IMPROVEMENT OF THE PERFORMANCE MEASUREMENT SYSTEM ACCORDING TO BUSINESS ENVIRONMENT

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Abstract

Today we may observe that the rules of traditional business have changed. The new business environment determines major changes in resources, structure, strategic objectives and the performance measurement of organizations. Economic and technological changes have significantly changed work environments and the management of businesses. Today's business environment has become more dynamic and competitive due to the rapid developments of recent years. Given such a competitive environment it has become very important for managers to make consistent, logical and strategic decisions and develop instruments and models that provide financial and nonfinancial information. The main objective of performance measurement is to provide information for decision making process. According to this aspect the importance of performance measurement and its information has increased. This aspect allows to state that the utility of performance measurement depends on its conformity with business environment. However, it is very important not only to conform performance measurement system to business environment, but also to improve performance measurement system according to the changing environment of the organization.

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Keywords: *performance measurement system, business environment, contingency theory, complexity theory.*

JEL Classification: *M40, M15, O33.*

1. Introduction

An intensified competition, globalization, scarce resources, changes and complexity in the business environment and accelerating technological changes drive organizations to realize the need to have objective information and awareness of the need for more detailed performance, processes and costs information. Also these factors in addition required a performance measurement system to provide timely and accurate information to facilitate efforts to control costs, measure and improve productivity and pricing decisions. It means, the generic factors of an environment do not only underline the viability of existing businesses, but they also influence the organizational change which has assumed central importance in business and management (Davidson and Worrell, 2001; Yeung, Chan & Chan, 2008; Taticchi, Tonelli & Cagnazzo, 2010). Performance measurement is not an exception (Jones & Kaluarachchi, 2008; Phusavat *et al*., 2009).

Performance measurement provides information about the internal environment of the organization and ensures learning processes and feedback, which, in turn, allows for steady performance improvements and adaptation to external environment (Luu *et al*., 2008; Brudan, 2010; Fukushima & Peirce, 2011). Performance measurement is useful when it corresponds to the external and internal environment of the organization. On the other hand, efficiency and effectiveness of performance measurement depends on organizations ability to apply theoretical method into practices, ability to incorporate information to decision making process, ability to improve and change the processes according to changing external conditions and internal potential of organization (Gimžauskienė, Klovienė, 2008a, 2008b; Taticchi, Balachandran, 2008; Carlucci, 2010; Fukushima and Peirce, 2011; Mathur *et al.*, 2011). According to this aspect, the influence of

business environment on (1) the content of performance measurement system and (2) on the internal resources based continual improvements is critical for a deeper analysis.

Introduction of the problem. It is difficult to use performance measurement system effectively, if organizations could not identify the instrumentation, which allows to estimate an aspect of conformity between its performance measurement system and business environment. Gradually performance measurement system could become a software and instruction for its usage only, and organizations constrained to search for new opportunities and resources in order to reach fast reaction, decision making and adequate performance. According to this aspect the conformity between the performance measurement system and the environment of the organization was selected for further research, striving to summarize research results of other scholars in this field and develop theoretical assumption for improvement when unconformity between the performance measurement system and the environment of the organization is identified. Contingency theory postulates (Gul & Chia, 1994; Chong & Chong, 1997; Garengo & Bititci, 2007; Wickramasinghe & Alawattage, 2007) that different organizations perform in different ways in the same environmental circumstances and provides a methodology for recognition of an external environment of the organization and its influence on the performance measurement system. According to this aspect, uncertainty level of external environment could be used for a state identification of external environment. According to limitations of contingency theory, an integration of two theories could be proposed choosing complexity theory, which could help to disclose reaction of the organization to environment and its influence on the performance measurement system (Rayburn & Rayburn, 1991; Miller, 1993; Anderson, 1999; Boisot & Child, 1999; Church, 1999; Ashmos, Duchon & McDaniel, 2000; Goulielmos, 2005). Such a reaction could be used to recognize the state of an internal environment of the organization. Analyzed aspects influence the need to search for new possibilities of improvements of the performance measurement system. Contradiction between (1) use of new performance measurement methods, routine innovation based on informational technologies and distinctive understanding of installers of performance measurement methods and (2) real informational requirements of organizations managers, which ensure performance and management utility, raise the following questions, how could the effectiveness and utility of performance measurement be better disclosed? How to measure the conformity of the performance measurement system with business environment? According to this, the scientific problem is formulated as a question: *how to identify the improvement possibilities of the performance measurement system based on the internal resources?*

Development of the background. Opinions of scientists about ensuring effectiveness of performance measurement are very different. Even the newest theoretical and practical research ensuring the performance measurement effectiveness has several limitations. These aspects influenced that effectiveness of performance measurement has been chosen for further analysis disclosing the context of different theories, research and the results. Burns & Stalker (1961), Gordon & Miller (1976), Otley (1980), Simons (1990), Rayburn & Rayburn (1991), Gul & Chia (1994), Chong & Chong (1997), Anderson (1999), Garengo & Bititci (2007), Wickramasinghe & Alawattage (2007) analyzed dominating contingency theory, which is reasoned by a few general contingencies, such as structure, technology, and environment stimulating effectiveness of performance measurement. Rayburn & Rayburn (1991), Miller (1993), Boisot & Child (1999), Church (1999), Ashmos, Duchon & McDaniel (2000), Goulielmos (2005) researched possible reactions of organizations according to complexity theory. Skaržauskienė (2010) analyzed the aspects of performance complexity management.

Nevertheless, it is important to analyze performance measurement methods and models according to different authors. Kaplan and Norton (1992, 1996) introduced with Balanced Scorecard (BSC) according to the strategy of organization which could be constantly implemented and performance effectiveness ensured. Gupta and Gunasekaran (2005) analyzed activity based costing (ABC) and value based costing (VBC) trying to determine cost optimization and effectiveness of performance measurement. Bourne *et. al*. (2000) proposed the peculiarities of the performance measurement system implementation, usage and practice in manufacturing

organizations. Yang *et. al*. (2010) composed a comprehensive performance measurement model for building industry. Webster and Hung (1994) and Parker (2000) analyzed performance measurement as the main management tool for decision making, control and ensuring useful information for effective resource allocation. Busi and Bititci (2006), Gunawan, Ellis-Chadwick and King (2008) analyzed performance measurement influence on practical and technical learning process and continual improvement. Marchand and Raymond (2008), Olsen *et. at*. (2007) researched performance measurement as a system for information integration, useful for the implementation of the purpose of an organization and combined inside. Slatkevičienė (2002) analyzed questions of performance measurement in aspect of performance quality and continual improvement. Jurkštienė and Gimžauskienė (2001, 2003) researched performance measurement implementation and improvement aspects. Bakanauskienė and Sližytė (2007) analyzed problems and possibilities of performance measurement system creation and improvement. Gimžauskienė (2007) researched the process of performance measurement system, which helps to plan performance, substantiate decision making, to accomplish value creation and adaptation to environment. According to the above studies it could be stated that performance measurement and its effectiveness research are fragmented, the studies did not produce a deeper understanding how an organization reacts to contingencies. It means that there is a distance between the analyzed factors interaction with an organization. Further, the conformity with internal and external environment of the organization is an important aspect for ensuring performance measurement effectiveness, and it is very little analyzed. Also, according to the position of today's business environment, the implementation of new theoretical performance measurement methods passes with rational usage of internal resources.

Purpose and rationale background. The purpose of this article is to disclose possibilities of internal resources based continual improvements of the performance measurement system (PMS) according to the business environment. Rationale background could be disclosed according to the structure of the study: (1) Assessment of business environment, (2) assessment of PMS and (3) development of performance measurement improvement possibilities according to the identified problems in conformity between performance measurement system and business environment.

2. Method

The research of performance measurement system conformity with business environment consists of three main stages: (1) *business environment research stage*, during which the external and internal environment of an organization is determined according to appropriate factors; (2) *performance measurement system research stage*; (3) *performance measurement system correction stage* which provides problem identification in conformity between organization and its business environment also recommendations for improvement.

External environment of an organization is measured by the *level of uncertainty* which is the result of changes in variables (x_{in}). Internal environment of organization is understood as an entirety factors associated with organization and consider variables (x_{jn}). According to complexity theory it could be stated that factors of internal environment are developed as a reaction to the level of uncertainty and could be described according to *level of complexity* of variables (x_{jn}). Organizations react to their external environment ($ENVIR_{ex}$) by the level of uncertainty of variables (x_{in}). Such a reaction is found in an internal environment of organization ($ENVIR_{in}$) by the level of complexity of variables (x_{jn}). According to this could be stated the dependency:

$$ENVIR_{ex} = f(x_{in}) \Rightarrow ENVIR_{in} = f(x_{jn}) \qquad (1)$$

Table 1. Performance measurement system conformity with business environment

Content of PMS	Static simplified business environment	Dynamic simplified business environment	Static absorbed business environment	Dynamic absorbed business environment
Strategy conformity	Rare changes in external environment and internal addiction for stability influence accurate strategy implementation process. High level of strategy conformity	Reaching order in constantly changing external environment influence inaccurate strategy implementation process. Low level of strategy conformity	Reaching changes in constant and stable external environment influence inaccurate strategy implementation process. Low level of strategy conformity	Constant changes in external environment and internal addiction to absorb them influence accurate strategy implementation process. High level of strategy conformity
Goals conformity	According to an internal stability strategy is implemented through short term homogeny goals. High level of goals conformity	According to an internal stability strategy is implemented through short term homogeny goals. High level of goals conformity	According to an internal addiction for changes strategy is implemented through long term homogeny goals. High level of goals conformity	According to an internal addiction for changes strategy is implemented through long term homogeny goals. High level of goals conformity
Process conformity	Underlying performance processes are consistent with formulated strategy. High level of process conformity	Underlying performance processes are not in line with formulated strategy. Low level of process conformity	Underlying performance processes are not in line with formulated strategy. Low level of process conformity	Underlying performance processes are consistent with formulated strategy. High level of process conformity
Measures conformity	Static external environment forms low demand for an information influencing requirement only for financial measures (minimum number). High level of measures conformity	Dynamic external environment forms high demand for an information influencing requirement for various measures (maximum number). High level of measures conformity	Static external environment forms low demand for information influencing requirement only for financial measures (minimum number). High level of measures conformity	Dynamic external environment forms high demand for information influencing requirement for various measures (maximum number). High level of measures conformity

Source: created by the author

Analyses made and dependency determined let to state, that external environment of organization assumes static or dynamic state to which reaction of organization assumes simplicity or absorption. The peculiarities of performance measurement system (PMS) in different business internal and external environment could be disclosed (table 1). Performance measurement system could be analyzed and disclosed as having four variables – measures, strategy, goals and process in different business environment (Gimžauskienė, 2007; Peters & Zelewski, 2008; Fukushima & Peirce, 2011).

Case study was performed in a Lithuanian organization disclosing relations between business environment and performance measurement system of an organization also improvement possibilities of performance measurement system. The choice of organization for a case study was determined by such kinds of criteria: (1) an expediency of analysis because the selected organization implements and uses different performance measurement methods; (2) changes in strategy implementation process which show importance of conformity analysis; (3) limited studies in the case of conformity between performance measurement and business environment in service-sector companies. Assessment of business environment and performance measurement system was performed using structured questionnaire and interview methods. Respondents have been selected on the basis of their position in the organisation - from different management levels. This choice was determined presuming that objective situation could be disclosed summarizing information and opinion from different management levels. This ensures objective view of functional systems' integration and availability in different management levels.

External environment of an organization was analyzed according to the frequency of changes in external environment. Rare changes show static and frequent changes – dynamic external environment. In this case respondents needed to mark frequency of listed changes using Likert scale (*changes in customer needs, in product/service, in pricing policy, in technology, in competition, in legislation*).

Reaction to environment was analyzed according to complexity – an organization tries to absorb or simplify external environment. Complexity was analyzed in four aspects using Likert scale – *strategy complexity, goal complexity, structural complexity and interaction complexity*. Strategic complexity was measured using two (*cost leadership and differentiation*) strategies by asking to indicate the importance of 12 items. Goal complexity was assessed by asking to indicate the importance of 10 goals. Structural complexity was measured according to the level of formalization which was measured using 6 items that addressed the degree to which rules were observed in the organization. Interaction complexity was assessed by asking to indicate a number of different groups highly involved in resolving 7 strategic issues.

Performance measurement system was analyzed according to *measures, strategy,* underlying *goals and processes* for strategy implementation in an organization. The strategy, using Likert scale, was measured according to two (*cost leadership and differentiation*) strategies by asking to indicate the importance of 6 items. In goals case, respondents ought to mark reachable goals from 2 goal groups: long-term and short-term. The processes, using Likert scale, were measured according to value chain by asking to indicate the importance of 6 activities. Measures were evaluated using 3 (operational, tactical, strategic) decision making levels by asking to indicate the usage of 28 measures from 6 main measures groups (financial, market, customer, internal process, employees, innovation and growth) for different decision making levels.

Conclusions and interpretation were made analyzing performance measurement system according to indicated environment of selected organization.

3. Results

Case study organization is a Bank, member of international group, operating in retail and corporate banking in Lithuania. Research of performance measurement system was performed by questioning six respondents from different management levels (manager of customer service center; manager of private banking; manager of personnel department; executive director; CEO at Southern

Lithuanian Branch and member of Directors board).

Questions about business environment were involved into the first part of the questioner, where respondents ought to list indications of different (x_{in}) and (x_{jn}) environmental aspects. The dimension of external and internal environment was indicated according to the highest averages. Objective opinion was checked with quantitative interview and also according to mission, values and artifacts of an organization. Resuming results it could be stated that dominating external environment of organization is dynamic and dominating reaction of an organization (internal environment) is absorption. Correlation between these two types of environment was indicated 0.411.

Questions about performance measurement system were involved in the second and third parts of the questioner. Resuming research results in strategy point of view, it could be stated that organization's competitive strategy relies more on managing customer's needs and relationships (*differentiation strategy*). The distance between different hierarchical levels was indicated in formulated publicly declared strategy and really implemented strategy (*two respondents from lower hierarchical levels indicated different strategy as formulated publicly declared and that which organization is implementing*). According to the disclosed aspects could be stated a low level of strategy conformity. Research results in the case of goals let to indicate the high level of goals conformity (*all respondents indicated long term perspective (value creation, social and responsible performance) of an organization and goals adequacy with important measures in organization*). Resuming research results in processes point of view, it could be stated that managers from different management levels understand the underlying processes of organization in different ways (*two respondents indicated underlying processes typical to differentiation strategy, two respondents indicated underlying processes typical to cost leadership strategy and two respondents indicated processes typical to both strategies*) and authorize to indicate the low level of process conformity. Also respondents declared that organization reacts to external changes through performance processes. Research results in the case of measures let to state that organization has a high demand for information (*all respondents indicated near all in questioner mentioned measures*) and authorize to indicate the high level of measures conformity.

4. Discussion

According to research results the requirement for identification, analyses and verification of possible alternatives for solving unconformity problems of performance measurement system with business environment was found. Unconformity could be found in the strategy level (*a low level of strategy conformity was indicated*) which lets to identify (1) problem of strategy formulation which could be influenced by changes in external environment and (2) problem of strategy communication to employees of lower hierarchical levels in organization. The analysis of strategy conformity level helps to identify the need for a process of strategy improvement. Formulated strategy should be improved by identifying the most important activities for strategy implementation for employees of lower hierarchical levels; continual analyzes of changes in external environment should be ensured. Also according to research results improvements need to be ensured in processes point of view. Underlying processes should be improved according to formulated and implemented strategy. If process of strategy improvement would be ensured it would influence a proper underlying processes. Hence it could be stated that proper process of strategy implementation could influence better strategy communication to employees of lower hierarchical level and would influence proper underlying processes for strategy implementation in an organization.

According to research results managers of organization could easier recognize possible directions of improvement, estimate possibilities of their application. Improvements should be performed according to priorities and attitude of organization managers. Also continual process of improvement should be ensured.

The research results disclosed the importance of the problem analyzed. Identification of conformity between performance measurement system and business environment involve the main

stages, which implementation lets to find out the main problems of performance measurement trying to ensure the utility and internal resources based continual improvement of this system: (1) Business environment identification (uncertainty level identification of external environment and complexity level identification of internal environment); (3) State identification of the present performance measurement system; (4) Identification of performance measurement system unconformity with business environment.

The research of the performance measurement system conformity with business environment allows to identify the problems of performance measurement system and to ensure the utility and internal resources based continual improvement of this system. The research of performance measurement system conformity with business environment allowed identifying the state of external environment of selected company – dynamic external environment and reaction to it as internal environment – absorption. The analysis showed that process of improvement is required – the conformity level of variables of performance measurement system is lower than minimal required for conformity of performance measurement system with business environment of an organization. According to this could be stated that applicability of the research is purposive reaching to disclose possibilities of internal resources based continual improvement in performance measurement system according to business environment of an organization.

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