

# Models for measuring the performance of an organization

G G L Mitrea- Curpanaru

Department of Engineering and Management, FDIMA, Gheorghe Asachi Technical University, 29 Dimitrie Mangeron Bd., Iași, 700050, Romania

[gabriela-livia.curpanaru@student.tuiasi.ro](mailto:gabriela-livia.curpanaru@student.tuiasi.ro)

**Abstract.** The complexity of managing an organization today requires that managers be able to measure performance and analyze the impact of different dimensions of performance on organizational excellence. Many experts in the field have started talking about the importance of measurement as a means of communication. The customer can provide information about the physical quality - the appearance of the product, about the functionality and performance of the product, characteristics that are also related to quality. If the product is used in the performance of a service, then the quality of this service is directly proportional to the quality of the product. A mixed performance management model is concerned with both inputs and outputs. The selection of the best model to improve performance is based on a self-assessment process. Organizational excellence is measured by the organization's ability to achieve and maintain exceptional results simultaneously for all stakeholders.

## 1. Introduction

Performance management should be understood as a continuous process, reflecting normal management practices, not "special techniques" imposed on managers. Its conceptual framework includes terms such as: "performance management", "performance", "performing organization". Performance management has also been approached as an "adjustment loop", linking organizational strategies and objectives, performance measurement, performance training, performance guidance and leadership, and rewarding performance. The performance of an organization is determined by: its level of coherence and stability; its ability to procure and use resources; of his reputation and image; the synergy of multiplying determinants such as employee relations, communication, mission, philosophy and leadership style, recognition, quality of organizational processes. Organizations use a wide range of qualitative and quantitative tools that have been accumulated over time to meet specific operational requirements [1]. Increasing interest in performance management has led to an update of accounting systems and an extension of non-cost performance. [2] define the performance management system as a set of indicators used to quantify both the efficiency and effectiveness of actions. [3] argue that the performance measurement system allows for the development of a closed-loop organizational strategy, which provides a structured framework for the flow of information relevant to feedback at close points, which facilitates decision-making and control processes. These emerging performance management systems can be grouped into two distinct categories [4]. The first are those that focus on self-evaluation, for example, the Deming Award in Japan and Asia (Deming 2004), the Baldrige Award in the United States (NIST 2004), and the European Foundation for Quality Award using EFQM Model of Excellence in Europe (EFQM 2004). The second category is those designed to help managers measure and improve business processes, for example, the Performance Pyramid [5] [6], the Balanced Scorecard [7] [8], The Cambridge Performance Measurement Process [9] [10] and the performance prism [11] [12]. The customer can provide information about the physical quality - the appearance of the product, about the functionality and performance of the product, characteristics that are also related to quality. If the product is used in the performance of a service, then the quality of this service is directly proportional to the quality of the product. A mixed performance management model is concerned with both inputs

and outputs. The selection of the best model to improve performance is based on a self-assessment process.

**Table 1.** Evolution of performance measurement systems [13] [14]

<b>Traditional performance measurement systems</b>	<b>Emerging performance measurement systems</b>
Based on the traditional accounting system	Based on company strategy
Based on cost / efficiency	Based on values
Compromise between performance	Performance compatibility
Profit-oriented	Consumer-oriented
Short-term guidance	Long-term orientation
Prevalence of individual instruments	Prevalence of team tools
Prevalence of functional tools	Prevalence of transversal instruments
Comparison with standard	Improvement monitoring
Evaluation as a goal	Evaluation and involvement as a goal
Prevents continuous improvement	Emphasizes continuous improvement

The complexity of managing an organization today requires that managers be able to measure performance and analyze the impact of different dimensions of performance on organizational excellence. Many experts in the field have started talking about the importance of measurement as a means of communication.

Table 2 summarizes the large amount in the literature of performance measurement systems [15] [16], which can be considered to be the main changes and development trends that have been affected by how these systems are viewed.

**Table 2.** Performance measurement systems

<b>Performance measurement systems and approaches</b>	<b>Performance measurement systems and approaches</b>
Strategic measurement analysis and reporting technique (SMART)	Lynch and Cross 1991; McNair et al. 1990
Performance Measurement Questionnaire (PMQ)	Dixon et al. 1990
Results and determinant matrix (R&DM)	Fitzgerald et al. 1991; Fitzgerald and Moon 1996
The Balanced Scorecard (BSC)	Kaplan and Norton 1992, 1996, 2000
Business Scorecard Comparison (CBS)	Kanji 1998; Kanji and Moura e Sá 2002
Cambridge Performance Measurement Process (CPMP)	Neely et al. 1996, 2000; Bourne et al. 1998, 2000
Consistent performance measurement systems (CPMS)	Flapper and others 1996

Integrated Performance Measurement Systems (IPMS)	Bititci et al. 1997, 1998 a, b
Dynamic Performance Measurement Systems (DPMS)	Bititci and others 2000
Integrated Performance Measurement Framework (IPMF)	Medori 1998a, b; Medori and Steeple 2000

## 2. The Balanced Scorecard (BSC) Model

Balanced Scorecard is a strategic performance management framework that has been designed to help an organization monitor its performance and manage the execution of its strategy. In a recent global study of the management tools used, the Balanced Scorecard proved to be the sixth most widely used management tool in the world, which also had one of the highest ratings. satisfaction. The concept, having two components BS personal (BSP) and BS organizational (BSO), was introduced in 1992 [17].

The BSO identifies several dimensions of the organization, representing areas where organizations need to achieve results, at the level of departments, teams or individuals. Depending on the type of enterprise, the essential dimensions can be: financial aspect, customers, internal processes, knowledge and learning, quality of service, market share, etc. [17] they stop at four fundamental dimensions, which give four perspectives from which to examine the business of the organization. At the same time, it involves the obligation of managers to find answers to some key questions:

- Financial aspect: its financial health. How do shareholders see the company? What does the company mean to shareholders?
- Customers (external): customer satisfaction. How do customers see the company? What does it mean for our customers?
- Internal processes: process control. How can we control the primary business processes to create value for customers? What processes do we need to excel in to continually satisfy our customers?
- Knowledge and learning: the skills and attitudes of employees and the organization's ability to learn. How can the company remain successful in the future? How should we learn and communicate in order to improve ourselves and thereby achieve our vision?

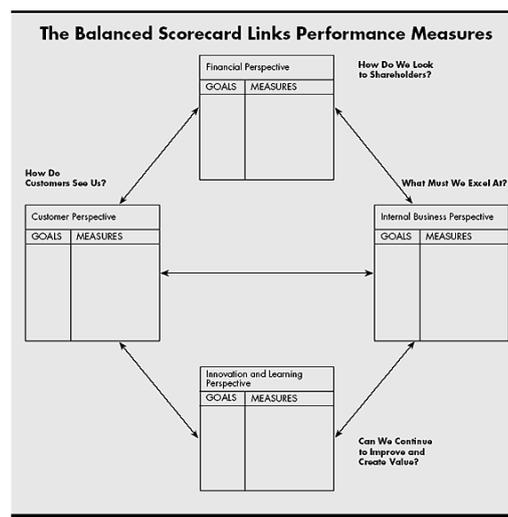


Figure 1. "The Balanced Scorecard Links Performance Measures." [18]

Definition for the four Balanced Scorecard perspectives:

- The financial perspective covers the financial objectives of an organization and allows managers to track the financial success and value of shareholders.
- The customer perspective refers to customer-related objectives, such as customer satisfaction, market share objectives, and product and service characteristics.
- The internal process perspective covers the internal operational objectives and presents the key processes necessary to achieve the objectives related to the client's perspective.
- The Learning and Development perspective covers intangible carriers of success in the future, such as human capital, organizational capital and information capital, including skills, training, organizational culture, leadership, systems and databases.

Research has shown that organizations that use a Balanced Scorecard approach tend to outperform organizations without a formal approach to performance management at the strategic level. The main advantages of using a BSC include:

- Better strategic planning - Balanced Scorecard provides a powerful framework for building and communicating strategy. The business model is visualized in a strategy map that forces managers to think about cause-effect relationships. The process of creating a strategy map ensures that a consensus is reached based on a set of interdependent strategic objectives. This means that performance results, such as key elements or future performance factors (such as intangibles) are identified to create a complete picture of the strategy.
- Improving communication and execution strategy - The fact that the strategy with all interdependent objectives is mapped on a piece of paper allows companies to easily communicate the strategy internally and externally. We've known for a long time that a picture is worth a thousand words. This "one-page plan" facilitates understanding of the strategy and helps engage staff and shareholders in delivering and reviewing the strategy. Finally, it is impossible to execute a strategy that is not understood by everyone.
- Better information management - The Balanced Scorecard approach forces organizations to design key performance indicators for their various strategic objectives. This ensures that companies measure what really matters. Research shows that companies with a BSC approach tend to report high quality management information and gain increasing benefits through the way this information is used to guide management and decision making.
- Improving performance reporting - companies that use a Balanced Scorecard approach tend to produce better performance reports than organizations without such a structured performance management approach. Increasing transparency needs and requirements can be met if companies create meaningful management reports and dashboards to communicate performance both internally and externally.
- Better strategic alignment - organizations with a Balanced Scorecard are able to better align their organization with strategic goals. In order to execute a plan well, organizations need to ensure that all business and support units work toward the same goals. Dividing the Balanced Scorecard into these units will help achieve them and at the same time link the operations strategy.
- Better organizational alignment - A well-implemented Balanced Scorecard also helps align organizational processes such as budgeting, risk management and analysis with strategic priorities. This will help to create a truly strategy focused organization.
- The Balanced Scorecard idea is simple, but extremely powerful if implemented well. As long as we use the basic ideas of the BSC to (a) create a unique and visual strategy on a "cause-and-effect" map, (b) align the organization and its processes with the objectives identified in the strategic map, (c) designing significant key performance indicators; and (d) using them to facilitate learning and improve decision-making; thus the organization has a powerful tool, which should lead to better performance.

To put the balanced scorecard to work, companies should articulate goals for time, quality, and performance and service and then translate these goals into specific measures. Senior managers at ECI,

for example, established general goals for customer performance: get standard products to market sooner, improve customers' time to market, become customers' supplier of choice through partnerships with them, and develop innovative products tailored to customer needs. The managers translated these general goals into four specific goals and identified an appropriate measure for each. [18]

ECI's Balanced Business Scorecard			
<b>Financial Perspective</b>		<b>Customer Perspective</b>	
GOALS	MEASURES	GOALS	MEASURES
Survive	Cash flow	New products	Percent of sales from new products
Succeed	Quarterly sales growth and operating income by division		Percent of sales from proprietary products
Prosper	Increased market share and ROE	Responsive supply	On-time delivery (defined by customer)
		Preferred supplier	Share of key accounts' purchases
		Customer partnership	Ranking by key accounts
			Number of cooperative engineering efforts
<b>Internal Business Perspective</b>		<b>Innovation and Learning Perspective</b>	
GOALS	MEASURES	GOALS	MEASURES
Technology capability	Manufacturing geometry vs. competition	Technology leadership	Time to develop next generation
Manufacturing excellence	Cycle time Unit cost Yield	Manufacturing learning	Process time to maturity
Design productivity	Silicon efficiency Engineering efficiency	Product focus	Percent of products that equal 80% sales
New product introduction	Actual introduction schedule vs. plan	Time to market	New product introduction vs. competition

Figure 2. "ECI's Balanced Business Scorecard" [18]

But educational practice does not operate the ideal module with theoretical operational dichotomies, but updates contextually: evaluation involves both normative elements and criterion elements. In addition, both normative and criteria instruments must be designed on the basis of evaluation objectives. Also, the performance can be judged according to the previous results, following the evolution over time. Finally, the interpretation of the results, obtained following the application of an evaluation tool designed according to the specifications of a predominantly normative or criterion type, will be performed accordingly. A normative assessment will distribute the subjects along the entire correction / grading scale, while a criterion assessment will provide a measure of the level of mastery achieved by the group in relation to a clearly specified criterion.

Therefore, suitability for purpose involves choosing the most appropriate way, a set of decisions that are made according to the following criteria: the major purpose of the evaluation / assessment / measurement; logistical constraints and determinations (including the human and material costs involved); the nature and dimensions of the target group investigated; the purposes, nature and characteristics of the curriculum or program underlying the evaluation process; the importance, for all those involved, of the stakes of the expected results; the form of presentation, depending on the audience or the beneficiaries of the final report. Only after making decisions on these issues can we proceed to select the evaluation techniques to be used.

The concept of educational efficiency makes the connection between process evaluation and system evaluation, making visible and explicit the relations between the two. When the one who designs an educational evaluation decides to carry out one of the types of evaluation, a series of questions appear:

- What do we evaluate? The system as a whole or only one of its components, educational performance or efficiency, training / educational process, school results, performance levels, competencies, aptitudes, abilities, attitudes.

- For what purpose do we evaluate? Formative / summative, placement, guidance / counselling.
- Who do we evaluate? Human resources involved.
- How do we evaluate? By establishing a clear and transparent path: goals - objectives - evaluation tools - results - interpretation - communication.
- When do we evaluate? At the beginning of a process, during it, at its end, after a certain time from completion.
- What do we evaluate with? With evaluation tools; Through direct, (semi) structured observation, during the process; Through individual or institutional portfolios; Through self-assessment, peer and group assessment procedures, in order to increase metacognitive reflection and institutional socialization.
- Who benefits from the evaluation results? Human resources involved, decision makers. Once the specific answers to these questions have been established, the situation can be designed and built.

### **3. Use of Balanced Scorecard - in order to develop the main processes within the school "Alexandru Ioan Cuza" Economic High School Piatra Neamt – Case study**

Professors Robert Kaplan and David Norton first introduced the concept of a balanced score card in an article published in Harvard Business Review 1/1992 [18]. The basic model of BSC evaluates the organization from 4 different perspectives and aims to integrate operational control into a long-term strategy.

Performance is assessed from 4-5 different perspectives, which integrate short-term operational control into long-term strategy.

BSC perspectives. According to the study of professors Kaplan and Norton, the 4 perspectives of the basic model are: the financial perspective, the client perspective, the process perspective and the learning and development perspective.

Financial perspective: How should we present ourselves to stakeholders in order to be financially successful?; Stakeholder expectations are also reflected in their profitability and development requirements; Effective use of resources.

Customer perspective: How should we present ourselves to customers in order to achieve the objectives ?; How should we thank our customers ?; Internal processes and development activities must take this perspective into account as the basis of the whole evaluation system.

Process Perspective: What are the processes by which we can create the quality requested by customers and through which we can meet the expectations of stakeholders? This perspective must provide the answer; What are the business processes in which we need to excel to please customers and stakeholders? What areas should we specialize in?

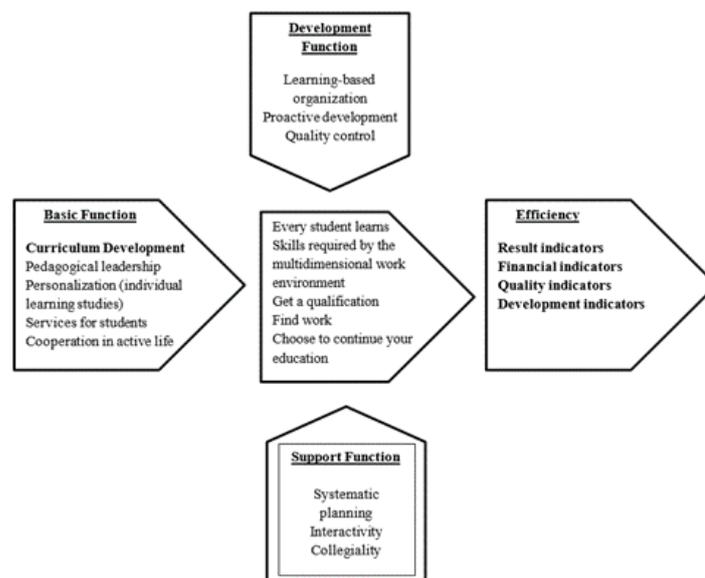
Development and learning perspective: How will we strengthen our capacity to make changes and improvements in order to achieve the objectives ?; What can we do to strengthen and develop our ability to meet the needs of our customers, to ensure the efficiency and productivity of processes that provide quality for customers ?; What are the main areas of expertise that we should develop and focus on?

BSC model applied within the "Alexandru Ioan Cuza" Economic High School in Piatra Neamt. BSC is applied in the Economic High School "Alexandru Ioan Cuza" Piatra Neamt, and the main processes are divided into 4 perspectives that describe the function of an educational organization. The fundamental function is related to the implementation and development of the teaching act. The auxiliary function considers the organization, structures and management of internal services. The development function describes the development of skills and anticipation of students' educational needs. The results of these 3 perspectives are evaluated through results indicators, financial and quality indicators which constitute the fourth perspective, namely, the development perspective.

The strategy, the annual planning and the management system of the quality and of the operations in the chariot of the Economic High School “Alexandru Ioan Cuza” Piatra Neamt were created based on this model. The BSC model is the framework for the whole evaluation of planning and quality. Through this we were able to achieve a practice-oriented model, a model suitable for an educational institution.

An important aspect is that neither the model nor its elements are direct copies, but individual applications. Using this model of quality development, the institution learned and adopted the fundamental idea of the model, its practices and justification:

- Basic function: making a curriculum; pedagogical leadership skills; personalization (individual study plans); student services; correlation with real life.
- Development function: educational institution; active development; quality control. Each student learns the necessary skills in multidimensional work environments, obtains a qualification, finds a job or continues his studies.
- Auxiliary function: systematic planning; inter collegiality.
- Efficiency: result indicators; financial indicators; quality indicators; development indicators.



**Figure 3.** Balanced Scorecard development perspective [19]

Using the BSC Model applied within the “Alexandru Ioan Cuza” Economic High School in Piatra Neamt. Estimated results from the application of the BSC model. The systematic use of BSC over the years has resulted in continuous development and a number of improvements at all levels of activity in the institution. First, it was possible for the institution as a whole to focus development on certain selected sections, to the detriment of unsystematized, individual actions. The model was developed as a basis for the structure and function of work teams. In addition to sector-specific teams, there are also teams that combine leadership competence and pedagogical skills to serve all ancillary and educational functions within the institution. Viable connections with the field of work. The link between the technical sector advisory committees, the sector-specific organizations and the representatives of real life creates an active forum for development depending on the field. The commitment of teams at all levels results in concrete progress at the pedagogical level in favor of students.

Recommendations for implementing the practice. There are 3 key recommendations for success:

- the relevance and systematic activity of the management staff regarding the use of the model;
- continuous feedback on concrete progress;
- achievement → motivation → staff commitment.

The application of BSC in the “Alexandru Ioan Cuza” Economic High School in Piatra Neamt is an adequate tool to be used in quality management and assurance, as well as for strategic planning within a pre-university education institution.

#### 4. Conclusion

In order to create a quality assurance system, a quality management system must first be introduced. It is a complex task, which involves first of all changing the mentality and perception of teachers in pre-university and university education and on the other hand the broad masses, the direct beneficiaries of the reform system. The performance of the educational institution is analyzed on the basis of key internal and external performance indicators, established targets and existing trends, judged constructively, with the establishment of improvement targets. Any performance measurement indicator is also used as a tool to control it, effectively for the implementation of continuous performance improvement actions.

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