Selecting KPI for SMEs and Designing A Performance Measurement Framework

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Abstract: Small and medium-sized enterprises (SMEs) play important role in the economic development. They participate with high % in the GDP and employment in the countries. The success of SMEs can be measured in different ways. Measuring performance of the business is very important in today's highly competitive environment. Performance measurement is a broad topic and there are numbers of metrics that companies can use to measure their activities. Finding the right measure is challenge as for the researches and for the managers also, especially for the ones in SMEs.

The objective of this paper is to give an overview of existing KPIs. Key Performance Indicators (KPI) are quantifiable measurement that measure progress toward organizational goals. They can help companies to get necessary information about enterprise's conditions and some further plan of action. The main aim of this paper is to identify and research the key performance indicators for SMEs and to develop a Performance measurement framework that is able effectively to measure SMEs performance. The effective performance measurement framework can help the companies to identify the problematic points and to formulate right strategies.

Key words: key performance indicators, performance measurement, SMEs.

Introduction

Small and medium sized enterprises (SMEs) play a key role in economic growth and development in developing countries. Also, SMEs are contributing to employment growth at a higher rate. There are a lot of researches about the importance of SMEs. Its importance is well recognized worldwide due to its significant contribution to various socio-economic objectives, such as higher growth of employment, output, promotion of exports and fostering entrepreneurship. Recent empirical studies show that SME's contribute to over 55% of GDP and over 65% of total employment in high-income countries. SME's account for over 60% of GDP and over 70% of total employment in low-income countries, while they contribute over 95% of total employment and about 70% of GDP in middle-income countries.[1]

There are different definitions of SME among various organizations and countries. According to the World Bank's[2] definition of SMEs is that micro scale; less than 50 employee, small scale; 50 employees, medium scale; 50-200 employees. There are two more criteria such as turnover and total value of operating assets. Republic of Macedonia accepted this classification and criteria in 2004 and regulate it with law. SMEs participate with huge percent in the total business subjects in the counties in transition. For example in Republic of Macedonia they participate with 84,7 %[3].

Today, SMEs having the capability of quick adjudication, working with less capital but more intense labor and having low cost of management and thus having cheap production. They all try to succeed in the market and achieve competitive advantage. There are different ways to measure the success of the SMEs. There are many indicators that can be used to present it. Measurement is important and it shows how company works, also it can identify problem if there are some. In recent years many researchers are trying to research the use of performance measurement in SMEs. There is a growing interest at both, academics and business subject for this issue. There are a lot of activities that can be measured, but not all them have the same importance as others and it is impossible to measure all of them. For the

[1] http://www.worldbank.org/en/topic/financialsector/brief/smes-finance

[2] http://www.worldbank.org/

[3] http://www.stat.gov.mk/

company it is important to select the right indicators that should be measured and represent can the real picture. The main problem that managers are facing is to select the right KPI that can present the real picture of the company. There are many different approaches and methodologies for measuring performance. There is not one unique that can be used by all the companies, because all the companies are different. But it is possible to create a framework that can be modified according the request of the special company. Many of the frameworks are based on Key performance indicators. Key performance indicators represent a set of measures focusing on those aspects of organizational performance that are the most critical for the current and future success of the organization (D. Parmenter, 2007). Another definition is that Key performance indicators are financial and non financial indicators that organizations use in order to estimate and fortify how successful they are, aiming previously established long lasting goals. A key performance indicator, or KPI in terms of this document's usage, is a metric or measure used to quantify and evaluate organizational performance in relation to the meeting of targets and objectives. KPIs are also used to set measurable objectives, evaluate progress, monitor trends, make improvements, and support decision making. Key performance indicators are always rates, ratios, averages or percentages.

Research Objectives

The main objective of this paper first is to give an overview of existing KPIs and after that to select the right key performance indicators for SMEs. In the end, based on the selected KPI is created a performance measurement framework. As is mentioned before it is difficult to set the right KPI for measuring performance and there is not one unique performance measurement framework that can be used by all SMEs. But, it is possible to set the main KPI and create one main framework that additionally can be modified according the request of the specific types of SMEs.

This paper focuses on the following research objectives:

1. Analyzing and selecting the right KPI for SMEs
2. Analyzing existing SME performance measurement techniques in order to identify the best framework for SMEs
3. Designing a practical PM framework for SMEs.

Key Performance Indicators

A Key Performance Indicator (KPI) is a measurable value that demonstrates how effectively a company is achieving key business objectives. According to Eckerson (2009) KPIs are multidimensional. Key Performance Indicators (KPIs) help managers understand how their organizations are performing in relation to their strategic goals and objectives. When set and used properly, KPIs provide an indicator to senior managers and stakeholders as to how the organization is performing and whether performance is on track with projections. According to different authors, KPIs can be defined in different ways. But, common for all of them is that KPI are metrics that measures accomplishment of business objectives. There is no difference in definitions for KPIs for large companies or SMEs. KPI are important and should be used by all companies.

For identifying and selecting the right KPI can be followed the SMART criteria which was proposed first by Doran (1981) and it is accepted by others authors as well. It is based on the following characteristics:

- **S**pecific - this means the measure has a specific purpose for the business;
- **M**easurable - to really get a value of the KPI;
- **A**chievable - the defined norms have to be achievable;
- **R**ealistic - the improvement of a KPI has to be relevant to the success of the organization;
- **T**ime bound - the value or outcomes are shown for a predefined and relevant period.

One of the main purposes of measuring is to compare the previous data with the new one and to make the right conclusions for improving and revising the processes in SMEs. Also it is important the KPIs of one company to be comparable with the KPIs in other company in the same industry.

As is mentioned before there are a lot of KPI and it is difficult for the companies to select the right KPI for the companies. When we want to select the right KPI, first we must to identify them. For this it is important to pre-define the main business process and after that identify the right KPI for measuring those business processes. SME should take a number of steps before choosing the best KPI, including:

- Having clearly defined business processes;
- Setting requirements for the processes;
- Having qualitative and quantitative measurement of results;
- Determining variances and adjusting processes to meet their short-term objectives.

In the past, KPI have focused mainly on financial measures such as sales growth, profit, cash flow and return on investment in order to analyze performance but these measures are not linked with strategies and therefore, can conflict with objectives. It is necessary to use a combination of financial and non-financial indicators. Measuring of financial indicators is relatively easy. It is harder to measure the non-financial indicators. These one usually are measured with scale.

As it concerns the types of KPIs, literature present different ways of grouping them from different aspects. There are two main types of KPI: outcomes and drivers. **Outcome KPIs** also known as lagging indicators, measure the output of past activities. On the other hand, driver KPIs, known as **leading indicators** measure activities that has a significant impact on outcome KPIs. For the companies it is easier to create outcome KPIs.

From another aspect, it is also suggested that the company base KPIs on two levels as follows:

- Strategic KPIs; and
- Operational KPIs.

Strategic KPIs should address the measurements required at a high level and take a top down approach. For example, strategic KPIs should start at or near the top of the pyramid and, in particular, address records management governance and accountability. Conversely, **operational KPIs** should be approached from the ground up. At this level, KPIs measure functions and activities of an operational nature, such as the delivery of records management services. It may be useful to group KPIs into categories based on the agency's vision, strategy and objectives. Grouping into categories may also assist in testing KPI applicability, relevance and potential overlaps or conflicts It is also important to stress that strategic measures are different from those required to monitor operational performance.

It is easy to make difference between those two when we talk about large companies. But when we talk about SMEs that is difficult. The main reason for this is because most of the SMEs do not have clear strategic goals/objectives. They even do not have mission and vision and are not strategically oriented. Choosing the right KPIs requires a good understanding of what is important to the organization and its customers. In order to identify the right KPIs for any business it is important to be clear about the objectives and strategic directions. So, when we talk about identifying and selecting the right KPI, first we must stress that it is important to be defined strategic goals of the company.

Identifying right metrics and monitoring them can provide companies with additional benefits. More precisely, a KIP is information collected at regular intervals that track performance of an SME or system at any level or activity. Effective KPIs must fulfill some characteristics. For example it is better to have fewer KPIs. KPIs must be understood by the users and they must drive desired outcomes. They must consist of financial and non-financial measures. Where such large number of KPI is available, a decision – making problem appears, in which questions arise: which KPI should be selected from a given set or how to prioritize these indicators.

Following are some characteristics of KPI:

- A KPI must be aligned with the organization's objectives;
- A KPI is determined by management personnel (normally human resource managers);
- A KPI must be designed so that it is easy to understand;
- Some KPIs are specifically designed for each employee;
- KPIs are expected performance by the organization;
- KPIs must be designed to balance the evaluation of each activity/employee/business process;
- KPIs lose their accuracy over time; therefore, it is necessary to revise KPIs periodically

As is mentioned there are number of KPIs that can be used by the SMEs. The most important is to select the right one that can present the success of individual activities and success of the company as well. The main problem and question is how to select the right KPI. There is no answer about this and there are not some rules that can be considered. What can be done about this issue? The following table present metrics that are considered as the most important KPIs for SMEs and which can make a good starting point for the development of a performance management system and framework. These one are selected by prior consultation of literature and consultation with managers of SMEs. Not all of them should be considered by all SMEs. It depends of the strategic goals that SME have. These ones (it can be choose only few of them, not all) can be used for in the performance measurement framework that is presented in the next section below.

Table 1. Selected KPI for SMEs

Financial performance	Customers performance	Market performance	Operational performance	Employees performance
Net Profit = net sales – cost of goods sold – operating expense – taxes – interest	Customer Retention Rate = ((E-N)/S)*100 (1. Number of customer at the end of a period – E 2. Number of new customers acquired during that period – N 3. Number of customers at the start of that period – S)	Market Growth Rate = (Change in market size)/(Original market size) =(Current market size-Original market size)/(Original market size)	Capacity Utilization Rate = {(Actual Output - Potential Output) / Potential Output}. On the other hand, Capacity Utilization Rate, CUR = {(Actual Output - Potential Output) / Potential Output} * 100	Human Capital Value Added = (EBIDTA – Financial Capital Cost) / Human Capital Cost
Net Profit Margin = net income / net sells	Customer Satisfaction Index – it can be determine with scale (for ex. Strongly agree – strongly disagree)	Market Share = (Particular Company's Sales Revenue in Time Period X) / (Relevant Market's Total Sales Revenue in Time Period X)	Time to Market = measuring is different in organizations and depend of many factors	Revenue Per Employee = (Revenue/Number of Employees)
Operating Profit Margin = Operating income ÷ Total revenue	Customer Engagement = (w1*n1) + (w2 * n2) + … + (w# + n#) Where w is the weight given to a random event and n is the number of times the event occurred.		Six Sigma Level – six sigma calculators - DPMO, DPM, Sample Size	Employee Satisfaction Index - Employee satisfaction survey
Gross Profit Margin = ((revenue – cost of goods sold) / revenue))	Customer Complaints = Number of complaints/number of transactions × 100			Employee Engagement Level - Employee Engagement survey
Return on Equity (ROE) = net income / shareholders equity	Customer Lifetime Value = Margin ($) * (Retention Rate (%) ÷ ([1 + Discount Rate (%)] - Retention Rate (%))			
Return on Assets (ROA) = net income/total assets Return on Investment (ROI) = Net income / Investment				

Performance Measurment Framework For SMEs

Performance measurement is a critical part of decision making and performance improvement. Neely (1995) describes performance measurement as the process of quantifying action. Also he defined it as the efficiency and effectiveness of action. There are many reason why performance measurement is is necessary today. It links and aligns strategic objectives, have an appropriate balance between various measures. Measurement is the first step that leads to control and eventually to improvement. If you can't measure something, you can't understand it. If you can't understand it, you can't control it. If you can't control it, you can't improve it. There a number of frameworks those are designed until now for measuring performance in the companies. Most of them that are developed in recent years are trying to achieve balance between financial and non-financial measures. Performance measurement system is a group of techniques developed by the SME to evaluate the performance of business activities. Brem (2008) concluded that there has been no performance measurement system to date that is widely accepted and designed especially for developed for SMEs. But there are a lot of authors and papers that put forward attempts at performance measurement frameworks for SMEs (Barnes, 1998; Leitinen, 2002). Empirical literature for performance measurement for SMEs consists mostly of case-studies (Adaie, 2003). However, we can conclude that there are a lot of articles that research this issue. Loch and Tapper (2002) identified four main functions of the performance measurement system:

alignment and prioritization, evaluation and incentives, operational control, and learning and improvement.

Following table present the most important frameworks that are developed until now.

Table 2: Performance measurement frameworks

Period	Framework	References
before 1980	The ROI, ROE, ROCE and derivates	Simons (2000)
1980	The Economic Value Added Model (EVA)	Stewart (2007)
1988	The Activity Based Costing (ABC) – The Activity Based Management (ABM)	Cooper and Kaplan (1988)
1988	The Strategic Measurement Analysis and Reporting Technique (SMART)	Cross and Lynch (1988)
1989	The Supportive Performance Measures (SPA)	Keegan et al. (1989)
1990	The Customer Value Analysis (CVA)	Customer Value Inc. (2007)
1990	The Performance Measurement Questionnaire (PMQ)	Dixon et al. (1990)
1991	The Results and Determinants Framework (RDF)	Fitzgerald et al. (1991)
1992	The Balanced Scorecard (BSC)	Kaplan and Norton (1992)
1994	The Service-Profit Chain (SPC)	Heskett et al. (1994)
1995	The Return on Quality Approach (ROQ)	Rust et al. (1995)
1996	The Cambridge Performance Measurement Framework (CPMF)	Neely et al. (1996)
1996	The Consistent Performance Measurement System (CPMS)	Flapper et al. (1996)
1997	The Integrated Performance Measurement System (IPMS)	Bititci et al. (1997)
1998	The Comparative Business Scorecard (CBS)	Kanji (1998)
1998	The Integrated Performance Measurement Framework (IPMF)	Medori and Steeple (2000)
1999	The Business Excellence Model (BEM)	EFQM (2007)
2000	The Dynamic Performance Measurement System (DPMS)	Bititci et al. (2000)
2001	The Action-Profit Linkage Model (APL)	Epstein and Westbrook (2001)
2001	The Manufacturing System Design Decomposition (MSDD)	Cochran et al. (2001)
2001	The Performance Prism (PP)	Neely et al. (2001)
2004	The Performance Planning Value Chain (PPVC)	Neely and Jarrar (2004)
2004	The Capability Economic Value of Intangible and Tangible Assets Model (CEVITAe)	Ratnatunga et al. (2004)
2006	The Performance, Development, Growth Benchmarking System (PDGBS)	St-Pierre and Delisle (2006)
2007	The Unused Capacity Decomposition Framework (UCDF)	Balachandran et al. (2007)
2010	The EFQM Excellence Model	EFQM 2010

As we can see from the table there are a lot of designed performance measurement frameworks until now and all of them have some specific characteristic. In the early beginning of this concept most of the methodologies for measuring performance are based only on financial indicators. The things have changed in the 1990s when we can see strategic, integrated and balanced approach for this issue. Bellow will be analyzed only a few of them, the ones that have the most impact in this failed and the ones that are the most implemented. Those four frameworks are the most recognized.

Smart – The performance pyramid is framework popularized by Cross and Lynch (1988). The pyramid consists four levels at it aims to integrate corporate objectives with operational performance measures.

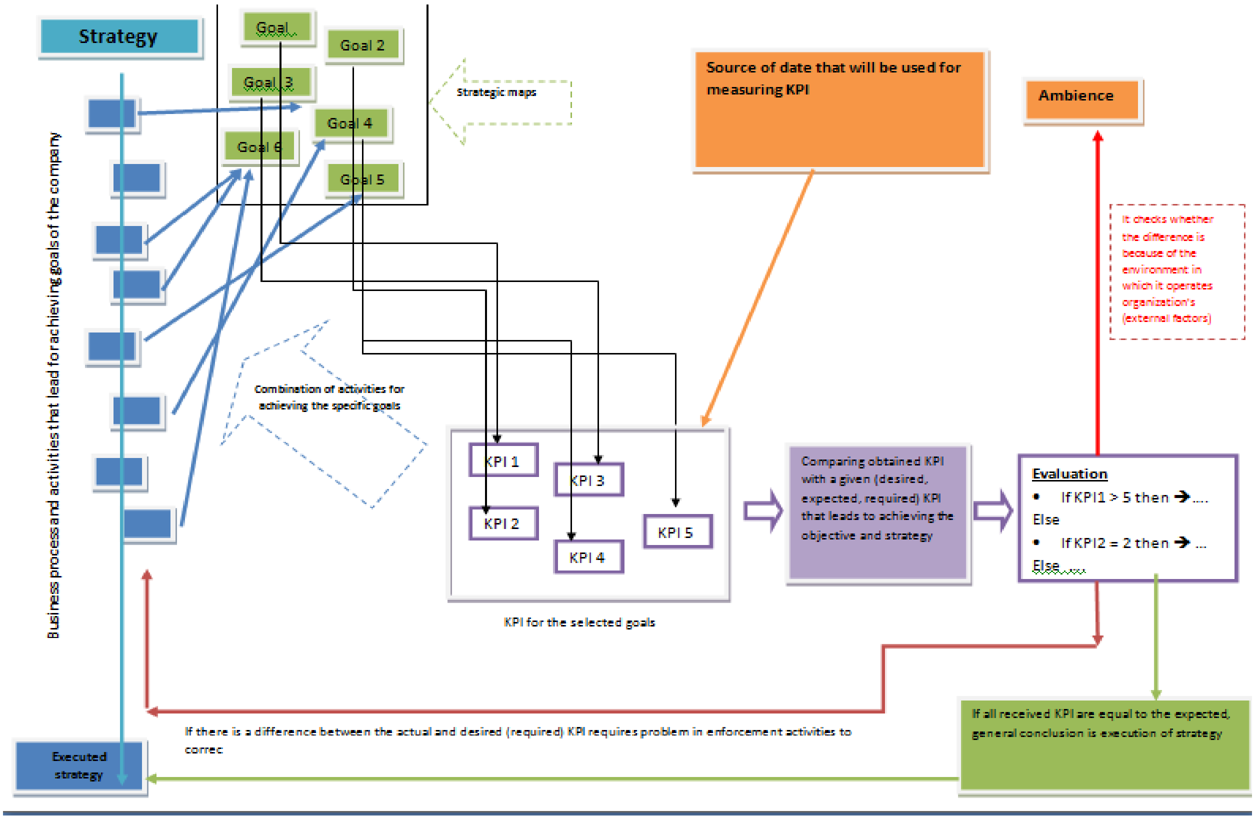
The performance measurement questionnaire developed by Dixon (1990) consists of four parts and it is designed to be answered by the respondents. This one assist in identifying improvement areas within the company and possible ways that existing performance measures can support those improvement areas.

The Balanced Scorecard developed by Kaplan and Norton (1992) consists four perspectives – customer perspective, internal perspective, innovation and learning perspective and financial perspective. The Balanced Scorecard can translate the strategy into specific measurable objectives.

The Performance Prism developed by Neely (2001) consists of five perspectives – stakeholder satisfaction, strategies, processes, capabilities and stakeholder contribution and it is designed to address the changing business environment.

Designing Performance Measurement Framework For SMEs

After previous analyze of the main performance measurement frameworks, this paper introduces a framework for performance measurement based on previous selected KPIs and the relationships between them. The following picture presents the performance measurement framework.



Picture 2: Performance measurement framework

Source: Authors preposition

According to this general framework for performance measurement based on Key performance indicators, the model starts from the strategy of the SME. After that objectives are defined that lead to the realization of the strategy. The actions that need to be taken to achieve specified objective are identified. It is assumed that to achieve a specific objective it is necessary to combine appropriate actions/business processes. Combination and justification of activates/ business process should be calculated using the cost-benefit analysis. Identifying of the actions required can be done through strategic maps and maps of success. For that purpose are set key performance indicators. Can be used all or some of the proposed KPIs in the table above. Data can be provided from various sources (internal and external). Key performance indicators that are get with calculation should be compared with some previously defined .

Finally, they will draw conclusions by analyzing the composite index of several indicators. If the composite index ranges within the prescribed interval can be conclude that the activities/business process are carried out with high performance.

- If all obtained KPIs are equal or nearly equal to the expected KPIs can be concluded that organizational performance are at a high level and lead to the realization of the strategy.
- If some of them are not equal or nearly equal to the expected / required KPIs then should return back to the operation to identify the cause of that condition.

Conclusion

Creating and selecting the right KPI is hard works for the academics and for the managers to. An effective performance measurement framework for SMEs should consider few elements such as: strategies of the SMEs, objectives, main business processes and action and several key performance indicators. Selecting the right KPIs for different SMEs is different and it depends primary of the strategy of the company.

There is not a general framework for measuring performance that can be implemented by all SMEs, but this paper attempt to suggest a framework that can be modified according the request of the certain SMEs. Here it must be stressed that the frameworks for measuring performance in SMEs are not the same as the one that are used for measuring performance in large companies. Successful implementation of the performance measurement frameworks request fulfillment of many requirements, but this can be issue for further research. Except the strategy, identifying and selecting right key performance indicators are the key for successfully implementation of the performance measurement framework.

This paper reviews the literature of performance measurement frameworks and key performance indicators. It highlights the need for performance measurement framework in SMEs. The main argument is that SMEs require a framework that is specifically designed and tailored to their characteristics and needs. This paper proposes a modified framework that is based on the strategy of the SMEs and few key performance indicators.

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