. Given the imprecise nature of categorizing comments as either positive or negative – without any sort of scale for intensity – a difference of a few percent cannot be seen as significant. Performance management prompts the same kind of response for both activities at the MRO. There are small notable differences at the NEO. The two activities where performance indicators had the most impact – admissibility and verification – boast the highest proportion of positive comments from frontline managers. Performance information needs to reach employees to have any kind of motivational effect on them and this is the purview of frontline managers. The fact that those who appreciate performance information get the most out of it is not surprising. Indeed, it may be that their appreciation comes from what they get out of it, and not the other way around.

There are a number of specific complaints that were voiced by managers regarding the use of performance indicators and information. The most frequent complaints at the MRO were: numbers being too important for top management, having performance information that does not reflect the reality of the situation or the work done, indicators being used only to control and never to manage or to help, too much pressure to achieve

objectives, and numbers skewing the priorities away from what they deem important. Although the nature of the complaints matters, there is an overall theme that appears from listening to lower-level managers talking about performance information: indicators are made by and for top management. In their word: *“all this system of evaluation by objectives, it is rubbish”* because *“People decide up there, without coming down to see what’s going on in the field.”*

These complaints are not echoed by managers at the NEO, however. Is it because the NEO’s system is any less top-down or centralized? A cursory glance at the history of the NEO shows that this is not the case; performance indicators and dashboards were designed and implemented specifically in a bid to centralize and standardize the application of regulations, the handling of clients, and the managerial oversight in local offices. They have also been very successful at promoting the use of performance information and objectives despite initial resistance.

*Without the slightest exaggeration, we can say that the "dashboards" and related "norms" have become, for the local offices, the Alpha and the Omega of their daily operation. The emphasis toward results and a coherent set of client-oriented objectives have thus been institutionalized as guiding principles for the functioning of the local offices. (75 ans de l’ONEM [NEO] – Official publication, p. 312)*

Although the chief complaint of managers at the MRO still resonates at the NEO, we find that managers are not overly bothered by the centralization brought by performance management. They see performance information as position and relevant data: *“There is never someone who will say, ‘oh you, you’re boring me with your numbers.’”* They also adhere firmly to the culture of management by results: *“If we have objectives, we reach them.”* Managers at the NEO find reassurance in meeting objectives, which grants them a sort of immunity against top management interference. The objectives thus act as explicit boundaries within which managers are empowered to act as they see fit. Unlike at the MRO, the definition of those boundaries is well integrated into

managers' mind and they no longer question the relevance of the system. They see and exploit its value both for themselves and for their clients.

For the most part, it seems the opinion of managers is more representative of the overall organizational culture of performance information use. As such, managers' opinions on performance management are more useful to compare organizations with each other than to compare distinct activities within a single organization. It is, however, very useful to identify pockets of resistance and systemic problems that prevent performance management adoption. Next, we explore in greater details the technical aspects of performance indicators that influence their utility for managers.

### **Technical aspects of performance management**

To explain the difference in the motivational effect of performance information between different activities within the same organization, we take a closer look at the specific indicators and objectives used. The table below lists a number of characteristics for the performance data collected in each activity.



**Table 7**

Characteristics of performance indicators and objectives by activity.

Org.	Activities	Number of indicators	Definition of main objectives	Results reported in	Main objectives
NEO	<b>Admissibility</b>	5	Processing time of 95% applications	Number of days	17 and 24 days
	<b>Career interruption</b>	2	Percentage of applications processed within norms	Percentage	90% within 24h 96% within 1w
	<b>Certificates delivery</b>	2	Percentage of applications processed within norms	Percentage	95% of first payment on time
	<b>Litigation</b>	9	Percentage of applications processed within norms	Percentage	66% within 1-2m 95% within 3-4m
	<b>Verification</b>	3	Percentage of applications processed within norms	Uncapped percentage	At least 100%
MRO	<b>Mortgage certificates</b>	2	Percentage of applications processed within norms	Percentage	72% within 8-20 days
	<b>Mortgage formalities</b>	2	Percentage of applications processed within norms	Percentage	72% within 10 days

There is a common denominator that applies to all activities where performance information has a poor impact on productivity: all those activities report their results in percentage form. The two activities with the most impact on productivity instead use an uncapped percentage and a number of days as results. Using a percentage as a performance indicator is a simple way to measure the completion of an objective, but the other indicators have several psychological advantages.

For instance, one problem that was often reported by managers was their difficulties in convincing employees of the importance of indicators and objectives:

*I worked hard to explain to my staff that, behind each performance indicator, there is a reason. It's a beneficiary who is waiting for its benefits, actually. That's why we have norms, that's why we watch them. (Middle manager – NEO)*

Promoting the importance of objectives is a vital step in creating engagement. In the public sector, employees answer well to reminders of the social significance of their work, hence the prevalence of client-oriented objectives. But percentages are abstract

and dilute the meaning of the task; a number of days, on the other hand, carries more meaning. It is closer to both the work to be done (*"We process files that are 7 days old"*) and to the outcome for the client (*"The goal is to inform the client that the situation of the NEO is currently 8-9 days, it means that when you submit an application, in 9 days it's done."*). Therefore, having indicators and objectives that are meaningful, not only in substance but also in form, makes it easier for managers to engage and motivate their employees.

The other aspect of note is the boundary and performance duality of each indicator. According to Tessier & Otley's Revised Lever of Control framework, boundary controls are controls that define what is to be avoided while performance controls define what is to be done. Each indicator has an explicit boundary in the form of an objective: managers should not fall or stay below 72% of mortgage formalities processed within 10 days. But each indicator also has an *implicit* performance objective: managers should aim for 100% within 10 days. This is where indicators reported as percentage fail in comparison with other indicators: an uncapped indicator has room for a much higher performance goal. This allows managers to set more difficult goals for themselves and their team, and to have a feeling that their performance will be apparent in the system and recognized by their superior. Managers also understand that higher goals are more motivating for employees:

*It's not very motivating. It's better if there's a challenge, so we set things internally, we say: "Well, here we would like to process those applications according to an even stricter deadline: 12 days." (Office director – NEO)*

Although it is possible for managers to set higher objectives on a percentage-based indicator, they have to rely on its other attributes to do so, and this operation can be complicated. If the indicator is reported as the percentage of files processed within 8 days, managers do not automatically have access to data about files processed within 4 days, for example. Reducing the technical barriers that prevent managers to adapt

indicators is an essential part of encouraging their use. But having an indicator that unites multiple informative aspects together multiply the possibilities, especially when it comes to publicize, interpret, or discuss performance information. Performance-unlocked indicators that display client-oriented and boundary-explicit objectives help communication and encourage an unbroken control chain from the dashboards to the employees, even through multiple managerial levels.

How this information circulates in the organization is bound by the actions of managers who choose to use or not use performance data. In the next section, we examine how managers use performance information at the operational level, and how this use correlates with the value of performance information.

### **Use of performance information by managers**

Fundamentally, the two organizations possess similar performance information distributed along similar paths. Data are collected by IT systems at several points along the production processes and aggregated in a centralized database. Performance information is produced and distributed by the top management in many forms, but the most prevalent are the monthly dashboards. Every month, results are distributed to office directors who are then invited to a meeting to comment on their performance. Beside the centralized management by results, office directors are expected to use performance information by breaking down objectives within their local office. They are also charged with distributing information in its various forms.

Inside local offices, managers enjoy access to many different sources of performance information, from dashboards to database queries. They sometimes collect additional data manually within their services. Top management distributes information through several reports (monthly, weekly, or even daily) in both organizations. This data is curated to specific needs or to address specific problems as

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part of the current strategic focus. Understandably, the NEO has a larger collection of performance indicators and managers have better access to relevant information. Yet, it is the NEO's managers that complain the most about not having enough performance information, a complaint rarely heard at the MRO. There is a good reason why: managers at the NEO find many uses for performance indicators, while managers at the MRO mostly find reasons not to use any. Table 8 below summarizes the reasons that managers have to use or not to use performance information in both organizations.

**Table 8**

Managers' reasons to use or not to use performance information.

<b>Reasons for using performance information (Examples)</b>	<b>Number of examples</b>	
	<b>NEO</b>	<b>MRO</b>
To plan and organize the work to be done		
Calculating the amount of work needed to meet objectives	31	3
Building tools to plan work and to monitor progress	28	2
To reassure themselves		
Comparing performance data with other offices or the national average	13	1
Planning ahead using historical performance information	17	
Getting ahead of the goals for safety	14	2
Looking for data to measure the importance of a potential problem	9	1
To gather information about what is going on in their service		
To identify problems and help employees solving them	15	1
To be objective about a situation or an evaluation	19	3
To motivate their subordinates		
Telling employees the amount of work needed to meet objectives	15	9
Using comparative results or trying to beat the mean	5	
Using performance information to celebrate accomplishments	4	2
To improve work processes		
Aligning the work with the objectives	4	2
Using comparative results to find best practices	4	1
<b>Reasons for <i>not</i> using performance information</b>		
Performance information does not agree with organizational reality	16	20
Performance information cannot help decision-making	5	8
Performance information is useless because it arrives too late		9
Comparison with others is useless because the work is different	8	4
Performance information is too difficult to work with	2	3
Using performance information moves us away from our real priorities		8
Our performance is good so there is no need to use performance information	2	4
We do not have enough performance information	14	2

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Note that, at times, there are more examples of managers using performance information at the NEO than the total number of managers that we interviewed there. This is because managers often have multiple tools that they designed and now use to supervise different part of the same activity, or because they are responsible for the supervision of multiple activities, each with its own custom-made performance information tools. Duplicate mentions of the same tool or event are not counted in this table.

Managers at the NEO use performance information for a number of reasons. They try to plan and organize the work to be done, and motivate their subordinates as needed. If they can identify problems use performance information, they will endeavour to solve them quickly. In certain cases, managers will try to use performance information to improve work processes or to facilitate management going forward. This is usually done in response to systemic problems, and only by managers who are very confident in their use of data. Most managers, however, tend to use information as a way to know and reassure themselves about their performance and that of their service. They will go beyond the objectives to create a safety cushion for the future. Finally, they will also use performance information to objectivize their impressions, often in the interest of dealing fairly, or at the very least having the appearance of dealing fairly, with their subordinates.

At the MRO, performance information is not used as widely by managers. The most widely institutionalized use of performance management is the control of employees' productivity, often by mandating and evaluating their daily production. Other cases of performance information use are marginal, and many managers instead spent the interview elaborating on why they did not feel like using performance data. The most common complaint in that regard was that performance indicators were not representative of the reality of their work:

*And the big problem is that top management swears by **these figures that do not represent the reality of the field**, and we waste time indefinitely to try to explain and we make incomprehensible tables to justify that everything is under control or that we are trying to put things under control. (Middle manager – MRO, emphasis added)*

*I've never been interested in all this [performance dashboards] because, for me, the only real number is what's in the bin [the inputs]. (Frontline manager – MRO)*

Other complaints include the fact that performance information arrives too late to be useful, that it does not help decision-making, that it is too difficult to work with, and that making comparison with other offices is useless because the work is different or is organized differently. Managers at the MRO do not see any value in the information provided because they only see its flaws. They are loath to use performance information because they believe those flaws make the information useless. And because they rarely use it, they fail to see how it could be valuable, creating a vicious cycle.

The situation at the NEO can shed light on the opposite reasoning, where managers see value in performance information, use it, and therefore keep enhancing its value. There are actually a large number of examples, almost as much as in the MRO, where the NEO's managers bluntly pointed out the flaws of performance information and how data could stray away from organizational reality. The difference is, when a manager at the NEO say that an indicator is flawed, he will add that he uses another indicator instead or that he takes the flaw in consideration while he interprets the results. For instance:

*Even when we are on schedule we notice that one file or the other is gone and lost in the process. That, for instance, **we cannot see it in the numbers** because it has to do with the quality. [...] For the quality, it is true that there are measurements done by special calculators [...] (Office director – NEO, emphasis added)*

Whereas just after the manager acknowledges that the indicators used do not account for certain fringe cases, he notes that there is a special process put in place to reduce this risk, a process that produces another indicator for quality. The NEO has many such 'complementary' indicators or objectives meant to solve blind spots in their

major performance indicators. NEO's managers, when they point out problems in the data, often refer to a very specific indicator or an aspect of one, while managers at the MRO talks about dashboards in general. For instance, two managers at the NEO indicated that some performance indicators were useless because the objectives were always met. But in both cases, they were talking specifically about the activity 'certificates delivery', which, interestingly, is one of the weakest activities in terms of impacts of performance management.

Managers at the NEO can see as many flaws in performance information as the MRO's managers, yet only the former see enough value in data to use it liberally in their daily operations. The missing step that the MRO's managers have not had time to fulfill is the appropriation of performance information. Managers at the NEO have taken control of the performance data that they use by creating their own tools according to their own needs. They create and use spreadsheets that aggregate performance information rather than relying on reports and tools made by top management. Conversely, middle managers at the MRO mostly use the dashboard as is, without modifications. But a dashboard is a useful tool only for top management and office directors, which incidentally are the only ones with a positive outlook on performance information. Middle and frontline managers at the NEO have learned to move from using *post hoc* controls and information to using *a priori* information that predicts the achievement of objectives. That way, performance information remains useful to them because it can provide a warning before it is too late to react and correct the situation. By changing the tools that they use to look at performance information, they have assumed control of this information and made it useful to them, something that managers at the MRO have not had time to do yet.

This is why managers at the NEO are asking for more performance information, whereas managers at the MRO prefer to oversee their service without the burden of



numbers. It does not have to do so much with the quality of the information produced, but rather with the value that managers see in it. It is quite possible to find flawed information valuable, as the NEO example demonstrates. But the information that is useful for top hierarchical levels will have little value for lower managerial levels until they create tools to appropriate the data and integrate performance information into their own management processes.

### **Control and supervision using performance information**

The intentions that managers have when they use performance information are another factor to consider in our exploration of good performance management enablers. In this, the revised Levers of Control framework provides additional insight into what happens when managers use performance information. It also helps examining the strategic alignment of controls in the organization.

In the previous section, we have identified a number of ways in which managers use performance information and counted a total of 205 examples of use between the two organizations. Although most of these examples are from the same organization, 178 at the NEO vs 27 at the MRO, we find further examples by looking at the strategy used by managers *instead* of performance information. Indeed, while managers at the NEO rely on performance indicators for most of their control needs, managers at the MRO prefer to use alternate strategies to the same effect. Although the interview questions were all about performance management, managers at the MRO gave answers that, in 41% of cases, could only be classified as classic management techniques, outside the scope of performance management. At the NEO, by contrast, managers gave less than 16% of answers of that type. Nevertheless, we analyze all the control strategies here because when managers decide whether or not to use performance indicators, they apply an important judgment.

We took every example where a lever of control was applied between any two hierarchical levels and coded them according to Tessier & Otley's framework. The table below lists the proportions of levers that fit in each category for each organization. It was not possible to code every aspect of the framework for every single lever used, so only the proportions are displayed to preserve comparability between the organizations.

**Table 9**

Proportion of levers of controls used by managers.

<b>Levers of control</b>		<b>Description</b>	<b>NEO</b>	<b>MRO</b>
<b>Types of control</b>	<b>Social</b>	Appeal to emotional elements within employees	48%	47%
	<b>Technical</b>	Specify how tasks are to be performed and organized	52%	53%
<b>Objectives of controls</b>	<b>Strategic</b>	Strategic objectives	24%	32%
	<b>Operational</b>	Operational objectives	76%	68%
	<b>Performance</b>	What must be done	53%	29%
	<b>Boundaries</b>	What must be avoided	47%	71%
<b>Managerial intentions</b>	<b>Interactive</b>	Focus on promoting discussion and learning	54%	32%
	<b>Diagnostic</b>	Looked at only if there is some deviation	46%	68%
	<b>Enabling</b>	With the intention of promoting creativity	63%	46%
	<b>Constraining</b>	With the intention of ensuring predictability	37%	54%
	<b>Rewards</b>	With positive consequences	68%	32%
	<b>Punishments</b>	With negative consequences	32%	68%
<b>Perception of controllee</b>	<b>Positive</b>	Seen positively	80%	23%
	<b>Negative</b>	Seen negatively	19%	76%
	<b>Neutral</b>	Neutral or no opinion	1%	1%

Although there seems to be a big difference in the use of rewards and punishments, there are only a few examples of each in both organizations, so the difference is possibly due to chance. Most consequences are social in nature, such as congratulations for good performance or a slight stigma and the need to justify bad performance. Our data hardly support a significant difference between both organizations here.

For other characteristics of controls, there are meaningful differences that can be spotted in table 9. Three sets of characteristics – performance/boundaries, interactive/diagnostic, and enabling/constraining – have significant difference in their respective proportion in each organization. Managers at the NEO have a stronger focus on performance and tend to use controls in a more interactive and enabling way. Managers at the MRO focus on boundaries and use controls in a more diagnostic and constraining way. In practice, it means that managers at the MRO tend to use tighter controls than managers at the NEO. Not that the controls themselves are tighter; as we saw earlier, the objectives used are, in fact, easier to meet at the MRO. Simply put, managers have a tendency to use performance information strictly as a control over employees rather than using information as a communication and reconciliation tool.

At the NEO, office directors are especially keen on using performance information as the basis for further discussion with managers:

*It's one thing to consult the figures and the conclusions we draw from them, but it's on the basis of those that we begin to make contact with the deputy, with the head of the department: "There, I saw something, what do you think? In which direction are we going? Should we do something about it?" (Office director – NEO)*

*It's based on that, based on these results that we start a discussion with the managers and the team leaders. (Office director – NEO)*

This way of using performance information starts with a diagnostic intention: looking at data to identify problems. But it quickly moves to an interactive function as

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people use the data to discuss problems and potential solutions. This behaviour relaxes the control function of objectives and instead promote teamwork and unity against external problems. Managers at the NEO use performance information to identify problems and work together to find a solution or to overcome them. These discussions, however, require agreement over the meaning of performance information. Without agreement, the discussion shifts toward the validity of the data, the real meaning of indicators, and whether any reaction is justified or not.

This is the situation that we observe at the MRO. The lack of use of performance information reduces the value that managers put into diagnostics made using data. Managers argue over the data, often criticizing it, sometimes suggesting changes, dismissing the importance of the problem, or playing the blame game:

*It's out of touch with reality, and that's the problem. Me, the first time I saw that, I said: "But we have to change the deadline!" (Middle manager – MRO)*

*They always calculate that we can make 30 or 40 a day. That, you cannot say in advance. Because I have certificates, applications where there are 150 names, you cannot do 30 a day, then. You'll do 2 or 3 a day, it's a lot. You see? They count a quantity that's wrong. In fact, you have to count the names you have to look for on the application. (Frontline manager – MRO)*

*We lost at a certain point in early 2015, we lost 8 people at the same time. [Since then] the team formalities is late, and that's where [the manager] puts pressure. And I don't understand because they are doing very well. (Frontline manager – MRO)*

Time is spent arguing over data to reduce its potency as a control mechanism. This is in direct response to the pressure felt by employees and managers over the newly implemented use of objectives and indicators. Managers feel that this pressure comes from above, from the instauration of new and higher boundaries that came with performance management. Although the intention of top management is to have people use indicators “intelligently” and without “dogmatism”, it is proving to be a hard sell when combined with strict objectives and constant insistence on performance:

*A director [...] is there to press people, but he has very few ways to help them. He does not have a power of management. He has nothing, he is like a link between Brussels [top management] and the people of his direction. (Office director – MRO)*

The fundamental problem seems to be that too much constraining controls, strict boundaries, and heavy diagnostic use focused on problems adds up to a very negative impression of performance information, which prevents a more positive use of it. Other functions of performance information – motivating, celebrating, learning – are crippled by a negative outlook, a low value, and a certain degree of hostility from the lower organizational levels. Unfortunately, there is not enough promotion of the interactive value of performance information and not enough positive interactions based on data to overcome this vicious cycle, yet.

Within the MRO, this translates into a wide gap between high- and low-performing offices. This is what the quantitative analysis exposed: a number of offices have such a negative relationship with performance management that employees answer low performance scores with even worse performance, potentially exacerbating the problem. But on the other hand, there are also offices that have a much better relationship with performance management and that are already building tools, appropriating data, and exploring more interactive uses for performance information. The seeds of a culture of management-by-results exist in the organization, but they are not as widespread as they could be.

### **Discussion**

As part of our goal to find the conditions that enable good performance management usage in public organizations, we started with devising a method to ascertain the effectiveness of a performance management system by looking at its effect on the productivity of employees. The assumptions were that good performance management processes would affect productivity in a manner that is effective, timely,

and sustainable. Using those criteria, we evaluated seven activities in two organizations. Three activities at the NEO failed to display a significant effect of performance information on the productivity of employees. The two activities of the MRO had a significant effect, but only when looked at globally; the results did not hold when an analysis of individual offices was conducted. Finally, two activities at the NEO met all our criteria. In the activities 'admissibility' and 'verification', we saw a significant effect, timely enough to keep results high, and sustainable over the period studied.

We used data from interviews of managers in both organizations first to confirm these results, then to analyze the factors that correlate with effective performance management. We use two methods to confirm our statistical results: linking effective performance management with the use of performance information by managers (Kroll, 2015c), and asking managers for their opinion on the overall effectiveness of the system and of the organization (Verbeeten & Speklé, 2015). Our analysis confirms that managers at the NEO have a much higher opinion of their organization's performance management system and use it much more extensively than managers at the MRO. Although results by activity are less categorical, there are a number of indications that in the three lesser-performing activities at the NEO, there is less management oversight based on performance indicators and a less positive outlook on performance management, but only at the lower managerial levels. It is very difficult to use either method to evaluate and compare the effectiveness of separate activities within the same organization, whereas the statistical analysis we conducted shows a much clearer pattern. Even if doubts remain about those three activities, there is ample evidence that at least two activities at the NEO are supported by good performance management, and that the activities of the MRO are somewhat lacking in that same regard, despite the application of a common model of performance management.

We found evidence of several factors that indicate or influence the presence of good or bad performance management. One of the first things we noticed at the MRO was that the opinion of managers about performance information became negative at the middle-management level. Middle and frontline managers and employees believe that performance information is made by and for top management, and are somewhat antagonistic about its use. A technical analysis of indicators and objectives reveals that not all indicators have features that simplify their use by lower-level managers. Some indicators are better suited for multiple purposes, hence more easily adaptable by managers. Having indicators that are complex translates into a perception of low value in the eyes of lower-level managers, and consequently, poor use. Poor use cheats managers of one essential step for effective performance management, the appropriation of performance information for their own purposes. Finally, comparative analysis of levers of control shows that at the NEO, managers use controls with more of an objective of achieving performance than an objective of setting boundaries. They also use information in a more interactive and enabling manner. At the MRO, however, performance information remains a boundary-setting, constraining control used mostly as a diagnostic tool. Because of this, managers criticize performance information to diminish its potency as a control. In the process, they tend to miss the other potential functions of performance information, such as motivating employees, celebrating realizations, or improving work practices.

When we look at the reasons why managers use performance information, we find a number of general topics already present in the academic literature. Data quality, for instance, is a big contributor to performance information use (Kroll, 2015a). But managers find ways to use performance information even if it generally lacks 'quality'. Drivers of performance information use need to be examined from the point of view of managers. At different hierarchical levels, there are different criteria that raise or

diminish the quality of data depending on the specific need of the managers of that level. Frontline managers are heavy consumers of very specific raw data that they can shape to their own needs. Middle and top managers need more aggregated solutions that give a quicker overview of their services. In general, we find that the managers who believe in information use can create and promote a more effective system than those who try to manage without performance indicators. Wider institutionalization of performance information use, however, requires the organization to increase data quality relative to managers' needs, which reduce the barriers to use. This is what is captured by measurement system maturity, another important driver of performance information use (Kroll, 2015a).

Another essential aspect of good and effective performance management seems to be the ability to give credibility to performance information in the eyes of managers of all hierarchical levels. It is especially hard for lower-level managers to find credibility or value in performance information if they feel constrained by performance controls. Performance information becomes a fighting ground for managers who will argue its flaws – which are many and unavoidable – against its value as a control for top management. On the other hand, once performance information acquires a measure of credibility, it can become a signal that managers use to motivate employees. When employees see performance indicators as something that represent the reality of their work, and not as a mean of control over them, they start working together with managers against the common problems that they face. But for that, they need to see the link between their work and performance information and understand objectives as benefits for their clients rather than benefits for management.

Performance information can be as much of an obstacle to communication as it can be a facilitator. It depends upon the mutual understanding of the meaning of indicators and objectives. When managers agree on the meaning of one piece of



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information, they can use it to quickly relate to the work to be done, the efforts to be made, or the situation to be faced. They can explain a situation to their employees with a number. But this collective meaning of performance information is built through use and interactions based on data. Negative interactions tend to build argumentation and disagreements over the meaning of data. Since flaws and inaccuracies are always possible when it comes to performance information, constantly arguing over data reduce its value. Instead, managers who focus on what can be known and what can be done with data finds value in it despite its flaws. Although individual managers can and do find value in performance information, it is very important to build a collective understanding of performance information value to unlock its possibilities. Once value is found, we find that managers can use performance information to evaluate, control, budget, motivate, promote, celebrate, learn, and improve as they see fit.

### **Implications for practice**

Certain behaviours are specially damaging to performance information credibility. One is to take 'automatic' actions because of performance information. For instance, if missing a target automatically carry consequences, the reaction from those who suffer the consequences will be dramatically negative. Performance information is not a magic wand that grants objectivity to a rule. Not only does the rule remain arbitrary in the eyes of managers or employees, but they will also start to criticize the data because of it. In the end, this action only devalues performance information. The correct approach is to use performance information as one source of data among others, and to prefer starting a dialogue using data rather than immediately trying to justify a decision using data.

Another behaviour that damages the credibility of performance information is a pure management-by-exception approach to performance dashboards. The danger in

using performance indicators as diagnostic controls is to focus only on the negative. If a manager only talks about performance information when there is something wrong with it, his employees never have a positive contact based on performance information. Regular performance meetings with discussions based on the current situation provide a more nuanced interaction with performance information and a reminder of its value as a communication tool. This is consistent with the principles of well-run data-driven reviews (Moynihan & Kroll, 2016), such as routine, positive reinforcement, and constructive feedback.

There is much to be said, generally, about multiplying interactions based on performance information. Increasing the value and promoting the use of performance information is best done by dialoguing with managers that face similar problems in their daily routine. Encouragement from the top is never as convincing as having a manager of the same level, who faces the same difficulties, explain his approach to performance information use. Managers who are less proficient with numbers are more likely to start understanding the value of data by exchanging tools and ideas with other managers. They are also less likely to devalue their coworkers' ideas and opinions, which is conducive to better organizational learning (Deschamps & Mattijs, Under review).

### **Limitations**

What we studied here is a narrow range of controls centred around a specific subset of performance indicators within a wider organizational performance management and control system. Although the goal is to be as representative of the organizations studied as possible, it is not possible to consider this analysis as exhaustive. Not all indicators can be compared in a single regression analysis. Those that can, however, are part of a number of indicators that are very popular in public organizations. Processing time indicators and objectives are widely used because they

follow the natural requirements of the work to be done. Beyond those indicators, many aspects of the system work to give them value: from the leadership of managers to their technical abilities, from organizational culture to the power structure and dynamics within, or from the history of the organization to the challenges of its environment. Further research will be needed to integrate these aspects into a coherent framework that can explain the effectiveness of performance management in public organizations.

While the quantitative analysis covers a period of a few years in both organizations, the interviews and contacts with managers are cross-sectional in nature. Some aspects of performance information are not used routinely within each organization, and thus managers might have failed to mention them. Another concern is the evolution of performance management systems and organizational structure. Managers tend to refer to proximate concerns rather than taking the long view. When the organization or system changes, a number of problems appear that cloud the opinion of managers. The MRO was undergoing a restructuration at the time of the interviews, and the impacts of that restructuration are inextricable from the impacts of performance management in general. Since the change was performance-driven, the opinions of managers can be seen as a backlash against the restructuration. Still, the comments we have chosen to analyze are appropriately backed with tangible concerns or real problems with regard to the way performance management is used. There is, however, a real possibility that the situation will evolve rapidly toward a healthier use of performance management as the restructuration unfolds.

### **Conclusion**

It does not seem to be an easy proposition to build organizational value using performance information. Organizations walk a razor-thin edge between too much constraint and too much freedom in making managers use performance information.

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Too much constraint creates opposition that turns into arguments about the value of information, putting forward every possible flaw of the data while overlooking its actual utility. Too much freedom fares no better; since performance information shines as a communication tool between managers, it requires wide adoption so that everyone is knowledgeable enough about how performance information relates to their organizational reality. Only then can performance information be used for meaningful exchanges and learning.

The experiences of public organizations show that it is possible to improve organizational performance, client service, and the job of managers using performance information. The advantages can be important, but they require implication and engagement from every managerial level. Both the problem and the solution, performance information can help managers to connect with one another. But the overall system has to be considerate of the specific needs of lower-level managers, who are often forgotten in the equation, and whose responsibilities are the most affected by performance management. Further research on public sector performance management should focus on the relationship between managers and data at the lowest organizational level, as they seem to hold the key to effective, timely, and sustainable improvements in performance.

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Performance management is becoming ubiquitous in public organizations, yet performance reforms have a poor track record (Gerrish, 2016; Moynihan & Kroll, 2016). Should we conclude that whatever potential there is in performance information use is sabotaged by poor implementation? But if the low amount of positive results hardly reflects the popularity of performance management reforms, there is the possibility that most attempts at implementation share similar weaknesses and liabilities. What we glimpsed in this thesis is the degree of complexity of performance management processes and the difficulties that managers have in making things work. However, after a detailed analysis of the specificities of a successful implementation of performance management, there are many indications that some measure of success relies on the social dynamic that is instituted in the organization using performance information. In this section, we review our main findings to explore overall contributions, limitations, and managerial implications of our studies.

## Summary

The objective of our thesis was to provide a detailed analysis of a particular phenomenon, the introduction and use of performance management in public organizations. We adopted an interdisciplinary perspective by leveraging theories from public management, management accounting, and psychological literatures. We endeavoured to contemplate what place, if any, should performance management have in the public administration of tomorrow. From this, we drew our research questions for each article:

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- Q1. Can effective performance management exist in public service organizations?
- Q2. How do organizations use performance information to learn and change?
- Q3. How do organizations use performance information to control and motivate?
- Q4. Can this model of performance information use be exported to other organizations?

In our first article, we used the core principles from goal-setting theory (Locke & Latham, 1990) to elaborate a model of effective performance management. Starting from the idea that performance information should have a measurable impact on the motivation of employees, we used their productivity as a proxy to measure their reaction to variation in performance indicators scores. By running a statistical analysis on an organization known for the excellence of its performance management system, we find that, in certain activities, performance indicators have an inverse and most likely causal relationship with the productivity of employees. This confirms that effective performance management can exist in public service organizations and that it can have an effect that is sustainable and timely.

In the second, we capitalize on the previous results to study another function of performance management: its ability to improve organizational learning. The implicit assumptions that we make is that since performance information proves useful to motivate employees, the same drivers or enablers of performance information use should apply to other functions as well (Kroll, 2015a). In this case, we study the specific enablers and blocks that help or hinder organizational learning based on performance information use. By studying examples of successful or failed learning, we find that performance information is used in several steps of the learning process. It helps to identify problems, but often fails at finding a solution, unless proper dialogue and sharing can occur between managers based on performance results. In fact,

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performance information enables learning by connecting managers through their mutual understanding of the meaning of performance results. Already, this hints at a major role of performance information in framing and focusing discussions, goals, and collective behaviours. We explore the consequences further in our next article.

In our third article, we investigate how performance information is used in the process of controlling and motivating employees toward organizational goals. We focus on the devolution of goals and information through the hierarchy to understand how performance information is affected by the actions, perceptions, and intentions of middle and frontline managers. Specific organizational dynamics appear from the way managers use and transform performance information according to their needs along the hierarchy. A noteworthy behaviour is the tweaking of performance management tools by middle and frontline managers because they want a different organization for their data and they require more precise information than abstract overview indicators. It is through this process of creating personalized tools that managers acquire or raise their overall understanding of the role of performance information and its link with the reality of their work. This process is essential for the development of a culture of performance management based on the common understating of the value and the role of performance information in public organizations.

In our fourth article, we expand upon the model that we used in the first article to evaluate the effectiveness of performance management. We use the same definition that effective performance management is having an impact upon employees' motivation, as demonstrated by an increase in their productivity. We redefine our expectations for this impact after the analysis: it should be effective, timely, sustainable, and uniform throughout the organization. This leads to a comparison of the use of performance information based on the organizational dynamics that leads to these expectations. We find several things that hints at the value of information being lower for managers that

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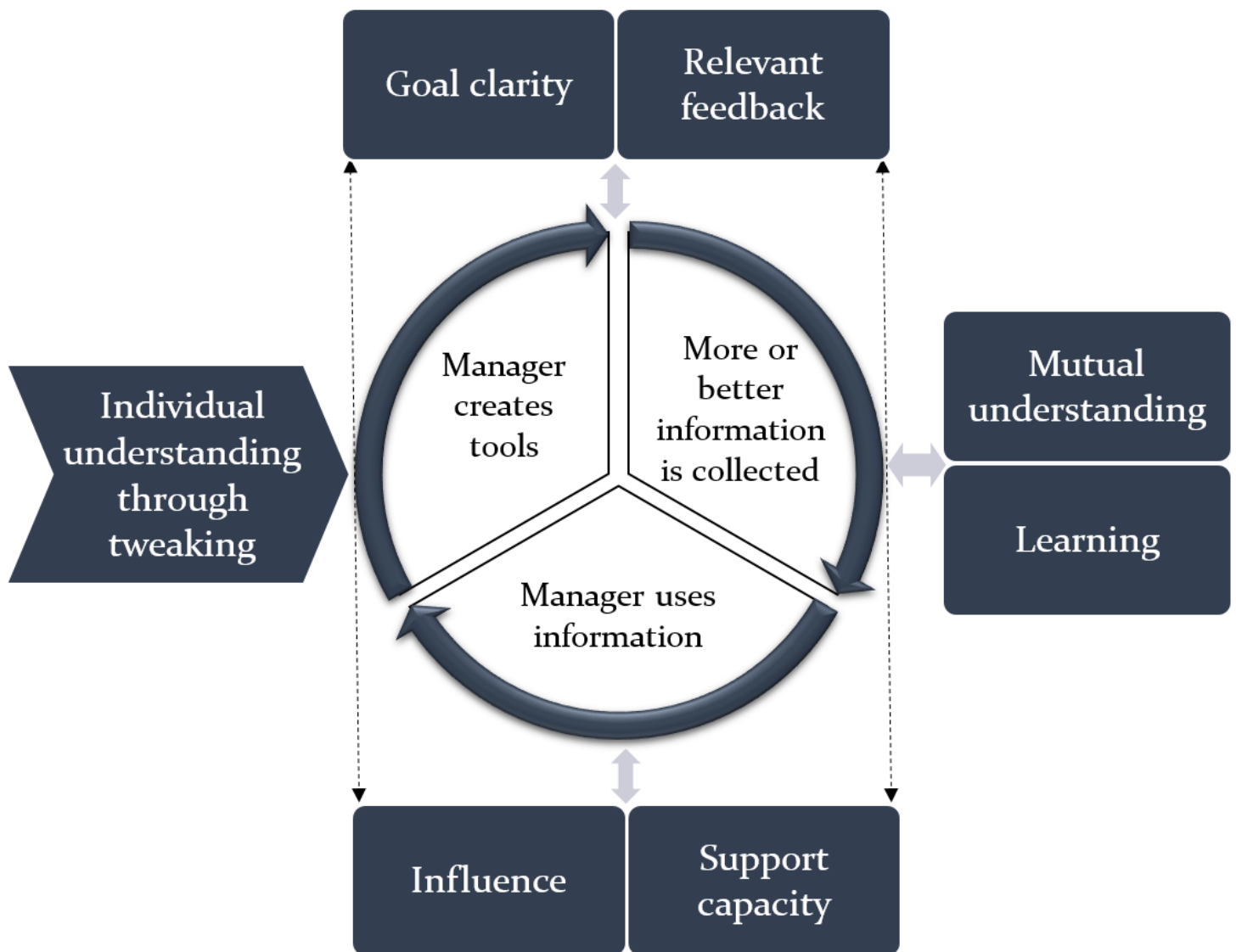
have few positive contacts based on performance management, or that rely on different performance information without connecting it strongly with the organizational indicators. Managers that create their own tools to use performance information, however, are apt at making strong connections between their needs and the needs of their subordinates and those of their superior.

It is possible to tentatively integrate the conclusions of each article into a coherent framework that capture the dynamics of performance information use. The next section provides a first attempt at a framework for building performance information capacity in public organizations.

### **Building Performance Information Capacity**

The organizational dynamics that lead to effective performance management start at the individual level, where managers use information and create new tools that help collect more or better data. At their level, it is a positive cycle that raise both the perceived and the actual value of performance information. But the personal struggle of managers with data is only a small part of the dynamic that increase the value of performance information in the organization. As a manager tweaks performance information tools, he raises his understanding of the role of data indicators in the organization. He begins to see more clearly the goals of his superiors and the relevant feedback that he can give them. At the same time, he understands better how to support his subordinates in their task and how to organize their work in a way that maximizes the accomplishment of goals. In the overall organizational dynamic, both of these relationships, with the upper and lower hierarchical levels, benefit from the same work and the same understanding by the managers of that level. Managers also encourage each other to further tweak and improve their tools. This creates a situation as follows:





**Figure 1.** Tentative framework of performance information capacity building.

Downstream, the ability to influence subordinates (which we could call leadership or control or many other things) is increased when the managers of that level better understand the goals of their superior. Similarly, it is easier to provide support when the relevant feedback is readily accessible. These capacities to use performance information depend upon the understanding of the role and value of performance information as a communication tool within the organization. And performance information, to properly frame dialogue between managers, requires a mutual understanding of the

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meaning of performance indicators and what part of the organizational reality is captured by each number.

Furthermore, on the same hierarchical level, managers that share a common understanding of the meaning of data can learn from one another. For this, they use performance results as a common ground, a foundation for the sharing of managerial practices. It is their understanding of the meaning of performance results that helps them measure the impacts of a given strategy. Performance results also convey a measure of credibility to the manager promoting an idea; moreover, savvy managers quickly realize when numbers have been gamed and an idea is only hot air. This is because managers who use performance information regularly have a better ability to identify not only what is expressed by numbers, but also what is missing from them. During performance dialogues, they know what questions to ask to find the truth of a situation. In this way, managers contribute to learning forums and discuss their respective results based on their mutual comprehension of performance information.

Performance information is, overall, a mode of communication. More than that, it is a language that managers use to communicate their needs and their efforts. As with any language, proficiency comes from practice. But performance information is not a universally codified language; there is no dictionary for it. The meaning of performance indicators depends upon the social and organizational structure that surrounds them. So the learning of the language by managers occurs simultaneously with its construction within the organization. The technical elements of the design of performance management system will affect how performance information is spoken between managers, and whether it is spoken at all.

### **Contribution to Literature**

The objective of this dissertation was to extend the knowledge in public administration research on performance management systems. In this, we make several contributions that we deem important to underline here. We believe that each article makes original contributions to public management scholarship by investigating more precisely the nature of organizational dynamics surrounding performance management and performance information use.

Our first contribution is to provide a new methodology for evaluating the overall effectiveness of a performance management system by analyzing its sustained effects on the productivity of employees. This is an improvement over the three methods commonly used in public administration research. The first, using common performance indicators, only applies to sectors where objective external performance indicators exist, such as education (Hvidman & Andersen, 2014). The second method consists of asking managers for their opinion on organizational performance (Speklé & Verbeeten, 2014), but as can be seen from our case studies, managers of different hierarchical levels may have diametrically opposed opinions on performance. Finally, many studies have explored the effectiveness of performance management systems based on whether performance information was used by managers or not (Moynihan & Pandey, 2010; Taylor, 2011; Van de Walle & Van Dooren, 2009; Wynen & Verhoest, 2016). But performance information use is a problematic variable to study; Moynihan (2009) identify four different types of use (Purposeful, Passive, Political, and Perverse) with only one having a positive organizational effect. Our method, in contrast, is objective, relies on internal data, analyzes the effect of performance indicators on the actual productivity of employees, can be used to compare organizations that use different performance indicators, can be used to compare subunits within the same organization, and evaluates not only the effect but also its sustainability and its

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uniformity within the organization. Developing better tools to analyze the efficacy of performance management systems brings us one step closer to answering the big question: Is performance management fit for the public sector (Kroll, 2015c; Moynihan & Kroll, 2016; Ossege, 2012; Poister et al., 2013; Pollitt & Dan, 2013)?

Our study of the processes that rely on performance information contributes to both the literature on the antecedents of performance information use and the literature on how performance information is used for decision-making. In a systematic literature review of the antecedents of performance information use, Kroll (2015a) identifies, among others, measurement system maturity, leadership support, support capacity, innovative culture, goal clarity, learning routines, attitudes toward performance measures, and networking as drivers of performance information use. These antecedents can all be connected to our model of performance information capacity building. In that sense, the model we propose encompasses a wide variety of dynamics that explain the motivation of managers in using performance information. The characteristics of maturity in a measurement system, such as information availability, minimization of technical problems, and stretching but achievable targets (Ammons & Rivenbark, 2008; Moynihan & Pandey, 2010; Taylor, 2009), matters greatly in the use of performance information. We go beyond that, however, to explain how managers need performance information with different characteristics at different points in the hierarchy.

Our overall theoretical contribution to the public performance management literature is to provide a better understanding of how performance information is used by managers of every hierarchical level. It is important to understand that, for any given manager, his usage of performance information will be driven by his proximal contact with other managers. He will use performance information to frame these interactions, to push his points ahead, to influence others, or to decide how to deal with a person or

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a situation. Managers are thus the product of their environment; how other managers use performance information will undoubtedly affect their own behaviour. This back and forth dynamic does not invalidate any of the organizational drivers of performance information use, but rather provide a deeper look at the cognitive behaviour of managers. In this, our research highlights the collective nature of performance information use. How managers begin to see value in performance information is part of a collective effort. How they use it is a collective behaviour. How they think about it is a collective reflection of their own struggles and that of others. Potential drivers or impediments to performance information use can be amplified by this collective behaviour. Our theory of performance information capacity building recognizes and emphasizes the social dynamic in play between managers. This offers a new perspective on the role of managers in enabling effective performance management in public organizations.

With this thesis, we also address repeated calls for more research on middle and frontline managers and their critical position in effecting performance management in organizations (Aguinis & Pierce, 2008; Berry et al., 2009; Hall, 2010; Jönsson, 1998; Kroll, 2015a; Reimer et al., 2016; Van der Stede, 2015). The critical importance of alignment for both goals and performance information is underlined by our researches. Middle and frontline managers have a unique position in the organization and bear most of the burden of translating goals and indicators to employees to create engagement, a most critical factor in performance management. Because most performance management systems are built specifically to answer the needs of top management, middle and frontline managers are expected to adapt to the new system, often without nearly enough organizational support. All of our work highlights the importance of this process of adaptation by which managers complete the alignment of the system and enable effective performance management. Our thesis contributes to

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raising awareness of the problem, and we argue that research on performance management cannot afford to neglect the role of middle and frontline managers.

## Limitations

Our work represents the sum of two detailed case studies in public organizations, albeit the focus is squarely on the first organization. Because of this, some special considerations must be taken when interpreting the results.

What we study here is a specific type of public organization that use a specific kind of performance indicators. Although we argue that these indicators are very common in the public sector, they do not apply universally. Productivity, for instance, is a good proxy for motivation in a production-focused environment, but the same situation might not apply to an organization focused on quality or human-centric services, such as health, education, or research. There is always a limited amount of information that can be gleaned from performance indicators; that is a fact that is well understood by managers in an effective performance-oriented organization. There probably is a threshold at which performance indicators can no longer provide enough information to be at the centre of managerial dialogue and interrelations. Beyond that threshold, performance information may not serve as a common language between managers, but will most likely increase tensions. As always, the theory has to be interpreted according to the specific circumstances of each organization.

The issue of generalization is always present in any theory-building endeavour. Despite the conventional wisdom, case studies can produce the best theories (Flyvbjerg, 2006). The question we have to ask ourselves is: Are the problems met by these organizations representative of the problems that public organizations generally encounter when designing, implementing, and using performance information systems? Well often, the problems that plague performance management reforms are

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social in nature: increased tensions, low morale, decline in motivation, competitive and adversarial ethos, distrust, excessive managerial power and domination (Diefenbach, 2009). There is no reason to believe these kinds of problems would be specific to an organization. But the way they can be overcome could be explained by how performance management is used and understood within the organization. As we have seen in the NEO's case, good performance management certainly correlates with the positive attitude of managers and employees toward the use of performance information systems. In this precise aspect, a degree of generalization can be expected from the cases studied.

Another issue is the methodology used to observe organizational dynamics. As the analysis of our results progressed, we became acutely aware that the development of organizational dynamics was fundamental to effective performance management. These observations came mostly from interviews with managers, and from a handful of situations that we witnessed while present in these organizations. While interviews are very useful in understanding the attitudes and perceptions of managers, direct observation could have been a better research tool to observe the interactions between managers. While their attitudes are very telling, their behaviours might be different in certain circumstances. For instance, a manager noted that employees refuse to acknowledge that they care about performance objectives, yet he once found a handwritten comment on a dashboard that was on display saying: We almost made it! Even if we did not observe organizational behaviours directly, anecdotes such as this one helped paint a comprehensive picture of the situation within each organization. Theoretical data saturation was also deemed appropriate because a number of variations around these organizational dynamics were found during interviews (Bowen, 2008). While the methodology could have allowed for a more extensive review of the

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organizations, which might have revealed other interesting dynamics, we consider that our analysis is accurate as it stands.

The cross-sectional nature of the interviews campaigns is also a limitation of this dissertation. We used as many opportunities as we could to add longitudinal elements to each paper: quantitative analysis covering periods of 5 years or thereabouts, reanalysis of old interviews conducted in the same organization, or analysis of documents stretching back many years. Still, most theory-building elements rely on interviews of managers that are cross-sectional in nature. Some non-routine aspects of performance information use may have been overlooked because managers failed to mention them. The relative importance of non-routine performance information use is hard to guess. Managers sometimes prefer non-routine performance feedback from alternative sources rather than routine performance reports (Kroll, 2013). Nevertheless, non-routine feedback does not diminish the importance of regular performance information use. If anything, there is a good chance of the two being complementary. Furthermore, given the depth of the interviews conducted, with some lasting nearly 3 hours, we consider that we have exposed most ways in which managers acquire and use performance information.

## Directions for Further Research

This thesis opens several questions on the development of a result-oriented culture in public organizations. The growing importance of performance management in the public sector also underlines the necessity to keep exploring the consequences for managers. We suggest several lines of enquiry for further research.

In this thesis, we focus heavily on individual managers' motivation in using performance information. We argue that the motivation to use performance information is dynamic and heavily influenced by the actions of surrounding managers



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and by the organizational culture, which provide a starting point for further research enquiries. By focusing on the construction of these dynamics, it is possible to design quasi-experimental research protocols that would prove useful in deconstructing the process. Of particular interest would be a natural intervention in an organization where different strategies could be tested to see if they facilitate the process of creating value and encouraging the use of performance information. Using different indicators, different objectives, different performance evaluation routines, or different degrees of managerial involvement could change the outcome in terms of how managers use performance information. Even without quasi-experimental research, studying the dynamics of how managers organize performance information using their own or organizational tools, then use this information in their interactions with other managers would provide many insights about the process of creating value through performance dialogue.

Another topic that deserves more attention is the link between accountability and learning. While we have explored those two topics independently, they appear to share a common antecedent in that they both require managers to perceive performance information as credible in order to be effective. Although we argue that the credibility of performance data comes from its use, other scholars have argued that accountability reduces the credibility of performance data and is incompatible with organizational learning (Hoffmann & Van Dooren, 2015). This incompatibility is due to the fact that accountability mechanisms lead to an increase in avoidance and manipulation strategies, and thus, less reliable and meaningful data. We surmise that this point of view could be reconciled with ours with additional work on the processes by which performance information gains credibility in the eyes of managers. Can the process of accountability be used to raise the credibility of data? Does it involve a special way to

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handle the evaluation process? Must accountability and learning remain separate processes for them to be effective? Further work is required to answer these questions.

On a related note, there remains many questions about the mechanisms of performance dialogue and how they can influence performance information use (Laihonen & Mäntylä, 2017). One observation reported in our thesis is that performance management can and should be a positive interaction for managers, but this notion was not explored in detail. Leveraging occasions for performance dialogue, including learning forums and evaluations, can raise interest in performance information use by creating a need to participate in collaborative sense-making. Performance dialogue helps managers to acquire a more inclusive understanding of performance. How these dialogues occur, how they are organized, and how they are arbitrated will affect what value managers get from them, collectively and individually. The mechanisms of any exchange that leverages targets and performance indicators are relevant to increase performance information use and should be studied in further research.

Finally, more conceptualization is needed on the subject of management controls to differentiate between 'good' and 'bad' controls. Management accounting research use concepts like complementarity and substitution to classify the value of interrelated controls, but these concepts are limited (Greve, 2016; van der Kolk, van Veen-Dirks, & ter Bogt, 2016). A better conceptualization that integrates other empirically observable dynamics is needed. Controls can be complements, they can substitute one another, but they can also be independent, or they can coexist awkwardly and diminish each other's efficacy. A more practical and empirically supported conceptualization would prove a boon to further research on how the technical and social characteristics of performance management systems affect their efficacy in public organizations. As well, it could provide a framework that is easier to understand and closer to the practical

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considerations of managers, for both the design and use of performance management systems.

Performance management has been called the defining contemporary challenge facing public organizations. While we cannot pretend to elucidate all its mysteries, we hope to have provided solid evidence for a better comprehension of the social underpinnings of performance management. We believe that these articles contribute to the existing literature, offer new perspectives on the issues, and provide a coherent overview of the dynamics that surround performance information in public organizations. It has long been known in public administration that performance management was there to stay, warts and all, because its potential was just too great to ignore. Hopeful, this research and many others will provide insights for managers on how to strive for effective performance management in their organizations.

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## Appendix A

**Table A1**

Regressions between variation (first-order difference) in productivity and indicator scores with controls (not shown), by activity, for individual offices at the NEO

Office	Admissibility	Career interruption	Certificate delivery	Litigation	Verification
Office 1	-0.43*	0.10	0.05	-0.15	-0.55***
Office 2	-0.25	-0.12	-0.05	-0.04	-0.67***
Office 3	-0.55+	-0.26**	-0.18	-0.15	-0.47*
Office 4	-0.49***	0.17	0.33*	-0.17+	-1.05***
Office 5	-0.16	-0.50	0.24	-0.09	-0.42*
Office 6	-0.26+	-0.82**	0.10	-0.22	-0.35
Office 7	-0.47***	-0.09	-0.08	0.09	-0.71***
Office 8	-0.54**	-0.12	-0.19	-0.13	-0.84***
Office 9	-0.41*	0.07	-0.24	-0.14	-0.46**
Office 10	-0.59***	0.12	-0.01	-0.11	-0.43**
Office 11	-0.45*	0.08	-0.22	-0.10	-0.78***
Office 12	-0.37**	0.08	-0.09	-0.14	-0.42*
Office 13	-0.36*	0.18	0.09	-0.30	-0.57**
Office 14	-0.51*	0.71*	-0.47	0.06	-0.45**
Office 15	-0.42*	-0.30	0.05	0.13	-0.65***
Office 16	-0.64***	-0.03	0.01	-0.01	-0.65***
Office 17	-0.54***	0.38+	0.13	-0.16	-0.68**
Office 18	-0.61*	-0.15	-0.02	-0.11	-0.65**
Office 19	-0.46**	-0.06	-0.03	-0.09	-0.61***
Office 20	-0.84***	-0.12	0.05	0.15	-0.82***
Office 21	-0.53**	-0.01	-0.24+	-0.24	-0.59**
Office 22	-0.32*	-0.20	-0.12	-0.09	-0.72***
Office 23	-0.24**	0.11	0.10	0.21	-0.66***
Office 24	-0.41**	0.15	0.07	0.07	-0.37
Office 25	-0.48+	0.26	-0.08	-0.15	-0.80***
Office 26	-0.47**	0.10	-0.24	-0.20	-0.57**
Office 27	-0.73**	-0.14	-0.36+	-0.21	-0.69***
Office 28	-0.40**	-0.09	-0.28**	-0.08	-0.69**
Office 29	-0.53**	-0.11	0.02	-0.06	-0.47+
Office 30	-0.36*	0.10	0.38+	-0.18**	-0.58**
<b>Significant negative correlation</b>	<b>28</b>	<b>2</b>	<b>3</b>	<b>2</b>	<b>28</b>
<b>Significant positive correlation</b>	<b>0</b>	<b>2</b>	<b>2</b>	<b>0</b>	<b>0</b>

+ p<.10 \* p<.05 \*\* p<.01 \*\*\* p<.001

## Appendix A

**Table A2**

Regressions between variation (first-order difference) in productivity and indicator scores with controls (not shown), by activity, for individual offices at the MRO

Office	Mortgage certificates	Mortgage formalities
Office 1	-0.03	0.28
Office 2	0.77	-0.47
Office 3	-0.16	-0.42
Office 4	-0.43	-0.04
Office 5	-0.10	-0.82+
Office 6	0.74	1.75**
Office 7	-0.11	0.69
Office 8	0.98	1.42**
Office 9	-0.36	0.40
Office 10	-0.19	1.33
Office 11	0.28	-0.46
Office 12	-0.20	-0.35
Office 13	-0.55	-2.52***
Office 14	0.66+	0.08
Office 15	0.14	0.65+
Office 16	-0.40	0.15
Office 17	-1.23*	0.09
Office 18	-0.33	-0.64
Office 19	0.32	-0.30
Office 20	-0.04	0.04
Office 21	0.33	0.52
Office 22	-0.35	0.48
Office 23	-0.29	0.51
Office 24	0.43	0.41
Office 25	0.93**	0.47*
Office 26	-0.46	1.53+
Office 27	0.20	0.05
Office 28	0.53	0.20
Office 29	0.46	0.55
Office 30	2.02*	-0.17
Office 31	-0.15	-0.22
Office 32	0.50	0.46
Office 33	1.32+	0.01
Office 34	0.17	-0.56
Office 35	-0.21	0.48+
Office 36	0.56	0.53
Office 37	0.23	-0.56
Office 38	0.42+	0.47
Office 39	0.50	0.14
Office 40	0.39	0.01
Office 41	0.37	-0.29
Office 42	-2.57+	-0.48
Office 43	0.86*	-0.57
Office 44	0.26	-0.40
Office 45	0.02	1.63*
Office 46	0.43	0.71
Office 47	-0.06	0.77
Office 48	0.21	0.54
Significant negative correlation	2	2
Significant positive correlation	6	7

+ p<.10 \* p<.05 \*\* p<.01 \*\*\* p<.001

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## Appendix B

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### Interview guide (translated from French)

1. Use of performance indicators
  - a. First, can you describe to me your responsibilities here?
  - b. To paint a picture of how you use performance indicators in your work, can you describe in general how you approach performance indicators?
  - c. (List the different methods to highlight all aspects of its use of indicators)  
Do you / How do you use: monthly dashboard reports; information requests; personal performance management tools; other?
  - d. At what frequency? Every day? Every week? Are there indicators for which you would like more frequent reports than what exists?
  - e. Do you have performance goals for your employees? Do you track their individual productivity? Do you have productivity goals for them? How do you manage productivity gaps between your employees?
  - f. Do you use performance indicators to encourage your employees to be more productive? To be more efficient?
  - g. How do you encourage your employees to always reach organizational objectives? What are the key elements of your performance management?
  - h. Do you set higher goals internally to make sure you meet the objectives that you get from top management?
  - i. Personally, how comfortable do you feel at managing using numbers? Are you comfortable looking for data in databases, processing, analyzing and understanding them? When you look for a piece of information, do you prefer to have the figures attached to it, or do you prefer to have someone explain the situation?
2. Opinion on the performance management system
  - a. Do you find that the indicators (discussed above) reflect the reality of your office? Do you think that more indicators would be needed to complete the overall picture? Which ones?
  - b. On the contrary, are there indicators that have become obsolete over time and are useless now?
  - c. Have you ever witnessed errors or clumsiness in the use of indicators?

## Appendix B

- d. Have you ever been surprised by some of the results you have received from your superior?
  - e. Are you aware of weaknesses in some indicators or elements that reduce their reliability?
  - f. If you ever leave your job here and find yourself managing at another large organization or company, would you implement a similar management system? What elements would you keep? What elements would you remove?
3. Changes in the performance management system (For MRO only)
- a. Could you describe to me how your work has changed with the structural reorganization? And with the implementation of the new computer systems?
  - b. Have your priorities been changed by these events? The priorities of your superiors?
  - c. Have you changed the way you manage your employees because of these events? Did your immediate supervisor change his way of managing following these events?
  - d. Has the information you receive or use changed with these events? Or with time?

## Appendix C

**Table C1**

Interviews' coding grid.

<b>Codes</b>	<b>Coding rules or Examples</b>
Theme	Objectives Management Performance information use Relationships
Sub-theme 1	Dashboards Evaluations Hierarchical relations Lateral collaboration
Sub-theme 2	The numbers do not agree with our reality We lack information to properly manage employees Numbers are too important for our bosses We use complementary objectives to sidestep problems We use numbers to explain the situation / to argue
Additional notes	Productivity Tool creation
Topic covered	Performance / General management / IT systems / Others
Opinion of interviewee	Positive / Negative / Neutral / Ambiguous

### **Revised Levers of Control Framework\***

Lever of control used	Dashboard indicators / objectives Performance dialogue with bosses / employees Work distribution according to objective conditions Building team spirit
Social	Yes/No
Technical	Yes/No
Strategic	Yes/No
Operational	Yes/No
Boundary	Yes/No
Performance	Yes/No
Interactive	Yes/No
Diagnostic	Yes/No
Enabling	Yes/No
Constraining	Yes/No
Reward	Yes/No
Punishment	Yes/No
Controlee's opinion**	Positive / Negative / Neutral

### **General Information and Context**

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Relevant activities	According to each organization
Hierarchical level	Frontline / Coordinator / Director / Top management
Office	According to each organization

#### Notes:

\* Each comment was coded independently according to what part of the framework was relevant. The lever of control “Building team spirit” was, for example, usually coded as: Social – Strategic – Operational – Performance – Enabling – Controlee’s opinion: Positive, but was also Technical in those instances where the manager used team objectives to raise team spirit.

\*\* Controlee’s opinion was only coded in the rare instances where the interviewee mentioned what his subordinates thought of that lever of control.