



The impact of performance management on the results of a non-profit organization

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Abstract

Purpose – In recent years many organizations have implemented performance management because this technique leads to better organizational results as reported in many articles and case studies. However, often the reported improvement relates to qualitative performance and there is little solid empirical evidence of the actual effects performance management has on the quantitative results of organizations. This article aims to describe the results of a study that explored the quantitative impact of performance management on the results of a non-profit organization.

Design/methodology/approach – Quantitative performance data of the organization, before and after the introduction of performance management, were collected and linked to key activities and events that occurred in the organization during and after the implementation.

Findings – The research shows that several key activities related to the introduction of performance management have an impact on the results of an organization although not always in an expected positive way.

Research limitations/implications – A research limitation is that it is always difficult to isolate the effects of a particular event on the overall results of an organization. Although the effects of other events have been taken into account, it cannot be ruled out that unlisted events and factors are in play.

Practical implications – The results support managers who want to introduce performance management to improve the results of their non-profit organisation. At the same time, the research indicates that introducing and using performance management needs continuous attention of management in order to become and stay successful in the long run.

Originality/value – This article contributes to the literature as it is one of the few longitudinal research studies into the effects of performance management, specifically in non-profit organizations.

Keywords Non-profit, Effects, Longitudinal, Quantitative performance, Performance management, Non-profit organizations

Paper type Research paper



Introduction

In recent years many organizations have implemented performance management (PM). This seems to be a logical thing to do as the literature indicates that PM leads to better organizational results (Ahn, 2001; Said *et al.*, 2003; Pinheiro de Lima, 2009). However, often the reported improvement relates to qualitative performance (Murby and Gould,

2005; Chang, 2006; Henri, 2006) and there is little solid empirical evidence of the actual effects performance management has on the quantitative results of organizations (Bourne *et al.*, 2000, 2005; Harris Mulvaney *et al.*, 2006). Available research is often descriptive and anecdotal (de With and Dijkman, 2006) with ambiguous outcomes: after the implementation of PM systems such as a balanced scorecard quantitative performance sometimes improves, and sometimes it does not (Banker *et al.*, 2000; Wiersma, 2003; Neely *et al.*, 2004; Peljhan and Tekavčič, 2006; Ittner, 2008). This article describes the results of a study that explored the impact of PM on the performance of a non-profit organization. This research area has been neglected in the PM literature until now because of the difficulty of measuring longitudinal performance effects in the non-profit sector (Andersen and Lawrie, 2002; Radnor and McGuire, 2004; Verbeeten, 2008; Moxham, 2009). Quantitative performance data of the organization, before and after the introduction of PM, was collected and linked to key activities and events that occurred in the organization during and after PM implementation. Then it was analysed whether PM had a visible and significant impact on the quantitative results of the organization. As such, this article contributes to the literature as it is one of the few longitudinal research studies into the effects of quantitative performance management, specifically in non-profit organizations.

The article starts with an overview of the literature on the effects of PM on the results of organizations, and in particular non-profit organizations. This is followed by a description of the case organization and the implementation process of PM at that organization. Special attention is given to key events that occurred during the implementation and subsequent use of PM. Then a link is made between these events and the quantitative performance of the organization over time, after which the resulting match is analysed and discussed. Finally, the limitations of the research are given.

The effects of performance management

Over the past decades PM has attracted much research interest from both academic and business communities. In this article the following definition of PM is used:

[...] the process where 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 and key performance indicators, in order to be able to take corrective actions to keep the organization on track (de Waal, 2007, p. 19).

The effectiveness of the process is defined as the achievement of both financial and non-financial targets, the development of skills and competencies, and the improvement of customer care and process quality (de Waal, 2007, p. 120). In this respect, PM as used in this article focuses on organisational performance and not on individual performance. It also focuses on the combination of performance measurement and acting on the results of the measurement. Since its introduction many authors have listed the advantages of applying PM (see for example: Jowett and Rothwell, 1988; Kaplan and Norton, 1996; Epstein *et al.*, 2000; Ahn, 2001; Ittner *et al.*, 2003; Davis and Albright, 2004; Neely *et al.*, 2004). The general tendency in this literature is that organizations that have implemented PM perform better in both financial and non-financial terms than organizations that are less performance management driven. This is explained by the fact that PM directs attention and

motivates the organization to act in a strategically desirable way. It also helps management to assess progress to-ward strategic goals (Langfield-Smith, 1997) and individuals to see their part in the wider enterprise with greater clarity (Williams, 1998).

However, many of the studies in which these benefits are mentioned are anecdotal and thus there is little empirical evidence about the impact of PM on performance (Ittner and Larcker, 1998; Bourne *et al.*, 2000; Neely and Austin, 2000; Bourne *et al.*, 2003; Davis and Albright, 2004; Neely *et al.*, 2004; Neely, 2005). In this respect, Rangone (1997) remarks that the link between organizational effectiveness and the use of performance measures has been widely recognized but that explanations for this link are constrained by the lack of clear theoretical foundations for many measurement tools and techniques and an apparent preference for description and prescription on the part of writers in the field (Holloway, 2000). Some studies do not find an explicit link between the use of non-financial measures and organizational performance. Perera *et al.* (1997) reason that this could be caused by the fact that organizations might consider introduction of PM less important than organizational structural arrangements or that the main benefits of the use of PM are motivational rather than instrumental, or that performance is a complex variable with a multiplicity of factors contributing to the level of global performance at any point in time. Armstrong and Baron (1998, p. 113) draw attention to the fact that it is often difficult to establish (forward) causation when they stated that one cannot prove that X produces Y, but neither can one prove that it did not. They give the example that when a study claims to establish that there is a proven connection between PM and measures of organizational performance, it is a matter of speculation as to whether the results in the most effective companies were created by PM, or whether the most effective companies were the ones most likely to introduce PM. Showing the impact of PM in non-profit organizations is even more problematic than in profit organizations. Implementing and using PM in the non-profit sector is more difficult due to a relative lack of clarity in the purpose and direction of PM in non-profit organizations and the distinct scarcity of empirical longitudinal studies in this area (Andersen and Lawrie, 2002; Franco and Bourne, 2003; Radnor and McGuire, 2004; Adcroft and Willis, 2005; Greatbanks and Tapp, 2007; Manville, 2007; Moxham, 2009). This article aims to fill the gap in the literature by describing research aimed at discovering the effects and impact of recently introduced PM on the results of a non-profit organization. The research question which is investigated in this article is therefore as follows: "How does the introduction of performance management affect the performance of a not-for-profit organisation?"

Research approach

Yin (1994, p. 20) supports the use of a case-based approach when real life context and situations are to be investigated. The research described in this article can be characterised to be of a quasi-experimental design, concerning a longitudinal case study in which a record of all plausible effect-causation events has been made (Wiersma, 2003). More specifically, it constitutes an interrupted time-series design because this design is considered to be especially strong when a rapid effect is expected of an intervention, such as implementing PM (Marcantonio and Cook, 1994). In the design, post-intervention data is compared with pre-intervention data, to compare and estimate the effect and impact of that intervention.

As one of the researchers had worked at the case company for several years and was still employed there at the time of the study, the researchers had easy access to data and reports from the company. Also, the other two researchers were able to interview the researcher working at the case company to obtain additional information. The analysis of the case data was done by these two researchers and discussed and verified with the case company researcher. This division of work was chosen as the case company researcher had been involved in the introduction and roll-out of PM at the case company.

Case company: the Trimbos Institute

The Trimbos Institute is The Netherlands' Institute for Mental Health and Addiction. The institute is committed to fostering a better quality of life through knowledge development and application regarding mental health, addiction and accompanying somatic illnesses. Its target groups comprise primarily those having problems in these areas, but also people in their immediate surroundings, and health care professionals. The main activities of the Trimbos Institute are informing policymakers, politicians and professionals about the mental health of the Dutch population; identifying and monitoring mental health and addiction problems; conducting research on and evaluating the structure, accessibility, quality and effectiveness of health care; developing new methods for treatment, drawing up guidelines, setting up prevention programmes; developing and executing courses and training programmes; and furnishing and organizing national prevention campaigns. The institute runs a broad range of (pilot) projects in the field of alcohol, drugs and addiction, aimed at development of evidence-based information and prevention, development of harm and/or risk reduction strategies, implementation of ambulant care and brief interventions, and analysis and evaluation of alcohol and drug demand reduction policy. The institute is a non-profit organization funded by subsidies and project funds from donors. Most of its work is commissioned by the Ministry of Health, Welfare and Sport, the Ministry of Foreign Affairs, and ZonMW (Netherlands Organization for Health Research and Development). Other clients include mental health organizations, health insurers, client organizations, GGZ Nederland (Netherlands Association for Mental Health Care), local authorities, the European Commission, the MATRA programme (Ministry of Foreign Affairs) The Ministry of Youth and Family, UNODC, European bodies and many others.

At the institute approximately 250 people (70 percent with academic qualifications) work on over 300 projects annually. The institute is organized into thirteen thematic programmes which are clustered around four centres. A programme consists of thematically related or interconnected projects. Whereas the projects have a limited scope and duration, the programmes have a more substantial character. The programmes address a particular theme related to mental health care, addiction care or social care for a prolonged period of time and may involve research; development of model programmes and guidelines; and/or the provision of implementation help for both care and prevention purposes. The four centres and the programmes which they encompass are the Centre for Innovation of Mental Health Care, Monitoring and Policy, the Centre for Prevention and Brief Interventions, the Centre for Youth, and the Centre for Long-Term Care (Figure 1).

A feature common to all programmes and activities is the collaboration with knowledge institutes, universities, professional associations, professionals, client

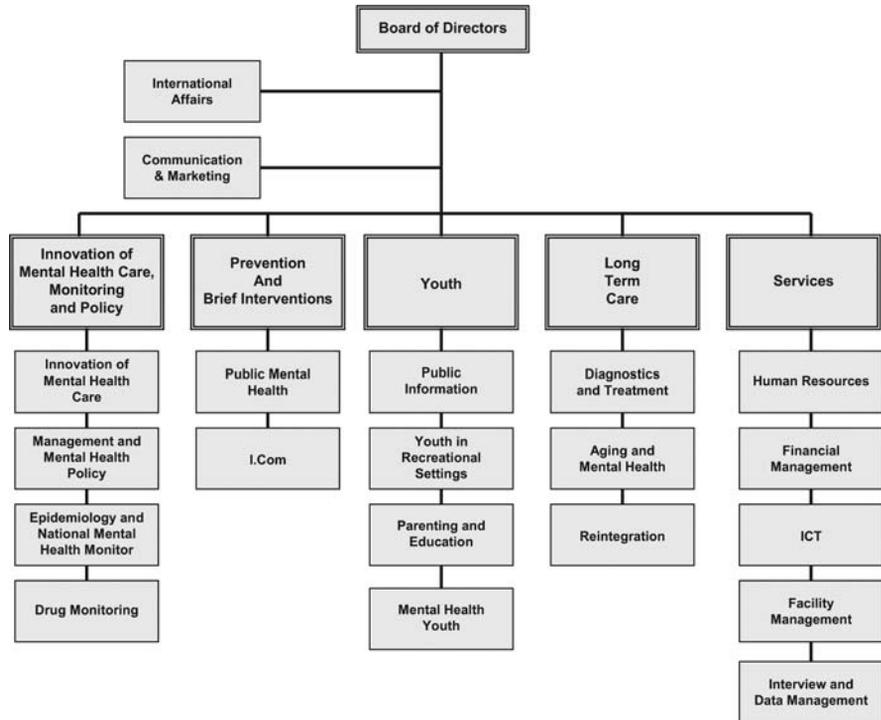


Figure 1.
Organizational chart of the
Trimbos Institute

organizations and other stakeholders. Within the context of the national and regional mental health services, Trimbos works for and with some 400 local, national and international organizations in the area of prevention, care, treatment and social reintegration. The institute is a prominent collaboration partner of the World Health Organization (WHO) in the area of information, disseminating and increasing the accessibility of knowledge about mental health services. Accordingly, the Trimbos Institute contributes to the implementation of the following frameworks: WHO Mental Health Declaration for Europe and Action plan, the Tallinn Charter (Health Systems for Health and Wealth) and the European Pact for Mental Health and Well-being. The institute has 70 publications per year, maintains 40 specialist web sites, and publishes nine specialist e-zines.

Introducing PM at Trimbos

In the beginning of this century the Trimbos Institute experienced great turbulence, among others because of several rapid changes in management, a changing external environment which expected Trimbos to function more as a knowledge centre, and the shifting nature of the subsidy relation with the Ministry of Health, Welfare and Sport which in the past had been a reliable source of income for the institute but had now become more professional and demanding, and as a consequence this stream of revenue was not as steady as it used to be. Unfortunately because of the turmoil and the “survival mode” the institute was in, little attention had been paid to the strategy of Trimbos. The new director, appointed at the beginning of 2003 had been busy

stabilizing the organization and had only been able to introduce business plans during 2003. At the beginning of 2005 the management decided to recalibrate the strategy using PM. The aim of the introduction of PM was to develop robust strategic objectives for the institute and to make these measurable using critical success factors (CSFs) and key performance indicators (KPIs), so that managers and employees could take corrective and preventive actions to keep the institute on course. A CSF provides a qualitative description of an element of the strategy in which the organisation has to excel in order to be successful. The CSF is quantified, made measurable, by a KPI (de Waal, 2007, p. 113).

The introduction of PM started in the summer of 2005. The first step was developing scenarios for Trimbos, based on external and internal developments which could and probably would affect the future of the institute. For each scenario the management indicated whether it was an opportunity or a threat and the chance of the scenario becoming reality. An examples of a scenario was: The subsidy of the Ministry of Health, Welfare and Sport will be reduced by 30 to 50 percent in comparison to 2004 (threat, 80 percent probability). The next step was to match the existing strategic objectives of Trimbos against the scenarios in order to evaluate whether the probable future developments were sufficiently taken into account. As this turned out to be not the case, new strategic objectives were drafted. During the third step of the PM introduction, the newly developed strategic objectives were elaborated by the management into CSFs and KPIs. Table I contains several examples of CSFs and KPIs for two of the strategic objectives.

During the last step in the PM development process the leaders of the centres and the programmes were asked to tailor the newly developed strategic objectives, CSFs and KPIs to their centres respectively programmes so they would appeal to their employees. Finally, the reward system was adapted to the new situation. Management would from now on be evaluated and rewarded on the achievement of performance agreements (which were drafted based on the strategic objectives, CSFs and KPIs), the achievement of personal development agreement (i.e. obtaining a degree, following specific training sessions) and general functioning and behaviour. A bonus scheme was not introduced; instead a gratuity was installed for which people can be nominated at the end of each quarter.

Key events

During the implementation and subsequent use of PM many activities and projects, both related and unrelated to the PM implementation, were undertaken in the institute. It was expected that the key events occurring during the PM project directly impacted on the results of the institute and therefore constituted plausible effect-causation events. At the same time, certain events that occurred in the institute but were unrelated to the PM implementation could also have had a direct or indirect influence on the institute's results. In the subsequent statistical analysis the impact of these events is tested. Table II provides an overview of the key events which occurred at Trimbos.

Results

Based on the experience of the researcher who worked at Trimbos the following KPIs were identified that best represented the performance of the institute: absenteeism, customer satisfaction, chargeability rate, lead time and project losses. Quarterly data

Strategic objective	CSF	KPI
Strengthen relations with current customers of the institute	Current customers	Percentage of current customers versus total number of customers Turnover current customers versus total turnover Increase in turnover of current customers
	Excellent project execution Preferred supplier	Customer satisfaction score Percentage of customers were Trimbos is preferred supplier versus total number of customers
	Understanding of client needs	Hit ratio quotations Number of customers visited versus total number of customers, per year
Guarantee the scientific quality of Trimbos' output	Solid scientific reputation	Number of successful applications for scientific grants Number of scientific speaking engagements
	Time available for scientific activities	Time available for scientific activities Number of scientific publications

Table I.
Examples of Trimbos' CSFs and KPIs

on these five KPIs were collected over the period 2003/Q1 (period 1 in the subsequent Figures) to 2008/Q4 (period 24), giving 24 data points per KPI. Effects of the key events were analyzed using analysis of variance (ANOVA). Seasonal adjustment of the data was applied where needed[1]. Any trends in the series were assumed to be caused by the events rather than being autonomous in nature. The impacts of events were assumed to have an immediate and lasting impact, by structurally raising the level of the series. As the number of observations was limited, cumulative (multivariate) and interactive effects of events have not been taken into consideration. Instead, cumulative effects had to be deduced by inspection of the pattern of effects of individual events. Since we were interested in the patterns of effects across events, and ANOVA – in this case – proved to produce robust results that takes into consideration the (interval and ratio) measurement levels of most variables, the alternative of non-parametric tests was discarded, though the latter undoubtedly better deal with issues of non-normality in the data and small samples. Events that more or less coincide in time have been grouped together, since it was impossible to assess their effects separately. The impact of event 1 could not be evaluated as no prior data is available. The grouping of the events is given in Table II. Under the null hypothesis of no effect, the series means before and after the events were expected to be equal; inequality suggested a level shift, representing an impact of the event on the results of the organization.

Impact on absenteeism

Absenteeism is defined as the proportion of all employees that were absent within a certain period of time. The lower the percentage is, the better it is for the organization. After imputation of missing quarterly data (in this case for periods 2, 4 and 9) by extrapolation between the periods before and after the gap in the graph, seasonal influences were detected (not surprisingly, absenteeism rates are highest in the wintery quarters; see Figure 2).

Group	No	Date	Event
	1	01-01-2003	Appointment new managing director Introduction business plans
2	2	15-10-2003	
3	3	01-01-2005	20 percent budget cut on structural subsidy, by Ministry of Health, Welfare and Sport
4	4	01-04-2005	Appointment new director operations
5	5	01-08-2005	Start PM process
6	6	01-09-2005	Appointment new controller Introduction project management
7	7	01-10-2005	
8	8	06-12-2005	Obtaining ISO certification 10 percent budget cut on project and structural subsidies, by Ministry of Health, Welfare and Sport
9	9	01-01-2006	Introduction corporate performance management IT system
10	10	01-07-2006	Start TOP program for high potentials
11	11	01-09-2006	Start structural measurement of all CSFs and KPIs
12	12	01-10-2006	Introduction employee counselling cycle
13	13	01-01-2007	
14	14	01-01-2007	Establishing new C&M department
15	15	01-03-2007	Start acquisition training
16	16	18-10-2007	Obtaining Investors in People certification
17	17	21-10-2008	Extension ISO certification

Request to people to convert their ideas for new products/services in business plans, to let them look in a more business-wise manner at their research and its possibilities

Consequences were cut-backs and contracts with several employees were not extended

The newly developed CSFs and KPIs were reported manually

Training for both managers and employees on project management skills

Certification on the quality of Trimbos' processes

Consequences were cut-backs

Implementing Hyperion so the new CSFs and KPIs could be reported automatically

Dedicated program to further develop high potential employees

Not all CSFs and KPIs could be reported from the beginning, these indicators are now also monitored and reported

Yearly structural translation of departmental objectives in individual objectives during the planning discussion, and yearly progress and evaluation review with each employee

New department charged with improving the quality of both external and internal communication

Dedicated training program to increase the acquisition skills of managers and employees

By implementing PM and the employee counselling cycle the development of employees was coupled structurally to the objectives of the institute, which yielded Trimbos the IP certificate

Table II.
Overview of the grouping
of key events at Trimbos

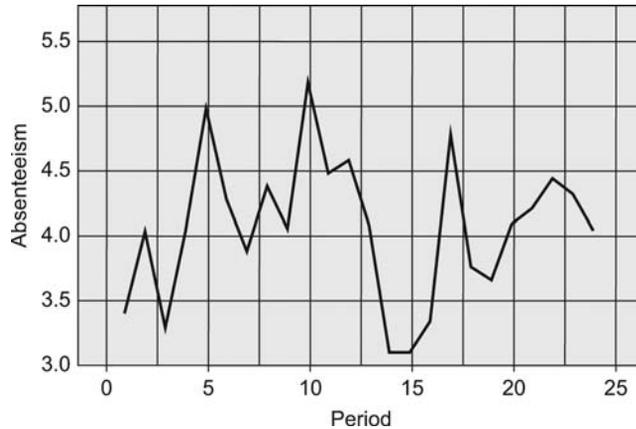


Figure 2.
Absenteeism rate

ANOVA was used to test whether the seasonally adjusted means of observed data only differed significantly before and after certain events (see Tables III and IV for an example of the data used in the evaluation of the event). After event 2, introduction of the business plans, occurred, absenteeism rose from 3.39 to 4.17, the difference being significant at the 90 percent level of confidence ($\text{Sig.} < 0.10$). Caution is in place because there are only two data points available before event 2 and absenteeism has risen while the expectation is that it should have been lower or not affected by the introduction of business plans. An explanation could be that, as a consequence of introducing business plans, the institute professionalized which could be construed by some people as threatening or as lowering the “family-feel” of the organization, thus lowering their feeling of well-being and subsequently increasing absenteeism.

Likewise the influence of the other events was tested. Table V shows that after event 9, the 10 percent budget cut, a significant (at the 90 percent level) drop in absenteeism took place, however this decrease seems not to have been structural. In general in tough times (caused by for instance budget cuts) absenteeism decreases as people are afraid of losing their job and they therefore call in sick less than normal. As

Table III.
Example of the data used to evaluate an event (in this case data for the influence of event 2 on absenteeism)

EVENT_02:		Mean	<i>n</i>	Std. deviation
Introduction business plans				
Before the event		3.39	2	0.30
After the event		4.17	19	0.54
Total		4.10	21	0.57

Table IV.
Example of the data used to evaluate an event (in this case data for the influence of event 2 on absenteeism)

	Sum of squares	df	Mean square	<i>F</i>	Sig.
Absenteeism by event 2: Introduction business plans					
Between groups (combined)	1.12	1	1.12	3.93	0.06
Within groups	5.40	19	0.28		
Total	6.52	20			

Group	Event	Absenteeism		Client satisfaction		Chargeability		Lead times		Project loss			
		After	Before	Sig.	After	Before	Sig.	After	Before	Sig.	After	Before	Sig.
2	Introduction business plans	3.39	4.18	0.06**	7.50	7.65	0.40	100.8	97.5	0.31			
3	20 per cent budget cut	4.06	4.12	0.83	7.50	7.65	0.40	96.2	99.0	0.25			
4	Appointment director	4.06	4.12	0.83	7.50	7.65	0.40	96.2	99.0	0.25			
5	Start PM process	4.22	4.04	0.52	7.33	7.70	0.00***	96.0	99.4	0.16*			
7	Appointment new controller	4.31	3.98	0.21	7.43	7.70	0.02***	96.1	99.7	0.13*			
9	Introduction project mgmt	4.34	3.93	0.10**	7.46	7.71	0.03***	96.2	100.0	0.11*			
10	Obtaining ISO certification	4.18	4.02	0.55	7.52	7.70	0.11	96.6	100.5	0.11*	87.0	83.0	0.01***
	Introduction CPM IT system												97.0
	Start TOP-program												92.3
12	Start measurement all CSF/KPI	4.11	4.09	0.93	7.57	7.69	0.37	96.9	100.4	0.17*	85.5	82.9	0.03***
13	Introduction counselling cycle	4.05	4.19	0.62	7.59	7.67	0.47	97.4	99.7	0.41	85.0	82.8	0.03***
	Establishing C&M department												91.3
	Start acquisition training												93.2
16	Obtaining IP certification	4.06	4.27	0.54	7.60	7.70	0.50	97.1	105.7	0.02***	83.4	83.3	0.91
17	Extension ISO certification	4.11	4.03	0.90	7.61	7.94	0.15	83.5	82.6	0.64	83.6	82.6	0.64
													93.1
													89.0
													0.52

Notes: * Significant at 80 percent, confidence level; ** significant at 90 percent confidence level; *** significant at 95 percent confidence level

Table V. Significance of the events on the various KPIs

soon as the situation of the organization improves, people return to their normal behaviour, potentially increasing absenteeism.

Impact on customer satisfaction

Customer satisfaction is defined as the average score that customers give (on a scale from 1 to 10) in regard to their satisfaction with Trimbos' work[2]. The higher the score is, the higher the level of satisfaction. For the periods 1 until 6 no data was available for customer satisfaction. Missing quarterly data (in this case for 9, 13 and 21) were inputted in order to assess seasonality (Figure 3). No large seasonal influences were found, and therefore ANOVA was applied to the unadjusted series. Table V shows that customer satisfaction increased significantly after the consecutive (groups of) events 5 (start of the PM process/appointment of the new controller), 7 (introduction of project management/obtaining ISO certification) and 9 (the 10 percent budget cut). This pattern in the results may indicate that any impact of event 9 may actually be the carry-over effect of the preceding events 5 and 7 (which took place within 4 months before the occurrence of event 9).

Impact on chargeability

Chargeability is defined as the number of employees' work hours that is paid for by customers versus the total number of employees' work hours available. The higher the percentage is, the better the institute's result. Missing quarterly data (in this case for 4, 5, 22, 23 and 24) were filled-in with extrapolated data (Figure 4). Then it was tested whether there were seasonal influences, none could be found.

Figure 4 depicts a fanciful development of the chargeability with upward and downward peaks at both the beginning and the ending of the time series. From quarter 5 to 16 there is a consistent increase in chargeability, as is the case in quarters 20 to 22. Despite the irregular pattern of the chargeability there are almost significant impacts to be detected for events 5 (start of the PM process/appointment of the new controller), 7 (introduction of project management/obtaining ISO certification), 9 (the 10 percent budget cut), 10 (introduction of the CPM IT system/start of the TOP program) and 12 (start measurement of all CSF/KPIs). For event 16 (obtaining the IiP certification) the impact is significant (Table V).

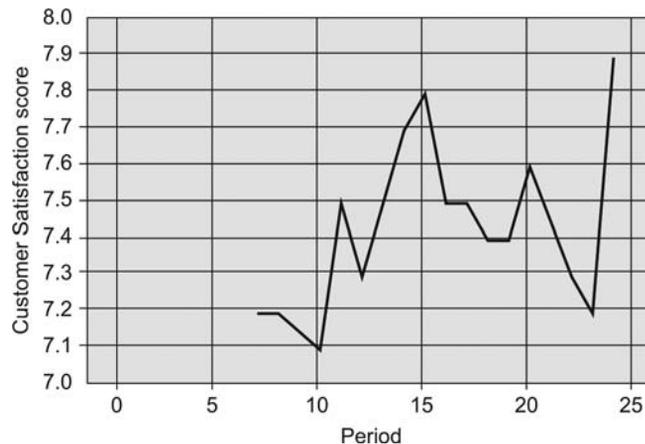


Figure 3.
Customer satisfaction score

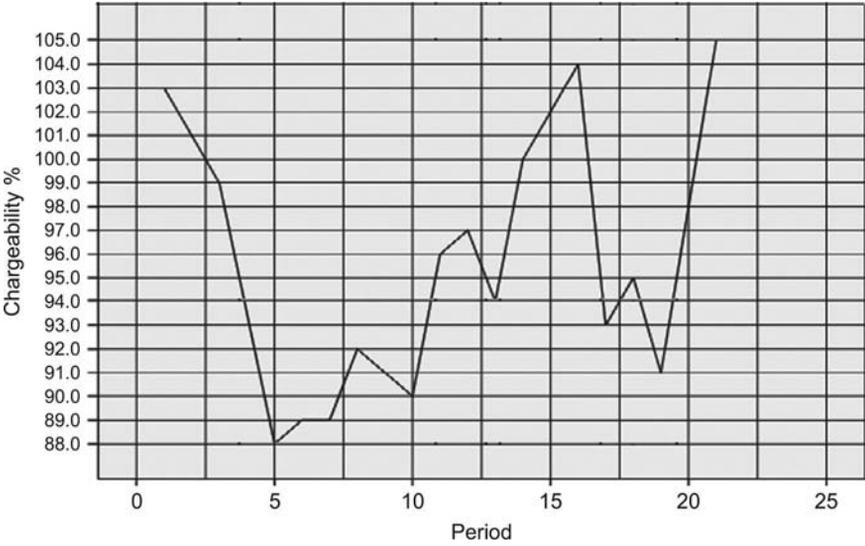


Figure 4. Chargeability score

Impact on lead time

Lead time is defined as the number of projects that is finalized without delay versus the total number of projects finalized. The higher the percentage is the better. For the periods 1 until 13 no data was available for lead time (Figure 5) so the impact of events 1 to 9 cannot be identified. Table V shows that the lead times increased significantly after events 10 (introduction of the CPM IT system/start of the TOP program), 12 (start measurement of all CSF/KPIs) and 13 (introduction of the counselling cycle/establishing the C&M department/start of the acquisition training).

Impact on project loss

Project loss is defined as the number of projects that is finalized with an overrun of the budget in excess of € 5,000 versus the total number of projects finalized. The lower the

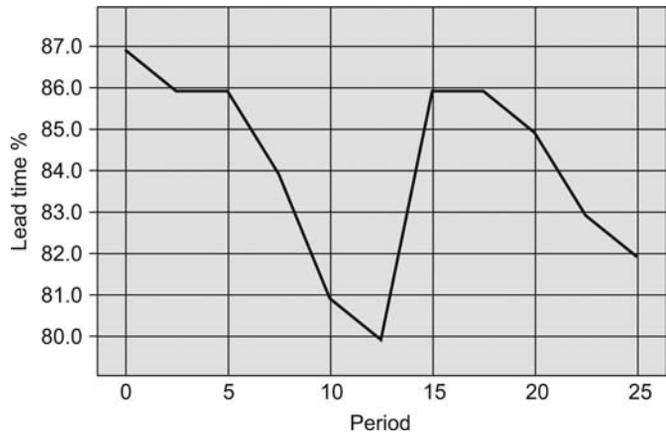


Figure 5. Lead times

percentage is, the better the result of the institute. For the periods 1 until 13 no data was available for lead time (Figure 6) so the impact of events 1 to 9 cannot be identified. After testing it seemed there was a seasonal pattern but the time series was too short to make a definitive statement in this regard. ANOVA therefore was applied to unadjusted data. Table V shows that none of the events had a significant impact on project losses.

Discussion and conclusion

Table VI provides an overview of the significance of the events. As can be seen from this table, the events which had most impact were 5 (start PM process/appointment new controller), 7 (introduction project management/obtaining ISO certification) and 9 (10 percent budget cut by the Ministry), with event 9 having the biggest impact on three KPIs. The KPI Customer Satisfaction was most significantly impacted by the events, with KPI Chargeability a close second.

From Table VI it can be concluded that the introduction of PM had an external impact as customer satisfaction was significantly affected in a positive way. This result was expected from the literature which states that PM will affect non-financial performance positively, and especially client satisfaction (de Waal, 2007). The reason for this is because of better commitment of process owners through the application of PM, better perception of the company's values through PM reporting, and improved strategic resource deployment based on PM (McCune, 1989; Pock *et al.*, 2004). In the case of Trimbos all these reasons were valid as customer satisfaction was measured, reported and discussed in a structured manner throughout the institute, thereby receiving more and more dedicated attention than before. The same goes for event 7 (introducing project management/obtaining ISO certification) which had the specific goal of improving project execution, thereby making customers more satisfied with the projects undertaken for them by Trimbos, and in the process increasing chargeability of people. This ties in with the finding of Verbeeten (2008) that the definition of clear and measurable goals is positively associated with performance in non-profit organizations.

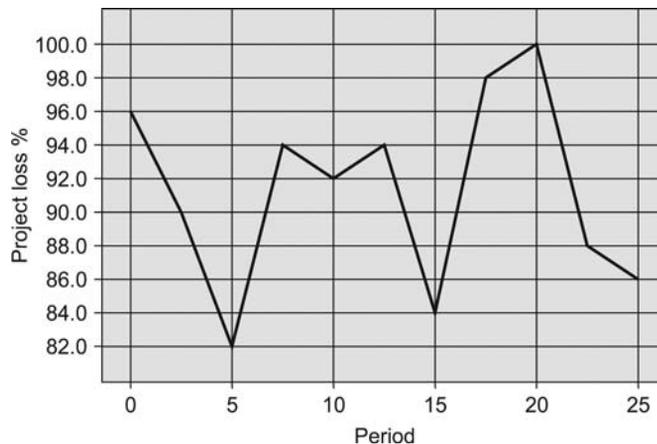


Figure 6.
Project losses

Group	Event	Absenteeism	Customer satisfaction	Chargeability	Lead times	Project losses
2	Introduction business plans	** ↓				
3	20% budget cut					
4	Appointment director operations					
5	Start PM process		*** ↑ ↑	* ↑		
	Appointment new controller					
7	Introduction project management		*** ↑	* ↑		
	Obtaining ISO certification					
9	10% budget cut	** ↑	*** ↑	* ↑		
10	Introduction CPM IT system			* ↑	*** ↓	
	Start TOP-program					
12	Start measurement of all CSF/KPI			* ↑	*** ↓	
13	Introduction counselling cycle				*** ↓	
	Establishing C&M department					
	Start acquisition training					
16	Obtaining IiP certification			*** ↑		
17	Extension ISO certification					

Notes: * = significant at 80 percent confidence level; ** = significant at 90 percent confidence level; *** = significant at 95 percent confidence level; ↑= positive, ↓= negative effect

Table VI.
Overview of the significance of all events

The 10 percent budget cut by the Ministry (event 9) dramatically increased the sense of urgency among Trimbos' institute that quality (i.e. customer satisfaction) and efficiency (i.e. absenteeism and chargeability) had to be heightened considerably. Recent literature (O'Toole and Meier, 2010) shows that budgetary cuts of 10 percent or more in a public organization cause an immediately drop in performance for several KPIs. These negative performance effects can be mitigated by managerial adjustments, if management pays immediate and dedicated attention to these KPIs, as was the case at Trimbos.

It is not directly clear why the KPI Lead times was impacted negatively by the events 10 (introduction of the CPM IT system/start of the TOP program), 12 (start measurement of all CSF/KPIs) and 13 (introduction of the counselling cycle/establishing the C&M department/start of the acquisition training). One possible explanation could be that the manner in which this KPI is measured became more strict through the years. Before the automatic measurement of the KPIs (event 10), the end-dates of the projects used to be the dates that were agreed with the customer, even when this was a delayed date. After event 10, the date that was used

was the end-date that was originally agreed with the customer. So even when the customer agreed with a delay, the end-date was not changed in the system anymore. Another explanation could be that a process of habituation took place (Murphy and McSweeney, 2003). After the initial newness of and management focus on CSFs and KPIs, people started to take performance management for granted and involuntarily started to pay less attention to it. This could result in slowly declining results, as de Waal (2007) pointed out that performance management needs continues high management attention to be successful.

The fact that event 12 (start measurement all CSF/KPIs) does not have a clear significant positive effect could be explained by the fact that the initial advantage of PM has already been achieved after event 5 (start PM process/appointment of the new controller) when the CFSs and KPIs were initially introduced. After all, as Heinrich (2002) shows, even when the initial set of indicators is complete, managers of the institute can still generate enough information from this imperfect data to start acting.

The research question, "How does the introduction of performance management affect the performance of a not-for-profit organisation?", can now be answered. Table VI shows that introducing PM does have impact on the results of a non-profit organization though not always in the expected, positive way. Although it is difficult to isolate the effects of one technique (in this case PM) because of the many things going on in an organisation, taken the extensive research into events which took place during the researched period into account, we can be fairly certain that at least a big part of the performance change can be explained by PM and other projects aimed at improving the performance of the institute. The research described in this article therefore supports managers who want to introduce PM to improve the results of their non-profit organisation. This result is in contradiction with recent research at UK non-profit organisations where it was found that PM was mainly used to monitor and assess the use of funds and limited attention was given to supporting the continuous improvement of the UK third sector (Moxham, 2010). Reasons for this given were the complexity of measuring performance in the non-profit sector and inconsistent use of PM. This enforces another finding from the research described in this article, namely that introducing and using PM needs continuous attention of management in order to become and stay successful in the long term. The practical implication of the research is that it is worthwhile for managers of a non-profit organisation to implement PM in order to improve the results of their organisation. At the same time managers are warned, by the outcome of the research, that their continuous and dedicated attention to the implementation process of PM is crucial for the successful implementation and use of the new CSFs and KPIs. In addition, they can expect mixed results of the implementation of PM but at the same time they can count on an improvement of the most important KPI, customer satisfaction. This knowledge can be used by management to manage the expectations of the organisation and its stakeholders in regard to the effect of PM.

Limitations and further research

The research described in this article has several limitations. The main limitation is that the research concerns a case study in which only one organization has been subject of investigation. Whether PM will have the same performance effects in other organizations can therefore not be derived from the results of this research. Another

limitation is that it is always difficult to isolate the effects of a particular event on the overall results of an organization. Although the effects of other events have been taken into account, it can not be ruled out that unlisted events and factors are in play. In addition, for all of the KPIs data was missing which was either extrapolated or left out of the calculations, this might have had an effect on the outcome of the time series analysis. Finally, the events and were treated independently in the study. Although it is a reasonable assumption that some of the events might have had effect on other events, analysing the precise interaction between events and variables is complex and was not part of our analysis, which is a limitation.

Further research opportunities are available through applying the method used here of an interrupted time-series design to evaluate the consequences of introducing PM at both non-profit organisations and profit organisations. This will increase our knowledge of the effects of PM and of the factors that play an important role during the implementation and subsequent use of PM.

Notes

1. In principle, seasonal effects, autonomous trends and external effects should be analyzed simultaneously, in “mixed models”. An a priori seasonal adjustment followed by estimating external effects is less of a concern if all periods (quarters, in this case) are affected by a similar number of events which generally holds for long time series and/or a small number of events. In our sample the number of external effects ranges from an average of 7.7 for Q1 to 9.5 for Q4. The number of observations and the number of missing values in our sample however do not allow for more sophisticated mixed models.
2. The customer is the sponsor or grant provider of the project. However, this is not always the end-user of the “product”. At the end of a project the customer is asked to fill in an evaluation form, including questions about the performance of the project team, the quality of the work, the satisfaction with the end result and the process.

References

- Adcroft, A. and Willis, R. (2005), “The (un)intended outcome of public sector performance measurement”, *International Journal of Public Sector Management*, Vol. 8 No. 5, pp. 386-400.
- Ahn, H. (2001), “Applying the balanced scorecard concept: an experience report”, *Long Range Planning*, Vol. 34, pp. 441-61.
- Andersen, H.V. and Lawrie, G. (2002), “Examining opportunities for improving public sector governance through better strategic management”, in Neely, A., Walters, A. and Austin, R. (Eds), *Performance Measurement and Management: Research and Action*, Cranfield School of Management, Cranfield.
- Armstrong, M. and Baron, A. (1998), *Performance Management, the New Realities*, Institute of Personnel and Development, London.
- Banker, R.D., Potter, G. and Srinivasan, D. (2000), “An empirical investigation of an incentive plan that includes non-financial performance measures”, *The Accounting Review*, Vol. 75 No. 1, pp. 65-92.
- Bourne, M., Franco, M. and Wilkes, J. (2003), “Corporate performance management”, *Measuring Business Excellence*, Vol. 7, pp. 15-21.
- Bourne, M., Kennerley, M. and Franco-Santos, M. (2005), “Managing through measures: a study of impact on performance”, *Journal of Manufacturing Technology Management*, Vol. 16 No. 4, pp. 373-95.

- Bourne, M., Mills, J., Wilcox, M., Neely, A. and Platts, K. (2000), "Designing, implementing and updating performance measurement systems", *International Journal of Operations & Production Management*, Vol. 20 No. 7, pp. 754-71.
- Chang, H.H. (2006), "An empirical evaluation of performance measurement systems for total quality management", *Total Quality Management & Business Excellence*, Vol. 17 No. 18, pp. 1093-109.
- Davis, S. and Albright, T. (2004), "An investigation of the effect of balanced scorecard implementation on financial performance", *Management Accounting Research*, Vol. 15, pp. 135-53.
- de Waal, A.A. (2007), *Strategic Performance Management, a Managerial and Behavioural Approach*, Palgrave Macmillan, London.
- de With, E. and Dijkman, A. (2006), "Performance measurement and evaluation in Dutch listed companies", in Roozen, F. and Steens, B. (Eds), *Reflections on the Future of Finance and Control*, Kluwer, Deventer, pp. 317-40.
- Epstein, M., Kumar, P. and Westbrook, R. (2000), "The drivers of customer and corporate profitability: modelling, measuring, and managing the causal relationships", *Advances in Management Accounting*, Vol. 9 No. 1, pp. 43-72.
- Franco, M. and Bourne, M. (2003), "Factors that play a role in managing through measures", *Management Decision*, Vol. 41 No. 8, pp. 698-710.
- Greatbanks, R. and Tapp, D. (2007), "The impact of balanced scorecards in a public sector environment", *International Journal of Operations & Production Management*, Vol. 27 No. 8, pp. 846-73.
- Harris Mulvaney, R.R., Zwahr, M. and Baranowski, L. (2006), "The trend toward accountability: what does it mean for HR managers?", *Human Resource Management Review*, Vol. 16, pp. 431-42.
- Heinrich, C.J. (2002), "Outcome-based performance management in the public sector: implications for government accountability and effectiveness", *Public Administration Review*, Vol. 62 No. 6, pp. 712-23.
- Henri, J.F. (2006), "Management control systems and strategy: a resource-based perspective", *Accounting, Organizations & Society*, Vol. 31 No. 6, pp. 529-58.
- Holloway, J.A. (2000), "Investigating the impact of performance measurement", in Neely, A. (Ed.), *Performance Measurement – Past, Present, and Future*, Centre for Business Performance, Cranfield University, Cranfield, pp. 234-41.
- Ittner, C. (2008), "Does measuring intangibles for management purposes improve performance? A review of the evidence", *Accounting and Business Research*, Vol. 38 No. 3, pp. 261-72.
- Ittner, C.D. and Larcker, D.F. (1998), "Are non-financial measures leading indicators of financial performance? An analysis of customer satisfaction", *Journal of Accounting Research*, Vol. 36, Supplement, pp. 1-35.
- Ittner, C.D., Larcker, D.F. and Randall, T. (2003), "Performance implications of strategic performance measurement in financial services firms", *Accounting, Organizations and Society*, Vol. 28 Nos 7-8, pp. 715-41.
- Jowett, P. and Rothwell, M. (1988), *Rothwell Performance Indicators in the Public Sector*, Macmillan Press, Basingstoke.
- Kaplan, R.S. and Norton, D.P. (1996), *Norton The Balanced Scorecard, Translating Strategy into Action*, Harvard Business School Press, Boston, MA.
- Langfield-Smith, K. (1997), "Management control systems and strategy: a critical review", *Accounting, Organizations and Society*, Vol. 22 No. 2, pp. 207-32.

- McCune, J.T. (1989), "Customer satisfaction as a strategic weapon: the implications for performance management", *Human Resource Planning*, Vol. 12 No. 3, pp. 195-204.
- Manville, G. (2007), "Implementing a balanced scorecard framework in a not for profit SME", *International Journal of Productivity and Performance Management*, Vol. 56 No. 2, pp. 162-9.
- Marcantonio, R.J. and Cook, T.D. (1994), "Convincing quasi-experiments: the interrupted time series and regression-discontinuity design", *Handbook of Practical Program Evaluation*, Jossey-Bass, San Francisco, CA.
- Moxham, C. (2009), "Performance measurement: examining the applicability of the existing body of knowledge to nonprofit organizations", *International Journal of Operations & Production Management*, Vol. 29 No. 7, pp. 740-63.
- Moxham, C. (2010), "Help or hindrance? Examining the role of performance measurement in UK nonprofit organizations", *Public Performance & Management Review*, Vol. 33 No. 3, pp. 342-54.
- Murby, L. and Gould, S. (2005), *Effective Performance Management with the Balanced Scorecard*, research report, CIMA, London.
- Murphy, E.S. and McSweeney, F.K. (2003), "Dynamic changes in reinforcer effectiveness: theoretical, methodological, and practical implications for applied research", *Journal of Applied Behavior Analysis*, Vol. 36 No. 4, pp. 421-38.
- Neely, A. (2005), "Update: the evolution of performance measurement research", *International Journal of Operations & Production Management*, Vol. 25 No. 12, pp. 1264-77.
- Neely, A. and Austin, R. (2000), "Measuring operations performance: past, present and future", in Neely, A. (Ed.), *Performance Measurement: Past, Present and Future*, Centre for Business Performance, Cranfield School of Management, Cranfield University, Cranfield, pp. 419-26.
- Neely, A., Kennerley, M. and Martinez, V. (2004), "Does the balanced scorecard work: an empirical investigation", in Neely, A., Kennerly, M. and Waters, A. (Eds), *Performance Measurement and Management: Public and Private*, Centre for Business Performance, Cranfield University, Cranfield, pp. 763-70.
- O'Toole, L.J. Jr and Meier, K.J. (2010), "In defense of bureaucracy", *Public Management Review*, Vol. 12 No. 3, pp. 341-61.
- Peljhan, D. and Tekavčič, M. (2006), "Dynamic relationship between management control systems and strategy and its impact on organisational performance management: a case study", in Neely, A., Kennerly, M. and Waters, A. (Eds), *Performance Measurement and Management: Public and Private*, Centre for Business Performance, Cranfield University, Cranfield, pp. 601-8.
- Perera, S., Harrison, G. and Poole, M. (1997), "Customer-focused manufacturing strategy and the use of operations-based non-financial performance measures: a research note", *Accounting, Organizations and Society*, Vol. 22 No. 6, pp. 557-72.
- Pinheiro de Lima, E., Gouvea da Costa, S.E. and Angelis, J.J. (2009), "Strategic performance measurement systems: a discussion about their roles", *Measuring Business Excellence*, Vol. 13 No. 3, pp. 39-48.
- Pock, T., Westlund, A. and Fahrmi, F. (2004), "Gaining bilateral benefit through holistic performance management and reporting", *Total Quality Management & Business Excellence*, Vol. 15 Nos 5/6, pp. 557-67.

- Radnor, Z. and McGuire, M. (2004), "Performance management in the public sector: fact or fiction?", *International Journal of Productivity and Performance Management*, Vol. 53 No. 3, pp. 245-60.
- Rangone, A. (1997), "Linking organizational effectiveness, key success factors and performance measures: an analytical framework", *Management Accounting Research*, Vol. 8, pp. 207-19.
- Said, A.A., Hassab Elnaby, H.R. and Wier, B. (2003), "An empirical investigation of the performance consequences of nonfinancial measures", *Journal of Management Accounting Research*, Vol. 15, pp. 193-223.
- Verbeeten, F.H.M. (2008), "Performance management practices in public sector organizations: impact on performance", *Accounting, Auditing & Accountability Journal*, Vol. 21 No. 3, pp. 427-54.
- Wiersma, E. (2003), "Non-financial performance measures: an empirical analysis of a change in a firm's performance measurement system", PhD thesis, Research Series, Tinbergen Institute, Free University, Amsterdam.
- Williams, R.S. (1998), *Performance Management, Perspectives on Employee Performance*, International Thomson Business Press, London.
- Yin, R.K. (1994), *Case Study Research: Design and Methods*, 2nd ed., Sage, Thousand Oaks, CA.

Further reading

- Neely, A. and Bourne, M. (2000), "Why measurement initiatives fail", *Measuring Business Excellence*, Vol. 4 No. 4, pp. 3-6.

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