

PERFORMANCE MEASUREMENT IN SMALL AND MEDIUM SIZE ENTERPRISES

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Abstract: *Manufacturers in many industries face worldwide competitive pressures. These manufacturers must provide high-quality products with leading-edge performance capabilities to survive, much less prosper. There is intense pressure to produce high-performance at minimum-costs.*

The customer is the principal judge of quality. Perceptions of value and satisfaction are influenced by many factors throughout the customer's overall purchase, ownership, and service experiences. To accomplish this task, an organization's efforts need to extend well beyond merely meeting specifications, reducing defects and errors, or resolving complaints. They must include both designing new products that truly delight the customer and responding rapidly to changing consumer and market demands. An organization that is close to its customer knows what the customer wants, how the customer uses its products, and anticipates needs that the customer may not even be able to express. It also continually develops new ways of enhancing customer relationships. The companies must use performance management and measurement systems derived from their strategies and capabilities.

Performance measures should be linked to an organization's strategy in order to provide useful information for making effective decisions and shaping desirable employee behaviour.

Keywords: *small and medium sized enterprises, performance management, performance measures, performance measurement system, organizational performance*

Introduction

In a world of global competition, a company has to deliver services more effectively and more efficiently than its competitor. This is especially difficult for small and medium size enterprises (SME) due to their relative lack of organizational and management skills, lack of strategic planning and shortage of working capital. They are more vulnerable than the bigger, more stable companies whenever business circumstances change. They must spend their resources in areas, which ensure their business sustainability in the future.

In order to assist companies achieves their goals and objectives, performance measures are used to evaluate, control and improve processes [1]. Quality control is responsible for transforming quality planning and quality

improvement outcomes into daily routine work. Quality control can be implemented by systematically going around the Plan, Do, Check and Act control cycle, with which organization may achieve continuous small steps of improvement.

Performance measures are utilized to compare the performance of organizations, plans, teams and individuals as well as to assess employees. Measurement induces curiosity, interrogation and challenging the way things are done.

Kaydos W.J. [2] defines five major reasons for companies to measure performance:

1. *improved control*, since feedback is essential for any system;
2. *clear responsibilities and objectives*, because good performance measures clarify

who is responsible for specific results or problems;

3. *strategic alignment of objectives*, because performance measures have proved to be a good means of communicating a company's strategy throughout the organization;

4. *understanding business processes*, since measuring data requires an understanding of the manufacturing process; and

5. *determining process capability*, because understanding a process also means knowing its capacity.

Neely et al. [3] state that performance measurement is literally the process of quantifying actions. To perform better, an organization has to achieve its desired goals with greater efficiency and effectiveness than its competitors.

He defines "efficiency" as a measure of the resources used in order to achieve a desired level of customer satisfaction. Performance measurement also highlights the possibility that internal as well as external reasons can prompt specific courses of action. For example, with respect to one of the quality-related dimensions of performance - product reliability, which might lead to greater customer satisfaction. In terms of "efficiency", achieving great reliability might reduce the costs incurred by a business through decreased field failures and warranty claims. Performance measurement is usually done by large companies, but SME could also benefit from it.

Prathap and Mittal [4] note that "Performance measurement is a crucial criterion for evaluating the competence and achievement of an organization".

Many authors have underlined the importance for all major businesses of evaluating and modifying performance measures in order to adapt to the rapidly changing and highly competitive business environment.

Characteristics of performance measurement in SME

An organization should be seen as a whole system made up of interrelated parts [5], which

should be understood in terms of how they contribute to the maintenance of the whole organization. In order to improve the overall business performance, performance management helps organizations to manage and improve their performance. The primary goal of an organization is to ensure its survival and continuity as a system. To do so, managers have to understand the various parts of their organization and their relationships among themselves and with the external environment.

According to Katz and Kahn [5], "Organizations are best represented as entities in close relationships with their environments, taking inputs and transforming them in to outputs. These outputs in the form of products can provide the means to new inputs, so the cycle can begin again. The main purpose is to maintain a steady state and to survive."

Small businesses play an important role in the economy of any country because of their flexibility and ability to innovate. In nearly every country, they play a significant role in providing employment opportunities and supporting large - scale manufacturing firms. SME are critical to almost every national and local economy because of their potential to grow larger. Small businesses are increasingly recognized as "the life blood of modern economics" [6].

A goods producing firms is considered "small" if it has less than 50 employees. Above that size, and up to 250 employees, a firm is considered medium-sized. The term SME is used to refer to all these components of the economy together.

SME generally have different peculiarities in comparison to large firms; their entrepreneurs are often involved in day to day activities, and face some difficulties in distinguishing between current decision (underlying short-term objectives) and long-term business goals; this implies that they often adopt a reactive and emotional decision-making process. Furthermore, they view strategic planning as a possible limitation of flexibility and on the same time prefer to use scarce time resources for operational activities rather than for strategic development process. For this reason normally SME do not devote

many resources to brand and marketing activities which often are not the result of a deliberate strategy.

SME generally have limited resources in term of working capital, people, management skills and strategic planning. Therefore, it is important to have good planning and proper management of these scarce resources. Having a performance measurement framework will help management to decide how the best use the company's scarce resources. Small and large firms are fundamentally different from each other in these aspects: uncertainty of the environment in which the small firms operates, together with the greater internal consistency of its motivations and actions [7].

The above comments suggest that the outcome products influence the steady state and have an effect on the growth or survival of an organization as they are the generators of new inputs. Like information obtained from the traditional method of performance management, information from the performance measures gives feedback so that any needed corrective action can be performed.

Performance measures from literature adapted from Browne et al., [8] are:

- financial measures: sales (turnover), fixed assets, current assets, purchased material cost, other costs, equity, receivables, current liabilities, opening stock, closing stock, external capital, total liabilities, profit from joint ventures;

- product development: number of active products, product-related process engineering and design cost, product research cost, number of new products, total number of customer complaint-related design changes, engineering drawings change cost, warranty cost for new products, number of components recycled, total number of components produced;

- marketing and sales: total number of customers, marketing cost, customer visits, number of on-time customer payments, products sold, number of customer suggestions;

- purchasing: number of active suppliers, numbers of purchase orders, average material procurement lead time, number of on-time payment to suppliers;

- planning and production: number of customer orders, number of on-time outgoing deliveries, average production and assembly lead time, total production cost, inventory costs, average cost of work in progress, cost of scrap material, re-work hours;

- personnel: average number of employees, total wages, number of person - days lost due to absenteeism, overtime cost, training and educational cost, cost of incentive schemes;

- other measures: system downtime, number of injuries, cost of preventative maintenance, numbers of employee suggestions, machine downtime, maximum available machine hours, cost of improvement projects.

There exist several difficulties in installing non-financial measures in the SME sector:

- the SME sector has often had a poor experience with consultants;

- the products generally available are often focused on one area of the business, from sales right through to distribution;

- the need is for product that is simple to use, easy to understand, flexible and, most importantly, will meet the needs of the business both now in the future;

- even the smaller firms of consultants can be relatively expensive.

Performance measurement systems should support SME in order to manage uncertainty, to innovate their products and services, and to sustain evolution and change processes [9].

Several important changes that have taken place in recent years have created a favourable context for the implementation of performances measurements systems in manufacturing SME. The four main factors are:

- the evolution of the competitive environment;

- the propensity to grow in dimension (if a performance measurement system does not focus exclusively on financial aspects, it can play a key role in supporting a rational approach to growing complexity and qualitative improvement in SME);

- the evolution of the concept of quality, increased focus on continuous improvement (its organizational impact [10], the introduction of ISO 9001 requirements and the

diffusion of quality awards are increasing the importance of implementing performance measurement in SME);

- developments in information technology.

Measuring processes performance is very important if the company wishes to survive and prosper in the current business environment. In fact, the companies must use performance management and measurement systems derived from their strategies and capabilities. Seifert [11] argues that "performance is the degree of target achievement of a process regarding pre-determined and application-dependent criteria", extending this definition to argue that performance measurement can be "understood as the measuring, analyzing and communication of the performance of business processes".

Performance measurement is a fundamental function in business management as they make it possible to detect failures or variations in processes. It indicates where processes must be improved in order to solve or ameliorate these problems, and thus increase the overall performance. Measuring performance is much more than tables of numbers and scorecards [12]. Although it uses numbers, it is not about numbers; it is perceptions, understanding and insight which, if done efficiently, can have a huge and positive impact on the organizations [13]. In line with this statement, performance management deals with how to relate the measurement results of the differences between current performance and desired performance, and then redesigns the processes in order to improve them.

The measurement system captures the performance indicator values for the process outputs and the key performance indicators (KPI) are then used as inputs for the performance evaluation process. The aim with the results obtained from this evaluation is to provide reliable information for the decision-making processes, including the necessary actions to solve problems, to achieve continuous improvement, as well as for process reengineering or innovation.

The term "indicator" traces back to the latin verb "indicare", meaning to disclose or point out, to announce or make publicly known, or to estimate or put a price on. Indicators communicate information about progress toward social goals such as sustainable development. As commonly understood, an indicator is something that provides a clue to a matter of larger significance or makes perceptible a trend or phenomenon that is not immediately detectable.

The KPIs should be selected in order to support decision-makers so that they can improve the performance of processes. Furthermore, there are key results KPI which presents how actions are conducted from a perspective or critical success factor. There are also the result indicators or outcomes which tell us what has been done. There are the performance indicators that tell us what to do.

Organizational performance is an indicator which measures how well an enterprise achieves their objectives. Ho [14] defined organizational performance in terms of how well an organization accomplishes its objectives. Schermerhorn et al. [15] point out that performance refers to the quality and quantity of individual or group work achievement. Delaney and Huselid [16] suggest two ways to assess organizational performance and market performance.

Jin-Nan et al. [17] propose organizational performance measures on four dimensions: sales generation, logistics cost decrease, improved staff productivity, and improved customer service. Morales et al. [18] identifies four dimensions of organizational performance, including return on assets, return on equity, return on sales, and market share and growth of sales. Zack et al. [19] propose organizational performances measures on five dimensions: innovation, rate of new product development, customer satisfaction, customer retention, and operating costs.

Strategic flexibility is considered to be an important source of firm competitive advantage in turbulent environments [20, 21]. However, an agreement on the link between strategic flexibility and firm performance has not been fully reached [22, 23].

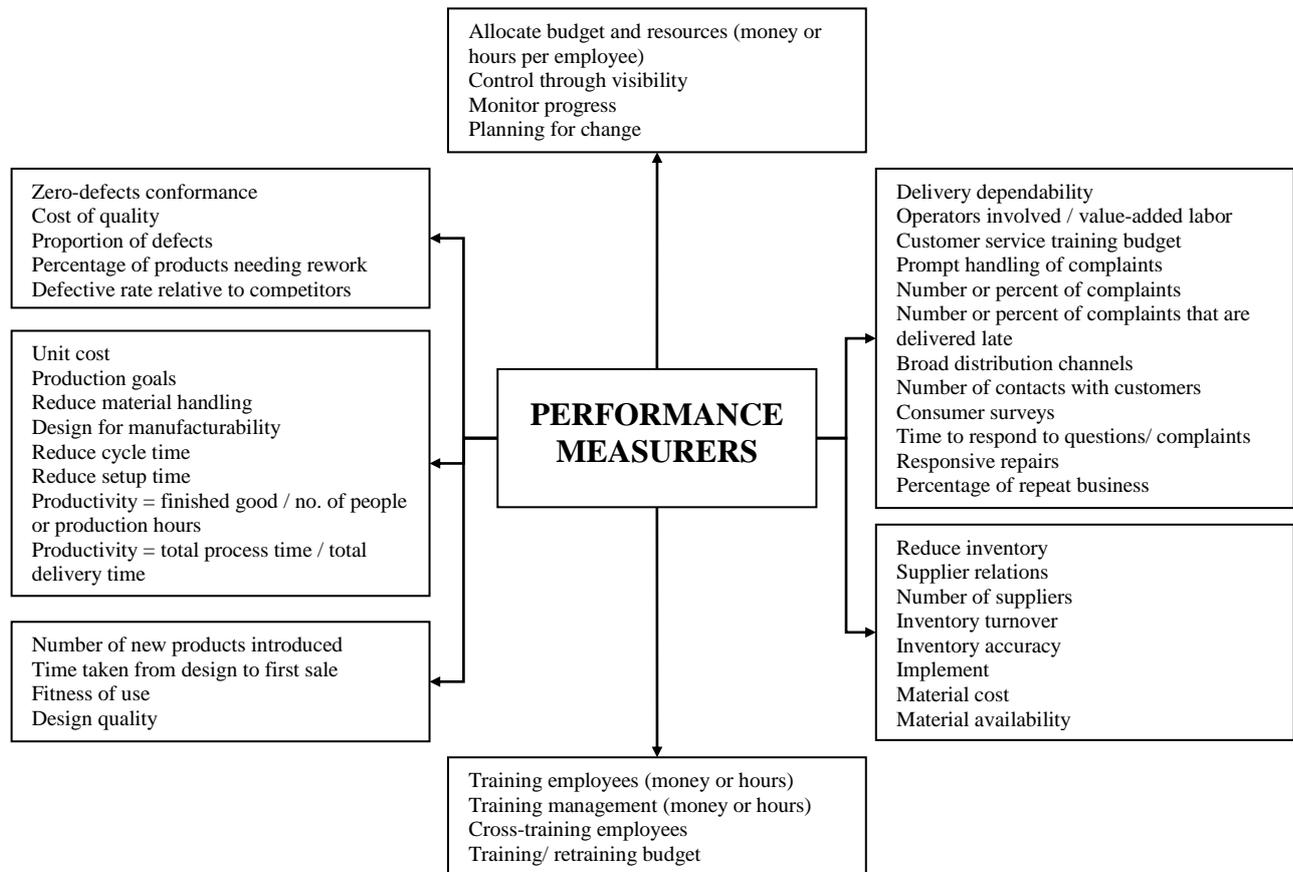


Figure 1. Measures of performance

Measures of performance, Figure 1 were dominated by cost measures and partial productivity measures till recent past. However, these came under severe criticism for several reasons, some of them being: encouragement of short-term objective implantation; encouraging minimization of variance rather than continuous improvement; lack of strategic focus; support of local optimization and not being externally focused.

Managers very often are also the owners of the company and the control in the SME rests primarily with one or a few people with a high level of autonomy; organizational success or failure in SME is seriously affected by the managerial competencies of the owner-manager; in fact, decision are mainly based on the director's personal skills and intuition rather than on analysis of information.

The owner-manager usually adopts a highly personalized management style, tending to follow a "react and adapt" philosophy and

fire-fighting strategy, focusing on short term horizons and not engaging actual strategic planning [24]. Tangen [25] suggest that:

- the measures must be derived from strategic objectives to ensure that employee behaviour is consistent with corporate goals;
- the measures must provide timely, relevant and accurate feedback, from both a long-term and a short-term perspective;
- measurement should be accomplished by a limited number of performance measures that consist of both financial and non-financial measures;
- measurement should be undertaken in ways that are easily understood by those whose performance is being evaluated.

Dixon et al. [26] developed the performance measurement questionnaire, which is a collection of questions that should help managers identify the improvement needs for their organization, determine to which extent the existing performance measures

support improvements and establish an agenda for performance measures improvements.

The method, called "the performance measurement progression map" [25], is formed as a flowchart and consists of nine steps separated into three phases:

- phase A focuses on finding an appropriate and useful set of measures;
- phase B is concerned with how the performance measure of each individual is designed;
- phase C includes the actual implementation of the results from the previous two phases.

However a PMS is much more than just a collection of measures, as it includes five basic elements: people, procedures, data, software and hardware [27]. In order to perform a complete review of a PMS it is therefore necessary to assess not only the effectiveness of the measures but also the effectiveness of the system as a whole.

All the tools for PMS assessment provided by the literature and described above do not make explicit reference to the size of the target companies; furthermore, they appear too complex and resource intensive to be used effectively in a SME context. Only one paper [28] dealing to some extent with PMS assessment in SME, proposes a framework to classify PMS in SME taking part in Quality Award Programmes and study their evolution.

PMS are classified according to two dimensions:

- PMS characteristics (how companies are using measures to manage performance) and
- PMS scope (what companies are measuring).

The framework does not represent a tool that SME can use to assess the effectiveness of their PMS, rather it is a model intended for theoretical reasoning and company classifications by external academics.

Conclusions

SMEs sector has an important role to play in developing economies not only in economic development, but also in poverty alleviation and job creation. Also, SME have been recognized as an important strategic sector for

generating high economic growth, reducing unemployment, inequality and poverty. SME stimulate private ownership and entrepreneurial skills, are flexible and can adapt quickly to changing market demand and supply situations, generate employment, help diversify economic activity, and make a significant contribution to exports and trade.

Firm performance is a focal phenomenon in business studies. However, it is also a complex and multidimensional phenomenon. Performance can be characterized as the firm's ability to create acceptable outcomes and actions. For many organizations achieving improved performance is not only dependent on the successful deployment of tangible assets and natural resources but also on the effective management of knowledge [29].

Performance measurement is the language of progress, and provides a sense of where we are - more importantly - where we are going [30]. Appropriate performance measures can ensure that managers adopt a long-term perspective and allocate the company's resources to the most effective improvement activities. Thus, performance measurement is an absolutely essential operational element in order to lead the organization towards improvement, guide progress and direct the efforts towards planned objectives. SME need a simple performance measurement system that can give the management focused, clear and useful information. The clarity and simplicity of a performance measurement system are of crucial importance for its successful implementation and use.

References

- [1] Mironeasa, C., Mironeasa, S., *Considerations on the concept of process and process approach*, Metalurgia International, vol. XIV, No.6 Special issue, 94-99, 2009.
- [2] Kaidos, W.J., *Operational performance measurement: increasing total productivity*, CRC Press, Boca Raton, F.L., 1999
- [3] Neely, A., Gregory, M., Platts, K., *Performance measurement system design: A literature review and research agenda*, International Journal of Operations & Production Management, vol.15, no.4, 80-116, 1995

- [4] Prathap, G., Mittal, R., *A performance index approach to library collection*, Performance measurement and metrics, vol.11, no.2, 259 - 265, 2010
- [5] Jackson, M.C., *Systems approaches to management*, Kluwer Academy / Plenum Publishers, 2000
- [6] Ghobadian, A., Gallear, D., *Total quality management in SMEs*, Omega, vol.24, no.1, 83-100, 1996
- [7] Welsh, J.A., White, J.F., *Converging on characteristics of entrepreneurs*, Paper from: Verper K.H., (Editor) *Frontiers of entrepreneurship research*, Wellesley, Babson Centre for entrepreneurial studies, 504-515, 1981
- [8] Browne, J., Delvin, J., Rolstadas, A., Anderson, B., *Performance Measurement: The ENAPS Approach*, International Journal of Business Transformation, vol.2, 73-84, 1997
- [9] Mironeasa, C. Mironeasa, S., *The process approach and the generated value at the process level*, Metalurgia International, vol. XIV, No.6 Special issue, 89-93, 2009.
- [10] Compagno, C., *Qualità ed evoluzione organizzativa nella piccola e media impresa*, Small Business, vol.1, 39 - 66, 1997
- [11] Seifert, M., *Collaboration Formation in Virtual Organisations by Applying Prospective Performance Measurement*. Aachen: Verlagsgroupe Mainz, 2009
- [12] Kaplan, R.S., Norton, D.P., *The balanced scorecard - measures that drive performance*, Harvard Business Review, January - February, 71 - 79, 1992
- [13] Spitzer, D.R., *Transforming performance measurement: rethinking the way we measure and drive organizational success*, New York, Amacom, 2007
- [14] Ho, L.A., *What affects organizational performance? The linking of learning and knowledge management*, Industrial management & data systems, vol. 108, no.9, 2008
- [15] Schermerhorn, J.R. Jr, Hunt, J.M., Osborn, R.N., *Organizational Behavior*, Wiley, New York, 2002
- [16] Delaney, J.T., Huselid, M.A., *The impact of human resource management practices on perceptions of organizational performance*, Academy of management journal, vol.39, no.4, 949-969, 1996
- [17] Jin-Nan, W., Wei-Jun, Z., Shu-E, M., *Application capability of e-business, e-business success, and organizational performance: empirical evidence from China*, Technological Forecasting & Social Change, 19 April, 1-14, 2011
- [18] Morales, V.G.M., Barrionuevo, M.M.J., Gutiérrez, G.L., *Transformational leadership influence on organizational performance through organizational learning and innovation*, Journal of business research, 31 March, 1-11, 2011
- [19] Zack, M., McKeen, J., Singh, S., *Knowledge management and organizational performance: an exploratory analysis*, Journal of knowledge management, vol.13, no.6, 392-409, 2009
- [20] Hitt, M.A., Keats, B.W., DeMarie, S.M., *Navigating in the new competitive landscape: building strategic flexibility and competitive advantage in the 21st century*, Academy of Management Executive, vol.12, 22-42, 1998
- [21] Zahra, S.A., Hayton, J.C., Neubaum, D.O., Dibrell, C., Craig, J., *Culture of family commitment and strategic flexibility: the moderating effect of stewardship*, Entrepreneurship theory and practice, vol.32, 1035-1054, 2008
- [22] Grewall, R., Tansuhaj, P., *Building organizational capabilities for managing economic crisis: the role of market orientation and strategic flexibility*", Journal of marketing, vol.65, 67-80, 2001
- [23] Nadkarni, S., Narayanan, V.K., *Strategic schemas, strategic flexibility, and firm performance: the moderating role of industry clockspeed*, Strategic management journal, vol. 28, 243-270, 2007
- [24] Hudson, M., Smart, A., Bourne, M., *Theory and practice in SME performance measurement system*, International Journal of Operations & Production Management, no. 8, 1096 - 1115, 2001
- [25] Tangen, S., *Evaluation and revision of performance measurement systems*, Doctoral thesis, Woxén Centrum, Department of Production Engineering Royal Institute of Technology, Stockholm, 2004
- [26] Dixon, J.R., Nanni, A.J., Vollman, T.E., *The new performance challenge - measuring operations for world-class competition*, Dow Jones-Irwin, Homewood, I.L., 1990
- [27] Wettsein, T., Kueng, P., *A maturity model for performance measurement systems*. Paper from: Brebbia, C.A. and Pascolo, P. (Editors), Management Information Systems, 113-122, 2002.

- [28] Garengo, P., *A performance measurement system for SMEs taking part in quality award programmes*, Total Quality Management, vol.20, no.1, 91-105, 2009
- [29] Lee, L.T., Sukoco, B.M., *The effects of entrepreneurial orientation and knowledge management capability on organizational effectiveness in Taiwan: the moderating role of social capital*, International Journal of Management, vol.24, no.3, 549-573, 2007
- [30] Sharma, M.K., Bhagwat, R., *Performance measurement system: case studies from SMEs in India*, International Journal of Productivity and Quality Management, vol. 2, no. 4, 475-509, 2007