

The supplement of the Diagnostic Tool For Assessment the Implemented Performance Management Systems: Theoretical Approach

Tarmo Kadak

Abstract—Survey results, articles and other literature about performance business have been published in remarkable amount. The subject has not remained only at the level of theory but attempts have been made to implement the performance related methods also in practice. It indicates the enormous popularity related with this topic. On the same time there is few literature how to ordain the efficiency of Performance Management System (PMS). If to add that, the literature contains hints to that difficulties have been encountered while implementing and using PMS in practice, then need to assess the efficiency the implemented PMSs is high. This paper proposes theoretical approach to supplement the diagnostic tool of PMS, which enables to assess the implemented PMSs and case of appearing shortcomings to indicate, which allows to eliminating of these. In addition to using this approach on the diagnosing the efficiency of implemented PMS, the same approach can be used in creation of PMS from start.

Keywords—Performance Management Systems (PMS), diagnostic tools, implementation, performance, indicators

I. PROBLEM STATEMENT

MANY references can be found in literature indicating that there have been difficulties in implementation of PMS (performance management systems) not allowing to gain the full benefit from the system [14]. There are certainly many success stories, but there is now growing literature addressing the difficulties of implementation and it is claimed by some that 70 per cent of performance measurement initiatives fail. The same rate (70%) marks failures of Balanced Scorecard (BSC) implementation. Waal [40] says that 56% of performance management projects fail. Research studies have shown that PMS implementation in industry still lags far behind expectations [21].

Insufficient implementation and/or lack of inefficient PMS may lead to the poor organisational performance and on the contrary.

At the same time there are surveys conforming, that using PMS enhance organizational performances and these organizations have better performances than organizations with poor or without PMS. Four of them are presented below, characterizing benefits from designing and using efficient

PMS.

One of the first research studies over a longer period of time (1996-1999) revealed that organizations with balanced PMS are more successful than organizations without balanced PMS [28].

The objective of the paper is to construct approach, which enables to assess the implemented PMSs and case of appearing shortcomings to indicate and therefore to raise efficiency of PMS. To achieve this objective the author of this paper analyzed viewpoints of different authors found in the literature about reasons causing implementation difficulties of PMS. During the research author gathered the viewpoints of different authors, systematised and grouped them on the basis of similar characteristics. In this way he reached the main and most frequent reason. Proposed approach in this paper would focus on assessing and if necessary on eliminating just on the same and most frequent shortcoming.

II. CONSTRUCTING THE APPROACH

A. Findings from Literature

PMS has a central role in the strategy execution process and thereof PMS contributes a lot to support this process successfully.

Fortune magazine study from 1999 found that 70% of CEO failures came not as a result of poor strategy, but the inability to execute [20]. In the opinion of the author of the paper this indicator clearly underlines the significance of the executing strategy in addition to the strategy itself.

The answer to the question why the execution of strategy is so complicated lies by Kaplan and Norton [14] in the form of four barriers that must be surmounted before strategy can be effectively executed. They state also that only 10% of organisations execute their strategy, which is a very low number and indicates to big problems existing in this field in the author's opinion. The barriers are [20]:

- Vision barrier: only 5% of the workforce understands strategy;
- People barrier: only 25% of managers have incentives linked to strategy;
- Management barriers: 85% of executive teams spend less than one hour per month discussing strategy;
- Resource barrier: 60% of organizations do not link

T. Kadak is with the Department of Accounting of Tallinn University of Technology – TSEBA, Akadeemia tee 3, 12618 Tallinn, Estonia (e-mail: tarmo.kadak@tseba.ttu.ee)

budgets to strategy.

All causes of failure presented by Schneiderman [30], may be classified as design failure and have been used in many papers as the main factors of failure causes:

- the independent (i.e. nonfinancial) variables on the scorecard are incorrectly identified as the primary drivers of future stakeholder satisfaction;
- metrics are poorly defined [32];
- improvement goals are negotiated rather than based on the stakeholder requirements, fundamental process limits, and improvement process capabilities;
- there is no deployment system that breaks high level goals down to the sub-process level where actual improvement activities reside;
- a state of the art improvement system is not used;
- there is not and cannot be a quantitative linkage between non-financial and expected financial results.

The author cannot agree with the last statement because the outputs of current activities, many of which are not measurable in monetary, shape the organisation's financial results in the future. PMS attempts to create linkages between these two different dimensions of time, which is the gist of PMS.

Additionally Schneiderman [29] has characterized the situation as follows: *"The much sought-after linkage between performance measurement and strategy is poor in practice, partly as a result of the forced classifications into the categories of financial, customer, internal processes, and learning and growth [. . .]. Current practice is ad hoc and the resulting linkages are not compelling"*.

Bourne et al. [2] are categorizing reasons for success and failure from literature and proposed them using three categories of Pettigrew et al. [23], which are:

a) Contextual issues:

- the need for a highly developed information system;
- time and leadership and resistance to change;
- lack of leadership and resistance to change.

b) Procession issues:

- vision and strategy were not actionable as there were difficulties in evaluating the relative importance of measures, and the problems of identifying true "drivers";
- strategy was not linked to resource allocation;
- goals were negotiated rather than based on stakeholder requirements;
- state of the art improvement methods were not used;
- striving for perfection undermined success.

c) Content issues:

- strategy was not linked to department, team and individual goals;
- large number of measures diluted the overall impact;

- metrics were too poorly defined;
- the need to quantify results in areas that are more qualitative in nature.

Bourne et al. [2] says there are four main blocking factors to implementation of the measures:

- the effort required;
- the ease of data accessibility through the IT systems;
- the consequences of measurement;
- being overtaken by new parent company initiatives.

Clinton et al. [5] believe that difficulties are related with selecting process of measures and with their appropriate use.

Frigo and Krumwiede [10] concluded that scorecard users rated about a third of customer and internal process area metrics as between "less than adequate" and "poor." In addition, "only 16.8% rated customer metrics as 'very good to excellent,' and only 12.3% said their internal process metrics were "very good to excellent".

BSC expert Niven [20] believes that half of BSC users are not achieving the results they hoped for and a significant number of users rate their performance measurement systems as "adequate".

They seem to have a difficult time choosing the proper metrics and then using them appropriately [5, 34].

CIMA technical report [4] points out the following weaknesses discovered in their research:

- 78% of companies that have implemented strategic performance measurement systems do not assess rigorously the links between strategies and performance measures.
- 71% have not developed a formal causal model or value-driver map.
- 79% have not attempted to validate the linkages between their non-financial measures and future financial results.
- 45% found the need to quantify results to be a major implementation problem.

Grouping shortcomings

Grouping the above-mentioned shortcomings, more general and specific groups of reasons can be identified. General difficulties are largely associated with strategy execution [4, 14, 29, 30] and it has been mentioned once that vision and strategy themselves are inadequate [2, 4].

The following more specific difficulties are encountered in strategy execution as a process:

- Communication difficulties: strategy has neither been deployed nor aligned with managers, units and employees [4, 5, 29, 30, 35]; strategy is not clearly understood [14].
- Measures are poor [2, 4, 10, 29, 30] and there are too many of them [2, 9, 24], which all is a consequence of poor selection process of measures [5]. This implies a lack of an efficient method.
- Insufficient resources for strategy execution,

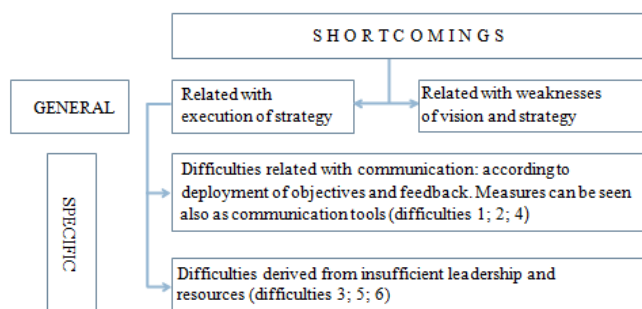
resources are allocated without consulting strategic priorities but on some other basis [2, 14].

- Feedback related: adjusting activities are not based on actual results or these are not performed at all [14, 30, 36]; additional pay is determined not based on strategy execution [14].
- Problems are encountered in PMS implementation [14, 36], insufficient initiative [2, 14], insufficient allocation of time and money for execution [2]. This indicates the lack of system operating “fuel”.
- Problems caused by PMS: lack of an advanced information system [2].

More specific weaknesses can in turn be divided into two (Figure 1):

- Difficulties with communication: both deployment of objectives and feedback. Also measures can be regarded as means of communication tools (difficulties 1, 2, 4).
- Difficulties arising from insufficient leadership and resources in PMS implementation (difficulties 3, 5, 6).

Figure 1. Summary of shortcomings



Source: author's projection based on literature review

Difficulties with communication affect creation of PMS structure and its functioning more directly. Insufficient leadership and resources influence the quality of the structure and functioning somewhat more indirectly.

Difficulties with communication have been pointed out by many authors. Verweire and Berghe [37] claim that communication has a significant role in the performance management process. Merchant [18] argues that communication failure is an important cause of poor organizational performance. Weak communication is mentioned also by Malmi [17] in his research: “*Most interviewees stated that they have derived their measures from strategy, based on cause-and-effect reasoning. When asked to give an example of such cause-and-effect chains, the claimed link between strategy and measures appeared weak in most companies. Comments suggest that the initial idea of linking measures is not well understood.*”

Breakdowns in communication and difficulty in translating the strategy into action are common reasons for failure. It is often difficult for employees to know what to do to improve

performance [7].

Chtioui [3] in his research reached a conclusion that communication contributes to the realisation of control objectives. Depending on the model adopted, it acts as:

- a control tool;
- a motivational factor;
- an instrument of influence;
- a coordination mechanism.

Employees of a well-known auditing firm, Arthur Andersen, unveiled that the control framework is often unsynchronised with the organisation's objectives. A challenge there is to identify and communicate the strategy and then design and implement a PMS which is clearly linked to strategic objectives. The trick is to identify the critical sources and find related measures that will lead to performance [33].

Comprehension of causal connections (author: which is the result of working communication) are important for the achievement of results [16]. He finds that the reason why poor causality exists is due to that defining of the profit creating process and their indicators that would cover these processes in the best way, is extremely uncertain and not well understandable for anybody in the organisation.

This has been studied also by Webb [41] who in his experiment verified that managers focus more on fulfilling the objectives where causal connections are visible, perceptible and strong.

Alver and Kadak [1] pointed out an analogous problem: relationships with firm's objectives (financial, personnel, product and their development areas) and data used for measuring the results were studied. Although the research demonstrated significant alignments, non-alignments still appeared between objectives and the indicators monitoring their achievement, both in strong and soft areas. These shortcomings can also be addressed as lack or weakness of communication where the objective is not observed in the execution phase.

Taking into account the high failure rate, on the one hand, and shortcomings of PMS implementation, on the other hand, there is an obvious need for a tool with the help of which to diagnose PMS. This tool will base on approach which will focus on communication in PMS design and usage.

B. What Are PMSs?

Before constructing the approach the author of this paper presents how performance management and PMS are defined, what and how it consist of, related with strategy, some requirements to PMS and about the efficiency of PMS by different authors to frame the approach. Finally author itself defines the PMS and its parts.

Verweire and Berghe defined performance management as a process that helps an organisation formulate, implement and change its strategy in order to fulfill stakeholders' satisfaction [37].

If performance management a process, then which activities consist of process?

The following list contains activities that must be done to

improve performance. The two institutions LGMB and the Audit Commission in the UK suggest that, in order to improve both organisational and individual performance, the following management functions are important:

- defining and setting organisational and individual aims and objectives;
- corporate planning;
- linking organisational strategy and service objectives to jobs and clients;
- identifying staff training and development needs;
- assessing the results through personal appraisal using relevant performance indicators;
- performance agreements or contracts;
- using the knowledge gained through training to modify performance attitudes;
- external and internal communication systems;
- organisation development and performance review.

What PMS consist of?

That has been described by many authors and institutions. An overview of PMS parts is provided in the definition (about Controlling) by Waal [38], according to what its structure is defined as a combination of the following parts:

- the organisation's structure (i.e. delegation of authorities and responsibility);
- performance measurement and assessment standards;
- infrastructure for the planning and control cycle;
- infrastructure for the organisation's management information.

According to Price [25], parts of performance management are:

- integration into business strategy;
- development of individual and team performances;
- focus on training and development;
- formal assessment components;
- line managers' accountability;
- integration into HRM and rewarding practices.

Definitions by Cokins and Edis relate performance management to strategy execution.

Performance management is the framework for managing the execution of an organization's strategy. It is how plans are translated into results [6].

The term performance management refers to any integrated, systematic approach to improving organisational performance to achieve corporate strategic aims and promote its mission and values [8].

Horizontal and vertical integration in construction of PMS.

A key characteristic of Performance Measurement Framework (PMF) is their ability to integrate horizontally across functions and vertically through the hierarchy of the organization [26].

Performance management is an integrated set of planning and review procedures, which cascades down through the

organisation to provide a link between each individual and the overall strategy of the organization [27].

PMSs are defined as:... the formal, information-based routines and procedures managers use to maintain or alter patterns in organizational activities [31].

The following two lists contain requirements for PMS. From a review of mainly US literature, Millett and Harvey [19] suggest that an ideal PM model has features that support:

- communicating of objectives to all employees;
- relating individual and departmental performance targets to a broader set of objectives;
- reviewing formally progress towards these target objectives;
- identifying training, development, and merit pay assessments;
- evaluating and improving the effectiveness of the process.

In the opinion of Kennerley and Neely [15] PMF must:

- provide a "balanced" picture of the business;
- provide a succinct overview of the organization's performance;
- be multidimensional;
- be comprehensive;
- be integrated both across the organization's functions and through its hierarchy;
- explain how results are a function of determinates.

Like in every system, one of the main assessment criterion of PMS is efficiency. The system is efficient when it can react and adapt to changes in the environment surrounding the organisation and within the organisation, and according to this provide information [11].

Olsen et al. [21] have assessed PMS efficiency with the help of three criteria:

- causability,
- continuous improvement,
- process control.

The efficiency of PMS is defined on the way, if management teams are using the majority of measures in the management of their business. Evidence to confirm that is the fact, if board meetings are reviewing company reporting documentation and observing the measures being displayed around the business [2].

Kadak has determined ensuring the efficiency of the system through the fulfillment of the following criteria [13]:

- constructed hierarchically;
- measures given to subunits and the achievement of their goals drives the fulfillment of an organization's objectives;
- are supported by other units and fields (for example, results are related with bonuses and motivation);
- measures follow trends and changes in the environment.

The author of this paper defines PMS as follows: *PMS is an holistic approach to the organisation, which derives for executive units and employees their short-term tasks based on*

the strategic objectives of the organisation (or on other which is regarded as performance), regularly monitoring their conformity to expectations and where necessary, launching adjusting activities when the (interim) results are not as expected. All this is in order to help the organisation ensure the achievement of its strategic objectives (or other which is regarded as performance) with its arrangement.

PMS is a system which with its (hierarchical) structure/setup and functioning supports the organisation to achieve its strategic objectives. It may be put as follows:

$$PMS = structure + functioning.$$

In comparison with others, author of this paper underlines in his definition of PMS rather the importance of alignment in the structure and functioning and as a whole.

In brief, according to definitions, consisting parts and requirements to PMS and to efficiency of PMS, the constructed approach to ensure communication in all parts and components of PMS must ensure:

- cause-and-effect relationships in the system (being integrated, hierarchical, holistic),
- activities starting with planning and ending with adjusting activities and
- adaption of the system.

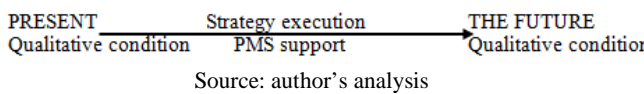
C. PMS and the Chain Concept: Birth of Chain

The analysis of PMS shortcomings indentified that PMS implementation and utilization failure is connected mostly with communication, which does not allow communicate information in several directions in PMS.

A solution to the problem where PMS in many organisations actually cannot support the achievement of its strategic objectives would be strict abidance by the chain concept in PMS design and functioning.

A purpose of PMS implementation is to move from the present qualitative condition of the organisation into a different qualitative condition in the future (Figure 2).

Figure 2. Change of qualitative conditions



The pathway there can be addressed as a set of different but interlinked stages/parts. One set is formed of activities and another set of system components: interim objectives, measures, interim results etc. All along the way from the current condition to the future condition the organisation is accompanied by PMS, based on the chain structure.

The following qualities are typical of a chain:

- a complete chain consists of links/components,
- a chain can fulfil its function only when it is unbroken.

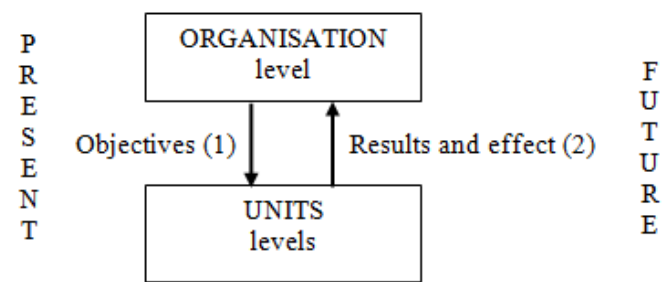
Then all it links can fulfil their role and therefore also the chain as a whole. In that case every link is filled with information which is transmitted from the beginning to the end of the chain. If the chain is broken, the link next to the break cannot fulfill its role anymore and communication/information

will cease. After the broken link is repaired the transmission is restored. PMS with all its parts and components can be viewed in a similar way.

General description of the chain and two directions of two chains

First, movement (of information) in PMS chain occurs (1) in the chain of objectives (Figure 3). There the necessary sub-activities derived from the organisation's strategic objectives are communicated to the respective units. In that way all required activities get an executor and the objective is split/deployed. Later, in the strategy execution and PMS functional phase, (information) communication movement will occur (2) in the result chain, which is movement in the opposite direction and where executing units with the results of their sub-activities exert the expected influence on the achievement of the organisation's strategic objectives, i.e. individual results are transformed into overall results of the organisation.

Figure 3. Communication of information in two chains



Source: author's analysis

Since the interval between setting strategic objectives and the final result being revealed is long (measured in years), then it is important to know before the date the final results become evident whether the strategic objective is likely to be achieved or not. For that the "long journey" needs to be deployed into shorter periods and then conclusions have to be made assessing the actual interim results against short-term objectives. The chain of both objectives and results will be deployed shorter by this amount (a month, quarter, half year, year).

Due to unsatisfactory interim results or other circumstances (e.g. changes in external environment) an adjustment would be made to the system. This would somewhat (but not significantly) change the next period's objectives of some executing units and the cycle will repeat: information is collected to know interim results; these are assessed and a judgement is made, which will lead to the adjustment of the next period's objectives.

It will be guaranteed by moving along this chain that exactly these activities which lead toward the achievement of the overall objective were derived from the overall objectives of organisation to strategy executors. The achievement of these is monitored on the basis of the criteria (measures) derived from the objectives. It rules out any other, out of

context results, keeping only those that are necessary with the overall objective in view. If this consistency is guaranteed and the chain is functioning, or all parts/links in the chain are functioning as necessary, there is a solid foundation also for the achievement of the organisation’s objectives.

In such a description we can speak of two chains (Figure 3):

- first – setting objectives based on the organisation’s objective;
- second – collection of results, analysis, drawing conclusions, communication and implementing adjusting activities.

The first chain happens earlier in time and is more static and shorter (objectives setting). The second chain acts later in time, is more dynamic and longer lasting (collection of results and responding). These chains come into contact with each other in two points. First, where in the functional phase of PMS it is initially observed what has been set in the chain of objectives, and then where the functional phase sets the short-term period objectives for the chain of objectives.

Consolidating the PMS and the chain. In a PMS can distinguish three main parts, which can be examined on the basis of the above-described two chains (objective setting chain and result collection chain) (Figure 4).

Figure 4. Relations between chains and PMS parts

Objective setting chain (1)	PMS structure
	PMS implementation
Results collection chain (2)	PMS functioning

Source: author’s analysis

Therefore the author considered it necessary to describe separately:

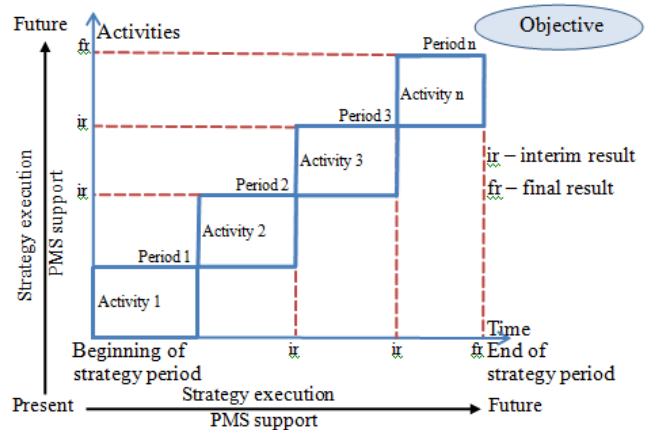
- the structure of PMS through its components (the objective setting chain),
- functioning of PMS through its components (the result collecting chain), and
- implementation of PMS that connects previous two parts.

III. CHAIN CREATION BETWEEN PMS PARTS

A. First Part of PMS

In the following the author discusses about the generation of PMS structure pursuant to the chain concept. While the directions of objective deployment and aggregation of results were discussed above, then now the temporal direction must be added. The direction of actions deployment and of aggregation of results can be addressed together (as one). PMS will derive from looking at one chain from two different directions (Figure 5).

Figure 5. Final result formation from results of temporal activities



Source: author’s analysis

The first direction of the chain (temporal part) derives from the organisation’s ambition to reach somewhere (some condition) in the future; the second direction of the chain (activity part) is already the activity for the achievement of the intended results. Both are directed at the same target, to reach a previously specified condition via actions and by a certain date.

Both directions (parts) of the chain are interrelated through temporally performed activities and the final result is the achievement of the intended at the desired time – in the future. Time and activities are closely connected: activities are fixed temporally and in a time period several predetermined activities are made in parallel.

The other direction of the chain (activity part) involves many executors or contributors in the organisation who help to realise the expected. Their actions must be coordinated rather than counteracting or duplicating. Actions/steps by executing units lead to the achievement of the organisation’s overall objective. This direction of the chain has an internal focus in the organisation, aimed at setting units’ objectives concerning time and activity.

The two-directional chain concept is the basis for designing a PMS structure. Hence, the intended final result (objective) to be achieved in the future is a sum of results of actions of different temporal duration.

Going in-depth axis

Previously two directions of a chain were mentioned: objective setting direction, and result generation direction. These were supplemented by the time and activity axis. In the following let examine the going in-depth direction, which channels appropriate activities which need to be executed to reach executors with the help of PMS structural components in an undistorted way, by going from the most general (organisational) level to a more individual (executor) level.

According the Best Practice, an organisation’s strategy is derived from the organisation’s mission, which answers the question what organisation wants to offer to society and to its

initiator by its existence. If an organisation has, based on the mission, formulated its strategy, the formulation is mostly in a form and level that requires concretisation, so that firstly, activities could be derived from that strategy, which the organisation then has to start executing. Secondly, during the strategy concretisation specific interim and final results need to be determined, which the organisation has to achieve, in order to be able to say in the meantime that strategy execution has reached a certain stage or that it has been fully executed.

After deriving strategic objectives, also critical success factors (CSF) should be fixed in action plans. These are most urgent, critical (qualitatively expressed) areas where the biggest obstacles in strategy execution occur which the organisation should surmount to achieve a particular strategic objective. These are areas (factors) that help focus every objective, which exist at the current moment of strategy execution (in case they do not exist, this strategic objective need not be set, because the situation where they want to reach has already arrived) and therefore they do not allow achieving the strategic objective at the moment and must be surmounted as a result of purposeful action. Surmounting them must lead to achievement of the objective. If it does not, the success factors and measures were derived incorrectly. For the sake of clarity and good management there might be a maximum of two success factors per one objective [38].

To ensure the surmounting of the CSFs and first of all achievement of objectives measurement (to know where specifically they want to reach and to know whether and when they have arrived) (quantitative) key performance indicators (KPI) or measures need to be imported to the system.

Simons [31] has said the following about measures: measures communicate to people what is important. Hence, through measures organisational strategy reaches to employees. To understand whether the measure is appropriate, suitable to support the objective, the measure must meet three requirements:

- aligned with strategy,
- be effectively measurable (measures should be objective, complete and responsive),
- linked to value (input – process – output).

When these three conditions are met by all measures, one can be confident that the organisational strategy and measurement system are interrelated.

It is advisable to have not more than three measures per CSF, which would make 3–6 measures per objective. KPIs with target values must exist, since they show what the actual aspirations are and whether these are achieved later.

Adding the unit axis

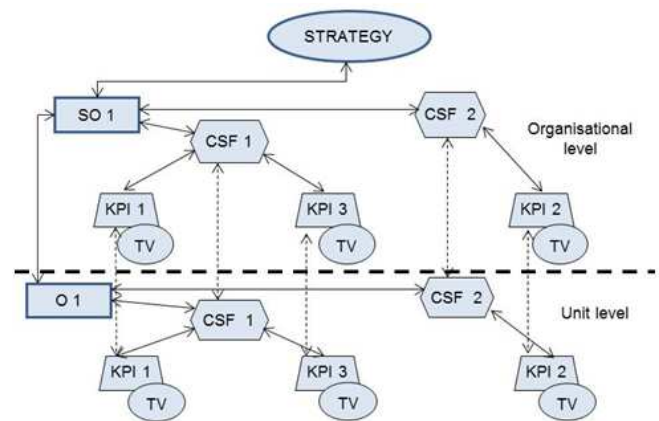
Further movement in the chain must go along the above-mentioned structural components in the organisation (from the organisational level) to the executing unit level. Since these are organisations characterised by division of labour, then units of the organisation will be contributing for the achievement of strategic objectives. Hence also the requirement in the criteria of strategic objective setting that it must be possible to link the objective to area/function, which

then will be responsible for achieving the corresponding objective.

Here the units get (from the organisation's strategic objectives) objectives for themselves. It is the same with units – their organisation strategy based objectives have some factors (CSF) that need to be surmounted. The surmounting of these factors is monitored by KPIs with target values. Additionally another success factor may be designated for a success factor, the accomplishment of which will lead to the surmounting of the first success factor. With the two different success factors the former should be called result CSF and the latter leading to the former, or effort CSF. The surmounting of the latter is again monitored by the effort KPI with target value.

Objectives, CSFs and KPIs of the organisational level and unit level must be interlinked (Figure 6).

Figure 6. Relationships between structural components of PMS on the different levels



Source: author's analysis

Since the units surmounting the organisational CSFs or organisational CSFs should be definitely revealed in the list of objectives of some units, since the head office does not fulfil them (objective setting direction – top down). Otherwise the chain will be broken. Hence the target values of KPI at the organisational level are formed as a result of actions of one or several executing units (result direction – bottom up).

Permanent PMS structural components hierarchically in private sector

Based on the communication problem pointed out in the problem statement section, PMS structural components should be addressed consecutively – in a chain. Going from the general, abstract and long-term dimension toward a more detailed, specific and shorter dimension, each structural component of PMS can and has to derive its criteria which it must meet in order to allow to get from it continuously on to the next link in the chain, which in turn must meet the respective criteria. Hence it commences from the strategic objective and ends with defining the inputs needed for the achievement of this objective.

The author grouped the above structural components of

PMS into two: recommended and obligatory.

Recommended components support the channelizing of the appropriate and aligned obligatory components into a chain, but these do not constitute the chain. Obligatory components must exist for constituting the chain.

The components which help derive or support deriving are recommended, so that the right KPI target values could form. They do not let deviate from deriving the right KPIs for strategic objectives. A deviation would cause the situation where units achieve KPIs with target values, but their achievement will not involve achievement of the KPI target values of the organisation's strategic objectives.

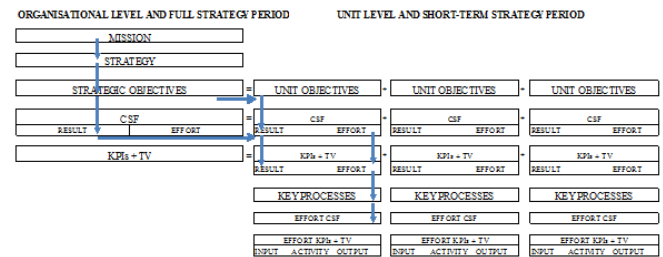
Such a step-by-step (in chain) movement is necessary so as the day-to-day activities of organisational units were derived from the organisation's strategy and would lead to its achievement or alignment must be ensured already in the structure design phase. Monitoring of the execution of the strategy with the support of the PMS structure is already a task of reporting structure and management.

The key process is a derivative from the effort KPI and the latter in turn a derivative from the effort CSF. Hence the chain breakage can be addressed as a situation where an organisation has defined the success factors but has not derived from them activities/processes that after implementation would surpass the success factor. The key process success factor is also a qualitative indicator, which characterises a certain area which at the moment hinders implementation of the key process and which needs to be surmounted. Surmounting is characterised with the help of effort key performance indicators (measures) (or activity already), which are divided into those characterising inputs, process and outputs. Inputs must be sufficient for activities, which have outputs ensuring that success factor of effort is surmounted, and which guarantees that sufficient effort KPI target value is achieved. Inputs necessitate relevant resources to achieve the objective, or a connection is generated between PMS and budgetary funds for strategy execution.

Summary of PMS structure

When units are given the strategy based targets with KPIs and target values and also activities with KPIs and time limits have been fixed (or available) for executing units, the structure for performance management exists (Figure 7). On the basis of that structure in functioning phase information can be gathered and communicated to managers, and on the basis of it adjusting activities are carried out, where necessary. If this chain is observed both regarding the structure creation and PMS functioning, it may be said that PMS works efficiently and the organisation is very likely to achieve its strategic objectives.

Figure 7. Relationships between structural components of private sector PMS



Source: author's analysis

All this long, a three-directional chain is necessary so as processes and activities could be derived from the organisation's objective with the deadline many years away, which the units need to perform in the short term as well as in the following years. Since functional division of labour is dominating in an organisation, units have to make efforts to the best of ability, which they do, or they are which through short-term activities generate long-term success/result. Hence, so as the right things are done well today it is necessary to derive an unbroken chain from strategy/future into the present day. In this way we can prevent "wrong activities" from being "mistaken for the right ones" in structural units' development activities.

B. Second Part of PMS

Implementation would be communicating and establishing of new temporal objectives for units or executors. It is a transition stage where the above created PMS structure is implemented for utilisation. This gives the executors new knowledge, or in the following periods just these things will be done slightly differently. Implementation can be summed up as an activity where new rules/principles are explained and established for the units.

Implementation is a one-time preparatory action for putting the precedent part of PMS – structure – into functioning, which ends when units have comprehended their tasks, as a result of training units have new competences to fulfil new tasks and are ready to start acting "in a new manner" from a certain round date. Implementation contains introduction of changes to documentation (units' statutes, work tasks, roles, duties, accountabilities, motivation).

This presumes assessment of conformity of the existing competences to new requirements after tasks for the new period are accessible and in the event of discrepancy, organising training. Implementation must also contain assignments to keep PMS functioning.

The importance of implementation cannot be underestimated. The structure of a PMS may be perfectly designed but when structural components are poorly implemented, the result is that the strategy execution does not begin as it should. Though the functioning of PMS will reveal non-achievement of interim results, time is lost until tasks of a new strategy are communicated to executors.

C. Third Part of PMS

There are studies which have examined the current use of performance management. It has been pointed out that 56% of performance management projects fail, especially in the functioning phase [39, 40]. This implies that the functioning phase is not less important than the structural design phase.

The author of this paper defines PMS functioning as the current operation of the system that begins from a round date (beginning of month, quarter or year) when a new strategy execution begins, new assignments enter into force.

Regular activities which constitute the functioning of PMS are:

- data collection,
- analysis,
- drawing up and presenting reports,
- communication,
- interpreting,
- managers and top level must peruse reports, react to them,
- feed backing with “carrot and stick“ judgment is important [22],
- planning of adjusting activities (with new KPI target values),
- executing of adjusting activities (the new activities probably involve that post-strategy actions will be somewhat influenced by them and they need to be adjusted slightly in the new light).

PMS functioning classically starts when implementation ends and operation by “new rules“ begins. In reports milestones set in the PMS structure, their achievement and communication of results are monitored.

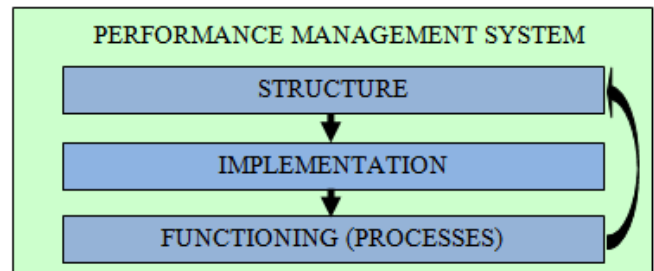
Functioning, on the one hand, ends the chain (comprising of PMS structure, implementation and functioning), but on the other hand, provides also an input to PMS structure after interim results are known. This result will supplement units' CSFs, KPIs of CSF and target values for the next period. Actually this is what closes the chain. When this total chain exists and functions incessantly it is very likely that the organisation will achieve its strategic objectives.

IV. RESULTS

Supplementing diagnostic tool of PMS consist utilising chain approach on the assessing PMS. Assessment focuses on identifying the chain occurrence of PMS of assessed organisation between the parts of PMS and between the components of parts. Assessor should be expert being familiar with PMS subject.

Summing up the above, the author can point out relationships between its three parts and between the components of the parts. The approach shows, first, these three parts occurring in a chain (Figure 8), and secondly, components of these parts appearing in a chain (Figure 9).

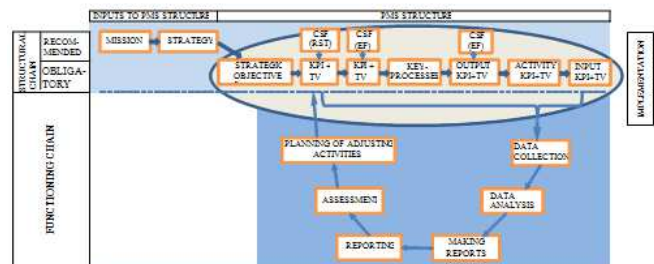
Figure 8. PMS parts occurring in the chain



Source: author's analysis

Figure 8 depicts the PMS parts appearing in a chain: structure – implementation – functioning – structure. During the implementation the components in the PMS structure are set/established for executing units. Also the functioning phase concentrates on them, collecting, communicating the results and deriving adjusting activities.

Figure 9. Relationships between parts and components of PMS in the chain



Source: author's analysis

In addition to PMS parts, components of PMS parts (components of structural and functional chain) also occur in a chain on Figure 9. In addition to the fact of a PMS part or component being present, the continuance model set requirements for their content. If they meet the requirements, we can speak of a continuous chain and efficient PMS.

V. CONCLUSION

The objective of the paper was to construct approach, which is central part of diagnostic tool and enables to assess the implemented PMSs and therefore to raise efficiency of PMS. The created theoretical approach focused on removing the formerly mentioned main and most frequent shortcoming of the implementation of PMS – communication. Communication is enhanced when PMS observes the chain concept.

In the approach the author divided PMS into three parts:

- PMS structure design,
- implementation of PMS,
- functioning of PMS.

The existence of these parts and interrelations between them can be seen as a chain. The obligatory structural components (occurring in a chain) of the PMS of private sector organisations at the organisational level are:

- strategic objectives,

- KPIs of output + TV.

The obligatory components at the unit level are:

- strategic objectives (for the executive party),
- output KPIs + TV,
- activity KPIs + TV,
- input KPIs + TV.

In the PMS implementation phase, new temporal objectives formulated in the PMS structure are communicated and established for executive units. It is a transitional stage where the above created PMS structure is put into operation. This provides new knowledge to executors as a result of which these things will be done in a slightly different manner than before in the next periods. Implementation can be summarised as a process where new rules/principles are clarified and established for units.

The PMS functioning phase comprises gathering and communicating of information on the indicators formulated in the PMS structure, and where necessary, conducting adjusting activities. A chain is formed of the following activities:

- monitoring interim results, which presumes identification, collection, analysis and communication of information originally;
- reacting;
- planning and performing adjusting activities and adaptations;
- system maintenance.

The practical contribution of this paper is that the approach allows to diagnose the efficiency of implemented PMS and where mal-functioning is detected, to draw attention to the weaknesses in the respective parts of the system, which, after the shortcomings are removed, would restore the efficiency. In addition to that, the same approach can be used on PMS creation from start.

Through this approach, PMS of organisation has been tested previously, which allowed to estimate the efficiency of PMS of organization [12]. In addition it enabled to assess the influence of existent level of PMS to the achievement rate of strategic objectives of organisation.

REFERENCES

- [1] J. Alver, and T. Kadak, *About the Conformity of Data Used in Planning and Performing in the Controlling Process: A Survey of Estonian SMEs*. In: *Controlling für kleine und mittlere Unternehmen*. Oldenbourg, 2009, p. 295–315.
- [2] M. Bourne, A. Neely, K. Platts, and J. Mills, The success and failure of performance measurement initiatives. Perceptions of participating managers, *International Journal of Operations & Production Management*, Vol. 22, No. 11, 2002, pp. 1288–1310.
- [3] T. Chtioui, *Management Control through Communication*, In: Proceedings of the 33rd European Accounting Association Annual Congress, 19–21 May, Istanbul, 2010.
- [4] CIMA, *Effective Performance Management with the Balanced Scorecard: Technical Report*. London: CIMA, 2005.
- [5] D.B. Clinton, S.A. Webber, and J.M. Hassel, Implementing the Balanced Scorecard Using the Analytic Hierarchy Process, *Management Accounting*, Vol. 3, No. 3, 2002, pp. 1–11.
- [6] G. Cokins, *Performance Management*, In: Adkins, T. *Case studies in performance management: a guide from the experts*. New Jersey: John Wiley & Sons, 2006.
- [7] G.K. DeBusk, and A.D. Crabtree, Does the Scorecard Improve Performance? *Management Accounting Quarterly*, Vol. 8, No. 1, 2006, pp. 44–48.
- [8] M. Edis, *Performance Management and Appraisal in Health Services*. London: Kogan Page, 1995.
- [9] J. Firich, *Futures Trading Based on Market Profile Day Timeframe Structures*, In: Proceedings of the 1st WSEAS International Conference on Finance, Accounting and Auditing, Zlin, 2012, pp. 80–85.
- [10] M.L. Frigo, and K.R. Krumwiede, Balanced Scorecards: A Rising Trend in Strategic Performance Measurement, *Journal of Strategic Performance Measurement*, Vol. 3, No. 1, 1999, pp. 42–54.
- [11] T. Haldma, *Tulemuslikkuse näitajad ja juhtimismeetodid tänases majandussituatsioonis*. Pärnu finantskonverents, 15.–16. 4. 2010, pp. 30–31.
- [12] T. Kadak, *Does Efficiency of PMS influence Organizational Performance? Case Study*, In: 34th Annual Congress of European Accounting Association, Rome, Italy, April 20–22, 2011: EAA, 2011.
- [13] T. Kadak, *Assumptions of Implementing Efficient Management Information System in Public Sector*. In: Accounting and Performance Management Perspectives in Business and Public Sector Organizations, Tartu, September 29–30, Tartu: Tartu University, 2005, pp. 247–251.
- [14] R.S. Kaplan, and D.P. Norton, *The Strategy-focused Organisation. How balanced scorecard companies thrive in the new business environment*, Boston: Harvard Business School Press, 2000.
- [15] M. Kennerley, and A. Neely, A Framework of the Factors Affecting the Evolution of Performance Measurement System, *International Journal of Operations & Production Management*, Vol. 22, No. 11, 2002, pp. 1223–1245.
- [16] J.L. Luft, Discussion of Managers' Commitment to the Goal Contained in a Strategic Performance Measurement System, *Contemporary Accounting Research*, Vol. 21, No. 4, 2004, pp. 959–964.
- [17] T. Malmi, Balanced scorecards in Finnish companies: A research note, *Management Accounting Research*, Vol. 12, No. 2, 2001, pp. 207–220.
- [18] K.A. Merchant, *Rewarding Results: Motivating Profit Center Managers*, Boston, MA: Harvard Business School Press, 1989.
- [19] B. Millett, and S. Harvey, Understanding Organisations: the Dominance of Systems Theory, *International Journal of Organisational Behaviour*, No. 1, viewed 26 March 1999, <http://www.usq.edu.au/faculty/business/dept_hrm/HRMJJournal/Welcome.htm>.
- [20] P.R. Niven, *Balanced Scorecard Diagnostic: Maintaining Maximum Performance*, New Jersey: John Wiley & Sons, 2005.
- [21] E.O. Olsen, H. Zhou, D.M.S. Lee, C.C. Chong, Y.N. Ng, and P. Padunchwit, Performance Measurement System and Relationships with Performance Results, *International Journal of Productivity and Performance Management*, Vol. 56, No. 7, 2007, p. 559–582.
- [22] D. Otley, Performance Management: A Framework for Analysis, In: *Performance Management. Multidisciplinary Perspectives* /Eds. Thorpe, R., Holloway, J. Palgrave: Macmillan, 2008.
- [23] A. Pettigrew, R. Whipp, and R. Rosenfield, Competitiveness and the Management of Strategic Change Processes, In: *The Competitiveness of European Industry: Country Policies and Company Strategies* /Eds. Francis, A., Tharakan, P. K. M. London: Routledge, 1989.
- [24] B. Popesko, and Z. Tučková, Utilization of Process Oriented Costing Systems in Healthcare Organizations, *International Journal of Mathematical Models and Methods in Applied Science*, Vol. 6, No. 1, 2012, pp. 200–208.
- [25] S.L. Price, *Performance Management Strategies: A Competitive Advantage for High Technology Firms. A Study in the Okanagan Valley Region of British Columbia*, Canada, 2006.
- [26] M. Ray, and A. Neely, *Beyond Words: Testing Alignment among Interorganizational Performance Measures*, In: Proceedings of the Performance Measurement Association Conference, 14–17 April, Dunedin, New Zealand, 2009.
- [27] S. Rogers, *Performance Management in Local Government*, Essex: Longmans, 1994.
- [28] W.A. Schiemann, and J.H. Lingle, *Bullseye! Hitting Your Strategic Targets through High-Impact Measurement*, New York: Free Press, 1999.
- [29] A.M. Schneiderman, Perspectives on the Balanced Scorecard, 2006
- [30] A.M. Schneiderman, Why Balanced Scorecards fail! *Journal of Performance Measurement*, January, 1999, pp. 6–11.
- [31] R. Simons, *Performance Measurement and Control Systems for Implementing Strategy: Text and Cases*, Upper Saddle River: Prentice Hall, 2000.

- [32] L. Smrčka, and M. Arltová, Increasing Threat of a “Total Financial Crisis” in the Upcoming Years, *International Journal of Mathematical Models and Methods in Applied Science*, Vol. 6, No. 6, 2012, pp. 782-790.
- [33] P.B. Stivers, and T. Joyce, Building a Balanced Performance Management System, *SAM Advanced Management Journal*, Vol. 65, No. 2, 2000, pp. 22–29.
- [34] J. Strouhal, C. Bonaci, R. Mustata, L. Alver, J. Alver and A. Praulinš, Accounting Harmonization Measurement: Case of Emerging CEE Countries, *International Journal of Mathematical Models and Methods in Applied Science*, Vol. 5, No. 5, 2011, pp. 899-906.
- [35] J. Strouhal, M. Paseková, B. Blechová, C. Bonaci, and I. Andreicovici, Prudence Principle and Students’ Perception on Measurement in Financial Reporting, *International Journal of Mathematical Models and Methods in Applied Science*, Vol. 6, No. 3, 2012, pp. 507-517.
- [36] Z. Tučková, and D. Tuček, Necessity of IT and SW Support for Business Process Management, *International Journal of Mathematics and Computers in Simulation*, Vol. 5, No. 1, 2011, pp. 36-44.
- [37] K. Verweire, and L. Van den Berghe, *Integrated Performance Management. A Guide to Strategy Implementation*, London: Sage Publications, 2004.
- [38] A.A. Waal, *Strategic Performance Management. A Managerial and Behavioural Approach*, Palgrave Macmillan, 2007.
- [39] A.A. Waal, and H. Counet, *Lessons Learned from Balanced Scorecard: Research into Problems Encountered and Lessons Learned from Implementation and Use of Performance Management Systems. /Research report*, Maastricht School of Management, 2006.
- [40] A.A. Waal, *Quest for Balance: The Human Element in Performance Management Systems*, New York: John Wiley & Sons, 2002.
- [41] A. Webb, Managers’ Commitment to the Goals Contained in a Strategic Performance Measurement System, *Contemporary Accounting Research*, Vol. 21, No. 4, 2004, pp. 925–958.

Tarmo Kadak, Ph.D. is Associate Professor at Department of Accounting (Chair of Management Accounting) of Tallinn University of Technology – Tallinn School of Economics and Business Administration. His research interest covers: managerial accounting, costing, performance management, management information systems.