



# Performance measurement and management in practice

## Advantages, disadvantages and reasons for use

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### Abstract

**Purpose** – Despite the fact that in recent years performance management and measurement (PMM) techniques and tools have attracted much research interest and that many scholars claim that implementing PMM yields many advantages, there is only a limited number of rigorous, systematic, scientific analysis of empirical studies into the benefits actually experienced by organizations in practice after introducing PMM. In addition little is known about specific reasons for organizations to start using PMM, and about the various relationships, if any, between the advantages, disadvantages and reasons for PMM use. This paper seeks to address these issues.

**Design/methodology/approach** – This article identifies the advantages, disadvantages and reasons for use of SPM which organizations have experienced in practice, based on an extensive literature research and interviews at 17 prominent Dutch organizations.

**Findings** – The study found four main advantages, two main disadvantages and two main reasons for use.

**Research limitations/implications** – The main limitation is that the number of participating organizations and interviewees could be higher.

**Practical implications** – The practical implication of this research is that implementing and using PMM yields specific benefits for an organization and that management now knows which advantages are to be expected.

**Originality/value** – This research shows that management needs to make the advantages of PMM explicit before the PMM implementation starts and keep stressing these advantages during and after implementation. This will heighten commitment of organizational members for PMM and increase a successful use of PMM.

**Keywords** Performance management, Performance management systems, Performance measurement, Organizations

**Paper type** Research paper

### Introduction

In the past decades performance management and measurement (PMM) techniques and tools have attracted much interest from both the academic and business communities (Thorpe and Beasley, 2004; Chau, 2008; Franco-Santos *et al.*, 2012). PMM is defined as the process in which steering of the organization takes place through the systematic definition of mission, strategy and objectives of the organization, making these measurable through critical success factors (CSFs) and key performance indicators (KPIs) in order to be able to take corrective actions to keep the organization on track (Waal, 2007). The effectiveness of the ongoing process means the achievement of financial as well as nonfinancial targets, the development of skills and competencies and the improvement of customer care and process quality (Waal, 2007). There is evidence that PMM is now implemented in approximately 70 per cent of medium to large firms in the USA and Europe, as well



as in many governmental departments (Silk, 1998; Marr and Neely, 2003; Rigby, 2001; Williams, 2001; Speckbacher *et al.*, 2003; Neely *et al.*, 2004; Marr *et al.*, 2004).

The reason for many organizations to implement PMM is that it is considered to be a means to gain competitive advantage and to continuously react and adapt to external changes (Chau, 2008; Cocca and Alberti, 2010). Specifically, organizations use PMM to create a consistent understanding of the business strategy by translating this strategy in a set of performance measures (Brewer and Speh, 2000) in the form of CSFs and KPIs. These CSFs and KPIs provide qualitative and quantitative descriptions of important elements of the business strategies in which firms have to excel in order to be successful (Melkers and Willoughby, 2005). When then setting SMART goals (goals setting) and budgets for the KPIs, people become clearly aware of what is expected from them. Locke and Latham (2002) emphasize the need of setting clear goals. Their goal-setting theory focuses on the core properties of an effective goal and they state that in goal setting, specific difficult goals will lead to increased performance. According to goal setting, performance will be better if clear goals are set systematically, if these goals are sufficiently difficult and therefore challenging, and if frequent and specific feedback is given on the degree to which goals are attained (Algera *et al.*, 1997; Fowler, 2003). Goal setting requires that employees are competent and committed, i.e. that they feel able and willing to participate in achieving the organization's goals (Jansen, 2004).

However, Robinson (2004) mentions that little is actually known about the specific reasons that organizations have for implementing PMM and how these reasons relate to the (expected) advantages and disadvantages of PMM. Thus, the question, however, is whether the use of PMM has actually increased organizational performance in business practice. As Bourne *et al.* (2010) state: "Performance measurement is at a crossroads. From an academic perspective, studies in the literature on the impact of performance measurement on business performance are inconsistent in their findings. This suggests that our understanding of this field is far from complete". Their statement is backed by Holloway (2009, p. 396) who argues: "few disciplines have answered the question voiced by many managers and demonstrated conclusively that performance management practices directly improve performance. Explaining the numerous and complex potential causal relationships in the overall production of organizational outputs and outcomes remains a major challenge to all concerned". Bourne *et al.* (2007) state that no single study will show the positive or negative impact of performance measurement on business performance, and that understanding of the impact will only develop over a number of studies that investigate the same issue using different techniques, in different contexts and using different approaches to performance measurement.

Various studies found or did not find proof that when PMM systems are being used daily it increases organizational results in the long run. There are many authors (Hronec, 1993; Lynch and Cross, 1995; Lingle and Schiemann, 1996, 1999; Kaplan and Norton, 1996; Rheem, 1996; Atkinson *et al.*, 1997; Armstrong and Baron, 1998; Ahn, 2001; Lawson *et al.*, 2003, 2004, 2005; Sandt *et al.*, 2001; Ittner *et al.*, 2003; Said *et al.*, 2003; Waal and Coevert, 2007; Pinheiro de Lima *et al.*, 2009) that contend that companies that have implemented PMM perform better than companies that do not use PMM. Waal *et al.* (2009) find that it is not enough for organizations to just implement PMM, they also have to make use of this system on a regular and structural basis. Azofraa *et al.* (2003) suggest a correlation between certain measures of the organizational performance measurement system and profitability in their case study of a Spanish subsidiary of a North American multinational company. Evans (2004) and Waal *et al.* (2009) specifically find a positive relation between the maturity of PMM

systems and organizational results. Ukko *et al.* (2007) find that PMM can only support and not replace managers in leading people, and that the increased interactivity between management and the employees leads to higher organizational performance. Mausolf and Spence (2008), in their study of the effectiveness of PMM used in human services programmes, find a strong correlation between the quality of PMM and programme performance. Ukko (2009) shows that focusing on the performance measurement factors that have a significant positive effect at the operative level (i.e. the individual and team levels) will result in higher financial performance of the organization in the long run.

At the same time, there are also many researchers that report on organizations using PPM with mixed results (Abernethy and Lillis, 1995; Ittner and Larcker, 1995; Chenhall, 1997; Perera *et al.*, 1997; Banker *et al.*, 2000; Ittner *et al.*, 2003; Kaynak, 2003; Said *et al.*, 2003; Davis and Albright, 2004; Neely *et al.*, 2004). Some of these authors even question whether PPM is useful for analysing and insuring future financial performance – or other achievement indicators – in organizations (Norreklit, 2000; Haas and Kleingeld, 1999). Ho and McKay (2002) note that organizations that have adopted PPM report varying degrees of success. Ittner and Larcker (1995, 1997) and Hoque (2003) also find little evidence of a significant impact from the use of nonfinancial performance measures on financial performance. Towley *et al.* (2003) describe a PMM implementation in the Provincial Government of Alberta, Canada, where the initial enthusiasm of managers for the PMM initiative was replaced with scepticism and cynicism. Martinez and Kennerley (2005), while researching a British energy supplier, find both positive internal effects of PMM (better people management, higher organizational capabilities, better organizational behaviour and higher operational performance) and negative effects of PMM (more bureaucracy, unclear designed performance indicators). Thus there is inconclusive empirical evidence about the advantages, or for that matter the disadvantages, that organizations may expect when implementing and using PMM (Bourne *et al.*, 2000, 2003; Davis and Albright, 2004; Ittner, 2008; Ittner and Larcker, 1997; Holloway, 1999; Marchand and Raymond, 2008; Neely, 2005; Neely and Austin, 2000; Neely and Bourne, 2000; Neely *et al.*, 2004). The reason for this might be that many factors and their effects must be taken into account which makes the study of PMM use and impact complicated (Neely *et al.*, 2004; Marchand and Raymond, 2008).

This paper attempts to fill this gap in the academic literature by providing answers, based on empirical research – by means of direct observation and experience data (empirical results that supported the hypotheses) from organizations – using a combination of quantitative and qualitative approaches to analysis- to the following research questions: What are reasons for implementing PMM? What are advantages and disadvantages of PMM in business practice? What are the relations between these advantages, disadvantages and reasons for implementation? In this respect advantages and disadvantages are defined as the respective positive and negative results that organizations experience from implementing and using PMM. The reasons for use are defined as the positive results that organizations expect from the use of PMM. This paper explicitly does not examine the conditions under which PMM is successful or not, this is a topic for future research.

The paper is organized as follows. The advantages, disadvantages and reasons for PMM use, as found in the literature, are described in the following section. In the same section the hypotheses are presented. The hypotheses were tested at 17 Dutch organizations and the results are discussed in the third section of the paper. Additional testing by using factor and multiple regression analyses is described and the results

are discussed in the fourth section. Finally, the last section provides a summary and a discussion of the limitations of the research and topics for future research. The research described in this paper gives direction to academics in their research into the mechanisms of PMM. Once the benefits that can be expected of PMM use are known, researchers can focus on the actual mechanisms with which PMM yield benefits (Bourne *et al.*, 2000, 2005; Franco-Santos *et al.*, 2012) as little is still known about this (Vakkuri and Meklin, 2000; Malina and Selto, 2001; Neely *et al.*, 2004). The research also has practical implications as it should help management to better manage expectations of PMM use. Because the relations between the reasons for use and accompanying advantages (and disadvantages) are now known, management can better evaluate whether their organization has obtained the most added value of its PMM system.

### **PMM advantages, disadvantages and reasons for use**

The main source of our research to identify PMM advantages, disadvantages and reasons for use consisted of academic and management publications discussing “real-world” experiences of organizations with PMM. A general search in academic and management databases (such as EBSCO, Science Direct, Emerald) and in the physical libraries of our institutes on the topic of PMM advantages and disadvantages initially yielded 5.625 matches. The following search phrases were used: advantages of performance management/measurement, disadvantages of performance management/measurement, reasons for performance management/measurement use, benefits of performance management/measurement and drawbacks of performance management/measurement. Most of the literature sources turned out to be either purely conceptual/theoretical or anecdotic in nature (Martinez *et al.*, 2004). After narrowing down the search criteria exclusively to literature containing empirical academic research, and stipulating that the advantages and disadvantages should be mentioned in at least two empirical literature sources, only 28 sources remained [1]. From these sources, a list of three quantitative and 22 qualitative advantages, eight qualitative disadvantages and 41 reasons for PMM use was compiled (Kourtit and Waal, 2009). Appendix 1 summarizes the reasons for PMM use, PMM advantages and PMM disadvantages (in decreasing order of number of literature sources found), and lists the publications in which these were found.

### **Development of hypotheses**

Based on the literature review several hypotheses are to be developed. The first thing to notice from the literature review is the abundance of advantages of PMM listed, while the disadvantages are in the minority. Therefore our first hypothesis is:

- H1.* The use of PMM yields more financial as well as nonfinancial advantages than disadvantages for an organization.

It is a reasonable assumption that the more certain advantages and disadvantages are mentioned in the literature, the more frequently they have been encountered during empirical research. This leads us to our second hypothesis:

- H2.* The literature accurately reflects the frequency of the advantages and disadvantages of PMM use as found in practice.

Many authors mention as a result of their studies multiple advantages, disadvantages and reasons for PMM use. It therefore can be assumed that some of these advantages,

disadvantages and reasons for PMM use appear together as they are logical consequences of each other. There are many performance models described in the literature that can be used as a means for categorizing the advantages, disadvantages and reasons (for instance see Medori and Steeple, 2000; Meng and Minogue, 2011; Neely *et al.*, 1996; Sink and Tuttle, 1990; St-Pierre and Delisle, 2006). In this paper, the balanced scorecard (BSC) model of Kaplan and Norton (1996) is used. This is because the BSC is the most widely accepted PMM framework in the past decades and as such it has been used in many organizations and many people are familiar with it (Srimai *et al.*, 2011; Taticchi *et al.*, 2010). Traditionally, a BSC has four perspectives. The innovative (or learning) perspective measures how often an organization introduces new products, services or (production) techniques. In this way, the organization makes sure that it does not become complacent but continuously renews itself. Sometimes organizations include people aspects in this perspective. These are used to measure the well-being, commitment and competence of people in the organization. People aspects measure cultural qualities such as internal partnership, teamwork, knowledge sharing, as well as aggregate individual qualities such as leadership, competency and use of technology. The internal (or process) perspective measures the effectiveness of the processes by which the organization creates value. It follows the innovative perspective because innovation and people influence the ability of the organization to create value by implementing and managing effective processes. The contribution of innovative people to the ability of the organization to create value consists of implementing and managing effective processes. The internal business perspective measures how effective processes are. It precedes the customer perspective because efficient processes make it possible for an organization to stay or become more competitive. The customer perspective measures performance in terms of how the customer experiences the value created by the organization. It follows the internal business perspective, because efficient processes enable the organization to provide better service to its customers. The financial perspective measures the bottom line, such as growth, costs, return on investment and the other traditional measures of business performance. It follows the customer perspective because higher appreciation by the customers translates into higher financial results. It is the last of the four perspectives because it is a logical consequence of the other advantages as it is the final result of good, committed people, of implementing and operating effective processes, of the ability to renew and innovate and of the ability to create value for customers. In different organizations, the perspectives and the leading indicators can be different, but the idea of the BSC is to provide a “balanced” set of indicators that allows an organization to measure the cause and effect chain by which customer and shareholder value is created. If value is created by people working on and in processes to satisfy customers and to produce financial results, then managers must be able to measure and monitor all of these perspectives of value creation to effectively manage the business. By combining lagging and leading CSFs and KPIs, managers gain an understanding of where the organization is and where it is going. The “balanced” in the BSC can be found in several aspects: nonfinancial data complement financial data, leading information (customer and innovation data) complements lagging information (financial and internal data) and internal information (financial, internal and innovation data) complements external information (customer data) (Waal, 2007). To test to which category the identified advantages and disadvantages of PMM use belong, they have been categorized

in the four perspectives of the BSC, as depicted in Appendix 2[2]. Our third PMM in practice hypothesis is:

*H3.* The advantages and disadvantages of PMM appear grouped according to the four perspectives of the BSC.

Another assumption can be made based on the fact that authors mentioned multiple advantages, disadvantages and reasons for PMM use in their studies. It therefore can be assumed that some of these advantages, disadvantages and reasons for PMM use appear in conjunction. This leads to *H4*:

*H4a.* Specific reasons for using PMM yield specific advantages (positive relationship) and disadvantages (negative relationship).

*H4b.* Specific PMM advantages create specific disadvantages (negative relationship).

*H4c.* Specific PMM advantages are a logical consequence of other advantages (positive relationship).

### Research approach and results

To test the hypotheses, we interviewed employees and managers of 17 prominent Dutch organizations. As this study did not focus solely on the BSC but on all types of measurements tools, the more general term PMM was used during the research and the interviews. As the literature search did not yield a structured, validated survey to obtain information from organizations on the advantages, disadvantages and reasons for PMM use, a self-composed survey was used. The advantages, disadvantages and reasons for use identified in the literature were converted into statements and presented to the interviewees. For instance, the advantage “improvement in communication in the organization on the strategy” was translated into the following statement: “Since the implementation of performance management, we have noticed in the organisation that communication on the strategy has improved”. The participating companies, predominantly from the profit sector, were selected on the basis of one criterion, namely whether they had implemented and used PMM. To determine the degree to which these organizations experienced advantages, disadvantages and reasons for use, the statements in the survey were formulated in such a manner that interviewees had to give a rating on a five-point Likert scale, varying from “1 = not at all” (i.e. “we did not at all experience the (dis)advantage”) to “5 = very strong” (i.e. “we experienced the (dis)advantage very strongly”). The interviewees were also asked if they had experienced any quantitative disadvantages from the implementation and use of the PMM system in their organization, and what the reasons for their organization were to start using PMM. The survey was first tested at one company after which some small adjustments were made in the formulation of several questions. We used a Likert scale because we were asking the interviewees for the degree of (dis)advantage they experienced. Using a binary approach would have given them too much trouble in answering, as we found out during the test of the survey. In view of the nested nature of the data, we used a combination richness of quantitative and qualitative data collection. This mixed-methodology design included semi-structured in-depth interviews to seek deeper for new insights, and used to explore and explain themes

which have emerged from the use of the questionnaire and to validate findings from the use of questionnaires (Wass and Wells, 1994; Healey and Rawlinson, 1994). This approach is often called a “conversation with a purpose” with the involvement of many closed questions i.e. yes-no answers and containing some open-ended questions (Robson, 1993).

The research procedure was as follows. A letter was sent to a selected group of Dutch organizations inviting them to participate in the research. The organizations were chosen on the basis of previous contacts we had with them so we could get easy access. In total 52 people of 17 organizations were personally interviewed by the researchers. No selection of industries was made in order to heighten the chance of generalization of the research results. Appendix 3 provides information on the participating organizations and interviewees. The survey was not sent in advance to interviewees in order to increase the spontaneity of answers. This was because the research was more about getting to know interviewees’ experiences with PMM than about getting “the correct answer”. At the beginning of the interview, the two interviewers first gave a short introduction explaining the research objective, a definition of a PMM and the interview procedure. After that, the interviewees were asked to indicate to what degree they experienced a certain advantage or disadvantage from the PMM system, by choosing one of the five ratings and explaining their choice. The explanation was triggered by the question “Where do you notice that?”, which we used to ask the interviewees for examples to illustrate and support their ratings. The interviewers were careful not to influence the interviewees in any way during the interview. They gave, for instance, no comments on the responses given by interviewees. This procedure minimized the risk of response bias. The interviewees also did not have the survey in front of them. After the interviews, the interview reports were sent to the interviewees for confirmation of their responses. After interviewees had approved the interview reports, the answers given were averaged for each company. As such, the research sample was 17 organizations. The question whether this sample is large enough for statistical analysis has been examined in a variety of studies over many years (e.g. Browne, 1968; Pennell, 1968; Velicer *et al.*, 1982). However, currently there is no estimation for the adequate sample size for a factor analysis that is based on any statistical theory. Recommendations from different sources vary greatly. Examples are 3-20 times the number of variables used. In general, sample size depends on two criteria: the ratio of the number of variables to the number of factors, and the communality of the factors extracted. Communality is a value between 0 and 1, and represents the proportion of the total variance in the data that is extracted by the factor analysis. Hatcher (1994) recommended that the number of cases (organizations) should be the larger of five times the number of variables, or 100. Even more cases are needed when communalities are low and/or few variables load on each factor (Garson, 2008). Finally, Lawley and Maxwell (1971) suggested 51 more cases than the number of variables, to support  $\chi^2$  testing (in Garson, 2008).

#### *Matching the literature with practice*

Based on the interview results, it was evaluated which of the advantages and disadvantages of PMM as noted in the literature indeed occur in practice[3]. For this, a ranking has been made (Table I) of the advantages and disadvantages, both for the number of times an advantage or disadvantage was identified during the interviews (the more 4 and 5 ratings were given the more interviewees experienced the (dis)advantage strongly to very strongly, resulting in a high practice ranking) or in the

	Practice ranking	Literature ranking
<i>Quantitative advantage</i>		
Increase in profit	1 (65%) <sup>a</sup>	1 <sup>b</sup>
Reduction in costs	2 (60%)	2
Increase in revenue	3 (31%)	1
<i>Qualitative advantage</i>		
Strengthened focus on what is important for the organization	1 (87%)	3
More focus on the achievement of results	1 (87%)	3
Improvement of internal communication on the strategy	2 (85%)	1
More effective management control	2 (85%)	5
Higher quality of performance information	3 (81%)	3
Better achievement of organizational goals	4 (71%)	4
More clarity for organizational members about their roles and goals to be achieved	5 (69%)	5
Stronger process orientation	5 (69%)	5
Higher operational efficiency	6 (63%)	4
More clarity among people about their contribution towards achievement of the strategy and organizational goals	6 (63%)	4
Better strategic planning process	7 (62%)	5
Better understanding of the strategy	8 (58%)	4
Improvement in the decision-making process	8 (58%)	4
Improvement of management quality	9 (54%)	4
Better strategic alignment of organizational units	10 (52%)	3
Higher personnel commitment to the organization	10 (52%)	4
Higher quality of products and services	11 (48%)	5
More proactivity of organizational members	12 (44%)	4
Strengthened reputation of the organization as a quality firm	13 (42%)	5
Higher employee satisfaction	15 (19%)	5
<i>Qualitative disadvantage</i>		
There are too many performance indicators	1 (35%)	1
There is not enough strategic information in the system	2 (31%)	2
It is too expensive and too bureaucratic	3 (19%)	2
There is too much financial information	4 (17%)	2
The performance information is too aggregated	5 (15%)	2
It causes too much internal competition	6 (10%)	2
The performance indicators are too subjective and therefore unreliable	7 (2%)	2

**Notes:** <sup>a</sup>The percentage reflects the number of times a 4 or 5 ranking was given by respondents, divided by the total number of respondents; <sup>b</sup>based on the number of literature sources where an advantage/disadvantage was found, e.g. a shared position 1 means the same number of literature sources; 1 = highest ranking, e.g. most given ranking of 4 and 5 by the interviewees (practice ranking), or most found literature sources (literature ranking)

**Table I.** Matching the advantages and disadvantages occurring in practice with those mentioned in the literature

literature (found in many empirical literature sources means a high literature ranking). As can be seen in Table I, the practice ranking and the literature ranking do not fully match. This means that *H2*, cannot be fully accepted. Although basically all advantages, disadvantages and reasons for PMM use as identified in the literature are also found in practice, the frequency in which they are found, and therefore the ranking, is not the same. For the quantitative advantages, one advantage seen in the literature as being very important, “increase in revenue”, hardly occurs directly in practice but is experienced as an indirect advantage. The emphasis of the PMM



system in the participating organizations seems to be on using the system for internal purposes, e.g. achieving cost reductions and thereby increasing profitability. Using PMM for improving external processes, such as sales and marketing, was not frequent or the results of this have not yet fully been noticed. Table I also shows that the participating organizations have used their PMM system to increase the goal and results orientation of the people in the organization, and to strengthen the control on this results achievement. Advantages such as closer collaboration and alignment between organizational units seemed to be of lesser importance. Finally, Table I reveals that the disadvantages, although not negligible, do not occur too often at the participating organizations. This means that *H1*, can be accepted.

#### *Matching the PMM advantages and disadvantages with the BSC*

To test *H3*, we used the “common factor analysis” (CFA) based on the Maximum Likelihood-method ( $n = 52$ ;  $p < 0.05$ ) as a multidimensional analytical tool, because the intention was to identify the main advantages, disadvantages and reasons for use, and to avoid a large amount of data. First, normality was verified through a Kolmogorov-Smirnov test, as was the quality of the factor analysis through a Bartlett’s test and a Kaiser-Meyer-Olkin test. These tests all yielded satisfactory results. A Varimax rotation was applied, to secure less ambiguous conditions between factors and variables (Hair *et al.*, 1998). Communalities reproduced the declared variance in the variable through the number of factors in the factor solution. Several variables with a communality below 0.3 were removed from the dataset. The factor analysis of the PMM advantages yielded four factors, as depicted in Table II.

Factor 1, higher results orientation (HRO), consists of variables which all have to do with a higher orientation of organizational members on achieving organizational results by using PMM. The organization experiences an increase in revenue and a decrease in cost, resulting in an increase in profit. The decrease in costs is specifically caused by higher operational efficiency, better management of the organization and more effective management control. The strengthened focus on what is important for the organization, coupled with the improvement in the decision making, considerably facilitates the achievement of organizational goals. Factor 2, better strategic clarity (BSC), consists of variables depicting advantages which are caused by PMM increasing clarity throughout the organization on the strategic goals to be achieved. PMM increases the understanding of organizational members of the strategy, by translating this strategy in tangible performance indicators at all organizational levels. This creates more insight for organizational members on the goals to be achieved and their role in this. Factor 3, higher people quality (HPQ), consists of variables depicting the increased quality of organizational members. Through PMM, people in the organization become more proactive, more committed to the organization, and more oriented on processes which help achieve organizational results. In addition, PMM aligns all organizational members towards achieving the strategy. Factor 4, higher organizational quality (HOQ), consists of variables which have to do with strengthening the organization’s quality. PMM improves internal processes such as communication on the organization’s strategy, performance information supply and strategic planning. As a result, employees are more satisfied, the quality of the products and services provided by the organization increases, contributing to a strengthened reputation of the firm as a quality organization.

The factor analysis of the PMM disadvantages yielded two factors, as depicted in Table III.

PMM advantages	BSC perspective	Factor 1 (HRO)	Factor 2 (BSC)	Factor 3 (HPQ)	Factor 4 (HOQ)
Increase in profit	F	0.825			-0.295
Higher operational efficiency	I	0.747	-0.174		0.182
Improvement in the decision-making process	I	0.705	0.191	0.269	-0.127
Improvement of management quality	I	0.613			0.246
Reduction in costs	F	0.610		0.126	
More effective management control	I	0.453	0.281	-0.123	0.275
Increase in revenue	F	0.353	0.207	0.200	
Better achievement of organizational goals	F	0.468	0.574		
Strengthened focus on what is important for the organization	C	0.477	0.390	-0.608	0.231
More clarity among people about their contribution towards achievement of the strategy and organizational goals	P	-0.127	0.884	0.189	-0.171
More focus on the achievement of results	F	-0.108	0.659	-0.226	0.134
Better understanding of the strategy	P	-0.104	0.642	0.376	
More clarity for organizational members about their roles and goals to be achieved	P		0.560	-0.140	0.181
More proactivity of organizational members	P			0.637	0.239
Higher personnel commitment to the organization	P	0.273	0.128	0.613	0.161
Stronger process orientation	I			0.533	
Better strategic alignment of organizational units	I	0.324	0.216	0.527	
Improvement of internal communication on the strategy	I	-0.122			0.713
Higher employee satisfaction	P	-0.162	0.211		0.667
Strengthened reputation of the organization as a quality firm	C	0.115		0.327	0.657
Higher quality of products and services	C	0.363	-0.126	0.157	0.530
Better strategic planning process	I			0.208	0.492
Higher quality of performance information	I	0.336		-0.105	0.351

**Notes:** BSC perspectives: F, financial; C, customer; I, internal; P, innovative/people

**Table II.**  
Common factor analysis of the PMM advantages

PMM disadvantages	BSC perspective	Factor 1 (BAS)	Factor 2 (LIQ)
It causes too much internal competition	P	0.736	-0.215
There is too much financial information	F	0.735	0.143
It is too expensive and too bureaucratic	F	0.700	
There are too many performance indicators	I		0.709
The performance information is too aggregated	I		0.640
There is not enough strategic information in the system	I		0.623
The performance indicators are too subjective and therefore unreliable	I	0.435	0.541

**Table III.**  
Common factor analysis of the PMM disadvantages

Factor 1, badly aligned system (BAS), consists of variables showing that the implemented PMM system does not have the right fit with the organization. It contains too much financial information so it does not give a balanced view of the organization's performance. It is also too voluminous, making it too expensive and bureaucratic. In addition, the system encourages the wrong type of behaviour in people as peer

pressure escalates in internal competition. Factor 2, low information quality (LIQ), consists of variables which depict the bad quality of the performance information generated by the PMM system. The system contains too many performance indicators, which are too high levelled and do not give strategic information. In addition, performance information cannot be used effectively as it is too aggregated and unreliable. This basically renders the performance information meaningless.

When matching Tables II and III with Appendix 2 it becomes clear that *H3*, cannot be accepted. The advantages and disadvantages do appear grouped but not according to the BSC perspectives, although for the disadvantages the match is close. A possible reason for the mismatch is that the perspectives as established by Kaplan and Norton (1996) are rather arbitrary while the factor analysis, on the other hand, is based on empirical data and provides a more accurate picture (Norreklit, 2000; Brignall, 2002; Malina and Selto, 2004).

The factor analysis of the PMM reasons for use yielded two factors, as depicted in Table IV.

Factor 1, focus on control (FoC), consists of reasons for use that have to do with a better control of the organization. PMM is used to deploy accountabilities and responsibilities at all levels in the organization and subsequently measure and control the performance of these levels. In addition, PMM is used to strengthen strategy commitment in an increasingly complex organization. Factor 2, focus on strategy (FoS), consists of reasons for use that have to do with creating a focus on formulating, deploying, communicating, implementing and understanding the strategy throughout the organization. In addition, PMM is used for translating the organization's strategy in operational terms, organization-wide strategy alignment, better understanding the capacities of the people who have to execute the strategy, and linking their subsequent performance to rewards. In the end, all this is used to improve the organization's performance.

#### *Testing the conjunctions*

In order to test the conjunctions between the advantages, disadvantages and reasons for PMM use, we will use a multiple regression analysis. It is, however, necessary, before this analysis can take place, to test relations between the reasons for use,

PMM reasons for use	Factor 1 (FoC)	Factor 2 (FoS)
Higher commitment to the strategy	0.575	
Better control and with that a better "obedience" of people	0.181	
Being able to measure performance at various organizational levels	0.362	0.197
Handling the increase in complexity of the organization	0.622	0.156
Enhance quality of the organization	0.517	
Stronger accountability	0.757	
Being able to measure performance at various organizational levels	0.153	
Better description of mission, strategy and goals		0.522
Improve the performance of the organization	0.161	0.447
Aligning employee behaviour with strategic objectives		0.586
Better communicating of strategy to everyone in the organization		0.656
Translating the strategy into operational terms	0.112	0.766
Linking rewards to performance		0.461
More focus on the strategy		0.673
Obtain a better understanding of knowledge and skills of people	0.195	0.288

**Table IV.**  
Common factor analysis of  
the PMM reasons for use

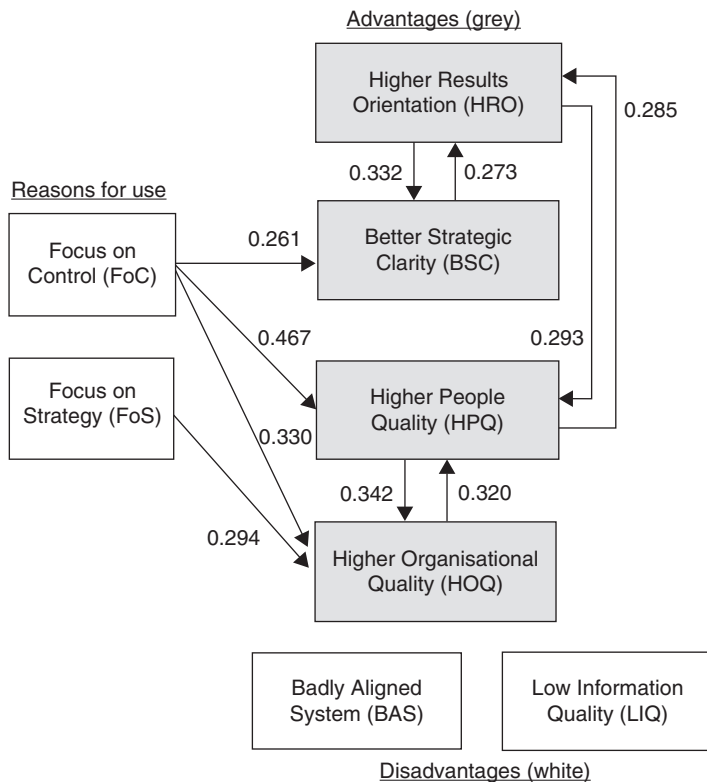
advantages and disadvantages, to check whether the identified factors are not subjected to the principle of multicollinearity nor have a strong correlation, because strongly correlated factors would explain the same phenomenon. Although there is no clear limit in the literature for the strength of a correlation, a significance level of around 0.6 is generally accepted. Table V gives the correlation matrix.

Table V shows significant correlations between the factors that are not stronger than 0.6, except for the one between FoS and HPQ ( $r=0.659$ ). This is understandable because both factors influence the effect that PMM has on people: making them more connected to the strategy and motivating them to deliver better and higher quality performance. From this point of view, it can be derived that FoS and HPQ are well connected yet really different. In general, the results indicate that the factors are mainly autonomous features and that there is no multicollinearity. Thus, the self-constructed survey as a basis for measuring PMM advantages, disadvantages and reasons for use is justified. Table V also shows that the scores on the advantages factors do not differ much from each other,  $\mu$  is between 3.3 and 3.5. This suggests there is no particular advantage that plays a dominant role when using PMM. The disadvantages are hardly experienced by the interviewees,  $\mu$  is 1.7 and 2.0. This suggests that the use of PMM brings clear advantages which are dominant over the disadvantages. Further, the interviewees indicate that all the reasons for use of PMM are virtually equally important ( $\mu$  is 2.4 and 2.3). This suggests there is no particular reason that plays a dominant role in the decision to implement and use PMM.

Initially, the factor-analytically derived components make it possible to launch a multiple regression analysis without fearing the problem of multicollinearity between factors. Using a multiple regression analysis, a relations model was created from the PMM factors (Figure 1). This model was constructed to identify the various relations between the factors. In this respect, several hypotheses were made. The multiple regression analysis used in our study has several constituents. It shows that the reasons for use factors have significant positive relations with three of the advantages factors and no significant relations with the disadvantages factors. Our regression model can be accepted by all model fit indices (with the  $r^2=0.664$ ;  $p$ -value = 0.00 that refers to the fraction of variance explained by the model) (Achen, 1982; Allison, 1999; Cohen, 1968; Tabachnick and Fidell, 2001). The observed values and measures of this model can be used in statistical hypothesis testing. As can be seen from Figure 1, the reasons for use do not have a direct relation with the advantage HRO. This can be explained by considering this advantage as a logical consequence of the other advantages: better strategic clarity, a higher quality of people and a higher quality of organization will result in a higher orientation on results (and subsequently achieving higher organizational results). The reason for use FoC has significant relations with three of the advantages. This seems logical as better control, emerging in for instance better measurement of results, stronger accountability, higher commitment to the strategy and more focus on enhancing the quality of the organization, results in better understanding of the strategy and how people's role fit in with achieving this strategy (BSC), a stronger process orientation and more proactivity in achieving results (HPQ), and a higher quality of the organization (HOQ). The reason for use FoS yields one advantage, HOQ. This can be explained by the fact that FoS is aimed at obtaining a better understanding of the knowledge and skills of people, subsequently aligning them better with the strategy (e.g. translating the strategy in operational terms) and then rewarding them for achieving strategic goals. This results in higher employee

**Table V.**  
Component correlation  
matrix of PMM factors

Factors	Mean ( $\mu$ )	SD	HRO	BSC	HPQ	HOQ	BAS	LIQ	FoC	FoS
Higher results orientation (HRO)	3.5	0.7	1							
Better strategic clarity (BSC)	3.5	0.9	0.489	1						
High people quality (HPQ)	3.3	0.9	0.543	0.430	1					
High organizational quality (HOQ)	3.4	0.8	0.516	0.380	0.516	1				
Badly aligned system (BAS)	1.7	0.9	-0.092	-0.197	0.047	-0.110	1			
Low information quality (LIQ)	2.0	0.8	-0.180	-0.330	-0.208	-0.328	0.176	1		
Focus on control (FoC)	2.4	0.7	0.121	0.371	0.212	0.179	-0.123	0.242	1	
Focus on strategy (FoS)	2.3	0.7	0.388	0.124	0.659	0.399	-0.247	-0.136	0.150	1



**Figure 1.**  
PMM factors  
relations model

satisfaction and higher quality of processes, products and services, as stipulated in the strategy.

There are no significant relationships between the reasons for use and the disadvantages, nor between the advantages and the disadvantages. From this result it can be inferred that the disadvantages, which did not occur very often anyway (see Table V), do not “automatically” stem from specific reasons for use nor are they linked to specific advantages. If disadvantages are experienced, they occur stand-alone. Therefore *H4a*, can only be partly accepted, that is for the relationship between reasons for use and advantages. *H4b*, has to be rejected.

There are several significant relations between the PMM advantages, specifically between HRO and better strategic clarity (BSC), HRO and HPQ and HPQ and HOQ. These factors can be interpreted as mutually reinforcing pairs. *H4c*, is therefore accepted. This can be explained by considering this advantage as a logical consequence of the other advantages: a better organizational structure, which is driven by the organization's strategy to help firms translate the strategy into operations and reach their objectives, and better information and communication will result in a higher orientation on results by the workforce and subsequently achieving higher organizational results.

A strong focus on the strategic issues that are important to the organization which is conveyed to all organizational levels (HRO) creates more clarity for organizational members about the strategic issues (BSC), their role in dealing with and working on these issues (BSC), resulting in a strong focus on the achievement of results at all

organizational levels (BSC). In turn, this strong focus (BSC) will increase the capability of the organization to achieve its financial results (HRO) and organizational goals (HRO). More effective management control (HRO) translates into stronger process orientation (HPQ) because there is better progress control of processes. This in turn results in higher operational efficiency (HRO). When effective management control is coupled with the strengthened focus on the strategic issues (HRO), organizational units are better able to link their goals and processes to the strategy (HPQ). Subsequently, organizational members are then more committed to the goals of the organization (HPQ) and are proactive to achieve these (HPQ). This will also increase the capability of the organization to achieve its financial results (HRO) and organizational goals (HRO). Higher commitment (HPQ) translates into higher employee satisfaction (HOQ) and in general in higher quality products, services and processes (HOQ) as organizational members are more motivated to excel. This then yields a strengthened reputation of the organization as a quality firm (HOQ). Better performance information (HOQ) better supports the process orientation (HPQ) and makes it possible for organizational members to become more proactive (HPQ). Improved communication on the strategy (HOQ) increases the commitment of organizational members to the organization (HPQ) as they better understand what is important. It has to be noted that no linear one-way relations among PMM advantages were found. This is in line with Norreklit's (2000) notion that the contention of Lynch and Cross (1990) and Kaplan and Norton (1996) about linear relations is false. As such Norreklit's (2000) statement has to be taken seriously that there is no single, unique sequence of events and each advantage may contain both drivers and outcome measures that may be related to more than one other advantage. This means that each advantage, as an independent variable, has a multiple positive effect.

### Summary, limitations and future research

The research described in this paper focused on answering the questions: What are the advantages, disadvantages and reasons for use of PMM in business practice? and What are the relations between the reasons behind the implementation of PMM, advantages and disadvantages? Based on a literature study and practical research at 17 prominent Dutch organizations, it became clear there are two main reasons for implementing PMM and four advantages and two disadvantages which are to be expected from using PMM. The practical implication of this research is that implementing and using PMM yields specific benefits for an organization, most of which are directly tied to the reasons that PMM was implemented and one benefit that is indirectly tied and a resultant of some of the other benefits. As a consequence, management now knows which and how many advantages are to be expected as a direct result of a specific reason for use, and thus management can check whether full benefit has been achieved from using PMM. If one or more of the PMM advantages have not been found in the organization, management has to investigate whether PMM is implemented and used in the right manner and for the right reason. Management can also use the research results to convince organizational members that PMM is indeed beneficial for the organization and only has minor drawback in the shape of a limited number of disadvantages which do not occur frequently (Marchand and Raymond, 2008). Overall, this research suggests, like Bryant *et al.* (2004), that management needs to make the advantages of PMM explicit before starting the PMM implementation and keep stressing these advantages during and after implementation. This will heighten commitment of organizational members to PMM and increase a successful use of PMM. The theoretical implication of this research is that it creates order in the myriad

of advantages and disadvantages of PMM that have been reported in the literature. The research also, for the first time, ties advantages to certain reasons for use of PMM.

There are several limitations to the research. The sample size of the research was relatively small. Although 17 organizations participated in the research, only 52 people were interviewed so generalization of the results for all organizations cannot be made. Thus, future research can focus on obtaining a larger response group. Also, the selection of the 17 organizations can have created a bias. It is logical to assume that organizations which have successfully implemented and used PMM are more willing to participate in the research than organizations which did not have positive experiences. As a result, the PMM advantages might be overstated in the research results while the PMM disadvantages were underexposed. In addition, most organizations were from the profit sector which created a bias in itself. Future research should therefore explicitly target nonprofit and governmental organizations. Another limitation is that this research is not longitudinal. Longitudinal studies would better examine the developments and shifts in the relations between PMM advantages, disadvantages and reasons for use. This is a topic for future research. Future research is also needed into environmental factors such as spatial dimensions (e.g. accessibility) or localized concentrations of economic activity. This interest is warranted because of the far-reaching influence that localized concentrations of economic activity (development of creative clusters) and business performance have on regional and national modern economies. This research may yield factors that are of great(er) importance to successful implementation and use of SPM than only organizational SPM factors identified in this study. Finally, another topic for future research, as mentioned in the Introduction, is examining the conditions under which PMM is successful or not.

### Notes

1. For the “reasons for using PMM” no selection was made because only four empirical literature sources were found that listed these reasons.
2. As Kaplan and Norton do not write about the reasons for PMM use, the conjunction of these reasons cannot be tested.
3. The reasons for use of PMM were not included in the matching because the limited number of literature sources that mentioned reasons for PMM use did not allow a proper matching.

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	Literature source
<i>Quantitative advantage</i> Increase in revenue	Malina and Selto (2001), Sim and Koh (2001), Davis and Albright (2002, 2004), Waal (2002), Said <i>et al.</i> (2003), Braam and Nijssen (2004), Neely <i>et al.</i> (2004), Robinson (2004)
Increase in profit	Epstein <i>et al.</i> (2000), Davis and Albright (2002, 2004), Waal (2002), Said <i>et al.</i> (2003), Said <i>et al.</i> (2003), Braam and Nijssen (2004), Neely <i>et al.</i> (2004), Robinson (2004)
Reduction in costs	Sim and Koh (2001), Neely <i>et al.</i> (2004)
<i>Qualitative advantage</i> Improvement of internal communication on the strategy	Lovell <i>et al.</i> (2002), Baraldi and Monolo (2004), Heras (2004), Neely <i>et al.</i> (2004), Papalexandris <i>et al.</i> (2004), Robinson (2004), Lawson <i>et al.</i> (2004)
Closer collaboration and better knowledge sharing and information exchange between organizational units	Mooraj <i>et al.</i> (1999), Kald and Nilsson (2000), Neely <i>et al.</i> (2004), Lawrie <i>et al.</i> (2004), Papalexandris <i>et al.</i> (2004), Robinson (2004)
Strengthened focus on what is important for the organization	Mooraj <i>et al.</i> (1999), Kald and Nilsson (2000), Baraldi and Monolo (2004), Neely <i>et al.</i> (2004), Self (2004)
More focus on the achievement of results	Dumond (1994), Bititci <i>et al.</i> (2004), Lawrie <i>et al.</i> (2004), Neely <i>et al.</i> (2004), Self (2004)
Higher quality of performance information	Lawson <i>et al.</i> (2004), Neely <i>et al.</i> (2004), Robinson (2004), IOMA Business Intelligence at Work (2005), Tapinos <i>et al.</i> (2005)
Better strategic alignment of organizational units	Malina and Selto (2001), Shulver and Antarkar (2001), Lovell <i>et al.</i> (2002), Neely <i>et al.</i> (2004), Lawson <i>et al.</i> (2005)
Higher operational efficiency	Waal (2002), Neely <i>et al.</i> (2004), Robinson (2004)
Improvement of management quality	Malina and Selto (2001), Waal (2002), Neely <i>et al.</i> (2004)
Better understanding of organizational members of the strategy	Lovell <i>et al.</i> (2002), Heras (2004), Neely <i>et al.</i> (2004)
Improvement in the decision-making process	Dumond (1994), Mooraj <i>et al.</i> (1999), Kald and Nilsson (2000)
Higher commitment of organizational members to the organization	Malina and Selto (2001), Neely <i>et al.</i> (2004), Bititci <i>et al.</i> (2004)
More clarity of people about their contribution towards achievement of the strategy and organizational goals	Lawson <i>et al.</i> (2004), Neely <i>et al.</i> (2004), Papalexandris <i>et al.</i> (2004)
Higher innovativeness	Sim and Koh (2001), Waal (2002), Self (2004)
Better achievement of organizational goals	Waal (2002), Lawson <i>et al.</i> (2005), Tapinos <i>et al.</i> (2005)
More proactivity of organizational members	Neely <i>et al.</i> (2004), Lawson <i>et al.</i> (2005), Tapinos <i>et al.</i> (2005)

(continued)

**Table AI.**  
Listing of PMM advantages, disadvantages and reasons for use identified in the literature



	Literature source
More clarity for organizational members about their roles and goals to be achieved	Lawson <i>et al.</i> (2004), Neely <i>et al.</i> (2004)
Higher quality of products and services	Waal (2002), Brown (2004)
More effective management control	Malina and Selto (2001), Neely <i>et al.</i> (2004)
Higher employee satisfaction	Sim and Koh (2001), Papalexandris <i>et al.</i> (2004)
Stronger process orientation	Shulver and Antarkar (2001), Neely <i>et al.</i> (2004)
Strengthened reputation of the organization as a quality firm	Waal (2002), Self (2004)
Better strategic planning process	Lovell <i>et al.</i> (2002), Tapinos <i>et al.</i> (2005)
<i>Qualitative disadvantage</i>	
It causes too much internal competition	Kald and Nilsson (2000), Papalexandris <i>et al.</i> (2004)
There is too much financial information	Kald and Nilsson (2000), IOMA Business Intelligence at Work (2005)
It is too expensive and too bureaucratic	Braam and Nijssen (2004), IOMA Business Intelligence at Work (2005)
There are too many performance indicators	Dumond (1994), Kald and Nilsson (2000), Self (2004), IOMA, Business Intelligence at Work (2005)
The performance information is too aggregated	Kald and Nilsson, (2000), Neely <i>et al.</i> (2004)
There is not enough strategic information in the system	Kald and Nilsson (2000), Sim and Koh(2001)
The performance indicators are too subjective and therefore unreliable	Kald and Nilsson (2000), Malina and Selto (2001)
There is too much historical information	Kald and Nilsson (2000), IOMA Business Intelligence at Work, (2005)
<i>Reason for use</i>	
More accurate measurement of performance	Robinson (2004)
More focus on the strategy	Robinson (2004)
Stronger accountability	Robinson (2004)
Need for a broader set of measures of performance	Robinson (2004)
Better facilitation of cross-functional understanding	Robinson (2004)
Better goal setting	Robinson (2004)
Formalization of the strategic planning process	Robinson (2004)
Stronger individual accountability of employees	Robinson (2004)
Stronger commitment of top management	Robinson (2004)
Higher commitment to the strategy	Neely <i>et al.</i> (2004)
Handling the increase in complexity of the organization	Tapinos <i>et al.</i> (2005)

(continued)

## Literature source

Better description of mission, strategy and goals	Neely <i>et al.</i> (2004)
Improve the performance of the organization	Lawson <i>et al.</i> (2004)
Obtain a better understanding of knowledge and skills of people	Lawson <i>et al.</i> (2004)
Better control and with that better "obedience" of people	Lawson <i>et al.</i> (2004)
Tracking progress towards achievement of organizational goals	Lawson <i>et al.</i> (2004)
Aligning employee behaviour with strategic objectives	Lawson <i>et al.</i> (2004)
Better communicating of strategy to everyone in the organization	Lawson <i>et al.</i> (2004)
Aligning the organization to the strategy	Lawson <i>et al.</i> (2004)
Being able to measure people, projects and strategy	Lawson <i>et al.</i> (2004)
Being able to measure performance at various organizational levels	Lawson <i>et al.</i> (2004)
Translating the strategy into operational terms	Lawson <i>et al.</i> (2004)
Need to make strategy everyone's job	Lawson <i>et al.</i> (2004)
Need to correlate measures and actions better	Lawson <i>et al.</i> (2004)
Linking rewards to performance	Lawson <i>et al.</i> (2004)
Enforcing and monitoring regulatory compliance	Lawson <i>et al.</i> (2004)
Requirement of a business opportunity	Lawson <i>et al.</i> (2004)
Expectation of the stock market	Lawson <i>et al.</i> (2004)
Requirement of governmental regulations	Lawson <i>et al.</i> (2004)
Decision support at top management level	Lawson <i>et al.</i> (2004)
Decision support at operational level	Lawson <i>et al.</i> (2004)
Providing a better picture of customer and product profitability	Lawson <i>et al.</i> (2004)
Making responsibility accounting possible	Lawson <i>et al.</i> (2004)
Identity possible needs for changes in strategy	Lawson <i>et al.</i> (2004)
Facilitate implementation of business strategy	Lawson <i>et al.</i> (2004)
Provide information for external reporting	Lawson <i>et al.</i> (2004)
Facilitate comparison with other, similar business units	Lawson <i>et al.</i> (2004)
Enhance quality of the organization	Lawson <i>et al.</i> (2004)
Determination of the bonus of management and/or staff	Lawson <i>et al.</i> (2004)
Monitor whether the business is creating value for shareholders	Lawson <i>et al.</i> (2004)
Facilitate a process orientation	Lawson <i>et al.</i> (2004)

Table AI.

**Appendix 2. Matching the advantages and disadvantages of PMM with the BSC**

In this appendix the advantages and disadvantages of PMM as identified in the literature are categorized according to the four perspectives of the BSC.

BSC perspective	Advantages
Financial	<ul style="list-style-type: none"> <li>Increase in revenue</li> <li>Increase in profit</li> <li>Reduction in costs</li> <li>More focus on the achievement of results</li> <li>Better achievement of organizational goals</li> <li>Strengthened focus on what is important for the organization</li> </ul>
Customer	<ul style="list-style-type: none"> <li>Higher quality of products and services</li> <li>Strengthened reputation of the organization as a quality firm</li> <li>Improvement in communication in the organization on the strategy</li> <li>Higher quality of performance information</li> <li>Better strategic alignment of organizational units</li> <li>Higher operational efficiency</li> <li>Improvement of management quality</li> <li>Improvement in the decision-making process</li> <li>More effective management control</li> <li>Stronger process orientation</li> </ul>
Internal	<ul style="list-style-type: none"> <li>Better strategic planning process</li> <li>Higher commitment of organizational members to the organization</li> <li>Better understanding of organizational members of the strategy</li> <li>More clarity of people about their contribution towards achievement of the strategy and organizational goals</li> <li>More proactivity of organizational members</li> <li>More clarity for organizational members about their roles and goals to be achieved</li> </ul>
Innovative/people	<ul style="list-style-type: none"> <li>Higher employee satisfaction</li> </ul>
Financial	<ul style="list-style-type: none"> <li>Disadvantages</li> <li>There is too much financial information</li> </ul>
Customer	<ul style="list-style-type: none"> <li>It is too expensive and too bureaucratic</li> <li>No disadvantages found</li> <li>There are too many performance indicators</li> <li>The performance information is too aggregated</li> <li>There is not enough strategic information in the system</li> </ul>
Internal	<ul style="list-style-type: none"> <li>The performance indicators are too subjective and therefore unreliable</li> </ul>
Innovative/people	<ul style="list-style-type: none"> <li>It causes too much internal competition</li> </ul>

**Appendix 3. Detailed information on matching the advantages and disadvantages**  
 This appendix lists the organizations that participated in the research, and provides some detail on the interviewees.

Organization	Industry	Size	Type	No. of interviews	Functions interviewed
Abrona	Care	Medium	National	5	Chairman of the Board, HRM Director, Region Manager, Cluster Manager (2)
De Lage Landen	Financial services	Large	Multi-national	4	Divisional COO (2), CFO, Programme Manager
Eneco	Energy	Large	National	3	Services Manager, Corporate Controller, COO
Heemskerk	Food	Medium	Multi-national	4	Operations Director, HRM Director, Operations Manager, Business Desk Manager
ING	Financial services	Large	Multi-national	2	Project and Change Manager (2)
KLM	Transportation	Large	Multi-national	2	Network Senior Vice President, Passenger Senior Vice President/Controller
KLM Cargo	Transportation	Large	Multi-national	2	Finance and Control Vice President, Financial Planning and Control Director
Philips Research	Manufacturing	Large	Multi-national	4	Works Counsellor, Research Vice President, HRM Senior Manager, Secretary of the Board
PQ Europe	Manufacturing	Medium	Multi-national	3	Plant Manager, HRM Officer, Health and Safety Manager
Rabobank	Financial services	Large	Multi-national	4	HRM Retail Manager, HRM manager, SS&F Manager, Corporate HRM Manager
Sara-Lee/DE	Food	Large	Multi-national	2	Corporate Control Vice President, Divisional CFO
Schiphol Group	Professional services	Large	Multi-national	1	HRM Manager
Stork	Manufacturing	Large	Multi-national	2	Corporate Strategy manager, Control Manager
Tempo-Team	Professional services	Large	National	4	Business Unit Manager, Account Specialist (2), Business Unit Analyst
Trespa	Manufacturing	Medium	Multi-national	4	CFO, Financial Support Manager, Commercial Manager, Industrial Engineer
Wessanen	Food	Large	Multi-national	5	Reporting Manager, Supply Chain Manager, Operations Manager, Financial Manager, Sales Director
A well-known car manufacturer	Manufacturing	Large	Multi-national	1	Internal consultant

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