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**On the Way to Active Management of Performance
Measures**

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* **Translator’s note:** In this paper, the word *Kennzahl* has been translated as *performance measure*.

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1. Motivation

Systems of performance measures have been used in corporate practice for a very long time. However, their value as a management tool is not untainted. This can essentially be traced back to two problem areas:

- ✓ Firstly, customary systems of performance measures are often directed at existing data, without focusing on management bottlenecks. This risks generating “data graveyards” with little useful information.²
- ✓ Secondly, traditional starting points are often one-sided and limited to monetary quantities and quantities based on past experience. The best-known example for this is the DuPont- theory.³

In the past few years, “modern” versions of performance measures have been suggested which addressed these deficiencies, including the balanced scorecard⁴, developed by Kaplan/Norton, and a system of selective performance measures using the example of logistics, developed in the German management science field by Weber et al.⁵ In a recently published research paper, Weber/Schäffer deduced the necessity of active performance measure management and defined a standard path for developing performance measure systems as a nucleus.⁶ In the paper, this starting point is imbedded within a comprehensive framework as a basis for active performance measure management.

2. Diagnostic and interactive systems of performance measures

² cf. e.g. regarding the cost accounting by Homburg et al.: *Kundenorientierung* (1998), p. 19. This statement is supported by numerous feedback from experiences in workshops, interviews and advisory projects. A conclusive empirical proof has yet to be found.

³ Taking profit maximisation as the objective, the Return on Investment forms the basis or main performance measure. Through step by step analysis, the major financial influence factors for the company’s success can be evaluated. Weak points can be recognised by contrasting comparative values both within and outside the firm (e.g. comparing different industries). This means appropriate counter measures can be taken. cf. also Heigl: *Controlling* (1978), p. 103.

⁴ cf. Kaplan/Norton: *Balanced Scorecard* (1992) and *Balanced Scorecard* (1997), by the same authors; as well as Weber/Schäffer: *Balanced Scorecard* (1999).

⁵ cf. Weber et al.: *Methodik* (1995) and *Logistik-Kennzahlen* (1997) by the same authors. Furthermore, the concept by Lynch/Cross: *Measure Up* (1995) should be mentioned and an overall view of estimates from diverse advisory firms from Klingebiel: *Performance Measurement* (1999), p. 63.

⁶ cf. Weber/Schäffer: *Entwicklung* (1999).

Robert Simons of the Harvard Business School has been dealing with strategic control systems for some years.⁷ According to his theories, the organisation of such controlling systems should be based on return on management (ROM) as a maximisation criterion.⁸ As stated by Simons, management attention⁹ is a scarce resource, which has to be optimised. “Like its cousins, return on equity and return on assets, ROM measures the payback from the investment of a scarce resource - in this case, a manager’s time and attention. It indicates how well managers have chosen among alternative courses of action to deploy that resource optimally.”¹⁰ ROM isn’t a quantitative amount, so it can only be determined by the manager as an intuitive estimate; as a control quantity it can indicate directions, but not definite targets.¹¹

If we apply the ideas behind ROM to performance measure systems, it would, according to Simons, be advisable to differentiate between diagnostic and interactive control systems.¹²

- ✓ Diagnostic control systems give the firm stability without requiring the management’s constant attention. The system regulates itself like a thermostat in the ideal case by negative feedback loops and doesn’t require any further attention while running.¹³ The mechanics of periodic, stochastic¹⁴ and exception-driven¹⁵ external supervision ensure that the management’s capacity

⁷ cf. Simons: *Lever of Control* (1995); and *Strategic Renewal* (1994), *Top Management Attention* (1991), *Competitive Advantage* (1990), *Business Strategy* (1987); all by the same author.

⁸ cf. Simons: *Lever of Control* (1995), p.17.

⁹ It isn’t easy to find a clear definition of attention. The fact that the term is used in everyday life makes it intuitively plausible and easy to understand (as this quote from William James illustrates: “Everyone knows what attention is”, James: *Psychology* (1890), p. 403). On the other hand, different meanings of the word are discussed and distinguished between, cf. e.g. Posner: *Attention* (1974). The meaning which is relevant in this context consists of the amount of conscious effort a member of staff puts in to find and assimilate incentives. In this way attention can be seen as a “bridge over which some of the aspects of the outside world, those chosen aspects on which our attention is concentrated, are brought into the subjective world of consciousness.” Zimbardo: *Psychologie* (1995), p. 226.

¹⁰ Simons: *Lever of Control* (1995), p. 72. cf. also Schäffer: *Zeit des Managements* (2000).

¹¹ cf. Simons/Dávila: *Return on Management* (1998)

¹² Apart from diagnostic and interactive control systems, Simons distinguishes between a belief and boundary system.

¹³ A quote from a sales manager of a large German business illustrates this point: “We don’t have to do a lot for that. If a company sends two, three reports [with diagnostic performance measures, JW/US] now and then, they have enough ambition to change something themselves.”

¹⁴ Regarding sample supervision cf. e.g. Weber: *Controlling* (1998), p. 147.

¹⁵ Regarding management-by-exception cf. e.g. Simons (1995), p. 70.

will only be required to a reasonable extent.¹⁶ The balanced scorecard, which is very much in the limelight at the moment, can be used as such a diagnostic performance measure system.¹⁷

- ✓ Interactively used control systems are at the centre of organisational attention and management should always be aware of them. They drive business and generate tension. In this way, the management's attention is focused on the part of the diagnostic system which is particularly marked by strategic instability.¹⁸ The concept of selective performance measures (Weber et al) can be used as an interactive performance measure system.¹⁹ Under certain circumstances, it can involve simply a single performance measure.²⁰ To illustrate, Simons quotes John Sculley: "Pepsi's top managers would carry in their wallets little charts with the latest key Nielsen figures. They became such an important part of my life that I could quote them on any product in any market. We would pore over the data, using it to search for Cola's vulnerable points where an assault could successfully be launched, or to explore why Pepsi slipped a fraction of a percentage point in the game ... No matter where I was at any time of the day, when the Nielsen flash came out, I wanted to be the first to know about it. ... The last thing I'd want was Kendall (Pepsi's CEO) calling for an explanation behind a weak number without having had the chance to see it myself."²¹

The stabilising or expansive function of the performance measure system is also mirrored in the respective fundamental learning type.²²

- ✓ The diagnostic performance measure system is based on *single-loop learning*. This learning type is represented by a process of finding and correcting errors which can also be described as a continual adapting-process to the given rationality and the improvement of this adaptability -

¹⁶ cf. Simons: *Lever of Control* (1995), p. 59.

¹⁷ cf. Simons (1995), p. 68 and Weber/Schäffer: *Entwicklung* (1999), p. 13., or: Kaplan/Norton: *Balanced Scorecard* (1997), p. 156.

¹⁸ cf. Simons: *Lever of Control* (1995), p. 91. Similarly, Goold/Quinn: *Strategic Controls* (1990), p. 49: "A good control system should distinguish a few key, consistent objectives, thereby giving managers a sense of priorities."

¹⁹ cf. Weber et al.: *Methodik* (1994) and by the same authors: *Logistik-Kennzahlen* (1997).

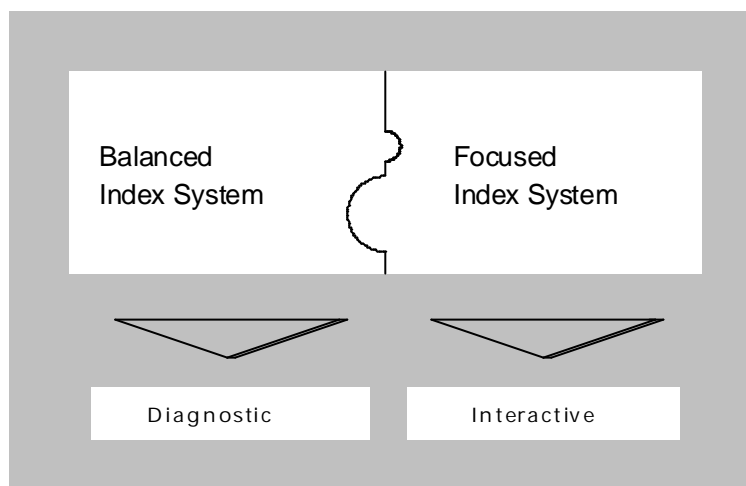
²⁰ For an airline this can, for example, be the capacity utilisation ("loading factor"). In middle class firms, sales are often represented by an active performance measure ("If the sales are right, so's the profit").

²¹ Sculley: *Pepsi* (1987), p. 6, quoted by Simons: *Lever of Control* (1995), p. 96.

²² Cf. also Simons: *Lever of Control* (1995), p. 105 and Ackoff: *System of Systems* (1971).

the standard for this learning process is efficiency. The main issue here is answering the question of how quickly and efficiently the given error can be corrected.²³

- ✓ On the other hand, interactively used systems of performance measures aim additionally for *double-loop learning*, which is defined by Argyris/Schön as follows: “We will give the name double-loop learning to those sorts of organisational inquiry which resolve incompatible organisational norms by setting new priorities and weightings of norms themselves together with associated strategies and assumptions ...”²⁴



*Diagram 1. Diagnostic and interactive performance measure systems.*²⁵

Simons describes the relationship between diagnostically and interactively used control systems as a creative tension between stabilising and expansive forces. Firms should develop both of these abilities: single and double-loop learning, stability with the minimum possible demand on the management’s attention and a focused learning on strategic insecurities as an expansive element.²⁶

The concept of focusing the management’s attention isn’t new, as the following quote from Senge illustrates: “In a well-designed organization, the *only* issues that should reach a senior manager’s attention should be complex, dilemma-like, divergent issues. These are the issues that require the thought and experience of the most senior people, in addition to the input of less experienced people. If top managers are handling twenty problems in a workday, either they are spending too much time

²³ cf. Argyris/Schön: *Theory of Action* (1978), p. 18.

²⁴ Argyris/Schön: *Theory of Action* (1978), p. 18.

²⁵ From Weber/Schäffer: *Entwicklung* (1999), p. 13.

on ‘convergent’ problems that should be dealt with more locally in the organization, or they are giving insufficient time to complex problems. Either way, it is a sign that management work is being handled poorly.’²⁷

However, symptoms²⁸ such as managers complaining about lack of time, as well as stress and a hectic pace, indicate to us that few are putting the ideas of Senge, Simons and others into practice. Further indications can be found in a study by Mintzberg.²⁹ An extensive, empirical proof of this hypothesis has, as far as we know, yet to be found.

3. *Standard path for an active performance measure management*

Both types of performance measure systems described are needed for controlling the business. The following matrix can be used accordingly to characterise the outcomes of an active performance measure management. The characteristics “functioning” and “not functioning” are feasible both for the diagnostically and interactively used performance measure systems.³⁰ Combining these characteristics gives four categories which describe the outcomes. We will now define these and derive specific standard paths.

		Interactive Index System	
		Functioning?	No
Diagnostic Index System	Yes	<p>1</p> <p>"In control"</p>	<p>2</p> <p>"Running out of steam"</p>
	No	<p>3</p> <p>"Losing the right to focus"</p>	<p>4</p> <p>"Out of control"</p>

Diagram 2: Matrix for the outcomes of performance measure management.

²⁶ cf. Simons: *Levers of Control* (1995), p. 158. cf. also similarly Bach et al.: *Dynamische Theorie* (1998).

²⁷ Senge: *Fifth Discipline* (1990), p. 304.

²⁸ cf. e.g. Frank: *Ökonomie* (1998), p. 49.

²⁹ Mintzberg: *Nature* (1975), p. 28.

³⁰ We consider a further operationalisation of these terms as an important task of future research.

3.1 'In Control'

The situation described in the first category is ideal and what we consider to be the objective of active performance measure management. Diagnostic performance measure systems support the management in its aim for stability with as low as possible demand on its organisational attention. Interactively used performance measure systems encourage learning focused on strategic instabilities as an expansive element. Both systems are completely developed and complement each other. This makes the performance measure system an optimal basis for operational control.

From the perspective of active performance measure management, no further steps to a proactive development of the performance measure management are necessary for now. However, care must be taken so that the premises of the momentary organisation are still considered to ensure that a necessary change to the system of performance measures or even the necessity of a change is not overlooked (cf. paragraph 5).

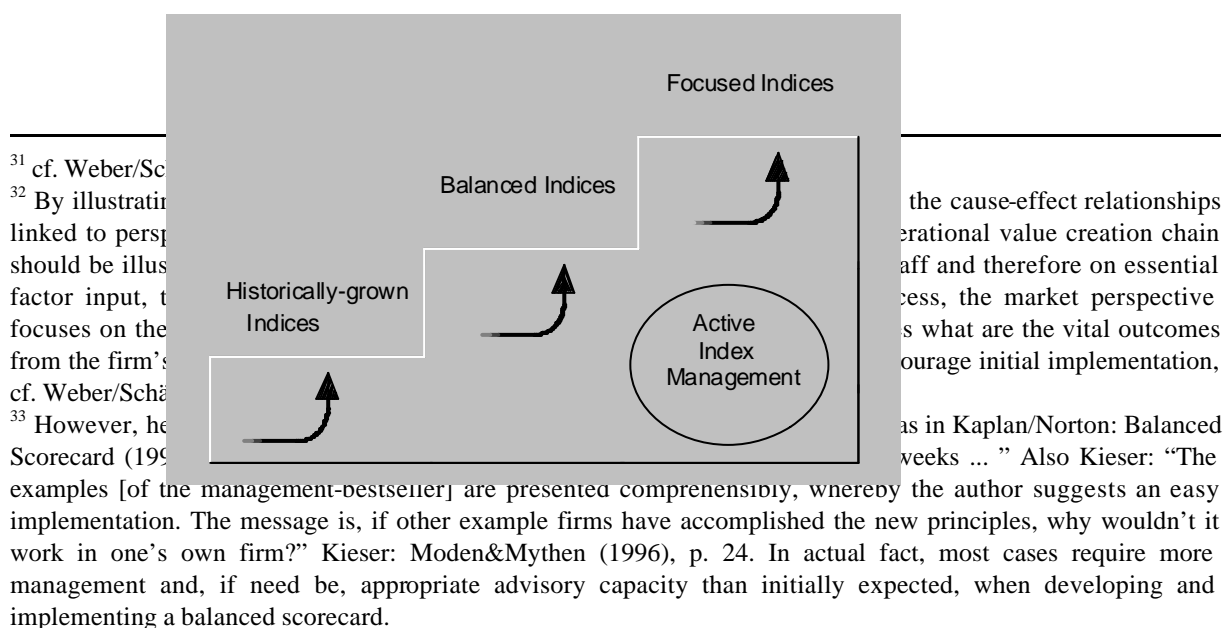
3.2 'Out of Control'

On the other hand, the situation described in the fourth category corresponds to the characteristic status quo at the outset of performance measure management in many areas of management practice. The existing system of performance measures often involves given data, without portraying the value creation chain objectively or focusing on management bottlenecks. The not uncommon result are "data graveyards" with little useful information. If performance measures are taken as a basis for management control, the firm is potentially "out of control".

In the already mentioned standard path³¹, the performance measures which form the management value creation chain, should firstly be filtered and narrowed down, in the event of such a situation arising. The second step should involve a broader focus on the essential bottlenecks and drivers. Central arguments for this are minimising opposition to change to performance measure systems, considering organisational apathy and in the learning attitude of the staff.

The balanced scorecard has recently become a popular way of selecting performance measures which form the value creation chain.³² It has become so popular that more and more firms are introducing this concept, and it is beginning to develop into a standard. Similarly to purchasing an IBM mainframe computer (at least, a few years ago), a responsible controller or manager can do little wrong in introducing a balanced scorecard. This is supported by the intuitive flexibility of the concept, particularly regarding the four perspectives. This minimises any resistance to changes.

The balanced scorecard or other diagnostic systems facilitate an improved communication and strategy-implementation, as well as supervision of the fundamental value chain. The previously high number of performance measures in firms (“performance measure graveyards”) are critically examined and reduced. Care is taken to ensure that firm’s attention concentrates on the significant factors of the value creation chain within the framework of diagnostic controlling so that no perspective is omitted. Implementing the balanced scorecard as a diagnostic instrument is achieved comparatively quickly³³ and the successful efforts in its introduction to the firm become clearly visible.



*Diagram 3: Standard path for managing performance measures*³⁴

If Kaplan/Norton are followed, the next phase should involve strategic feedback “from the lower hierarchical ranks of the management”³⁵ and an interactive clarification concerning the performance measures used in the balanced scorecard.³⁶ This, however, is only to be expected within certain limits: an interactive clarification with a multitude³⁷ of performance measures inevitably overloads the management’s capacity; energy and attention would be “scattered to the four winds”³⁸

The implementation of the balanced scorecard as a diagnostic system should create strategic thinking and a wider understanding of the connections to the business system. To illustrate this point further, different uses for performance measures should be explained.³⁹

- ✓ Performance measures can undoubtedly be used directly to justify specialised decisions. In this case they cause immediate actions. This type of use for performance measures - which involves decisions and actions - is called instrumental use.

³⁴ From Weber/Schäffer: *Entwicklung* (1999), p. 16.

³⁵ Kaplan/Norton: *Balanced Scorecard* (1997), p. 16.

³⁶ cf. Kaplan/Norton: *Balanced Scorecard* (1997), p. 242 and p. 15.

³⁷ Kaplan/Norton mention approximately 24 performance measures and emphasise that there can be no generally approved number of performance measures.

³⁸ This doesn’t change the link between the performance measures and the cause-effect relationships. These shouldn’t be seen as a concrete functional model, but rather as a plausible connection, which has to be interpreted in a new way, according to the daily decisions of management. This only reduces the complexity a little, the complete set of performance measures still needs to be observed and explained.

³⁹ cf. Menon/Varadarajan: *Knowledge Use* (1992), p. 54. and Homburg et al.: *Kundenorientierung* (1998), p. 36.

- ✓ Apart from this, performance measures further encourage a general understanding of the business and the staff's situation. Here, however, the performance measures don't lead to concrete decisions. Moreover, if the performance measures influence thought processes and staff attitudes, this is known as an intuitive use of performance measures.

- ✓ We speak of a symbolic use of performance measures if they were only implemented after the decision itself has already been made, but the performance measures were used in enforcing the decisions and influencing other staff in the firm.

This now leads to the second argument: the mental models of the staff⁴⁰ concerning the business are explicit in diagnostic performance measure systems such as the balanced scorecard and have been adapted if need be. The terminology of the diagnostic system can function as a common language and apart from instrumental, they particularly serve intuitive purposes. Appropriate use of diagnostically used control systems forms the basis for determining the performance measures which can be used interactively. Strategic discourse is made possible and focused relevantly. This means that those firms which implement the balanced scorecard have to go one step further. In implementing the scorecard, they are only at the first stage of actively developing their performance measure system.

Finally, the question remains of whether or not the second step to focusing the performance measure system is advisable in every case, or if it should only depend on the context. The answer to this lies in Simons' research results. These show that, depending on the chosen strategy, a focus on diagnostic or interactive control systems resulted.⁴¹ Using the typology developed by Miles/Snow as a basis, he classifies firms as either prospectors or defenders.⁴²

- ✓ Prospectors bring a multitude of new products on the market, thus creating discord.

- ✓ Defenders aggressively guard a prominent position in a carefully chosen, narrow market niche.

⁴⁰ cf. to the term mental model Weber/Grothe/Schäffer: *Mentale Modelle* (2000) and the works quoted in it.

⁴¹ Simons: *Business Strategy* (1987). There are a number of other studies concerning strategy and control systems: cf. among others Khandwalla: *Types of Competition* (1972) and by the same author: *Management Control* (1973), Miller/Friesen: *Archetypes* (1980), Govindarajan/Gupta: *Control Systems* (1985).

⁴² cf. Miles/Snow: *Organizational Strategy* (1978) and Simons: *Business Strategy* (1987).

According to Simons' research, successful prospectors mainly use their control systems interactively, whereas successful defenders use theirs diagnostically.⁴³ The work of von Bruggeman/Van der Stede⁴⁴ and Hong⁴⁵ confirms this hypothesis.⁴⁶ Therefore, depending on the chosen strategy, the step to focusing is either more or less important. If we imply that prospectors are confronted with higher knowledge restrictions than defenders, the focus only becomes possible and significant on the basis of sufficient knowledge and stability of the fundamental business model. On the one hand, this confirms the implicit sequence for the performance measure system implementation. On the other hand, this also means that a firm's focus can widen with time, in a clearly defined competitive environment, such as how the cola-wars between Pepsi and Coke can be reduced to a single performance measure.⁴⁷ At the other extreme, very high knowledge restrictions about the business system make focusing risky and counter-productive. Here the firm should divide its organisational attention evenly, as previously mentioned in the balanced scorecard. However, considerable further research (intuitive, as well as empirical) is required in order to justify and develop these sorts of evaluations.

3.3 *“Losing the Right to Focus”*

The situation described in the third category corresponds to a situation involving an interactive performance measure system functioning well, at the same time with a non-existent or non-functional diagnostic system. So there is a risk of the manager's perception being limited to a few interactively treated aspects of management so that the matter is possibly 'out of control' at the parts of the value creation chain which aren't considered interactive, without the management becoming aware of this in time. Therefore, focusing on too few performance measures can become risky.

⁴³ cf. Simons: *Business Strategy* (1987).

⁴⁴ cf. Bruggeman/Van der Stede: *Competitive Advantage* (1993), p. 205.

⁴⁵ cf. Hong: *Business Strategy* (1996).

⁴⁶ Miles/Snow come to a conclusion which deviates somewhat from this; cf. for explanations of the differences criticisms of older studies in Simons: *Competitive Advantage* (1990) and theories of Sim/Teoh: *Strategy* (1997), p. 59.

⁴⁷ cf. page 4.

Miller warns that management can often be tempted by initial successes to implement a strategy of wider focusing and simplicity.⁴⁸ In this way, a company with a marketing driven differentiating strategy has to come to terms with, say, the market share and the sales increase as a decisive performance measure.⁴⁹ Focusing on important independent variables may have a positive effect on the firm's success, however if there is no supplementary diagnostic performance measure system, there is a risk that deteriorating quality or productivity remain unnoticed.⁵⁰ Starbuck argues in this context: "Data tends to confirm what the programs assume to be true: the gathered data may show mainly good results even when poor results prevail, because people are gathering little data where poor results show up. For instance, people do not monitor events that they believe to be tangential or phenomena that they assume to be stable."⁵¹

In this way, the circumstances which lead to initial success through focusing can ultimately lead to decline and set-backs. Miller describes this phenomenon in his analysis of focused company strategies as the Icarus paradox.⁵² He rightly claims that distinguishing between necessary and too narrow focusing is anything but easy in practice: "Unfortunately, the difference between the simplicity required for success and the simplicity that leads to failure is often subtle. What appears to be narrowness to outsiders seems to the managers of outstanding firms to be 'operating from strength', creative passion, or efficient concentration. How managers define excess will depend on their world views, standards, and history. And when these managers have excelled by concentration, a little more focus seems to be just the thing."⁵³

⁴⁸ cf. Miller: Icarus (1993).

⁴⁹ cf. again Sculley's Pepsi-example.

⁵⁰ cf. Miller: Icarus (1993), p. 3.: "Many outstanding organizations have followed such paths of deadly momentum - time-bomb trajectories of attitudes, policies, and events that lead to falling sales, plummeting profits, even bankruptcy. These companies extend and amplify the strategies to which they credit their success. Productive attention to detail, for instance, turns into an obsession with minutiae; rewarding innovation escalates into gratuitous invention; and measured growth becomes unbridled expansion. In contrast, activities that are merely de-emphasised - that were not viewed as integral to the recipe for success - are virtually extinguished. Modest marketing deteriorates into lackluster promotion and inadequate distribution; tolerable engineering becomes shoddy design. The result: strategies become less balanced. They center more and more upon a single, core strength that is amplified unduly, while other aspects are forgotten almost entirely."

⁵¹ Starbuck: Strategic Change (1985), p. 353.

⁵² A character in Greek mythology, Icarus was given a pair of wings from his father Daedalus. According to the legend, he flew higher than ever before so that he came too close to the sun and fell. The wings were therefore the cause of his record flight and his crash.

⁵³ Miller: Icarus (1993), p. 130.

If there is an excessive focus on the operating system of performance measures, the management's attention should at least be occasionally redirected to the diagnostic system. The management has lost its right to focus its attention. The diagnostic system has to portray a balanced representation of the value creation chain again, as described above in the first step. It must also include early warning signs within a practical and feasible range. This ensures that the company's perception and behaviour repertoire is sufficient and that the performance measure system is organised with the required variety according to the conditions of Ashby's law. This says that only the variety of possible courses of action limits the variety of outcomes resulting from the disturbance.⁵⁴ Here, variety is defined as being the dynamic complexity of a system, or to be more precise: the number of different outcomes capable of being generated by a system.⁵⁵ A prerequisite for such a behaviour repertoire is an appropriate perception and control repertoire for the firm. Ashby's law of required variety has therefore long-term implications for organising the operational performance measure system. It requires the presence of sufficiently differentiated diagnostic system to be present.⁵⁶ Only in this way can the management's further "peace of mind" be ensured, without having to deal constantly with all performance measures actively, and the basis for strategic dialogue within the interactive performance measure system has been formed.

3.4 *"Running out of Steam"*

The situation described in the second category corresponds to a diagnostic performance measure system which is functioning well with a non-existent or non-functional interactive system. The firm does, however, form a balanced value creation chain, thus ensuring that diagnostic supervision is made possible. Because of such an implicit restriction to single-loop learning, there is a risk that, in the long term, the firm could "run out of steam". It may be doing everything right, but it may not, to an increasing extent, be doing the right things. Efficiency is prioritised at the expense of effectivity of

⁵⁴ cf. Ashby: *Cybernetics* (1970), p. 206 and Beer: *Brain* (1981), p. 41: "Control can be obtained only if the variety of the controller (and in this case of all the parts of the controller) is at least as great as the variety of the situation to be controlled."

⁵⁵ cf. Ashby: *Requisite Variety* (1958), p. 83.

⁵⁶ Similarly, Weick writes: "If a simple process is applied to complicated data, then only a small portion of that data will be registered, attended to, and made unequivocal. Most of the input will remain untouched and will remain a puzzle to people concerning what is up and why they are unable to manage it." Weick: *Social Psychology* (1979), p. 189.

management; not enough impulses to develop the readiness to do something come from the operational performance measure system.

There is a risk of getting into such a situation, if, for example, staff departments steer the management's attention to diagnostic control systems (such as the balanced scorecard!), purely out of sectional motives. Similarly, Simons writes: "Sometimes control staff specialists attempt to impose an interactive control system on processes that should be controlled diagnostically. Staff experts find interactive control systems appealing because these systems receive management attention, thus they elevate the importance of staff working."⁵⁷ Therefore, managers should treat with caution suggestions to make a differentiated planned balanced scorecard a basis for regular and intensive strategic dialogue. There is the risk that the struggle with really critical bottlenecks and drivers will not get enough attention. The negative consequences of a lack of focus, can also in this case be considered after a certain delay, if need be. They can only be developed in a dynamic consideration. It is to be expected, particularly in those firms which have an error-avoidance and suspicion culture that an interactive consideration with key factors isn't paid sufficient attention - a hypothesis which has yet to be proved empirically.

The implications for active performance measure management must be that when the situation is presented, the management's attention must be focused and the performance measure system interactively used. Therefore, as previously mentioned in the second step of the standard path, a further focus on significant bottlenecks should follow.⁵⁸ This, however, doesn't apply to every case: as already detailed above, focusing via interactive performance measure systems with very high knowledge restrictions about the business system is risky and counterproductive. Here, as already put forward in the concept of the balanced scorecard, the firm should divide its organisational attention evenly. On the other hand, focusing should be avoided, when despite there being no knowledge restrictions to rule out interactive methods to deal with the problem, the management's capacity is already taken up with diagnostic supervision. A reason for this could be deviating objective functions of management and its agents or also the complexity of the object to be controlled.

⁵⁷ Simons: Strategic Renewal (1994), p. 169.

4. *Fit formal and informal systems of performance measures*

Up until now, the explanations have been based on the premise that the performance measures considered existed in an explicit form⁵⁹ and corresponded to the control quantities used intuitively by managers. We accordingly discussed the firm's formal performance measure system organisation and omitted the informal level. We will now introduce this premise and consider also situations where diagnostic and/or interactive performance measure systems are only present informally.

		Interactive Index System	
		Yes	No
Diagnostic Index System	Is there a formal Index system?		
	Yes	<p>①</p> <p>Risk of neglecting intuition"</p>	<p>②</p> <p>"Risk of deceptive calm"</p>
No	<p>③</p> <p>Risk of control gaps"</p>	<p>④</p> <p>Risk of errant intuition</p>	

Diagram 4: Matrix for existing formal performance measure systems.

The first category describes the situation depicted up until now, that is, both diagnostically and interactively used performance measure systems are present and correspond to the control quantities used intuitively by managers.⁶⁰ The reasons why we regard this situation as ideal will become obvious from discussing the remaining situation-types.

The fourth category is characterised by the fact that none of the control systems are formalised and they only exist implicitly. This is often the case, for example, in smaller/medium sized firms. In this

⁵⁸ Our experience has shown that continual efforts to focus the existing balanced scorecard can be a practical method for keeping the process of introducing and implementing the balanced scorecard in the firm alive and prevent it from coming to a stand-still.

⁵⁹ cf. e.g. Simons. *Levers of Control* (1995), p. 5: "Management control systems are the formal, information-based routines and procedures ..."

⁶⁰ Informal performance measure systems shall be characterised from now on by the control quantities and their connections, which the manager uses intuitively.

context, management is predominately people-related; at the centre of the firm is its character. Kosmider defines the management task as follows: “The direct, people-related contact during instruction and checks, the frequent, lasting and immediate participation in operational matters, the clarity and familiarity of the staff and the dominating role of the leader’s management skills create a very personal, informal and individual-based management environment.”⁶¹ The rationality of such informal control is closely linked to the leader’s cognitive abilities. If these appear to be sufficient, then the situation outlined is a suitable way of organising the operational control efficiently. However, the fact that critical supervision of the performance measures by a third party isn’t possible could be problematic. If the leader’s amount of experience and internal knowledge of the firm is insufficient or unsuitable to the situation then the most likely consequence is the firm’s failure.⁶²

This leads to the criticism of the two remaining situation-types. The situation in the third category doesn’t seem to us as being risk-free. It could, for example, exist in a firm which uses a simple performance measure system focused on operational and strategic bottlenecks, based on the concept of selective performance measures by Weber et al,⁶³ and has excluded any performance measures which go beyond this from its reporting. The fact that the diagnostic control system isn’t explicit means that the management can never be sure if all relevant aspects are being covered by the checking which is in at most, intuitive. The diagnostic system is immune from intersubjective review. There is a risk that under certain circumstances, disastrous lapses in perception and controlling could occur, as described in the category “losing the right to focus”.

The reverse case in the second category is one which affects large German firms most often; in his reporting the manager receives either a “clutter of performance measures” or (e.g. according to the principles of the balanced scorecard) a prepared set of performance measures⁶⁴: the diagnostic performance measure system is presented formally. The reporting, on the other hand, lacks a further focus on selected performance measures. The manager will usually try to compensate for this deficit based on his own experience. He will primarily look for those performance measures which are

⁶¹ Kosmider: *Mittelstand* (1994), p. 40.

⁶² cf. for this argumentation also Weber/Schäffer: *Willensbildung* (1999).

⁶³ cf. Weber et al.: *Methodik* (1994) and *Logistik-Kennzahlen* (1997).

⁶⁴ Lipe/Salterio: *Balanced Scorecard* (1998), p. 6. list numerous behaviour-related studies, which show that clarifying information influences the receiver’s processing, as shown by these studies, Frederick: *Control* (1991); Blocher/Davis: *Presentation Format* (1990); Kaplan: *Judgements* (1998); Ricciute: *Order Effects* (1992) and Wang: *Constraints* (1995) as well as the results of their own study, cf. ebenda, p. 16.

important for him and control these. Countless interviews have confirmed for us that most practical people control the area for which they are responsible with a handful of performance measures. However, they rarely receive these performance measures in the form they wish for.⁶⁵

This solution does have a certain charm: it is not only inexpensive, but also flexible. For example, Goold/Quinn think that: “It follows that the attempt to identify a ‘few key strategic control variables’ will inevitably screen out much information of relevance to the skilful manager, and an explicit strategic control system may conflict with his powers of judgement ... Explicit strategic control measures are less well-defined, more implicit sense of direction that will guide the senior manager’s response to events as they unfold.”⁶⁶

On the other hand, the argument is valid once again, that the manager’s intuition concerning suitable performance measures and their actual character should be reviewed, especially regarding critical and important control quantities. For this, however, an explicitly formulated performance measure is necessary as a counterpart. These performance measures which accumulate in the reporting can and must be reviewed intuitively by the manager. The objective is therefore a productive relationship resulting in a “fit” due to the performance measure-related intuition of the manager and the firm’s performance measures accumulated in the reporting.⁶⁷

5. Taking premises into consideration

Most performance measure concepts, including Kaplan/Norton’s balanced scorecard⁶⁸, do not take explicit supervision of premises into account. This can cause problems, especially if, according to the prevailing doctrine of management control theory, strategic supervision consists of three elements: strategic implementation monitoring, premise supervision and general strategic surveillance.⁶⁹

⁶⁵ As an example we shall quote an area supervisor from a large German company who complained to us: “Here, we have a multitude of controllers ... and I control my area with three, four performance measures. Do you think I’d get these performance measures the way I want them?”

⁶⁶ Goold/Quinn: *Strategic Controls* (1990), p. 52.

⁶⁷ cf. also Weber/Schäffer: *Willensbildung* (1999), p. 7.

⁶⁸ Kaplan/Norton claim that coming to terms with the model’s hypothesis in the strategic learning process fulfils the function of premise supervision (Kaplan/Norton: *Balanced Scorecard* (1997), p. 242).

⁶⁹ cf. among others Schreyögg/Steinmann: *Strategische Kontrolle* (1995).

- ✓ Within the framework of monitoring implementation, insights into past results of strategic measures are in the foreground. Often particular milestones which had been set are referred to, such as the market share of a newly introduced product after one year. Monitoring implementation aims (mainly) at answering the question of whether or not the initial strategic direction should be retained.
- ✓ During premise supervision, key assumptions of strategic planning are subjected to constant scrutiny.
- ✓ Strategic surveillance is ultimately closely linked to both supervision areas, ideally as general observation activity. It serves as a “strategic radar”, for early identification of opportunities and risks in the business fields and competition projects of the firm.

Up until now, our explanations on diagnostic and interactive performance measure systems have almost completely revolved around components of implementation monitoring, as is the tradition with work on performance measure systems.⁷⁰ We now want to examine whether or not premise supervision and strategic surveillance are rightly excluded when discussing systems of performance measures or if these elements of strategic supervision systems should also be considered when planning the operational performance measure system.

Let us first look at premise monitoring: The selection process when laying down diagnostic and interactive performance measure systems usually occurs on the basis of the premises stipulated in the strategic planning process. This enables not only “the principal inclusive decision field”⁷¹ in strategic thinking but also allows the control field to be given a more workable format.⁷² The necessity for continuous supervision of the premises results from the fact that by setting premises, the instability of the environment itself remains unchanged; it merely provides a means of better handling.⁷³

⁷⁰ cf. for example Reichmann: *Controlling* (1997), p. 496. cf. for the balanced scorecard the explanations of Kaplan/Norton: *Balanced Scorecard* (1997) and Weber/Schäffer: *Einordnung des Konzepts* (1998), p. 23.

⁷¹ Schreyögg/Steinmann: *Strategische Kontrolle* (1985), p. 401.

⁷² cf. Schreyögg/Steinmann: *Strategische Kontrolle* (1985), p. 401.

⁷³ Steinmann/Küstermann refer to the “double selection achievement” of top managers when assigning the diagnostic and interactive system in Simons’ concept and state; “Because these first decisions mean that the

For this to happen, the first step must include creating optimal transparency regarding the set of premises. This is usually accomplished through examining the premises or the appropriate performance measure, as the case may be. This can correspond with the performance measures contained in the diagnostically or interactively used performance measure systems (for example, the acceptance of a certain market share as a minimum threshold), but it does not necessarily have to (e.g., number of competitors, growth rate of the GNP). The performance measure systems which have already been discussed need to be supplemented by an explicit consideration of the strategic premises in the form of appropriate performance measures, if need be. In many cases, this supplementation means that warning signs can be recognised sooner rather than later. As shown in the diagram, the entrance of new competition (into the market) is shown, rather than the effect of this entrance on the firm's market share. "The sooner tendencies towards crisis are recognised, the wider- as against under otherwise similar circumstances- the spectrum of alternative possible reactions and the more time for well considered preparation: all in all, therefore, the greater the potential gain in efficiency."⁷⁴

Establishing premises causes two problems: Firstly, it doesn't make sense, for economic reasons, to devote the same supervision intensity to all premises. This means that the premises have to be ordered according to priority. "Those premises which are based on weak progress require a high supervision intensity. They have been withdrawn from their own field of influence and have critical priority in the strategic concept, because even the slightest deviation can have far reaching consequences."⁷⁵ An appropriate solution is therefore to divide them into interactively- and diagnostically-used premises.

Diagnostic premise systems incorporate the less urgent premises and give the firm security without requiring the management's constant attention. Like its counterpart, which is immediately related to the value creation chain, interactively used premise systems are at the centre of organisational attention and should always be at the forefront of the managers mind. In this way the management's attention is focused on those premises which are particularly characterised by strategic insecurity.

whole organisation's attention... is selectively analysed, therefore errors here could have catastrophic consequences." Steinmann/Küstermann (1996), p. 25.

⁷⁴ Schreyögg/Steinmann: Strategische Kontrolle (1985),p. 403.

On the other hand, it basically isn't possible to compile a conclusive list of (implicit and explicit) premises.⁷⁶ This means that there are always some premises of which the organiser cannot be aware when he is actually planning. If the environment isn't completely described and predictable, then the organiser doesn't know which aspects of the scenario are relevant for him, or else he only knows within certain limits.⁷⁷ The information he requires cannot be precisely described and predicted. For this reason, it is only possible to stipulate the relevant premises explicitly *ex ante* to a certain extent. The selective character of premise supervision which results from this, need to be compensated; this falls under "strategic surveillance": By definition this has to be general, in other words, it has no identifiable object *ex ante* to be controlled.⁷⁸

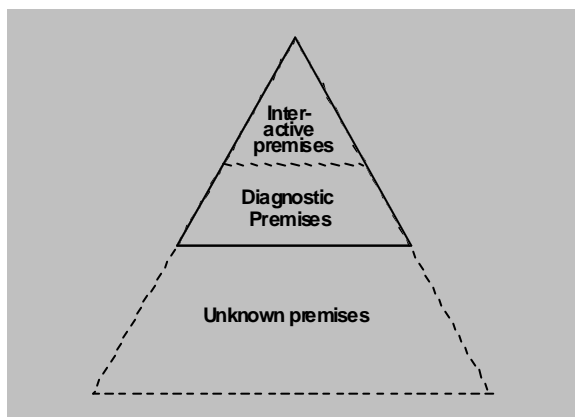


Diagram 5: Premise Pyramid

The process of continuous environment analysis in order to eliminate knowledge deficits has become known as "environmental scanning". In his work on strategic planning,⁷⁹ Kefalas defines this as "the process of linking the organisation to its environment"⁸⁰ The concept enables as large as possible

⁷⁵ Schreyögg/Steinmann: *Strategische Kontrolle* (1985), p. 401.

⁷⁶ cf. also Lutke Schwienhorst: *Strategische Kontrolle* (1989), p. 148: "If at first premise supervision was seen as being a case-by-case examination of those assumptions, which were explicit, as the planning foundation, then the momentary state of the discussion is characterised by the fact that the necessity for taking implicit conditions into consideration in the object area is defined as strategic supervision."

⁷⁷ cf. also Aguilar: *Business Environment* (1967), p. 4.

⁷⁸ Insights into cognition science have shown us that a completely general search or supervision is not possible by a human being. cf. Weber/Grothe/Schäffer: *Mentale Modelle* (2000) and the works listed there. Therefore we see the Schreyögg/Steinmann term of the undirected search as an effort to come as near as possible to an unattainable ideal concept.

⁷⁹ cf. Aguilar: *Business Environment* (1967); Kefalas: *Business Environment* (1971), p. 77 and Horvath: *Controlling* (1998), p. 401.

⁸⁰ Kefalas: *Business Environment* (1971), p. 77.

data quantities to be searched for information. However, even this broad and comprehensive data search is selective in the end.⁸¹

In operational practice, however, the concept, which is sufficiently well-known in books, proves difficult to put into action.⁸² As Schreyögg/Steinmann write: “Most answers, however, lead to the belief that strategic supervision was carried out in a more or less informal way. Basically one relied on the strategic vigilance of the staff in the firm; for instance monitoring competition by marketing or supervising the most important planning premises through line management within the framework of daily business. The significance of a ‘strategic thinking environment’ was repeatedly underlined in this context, which should enable strategic supervision to become a natural part of the management task.”⁸³ In order to bridge, or at least reduce the “operational gap” of Schreyögg/Steinmann’s concept, we suggest using interactively used performance measures and premises as a kind of recurring theme for the general search for risk and opportunities. The individual staff member in the firm becomes persistent and is ideally “driven” by the question of what implications each detail of the activities and developments observed by him could have; for example, for future market shares or future customer satisfaction. This search isn’t reactive or targeting (as in the Pepsi example used by Simons)⁸⁴, but is related to the future and with reference to the search field, it is largely general. The conscious filter which drives the search is highly significant. The individual staff member should not just receive and pass on information (as in Simons’ concept); he has to classify the perceived signals as (potentially) strategically relevant.⁸⁵

The wisdom in such a course of action seems to be intuitively plausible. It is similar to a researcher who goes through life (or at least, through his student life) with an unsolved problem at the back of his mind. If the problem drives him to a great enough extent, he may often come across a piece of

⁸¹ cf. Aguilar: *Business Environment* (1967), p. 9: “The great number and complexity of the variables involved ... introduce a barrier to any comprehensive consideration of the factors that could be important.” The cause for this lies in the combination of a high information requirement, which can only be described and predicted to a limited extent, as well as a limited ability to transform data, on the part of staff. This can happen, if, for example, staff lack the knowledge to see the effective connection between a date and the given problem. On the other hand, it is sometimes the case, that a cause-effect relationship is suspected between the date and the problem, a suspicion which was well-founded in the past, but has now become irrelevant, because the fundamental causal link has been broken by one’s own actions or changes in the working environment.

⁸² cf. to this also Steinmann/Küstermann: *Steuerungslehre* (1996), p.29 and Preble: *Strategic Control* (1992), p. 396f.

⁸³ Steinmann/Schreyögg: *Umsetzung* (1986), p. 752.

⁸⁴ cf. again paragraph two of this paper.

⁸⁵ Similarly, Steinmann/Küstermann: *Steuerungslehre* (1996), p. 34.

information unexpectedly, information which only he can interpret as being relevant or even essential for solving his problem. To a lesser extent, this idea is compatible with Schreyögg/Steinmann's concept of a "strategic thinking environment." By linking it to the concept of interactively used performance measures and premises, the task of strategic surveillance within the firm is clearly defined and institutionalised, contrary to Schreyögg/Steinmann's theory. This is of vital importance, if the concept of strategic surveillance is to "give *all* staff in all organisations the opportunity to *initiate* dialogue processes if critical signs imply a strategic threat."⁸⁶ This does, however, imply the need for an appropriate communication platform.⁸⁷ The platforms which have become established within the framework of the interactively used performance measure and premise system should therefore be used for discussing suggestions and results from strategic surveillance.

6. Conclusion.

The conclusion of this paper can be summarised as follows:

1. Balanced and focused systems of performance measures complement each other. The process of introducing the balanced scorecard which is being carried out in many firms at the moment, shouldn't usually be the end of developing the operational performance measure system.
2. The basis of active performance measure management is a stocktaking of the existing performance measure system. Four types of situation were differentiated: "in control", "out of control", "losing the right to focus" and "running out of steam". Specific standard paths were derived from these.
3. An important distinction should be made when differentiating formalised systems of performance measures and control quantities used intuitively by managers. The objective is a productive relationship resulting in a "fit" between the performance measure related intuition of the manager and the performance measures used in the reporting.

⁸⁶ Steinmann/Küstermann: Steuerungslehre (1996), p. 34.

⁸⁷ Similarly, Senge et al: Dance of Change (1999),p. 520. "Have a diverse enough group of people scanning that you are sure of covering all the bases - predictable and unpredictable. And make sure they have a vehicle to succinctly report back on what they have found, and a forum to pool and discuss their findings regularly with the rest of the core strategic team, if not the entire organisation."

4. Apart from diagnostically and interactively used performance measures, an explicit illustration of the premises for the fundamental strategy is required. Here, an equivalent differentiation between diagnostically and interactively used premises is to be recommended.
5. However, strategic supervision aimed at premises is not sufficient; a supplementary and (ideally) general strategic surveillance is required. The difficulties in putting this concept of Schreyögg/Steinmann into practice can be reduced by linking interactively used performance measures and the communication platform.
6. This paper should be seen as a contribution to developing the theory of actively managing performance measure systems in firms.