
Factors that play a role in “managing through measures”

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Abstract

Organisations devote time and effort to the development of strategic performance measurement (SPM) systems. Many articles have been written on how to design and implement this type of system. However, few studies have addressed the issue of why some organisations are better able to “manage through measures” than others. Why do some organisations struggle to ensure that action follows measurement, whilst others systematically use their metrics to inform their decision-making processes, and their subsequently actions? Specifically, it is unclear what critical factors play a role in enabling organisations to effectively use their SPM system. To gain an understanding of these factors, 24 practitioners were interviewed. This paper presents the analysed evidence from those interviews and its implications for practice.

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Introduction

Kaplan and Norton's (1992) concept of balanced scorecard (BSC) has opened a new field in the literature of management control. Since they started discussing the need for a more strategic and balanced performance measurement system, many articles have been published on the subject (Neely, 1999). Some of Kaplan and Norton's critics argue that they were not the first ones linking measures to strategy (Wisner and Fawcett, 1991; McNair *et al.*, 1990; Beischel and Smith, 1991; Grady, 1991). However, it is difficult to deny that the balance scorecard and similar frameworks such as the performance prism (Neely *et al.*, 2002) are transforming the strategic management paradigms. An illustrative example of these strategic performance measurement (SPM) systems' impact on today's management paradigms is the figure provided by Silk (1998) who estimates that 60 per cent of the USA *Fortune* 500 companies have implemented or are managing their business with a balanced scorecard.

The literature on SPM systems suggests that the field is evolving progressively. In the mid-1990s, the literature's focus was on the design of SPM systems (Kaplan and Norton, 1996; Neely *et al.*, 1995, 1996; Bititci, 1995; Flapper *et al.*, 1996). Managers were concerned with questions such as: What is our strategic success map? What type of measures should we select? In the late 1990s and early 2000s, authors became more interested in the implementation processes of SPM systems and the reasons why many organisations struggled in this task (Bourne *et al.*, 2000; Bititci *et al.*, 1997). Nowadays, the performance measurement community seems to have shifted its focus of attention. Academic and practitioner's papers are

increasingly concerned with how organisations manage with measures and how they extract value from the data they collect (Lipe and Salterio, 2002; Malina and Selto, 2002; Kalagnanam, 2001; Vakkuri and Meklin, 2001; Barsky and Marchant, 2001; Malmi, 2001; Epstein, 2002). Furthermore, authors are focusing on whether organisations are taking advantages or not from the expected benefits of their SPM systems.

Neely and Bourne (2000) argue that the process of measuring performance is completely wasted unless the performance data produced informs management's actions. Information is crucial in the performance measurement process. Nevertheless, many organisations struggle to transform their performance information into accurate understanding that helps to inform effective actions. As Johnston *et al.* (2002, p. 257) claim:

... in this quest for a more structured and balanced approach to performance measurement, have managers become swamped with measures and information and spent their time increasing PM [Performance Measurement] activity rather than improving management decision and action?

Pfeffer and Sutton (1999) call this phenomenon the knowing-doing gap whereas Cohen (1998) calls it the performance paradox. The former argues that one of the reasons knowledge is divorced from day-to-day activities is that managers and information specialists who design and implement the systems for collecting, storing, and analysing information have limited, often inaccurate, views of how people actually use knowledge in their jobs. However, the latter suggest:

... managers know what to do to improve performance, but actually ignore or act in

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contradiction to either their strongest instincts or to the data available to them.

Thus, how can an organisation ensure that its people are translating the data they received into effective decision making and action?

Purpose and rationale

The main purpose of this study is to gain further understanding of how managers' "knowing-doing" gap (Pfeffer and Sutton, 1999) works in practice. This paper aims to contribute to the performance measurement literature and its latest focus on how organisations are managing with their SPM system. In particular, the study looks at what are the main factors that differentiate between organisations that are able to manage through measures, i.e. ensure that action follows measurement and others that are not. In order to give an answer to this question, the research team, first, reviewed the relevant performance measurement literature in search of relevant studies that could inform our research, and second, carried out a set of interviews with SPM senior managers and consultants in an attempt to validate and further explain the findings extracted from the literature.

Literature review

One problem for attaining consensus on the factors that facilitate the process of managing through measures is the broad range of approaches that different authors use. For instance, some authors focus on specific aspects that arise during the design phase of the system, while others focus on key issues of the implementation phase. Very few authors focus on the overall use of SPM systems. Another problem for identifying actual factors is the lack of empirical studies in the performance measurement literature. Out of a review of the academic and practitioner literature, the research team found seven relevant studies. Three of them: (A) Lingle and Schiemann (1996), (B) The Conference Board (1999), and (C) AICPA (2001) used a survey methodology for identifying the key factors related with the use of SPM systems. The remaining four: (D) Kaplan and Norton (2001), (E) Johnston *et al.* (2002), (F) Ho and McKay (2002), and (G) De Waal (2002) used case study methodology in their search for evidence of those factors that support the process of managing through measures. Table I summarises the factors found in these studies.

In summary, from the above studies it can be implied that the critical factors facilitating the use of SPM systems in organisations are:

- 1 *Corporate culture.* All authors found this factor in their research. However, some studies highlight the need for a corporate culture that encourages team working, ownership of problems and risk-taking or entrepreneurship (A, B, C, E), while others emphasise the need for a corporate culture orientated to continuous improvement and use of the SPM system (D, F, G).
- 2 *Alignment.* There seems to be a consensus around the importance of this factor given that six out of the seven studies (A, B, C, D, F and G) found this factor to be significant. Four studies (A, B, C, F) define alignment as the link between business unit's performance measures and organisation's strategic measures; while the other two, define alignment as the integration and linkage of individual strategies and goals (D), and the "good match" between managers responsibilities and SPM system (G).
- 3 *Review and update.* Senior management review and update of the SPM system and measures have also appeared in six out of the seven studies (A, B, D, E, F). Four of them (A, B, E, F) underline the need for a continuous review of the SPM system and measures. Two of those four studies, specifically, point out the need for a continuous review of the strategy and not only the SPM system and measures (D); and suggest that measures should be reviewed on a rolling monthly bases rather than the traditional annual review (E). One single study (G) reports that the SPM system should focus on internal management and control, whereas three other (D, E, F) clearly show that the SPM system should focus on using measures to drive action for improvement and learning rather than control. Furthermore, two studies (B, F) explicitly recommend senior managers to develop action plans in order to explain how the gaps between performance measures and goals could be closed, and review their progress periodically.
- 4 *Communication and reporting.* Five studies (A, B, C, D, F) highlight the importance of clear communication of measures and progress. Four of the studies (A, B, D, F) emphasise the need for prompt and formal feedback.
- 5 *Involvement of employees.* There is also consensus around the benefits of making everyone participate in the development of measures (A, C, D, F). Involvement in

Table I

Comparative list of critical factors that facilitate organisations to manage through measures in the eight empirical studies

Studies	(A) Lingle and Schiemann (1996)	(B) The Conference Board (1999)	(C) AICPA (2001)	(D) Kaplan and Norton (2001)	(E) Johnston et al. (2002)	(F) Ho and McKay (2002)	(G) De Waal (2002)
Key factors							
(1)	Organisational culture/management style (team-working, self monitoring, risk-taking)	Corporate culture (team-working, risk-taking)	Organisational culture (collaborative, entrepreneurial)	Performance culture (performance and BSC support)	Organisational culture (team-working, ownership of problems)	Organisational culture (BSC support)	Organisational culture (improvement and SPM system support)
(2)	Alignment (Focus and alignment (linking BU's metrics and strategic measures))	Alignment of business units with strategy	Linkage and alignment to strategy	Integration and linkage of individual strategies and goal		Clear alignment between mission, strategy and measures	Alignment (good match between managers' responsibilities and PMS)
(3)	Review and update (Senior management reviewing their strategic "scorecard" regularly)	Develop action plans and review progress		Continuous review of the strategy. Double loop learning process	Continuously review the measures. Clear focus on action: improvement and learning	Detailed action plans. Focus on continuous improvement. Measures review periodically	Focus of the PMS on internal management, and control
(4)	Communication and reporting (Clear communication of measures and progress to all employees. Formal feedback.	Clarity of communication. Appropriate feedback and information system	Communication	Clear communication and Feedback system		Clear communication and prompt feedback	
(5)	Involvement of employees (Involvement of employees in developing measures)	Buy-in by employees and managers			Involvement came from the top to the bottom	Employee involvement in the development of measures	Managers understanding
(6)	Management understanding (Managers understanding)	Education and training	Education and training	Education, strategic awareness and understanding			
(7)	Compensation (Compensation link)	Compensation link	Rewards link	Incentive link		No compensation link	(continued)

Table 1

Studies	(A) Lingle and Schiemann (1996)	(B) The Conference Board (1999)	(C) AICPA (2001)	(D) Kaplan and Norton (2001)	(E) Johnston et al. (2002)	(F) Ho and McKay (2002)	(G) De Waal (2002)
(8)	Management leadership and commitment		Executive support and ownership of results	Executive leadership, commitment and change mngt. skills		Management with clear responsibilities and accountabilities	Management attitudes
(9)	Clear and balanced framework	Balanced framework (six dimensions)	Balanced Scorecard Framework	BSC (four dimensions)	Clear and balanced structure of key performance indicators		
(10)	Agreement on strategy and success map	Senior management agreement on strategy and on measures for strategic success	Senior management approval. Agreement upon the measures	Agreement on mission, vision, strategy maps. Translate strategy into operational terms			
(11)	Data processes and IT support		IT support of data processes			Adequate IT infrastructure	
(12)	Target setting	Targets setting	Measures-budget linkage	Target setting			
(13)	Budget link		Management support systems and tools	Budget linked to the BSC			
(14)	Management support systems		Competency and structure of industry				
(15)	Industry and business		Broader measures with consistent definition				
(*)	Measures	Clear objectives and goals. Few measures	Identify and select the right measures		Simplicity and "good enough" measurement	Few measures, simple and easy to understand and manage	

- the selection and definition of measures can reduce employees and managers' resistance to the SPM system, and increase their usage level of performance measures.
- 6 *Management understanding.* Four studies (A, C, D, G) coincide on the influence of this factor on the ability of organisations to manage through measures. Two of the studies (C, D), specifically, point out the need of formal education and training processes for better manager's understanding of the SPM system and measures.
 - 7 *Compensation link.* Studies (B, C, D, F) concur on the importance of the linkage between incentive compensation and strategic performance measures. However, around this factor appears to be inconsistencies. Three studies (B, C, D) report a positive impact of the link between compensation and strategic performance measures in the SPM system, whereas one of them (F) reports the opposite. In addition, a lack of understanding around the concept of compensation seems to exist, since the studies use the words "incentives", "rewards" and "compensation" indistinctly, and do not provide any clear definition of any of them.
 - 8 *Management leadership and commitment.* This factor is crucial according to four studies (C, D, F, G). Two of them (C, D) highlight the requisite of executive support, leadership and commitment. Another two studies (C, F) point out that management should have clear accountability and responsibility of measures and results. One study (G) concludes that a key issue for managing through measures is management attitudes towards the SPM system and its functioning.
 - 9 *Clear and balanced framework.* The use of structured approaches to performance measurement that include finance and non-finance measures is emphasised by four of the studies (A, C, D, E). The authors of one study (D) claim that a balanced SPM framework should have four performance dimensions: financial, customers, internal processes, and innovation and improvement. However, the authors of another study (A) argue that six are the performance areas that drive organisation's long-term performance: financial performance, operating efficiency, customer satisfaction, employee performance, innovation/change, and community/environmental issues.
 - 10 *Agreement on strategy and success map.* Four studies (A, B, C, D) stress the importance of the senior management team's agreement on strategy and on the measurable criteria for strategic success.
 - 11 *Data processes and IT support.* Two studies (C, F) address the relevance of having an adequate information technology infrastructure for supporting of data collection, analysis, interpretation and reporting processes.
 - 12 *Target setting.* Two studies (B, D) include the formal process of setting targets for measures among the factors that facilitate organisations to manage through measures.
 - 13 *Budget link.* Two studies (C, D) point out the importance of linking SPM systems to the organisation's budget setting process.
 - 14 *Management support systems.* One study (C) highlights the role that management support systems, tools and processes play in helping managers to cope with measures.
 - 15 *Industry and business.* Only one study (C) reports that competency and structure of organisation's industry are critical for the selection and use of performance measures.
- In addition to these factors, five studies (A, B, C, E, F) point out different issues related with the type of measures that best facilitate the use of SPM systems. Some (A, C, E, F) highlight the benefit of having few, clear, and simple measures for their better understanding and managing process; whereas one of them (B) highlights the importance of identifying and selecting the right measures.
- Having a closer look at the results of the seven selected studies, none of them provides any indication of the relative importance of each factor. This knowledge gap and the incentive to validate and further explain the findings extracted from the literature motivated the research team to carry out the following empirical research.

Interview methodology

The further research developed by the research team comprised semi-structured interviews with senior consultants in the field of SPM systems and performance measurement managers from the private and public sector. These professionals were selected for the following reasons. The senior consultants were chosen because they had been continuously involved in the design and implementation of strategic performance measurement projects. Performance

measurement managers were chosen because they are every day dealing with issues related to the SPM systems.

Data collection

In selecting the sample, the research team decided to analyse the list of delegates to the 2002 performance measurement association (PMA) Conference, since this is one of the main international conferences in the field that includes academic and practitioner delegates. Out of the 220 delegates, 82 were practitioners; 34 of the practitioners were consultants from 18 consultancy firms and 31 were private sector managers from 22 companies. In addition, there were 17 public sector managers from 12 institutions. From the list of practitioners, the research team decided to contact 28 of them based on the following three criteria: practitioner's position; the researchers awareness of the performance measurement practices of the company, and their company's reputation. Finally, out of the 28 people contacted, 13 senior consultants, four performance measurement managers from the private and three from the public sector agreed to participate in the research. The research team considered that the final number of consultants and managers was unbalanced and for that reason they decided to undertake four additional interviews. The managers selected for these interviews came from companies identified as best practices in the PMA Conference's interviews. Table II summarises the profiles of the list of people interviewed.

In summary, 24 semi-structured interviews were conducted between July and August 2002. Typically, each interview lasted from three quarters of an hour to one-and-a-half hours; 14 interviews were taped and full notes were taken on the remaining ten. The question asked was: "Based on your experience, what do you think are the main factors that differentiate between an organisation that is able to manage through measures – i.e. ensure that action follows measurement – and another that is not?"

Data analysis

The content of the tapes and notes was transcribed. Furthermore, the transcripts were downloaded into the qualitative analysis software, *Nvivo v.2.0*. The software's analysis method applies codes that reflect empirical constructs to the qualitative data. Two researchers independently analysed the data using open, inductive content analysis. They each developed a list of emergent themes or factors (Lofland and Lofland, 1995) using the information from the interviews.

Both lists were discussed and a final set of factors agreed upon. The data were examined in the search for patterns in the interviews' responses. Trends in responses were studied, and they assisted in the identification of key themes or factors from the qualitative data (Miles and Huberman, 1994).

Findings

Nine[1] factors seem to have a greater impact on the way organisations manage through measures:

- 1 organisational culture;
- 2 management leadership and commitment;
- 3 compensation link to the SPM system;
- 4 education and understanding;
- 5 communication and reporting;
- 6 review and update of the SPM system;
- 7 data process and IT support;
- 8 business and industry; and
- 9 PMS framework.

Table III presents the full list of factors and their definitions.

There was one specific factor, measures content, which the research team decided to study separately from the rest in order to extract a more detailed analysis of the different criteria the performance measures should meet. Relevancy of the measure to the business and the people was the measure's feature that seemed to be the most important one for enabling an organisation to manage through measuring. The second measure's feature most cited was clarity and simplicity of the measures, followed by: the need of balance among financial and non-financial indicators, precision and accuracy of calculations, and little number of metrics. The features of measurability, consistency and applicability came next. Sufficiency and focus of the measures were also mentioned, as well as timeliness and cost-effectiveness. Additionally, respondents mentioned that measures should help to predict future outcomes, and that they should be linked to the individual more than to the team, and should be relative more than absolute. Table IV presents the list of the measure's features mentioned during the interviews and its definitions.

The nine factors are further developed below and they are illustrated with selected quotes extracted from the interviews.

Factor 1: organisational culture

This factor was cited by 19 interviewees (79 per cent of the sample). Some of the respondents used this term to explain the importance of having an organisational culture that encourages action and

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Table II
Interviewees' information

Name	Position	Industry	Country
Active Strategy Inc.	Senior consultant	Consulting	USA
Boston Consulting Group	Senior consultant	Consulting	The Netherlands
Cap Gemini Ernst & Young US LLC	Senior consultant	Consulting	USA
DHL Int.	PM manager	Transports	UK
DHL, UK	PM manager	Transports	UK
Dorset and Somerset Health Authority	PM manager	Health Authority	UK
Dransfield Associates Pty Ltd	Senior consultant	Consulting	Australia
Emerald	PM manager	Publishing	UK
Ernst & Young	Senior consultant	Consulting	Australia
Fraunhofer IPK Corporate Management Division	Senior consultant	Consulting	Germany
Gayeski Analytics	Senior consultant	Consulting	US
Intellectual Capital Services	Senior consultant	Consulting	UK
Hilton, Int.	PM manager	Leisure	UK
Hilton, UK	PM manager	Leisure	UK
Holland Consulting Group	Senior consultant	Consulting	The Netherlands
LCP Consulting	Senior consultant	Consulting	UK
London Borough Barking & Dagenham	PM manager	Government Agency	UK
Performance Measurement Associates Inc.	Senior consultant	Consulting	USA
Praxis	PM manager	Manufacturing	USA
Sainsbury	PM manager	Retail	UK
Science Applications International Corp.	PM manager	Government Agency	UK
Shell	PM manager	Oil	UK
Shreeveport Management Consultancy	Senior consultant	Consulting	UK
The Decision Group	Senior consultant	Consulting	USA

improvement, and that it does not punish people's errors:

One of the very important things in PMS is that you need to have a culture of using performance measurement for improvement, not for control. That's one of the things I think a lot of academics have picked up on, quite rightly. If you go into the real world, that is one of the most difficult things to do, because there is a lot of hostility of managers against Performance Measurement because of this control thing.

Others emphasised the need for an organisational culture that encourages discussion and analysis:

The organization should have a culture of devoting quality time to reviewing, planning, communicating and stuff like that. Culture of discussion and analysis rather than shoot from the hip.

Few of the respondents simply stated the requirement of a "performance" or a "measurement driven" culture for a better use of SPM systems.

Factor 2: management leadership and commitment

Management leadership and commitment was mentioned by 17 of the interviewees (71 per cent). Most of them agreed on the importance of senior managers' desire for the system. This willingness of the system is normally reflected through their quality time

devoted and other resources they commit to its development and management:

The best companies that manage through measures do it because they want to do it and the danger in the public sector is that the central government sets the performance indicators and they don't use them because they want to, they use them because they have to. So it doesn't make a difference to what they do, they just have to report them.

Management quality time devoted to reviewing and planning measures. Time for commitment.

In addition, some of the respondents highlighted the impact of leadership on the SPM system:

The senior executive team should do the initial push of the program. Many organizations I have seen have felt frustrated due to inaction and lack of leadership of the senior management team.

Factor 3: compensation link to the strategic performance measurement system

The link between SPM systems and compensation schemes was cited by 16 respondents (67 per cent). Most of the respondents said that this link was critical for gaining motivation and commitment:

Reward and recognition practices, which are actually sometimes misplaced and they matter far more than what people say.

Table III
Full list of critical factors

Keywords	Definitions	A	B (%)
(1) Culture	Corporate culture (performance, discussion and analysis, measurement driven, improvement)	19	79
(2) Management leadership/ commitment	Leadership for managing through measures and management team commitment to the SPM system (time devoted to it, desire for it)	17	71
(3) Compensation	Link of measures to compensation	16	67
(4) Education and understanding	People's education and training for understanding of the measures and SPM system	16	67
(5) Communication and reporting	Open and clear communication with timeliness and easy to understand reporting system	15	63
(6) Review and update	Continuously review, update and challenge the SPM system	15	63
(7) Data processes and IT	Easy process of collection, analysis and interpretation of data (understand trends). Supports IT systems	12	50
(8) SPM Framework	SPM system clear structure and firm specific	12	50
(9) Environment	Industry and business competitiveness, overall performance, long-term vs short-term focus and government regulations	12	50
Development	Top-down and bottom-up development process	11	46
Involvement	Employees involvement in the development of the SPM system	11	46
Accountability	Managers' and employees' accountability and ownership of the measures	10	42
People behaviours	People behaviours and dynamics (SPM system driving the right people behaviours, teamwork, right attitudes toward the system)	10	42
Improvement	Focus on improvement vs focus on control	8	33
Hiring	Hiring of managers and employees with the right skills for working with measures	7	29
Alignment	Alignment between measures and organisation strategy	7	29
Trust and credibility	Trust and credibility on the SPM system (honesty)	6	25
Data processes	Easy process of collection, analysis and interpretation of data (understand trends)	6	25
Time devoted	Time spent in developing the system and on working and securing the agreement on the SPM systems	6	25
Management support	Management processes and tools that support the SPM system	6	25
Decision making	Decisions based on measures	6	25
Cause-and-effect relationships	Understanding and definition of cause-and-effect relationships among the measures	6	25
Goals	Clear and agreed objectives and goals	5	21
Organisational structure	Organisation structure	5	21
Target setting	Consistent, clear and formal target setting process	5	21
History/past experiences	Organisational history of recent pain and past experiences with measurement	4	17
Senior management stability	Stability of management team in the organisation	4	17
Learning and feedback loop	Continuous learning from the outputs (double loop feedback)	3	13
Ownership	Organisation ownership, partnership.	3	13
Clear mission and vision	Clear	3	13
Maturity	Maturity of the organisation	3	13
Project management	Managers' skills of how to manage the project of developing SPM systems	3	13
Change management/resistance	Managers' skills of how to manage change and overcome resistance	3	13
Organisational size	Organisational size (large, medium, small)	2	8

Note: A = No. respondents mentioning this factor; B = No. respondents mentioning factor/total no. interviews

Table IV
Full list of critical characteristics of performance measures

Keywords	Definitions	A	B (%)
Relevant	Measures should be relevant to the business and to the people being accountable for them	11	46
Clear and simple	Clarity of definition and calculation, unambiguous, and simple to understand	9	38
Balanced	Balanced between non-financial and financial measures	6	25
Precise and accurate	Accurate calculations, concise and precise measures to increase credibility	6	25
Few measures	As few measures as possible in the SPM system (4 to 6 measures per manager)	6	25
Measurable	Measures that you can "count". Objective versus subjective measures. Observable	5	21
Consistent	Consistency of the measures through the organisation	5	21
Actionable	Applicable and usable in practice (clear view of action)	5	21
Dimensional and sufficient	Measure should capture what matters with no overlap	4	17
Focus	Measures focused on strategic objectives	4	17
Timeliness	Realtime measures (weekly, monthly) as oppose to annual measures	2	8
Cost-effective	Balanced between cost and benefits of the measures	2	8
Predictable	Measures for predicting future outcomes	1	4
Individual	Individual measures versus team measures	1	4
Relative	Relative measures versus absolute measures	1	4

Note: A = No. respondents mentioning this characteristic; B = No. respondents mentioning characteristic/total no. interviews

However, not all the interviewees agreed upon the actual need of this link. Some of them pointed out the decrease in flexibility and the manifestation of dysfunctional behaviours this link can generate:

I do not really believe in the direct link between measures and rewards. And I have some good reasons for that. One is that things change, and incentives don't facilitate flexibility. And the other is that there are a lot of things that can affect performance that people don't control. So if you have an incentive system and you are going to have a direct link, then the only things that you can have that person pay tight to, realistically, are the things that they control.

It is worth recalling that interviewees used the words "compensation", "incentives" and "rewards" indistinctly.

Factor 4: education and understanding

This factor was mentioned by 16 respondents (67 per cent). All of them called for people to have a good understanding of the measures (what they meant and how they were calculated), and of the SPM system itself (understand what is it and how to use it). Some respondents explicitly cited education and training as critical activities for gaining people's understanding:

Formal training and education in measures is key [. . .] We always assume that people understand these things. But managers, often don't know how to review and analyse data. And in the same way, if you are looking for

action from performance measures again you have to have managers that actually know how to take action and you really need to have that capability distributed to some extent through the whole organization.

Factor 5: communication and reporting

The factor "communication and reporting" was cited by 15 of the interviewees (63 per cent). The majority of respondents citing this factor called for clear, simple, regular, and formal communication and reporting processes, claiming that this form of reporting would provide better management understanding. In some cases, the interviewees called for diverse and multiple methods for communicating performance measures:

Measures must be communicated, understood and available to everyone [. . .] We used to report them every week and the managers had 10min meetings in order to communicate the measures to their teams. You find the same thing in all of the good companies that I see that use measures. Communication is really important, and honesty as well.

Communication is critical. There is a variety of methods to transmit messages further down. I think the reality is that: no one method works by itself. [. . .] You've got to use a range of methods, and I think there is a danger that you rely on one method and say well we've got a communications strategy [. . .] It is critical that you think about communication in a broader sense.

Factor 6: review and update of the strategic performance measurement system

This factor appeared in 15 of the interviews (63 per cent). The underlying idea behind it was that performance measurement systems require continuous improvements and revisions. Measures need to be reviewed or changed with a clear purpose in mind: to look for or maintain their relevance to the business and to the people accountable for them:

Performance measurement demands action, if it is not right, then you revise it and you fix it. That is what they are there for, otherwise it is a waste of time.

Must challenge measures, and continue to refine them and develop them as they [managers] use them. If you end up in a situation where your measures don't seem to match the reality, then you need to look at the measures and fix them. You have to continuously improve your measurement system and revise it as products, customers, processes, etc.

Factor 7: data processes and information technology support

The importance of data processes (collection, analysis and interpretation), and the need for the adequate IT system support were mentioned by 12 respondents (50 per cent). Interviewees pointed out that one of the challenges for effective use of SPM systems is to know how to transform data into usable knowledge. They stressed that it is important to be able to interpret performance information and understand current trends and regular variances. Some respondents explained the key role that IT and, in particular, information system designers play in facilitating the use of SPM systems as Pfeffer and Sutton (1999) argue when explaining manager's "knowing-doing" gap phenomenon:

Data warehousing capabilities and effective IT systems. The challenge there is having the right skills and capabilities to actually move through what I call the "data-information-knowledge-business cycle".

There has to be a level of sensitivity to the fact that measures may illustrate a variance from plan but if that variance from is something that is understood or explainable then it is OK.

Factor 8: strategic performance measurement framework

Having a structure approach to the SPM system facilitates its management and daily use as 12 of the respondents claimed. Most of them suggested that the framework should be

firm specific, the balanced scorecard and similar frameworks can help as an example to focus the dialogue among the management team working in the design of the system. However, organisations should move forward and adapt it to their own circumstances and business characteristics:

The existence of a comprehensible measurement framework. I use the word comprehensible here intentionally. People jump into the four box Kaplan and Norton's framework because it is written up, is there, is easy and not necessarily because it is right for their organization. There must be a framework in which one can then rationalize the measures but it needs to be one that helps the people make sense of the systems as oppose to simply being category variables.

Factor 9: business and industry

The importance of this factor in the way organisations manage through measures was mentioned by 12 respondents (50 per cent). Some of them pointed out the relevancy of the competitive nature of the industry, while others focused on the long/short-term orientation, on the overall finance performance, or on the growth stability of the business. Few interviewees highlighted the impact of government pressures on the public sector:

Business factors such level of competitiveness, internal cost focus, margin, etc. If you have few control measures, you don't need a PMS. The PMS is valuable when you have pressure to improve, when the future doesn't seem as good as it is now.

In which situation should you implement a PMS? Does the environment have a big impact? [. . .] You have to look at the time available, resources. I've concluded that if you look at PM it is aimed at long-term survival, long-term continuous improvement. So if you have a company that it is in a survival situation, then forget about PM at least of something that is as elaborated as the Balanced Scorecard.

In the public sector, political pressures and government agendas can distort the system. In this sector the use of performance measures is probably a lot more difficult because a lot more subjective factors get thrown in. And this throws another dimension to the problem. It makes it a more complex issue.

In summary, this research suggest that organisations that are better able to manage through measures share a number of common features:

- Organisational culture oriented to improvement, measurement and performance.

- Management leadership and commitment to the development of the SPM system and its maintenance.
- Training and education on the measures and on how the system works for gaining a better management understanding.
- Clear, simple, regular, and formal communication and reporting processes.
- Continuous management review and update of the system (monthly or quarterly rather than annually).
- Easy data collection, analysis and interpretation processes supported by the adequate information technology infrastructure.
- Industry's level of competitiveness, long-term focus and stable growth business.
- The choice of a structure approach for developing and managing the SPM system.

As well as the studies found in the literature, this study has found some inconsistencies related with the call for a direct link between compensation and SPM systems. Based on the interview evidence collected, the research team cannot assess the nature of this factor. Under some organisational circumstances, the link between compensation and strategic performance measurement plays a critical role in the way organisations manage through measures. However, this might not always be the case.

Discussion and conclusion

The literature cited at the beginning of this paper suggests that the focus of performance measurement research is now moving from the design and implementation of the SPM systems to how these systems are used in organisations. However, our review of the literature revealed that there is still little research on how SPM systems are being used in organisations. The handful of empirical studies in this area has been reviewed for the first time and this analysis has given some indication of the relative importance of the factors cited. In particular, it has emphasised the importance of "culture" in the use of performance measurement systems.

We have also conducted our own research through interviewing 24 knowledgeable individuals working in the field and their opinions broadly concur with our summary of earlier studies. Again, culture is the most frequently cited factor, even more important than leadership and senior management commitment.

Although our review has shown that there is no clear consensus on exactly what aspects

of culture are important, it does have serious implications for practitioners who wish to influence the use of SPM systems. Much of the literature to date has focused on the mechanics of measurement with much less emphasis on the softer issues. Further, one might assume from the change management literature (Frizelle, 1991) that senior management commitment is all that is required. However, this study suggests that this might not be sufficient for performance measurement. Managers may marshal all the support they can muster, train, educate and implement all the prescriptions of what a good performance measurement system should be like, but if the "culture" is not appropriate, they may never achieve a well functioning SPM system.

Our study and review of the literature raises three important issues for further research. The first is to identify what are the precise aspects of culture that affect SPM systems. Mooraj *et al.* (1999) suggest that performance measurement can be affected by three major types of culture: national culture, occupational culture and, perhaps most importantly, the culture of the organisation. Taken this typology into account future research could specifically be focused on studying how does each type of culture influence the way in which organisations manage through measures. This might in the fullness of time result in an instrument for diagnosing the "cultural fit" of SPM systems.

A second issue for further research is to understand what role the link between the SPM system and the compensation system plays in influencing individual behaviour (both positive and negative). Advocates of the balance scorecard for example argue that the link between both systems allows companies to build consensus around the organisation's vision and strategy, effectively communicate strategic objectives, and motivate performance against established strategic goals. However, little evidence exists about the specific characteristics of this link or about the process needed for its development – what elements of the compensation system need to be linked to the SPM systems: incentives (short-term, long-term, both), base pay (skill-based), others? When is it appropriate to link the SPM system to compensation? The answers to these research questions would be valuable to practitioners and academics not only in the field of performance measurement, but in the field of strategic compensation too.

A third issue is to study the softer aspects related to performance measurement. For example, an interesting subject of study

would be to gain a further understanding of the reasons why some managers are better able to ensure that actions for improvement follow measurement. This type of research would involve the review of the psychology and sociology literature. Research on this area could help organisations to improve their recruitment and selection practices and their people development programs.

Implications for practice

This study could be useful to an organisation attempting to identify those issues that might be affecting the way its managers use the organisation's performance measures, and subsequently the overall effectiveness of the SPM system. Being aware of the critical factors that influence the functioning of a SPM system, an organisation can design and put in place the adequate mechanisms that will improve and increase the success of the system.

Note

- 1 In search of focus and robustness of results, only those factors that were mentioned by at least half of the interview respondents have been considered for analysis.

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