



## The use of performance measurement information in the work of middle managers

### Citation

Jääskeläinen, A., & Luukkanen, N. (2017). The use of performance measurement information in the work of middle managers. *International Journal of Productivity and Performance Management*, 66(4), 479-499. <https://doi.org/10.1108/IJPPM-02-2016-0043>

### Year

2017

### Version

Early version (pre-print)

### Link to publication

[TUTCRIS Portal \(http://www.tut.fi/tutcris\)](http://www.tut.fi/tutcris)

### Published in

International Journal of Productivity and Performance Management

### DOI

[10.1108/IJPPM-02-2016-0043](https://doi.org/10.1108/IJPPM-02-2016-0043)

### Take down policy

If you believe that this document breaches copyright, please contact [cris.tau@tuni.fi](mailto:cris.tau@tuni.fi), and we will remove access to the work immediately and investigate your claim.

# Understanding how performance measurement is utilized by middle managers

## Abstract:

**Purpose** - The aim of this study is to investigate in-depth how the managerial processes involving middle managers are affected by performance measurement information. More specifically the study gives understanding on the impact of performance measures, policies and procedures (formal controls); and individual intuition and experiential knowledge (informal controls) on the work of middle managers.

**Design/methodology/approach** - The study is carried out as a semi-structured interview study in Finnish companies representing five industries and 29 interviewees. Empirical data was analyzed deductively according to the research framework combining informal and formal management controls with two managerial processes: strategy implementation and decision-making.

**Findings** – It was found that the work of middle managers is clearly affected by informal controls. Much of the managerial work relies on intuition and individual experience instead of performance information or formal instructions. The study also unveiled that top management sees the status of utilizing performance measurement information in a more positive light than do middle managers.

**Research limitations/implications** – This study examined the work of middle managers widely in different positions and industries which means that the findings are rather explorative. Further, more focused research is required in order to understand better the contextual causes of the findings and to provide more understanding on the appropriate ways of improving the utilization of performance measurement information.

**Practical implications** – The practical contribution of this study is in the detailed description of strategy implementation and decision-making processes based on observations in several large companies representing different industries. Through this description, this study unveils possible improvement areas regarding the utilization performance information in middle management.

**Originality/value** – This study contributes to the earlier literature on performance management by highlighting the usage of performance measurement information as opposed to developing new measures. In addition, the novelty value of the paper relates to the focus in the work of middle managers which has gained less attention in the previous research.

**Keywords** - decision-making, interview study, management control, performance information, performance management, strategy implementation

**Paper Type** - Research Paper

## 1. Introduction

Performance measurement is often promoted as a facilitator of strategy implementation, budget monitoring, reporting, decision making, and information provision in general (Axson 1999; Amaratunga and Baldry 2002; Bititci et al. 2011; Merchant and Van der Stede 2012). However, the potential of performance measurement is still rarely materialized in practice (Bourne et al. 2005). It has been observed that problems often occur in the utilization of performance information (Nudurupati et al. 2011) and are not necessarily caused by the validity of measures in itself. Measurement systems do not work in a vacuum since both formal and informal managerial practices affect the usage of such systems. This study highlights the less studied perspective of middle managers using measurement systems (Wouters 2009). This

viewpoint is also interesting since the role of different management controls in more defined operative managerial tasks has gained less attention (Hansen et al. 2003; Henri 2012; Libby and Lindsay 2010).

This research concentrates on two tasks of middle managers: strategy implementation and decision-making. One of the important managerial tasks utilizing performance measurement is strategy implementation (Atkinson, 2006). Academic literature on strategy implementation is limited (Aaltonen and Ikävalko, 2002; Atkinson, 2006; Noble, 1999). It has also been perceived that many employees do not understand their company strategy (Kaplan and Norton, 2005). While the role of middle managers has been widely acknowledged in strategy implementation (Aaltonen and Ikävalko, 2002; Noble, 1999), many existing studies have emphasized formal budget controls (Marginson, 2002; Noble, 1999) focusing on upper organizational levels and traditional top-down communication. It is notable that performance measurement can also be used in making decisions supporting the formulation of new ideas. This can be related to the second strategic role of middle management (cf. Wooldridge and Floyd, 1990), namely improving the quality of decisions.

*The aim of this study is to investigate in-depth how the managerial processes involving middle managers are affected by performance measurement information.* The complementing role of formal and informal controls is one of the motivators for the analysis of this study. More specifically the study gives understanding on how performance measures, policies and procedures (formal controls); and individual intuition and experiential knowledge (informal controls) impact on the work of middle managers. The starting point of this study highlights performance measurement, which is commonly seen as essential part of management controls (Fisher 1998; Simons 1995; Merchant and Van der Stede 2012). Earlier research often characterizes performance measurement systems in relation to formal types of control mechanisms (Nørreklit 2003). However, there are not many studies investigating many types of controls simultaneously (Chenhall 2003; Malmi and Brown 2008; Tessier and Otley 2012). The role of middle managers is seen broadly in this study. It is related to the location of managers below top managers and above first-level supervision in the hierarchy. In addition to the place in the hierarchy, this study sees the role of middle managers as a mediator between the organization's strategy and daily activities requiring knowledge of operations as presented by Wooldridge (2008). The study is carried out as an interview study in Finnish companies. Qualitative research enables the in-depth examination of operative managerial practices and understanding of the varying roles of informal controls. Twenty-nine interviews were carried out in five different industries. Three top managers were also interviewed in order to identify potentially contrasting views on prevailing control mechanisms.

The paper is structured as follows. The next section reviews the literature on the chosen two managerial tasks: strategy implementation and decision-making. It continues by examining the literature on management control in order to identify the perspectives of analysis for the empirical study. Third section explains the empirical methods used and presents the main results of the study, namely the analysis of factors affecting the middle managerial use of performance measurement. The paper ends with discussion and conclusions.

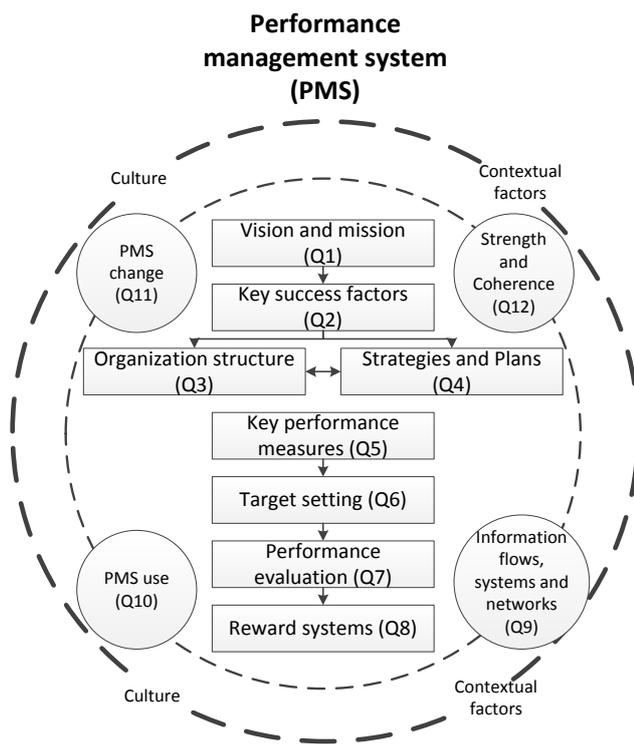
## 2. Literature review

### 2.1. Processes for implementing strategy and making decisions

Several studies have been carried out investigating the role of middle managers in strategy (Wooldridge and Floyd, 1990). During the recent 25 years, the strategy process research has been expanded to comprise not only top managers but also middle managers whose activities and behaviors have an important impact on how strategy forms within organizations (Wooldridge et al., 2008). Middle managers should not only be passive recipients of top-down communication, but also active interpreters, mediators and intermediaries in implementing strategic changes (Shi et al., 2009). The literature has also acknowledged the role of middle managers in selling concerns and having upward influence on upper managerial levels (Wooldridge et al., 2008). This study concentrates on the role of middle managers in implementing strategy through performance management process. It also examines middle managers' role in decision-making potentially supporting the improvement of quality of strategies.

Annual or otherwise repetitive processes characterize the work of any manager and they are useful for studying strategy implementation and decision-making regardless of the context. Such processes have been presented, e.g. in the literature on *strategy implementation* (Aaltonen and Ikävalko, 2002). In their study exploring the role of formal control systems in strategy implementation, Daft and Macintosh (1984) defined a three-phase cycle including: (1) planning a target or standard of performance; (2) monitoring or measuring activities; and (3) implementing corrections if targets or standards are not being achieved. Many of the existing performance management models (see e.g. Ferreira and Otley, 2009) also include similar phases.

*Performance management* models have been introduced to emphasize management by measures (Broadbent and Laughlin 2009; Ferreira and Otley 2009). Performance management models are typically presented in a process-oriented way to support the development of performance measurement and management systems. Ferreira and Otley (2009) present a process model with numbered questions (12 in total) starting from constructing a PMS based on strategy, mission, and vision (Figure 1). When looking at the actual process of managing by measures, questions six and seven, including setting targets and monitoring their achievement are the most interesting. These two tasks are intrinsic in the literature on performance management (Bourne et al. 2000; Neely et al. 2000).



**Figure 1 Performance management systems framework (Ferreira and Otley, 2009)**

Bourne et al. (2005), on the other hand, distinguish the following process-like steps in using measurement information in management: gathering information, analysis, interpretation and evaluation, communication, offering information, decision-making, and decision implementation. These steps resemble the information management cycle by Choo (2002) and are slightly different from the model by Ferreira and Otley. Decision-making is presented as a discrete managerial task.

*Decision-making* also constitutes a separate research topic. Studies have been presented differentiating various decisions (Nutt 1998; Snowden and Boone 2007) and analyzing factors influencing decision-making (Goll and Rasheed 1997). Various approaches to making decisions among specified options have likewise been presented (Mintzberg et al. 1976). Decision-making has also been modeled as a process. Most of the models (Fredrickson 1984; Schwenk 1984) include three identifiable phases: problem identification (or setting the vision), creating options, evaluating options and choosing an option. The use of process-models characterizes rational and analytical approach to decision-making (Fredrickson 1984).

## 2.2. Formal and informal forms of management control

Management controls have been studied for decades and there is considerable number of different kinds of classifications and models have been presented on management controls. As a result, there are many related and partly overlapping ways of classifying and presenting the different forms of controls. Typically used characterizations of management controls are twofold including (Auzair & Langfield-Smith 2005; Chenhall, 2003):

- Action/results controls

- Formal/informal controls
- Tight/loose controls
- Restricted/flexible controls
- Impersonal/interpersonal controls
- Mechanistic/organic controls

In this study the separation between formal and informal is used to characterize the twofold characteristics inherent in many of the earlier control classifications. According to Maciarello and Kirby (1994), formal controls consists of purposefully designed and explicit structures, routines, procedures and processes supporting managers in monitoring that organizational strategies are implemented. In turn, informal controls include personal, cultural and social controls (Chenhall, 2003). Informal controls also include traditions and ceremonial controls (Ouchi, 1979).

The interest of management control system (MCS) research has been increasingly shifted from the mere examination of formal controls into understanding of informal controls including much broader scope of information than merely financially quantifiable information (Chenhall, 2003). The importance of informal forms of control including the actions of individuals has been widely acknowledged (Collier 2005; Malmi & Brown 2008). More sociological or informal approach regards MCSs as a means to activate individuals to achieve their own ends as opposed to the conventional perception of MCSs as passive tools providing information to managers (Chenhall, 2003). Earlier management control research was often carried out on individual controls or practices (Merchant and Van der Stede 2012). However, informal and formal controls take typically place at the same time. For example, the use of performance measurement systems (PMS) comprises an essential control mechanism as such but also relates many other controls such as cultural controls. Increased research interest has been laid in comprehensive control systems and interconnections between different controls (Amaratunga and Baldry 2002; Collier 2005; Malmi and Brown 2008).

Existing MCS literature provides a few frameworks intended to give an overall picture on the linkages between controls and support in constructing management systems. These frameworks have their own specific characteristics but also similar or overlapping perspectives. Probably the most commonly known framework is the levers of control by Simons (1995). It divides MCS into diagnostic control, interactive control, beliefs systems, and boundary systems. The object-of-control framework by Merchant and Van Der Stede (2012) divides controls depending on which objects are to be affected. It distinguishes results controls, action controls, personnel controls, and cultural controls. Results controls influence actions or decisions of personnel because they cause employees to be concerned about the consequences of their actions or decisions. Action controls involves ensuring that employees perform (or do not perform) certain actions known to be beneficial (or harmful) to the organization. Personnel and cultural controls are implemented to encourage either or both of two positive forces that are normally present in organizations, namely self-monitoring and reciprocal monitoring. The model by Malmi and Brown (2008) comprises five types of controls. First, planning controls set out the goals of the functional areas of the organization and direct effort. Second, there are four basic cybernetic systems: budgets, financial measures, non-financial measures, and hybrids including both financial and non-financial measures. Third, reward and compensation controls focus on motivating and improving the performance of individuals and groups by including rewards to control effort direction, effort duration, and effort intensity. Fourth, administrative controls direct employee behavior by organizing individuals and groups, monitoring behavior and to whom employees are made

accountable for their behavior, and the process of specifying how tasks or behaviors are to be performed. Fifth, cultural controls include the values, beliefs, and social norms established to influence employees' behavior.

Table 1 presents an interpretation combining the twofold characterization of controls into formal and informal controls and the more comprehensive models aiming at capturing the interconnections between different controls. Most of the MCS model authors do not explicitly mention the nature of the presented controls but it is interesting to see that both formal and informal controls are clearly visible in the models while the former still have a more dominant role. In this study, the interest is in understanding the joint role of formal and informal controls in middle managerial processes.

**Table 1 Characteristics the controls in the MCS models**

<b>Elements as presented in the MCS models</b>	<b>Nature of control</b>
Diagnostics controls (Simons, 1995) Cybernetic controls (Malmi and Brown, 2008) Results controls (Merchant and Van Der Stede, 2012) Reward controls (Malmi and Brown, 2008) (extrinsic vs. intrinsic) Action control (Merchant and Van Der Stede, 2012) Boundary systems (Simons, 1995) Administrative controls (Malmi and Brown, 2008)	More formal
Interactive controls (Simons, 1995) Planning controls (Malmi and Brown, 2008) Personnel controls (Merchant and Van Der Stede, 2012) Beliefs systems (Simons, 1995) Cultural controls (Malmi and Brown, 2008; Merchant and Van Der Stede, 2012)	More informal

### **2.3. Management controls in strategy implementation and decision-making**

Different challenges regarding strategy implementation have been identified (Atkinson, 2006) many of which are cultural and behavioral in nature (Aaltonen and Ikävalko, 2002). One of the commonly mentioned problems relates to poor communication. Typically top-down communication is used, while informal communication has been perceived as more important than formal communication (Aaltonen and Ikävalko, 2002). Also challenges regarding co-ordinated target setting at various organizational levels have been identified (Aaltonen and Ikävalko, 2002; Atkinson, 2006).

Earlier research has presented that the nature of control systems in strategy implementation is an important research question and that informal controls are often desirable (Noble, 1999). Atkinson (2006) highlights the importance of performance measurement systems in engaging middle managers to the strategy implementation process. Also rewarding, typically requiring some sort of performance measures can support in the successful implementation of strategy (Aaltonen and Ikävalko, 2002). Marginson (2002) studied the effect of management controls on strategy formation at middle managerial levels. It was found that middle managers behave according to their perception of their role (e.g. line responsibilities vs. boundary-spanning role) within the organization. This perception was affected by administrative controls in use. Also the number and types of performance measures were found to have an influence on development of strategic initiatives. Marginson presented that beliefs or value systems can be used as instruments for strategic change and that administrative controls may be useful in implementing strategy at multiple organizational levels. He also proposed that value systems may undermine the role of performance measurement systems.

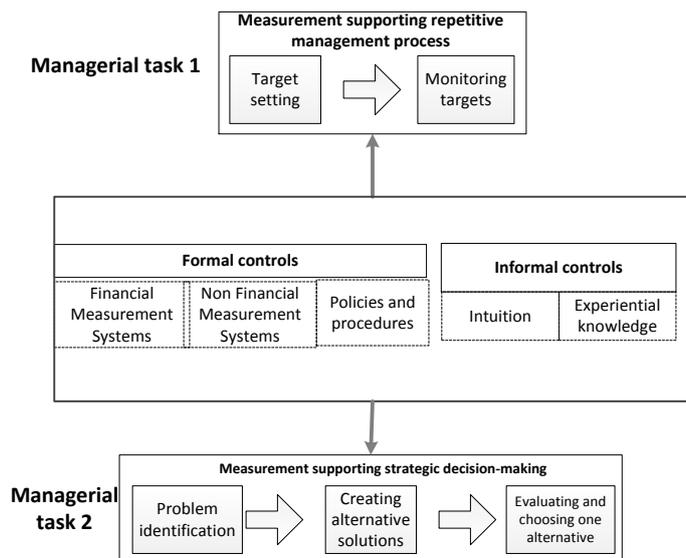
This is a working paper version of the study. The final version is published in *International Journal of Productivity and Performance Management*, Vol. 66, No. 4, pp. 479-499 available at: <http://dx.doi.org/10.1108/IJPPM-02-2016-0043>

There are scarce studies investigating the role of different controls on decision-making. One reason may be that decision supporting systems (e.g. management accounting systems) and management control systems (MCS) are separated by some authors (e.g. Malmi and Brown, 2008). However, when decision preparation process is considered it is obvious that many different controls can affect the process. In general, decision-making has been examined extensively in the literature and it is also very commonly related to performance measurement (Bititci et al. 2011). There is a lack of research especially on the processes of analyzing, interpreting, and implementing performance information in decision-making (Hall 2010). An interesting question of the previous literature has related to the differences between rational (or formally informed) and intuitive (or informally informed) decision-making. Mintzberg et al. (1976) distinguish judgment, bargaining and analysis approaches towards decision-making. Judgment is used when decision-makers apply their intuition to select courses of action without explaining (or being able to explain) their reasoning or rationale. Bargaining or compromising searches for a decision to reach a consensus. Decision-making based on factual information can be regarded as analysis. While many earlier studies on decision-making emphasized rational decision-making, the role of intuition has gained increasing attention (Khatri and Ng, 2000). High interest has been laid on the combination of analytical approach and intuition in decision-making laying ground for research combining different types of controls impacting on decision-making.

There are a limited number of studies on management controls affecting strategy implementation and decision-making. There is still a need for a more balanced approach combining different controls and highlighting the middle managerial level. The empirical part of this study intends to elaborate the findings of above-reviewed studies and identify prevailing status and challenges of practices in the two managerial processes.

#### **2.4. Constructing the research framework**

Figure 2 presents the research framework upon which the empirical study and interview structure are constructed. The framework has two key components: managerial processes and perspectives of management control, which interconnect the distinguishable research areas of strategy implementation, decision-making, and management control. The main idea is to study the nature and impact of controls in two managerial processes. The first process considers strategy implementation as an annual or otherwise recurring management process. The process approach is suitable for investigating the research objective, since similar processes occur in any organization regardless of the industry and more specific managerial issues. Since operative managerial tasks are very diverse, the process approach is deemed to enable a more generally applicable exploration of the work of middle managers. The second managerial task is decision-making, which is also studied as a process similar to those examined in the literature. It includes problem identification, creating optional solutions, and finally evaluating and choosing one solution for implementation.



**Figure 2** Research framework

The second main component of the framework is built upon formal and informal controls. Formal controls are examined from the perspectives of financial and non-financial performance measurement and formal policies and procedures supportive of managerial practices. Policies and procedures influence management controls systems but they have not gained the deserved attention in the previous literature (Henri 2012). Informal controls are studied from the perspective of middle managers' own intuition and experiential tacit knowledge utilized in the chosen managerial tasks.

### 3. Interview study

#### 3.1. Research methods and empirical data

The empirical part of the paper was carried out as a semi-structured interview study. Two-phase testing was done on the interview structure. Research colleagues were utilized in the first phase, which led to reformulating some of the questions as well as re-ordering the questions. Secondly, two pilot interviews were conducted with the intended target group of managers. This facilitated the actual interview process since functional ways of eliciting appropriate answers to the issues of interest were learned. The final version of the interview consisted of 20 questions. In addition to five background questions, there were 15 questions which are better clarified in the Appendix.

Purposive sampling was used to identify 29 people, who were interviewed individually in spring 2014. The duration of one interview was approximately one hour. The Finnish companies studied all employed more than 150 people, since it was assumed that in smaller organizations managerial practices are possibly not systematic enough to investigate the research objective at hand. Respondents mainly represented middle management (21), since it was assumed that this particular group has the most critical view of the issue and since most of the literature so far has concentrated on the views of top managers (Grafton et al., 2010). To obtain a balanced view of the research issue, three upper managers and five experts were interviewed. These experts typically represented information providers and were also assumed to have a critical view on the issue. Four different industries were studied in order to obtain more generally applicable results and to find out whether there are differences between some specific industries. Table 2 illustrates the distribution of respondents in relation to different industries.

**Table 2.** Respondent numbers representing different industries

Industry	Number of respondents
Industrial production	11
Infrastructural services	6
Bank and insurance services	4
Retail services	4
Logistical services	4

The interviews were taped and transcribed. Empirical data was classified deductively by the authors with the method of classification (Bryman and Bell 2007) as regards the research framework and contextual factors, i.e., industry and respondent's position therein. The analysis was based on the assessment of both authors.

## 3.2. Results and discussion

### 3.2.1. Overview of performance measurement information utilization

At the beginning of each interview, respondents were asked to name functional practices supporting the utilization of performance measurement information. There were two clear areas to which most of the practices can be related to. The first of these is *strategy steering and communication*. Respondents representing middle management typically described practices related to strategic steering and communication. The following citation exemplifies the practices reported:

“In a situation where our sales function is lagging behind targets and we strive to reach sales targets before the change of quartile and month, we typically ask sales personnel about the possibilities of close deals earlier.” / Middle manager, industrial production

Almost all the respondent groups reported functional practices supporting the *identification of different kinds of deviations*. It is noteworthy that observing deviations from standards is probably one of the most traditional ways of using performance information and at the core of cybernetic controls. Analysis of deviations from the budget was the most commonly mentioned aspect of the issue. Some respondents further explained practices through which observed deviations were discussed in order to identify concrete development targets. Overall, it appeared that this managerial purpose of performance measurement information is the most widely and systematically utilized.

The most commonly mentioned problem complicating performance measurement information utilization was linked to combining information from different sources. This was most apparent in industrial production and retailing services. One of the biggest problems was that the same *information appears differently in different information systems*. Information systems were often blamed for not providing information in a usable format. Information was also criticized for being fragmentary. *Lack of proper analysis* was also highlighted and this was most apparent in companies representing industrial production. This is how one of the respondents described the problem:

“Analysis of the root cause of deviations is an issue that should be emphasized more. Currently, we collect different kinds of subjective explanations in order to explain our failures” / upper manager, industrial production

It was also deemed problematic that faulty analysis led to an instruction to run faster without properly understanding what should be improved. The third issue was probably the most interesting or at least surprising. There is *no permission to use the information gathered*. This was mentioned most often by middle management representing retailing services. The bonus cards of retail customers collect many kinds of information regarding buying habits. However, the legislation does not allow the utilization of this information, for example in targeted marketing. Therefore much of the information available is not utilized at all. Moreover, certain information regarding the performance of individuals was not permitted to be used, even though there were no legal constraints. The organizational practices and culture remained at a more collective level and performance monitoring of individuals was not favored.

### **3.2.2. Management control in the strategy implementation**

Most of the respondents identified elements of strategy implementation process in their organizations. *Target setting* was an essential aspect which was discussed first. All respondents identified the common process in which targets are set according to the strategy. As expected, top managers described how targets are set through budgeting and the strategy process and how these targets are implemented at the operative levels. Middle managers typically commented that upper level targets are utilized as background information and it is their duty to deliver targets downwards to operating units. An expert representing industrial services gave a typical description of implementing company level targets:

“Major targets, such as sales targets and supply targets come from the consolidated corporation almost as a dictation. Of course there is a certain level of discussion between top management and middle management. Development projects regarding, for example customer satisfaction, are a way to split the broader targets into smaller parts and to implement them. Development projects include our own targets which are communicated to the top management to be approved. In a way they are solution ideas to the targets coming from the upper managerial level.”

Prevailing practices seemed to vary between industries. Banking and insurance services had the most systematic and formal processes for strategy implementation. All respondents in that sector reported that targets are disseminated with clear instructions downwards all the way to the level of individual employees. A more common answer in other sectors was that middle managers and experts reported a lack of any instructions or documents supporting target setting. In contrast, top managers regarded target setting as well instructed and approached it from the budgeting perspective. As a top manager representing industrial services described:

“Budgeting process is very formal and we have written instructions to it. It is a milestone-driven operation which has defined milestones and workshops between the milestones.”

However, top managers also acknowledged that only budget frames are communicated downwards. Middle managers in industrial services reported a need for better instructions for target setting. The validity of targets was questioned. One of the respondents also mentioned the lack of acceptance policy for middle managerial level targets.

Most respondents reported that performance measurement information affects target setting at least to some extent. However, the information (e.g. sales estimates) utilized appeared unilateral and budget-oriented in many cases. In addition, the use of performance information was not systematic and clearly defined in policies and procedures. Many respondents described their target setting practices as follows: “We analyze historical performance information in order to identify a broad range for targets and the fine-tuning of targets is done according to the experience and intuition of individuals.” Middle managers proposed targets and someone at the higher level either approved or changed the target. One of the respondents noted that:

“Targets may be based on the subjective views of individuals. Sometimes (e.g. in investments) target values are driven by the objective to get the decision through.” / middle manager, infrastructural service

One fifth of the respondents mentioned that target setting was not systematic and that targets were provided to them by others. These operative level personnel were often unsure how or where targets came from. A few respondents reported that (financial) targets were set through a very simple budget-based division. In this case it was unclear how such targets took account of performance potential. Generally, many of the middle managers and experts noted that those setting targets were often different than those responsible for achieving them. They criticized communication between the two parties for being very limited. Consequently, the principle for setting targets was often unclear.

Top managers described *the monitoring of targets* as formal and well instructed: “Financial numbers are gone through once a month in the board meetings.” The task appeared much more unclear at the middle managerial level. Half of the middle managers and all the experts interviewed mentioned that their organization had no official policies or procedures for target monitoring at the operative level. However, these respondents also mentioned that they had their own informal practices for the task. Monthly meetings were often utilized as a discussion forum. However, one middle manager representing retailing services criticized that monthly meetings were not properly instructed to repeatedly facilitate communication regarding results. The banking and insurance sector was again an exception where middle managers appeared to have more formal procedures for monitoring targets. This is a summary of practices described by one of the respondents:

“We follow certain sales numbers weekly. These numbers are available at the level of individual employees. Results are gone through at the white board one hour before the bank opens its doors. There is also meeting directing the work of sales personnel once a month. Profitability of key customers is monitored. In addition, broader targets are gone through quarterly with a specific group of people.”

According to most of the interviewees, performance measurement information had a clear role in monitoring targets. Budgets, reports, and balanced scorecards were the most commonly mentioned sources of information. Middle managers appeared to have freedom to decide what measures should be utilized to monitor the achievement of operative targets. An example practice comes from the industrial context where at the top level measurement supports shareholder perspective and is financially and result oriented. At the operative level measurement includes context-specific means to achieve the upper level results.

The utilization of measurement information was also criticized by one third of the respondents. As a middle manager working in industrial services commented:

This is a working paper version of the study. The final version is published in International Journal of Productivity and Performance Management, Vol. 66, No. 4, pp. 479-499 available at: <http://dx.doi.org/10.1108/IJPPM-02-2016-0043>

“Analysis of deviations is not coordinated or systematic. Responsibilities are also unclear. There is a lot of room for subjective explanations since the analytical search for root causes is lacking”

Some of the respondents also remarked that measures are not a necessity since there are also other means to monitor targets. For example, project managers seemed to be most interested in following a project plan and project milestones instead of measures in a traditional sense. The role of tacit knowledge obtained through informal discussions was also acknowledged in analyzing how well targets were achieved.

### 3.2.3. Management control in decision-making

Decision-making was the more complex issue discussed in the interviews. No obvious differences between industries were identified and the responses were typically shorter. Most respondents identified a certain level of systematicity in decision-making and identified the presented three-step model of decision-making. The practice of decision-making seemed to be also advancing to a more systematic level. One of the respondents representing retailing services stated:

“When preparing strategic decisions we now increasingly use a systematic approach which was not the case before.”

Two thirds of the respondents mentioned that their decision-making could be described as a process. However, this process was most often linked to large-scale investments or projects and only after lengthy deliberation. A respondent from industrial services gave an example of another context for process-type decision-making. The example was in decision-making aiming to proactively identify problems in supplier actions during R&D projects. One third of the respondents said that even if some phases of the process were identifiable, the actual decision-making did not follow them. This was the case especially among middle managers representing industrial services, as described below:

“The decision-making process could be clearer. Problems are identified but I am not sure whether they are forwarded to the list of issues to be resolved. The process is not systematic and here there is room for improvement.”

Many respondents also reported that decision-making was invariably case-specific and that there were no instructions or systematic approaches. One possible reason for this was that the need for strategic decision making was reportedly driven by varying factors such as observations from the external environment (suppliers, customers), observed deficiencies in internal operations and initiatives by top management. This also meant that decisions were different from each other. One of the respondents also commented that decisions varied from year to year. There also seemed to be a rather common agreement on that there is generally no need for detailed instructions. Such instructions might have undesirable consequences when important factors might be neglected when the focus was on a formally implemented process. Performance measurement information was not systematically utilized in the decision-making process. One of the respondents described the issue in a following way: “mathematics should be complemented with psychology”.

The decision-making process was also discussed in more detail. *Problems were identified* both on the basis of measurement information and “experience from the field”. Most of the respondents reported the use of measurement information and the most common source of quantitative information was various kinds of deviations typically related to sales figures or quality. Half the respondents mentioned using their own experience and tacit knowledge (regarding e.g. competitors, legislation, and customers) alongside performance measurement information since measurement

information was at least partly deficient or difficult to obtain. The company's internal information was typically used, but half of the respondents also reported using external information such as customer surveys, market, competitor, economic, and political analyses. The roles were not clear. It was typically reported that people in any working position might raise problems needing decision-making.

Tacit knowledge was commonly used when *optional solutions were identified*. Most of the respondents reported that measurement information had no role in proposing solutions. As a middle manager representing industrial services commented:

“It is mostly your experience which is used when different solutions are created. If you blindly follow a certain model, there is a clear risk that not all the necessary variables are taken into account”

Formal procedures or models for formulating different options were mentioned only seldom. A few of the respondents mentioned mathematical models to support the creation of optional solutions. These examples were related to the use of historical information in analyzing various investment options. Historical information was deemed useful especially in static circumstances and recurring decision-making situations. Benchmarking information was also used when reports from similar cases were available.

When *evaluating the options identified*, most of the respondents seemed to rely solely on their intuition and experience. For example, one of the respondents clarified that most options are very easy to dismiss and to end up with only few alternatives which can be evaluated with your experience. Measurement information was used rather little in making the eventual choice. One clear reason for this was the lack of appropriate measurement information and challenges in measurement. As one of the respondents clarified: “We would use more measurement information if there was useful information available”. This was complemented by another respondent:

“We are clearly not up-to-date in using measurement information in decision making. We have a lot to learn and one clear problem relates to the scattered nature of existing measurement information. Current information does not come in such a format that could be utilized easily.”

Cost-benefit analysis was sometimes utilized as well as pilot testing of options. No policies or procedures were mentioned in evaluating different options. The eventual decision-makers were often different than those preparing the options for consideration. Very commonly the decision was made by the top management and therefore many of the interviewees were possibly not familiar with the prevailing practices. This was therefore a very tricky question for them. A few respondents mentioned that sometimes only one solution was submitted for decision by the top management.

#### **3.2.4. Discussion**

Most of the functional practices of using performance measurement information reported by the interviewees related to strategic steering and communication. This observation is in line with the studies by Grafton et al. (2010) and Hall (2010), which identified the significant role of performance information in the communication of strategy throughout the organization. The results of the study by Grafton et al. (2010) are also corroborated by the reported functional practices supporting the identification of different kinds of deviations. This can also mean that the use of budgets as a main integrative control mechanism is still a widely prevailing practice (cf. Atkinson, 2006). The results in general revealed a great deal of room for improvement in the utilization of measurement information.

This is a working paper version of the study. The final version is published in International Journal of Productivity and Performance Management, Vol. 66, No. 4, pp. 479-499 available at: <http://dx.doi.org/10.1108/IJPPM-02-2016-0043>

Overall, it seems that in the work by middle managers are affected by both formal and informal controls and that the latter are more important. It also seems that the actual practices of performance information utilization are extremely difficult to describe. The role of performance information appears most often as a secondary source supporting the understanding of the operating environment and the preparation of decisions and communication, as Hall (2010) also claims.

In the case of the strategy implementation process, informal controls clearly influence the setting and monitoring of targets. This was the case especially with the setting of targets at the middle managerial level, while bank and insurance services represented a rather contrasting perception highlighting the role of performance measures. In the other studied contexts targets were often at least partly based on subjective views of individuals. Experience and intuition of individuals was used especially in the fine-tuning of targets. One respondent mentioned that experienced workers know the achievable targets due to their experience of many past events. Subjective explanations were sometimes in use in analysis of deviations in measurement results. In addition, the role of tacit knowledge obtained through informal discussions was also mentioned as a mean to monitor targets.

Formal instructions had a fairly little role in supporting the strategy implementation process. However, the acceptance procedure at higher managerial levels was often utilized especially in the case of target setting. Formal controls were therefore taking the form of organizational hierarchies. In many cases responsibility was delegated to the middle managers to implement performance measurement at the operative level. Organizations rely on self-steering in the case of operative performance measurement and management. However, it has been argued that control systems should include instructions regarding performance measurement systems and their use (Nørreklit 2003). There seems to be a need to investigate in greater detail whether the prevailing practices do indeed need improving.

Similar and even more distinctive observations were made in the second managerial task studied, namely the decision-making process. Earlier research has found that short-term decisions in particular are made on the basis of intuition and experience (Gorry and Morton 1971; Hall 2010). In this study, the observation was extended to decision-making among middle managers. It appears that decision-making requires knowledge that is difficult to present in numerical form (Pfeffer and Sutton 2000). The prevailing practices seemed to follow the judgment approach presented by Mintzberg et al. (1976), in which intuition is in a key role in making a decision.

Performance measurement appeared to have the most important role in identifying problems requiring decision-making and the least important role in making the final decision. In any case, the prevailing practices appeared to be non-recurring, reflecting the lack of instructions commonly in place. Like in the study by Khatri and Ng (2000) earlier personal experiences are a key influencing factor on decision-making. This study gives also support to their observation that there is a wide acceptance among managers to use intuition and own experience in decision-making.

Most of the respondents in the companies studied gave the impression that the existence of performance measurement systems does not as such guarantee the systematic use of measurement information. In turn, the existence of formal instructions may increase the systematic use of performance measurement at the middle managerial level. This proposition is supported by the observation that in the absence of clear instructions for implementing performance measurement, middle managers are likely to rely more on their own experience and tacit knowledge instead of measurement information.

This is a working paper version of the study. The final version is published in *International Journal of Productivity and Performance Management*, Vol. 66, No. 4, pp. 479-499 available at: <http://dx.doi.org/10.1108/IJPPM-02-2016-0043>

One of the observations of this study is that top management regards the status of prevailing performance management practices in a more positive light than do middle management and experts. Top managers regarded target setting as a very straight-forward and well instructed process while middle managers reported the lack of instructions and some middle managers were clearly in a need for better guidelines and questioned the validity of targets. Similar observation was made in the case of monitoring the achievement of targets. While top managers seemed to have clear practices for scrutinizing financial numbers, most of the middle managers and experts reported the lack of official policies for the task. One reason for this may be that top managers use more focused measurement information. For example, Kraus and Lind (2010) have observed that top management is budget-oriented, which is more formal and standardized in nature than the use of non-financial information. At the more operative level, measurement information is more fragmentary and informal. Many middle managers were seeking for more detailed instructions for using performance measurement. When comparing the responses of middle managers and experts, no similarly notable differences were identified as in the case of with top and middle managers.

As regards industry-specific features, there were no clearly distinctive observations apart from those in the banking and insurance sector. In that particular context, it appears that respondents reported clearly fewer challenges in performance information utilization and more formal control practices. One reason for this may be that the banking industry is traditionally built upon quantitative information and there are already functional and approved practices in place. This observation is in line with the results of the study by Khatri and Ng (2000) who also proposes that intuition should be used less in stable business environments. Another reason for this observation is probably that the key business phenomena such as transactions and payouts are quantitative in nature.

#### **4. Conclusions**

This study shed light on how the work of middle managers is affected by performance measurement and other more informal management controls. It contributes to the earlier literature on performance management by highlighting the usage of performance measurement information and the managerial practices of middle managers. Overall, the results indicate that performance measures have as such relatively minor role in the studied managerial practices. However, the results unveiled that performance measurement clearly affects strategy implementation process. While intuition and experiential factors demonstrably have a role in strategy implementation, their role is especially high in decision-making. While the preparation of decisions relies also on performance measurement information, intuition and personal experiences are in the most important role when making the final decision.

A key starting point of this study was to address the research gap (Wouters 2009) regarding the role of middle managers as users of performance measurement information. The results reveal that while top managers mostly hold positive views, middle management and experts are clearly more critical regarding the status of performance management. However, middle managers are in a critical role in strategy implementation and building the success of companies. The results demonstrate that while measurement information is satisfactorily used in identifying deviations and monitoring targets, the fairly common and widely used managerial tasks, such as target setting and decision-making, are not systematically supported by such information. All in all, the results indicate that performance measurement is most clearly observed at the top organizational levels, while middle management seems to rely more on informal control practices.

The practical contribution of this study is in the detailed description of strategy implementation and decision-making processes based on observations in several large organizations representing different industries. The study also unveils possible improvement areas regarding the utilization performance information in middle management. It appears that the prevailing practices are rather unilateral highlighting the identification of deviances from pre-defined performance targets instead of planning future opportunities. The need to move from backward-looking information into truly forward-looking performance information was identified for long ago, but it still appears to be a topical issue in practice. It also appears that budget based control systems are widely in use instead of wider balanced performance measurement systems. Hence, there seems to be a clear gap between the ideal instructions of academic literature and practices in the field.

While the results of this study improve our understanding of the role of performance measurement, formal instructions and policies, individual intuition and experience in supporting strategy implementation and decision-making, there is still a need to elaborate those tacit, cultural and experience-based aspects clearly having a major impact on managerial work. In this study, these aspects were intentionally studied with indirect questions (“other forms of information, ad-hoc procedure” etc.) leaving the answers more open-ended and broad. This study examined the work of middle managers widely in different positions and industries which meant that the findings were rather explorative. Advantage of the broad approach is that the generalizability of the findings should be rather good since many contexts and managerial tasks are covered. In addition, the examined managerial processes are widely used in any organization. However, understanding on the specific and contextual causes of the findings should be improved in the further research which should be carried out in more precisely defined industries and managerial tasks such as project management, R&D or strategic purchasing. While interviews unveil managers’ descriptions of the actions they take, future research could complement the interview method through observations since spoken descriptions may be biased. Another alternative could be group interviews, in which different respondents could facilitate and support each other in putting the complex issue into words.

## References

- Aaltonen, P., Ikävalko, H. (2002) Implementing strategies successfully, *Integrated Manufacturing Systems*, Vol. 13, No. 6, pp. 415–418.
- Amaratunga, D. & Baldry, D. (2002) Moving from performance measurement to performance management, *Facilities*, Vol. 20, No. 5/6, pp. 217–223.
- Atkinson, H. (2006) Strategy implementation: a role for the balanced scorecard?, *Management Decision*, Vol. 44, No. 10, pp. 1441 – 1460.
- Auzair, S. M. & Langfield-Smith, K. 2005. The effect of service process type, business strategy and life cycle stage on bureaucratic MCS in service organizations, *Management Accounting Research*, Vol. 16, No. 4, pp. 399–421.
- Axson, D. A. J. (1999) The Fastest Route to Right Answers, *Strategy & Leadership*, Vol. 27, No. 3, pp. 6–10.
- Bititci, U. S., Ackermann, F., Ates, A., Davies, J., Garengo, P., Gibb, S., MacBryde, J., Mackay, D., Maguire, C., van der Meer, R., Shafti, F., Bourne, M., Firat, S. U. (2011) Managerial processes: business process that sustain performance, *International Journal of Operations & Production Management*, Vol. 31, No. 8, pp. 851–891.
- Bourne, M., Kennerley, M. & Franco-Santos, M. (2005) Managing through measures: a study of impact on performance, *Journal of Manufacturing Technology Management*, Vol. 16, No. 4, pp. 373–395.

This is a working paper version of the study. The final version is published in *International Journal of Productivity and Performance Management*, Vol. 66, No. 4, pp. 479-499 available at: <http://dx.doi.org/10.1108/IJPPM-02-2016-0043>

- Bourne, M., Mills, J., Wilcox, M., Neely, A. & Platts, K. (2000) Designing, implementing and updating performance measurement systems. *International Journal of Operations & Production Management*, Vol. 20, No.7, pp. 754–771
- Broadbent, J., Laughlin, R. (2009) Performance management systems: A conceptual model, *Management Accounting Research*, Vol. 20, pp. 283–295.
- Bryman, A., Bell, E. (2007) *Business research methods*, Second edition, Oxford, Oxford University Press.
- Chenhall, R. H. (2003) Management control systems design within its organizational context: findings from contingency-based research and directions for the future, *Accounting, Organizations and Society*. Vol. 28, No. 2-3, pp. 127–168.
- Choo CW. (2002) *Information management for the intelligent organization, art of scanning the environment*, USA, Information Today.
- Collier, P. M. (2005) Entrepreneurial control and the construction of a relevant accounting, *Management Accounting Research*, Vol. 16, No. 3, pp. 321–339.
- Daft, R., Macintosh, N. (1984) The Nature and Use of Formal Control Systems for Management Control and Strategy Implementation, *Journal of Management*, Vol. 10, pp. 43–66.
- De Waal, A. A. (2004) Stimulating performance-driven behaviour to obtain better results, *International Journal of Productivity and Performance Management*, Vol. 53, No. 4, pp. 301–316.
- Ferreira, A. & Otley, D. (2009) The design and use of performance management systems: An extended framework for analysis, *Management Accounting Research*, Vol. 20, No. 4, pp. 263–282.
- Franco-Santos, M., Lucianetti, L., Bourne, M. (2012) Contemporary performance measurement systems: a review of their consequences and a framework for research, *Management Accounting Research*, Vol. 23, No. 2, pp. 79-119.
- Fredrickson, J. W. (1984) The Comprehensiveness of Strategic Decision Processes: Extension, Observations, Future Directions, *Academy of Management Journal*, Vol. 27, No. 3, pp. 445–466.
- Goll, I. & Rasheed, A. M. A. (1997) Rational Decision-Making and Firm Performance: The Moderating Role of Environment, *Strategic Management Journal*, Vol. 18, No. 7, pp. 583–591.
- Gorry, A. G. & Scott Morton, M. S. (1971) A Framework for Management Systems, *Sloan Management Review*, Vol. 13, No. 1, pp. 55–70.
- Grafton, J., Lillis, A. M. & Widener, S. K. (2010) The role of performance measurement and evaluation in building organizational capabilities and performance, *Accounting, Organizations and Society*, Vol. 35, No. 7, pp. 689–706.
- Hansen, S. C., Otley, D. T. & Van der Stede, W. A. (2003) Practice Developments in Budgeting: An Overview and Research Perspective, *Journal of Management Accounting Research*, Vol. 15, No. 1, pp. 95–116.
- Hall, M. (2010) Accounting information and managerial work, *Accounting, Organizations and Society*, Vol. 35, No. 3, pp. 301–315.
- Henri, J.-F. (2012) *Budgeting and MCS Package*, Montreal, École de comptabilité, Université Laval, SSRN 1980868.
- Kaplan, R. S., & Norton, D. P. (2005) The office of strategy management, *Harvard Business Review*, Vol. 83, No. 10, pp. 72–80.
- Khatri, N., & Ng, H. A. (2000) The role of intuition in strategic decision making, *Human Relations*, Vol. 53, pp. 57-86.
- Kraus, K. & Lind, J. (2010) The impact of the corporate balanced scorecard on corporate control—A research note, *Management Accounting Research*, Vol. 21, No. 4, pp. 265–277.

- Libby, T. & Lindsay, R. M. (2010) Beyond budgeting or budgeting reconsidered? A survey of North-American budgeting practice, *Management Accounting Research*, Vol. 2, No. 1, pp. 56–75.
- Maciarello, J. A., & Kirby, C. J. (1994). Management control systems. Englewood Cliffs: Prentice Hall.
- Malmi, T., Brown, D.A. (2008) Management control systems as a package—Opportunities, challenges and research directions, *Management Accounting Research*, Vol. 19, No. 4, pp. 287-300.
- Marginson, D. E. W. (2002) Management control systems and their effects on strategy formation at middle-management levels: Evidence from a UK Organization, *Strategic Management Journal*, Vol. 23, pp. 1019-1031.
- Merchant, K. A. & Van der Stede, W. A. (2012) *Management Control Systems: Performance Measurement, Evaluation and Incentives*, 3rd edition, Financial Times/Prentice Hall.
- Mintzberg, H., D. Raisinghani, and A. Theoret (1976) The structure of unstructured decisions, *Administration Science Quarterly*, Vol. 21, No. 2, pp. 246-275.
- Neely, A. (2005) The evaluation of performance measurement research: developments in the last decade and a research agenda for the next, *International Journal of Operations & Production Management*, Vol. 25, No. 12, pp. 1264–1277.
- Noble, C.H. (1999) The eclectic roots of strategy implementation research, *Journal of Business Research*, Vol. 45, No. 2, pp. 119–134.
- Nørreklit, H. (2003) The Balanced Scorecard: what is the score? A rhetorical analysis of the Balanced Scorecard, *Accounting, Organizations and Society*, Vol. 28, No. 6, pp. 591–619.
- Nutt, P. C. (1998) How Decision Makers Evaluate Alternatives and the Influence of Complexity, *Management Science*, Vol. 44, No. 8, pp. 1148–1166.
- Nudurupati, S.S., Bititci, U.S., Kumar, V., Chan, F.T. (2011) State of the art literature review on performance measurement, *Computers & Industrial Engineering*, Vol. 60, No. 2, pp. 279-290.
- Ouchi, W. (1979) A conceptual framework for the design of organizational control mechanisms, *Management Science*, Vol. 25, No. 9, pp. 833–848.
- Pfeffer, J., Sutton, R. I. (2000) *The Knowing-Doing Gap: How Smart Companies Turn Knowledge into Action*, Boston, MA, Harvard Business School Press.
- Schwenk, C. R. (1984) Cognitive Simplification Processes in Strategic Decision-making, *Strategic Management Journal*, Vol. 5, No. 2, pp. 111–128.
- Shi, W., Markoczy, L., & Dess, G. G. (2009) The role of middle management in the strategy process: Group affiliation, structural holes, and Tertius Iungens, *Journal of Management*, Vol. 35, pp. 1453–1480.
- Simons, R. (1995) *Levers of control*. Boston, MA, Harvard Business School Press.
- Snowden, D. J. & Boone, M. E. (2007) A Leader’s Framework for Decision Making., *Harvard Business Review*, Vol. 85, No. 11, pp. 68-76.
- Tessier, S. & Otley, D. (2012) A conceptual development of Simons’ Levers of Control framework, *Management Accounting Research*, Vol. 23, No. 3, pp. 171–185.
- Wooldridge, B., & Floyd, S. W. (1990) The strategy process, middle management involvement, and organizational performance, *Strategic Management Journal*, Vol. 11, pp. 231-241.
- Wooldridge, B., Schmid, T., & Floyd, S. W. (2008) The middle management perspective on strategy process: Contributions, synthesis, and future research, *Journal of Management*, Vol. 34, pp. 1190-1221.

## Appendix

### Interview structure (translated from Finnish)

#### Background information:

- Name and position
- Experience in the current organization in years
- Organization name and industry
- Organizational size in terms of employees
- What kind of performance measurement is closest to your every-day work, can you briefly describe the measurement system:
  - Which managerial function and purpose the measurement system supports?
  - What kinds of measures are used?

#### Overview of the status of performance measurement

- Can you provide an example of a good practice for utilizing performance measurement?
- What factors hinder the use of performance measurement in management?

#### The role of measurement as a part of annual or otherwise repetitive managerial process

##### Setting of targets

- How do you set targets?
- Is measurement information used in setting of targets? If it is used, how? If not, why not, and should the situation to be improved, how?
- Does your company have a written instruction or document supporting the setting of targets?

##### Monitoring of targets

- How do you monitor the achievement of targets?
- Is measurement information used in monitoring the achievement of targets? If it is used, how? If not, why not, and should the situation to be improved, how?
- Does your company have a written instruction or document supporting the monitoring of achievement of targets?
- Please think about a recent failure in the achievement of targets
  - How did you analyze the causes of failures?
  - Is the analysis carried out case-by-case or is there a more standardized approach used?

#### Measurement supporting decision-making

- Please think about a recent strategic decision-making situation.
- Do you have instructions for making such decisions or are they implemented ad-hoc?

##### Identification of a problem

- How strategic decision is initiated?
  - Who does/do the initiative?
  - What kind of information is used and from where it is obtained?
    - performance measurement information (what type of information, internal external)?
    - other information?

##### Creating alternatives

- How different alternatives are formulated?

This is a working paper version of the study. The final version is published in International Journal of Productivity and Performance Management, Vol. 66, No. 4, pp. 479-499 available at: <http://dx.doi.org/10.1108/IJPPM-02-2016-0043>

- Who participate into this task and how?
- Is some kind of method utilized?
- What information is utilized and how it is obtained?
  - performance measurement information (what type of information, internal external)?
  - other information?

Evaluation of alternatives and making decision between alternatives

- How different alternatives are evaluated and the final decision made?
  - Who participate into this task and how?
  - Is some kind of method utilized?
  - What kind of information is used and hot it is obtained?
    - performance measurement information (what type of information, internal external)?
    - other information?