

Stefano Biazzo · Patrizia Garengo

Performance Measurement with the Balanced Scorecard A Practical Approach to Implementation within SMEs



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Performance Measurement with the Balanced Scorecard

A Practical Approach to Implementation
within SMEs



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ISSN 2191-5482 e-ISSN 2191-5490
ISBN 978-3-642-24760-6 e-ISBN 978-3-642-24761-3
DOI 10.1007/978-3-642-24761-3
Springer Heidelberg Dordrecht London New York

Library of Congress Control Number: 2011943089

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Foreword for Balanced Scorecards for SMEs

I am pleased to welcome this important new book. *Balanced Scorecard for SMEs* provides an excellent summary of the leading performance management concepts, with a particular emphasis on how to apply these concepts to the SME sector. The great strength of the Italian economy is its network of SMEs that provide world class goods. Today's competitive environment, however, is extremely challenging due to

1. Intense global competition, particularly from enterprises located in low-cost emerging economies,
2. The slow global growth after the 2007/08 financial crisis, and
3. The debt crisis being experienced by countries along the southern boundary of the Eurozone.

Succeeding in this challenging world will require that the leaders of SMEs deploy the most innovative and proven management tools. Among these is the Balanced Scorecard, currently used by more than 70% of companies worldwide, and regularly ranked among the top-ten management tools used worldwide according to the annual survey conducted by Bain & Company, a leading strategy consulting company. Many SMEs, however, feel that the Balanced Scorecard is only for large and global corporations. This is an incorrect view. SMEs, like all other enterprises, need a management tool to communicate strategy to all employees and to align their day-to-day work to strategic objectives. Without a tool, such as the BSC, more than 90% of employees – even in small enterprises with fewer than 300 employees – are unaware of the strategy. If employees don't know what the strategy is, then they can't help their company to implement the strategy. This is the key reason why more than 70% of companies report that their strategies fail to achieve their targeted goals. Using the BSC, the odds reverse with 75% of companies using the BSC as their central strategy execution system reporting that they are outperform their competition, usually by a significant amount.

For these reasons, I believe that this new book can have a large impact on the performance of SMEs, especially in today's challenging business and

economic environment. I encourage the management teams of these enterprises to purchase and read the book, and then organize a project to translate their strategy into a strategy map and scorecard. In that way, they can join the growing population of companies around the world that are using the scorecard to achieve breakthroughs in performance.

Boston, MA

Robert S. Kaplan

Preface

Do we really know the critical phenomena that are linked to how enterprises function and the dynamics of their relationships with customers, suppliers and competitors? Are their decision-making processes founded upon a set of performance measurements that were accurately designed and systematically elaborated?

The above questions are the focus of this book: enterprises need a system to measure their critical performances so they can be effectively governed; metaphorically speaking, enterprises need a “management dashboard” to serve as a navigation support. A dashboard to show – with as few distortions as possible – the pattern of the key variables that characterise the specific formula that enterprises use to face their competitive and social environment.

However, a “management dashboard” is not a mere collection of data and indicators. With the widespread use of information technologies, enterprises find themselves dealing with an abundance of information; they possess many indicators, but the important information is hidden, drowned in muddled reports or disseminated throughout spreadsheets whose existence is known only to a few people. The main issue at stake is not to adopt the latest version of the most powerful IT tool of Business Intelligence available, so to be able to elaborate evermore sophisticated statistics in a fraction of a second. The issue is to conceptually design a system that will measure business performance. A design that follows an accurate and patient selection of the company’s indicators and is based upon the identification of the phenomena which are critical to an enterprise’s success and/or its survival (“measuring only what is important”); a thorough and an integrated overview of the enterprise and how it works (“measuring performance from 360°”): not only financial performances, but also those that pertain to the critical factors of success in its relationships with customers; those that pertain to the critical factors of internal processes’ functioning; and those that pertain to human resources. The term “Balanced Scorecard” – after the most renowned and used dashboard model at the international level – implies these two major concepts: the strategic importance of the measurements (*scorecards*: used for taking note of

the facts that matter in sports competitions); the integrated view of a company's performance, that is the "balance" (*balanced*).

The first part of the book, featuring four chapters, is dedicated to the exploration and in-depth study of the concepts and tools that are necessary for setting up a management dashboard, based upon the Balanced Scorecard model. The first chapter analyses the key question concerning the identification of critical phenomena and illustrates the logic behind the design of a system of indicators that is strategically aligned and balanced. In the second chapter, the "circular" approach to the implementation of the BSC model is presented; this approach reverses the traditional top-down logic, but is actually in line with the organisational and cultural peculiarities of small and medium-sized enterprises. The goal of the third chapter is to examine the characteristics of the processes that lead to a company's strategy and to highlight the role of the BSC model in such processes. Finally, the fourth chapter deals with the comparative analysis of the most renowned models used to measure performance, so we can appreciate – in a broader perspective – the conceptual and practical importance of Balanced Scorecards.

The second part of the book describes the experience of three SMEs as they implemented a management dashboard based upon the Balanced Scorecard. The enterprises are: Valbona, Home Cucine and Uniflair. Three companies of different size (from about 50 to 300 employees), which are dedicated to greatly heterogeneous businesses (canned products, modular kitchens, precision conditioning and raised-access floor panels), but are all extremely willing to improve and innovate their administration and management. A willingness that goes back to the basic ability to do some serious soul searching and to the desire of experimenting new solutions. These qualities are rather critical as we approach a reality where the level of innovation may become one of the few winning features on the globe's competitive arena.

This work owes much to a lot of people. We wish to acknowledge Professor Giovanni Bernardi's contribution with his enlightening discussions and precious advice, which helped us throughout our research. We also wish to express our gratitude to Professor Umit Bititci (University of Strathclyde, Glasgow, UK) for sharing his extensive experience with us, thus enriching our observations with worthy suggestions.

We would like to thank the managers, the entrepreneurs and the professionals whom we have worked during the last 10 years; they are too many to mention without taking the chance of leaving someone out. However we would like to mention the companies that have worked with us: Antonio Carraro, Blowtherm, Carel, Galvene, Gruppo Giplanet, Home Cucine, Insula, Luxardo, Piaggio & C., P3, Scilm, Crefin, Falegnameria Gastaldello, Fila, Munari, Rea Robotics, Sirmax, Uniflair, ZMI Industries, Zp Trasporti, Berto's, Modi Nuovi, Griggio, Sauro, and AB Analitica.

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Chapter 1

Measuring Business Performances: The Balanced Scorecard Model

Abstract. In this chapter performance measurement system is described as a balanced and strategic system that is able to support the decision-making process by gathering, elaborating and analysing critical information. The search for balance of the measurement system is a way to support and make explicit the need for abandoning the model of opportunistic search for profit, in favour of a circular and holistic vision of the concept of entrepreneurial success. The looking for strategic alignment underlines the need to create a system focusing on a limited number of critical phenomena that lead an enterprise to finding a specific position in the industry and to taking advantage of specific internal resources and competencies.

The design of a strategic and balanced dashboard may be based upon various reference models; in this chapter, we focus our attention on the Balanced Scorecard as it is the most diffused, easy to understand and renowned model at the international level.

Keywords Performance dashboard • Strategic alignment • Critical success factors • Strategy maps • Value proposition • Performance pyramid

1.1 A Dashboard for Enterprise Management

A “dashboard” for the management of an enterprise is not a mere collection of data and indicators. With the widespread use of information technologies, enterprises find themselves dealing with an abundance of information; they possess a lot of indicators but the important information is hidden, drowned in muddled reports or disseminated throughout spreadsheets whose existence is known only to a few people. The information crisis does not appear to be correlated with a company’s computation and communication capabilities: it is in fact rather curious and interesting

to read again today the famous article by Ronald Daniel that was published in *Harvard Business Review* back in 1961, and actually entitled “*Management Information Crisis*”. Here is an excerpt: “[...] companies were plagued by a common problem: inadequate management information. The data were inadequate, not in the sense of there not being enough, but in terms of relevancy for setting objectives, for shaping alternative strategies, for making decisions, and for measuring results against planned goals” (Daniel 1961).

A “management dashboard” is firstly a *performance measurement and management system* (hereinafter referred to as PMS), that is an *integrated* set of performance indicators or measures which are being used to quantify the effectiveness and efficiency of the actions (Neely et al. 2005), so to enable the management to make well-grounded decisions through the acquisition, integration, analysis and interpretation of appropriate data (Neely et al. 2002b).

A “management dashboard” must also serve as a *strategic and balanced* system (Fig. 1.1).

Strategic because the set of indicators should be the result of an accurate selection, based upon the identification of critical success factors (CSFs) – the elements that characterise – in a qualitative fashion – the company’s strategic choices (De Waal 2007); *balanced* because it should provide a holistic view of how the company works; the critical factors of success and the indicators should not only be looked for in the financial realm, but also, for example, within the relationships with customers and suppliers, within the features that tell how a company’s innovation processes function and how closely the skills of the human resources are to preset competence profiles.

Why are the concepts of balance and strategic alignment essential in the creation of a management dashboard? In the following paragraphs we will propose a reasoned answer to such a question.

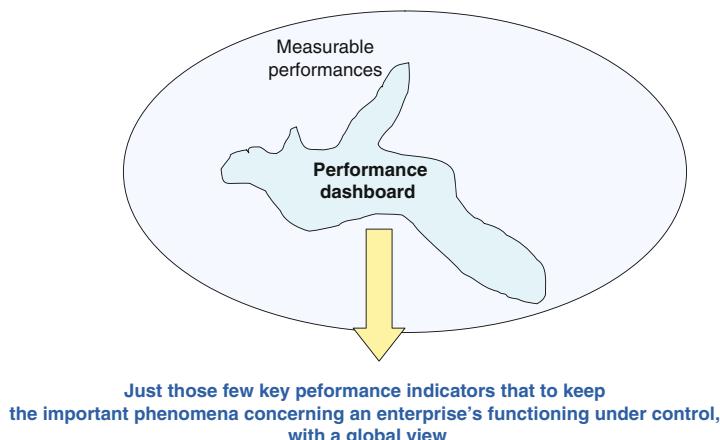


Fig. 1.1 A dashboard to manage an organisation

1.2 Looking for Balance

Why is it so important to look for balance? Why is it essential to create a dashboard that will not simply contain financial-related indicators?

Over the years, the scarcity of reporting systems stemming from general and analytical accounting has been widely mentioned and discussed in literature. Almost 20 years ago, in a famous article published in *Harvard Business Review*, Robert Eccles points out that it is dangerous to be short-term oriented with a focus on financial results, and highlights the need for a revolution in performance measurement: “At the heart of this revolution lies a radical decision: to shift from treating financial figures as the foundation for performance measurement to treating them as one among a broader set of measures” (Eccles 1991). Being short-term oriented limits the search for growth opportunities and the attention to product/service innovation leads to restrained investments in human resources and in the continual improvement of all the operational processes, thus making the enterprise weak and highly susceptible to the pressures of the social and competitive environment.

Besides from being short-term oriented, there is also a problem of time-related lag: financial performances are “lagging” indicators, in the sense that they measure “today” the effects of decisions made several months prior (Neely et al. 2002a). A dashboard featuring only lagging indicators is undoubtedly inadequate to travel into the future: it needs to contain “leading” indicators as well, so it may capture the condition of an organisation’s internal abilities and the relations with the environment and hence assess in advance the drivers of future financial and competitive performances.

The need for balance though has even deeper roots and motivations: what is being systematically measured and assessed is the *reflection* of the *success concept itself* which permeates the enterprise’s organisational culture. Coda and Mollona (2006) effectively demonstrated how, at the foreground of solid, sustainable and winning entrepreneurial formulas, there is an integrated and circular vision of “success”: they imply an interest and a balanced attention to financial results, social results (trust, dedication, cohesion and participation) and competitive results, which feeds one another in a virtuous circle (see Fig. 1.2): “profit comes into being as it derives from a superior ability to meet the customers’ needs and feeds a superior ability to meet the expectations of social parties. The latter in turn produces trust, dedication, cohesion and motivational impetus, which are all critical elements for a superior competitive performance” (Coda and Mollona 2006).

On the other hand, there are entrepreneurial formulas in which the idea of success identifies with that of profit “which comes from the exploitation of a competitive advantage whose foundations are more or less fragile or consistent. The foundations may be environmental conditions providing a simple opportunity to make profit and sooner or later destined to no longer be available, thus nullifying the competitive advantage. This is then a typically fleeting advantage of costs or of mere presence on the market without the obstacles and restrictions that competitors are subject to [...]. In other cases instead, the foundations of success are represented by distinctive competencies in the technological area, typically featuring a differentiation-type of competitive advantage (superior product

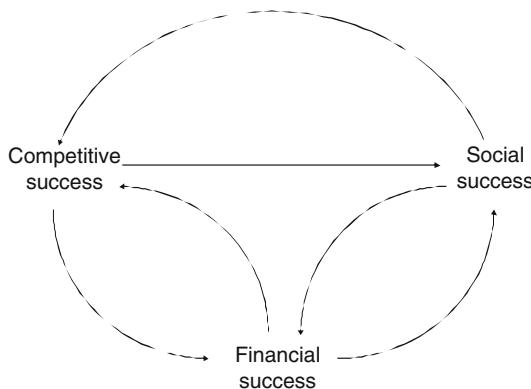


Fig. 1.2 The circular vision of entrepreneurial success (Coda and Mollona 2006)

performances). [...] In any case, whatever the bases of success, they are ultimately made up of one single critical factor or element in terms of success of that one particular entrepreneurial set-up. And the latter stands only and until that factor does not give in under the pressure of competitors' initiatives [...]. It is therefore a precarious success." (Coda and Mollona 2006).

The search for balance of the measurement system is hence a way to support and make explicit the need for abandoning the model of opportunistic search for profit, in favour of a circular and holistic vision of the concept of entrepreneurial success: the vision that characterises enterprises, which are systematically innovative and lean toward total entrepreneurial excellence (i.e. pertaining to all business processes) and are open to continual learning.

It is interesting to see that the balance of the measurement systems is also strongly supported by the "excellence models" in business management developed by the *European Foundation for Quality Management* ("EFQM Excellence Model") and in the United States by the *National Institute of Standards and Technology* ("Performance Excellence Framework", known as the "Baldrige Award" model). Excellence models provide some *reference outlines* whose purpose is to actually interpret – in a mostly non-prescribed fashion, in terms of methodologies, techniques or tools – the concept of "business excellence", by defining a set of basic *principles/concepts* and a collection of *practices* (the activities that are supposed to incorporate the principles) that will turn the principles into operations.

It is useful and interesting to examine the principles that inspired the two above-mentioned models. The "Baldrige Award" model is based upon the following values and key concepts:

Far-sighted leadership. The leaders are the organisation's "trainers". A leader's role is to trace the company's "direction of movement" and make it obvious and understandable; to create the focus on customers and high expectations, taking into account the needs of all stakeholders; to stimulate innovation and encourage the building of knowledge and skills; to inspire and motivate the whole workforce and to promote employees' participation, development, learning and creativity.

Customer focus. Business quality and performance are assessed by the customers.

Therefore all the product/service characteristics that provide customers with value and satisfaction must be taken into consideration; trust and loyalty are the foundations of customer relationships. Being customer-focused has strategic importance if a company wishes to maintain high levels of customer loyalty, to acquire market shares and to grow in the industry.

Corporate and personal learning. Learning is the essence of working activities.

At the organisational level processes have to be continually improved and people have to have the opportunity to learn and practice new skills, as personal learning can actually lead to greater satisfaction and versatility, to bigger opportunities to learn about the organisation and a more fertile environment for innovation.

Workforce and partner focus. The success of an organisation depends more and more on the know-how, the skills, the innovative creativity and the motivation of its workforce and partners. Placing value on the workforce means to be totally committed to their satisfaction, development and well-being; organisations must build both internal *partnerships* (for example co-operating with trade union representatives) and external ones (with suppliers, customers, educational institutions) in order to better pursue their goals.

Agility. The current competitive environment expects organisations to be greatly flexible and to have the ability to evolve quickly.

Focus on the future. In order to pursue a sustainable growth and to dominate in the market, it is necessary to be highly future-oriented and willing to make long-term commitments with one's *stakeholders*.

Managing for innovation. Innovation involves all business activities; it needs to be encouraged and promoted through adequate organisational solutions; it shall be the spirit that drives everyone's daily work.

Managing through facts. Organisational performances must be measured and analysed (in a global view) in order to be able to plan and improve one's operational practices and to be able to confront with one's competitors.

Public responsibility and citizenship. Within a company's actions and decisions, there needs to be a diffused awareness of the responsibilities that the organisation has toward the community (ethics in business affairs, safeguard of public health, safety and protection of the environment); practicing "good citizenship" means sustaining initiatives of public interest, within the limits of the available resources.

Focus on results and on the creation of value. Results shall focus on the creation of value for all *stakeholders*.

The main principles that are at the base of the EFQM model, instead, are as follows:

- *Results orientation.* Being able to maintain a position of success depends on the ability to meet, in a balanced way, the expectations of all the organisation's stakeholders: customers, suppliers, employees, shareholders, as well as of society in general.
- *Customer focus.* The customer is the ultimate arbitrator of the product/service's quality, therefore the customer's needs must be perfectly understood and the customer's satisfaction has to be measured and monitored.

- *Leadership and constancy of purpose.* The attitude of the organisation's leaders shall create clarity and unity of intents and an environment where people can excel.
- *Management by processes and facts.* An organisation is more effective when all its interrelated activities are understood and systematically managed, and when the decisions regarding current operations and improvement projects are made using reliable information.
- *People development and involvement.* Employees' potential must be fully valued in a cultural context that shall support and disseminate the values of trust, involvement, attention to continuous learning and improvement.
- *Continuous learning, innovation and improvement.* routines and organisational behaviours, that are necessary for searching and implementing continuous incremental improvements in business activities and performances, shall be developed and adequately supported; creativity and innovation shall be encouraged and supported as well.
- *Partnership development.* An organisation is more effective when it establishes value-adding relationships founded upon trust, sharing of knowledge and integration.
- *Corporate social responsibility.* The company and its employees are aware of the impact that their business has on society and are committed to exceed the minimum regulatory framework.

The compliance of these principles with the circular and holistic view of entrepreneurial success is evident and clearly exists in the *requirements on measurement systems* featured by excellence models (Garengo 2009). Let us look at the EFQM model, as illustrated in Fig. 1.3. This structure indicates that excellence in

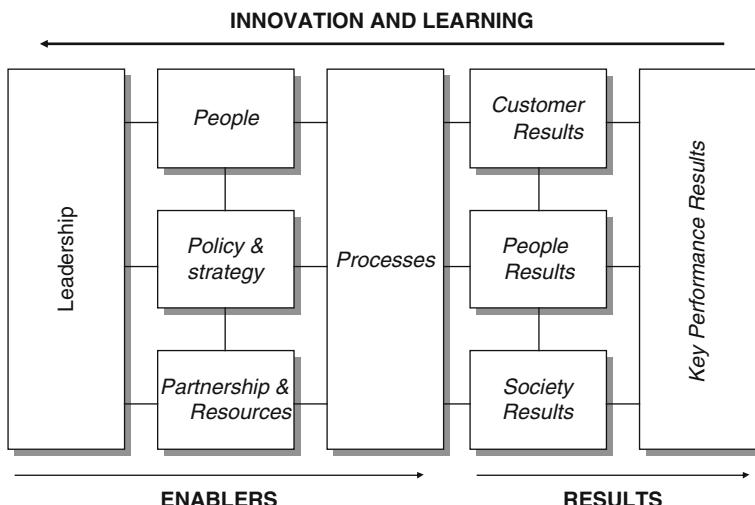


Fig. 1.3 The EFQM model

“results” is achieved by a sound combination of “enablers”: the enablers criteria cover what an organisation does; the results criteria cover what an organisation achieves; the arrows emphasise the dynamic nature of the model: innovation and learning processes (stimulated by patterns that are not considered satisfactory in the results) lead to improvements in the enablers, which in turn cause improvements in the results.

The model makes it clear how wide and balanced the vision of “results” and the concept of “excellence” have to be: the results concerning *customer* relations are to be monitored; as well as the results concerning the *people* in terms of satisfaction and motivation; the results concerning the relationship with *society*, intended as a group of individuals – where employees, customers and business partners are not included – with their own needs and expectations; and finally, the *key performance results* of both financial nature and operational nature (efficiency and effectiveness, internal results of business processes). Similarly, the U.S. excellence model requires the result measurements to include the following: assessment of the product/service’s quality, market and financial performances, results pertaining to the management of human resources, society results and results pertaining to key performances of critical processes.

1.3 Looking for Strategic Alignment

As discussed earlier, a “management dashboard” should be thought of as a *strategic* system; in other words as a system *focusing* on a limited number of “important or critical phenomena”. The strategy may be seen as the set of choices (rationally planned and/or creatively improvised, as we will further describe in the third chapter) that lead an enterprise to finding a *specific position* in the industry and to taking advantage of specific internal resources and competencies. Such a position (which may be thought of as a “niche” or market segment, or as a more complex set of various product-market combinations) *shapes* those *factors* that are *critical* to the *success* of the enterprise (CSFs, oftentimes defined as “strategic goals”): “those few key areas where things must go right for business to flourish” (Rockart 1979). It is important to point out that critical success factors are not necessarily unique to a single organisation; CSFs may in fact be classified into four main categories (Rockart 1979):

1. “Environmental” factors: the position of the business in the environment is also influenced by the economic and social situation of a certain historical period and its geographical location; a certain economic/social environment influences enterprises in a general manner and hence their CSFs;
2. “Industry” factors: these are the factors that reflect the critical areas common to all organisations belonging to the same industry;
3. “Competitive” factors (that is, those that are closely connected with the entrepreneurial formula): these are the factors that are unique to a single enterprise,

which is the product of its history and the choices that led the organisation to operate in one or more product/market segments (with a certain system of products/services) and to interact with a specific network of social parties;

4. “Time” factors: considerations made on internal administration often lead to “time” CSFs, which have to do with overcoming contingent situations of difficulty for the company.

The concept of CSF is extremely important when planning a measurement system, because it is a starting point in the identification of performance measures that are supposed to be strategically aligned. A Critical Success Factor – as it *qualitatively* describes the phenomena, the areas of “excellence” that are especially important in relation to the environment, the industry, the entrepreneurial formula and contingent situations – represents the *raison d'être* of performance measures. Figure 1.4 shows an example of connection between CSFs and indicators: the qualitative description of a phenomenon, which is important to the company (“the impact of innovation on competitiveness”), is translated into operations and made *measurable* thorough two indicators.

The translation of a phenomenon into a set of indicators, whose goal is to numerically “capture” it, is by no means an easy operation. Two possible distortions could come about, as described in Fig. 1.5 (Becker et al. 2001). The first one is incompleteness – the chosen indicator or indicators do not fully seize the underlying phenomenon (for example, measuring the impact of product innovation exclusively with the company’s turnover); the second one is “contamination”: the adopted measures also capture other phenomena and, as a consequence, “contaminate” the data (for example, measuring the impact of product innovation with the annual

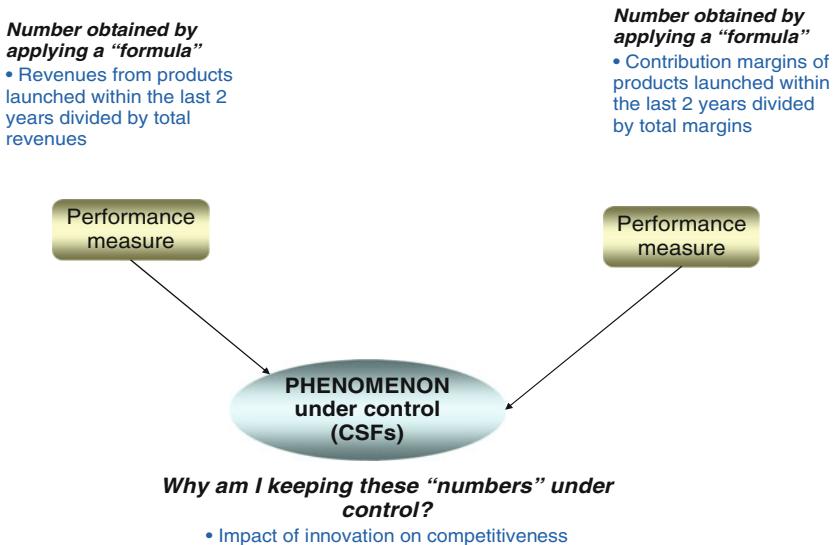


Fig. 1.4 The linkage between performance measures and CSFs

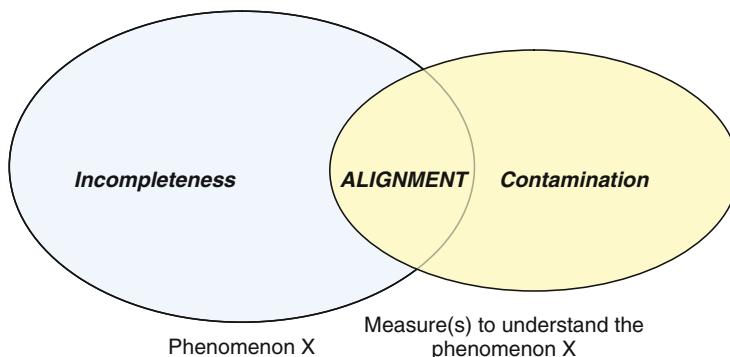


Fig. 1.5 The relationship between phenomena and indicators (Becker et al. 2001)

increase of the market share: such an indicator is certainly correlated to innovation, but is also connected with other phenomena: improvement of communications, reduction of costs, improvement of product's price positioning, etc.).

Therefore, a performance measurement system is not a mere collection of measures; the presence of numerous indicators and the proliferation of reports do not generally indicate a “management dashboard”. An effective dashboard features linkages between the indicators and the various critical success factors that characterise the enterprise’s position in the environment. The low-cost power of information technologies has amplified the difficulties connected with the selection of data that are truly important: seduced by technology, we tend to measure too many things. The information overload produces just the opposite effect of an accurately designed measurement system: instead of focusing upon a few important things, we lose the sense of direction and we consistently reduce the production of useful knowledge to decision-making.

A dashboard that focuses upon critical success factors also allows us to create what Kaplan and Norton (1996) defined as the “double-loop management”. As illustrated in Fig. 1.6, a strategic and balanced PMS is the key element where two loops of “strategic” nature are engaged (for further details on the relationship between a measurement system and a strategy management, please refer to Chap. 2). Through the dashboard, we may close the loop of *strategy control*:

1. The indicators connected with the critical success factors are the basis for the definition of the performance targets and for the selection of any initiative and investment;
2. The implementation of strategic choices may be monitored because organisational actions are evaluated through a set of strategically aligned measures.

Furthermore, the dashboard allows us to critically think about the entrepreneurial formula and to make the loop of *strategic learning*: are the hypotheses underlying the company’s strategy confirmed in the trend of the key performance measures? Is focusing upon a specific “competitive factor” the right thing to do?



Fig. 1.6 The “double-loop” management (Adapted from Kaplan and Norton 2001)

The “double-loop” management represents the evolution of a management control system from a “traditional” model – which emphasises financial results and neglects the determinants that are at the basis of competitive advantage – to a “strategic” model: a management control becomes strategic when it tries to capture, in a non-occasional fashion, the strategy at the level of management choices and actions; when it systematically brings the managers’ attention to the strategic consequences of their daily activities.

1.4 The Balanced Scorecard as a Reference Model

The creation of a strategic and balanced dashboard may be based upon various reference models; the Balanced Scorecard (BSC) is the most diffused and renowned model at the international level and it is extremely easy to understand it (Chap. 4 is dedicated to a comparative analysis of alternative models). The basic concepts of the BSC were elaborated by Kaplan and Norton in a famous article published by the *Harvard Business Review* in 1992; after that, the concepts were further defined and developed in numerous publications (especially in books published in 1996, 1999, 2003 and 2008). Kaplan and Norton’s context of reference usually features multi-national companies with a multi-division organisation; further in this book, we will describe the BSC model in our re-elaboration and will refer to a rather different context: that of small and medium-sized enterprises organised by functions.

The BSC model calls for a balanced overview of business performances, according to four *perspectives*:

- *Financial (F)*: performance measures relevant to key indicators of the company's financial status;
- *Customer (C)*: measures relevant to critical success factors within customer relationships;
- *Business processes (BP)*: measures relevant to critical functioning factors of internal processes;
- *Human resources (HR)*: measures relevant to corporate environment and culture and to the availability of critical competencies.

Figure 1.7 shows the logical connections between the four perspectives. The financial performances are the tip of a tree which is dependent upon the strength of the layers below it: corporate environment and culture, along with individual competencies, are the roots on which the efficiency and effectiveness of business processes are founded; in turn, the functioning of processes influences the ability to provide customers with value.

As previously indicated, the selection of measures in the various perspectives must be based upon the concept of CSFs (we will concentrate more on how to identify CSFs in Chap. 2, where we will propose a substantially different approach from that supported by Kaplan and Norton). If we represent the critical success factors in the four perspectives and we look for any logical connection, what we will see is the so-called *strategy map* (an example can be found in Fig. 1.8). The CSFs' map is called "strategic" because it is a visual and general description of how an organisation wants to create value for its stakeholders. The strategy map describes the *logic* of the business strategy, making sense of the measures contained in the BSC.

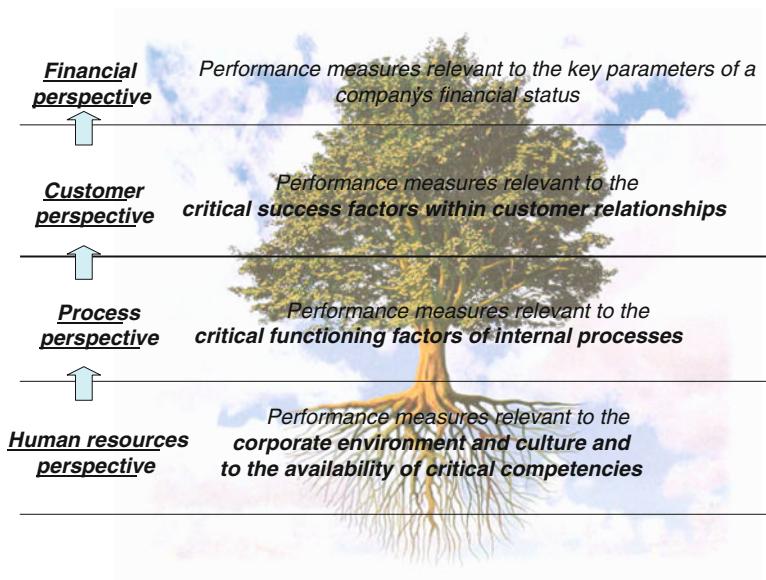


Fig. 1.7 The four perspectives of the balanced scorecard

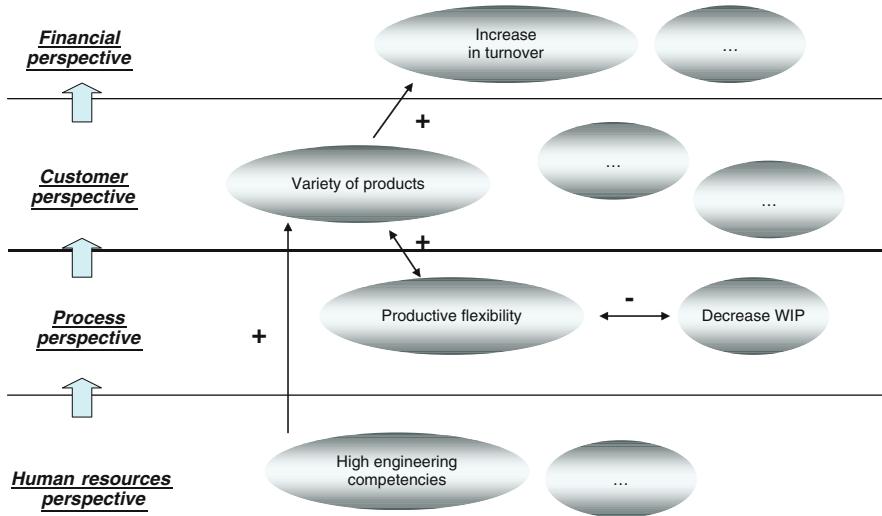


Fig. 1.8 An example of “strategy map”

Figure 1.6 illustrates the linkages between the CSFs. Although in literature importance is given to the clarification of those connections, we do not believe this exercise to be so important: as discussed further on in the book, it is absolutely misleading thinking of proposing some cause–effect relationships between factors in order to verify their validity using mathematical and statistical methods. What matters is to identify the factors and know that they are obviously interconnected – often with non linear patterns and with time-related delays (the effect of a change in a factor becomes evident in another factor after a certain period of time). What we deem important (if looking to point out the main logical connections between CSFs) is to highlight the relationships in *trade-off*, meaning those connections between factors where the search for improvement of certain performances must inevitably take into account the worsening of others and, in those situations, it is therefore necessary to look for the best balance possible.

Let us now further examine each perspective, so to give some reference frameworks that can be of help in the development of one’s dashboard of indicators.

The EF perspective features measures that answer the following question: *what are the key indicators of financial nature that our attention needs to focus upon?* Such measures may be grouped into three categories (Fig. 1.9):

1. Summary measures of financial results (profitability rates, contribution margins, liquidity ratios, etc.);
2. Productivity/efficiency measures (cost reduction indexes, revenues per operator, etc.);
3. Growth measures (revenues, investments, etc.).

Such categories may be useful to highlight the presence of balance even within the EF perspective: as a matter of fact, *growth* and *productivity* represent two

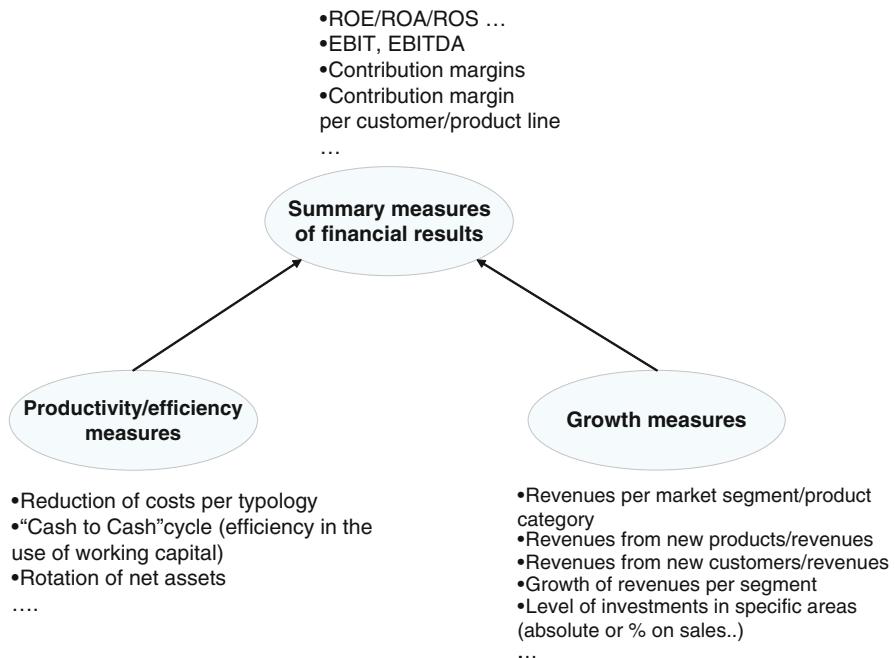


Fig. 1.9 The three measurement categories in the financial perspective

forces, which are often opposed to each other and are to be kept in equilibrium; generally speaking, long-term orientation to growth has to be adequately balanced with a view to a short-term search for efficiency and productivity increase.

In the customer perspective, performance measures must be founded on an accurate understanding of who the target customers are and what the “value proposition” to the target customers is. The “*value proposition*” that an organisation offers its customers can be outlined in three components (Kaplan and Norton 1996):

- *Product/service attributes*, which include the functional qualities of a company’s offer and prices;
- *Customer relationships*, featuring the aspects concerning the intrinsic characteristics of the offer (for example punctuality, response flexibility, quality of customer service);
- *Image and reputation*, the size of the value proposition reflecting the intangible factors that may attract customers.

This simple conceptualisation of the value proposition is useful when it comes to identifying a company’s critical success factors and, therefore, to answering the following question: *why should our target customers buy our product/service instead of our competitor’s?* The performance measures that enable the CSFs may be developed on three different levels, as indicated in Fig. 1.10.

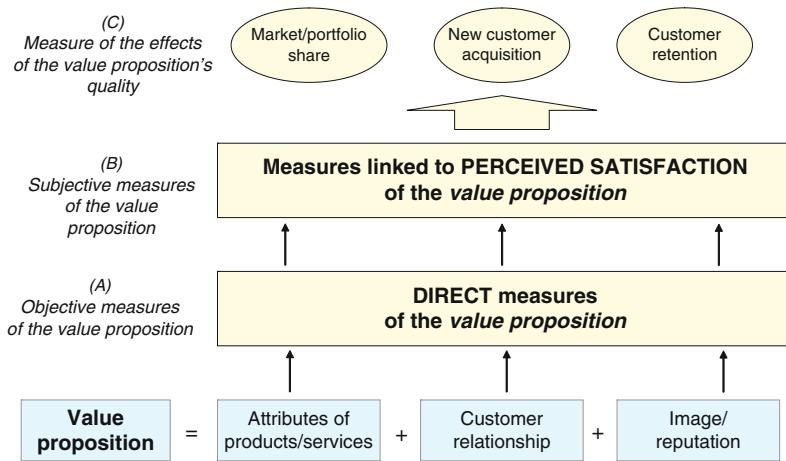


Fig. 1.10 The three measurement levels of the “value proposition”

At the first level there are the *objective* measures of the value proposition, that is the metric and numeric measures that do not depend upon the person responsible for the measuring: as far as customer relationships are concerned, an example would be the percentage of deliveries (within a certain timeframe) made on the day agreed upon. At the second level there are the *subjective* measures, featuring the customer’s *assessment* (or more generally an assessor’s assessment) on the value proposition. At the third level there are the measures of the *effects* of the value proposition’s quality, which are typically evaluated according to three dimensions: market and/or portfolio share, new customer acquisition and customer retention. The measures along such dimensions must of course be built with the specific customer groups or market segments of the company in mind.

The business process perspective is an answer to the following question: *what are the activities that require special attention and what should we excel in?* The critical factors that pertain to the functioning of the processes are with no doubt connected with the peculiar configuration of the *value proposition*: the objective measures of the value proposition in the customer perspective are oftentimes the process measures that are *visible* to customers (for example, on-time deliveries are a typical measure of the level of service in an order process).

The process perspective may feature measures that pertain to both *primary* processes – those that serve an external customer (product/process innovation, operational processes and customer management processes); and *secondary* processes, which support the primary processes and serve “external customers” (for example, the selection of staff and the management of overdue loans). Figure 1.11 illustrates a general process performance model.

The vertexes of the triangle represent the three key areas of process performance:

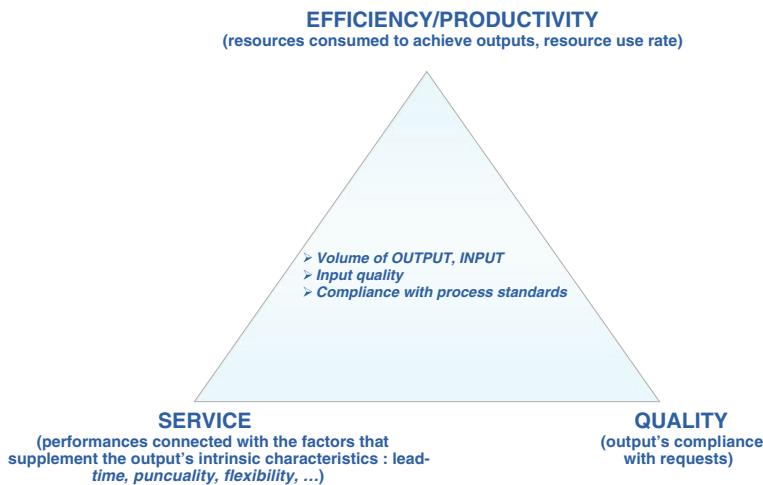


Fig. 1.11 A general process performance model

- *Efficiency/productivity*, which refers to the resources that are consumed to achieve the output and their rate of return;
- *Output quality*, in terms of suitability or compliance with expectations or requirements;
- *Service*, that is the dimension of the performances that pertain to the factors that supplement the output's intrinsic characteristics (for example, delivery times, waiting times, flexibility).

Other indicators are: the volume of the output or input, the quality of the input and any indicator that detects whether a process comply with certain standards (for example, in the case of a new product development featuring the direct involvement of the customer in the initial phases of *concept development*, a cognitive indicator is the extent of direct contacts between the customer and the project team).

The human resources perspective leads to the measurement of “intangible” foundations of entrepreneurial success so to understand three key aspects of the *person-enterprise relationship*: (1) what people do [with respect to the working relationship with the enterprise], (2) how they feel and (3) what they know (Ulrich 1997). People’s behaviour towards the organisation (“*what people do*”), intended as the objective manifestations that reflect aptitudes and level of satisfaction/dissatisfaction towards their job and workplace, may be detected through some classic quantitative indicators: absenteeism rates, turnover, extent of settlements.

Surveys on corporate climate and culture, instead, intend to directly detect people’s *perceptions* (“*how people feel*”) of the aspects that are considered important for the success of an organisation (for example, collaboration, trust in leaders, identification and commitment, etc.): such dimensions are usually evaluated through a number of statements upon which the respondent is supposed to express

his/her level of agreement or disagreement (for example, using a range from 1 to 5; ref. the instrument generated by Cameron and Quinn 1999).

Finally, there is the matter of competency assessment for the achievement of the company's strategic objectives ("what people know"). Such an evaluation is extremely complex and requires the processing of *competence profiles* for the roles that are being assessed (for Kaplan and Norton the focus should be upon strategic professional families, that is those who mainly influence the improvement of internal processes) and the definition of the patterns that assess the skills that people currently possess so to identify any "competency gap" with respect to the expected results.

In order to fully understand the level of difficulty and complexity of such a "measurement" operation, we deem it important to examine the notion of competency. First of all, two views can be distinguished: the *input or worker-oriented view* (competencies as the "stock" that a person possesses) and the *output or work-oriented view* (competencies as the effective accomplishment of a task) (Horton 2000).

Input orientation is a typical North-American approach to competencies (Horton 2000) originated by Boyatzis' research (1982), who defined competency as "an underlying characteristic of a person which results in effective and/or superior performance in a job". According to this perspective, competencies have a "behavioural" nature, since they are linked to *personal qualities* and *interaction patterns* with others; Fig. 1.12 shows the 19 competencies (divided into six categories) that were analysed by Spencer and Spencer (1993).

In order to be able to *observe* a specific competency, and to then assess its level, Spencer and Spencer developed scales of "*behavioural indicators*" to define the different levels that the competency can be displayed at; for example, for the

Productive and operational competencies	<ul style="list-style-type: none"> • Achievement orientation • Concern for order, quality and accuracy • Initiative-minded • Information seeking
Assistance and service competencies	<ul style="list-style-type: none"> • Interpersonal sensitiveness • Customer orientation
Influence competencies	<ul style="list-style-type: none"> • Persuasiveness and influence • Organisational awareness • Relationship establishment
"Management" competencies	<ul style="list-style-type: none"> • Developing others • Leadership skills • Team work and co-operation • Team leadership
Cognitive competencies	<ul style="list-style-type: none"> • Analytical thinking • Conceptual thinking
Personal effectiveness competencies	<ul style="list-style-type: none"> • Self-control • Self-confidence • Flexibility • Commitment to the organisation

Fig. 1.12 Competencies, as analysed by Spencer and Spencer (1993)

competency “spirit of initiative” there are two scales of behavioural indicators – the timeframe and the self-motivation. As an example, below is part of the timeframe category:

- *Level -1*: only thinks about the past; does not strive to take advantage of opportunities, fails.
- *Level 0*: not applicable or does not show initiative.
- *Level 1*: shows persistence. [...]. Does not easily give up when things do not go as planned.
- [...]
- *Level 5*: acts in a 3–12 months perspective. Foresees and prepares for an opportunity or for a problem that others cannot see. [...].

The scales of behavioural indicators make it easier to identify the level of competence that an individual shows to possess; they, in fact, may be used to ask, through a specifically designed survey, what level of scale better describes the typical behaviour of the individual in his/her job. Drawing them up though is a rather complex and expensive process; in many instances, simpler assessment scales are preferred (even though they are less “precise”) based upon how frequent the behaviours indicated in the description of the competency are. Based on the direct observation of behaviours, the assessor selects a value for the “frequency of observation” (for example, with values ranging from 0 to 7: *never* – 0, *seldom* – 1, *often* – 3, *very often* – 5, *always* – 7).

The output orientation is typical of the British (and, more generally, of the European) approach to competencies, as in the case of the National Occupational Standards of the United Kingdom for the accreditation of National Vocational Qualifications. The system describes what the outcome of a certain activity is supposed to be and what knowledge is to be applied. As an example, Fig. 1.13 illustrates 1 of the 25 areas of competency that make up the *National Occupational Standards* for the role of *Technical Communicators*. Even in this case, the assessment may be done through the preliminary elaboration of “behavioural indicators” that would help detect the presence and the level of a specific competency or through simple numeric scales that the assessor would use to *globally* assess the level of confidence in the competency, appropriately described in a “dictionary”.

Measuring competencies, in both the output and input orientations, is intrinsically founded upon the assessors’ evaluation and this aspect brings up three very delicate matters: the assessments’ *subjective nature*, the assessors’ *ability to evaluate*, the assessments’ *accuracy*.

The subjective nature of assessments is not a characteristic that can be eliminated because, “when it comes to assessing people’s abilities, there is no *term of reference* that can be used in a simple all-encompassing unquestionable way, like we would if we were to measure or weigh physical-natural objects”; it is, however, possible to try and *minimise* the impact of subjectivity by specifying, as best as possible, the *object* of the assessment, by developing “clear classifications of behaviour to validly represent the different degrees of competency strength, with sufficient clarity and uniformity”. The granularity, that is the degree of detail used to define competencies (for example,

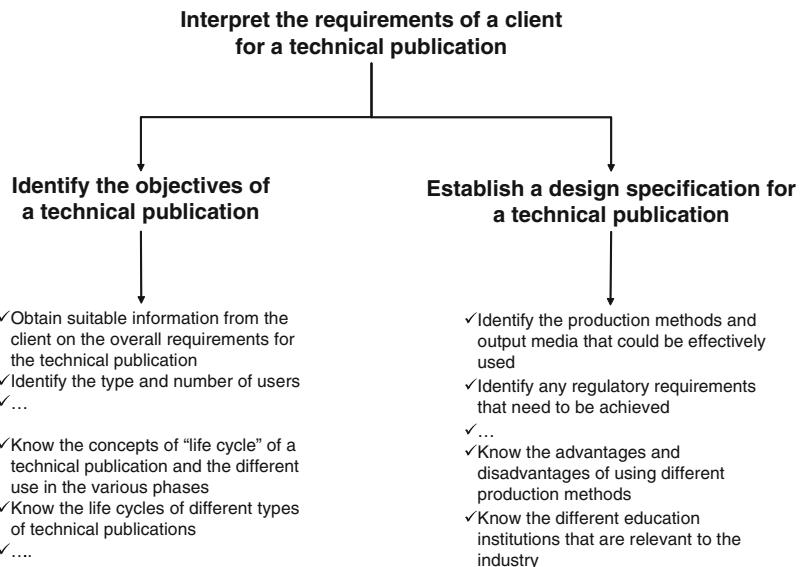


Fig. 1.13 A definition of output-oriented competency (National Occupational Standards, UK)

through the above-mentioned behavioural indicators), is the antidote to arbitrary interpretations. It is worth mentioning this interesting example: suppose we have to assess the leadership skills of a combat unit commander. If the assessment criterion were expressed like this: leadership is the ability to guide people, then this would certainly be the case of a subjective criterion because it would be an ambiguous term of reference. Measurements would likely be different in meaning, depending on the assessors' beliefs about the conduct called *guiding people*. What traits should such a conduct show? Is someone who uses force and threats to control his/her soldiers at will a true commander or is it rather someone who knows how to use a wise strategy to convince them that his/her decisions are right? Or yet, is it both (and more) depending upon the circumstances? Our evaluation will change according to the meaning and importance we give to the notion of “*guiding people*”. However, if we better explain the concept by adding that, for example, a true military leader behaves by standing on the front line at the head of his/her men on the battlefield, then we start building a metric thanks to which the margins of an assessor's subjective interpretation become narrower.

The second problem is the assessment capability of the assessors: judging the presence or the level of a competency in a real situation calls for a thorough conceptual understanding of the competency model and the ability to “read” organisational facts in light of such a model. Finally, the third problem is connected with whether the evaluations are accurate and complete: whoever assesses can make a *mistake*; and the error may not only be the result of a lack of adequate information, but also of voluntary distortions that stem from personal interests (this is the case of compressed evaluations or discriminatory evaluations).

The combined presence of these three issues has led scholars to confirm the importance of multi-perspective assessments; therefore, an assessment needs to be carried out by high executives, as well as those below them, by co-workers (peer evaluation) and by the person being evaluated.

1.5 Using BSCs: The Performance Pyramid

In the previous pages we stated that a strategic and balanced dashboard is the pivot where two main loops are strung together: the control loop and the strategic learning loop. In the following pages we wish to further discuss the operational aspects connected with the use of the BSC by tackling the following questions:

- How often and in what manner should the indicators contained in the dashboard be examined?
- What IT tools should be used to support the elaboration and analysis of the indicators?

In order for the BSC to become the pivot of the strategic control loop, an organisation has to plan what Kaplan and Norton (2008) called the “*new management meeting*” or “*strategy review meeting*”: that is a meeting dedicated to monitoring critical performances and discussing the implementation status of the strategic choices. This meeting is usually held once a month, even though, in many cases, the frequency may be changed to once every 3 months. It is not advisable to meet less often though, because of the risk of dangerously reducing the perception of how important it is to keep the critical success factors identified in the strategy map under control. Participants must represent the company’s management team: in the case of SMEs, the top managers and the first levels that report to the general management.

The meeting’s agenda should *not* focus upon a *presentation* of performance data, but upon a discussion of the *causes* that determined the current performances, of anomalies and of proposals for future interventions. It is therefore necessary for all participants to learn in advance about BSC reports: reviewing performances is an activity that needs to be *continually* performed in between meetings. The effectiveness of *strategy meetings* depend upon how participants are familiar with the data that they will discuss about; therefore, dwelling on long presentations on the “*history*” of performances should be avoided and more time should be dedicated to the *interpretation* of performances, to the discussion of problems and to the planning of possible solutions. It is considered a good practice to assign a “*measure owner*” to each performance measure (ref. Niven 2002): the “*owner*” is the one whose duty is to understand the causes behind a certain performance and to activate the necessary resources for the management of any improvement plan. It is important to note that matching a measure with an owner *does not* necessarily reflect an organisation’s structure; as a matter of fact, measures often have an inter-functional impact and their owners should have a responsibility to intervene in the phenomena

being monitored, even if the areas of intervention may not fall under their own direct authority. Hence, identifying owners introduces a “horizontal” managerial dimension promoting the inter-functional integration potential of SMEs’ typical functional structures. For this potential integration to happen though there has to be a well-defined willingness to remove the culture of *authority-focused debates* (“Whose problem is it? Who has got the right to make certain decisions?”) and shift to *responsibility-focused conversations* (“What is the right thing to do?”) (Shook 2008).

The issue concerning the interpretation of the progress of a performance measure in the BSC takes us back to the topic concerning the tools that support data processing and analysis. Figure 1.14 shows how the BSC is “only” the tip of the *performance pyramid*: the dashboard’s job is to *report* the critical aspects of performance patterns; *understanding* the causes requires a data’s “navigation system” able to help analysts with their research.

In its most advanced version, the navigation system is represented by an information technology tool called *Business Intelligence* (BI): BI software enables people to perform complex inquiries featuring automatic aggregations and the combination and integration of information, thus enabling them to analyse phenomena over time. The navigation system turns the BSC into an operational tool for strategic control; if the search for the factors that can give meaning to performances is difficult and requires long times, then a high risk of turning the dashboard into a mere reporting exercise could come true, with the result of voiding the real benefits deriving from the introduction of the BSC to the management of an enterprise.

Figure 1.6 shows how the BSC is also the pivot of another loop: the *strategic learning* one. With this perspective in mind, the management should plan (at least

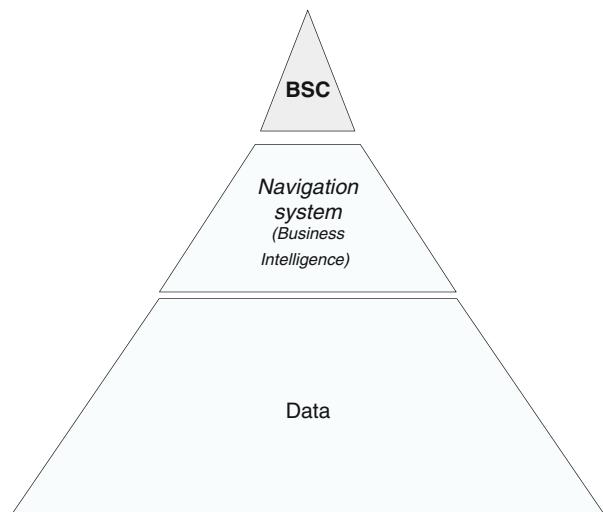


Fig. 1.14 The performance pyramid

every year) a meeting to review the critical success factors that exist in the strategy map and to assess the changes that happened in the external environment so to critically discuss about the organisational setting that is currently being pursued and to redefine the organisation's strategy. The strategy map is a chain of assumptions about cause and effect results: Kaplan and Norton talked about "*strategy testing and adapting meeting*" to stress that reviewing the strategy is sort of a test on the hypotheses that are present in the map; in our opinion this test has a speculative and conceptual nature, not a mathematical-statistical one. We have, in fact, doubts about the actual possibility to validate the cause-effect relationships in the strategy map with statistical correlation tests (where enough data for the analysis exist, of course), as Kaplan and Norton (2008) stated. The idea that a strategy map can detect, in a statistically verifiable way, the chain of relationships between the variables that have caused certain financial results is misleading and conceptually hard to sustain, considering the huge complexity and the chaotic nature of human systems (Thiébart and Forgues 1995)

The strategy map's value becomes evident when it is used as a tool that enables people to express and share strategic priorities; these two aspects can actually facilitate the difficult process of re-formulating a company's strategy and hence feeding the strategic learning loop.

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Chapter 2

The Balanced Scorecard for SMEs: A Circular Approach

Abstract. Scholarly literature offers methodologies for the implementation of a PMS that are based upon a top-down approach and that aim at translating strategy into action, with little consideration to the tendency of small enterprises not to give much importance to the formalisation of their strategic choices. In this chapter, the authors identify a circular methodology to implement a strategically aligned performance measurement system in SMEs. The proposed methodology is based on the Balanced Scorecard Model and features four main phases: (1) the analysis of current “individual dashboards” to actually show the performances that are kept under control; (2) the clarification of the key success factors (CSFs) underlying the measures under control; (3) the definition of the desired strategy map as a result of the comparison between CSFs that are currently under control and the desired strategy; (4) the translation of the desired strategy map into a dashboard of indicators necessary for the implementation of the strategy.

Keywords Circular approach • Performance measurement system implementation • Performance measurement system design • Strategy map

2.1 Implementing the Balanced Scorecard: Traditional Approaches

Implementing a Balanced Scorecard is, no doubt, a complex process that requires careful attention: determining the logical paths to follow in the system scheme and choosing how to involve the organisational actors may appreciably influence the success of the project.

In literature, as well as in practice, the methodology of reference for the implementation of the BSC is, for obvious reasons, the one that Kaplan and Norton developed (Kaplan and Norton 1996a; Niven 2002). Kaplan and Norton’s methodology

features two main characteristics: the *top-down approach* and the involvement of managers in *group sessions*. When we say “*top-down approach*” we refer to a process that establishes performance measures, starting from the identification and formalisation of the company’s *mission* and *vision*. The methodology, in fact, features an initial *executive workshop* with twofold goals: (1) to discuss and develop consensus over the statements pertaining to the mission and future vision of the enterprise; (2) to establish strategic objectives so to translate the business vision into operations for each of the BSC’s perspective. Next, the formation of four sub-groups (one per perspective), each with the task of translating critical success factors into performance measures, is recommended (see Fig. 2.1); Kaplan and Norton then envisaged two more *executive workshops* with the aim of discussing the results of each sub-group and defining the business BSC and the operational plan to be carried out.

It is interesting to note that such characteristics are also found in the implementation methodologies of performance measurement systems that do not adopt the Balanced Scorecard model like, for example, in the *Performance Prism* by Neely et al. (2002a), in the *Cambridge Performance Measurement (PM) Process* developed by Cambridge University (Bourne et al. 1996) and in the *Integrated Performance Measurement Systems (IPMS) Reference Model* of Strathclyde University by Bititci et al. 1997 (ref. Chap. 4).

The *Performance Prism* features a multiple top-down procedure: performance measures are selected through a top-down process (to be repeated for every stakeholder, that is for investors, customers, employees, suppliers and society in general) aiming at identifying the following: (1) expectations and contributions of the stakeholder under consideration; (2) strategies to satisfy the stakeholder; (3) necessary critical processes to realise the strategies; (4) necessary abilities to

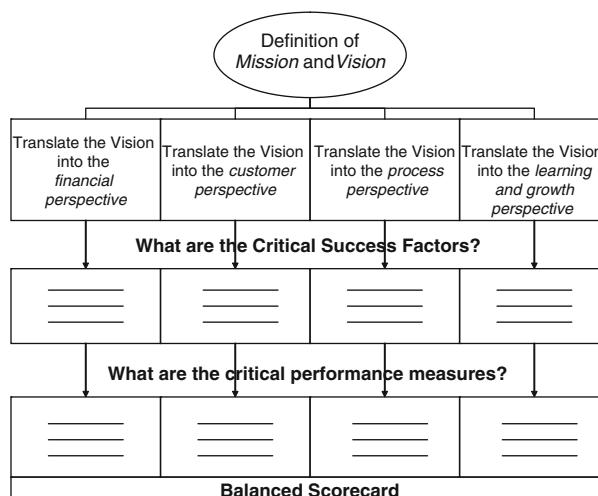


Fig. 2.1 The top-down approach (Kaplan and Norton 1993)

effectively and efficiently execute the processes. The *Cambridge PM Process* features the identification of strategic objectives for each product-customer group in which the company's offer might have segmented and the identification of performance measures for each of them, so that the level of achievement may be detected. The elaboration of the measurement system into the *IPMS* model of Strathclyde University is based upon the division of the organisation into four levels (business, business unit, core processes, support processes) and upon a top-down method where the objectives and the measures, identified at the company level in its entirety, fall down onto the lower levels – business unit, core processes and support processes.

The above-mentioned approaches were developed with large enterprises in mind. In scholarly literature, the issue of transferability to the small and medium enterprise context was only specifically tackled by Hudson's studies (ref. Hudson et al. 2001; Hudson-Smith and Smith 2007). Hudson stated that the main problem with applying the top-down approaches to SMEs is their “extent”, that is the fact that the identification of the critical success factors and the key performance measures for the various perspectives happens at the same time, and the implementation of the operational system is launched after having clearly defined a complete and balanced set of measures. In order to avoid this problem, an implementation method defined as “incremental” is proposed. This method focuses upon “depth” instead of extent: the implementation process features the *sequential repetition* of the “*name, act, use, learn*” cycle for every strategic objective:

- *Name*: the main strategic objective to immediately focus upon is identified;
- *Act*: the performance measures connected with that strategic objective are identified, along with the improvement actions needed;
- *Use*: the measurement system is implemented and the improvement actions are activated;
- *Learn*: the target achievement is monitored and, at the same time, the adequacy of the selected measures is assessed.

Even with this approach, the basic logic is a top-down one; although Hudson clearly pointed out that the development processes of PMSs in small enterprises should be able to exalt informal strategies and overcome limited experiences and competencies in the formalisation of strategies (Hudson-Smith and Smith 2007), as a first step, the *name – act – use – learn* Bourne et al. 1996 cycle requires an actual rationalisation of the strategic vision.

It then appears evident that the top-down logic dominates – even where the design of a specific implementation approach for small-sized enterprises was attempted. In our opinion, it is exactly that logic that needs to be discussed, in consideration of the cultural and organisational specifics of SMEs (Bititci et al. 2006; Garengo and Bititci 2007; Garengo and Bernardi 2007). The distinctive element in the majority of small and medium enterprises is the overlapping of roles (entrepreneur, managers, family members) and such an “institutional overlapping” is often associated with an organisational and managerial structure with peculiar characteristics:

- Dominant role of entrepreneurs and simple structural configuration;
- Lack of formalised management systems and little “engineerisation” of processes, along with an abundance of vague roles;
- An entrepreneurial formula that is often not formally expressed, along with intuitive and informal strategic processes.

Top-down approaches offer a starting point in the establishment of the BSC (i.e. definition of the company’s mission and clarification of its objectives) that collides with such a cultural framework. The organisational and cultural peculiarities of small and medium enterprises call for a new approach in the implementation of the BSC; this approach shall tackle, in an explicit and systematic way, the little interest that SMEs have in rationalising their operational practices and strategic processes, and shall hence reverse the top-down logic.

2.2 A Circular Approach to the BSC

Figure 2.2 illustrates the four main steps of the implementation approach that we named “circular”: the starting point is not the abstract (and often generic) wording of “strategic visions”, but the actual operations of *each individual*, actually expressed by the performance measures that people use, on a regular basis, to manage their labour (Garengo et al. 2007a).

The first phase (step 1 and 2) is dedicated to *unveiling* what is currently kept under control; it is surprising to note how little the global vision of what is actually measured by the organisation’s various actors is diffused. It is important to point out that, in small enterprises, such a lack of vision is bigger than that of larger

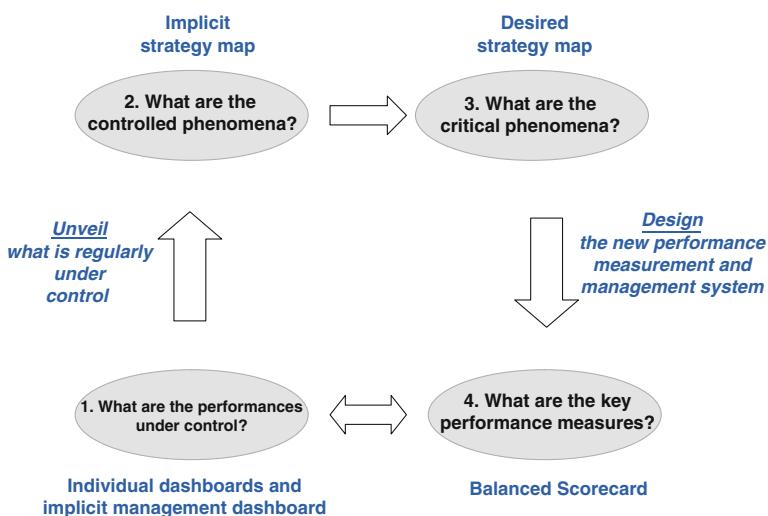


Fig. 2.2 A circular approach to the implementation of the BSC

enterprises, which are generally more formalised and therefore more aware of the status of their measurement system.

Unveiling what the enterprise measures and controls is the first step toward the reconstruction of “individual dashboards” and the *implicit* management dashboard. Individual dashboards are the aggregation of the performance measures that are utilised by single individuals to assess the activities that they are responsible for; the implicit management dashboard is the sum of individual dashboards. The word *implicit* is an important qualification; the “reconstructed” dashboard is implicit because:

- It often is *invisible* to the management; performances are locally monitored and there is no overall vision of the performances being under control;
- It is not the outcome of a rational design process but an accumulation of monitoring needs that have arisen in each business function over the course of time.

The management dashboard is the basis for the subsequent identification of the *implicit* strategy map: the bottom idea is that, from the performances that are *actually* under control, we can try and figure out what the critical success factors, which (implicitly) hold up the currently pursued company strategy, are. The amount of information that the implicit strategy map can offer obviously depends upon the number of individual dashboards being used for its set-up; in view of this, during the first phase both the top and middle managers should be involved.

In order to set up an implicit strategy map, it is necessary to carefully examine each performance measure and to pair each one with the “phenomenon” that it measures – the underlying “critical success factor” (paragraph 1.3). This operation, which requires a great effort because it calls for critical thinking about the reasons behind the figures, enables the company to make sense of the management dashboard and to turn it into an *implicit strategy map*. The various “measured phenomena” may in fact be placed in the four classic perspectives of the BSC (and even connected with assumptions of cause-effect relationships): what emerges is a picture of the “critical success factors” that are currently kept under control and, hence, of the strategy that the enterprise implicitly supports.

Through the implicit strategy map, it is possible to proceed with the design of the BSC (step 3 and 4) using a *differential* approach; the future or “desired” strategy map is built from the implicit strategy map by eliminating and adding:

- Do the present critical success factors reflect the desired strategic orientation? Or are they “strategic” at all?
- Is there any critical success factor that is not present in the implicit map and should then be added?

In an organisational and cultural context, where finding sophisticated formalisations of the strategic vision and of the entrepreneurial formula is rare and where a habit and attitude toward conceptualisations has not developed yet, the differential approach to the establishment of the future strategy map is operatively and psychologically a winning one: it enables a company to overcome the classic “blank page syndrome”

and it makes the intellectual efforts to rationalize the strategic vision easier to face and overcome.

The desired strategy map is then the basis for the identification of the performance measures that will make up the BSC. With step 4 we go back to actual metrics: the approach has been defined as “circular” because the performance measures represent both the starting and arrival points.

The following paragraphs deal with further explorations of the four steps of the method describing some examples of implementations that took place in a few small and medium-sized enterprises with whom the authors cooperated.

2.3 Unveiling what is regularly under control

The first step of the initial phase features the reconstruction of the implicit management dashboard: what are the performances that are normally kept under control? In order to make the gathering of information effective, it is important to draw up a model for the analysis of the existing measurements; for example, a model for the collection of the following information:

- *Person*: who uses the measure;
- *Name*: the name of the measure (pick the one that the company uses, if applicable);
- *Formula*: how the measure is calculated;
- *Location*: the report/file where the measure is located;
- *Timeframe*: the time period that the measure refers to (month, year, 52-week year, stock measure, etc.)
- *Analysis dimension*: any segmentation keys of the measure that are being used (the measure is analysed by product line, by geographical area, etc.)
- *Frequency* of the measure analysis;
- *Benchmark*: any comparison present (for example with the history, with the budget, etc.)
- *Scope*: why is this measure being used? What is the phenomenon that we want to keep under observation?

The analysis model will obviously have to be customised, according to specific business situations. Table 2.1 shows a section of the analysis performed by the company AB Analitica on its measures. AB Analitica was founded in 1990 by a group of people with extensive scientific and commercial experience; it is a small-sized enterprise specialising in the development and sale of diagnostic systems for professional use (breath tests, in-vitro diagnostic medical devices, research products, and molecular biology and fertility tests). It is involved in advanced molecular biology diagnostics in the following sectors: microbiology, virology, onco-hematology, and genetics. AB Analitica’s key competencies are related to diagnostics with molecular biology technologies for both the qualitative and quantitative determination of nucleic acids, the development of biobanking

Table 2.1 An excerpt of the implicit dashboard reconstruction in AB Analitica

Measure's name	Calculations	Comments	Target "What is my goal?"	Position	Whoever analyses the measure
Percentage of accepted proc. tenders	# accepted tenders/# proposed tenders		30% Accepted	Reg. proc. tenders monitoring	Top mgmt
Percentage of accepted offers	# accepted offers/# proposed offers		30% Accepted	Reg. offers monitoring	Top mgmt, MCS
Productions that had to be re-done due to non conformity	# productions re-done due to non-conf./# non-conf. productions	Important info for work load assessment (missing)	<75%	Reg. product non-conf.	Top mgmt, prod. C
Successfully closed Projects	# successfully closed projects/# closed projects over the year	Punctuality is over-estimated due to changed dates that AB Analitica is not responsible for. Presently, it is not interesting to evaluate the entity of the overall delay in months	>75%	yy_mm_dd_R&D	Top mgmt, quality mgr
Punctually closed projects	# projects closed by planned deadline/# projects closed over the year		50%	yy_mm_dd_R&D	Top mgmt, quality mgr
WEBSERVICE tests	# WEBSERVICE tests, current year – previous year/# WEBSERVICE tests previous year		>5%	Management	Top mgmt, prod. mgr
# commercialised UBT pieces	# commercialised UBT pieces by period of current year – same period of previous year/# comm. UBT pieces previous year, same period		>15%	UBT reports	Top mgmt, prod. mgr
Stock management	# products subject to stock controls	To be defined	Reg. stock of breath tests	Stock mgr	(continued)

Table 2.1 (continued)

Measure's name	Calculations	Comments	Target "What is my goal?"	Position	Whoever analyses the measure
			To be defined	Reg. non-conformities	Top mgmt, quality mgr
Evaluation of suppliers' N.C.	# and % over total non-conf. supplies by supplier (divided by serious, moderate, repeated, document-related, delay, conforming) and between the two categories of strategic and leverage suppliers	Sum of reactant costs and workforce (calculated on production costs as far as kits and hourly cost) over turnover per line	<1%	Reg. non-conf. product, production costs and turnover reports	Top mgmt, prod. C.
Cost of non-conforming productions					

management systems, and in vivo/in vitro diagnostics with breath test technology and the use of stable isotopes.

The second step consists of giving meaning to the measures by pairing each one with the “phenomenon” that it measures, that is with its underlying “critical success factor”; the set of phenomena under control will form the implicit strategy map. Table 2.2 illustrates the work that AB Analitica carried out. Along with the identification of critical success factors, the measures were classified according to three categories of importance (ABC) and this was the first step toward the critical observation necessary to reconstruct the management dashboard.

Later on, the critical success factors were classified and placed in the four perspectives of the BSC in order to show the implicit strategy map (Fig. 2.3).

2.4 Designing the Performance Measurement and Management System

The implicit strategy map is the starting point for the design of the BSC by means of a *differential* approach; the future or “desired” strategy map is built starting from the implicit strategy map:

- Do the present critical success factors reflect the desired strategic orientation? Or are they “strategic” at all? Is there any critical success factor that is not present in the implicit map and should then be added?
- Are the critical factors, present in the implicit map and “confirmed” in the desired map, adequately translated by the existing indicators? In other words: do the existing measures actually detect the phenomenon that the organisation wishes to control?

From an operational viewpoint, it is useful, in our opinion, to work by single perspective using a different sequence from the traditional approach that Kaplan and Norton recommended. The latter usually prefer a top-down logic (that is: starting from the financial perspective and arriving at the human resources perspective). We have, in fact, empirically discovered the advantage of adopting the sequence that Fig. 2.4 illustrates, where there also are the “triggering questions” that may be proposed to promote and encourage discussions. In our opinion, the customer perspective is a good starting point because it facilitates strategic observations: the fact of focusing upon a “value proposition” makes the topic of business strategy extremely operational and concrete, and provides the right foundations for the selection of processes and critical performance areas. Furthermore, the identification of critical financial indicators takes place after the critical success factors in the value proposition and the functioning of internal processes have been clarified. Lastly, there is the human resources perspective; it is the last one because its development must begin with clarifications of the critical factors in the other three perspectives.

Table 2.2 From implicit dashboard to implicit strategy map (AB Analtica)

Measure's name A, B, C factor	Importance	Critical success factor	Calculations	Comments	Target “What is my goal?”	Measure’s scope “What do I want to control?”	Position	Whoever analyses the measure
% of accepted proc. tenders	A	Effectiveness of proc. tender preparation process	# accepted tenders/# proposed tenders	Accepted up	30%	Assess the penetration of proc. tender draw up	Reg. proc. tenders monitoring	Top mgmt, MCS
% of accepted offers	A	Effectiveness of offer preparation process	# accepted offers/# proposed offers	Accepted	30%	Assess the penetration of offer draw up	Reg. offers monitoring	Top mgmt, MCS
Productions re-done due to non conformity	A	Production efficiency	# productions re-done due to non-conf./# non-conf.	Important info for work load assessment (missing)	<75%	Assess the # of redone productions with respect to work load	Reg. product non-conf.	Top mgmt, prod. C
Successfully finished projects	A	Effectiveness of research activities	# successfully closed projects/# closed projects over the year		>75%	Assess the effectiveness of research activities in progress	yy_mm_dd_R&D	Top mgmt, quality mgr
Punctually finished projects	C	Punctually closed projects	# projects closed by planned deadline/# projects closed over the year	Punctuality is over-estimated due to changed dates that AB Analtica is not responsible for. Presently, it is not interesting to evaluate the entity of overall delay	50%	The aim is to keep the precision and punctuality of projects’ closing under control; this indicator focuses upon punctuality, not on extent of delay	yy_mm_dd_R&D	Top mgmt, quality mgr

WEBSERVICE tests	B	Extent of service	# WEBSERVICE tests, current year – previous year/# WEBSERVICE	>5%	Assess the progress of WEB SERVICE	Management	Top mgmt, prod. mgr
# commercialised UBT pieces	A	Extent of UBT commercialisation	#' commercialised UBT pieces by period of current year – same period of previous year/# comm. UBT	>15%	Assess UBT sales volume	UBT reports	Top mgmt, Prod. mgr
Stock management	C	Quality of stock management	year, same period # products subject to stock controls	To be defined	Start keeping material supplies in the warehouse under control	Reg. stock of breath tests	Stock mgr
Cost of non-conforming productions	A	Costs of non-quality in production	# and % over total non-conf. supplies by supplier (divided by serious, moderate, repeated, document-related, delay, conforming)	To be defined	Non-quality costs in production with respect to turnover, to be analysed per production line	Reg. non-conformities	Top mgmt, quality mgr

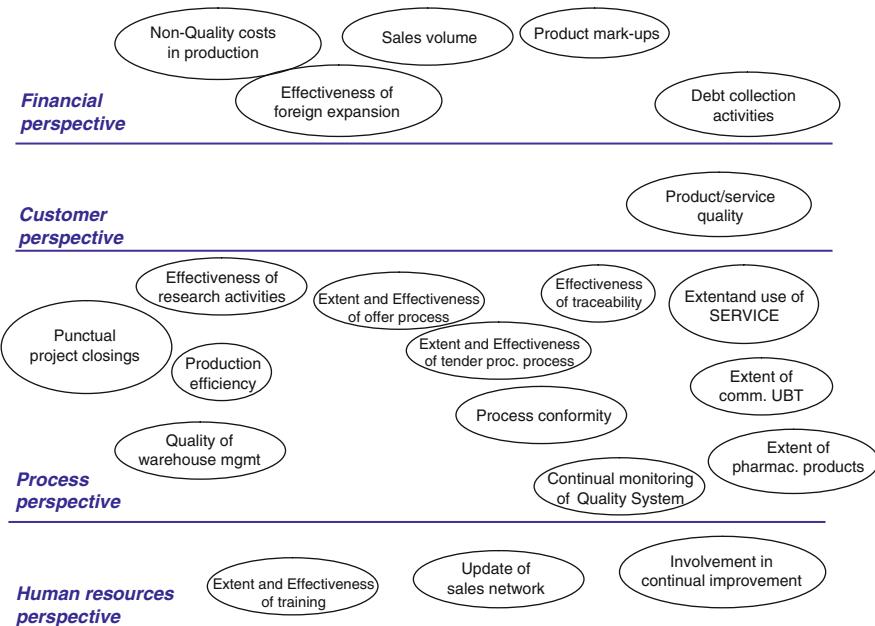


Fig. 2.3 AB Analitica's implicit strategy map



Fig. 2.4 Developing the desired strategy map: the adopted sequence and “triggering questions”

In AB Analitica, the implicit strategy map showed the lack of supervision on a few important phenomena (the perception of customer satisfaction, the quality of newer products, the quality of supplies and the effectiveness of instrument calibration services) and the inadequate coverage of some phenomena in terms of precision

measurements; furthermore, two factors were eliminated because they were not considered as important. Figure 2.5 illustrates the initial re-elaboration of the strategy map: the black dots inside each critical factor represent the number of indicators pertaining to that factor (in the implicit map, the critical factors–indicators correspondence was one to one); then, new phenomena to be monitored and new indicators to be developed were identified.

The re-design of the dashboard led to the development of 12 new indicators over a total of 36.

An important activity in the BSC design phase is the critical review of the existing measures and of those that the organisation wishes to keep. Too much emphasis is often put on the “innovative” dimension of the BSC implementation (meaning the creation and elimination of performance measures) to the detriment of the patient revision labour of the existing measures; this last effort though is not at all less important. It is dangerous trying to understand and “control” a phenomenon with an indicator that, after careful analysis, shows an incomplete connection with the phenomenon (the chosen indicator/indicators does/do not fully capture the underlying phenomenon) or a contaminated one (the adopted measures also capture other phenomena and, as a result, “contaminate” information). As a matter of fact, it is not rare for an organisation to regularly use some measures without understanding the calculation method, the measure’s reliability and its correct interpretation.

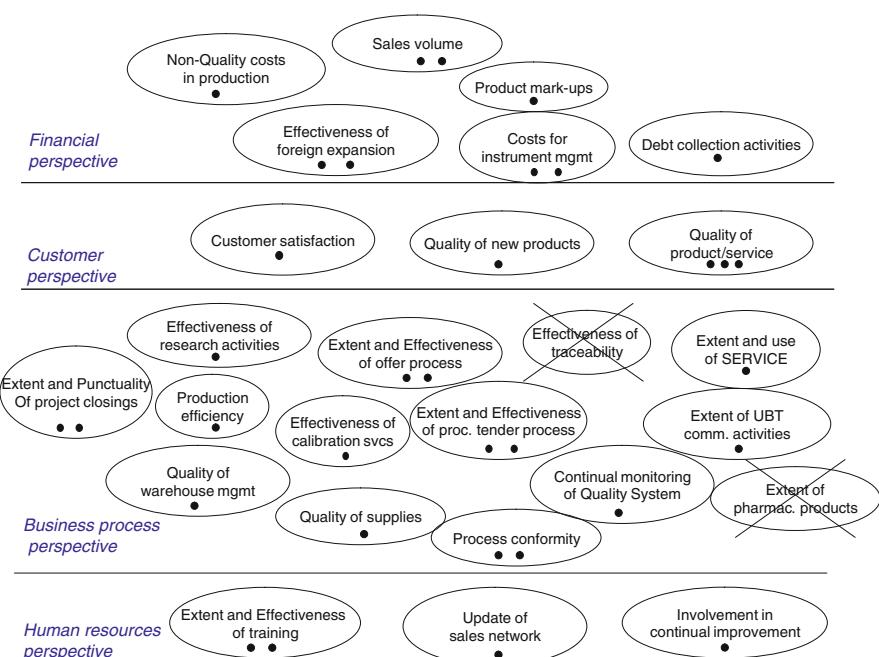


Fig. 2.5 The revised implicit strategy map in AB Analitica

In this perspective, we deem it important to carefully structure the design of measures and to develop a “dictionary” (Fig. 2.6 shows a scorecard featuring one of the measures developed by the company Uniflair, ref. Chap. 7).

Along with the development of the dictionary, an operational system to manage the indicators needs to be designed, showing how often the measures will be observed and the level of responsibilities for the indicators. The BSC needs to become a “live” tool to be operatively used in decision-making processes: it is hence necessary to plan performance review meetings (to take place every so often, as needed: once a monthly or every 3 months). As stated in the previous chapter, such meetings must not focus upon the presentation of performance data, but upon the discussion of the causes that determined the current performance trend, any anomaly and any future action.

An interesting example of critical review of existing indicators and draw-up of a dictionary is provided by the company Sauro, which is a leader in the creation and production of automatic connecting devices, such as terminal blocks and connectors for electronic PCBs with functional defect zero. Sauro offers a wide range of products deriving from its automation engineering, including modular connectors – male and female – terminal blocks pitch 2.54 mm, multiple terminal blocks of 2, 3 or 4 layers and a complete range of products for all wire sections, The products are

<i>Name of Measure:</i> LEAD TIME OF RECEIVING ORDERS	
CALCULATION Difference average "Date of First Confirmation sent" and "Date of Order Processing". Histogram	TARGET XXX
SCOPE (phenomenon to be controlled) Efficiency / Speed of sales staff in defining the details that the final order features In case the "Date of First Confirmation sent" is prior to the "Date of Order Processing", the difference will equal to zero (for example, when there was a subsequent entry)	PERSON RESPONSIBLE XXX
TEMPORAL DIMENSION (timeframe the measure refers to: month, progressive, etc.) Media mobile (12 months), Progressive, Monthly	ANALYSIS DIMENSION Per product Line (CDZ, SIS) and family, and ITALY / ABROAD
NOTES No calculations for the Pavimento line. Calculation done within first 15 days of next month. Elaboration of Management Control. It would be interesting to also verify percentages of re-sent order confirmations (in the 2006-2007 period, it happened 30% of the times)	LOCATION Jump Web (UNIDAT_UOAOCD00)
<input checked="" type="checkbox"/> AVAILABLE <input type="checkbox"/> AVAILABLE WITH ADDITIONS BY _____ <input type="checkbox"/> TO BE PRODUCED BY _____	

Fig. 2.6 The indicators’ dictionary

100% functionally tested before being manufactured. The Integrated Quality System in Environment safety has allowed SAURO to be amongst the few companies to have the three certifications ISO 9001, ISO 14001 and BS OHSAS 18001:2007 (Health and Safety) and all the most prestigious marks (VDE, UL, CSA, IMQ, ESS, etc.).

During the reconstruction of its existing measures, Sauro deemed it necessary to “tidy up” its performance measurement system. The reconstruction of individual dashboards did in fact show that the measures were often redundant with contradictory results, even for the same phenomena; every middle manager had a series of “personal” and “personalised” indicators from different and non-homogeneous sources. Along with the performance measures that each middle manager used, the company also had a very high number of other indicators, which were annually presented during the company’s final balance and annual management review. Such indicators, though, featured a mostly descriptive aspect and had little impact on corporate decision-making processes.

To “give meaning” to the set of identified indicators, a number of workshops then took place with the main middle managers (Purchasing, Production, Planning and Sales; a decision was made to focus on the phenomena regarding the Supply Chain management). The goal was to identify the critical success factors underlying the measures being used and, at the same time, to highlight the phenomena that were thought of as critical and important but that were not backed up by the current measures. The use of a structured approach was essential to define the indicators through the model that Fig. 2.7 illustrates.

<u>Perspective:</u> INTERNAL PROCESSES	<u>CSFs:</u> overall effectiveness of automated assembly dept.
Indicator name: KPI_11_T=O.E.E. Automated Assembly	
Formula: O.E.E. = Availability x Performance x Quality Availability = net productive time / theoretical plannable time for the company to produce Performance = (effective production/expected production) over net production time Quality = (sellable products/total products)	
Indicator's meaning: Measures the efficiency and effectiveness of the equipment/machinery present in the automated assembly. The Net Production Time is the time the machine is available for The Gross Production Time is the time the machine is available for	
Timeframe: 3 months	

Fig. 2.7 Sauro’s indicators

As we are writing these notes, Sauro has identified 22 critical indicators that are at a different level of conceptual development. Drawing up the dictionary of indicators has actually enabled the company to highlight the gaps in their design; in this perspective, the company decided to use colours (from green to red) to formalise the different status of each performance according to the completeness and clarity of the indicator card, according to the level of reliability of the input data and to the level of automation in the processing of information.

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Chapter 3

Corporate Strategy and the Balanced Scorecard

Abstract. Every enterprise finds itself in the position of facing and interacting with the environment that it is surrounded by. Enterprise has to outline the corporation's identity in its relationships with the outside: more specifically, it consists of the special entrepreneurial formula i.e. it is how the company specifically responds to the manifold expectations/needs of the various parties that it interacts with.

In this chapter, we describe the formation process leading to corporate strategy and the role of the Balanced scorecard in strategy management by exploring the relationship between the Balanced scorecard and the four main engines of strategy management: (1) the strategy control loop, (2) the strategic intent formation loop, (3) the entrepreneurial and innovation loop and (4) the value, aspiration and attitude review loop (in brief, the “mental models”) of the top management.

Keywords Corporate strategy • Strategy formation • Intentional strategy • Deliberate strategy • Realised strategy • Emergent strategy • Strategy review loops • Strategic control

3.1 Processes leading to Corporate Strategy

In the pursuit of success, every enterprise has constantly got to become acquainted with and face its adversaries, by either defending itself – for example with similar changes in the offer of products/services – or attacking, for example with customer services that feature a unique ability to personalise products. In the pursuit of success, every enterprise looks for contributions and consensus from that set of social parties (employees, financiers, public administrators, etc.) who offer the enterprise the resources that it needs to survive and develop.

Every enterprise hence finds itself in the position of facing and interacting with the environment that it is surrounded by. A strategy defines the enterprise-environment relationship, that is it outlines the corporation's identity in its relationships with the outside: more specifically, it consists of the special entrepreneurial formula (Coda and Mollona 2006) that the enterprise has developed over time while pursuing a certain idea of success and establishing a specific interaction model with the environment. The environment that an enterprise operates in consists of an intricate set of interlocutors that it interacts with: namely, competitors, suppliers, customers, banks, public administrators and officials, employment seekers, employees, trade union representatives, top managers, etc. This set of interlocutors can be divided into two distinct groups: one group composed of the parties ailing from the competitive world, and the other group composed of the social parties that represent those who "hold an interest and have expectations that stem from the supply of labour resources, financial resources, consensus and various contributions that a firm needs to operate" (Coda and Mollona 2006). The competitive environment consists of the network of business relationships generated by competitors, suppliers and customers (i.e. the purchasers). The social parties consist of employees, managers, shareholders, banks and financial institutions, trade union representatives, national and local stakeholders (public administrators and officials, citizens).

The entrepreneurial formula is how the company specifically responds to the manifold expectations/needs of the various parties that it interacts with; this response consists of basic choices concerning the following:

- The competitive environment where it is located (who are my competitors, customers and suppliers?);
- The "product system" that the enterprise presents to the competitive world, that is: the material specifications of its products, the number of offered alternatives/ options, the non-material elements connected with them (such as prestige, elegance, etc.), customer assistance, the economic conditions of the exchange (prices, forms of payment, insurances, etc.);
- The project proposals that the enterprise (whether explicitly or not) offers its social parties, with potential rewards and asking for specific contributions or consensus;
- The company's internal characteristics that define its "structure" (through which a certain product system is offered to the market and through which the competitive and social environment is tackled); the term "structure," in compliance with what Coda and Mollona stated (2006), is hereby used in a broad sense of the term that, not only includes the organisational structure and the operational mechanisms (such as planning and control mechanisms, individual performance evaluation mechanisms, etc.), but also all the resources – both human and non-human ones – which constitute the technological, commercial, managerial and economic-financial assets of the enterprise.

As has been mentioned in the previous chapters, the strategic choices that lead an enterprise to use a certain entrepreneurial formula may be either rationally planned

or creatively “improvised.” The goal of this chapter is, on the one hand, to further discuss this statement by exploring the characteristics of the processes through which a company’s strategy is formed; and, on the other hand, to highlight the role of the BSC in such processes.

The view of strategy formation, as a simple sequence that features a formulation phase (with the formalisation of intents into strategic plans) followed by an implementation phase, has long been a source of debate among scholars. Mintzberg, in his famous and seminal researches (see, for example, Mintzberg 1978; Mintzberg and Waters 1985), pointed out that a company’s “realised strategy” is the result of two elements combined (ref. Fig. 3.1):

- *Deliberate strategy*: the component of the *intentional strategy* (goals and plans for the future are deliberately set up and made explicit) that has been realised;
- *Emergent strategy*: a combination of actions that, because of their coherence, indicate a “strategy” in the decision-making processes; this strategy though is not deliberated beforehand, but gradually emerges over time.

The importance of acknowledging the existence of a strategy’s emerging component is rather well illustrated by the exemplary case of Honda, as it entered the US market. Honda (which back then was only a producer of motorcycles) entered the US motorcycle market – dominated by Harley-Davidson, BSA, Triumph, Norton and Moto Guzzi – in 1959; 7 years after its entry, Honda had captured 63% of the entire market share

At the beginning, the story of Honda’s success was seen as an example of perfect realisation of an accurate expansion strategy. The report of the Boston Consulting Group (commissioned in 1975 by the British government to understand the causes of the decline of its motorcycle industry and to find possible strategic solutions) described Japanese manufacturers, and especially their leader Honda, in these

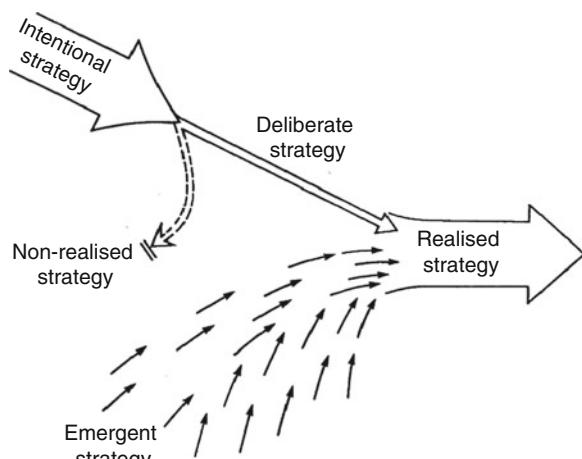


Fig. 3.1 Strategy’s formation process (Mintzberg 1987)

terms: “the success of the Japanese motorcycle manufacturers originated with the growth of their domestic market during the 1950s. By 1960 they had developed huge production volumes in small motorcycles in their domestic market and volume-related cost reductions had followed. This resulted in a highly competitive cost position which the Japanese used as a springboard for penetration of world markets with small motorcycles in the early 1960s.” Honda was seen as a company that had sought a high scale of production at low costs and had used its dominant position in Japan to enter the US market by expanding the market and creating the segment of “small motorcycles that normal everyday people rode” (prior to Honda’s entering the market, the US market was entirely dominated by big motorcycles and the biker’s stereotype was that of a young leather-clad outlaw), and exploiting its cost competitive advantage through aggressive pricing and intensive marketing campaigns.

According to the BCG, the story of Honda’s success is the story of a brilliant intentional strategy made perfectly capable in the deliberate strategy. Things actually did not go that way. In 1982, Richard Pascale – a consultant and renowned expert of the “Japanese phenomenon” – extensively interviewed the six Honda executives who had been responsible for the firm’s entry into the US market: As opposed to the linear and rational explanation that the BCG had provided, the story actually brought attention to certain other aspects. Initially, Soichiro Honda (the founder) had been sure that the biggest chance for success in the American market would come with 250cc and 305cc motorcycles; however, a decision was made to set the start-up warehouse in California with 25% of each of these four products: 50cc Supercubs, 125cc, 250cc and 305cc bikes. “We were entirely in the dark the first year. We were not aware that the motorcycle business in the United States occurs during a seasonable April-to-August – and that our timing coincided with the closing of the 1959 season. [...] By spring 1960, we had 40 dealers and some of our inventory in their stores – mostly larger bikes. A few of the 250cc and 305cc began to sell. Then disaster struck. By the first week of April 1960, reports were coming in that our machines were leaking oil and encountering clutch failure. This was our lowest moment. Honda’s fragile reputation was being destroyed before it could be established. As it turned out, motorcycles in the United States are driven much farther and much faster than in Japan. We dug deeply into our precious cash reserves to air freight our motorcycles to the Honda testing lab in Japan. [...] Within a month, a redesigned head gasket and clutch spring solved the problem. In the meantime, events had taken a surprising turn. Throughout our first 8 months, following Mr. Honda’s and our own instincts, we had not attempted to move the 50cc Supercubs. While they were a smash success in Japan [...], they seemed wholly unsuitable for the U.S. market where everything was bigger and more luxurious. [...] We used the Honda 1950s ourselves to ride around Los Angeles on errands. They attracted a lot of attention. One day we had a call from a Sears buyer. While persisting in our refusal to sell through an intermediary, we took note of Sears’ interest. But we still hesitated to push the 50cc bikes out of fear they might harm our image in a heavily macho market. But when the larger bikes started breaking, we had no choice. We let the 50cc bikes move. And surprisingly,

the retailers who wanted to sell them weren't motorcycle dealers; they were sporting goods stores." (Pascale 1984). From that moment on, the Honda's American team further promoted the 50cc bikes and in 1963 they launched the famous advertising campaign "You Meet the Nicest People on a Honda" that directly identified and attacked an enormous and never-before tapped market segment.

The story of Honda in the USA shows that its success "did not result from a bold insight by a few big brains at the top. On the contrary, success was achieved by senior managers humble enough not to take their initial strategic positions too seriously..." (Pascale 1984); they were open to learn from mistakes and unforeseen events; there was room for an emerging strategy to form.

The relationships between the top-down rational processes of strategic planning and the bottom-up learning processes of the emerging strategy were recently further studied by Coda and Mollona (2006) in a model featuring the dynamics of strategic management that clarified and improved Mintzberg's diagram (see Fig. 3.2).

The model shows how the formation process to strategy consists of four main loops or "engines" of strategy management: (1) the strategy control loop, (2) the strategic intent formation loop, (3) the entrepreneurial and innovation loop and (4) the value, aspiration and attitude review loop (in brief, the "mental models") of the top management. Coda and Mollona described the four loops as follows: "via loop 1 the realisation of intentional strategy is controlled. Once intentional strategies have

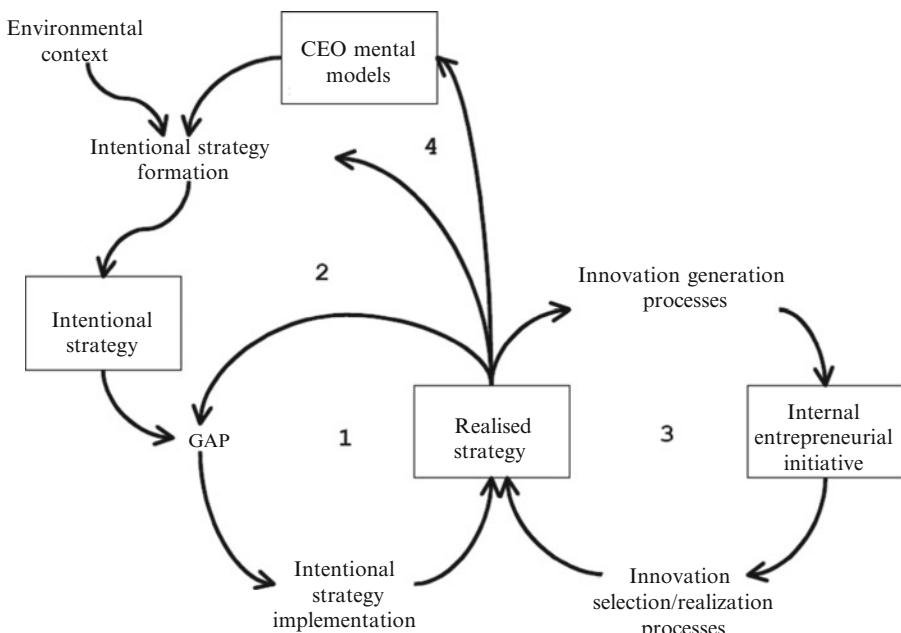


Fig. 3.2 How a company's strategy is formed (Coda and Mollona 2006)

been modelled, and possibly articulated into strategic plans, the resulting realisation processes are oriented towards reducing the gap between strategic intents and realised strategy. [...] The strategic control loop describes a company's ability to execute a certain strategy promptly and efficaciously. [...] Loop 2 represents the process whose protagonists are the top-managers who draw useful indications from the realised strategy in order to re-examine and adjust strategic intents. [...] The process represented in loop 4 highlights the impact of analysis of past strategic action on top management learning. Compared with the mechanism described in loop 2, the learning process shown in loop 4 goes to greater depth because it changes management's mental patterns, i.e. it goes to the roots of strategic intent. [...] The third loop describes the bottom-up innovation processes, which are the expression of internal entrepreneurship (in the case of strategic innovations) or simply of empowering projects aiming to generate operational innovations that will lead to incremented productivity. Loop 3 consists of a series of elements. The process pivots on a stock variable: the strategic and operational initiatives; the latter describe the results of the sub-processes which, positioned upstream and downstream of the stock, modify its level. The choice of a stock variable of strategic and operational initiatives is the answer to a precise research question: at a certain moment in time, what describes the energies, tensions and resources that are working to create innovation in the strategy or operational reality of a company? For example, the patents owned by a company represent the results of innovative initiatives after the latter have been selected, funded and developed, and have become part of the realised strategy. On the other hand, a company's ideas and projects, in support of which resources and energies have not yet been added, indicate the richness and cultural fertility of a certain organisational context and are therefore elements of the realised strategy, although they do not yet constitute actual 'initiatives.' By representing the strategic and operational initiative variable, an attempt is made to 'photograph' the intermediate moment in time when the stimuli and incentives present in the organisational context have taken shape and are combined into initiatives, which have nevertheless not yet changed the strategic-organisational context and are still in a developmental phase. This photograph makes it possible to observe the processes upstream and downstream of the stock of strategic and operational initiatives. Upstream, the initiative generation processes, which take place in the strategic-organisational context, feed the stock of strategic and operational initiatives; downstream, the selection and realisation processes, by means of which the single initiatives are assessed and funded, empty out the stock of initiatives since, once selected and realised, single initiatives help modify realised strategy and become an integral part of it. In this way, realised initiatives define the cultural environment in which the subsequent initiatives will be conceived" (Coda and Mollona 2006).

In light of the above, it becomes clear that the effectiveness of strategy management is linked to the good coordination and fusion of the four engines. It is especially important to point out that there is balance between engines 1-2-4 and engine 3. The first group of loops refers to the ability of the top management to imagine a clear direction for the enterprise to follow, to initiate the adequate actions

that will guide the enterprise toward the desired direction and to assess and redefine their strategic intents; the operation of engine 3 makes it possible to mould the strategy from the bottom.

Strategy management without engine 3 would make the business system slightly more rigid, less adaptive and less swift in perceiving the changes occurring in the environment and in elaborating adequate responses. On the contrary, exclusively focusing upon engine 3 could lead to a waste of energy: with greater freedom of action there is a risk of having chaos-induced reactions to pressures happening at that moment, and a risk of adopting initiatives that go toward non-correlated and synergy-lacking initiatives. The idea of balance within the “engines” shows rather well that strategy management is an elaborate mix of rationalisation and improvisation; of planning and learning-based adaptability; of clarity in strategic intents and freedom of experimentation.

What is the role of the BSC in strategy management? The previous chapters outlined an initial answer to the question when we illustrated the “double-loop management” by Kaplan and Norton: the BSC is the central point of two loops: the control loop and the strategic learning loop. The paragraphs to follow will further deal with such concepts by exploring the relationship between the BSC and the four engines of strategy management.

3.2 BSC, Learning Loops and Strategy Review Loops

As has been shown, the establishment of the BSC calls for the identification of critical success factors and a strategy map: in other words, a summary of the points of reference that the desired entrepreneurial formula is built on. Therefore, there is no doubt that the formation and review process of intentional strategy finds, in the BSC, an important support tool. The clarification of critical factors and their linkages in the strategy map promote the functioning of engines 2 and 4, and lead the company to think and clarify its vision of the future; engines 2 and 4 detail the concept of “strategic learning loop” illustrated in the “double-loop management” model by Kaplan and Norton (Chap. 1).

The BSC does not require a lot of formalisation though, as in the case of another classic tool that supports the definition of intentional strategy – the industrial plan: “the industrial plan is a document that illustrates, in a fundamental and critical manner, the strategic intents of the management with regards to: its competitive strategies at the level of business strategic areas and at the company level; the main expected results at the economic-financial, competitive and sometimes social level; the actions that will follow the strategic intents presented and their linkage to the expected results” (Mazzola 2003). The BSC and the strategy map help show strategic intents, without explaining and planning future actions, but clarifying the points of reference that must be taken into account for future operations.

The BSC hence provides some “light” support to the formation and review of intentional strategies and is thus well suited for small and medium-sized enterprises

and, most of all, is in line with the perplexities that have long been surrounding the soundness of formalised strategic planning. Mintzberg (1994) effectively summarised the fallacies connected with an orientation to strategy management that is too attracted to the alleged certainties of medium-to-long-term detailed plans and of formal planning processes; it is interesting to spend a few extra words on two of them: predetermination and detachment. The fallacy of *predetermination* is related to the conviction that environmental and organisational dynamics can be predicted with some degree of accuracy; however this is only possible in specific conditions – controllability or stability of the environment – which seldom occur. The fallacy of *detachment* refers to the separation of the plan formulation from the implementation that formal strategic planning processes undertake and actually require. “Imagine someone planning strategy. What likely springs to mind is an image of orderly thinking: a senior manager, or a group of them, sitting in an office formulating courses of action that everyone else will implement on schedule.” The fallacy of detachment manifests itself when we do not acknowledge the fact that strategy formation processes call for the dynamic combination of formulation and implementation, and require learning from experience and “surprises” (remember the Honda effect).

The strategy map and the BSC are hence useful tools for the rationalisation and visualisation of strategic intents and only indirectly act as tools that support the strategy creation processes; they are indirect supports because the identification and visualisation of the critical success factors may lead to critical thinking – as a useful “collateral effect” – over a company’s strategic vision and promote its modification. They are also indirect supports because the formation of intentional strategy is not a structurable process that occurs in pre-set times and places: the tools may help read certain phenomena in a different way, reorganise ideas, focus the strategic vision; such a vision takes shape day by day through an ongoing learning process, during the course of continuous interactions with organisational parties and social interlocutors.

It is possible though to improve the use of the strategy map by linking it to another tool, which can help catalyse the development of entrepreneurial intuitions: the *value curve* elaborated by Kim and Mauborgne (2005). The value curve represents, in a brief and visual manner, the strategic profile of an enterprise and its competitors. The horizontal axis represents the range of factors upon which competition and investments are focused. The vertical axis represents the offering level that purchasers perceive in connection with all those factors of competition; a high score indicates that the company offers more to its purchasers, and hence invests more in relation to that factor; in the case of prices, a higher score indicates a higher price (Fig. 3.3 shows the value curve for Home Cucine; see Chap. 5).

The value curve that shows the current situation of an enterprise can promote a number of considerations; firstly, it is interesting to compare the identified factors with the critical success factors in the *customer perspective* of the implicit strategy map, and thus see if there are any measurement gaps – these factors are important to the customer but are not under control; secondly, it can be used as a starting point for considerations leading to strategic changes and to the draw-up of the desired

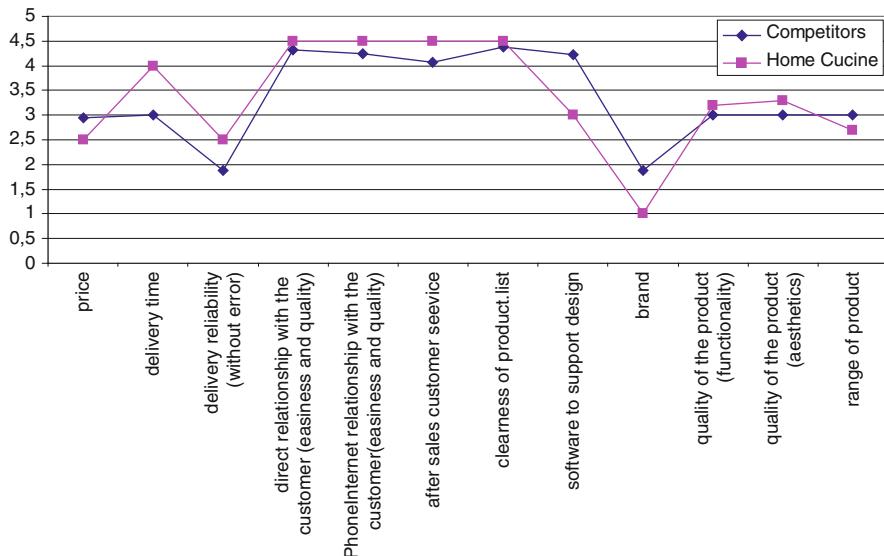


Fig. 3.3 Example of a value curve (Home Cucine)

strategy map. In order to promote creative change in the value curve, it is of interest to refer to the grid of the four actions by Kim and Mauborgne (2005) – reduce, raise, eliminate, create:

- Reduce: which factors should be reduced well below the industry's standard?
- Raise: which factors should be raised well above the industry's standard?
- Eliminate: which of the factors that industry takes for granted should be eliminated?
- Create: which factors should be created that industry has never offered?

Creative work on the value curve can then promote the re-definition of the profile of the critical success factors in the customer perspective and, as a result, a re-consideration of the critical factors in the other perspectives of the strategy map and of the BSC.

3.3 BSC, Strategic Control and Entrepreneurship

There is consensus in the statement that the development of a balanced managerial dashboard, such as the Balanced Scorecard, implies the transformation of management control from a “traditional” model – which highlights the economic-financial type of results and neglects the determinants that are at the base of competitive advantage – to a “strategic” model: “management control becomes strategic when it tries to capture strategy, in a sporadic fashion, at the level of

choices and actions of operational management, when it systematically calls the managers' attention back to the strategic consequences of everyday work" (Kaplan and Norton 2001a).

The BSC can efficaciously grease engine 1 of "strategic control" because: (1) the indicators linked to the critical success factors are the foundations for the definition of performance targets and for the selection of possible initiatives and investments; (2) the organisational action is assessed through a set of strategically aligned measures. In addition, using the BSC, as has been stated in the first chapter, requires the planning of a meeting (to take place at least every 3 months) where the causes that determined the current status of critical performances are discussed and the proposed actions to correct the direction of the enterprise are evaluated. Therefore, the use of the BSC brings the attention to management variables of strategic importance, removing the power of the economic-financial dimension from the control activity.

Centring the attention on specific strategic goals, and clearly sharing the understanding of what the "rules of the game" are, has also got an important impact on communication; it defines the context of organisational action. In this perspective, it has a double impact on engine 3. On the one hand, it "contains" the potential centrifugal effect of initiatives that are not coherent with one another, which could lead to a waste of energy: matter of factly, the formation processes of initiatives emerging from the bottom are certainly influenced by how well the top managers understand the aspects and goals that they deem a priority; the strategy map becomes a shared point of reference that provides the framework or grounds where everyone's creativity can be planted and where improvement actions and innovations can grow and become strategically important. As stated earlier, a "light" point of reference is not a plan to be pursued rigidly; it is not a rigid structure that hinders the freedom of experimentation.

On the other hand, sharing the rules of the game can directly feed the entrepreneurial loop because the initiatives emerging from the bottom are encouraged by the ownership of key performance indicators. Scholarly literature typically focuses upon large enterprises that have departments and multi-national holders, and stresses the importance of aligning people to strategy. Therefore, the direct influence of the BSC on engine 3 is even more important when the dashboard is "deployed" at the level of function or single organisational role. Starting from a company's BSC, the top organisational units identify the performance measures that are causally connected with the indicators of the company's level; the organisational units that are below proceed the same way referring themselves to the units above. The overall set of indicators is thus connected via a network of cause-and-effect relationships.

In the case of small-sized enterprises, this deployment process is no doubt redundant; within the company's BSC, the fundamental indexes of the main business functions are normally already present. The concept of deployment though may be effectively used in a "lighter" form: the BSC's indicators can be formally linked to the planning of operational actions and assigned to single managers. The triad *strategy map-BSC-portfolio of initiatives* does not only translate strategy into action, in an operational manner – as Kaplan and Norton stated – but, in SMEs, it

already represents a powerful means for the alignment of functional responsibilities with strategic goals.

The planning and management system, which was developed in Home Cucine (a case study discussed in detail in chap. 5), well explains the relationship between the BSC and the strategic management engines. The planning and control cycle used in Home Cucine features five phases, as Fig. 3.4 illustrates.

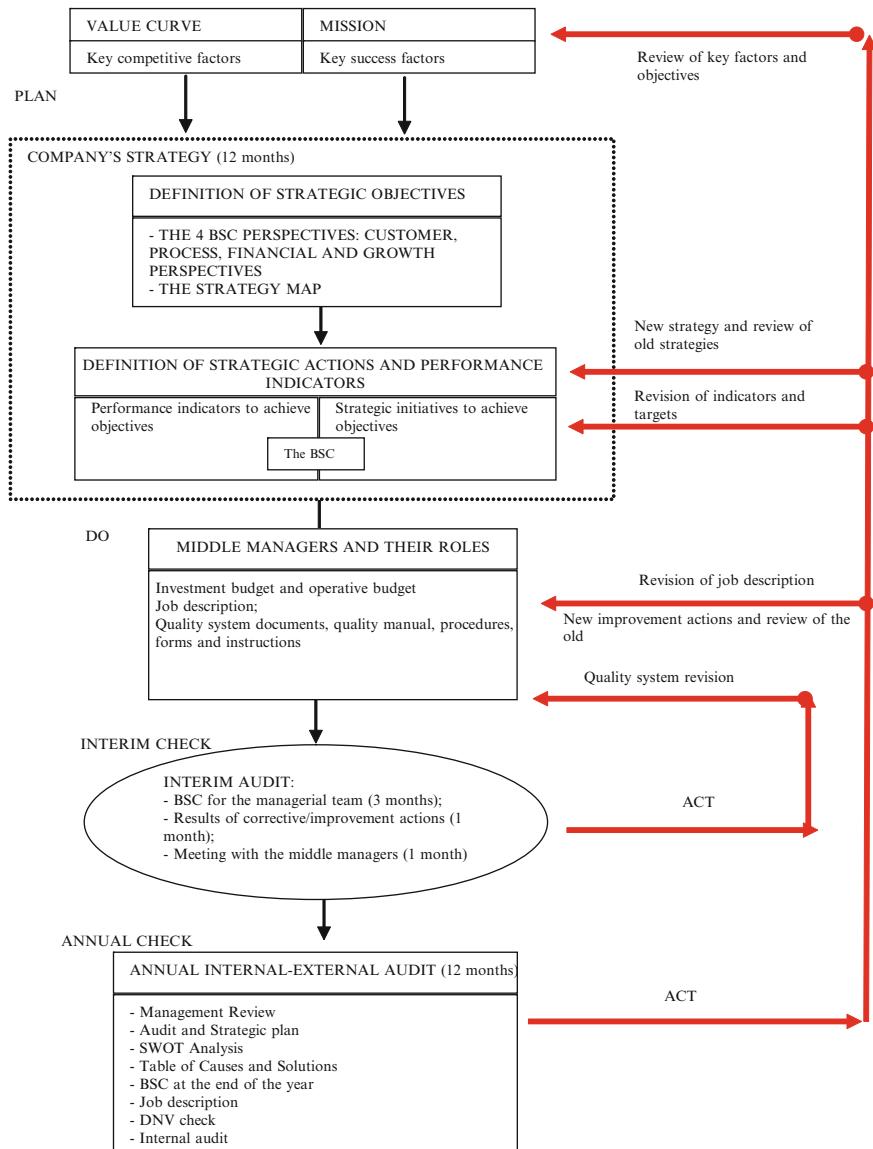


Fig. 3.4 The BSC and strategy management loops in Home Cucine

The planning and control cycle used in Home Cucine it is summarised below

- Analysis of competitive factors and success factors, as explained by the Value Curve and the company's Mission;
- Development of the strategy, formalised in the strategy map, expressed both in terms of strategic goals and in terms of performance indicators (Plan);
- Realisation of the plan through the implementation of operational actions, job descriptions and other quality assurance documents (Do);
- Monitoring and achievement of goals by use of the management dashboard and through operational meetings (Check);
- Activation of actions aiming to improve (Act).

The BSC is at the centre of the strategy formation and review loop, since it supports the description of strategy by providing a clear model for the definition of strategic goals (the map) and requires concreteness in the identification of indexes/ targets and of operational actions aiming to realise the targets. The BSC also represents the central point of control in the check-up phase dedicated to quarterly reviews; in addition, it is an important element that feeds the entrepreneurship loop because every middle manager is the “owner” of some indicators and is the reference for the operational actions connected with the achievement of some targets.

Moreover, the identification of actions is a bottom-up process: it is the single managers who propose – based on the improvement expectations of the indicators – solutions for the achievement of company goals. This is a key process that in Home Cucine is configured as an actual engine of change: at the beginning of 2009, an improvement solution featuring 26 Operational Actions with people in charge and well-defined time periods was started. The entrepreneurial loop is fed by the clear dissemination and explanation of the objectives and is “contained” in its potential centrifugal effect by the correlation between actions and effect on the performances contained in the management dashboard.

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Chapter 4

Models for Measuring Performances

Abstract. In this chapter, the literature on performance measurement in manufacturing companies is reviewed and the diffusion, characteristics and determinants of performance measurement in SMEs are analysed. Shortcomings in the performance measurement systems are highlighted and the many factors that seem to constrain PMSs in manufacturing SMEs are defined, e.g. lack of financial and human resources, wrong perception of the benefits of PMS implementation, short-term strategic planning, tacit knowledge and little attention given to the formalization of processes. Moreover, using dimensions defined according to the information found in the literature, two PMS models specifically developed for SMEs are compared with generic PMS models. The comparison points out an evolution in PMS models over time; in particular, the models developed in the last 20 years are more horizontal, process-oriented and focus on stakeholder needs.

Keywords Performance measurement system model • Performance measurement contingency factors • Dynamic adaptability • Strategic alignment • Process orientation • Causal relationships

4.1 Measuring Performances in SMEs

Literature underlines a significant gap between theory and practice: the theory underlines the importance of PMS in SMEs in supporting the development of managerial systems, but little research focusing on performance measurement in SMEs is available. The study revealed that there are basically two main obstacles to introducing PM in SMEs: “exogenous” barriers, e.g. the lack of financial and human resources, and “endogenous” barriers, e.g. short-term strategic planning and the perception of PMSs as bureaucratic systems that cause rigidity. Although an explicit comparison of the studies is not available in the literature, our literature

analysis showed that there do not appear to be any differences based solely on the country where they research were carried out. On the other hand, five common characteristics were identified.

The difficulty in involving SMEs in performance measurement projects. Moreover, the companies that do take part in these projects rarely continue on to the last phase because of the lack of time available for non-operational activities and the poor involvement of the entrepreneurs or top managers in the PM project (Tenhunen et al. 2001). There is, however, a significant difference between SMEs that have developed a quality culture and those that have not because quality activities highlight the inadequacy of current managerial practices and thus have a positive impact on the development of managerial systems (Barnes et al. 1998).

The studies indicate that SMEs either do not use any PM model or they use models incorrectly. Many companies often implement only some parts of a general model, while others modify the models without carefully considering the changes made. In other words, they eliminate some dimensions without first carefully understanding and analysing the characteristics of the model and the company. This approach is incomplete and does not consider the specific needs of SMEs (CIMA 1993; Tenhunen et al. 2001). Moreover, some researchers point out that even if general models were applied correctly, they would be inadequate for the particular characteristics of SMEs: “the small enterprise is different from the big company; you cannot simply look at the needs of SMEs by turning your binoculars upside down and making small what was big” (Marchini 1995). For example, some authors who have assessed the implementation of the Balanced Scorecard in SMEs conclude that this model is not suitable for SMEs (Hvolby and Thorstenson 2000; McAdam 2000¹). Finally, very few models have been developed for SMEs and those that do exist have been developed only in the last few years.

Performance measurement implemented in SMEs rarely has a “holistic approach.” The studies by Barnes et al. (1998) and Rantanen and Holtari (2000) highlight the fact that SMEs do not usually implement integrated PMS, and that they are not aware of the existence of integrated PMS models. Furthermore, since small companies focus on operational and financial performance, balanced models are seldom used. In fact, innovation, human resources, work atmosphere, R&D and training are rarely measured (Chennell et al. 2000; Hudson et al. 2001a; Hvolby and Thorstenson 2000; Tenhunen et al. 2001). The study by Antonelli and Parbonetti (2002) highlights that SMEs still do not perceive the need for balanced models, which was proposed by Kaplan and Norton (1996), even if some SMEs do use indicators of customer satisfaction, internal processes and training.

¹ McAdam (2000) writes “Balanced scorecard as developed in large organisations had a number of problems when applied to SMEs. The model was found to introduce a degree of mechanisation and inflexibility that SMEs found difficult to accept in times of turbulent market changes which demand increased agility. Simply reducing the rigour in the model did not alleviate the problem. On the positive side, the model increased the measurement rigour and link between strategy and operational processes.”

SMEs' approach to performance measurement is often informal, not planned and not based on a predefined model; performance measurement is introduced to solve specific problems and the PMS grows out of this process spontaneously rather than as a result of planning (Barnes et al. 1998). Consequently, performance measurement in SMEs is characterized by a poor alignment between strategy and measures (Chennell et al. 2000; CIMA 1993; Hudson et al. 2001a), with the exception of SMEs with quality management experiences. In SMEs planning is usually absent or limited only to the operation levels where performance is measured. Consequently, SMEs do not take advantage of the implementation of the PMS to introduce strategic planning. Moreover, performance measures usually focus on past activities. In other words, the aim is to gather information to support the control activities rather than the forecasting and planning processes.

SMEs have limited resources for data analysis. Data is gathered and the processes analysed in an imprecise way and this unformalised approach increases the ambiguity of the measurement objectives. The information is then presented in the same way: SMEs usually use tables rather than graphs, making it difficult to interpret the information (Antonelli and Parbonetti 2002; Barnes et al. 1998). Only SMEs with quality management experience have started to develop a graphical presentation of the information they gather. The same happens for performance measurement review, which is a process needed to make changes in the PMS according to changes taking place in the internal and external contexts. When PM review is not carried out correctly, the PMS is not being used to achieve strategic objectives. The reason SMEs with a quality culture place more attention on gathering, analysing and presenting data and reviewing indicators is probably that quality programs support improvements in how information is managed (Barnes et al. 1998).

Despite the recognised importance of performance measurement in SMEs, there seems to be a significant gap between the theory, which highlights the importance of PMSs in supporting the development of managerial systems, and practice, where there are almost no models and tools that deal with the specific characteristics of SMEs. In the next section, the main factors that influence performance measurement in SMEs are summarized.

4.2 Performance Measurement and Contingent Factors

Many researchers state that the specific characteristics of SMEs can be obstacles to the implementation and use of a PMS. These characteristics are briefly described in the following paragraphs.

- *Lack of human resources.* SMEs have limited human resources. All of the staff are involved in the activities of managing daily work, and have no extra time for additional activities, such as implementing a PMS (Barnes et al. 1998; Hudson

et al. 2001b; Hvolby and Thorstenson 2000; McAdam 2000; Noci 1995; Tenhunen et al. 2001).

- *Managerial capacity.* Technical excellence in products and operational processes is often perceived as the only key critical factor in SMEs. A managerial culture is often lacking in these companies and therefore managerial tools and techniques are perceived as being of little benefit to the company. Very often employees occupy different positions at the same time, the organizations are flat, and though the entrepreneur is in charge of both operational and managerial functions, he/she usually neglects the managerial activities (Marchini 1995).
- *Limited capital resources.* The impact of the resources needed to implement a PMS is proportionally more onerous in SMEs than in large companies (Barnes et al. 1998; Burns and Dewhurst 1996; Ghobadian and Gallear 1997; Hudson et al. 2001b; Hvolby and Thorstenson 2000; Neely and Mills 1993; Noci 1995). Moreover, the absence of affordable software platforms that focus on the specific needs of SMEs further obstructs the introduction of PMSs in these companies (Bititci et al. 2002).
- *Reactive approach.* SMEs are characterized by poor strategic planning and their decision-making processes are not formalized. The lack of explicit strategies and methodologies to support the control process promotes both a short term orientation and a reactive approach to managing the company's activities (Brouthers et al. 1998; Marchini 1995).
- *Tacit knowledge and little attention given to the formalization of processes.* One of the main barriers to organizational development in SMEs is the lack of a managerial system and formalised management of the processes. Furthermore, since knowledge is mainly tacit and context-specific, the information required to implement and use a PMS is difficult to gather (Jennings and Beaver 1997; Marchini 1995; Martins and Salerno 1999).
- *Misconception of performance measurement.* Bourne (2001) underlines that a PMS can only be effectively implemented and used when the company perceives the benefits of the PMS. SMEs often do not understand the potential advantages of implementing a PMS; these systems are perceived as a cause of bureaucratization and an obstacle to the flexibility of SMEs (Hvolby and Thorstenson 2000; Hussein et al. 1998; McAdam 2000).

The limited resources of SMEs require approaches and models that respond to their specific needs and are efficient and easy to implement. The employees involved in implementing and using PMSs must clearly understand the short and long term advantages in order to maintain their enthusiasm and commitment (Hudson et al. 2001a). PMSs for SMEs must be dynamic and flexible in order to respond to the needs of these companies, but at the same time they must also be structured to a certain degree in order to favour activity planning (Barnes et al. 1998; Hudson and Smith 2007; Hudson et al. 2001a). Though the design of PMSs for SMEs must consider strategy, there must also be a strong focus on operational aspects since traditionally these are the aspects that are critical for the success of SMEs. Finally, the performance measurement process has to be based on a

management information system which keeps in mind the limited financial and human resources of small and medium enterprises.

All of these factors underline the differences between SMEs and big companies and the need for a different approach to PM in SMEs. Moreover, these factors could be useful in the study of the dimensions of PMSs for SMEs.

4.3 Characteristics of the Main Performance Measurement Models

The following is an analysis of the main dimensions that characterize contemporary PMS models (mostly introduced after the mid-1980s). Each dimension is first discussed in general terms and then with specific reference to SMEs.

4.3.1 *Strategy Alignment*

For many years, it has been recognised that performance measurement can influence a company's behaviour and consequently affect the successful implementation of company strategy (Skinner 1971). A PMS must be designed and implemented in accordance with a company's business strategy in order to link the strategy to the objectives of functions, groups of people, and individuals (Bierbusse and Siesfeld 1997; Kaplan and Norton 1996; Nanni et al. 1992; Schneiderman 1999), as well as to operational aspects (Greatbanks and Boaden 1998; Lynch and Cross 1991; Meekings 1995; Neely et al. 2002b).

The lack of alignment between performance measurement and business strategy in traditional models has been found to be one of the main obstacles to achieving the expected results from a PMS (Atkinson and Waterhouse 1997; Bourne et al. 2000; Dixon et al. 1990; Goold 1991; Kaplan and Norton 1992, 1996; Keegan et al. 1989; Lynch and Cross 1991; McAdam and Bailie 2002; Neely et al. 1994; Sink 1986). In fact, the models proposed after the mid-1980s, such as the Balanced Scorecard (Kaplan and Norton 1996) and the Performance Pyramid System (Lynch and Cross 1991), stress the alignment between strategy and PMS.²

The alignment between strategy and performance measurement is particularly important in SMEs. These companies lack formalized strategy, and implementing a PMS could promote the definition or formalization of business strategy. The first step in designing PMSs for SMEs should be strategy definition (Cook and Wolverton 1995; Hudson et al. 2001b; Tenhunen et al. 2001). Furthermore, the

² For in depth analysis see Bierbusse and Siesfeld (1997); Bititci et al. (1997); Bourne et al. (2000); Fitzgerald et al. (1991); Greatbanks and Boaden (1998); Kaplan and Norton (1996); Keegan et al. (1989); Lynch and Cross (1991); Nanni et al. (1992) and Schneiderman (1999).

relationship between strategy and operational activities must be made explicit in order to avoid losing the focus on the operational aspects (CIMA 1993).

4.3.2 *Strategy Development*

The reciprocal relationship between PMSs and business strategy is underlined in the literature. Although some authors stress that the design of a PMS should be based on company strategy, others explicitly state that a PMS should also support the definition, development and evolution of business strategy in order to support continuous improvement (Bititci 1997; Bourne et al. 2000; Tonchia 2001). In other words, they argue that a PMS and strategy should be separate but inter-related, i.e. the PMS informs the strategy development process and at the same time reflects the priorities of the adopted strategy. Neely et al. (2002a) write that performance measures are designed to help managers establish whether they are on the right track to reaching the planned objectives. Dixon et al. (1990) write that Integrated Performance Measurement is “the process of acquiring cost and other performance knowledge and employing it operationally at every step in the strategic management cycle”. A PMS is a guide to how to develop and implement strategy, and how to find the method that can be used to improve it continuously.

Changes in the internal and external contexts require changes in strategy and defined objectives. To make these changes, knowledge must be accessible (Feurer and Chaharbaghi 1995) and there have to be mechanisms that can be used to gather information. A PMS allows a company to gather data that quantifies the effectiveness and efficiency of its activities and helps it assess whether its strategy is appropriate and whether it has achieved the objectives of its business strategy (Neely et al. 1995, Suwignjo et al. 2000). Moreover, a PMS can provide information on the effectiveness of actions before their full implementation and support changes in defined objectives (Feurer and Chaharbaghi 1995).

4.3.3 *Focus on Stakeholders*

In the last 20 years, the attention paid to stakeholders has increased dramatically. Freeman (1984) gave the first definition of stakeholders as the groups of people who can influence or who are influenced by the achievement of a company's objectives. Atkinson and Waterhouse (1997) underline that an organization should know what its stakeholders' expectations are and strive to achieve the objectives they have defined. Dickinson et al. (1998) describe stakeholders as the “final judge” of organizational performance. Funk (2003) stresses the importance of creating a *sustainable organization*, which is “one whose characteristics and actions are designed to lead to a ‘desirable future state’ for all stakeholders”. However, the needs, wishes and levels of satisfaction of different groups of stakeholders vary, and

each company has to monitor these aspects. To achieve this, in recent years some authors have adopted a stakeholder perspective in their PM systems and approaches (Atkinson and Waterhouse 1997; Bititci 1994; Kanji 2002; Neely et al. 2002a; Sharman 1995). Some of the more recent performance measurement models focus on stakeholders' needs rather than business strategy as the starting point in performance measurement system design, such as Integrated Performance Measurement Reference Model (Bititci et al. 1997) and Performance Prism (Neely et al. 2000).

Even though PMS studies focusing on SMEs have begun to adopt the stakeholder approach, the literature shows that only the SMEs taking part in quality awards gather information about stakeholder satisfaction (Barnes et al. 1998). The approach to assessing stakeholder satisfaction in SMEs must be simple because, as Vinten (2000) writes, small businesses struggling to survive cannot be expected to take into consideration the range of stakeholders that a multi-national company has. Thomlison's (1992) specification about primary and secondary stakeholders could be applied to SMEs.³

4.3.4 Balance

The most significant criticism of the traditional PMSs is the fact that they focus on financial measures. In fact, all the models developed after the mid-1980s are more balanced. However, scholars take different approaches to balance: Keegan et al. (1989) write about the balance between internal and external measures; Lynch and Cross (1991) propose balancing measures related to all the different organizational levels; Fitzgerald et al. (1991) pay attention to the results-determinants relationship; and Kaplan and Norton (1992) propose balancing four different perspectives based on both the nature of the measures (financial and non-financial) and the object of the measures (internal and external).

In our study balanced models (also called multidimensional models) are defined as models that adopt different perspectives of analysis and manage them in a coordinated way. The innovations in information technology and systems have made it easier to gather and elaborate large amounts of data at a lower cost. These innovations could potentially support the implementation and use of balanced performance measurement systems. However, the use of innovative software has often brought with it an excessive use of measures that are introduced without a

³In particular, primary stakeholders, i.e. those who have formal, official, or contractual relationships and a direct and necessary influence on the organization could be included in a PMS for SMEs. Since it is difficult to consider secondary stakeholders, i.e. those who are not directly engaged in the organization's economic activities but are able to exert influence on or are affected by the organization, this type of stakeholder could be excluded.

planned design. In this case, the performance measurement reports generated are difficult to use and interpret (Neely et al. 2000).

The issue of balance is particularly important when considering SMEs. These companies are characterized by a focus on operational and financial aspects and often only measure the performance of single aspects such as the different elements of the lead time, delivery precision and quality levels (Hvolby and Thorstenson 2000). Although operational issues are very important in SMEs, these companies need to increase their strategic managerial approach to align decision making processes to strategic objectives; to do so a balanced PMS could be an important support tool (Tenhunen et al. 2001).

4.3.5 Dynamic Adaptability

A performance measurement system should include systems for reviewing measures and objectives that make it possible to both quickly adapt the PMS to the changes in the internal and external contexts, and systematically assess a company's strategy in order to support continuous improvement. Many scholars have studied and defined the dynamic approach (Bititci et al. 2000; Bourne et al. 2000; Dixon et al. 1990; Eccles and Pyburn 1992; Fortuin 1988; Ghalayini et al. 1997, Ghalayini and Noble 1996; Lingle and Schiemann 1996; Lynch and Cross 1991; Maskell 1989; McMann and Nanni 1994; Neely et al. 2000; Wisner and Fawcett 1991). By considering these studies and making reference to Bititci et al. (2000), it is possible to define a dynamic PMS as a system with the following characteristics.

- *An external and internal monitoring system.* A system should continuously monitor the developments and changes in the external and internal environments.
- *A review system and an internal deployment system.* A system should “use the information provided by the internal and external monitors and the objectives and priorities set by higher level systems, to decide internal objectives and priorities”; moreover, the system has to “deploy the revised objectives and priorities to critical parts of the system: business units, processes and activities using performance measures” (Bititci et al. 2000).

Although the literature has highlighted the importance of dynamic PMS, most companies use static models (Bititci et al. 1999). This is mostly a result of the lack of:

- An ability to distinguish measures that are useful for the control aspect from the measures that support improvement;
- An understanding of the causal relationship between strategic objectives, processes and activities.
- External monitoring, which is rarely carried out in SMEs even though they have to be flexible and able to react quickly to changes in the competitive context;

- The ability of the management to systematically relate the changes in the external and internal environments to changes in their PMSs;
- Frameworks and platforms developed specifically for the needs of SMEs.

4.3.6 Process Orientation

Process management is becoming a part of the language and actions of many organizations. It is defined as an approach based on the organization of a company as a whole set of interconnected activities that aim to map, improve, and align organizational processes (Benner and Tushman 2003). The importance of process management is underlined by both quality awards and the new edition of ISO 9001:2000 (Garvin 1998; Ittner and Larcker 1998), which recognizes process management as particularly useful to meeting stakeholder expectations and promoting the integration of the different company functions.

Different studies provide evidence that the performance of business processes has to be monitored because it has a direct impact on stakeholder satisfaction. However, there are many operational difficulties in introducing the process management approach in companies. Though, some organizations have started to re-engineer their processes by moving from vertical structures to horizontal structures that focuses on internal business processes, the organization of most companies is still based on functional units (Beretta 2002). A study by Bititci et al. (1999) shows that few companies define and manage business processes. Consequently, PMSs based on a process approach are difficult to implement. Turner and Bititci (1999) highlight that the failure to deliver consistent output to the stakeholders is caused by the lack of coordination between functions. Organizations should re-evaluate their performance measurement systems and replace functional performance measures with process related measures. Adopting process-oriented performance measurement could facilitate business process modelling, show the inadequacy of functional organizations (Beretta 2002) and promote the use of performance measurement as an important support in the decision making process. Process performance is one of the main factors affecting the reliability of business processes; Turner and Bititci (1999) defined a reliable business process as “a process that will continue to provide a high level of stakeholder satisfaction over time”. According to these authors, applying reliability engineering, process thinking and active monitoring concepts to business processes, can help systematically identify key performance measures in order to actively monitor business throughout the company. These authors also propose an active monitoring technique for improving and maintaining the reliability of business processes.

The increased importance of process management is influencing PMS models as well (De Toni and Tonchia 1996). Some PMS models introduce the process-oriented dimension (Kaplan and Norton 1992) and others use processes as one of the main starting points in designing PMSs (Bititci et al. 1997).

The increased attention to process management is also highly relevant to SMEs. PMSs based on business processes can provide information that allows companies to be more proactive in meeting stakeholders' requirements. Since SMEs are small, by their very nature they have more visible end-to-end business processes, which make process orientation a simpler and less political issue. The two PMS models for SMEs considered in this study are based on business processes.

4.3.7 Depth and Breadth

The depth of a PMS is the level of detail to which performance measures and indicators are applied. The breadth of a PMS relates to the scope of the activities included in PMS. An in-depth model helps define aims and focus on how to implement and use the PMS from an operational and practical point of view. Tenhunen et al. (2001) write that an in-depth model could help SMEs to concentrate on just a few objectives and develop a more focused PMS over a short period of time using limited resources. However, according to other scholars, the focus must first be placed on the breadth of a model before focusing on a specific objective and developing an in-depth PMS. A broad model includes all the company's activities (managerial, operational and support) and provides a "holistic" assessment of the company's performance. Lynch and Cross (1991) write that it is impossible to improve just one measurement of a company's performance without somehow impacting on other areas of performance. This is because of the inter-relationships between individual measures. . This is similar to what Neely et al. (2000) write: "a PMS should give a synthetic and general description of company performance and provide comprehensiveness". Moreover, according to Lynch and Cross (1991), since the performance measurement has to create a base for the management system, the company must consider more than just a few areas in its improvement effort.

A big company needs in-depth systems that "go down" to the level of the single operational department (Lynch and Cross 1991). Models like the Balanced Scorecard and the Performance Pyramid support in-depth measurement processes, but these models are difficult to implement in SMEs. Dickinson et al. (1998) and McAdam (2000) claim that SMEs should use PMSs that focus on breadth, not depth. By doing this, SMEs could develop a simple model and an integrated approach to corporate governance.

4.3.8 Causal Relationships

Many scholars have written about the causal relationship between results and their determinants in performance measurement: Lynch and Cross (1991) have developed a tool to find the causality link; Fitzgerald et al. (1991) call their model

“Results and determinants” to highlight that the results have to be interpreted as a function of specific determinants; Kaplan and Norton (1996) underline that identifying a causal relationship between performance indicators and objectives supports strategy review and learning. Since performance measurement is supposed to support planning and control (Ballantine and Brignall 1994), a PMS should measure not only the results but also their determinants and quantify the “causal relationship” between results and determinants in order to help monitor past actions and the improvement process (Bititci et al. 2000; Neely et al. 2000). However, since the causal relationships between determinants and results are very complex, and thus difficult to analyze, further research on this issue is still necessary (Neely 1999).

Performance is affected by a large number of multidimensional factors characterized by dynamic behaviour. Many factors are involved in a PMS and it is very difficult to quantify their actual effects on performance Fig. (4.1). Suwignjo et al. (2000) have analyzed different techniques to analyze the relationship between results and determinants, such as cognitive maps, cause and effect diagrams, tree diagrams and analytic hierarchy processes. Using these techniques, the authors have developed a specific model, called the Quantitative Model for Performance Measurement Systems (QMPMS), that helps identify the factors that affect performance and the relationships that exist between them. The effects of these factors on performance are expressed in quantitative terms. Though the model is easy to understand and implement, it is difficult to define the relationships between some of the factors and their determinants.

Understanding the relationships between results and determinants makes it possible to have periodic feedback on the measures being used, the performance results (Hynes 1998) and the incremental changes (Appiah-Adu and Singh 1998). This would be very useful for improving the processes in SMEs, where incremental changes are often preferred over radical changes.

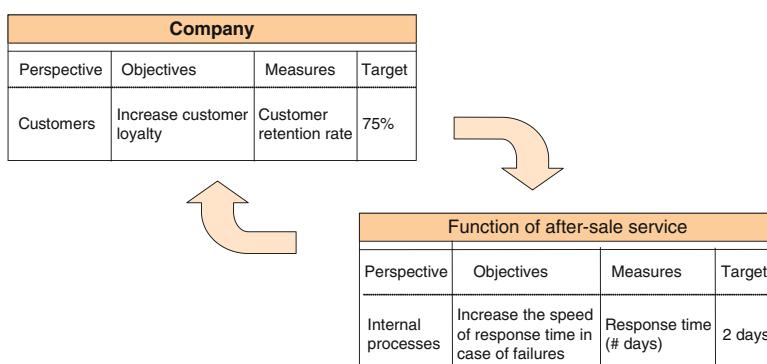


Fig. 4.1 Example of deployment of a “customer retention rate” indicator

4.3.9 Clarity and Simplicity

The clarity and simplicity of a PMS are of crucial importance for its successful implementation and use. Many scholars have stated that clarity and simplicity should be the main characteristics of a PMS (Bierbusse and Siesfeld 1997; Eccles 1991; Globerson 1985; Neely et al. 1996, 2000; Maskell 1989; Schneiderman 1999). Clarity and simplicity are not easy to assess because these characteristics have a subjective component. Literature highlights the following components as characteristics of a clear and simple PMS.

- *Clear definition and communication of the fixed objectives.* The company has to define and communicate the objectives it aims to achieve using the adopted measures (Globerson 1985; Maskell 1989; Neely et al. 1996, 2000).
- *Careful selection of the measures to be used.* One of the main problems with PMSs is that there often are too many data, most of which is easy to gather but is not useful (Neely 1998). Bierbusse and Siesfeld (1997) wrote that an excessive amount of data actually makes the PMS less effective; according to Dickinson et al. (1998) the set of measures is big enough when all of the stakeholder needs are assessed without useless indicators. Ewing and Lundahl (1996) set a limit of 25 strategic indicators for each manager, and believed that if this limit was exceeded, the PMS would be difficult to manage and would take the motivation away from those who used it.
- *Clear definition of measures.* The measures have to be defined using objective criteria that make the meaning of each one clear (Globerson 1985; Neely et al. 2000; Schneiderman 1999).
- *Clear definition of how to gather and elaborate data.* The aim in this case is to avoid elements that could reduce the quality of the data gathered (Globerson 1985; Neely et al. 2000). As Neely et al. (2002a) wrote, there are many factors that could influence the quality of the data during the PMS definition and implementation process. A clear definition of how information is to be gathered and elaborated improves the quality of the data.
- *Use of relative instead of absolute measures.* Relative data are easier to read and understand than absolute data (Globerson 1985; Neely et al. 2002b).
- *Definition of how the processed information has to be presented.* Information has to be communicated using a predefined format, supporting the understanding of the data (Globerson 1985; Neely et al. 2002b).

According to literature, SMEs need a simple PMS that can give managers some focused, clear and useful information (Hussein et al. 1998; Laitinen 1996, 2002). In fact, SMEs lack the resources needed to implement complex models and do not actually even need them (Cook and Wolverton 1995; Hussein et al. 1998; Hvolby and Thorstenson 2000; Laitinen 1996; McAdam 2000; Tenhunen et al. 2001; Yeb-Yun 1999). The number of measures used should be limited. Furthermore, particular attention should be paid to the specific requirements of a given SME and the usability of the PMS (Barnes et al. 1998; Tenhunen et al. 2001). Nonetheless, the

need to make a PMS simple and easy to use should not compromise the completeness of a system, as would be the case if only single measures were used or if PMS models developed for big companies were merely simplified for SMEs, by reducing the number of measures without maintaining the holistic vision of the original architecture (McAdam 2000).

4.4 Models for Measuring Performances: A Comparison

Eight PMS models developed after the mid-1980s were compared. The traditional models, such as the activity-based costing, which Bourne et al. (2000) defined as models based on accounting systems and financial information, were not included in this comparison because many research studies have stressed the inadequacy of these models for current managerial needs.

The models were compared using the eight dimensions discussed above (strategy alignment, strategy development, focus on stakeholders, balance, process orientation, depth, breadth, dynamic adaptability, causal relationships, and clarity and simplicity). They were also compared according to the three typologies defined by De Toni and Tonchia (2001) (vertical, balanced and horizontal).

- Vertical architectures are defined as models that are strictly hierarchical (or strictly vertical) and are characterised by cost and non-cost performances on different levels of aggregation, until they ultimately become economic-financial ones (Berliner and Brimson 1988; Lockamy and Cox 1994; Partovi 1994; Rangone 1996); the first hierarchical model was that of Gold (1955), which connected productivity with ROI.
- Balanced architectures are models that are balanced scorecards or *tableaux de bord*, where several separate performances are considered independently; these performances correspond to different perspectives of analyses (financial, internal business processes, customers, learning/growth), which substantially remain separate and whose links are defined only in a general way (Maskell 1991; Kaplan and Norton 1992, 1996).
- Horizontal architectures (by process) are models that focus upon the value chain and take the internal customer-supplier relationship into consideration (Sink and Tuttle 1989; Moseng and Bredrup 1993).

This latter comparison made it possible to summarize the results based on the eight dimensions defined in this study (see Table 4.1).

The models being considered are six of the most popular generic models, i.e. those which make no reference to company size, developed in the last 15 years, and two PMS models created specifically for SMEs. The main characteristics of these models are listed below.

- The Performance Measurement Matrix by Keegan et al. (1989). This is a multi-dimensional and balanced model that, in scholarly literature, is known for its

Table 4.1 Dimensions of the analysed performance measurement models (* fully present; ○ partially present)

	Models for SMEs							
Generic models	Performance measurement matrix (Keegan et al. 1989)	Performance pyramid system (Lynch and Cross 1991)	Results and determinants framework (Fitzgerald et al. 1991, Fitzgerald and Moon 1996)	Balanced scorecard (Kaplan and Norton 1992, 1996)	Integrated performance measurement system (Bitici et al. 1997)	Performance prism (Neely et al. 2002a)	Organisational performance measurement (Chennell et al. 2000)	Integrated performance measurement for small firms (Laitinen 1996, 2002)
Strategy alignment	○	*	*	*	*	○	○	○
Strategy improvement (or FCS)				*			○	
Focus on stakeholders	*	*	*		○	*	*	*
Balance		*	*	*	*	*	*	*
Dynamic adaptability			*	*	*	*	*	*
Process oriented			○	*	*	*	*	*
Depth	*	*	○	*	*	*	*	○
Breadth		*	*	*	*	*	*	
Causal relationships		*	*	*	*	*	○	
Clarity and simplicity	*			*				*
Vertical	*	*	*	*				
Balanced	*	*	*	*	*	*	*	*
Horizontal				*			*	*

Definitions of the dimensions used in the comparison

Strategy alignment: strategy is the key dimension in the model. The PMS must ensure the measures adopted are coherent with the strategy.*Strategy improvement:* performance measurement helps improve pre-defined objectives and strategy.*Focus on stakeholders:* requirements are one of the main starting points in the design of the PMS.*Balance:* the PMS uses different perspectives that are based on the type of measure (financial or non-financial) and/or the objective of the measure (internal or external).*Dynamic adaptability:* review systems of measures and objectives are included in the PMS. These review systems aim to ensure the PMS quickly respond to changes in internal and external contexts.*Process oriented:* the organization is not seen as a hierarchical structure but as a whole set of coordinated processes which create a system.*Depth:* measures are disaggregated into detailed indicators (the single operational activities involved in each process are measured).*Breadth:* the whole organisation is the object of the performance measurement. A broad number of functions (or macro-processes) are included. *Causal relationships:* results and their determinants have to be measured to quantify the “causal relationship” between them, and to support the control of actions and the improvement process.*Clarity and simplicity:* the fixed objectives and measures and methodology to be used to gather and process information are clearly defined and communicated to those involved in the PMS.

simplicity. Its structure is graphically represented by a twofold matrix, with the first part referring to the economic-financial aspects and allowing for the separate assessment of economic-financial aspects (e.g. production costs) as well as non-economic and financial aspects (e.g. lead time); the second part distinguishing between the measures that assess internal phenomena (e.g. production time) and those focusing upon aspects that are outside of the organisation (e.g. market share) (Fig. 4.2).

The authors stressed the need for balanced indicators along these two dimensions, however, according to what Neely et al. (1995) wrote, other important measures in the model are neglected. Another weakness of this model is the fact that, although there should be linkages among the dimensions under consideration, such linkages are not explicitly defined, as in the case of the Balanced Scorecard by Kaplan and Norton (Neely et al. 2000).

- The Performance Pyramid System by Lynch and Cross (1991). This model is called a performance pyramid because the authors represented it as a pyramid with the strategic goals of the organisation at the top; from the objectives we derive the goals of the business units. These goals are disaggregated and they give birth to the process goals that then lead to each single operational unit. At each level, and closely connected with the defined goals, the performance indicators are identified (Fig. 4.3).

The multi-dimensional architecture separates the measures that concern the external stakeholders (customer satisfaction, quality and market) from those that have to do with the operations of the organisation (productivity, cycle time and waste). The model allows for the identification of the relationships among the various indicators and for the isolation and management of specific business performances, through the analysis of the correlations that exist even between

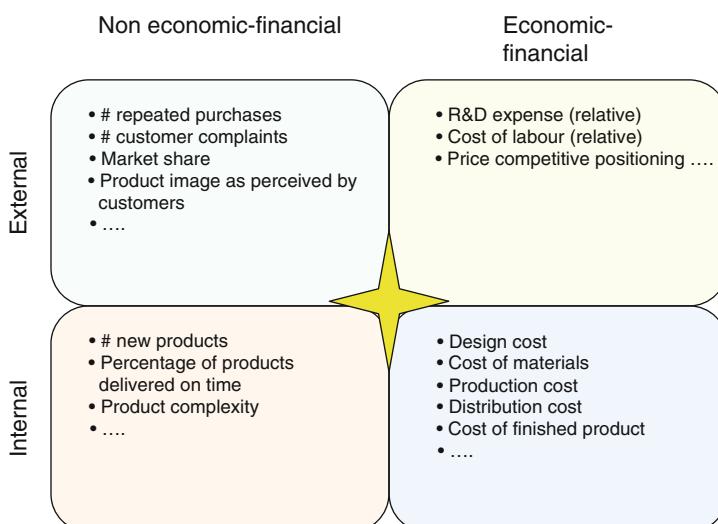


Fig. 4.2 Performance matrix

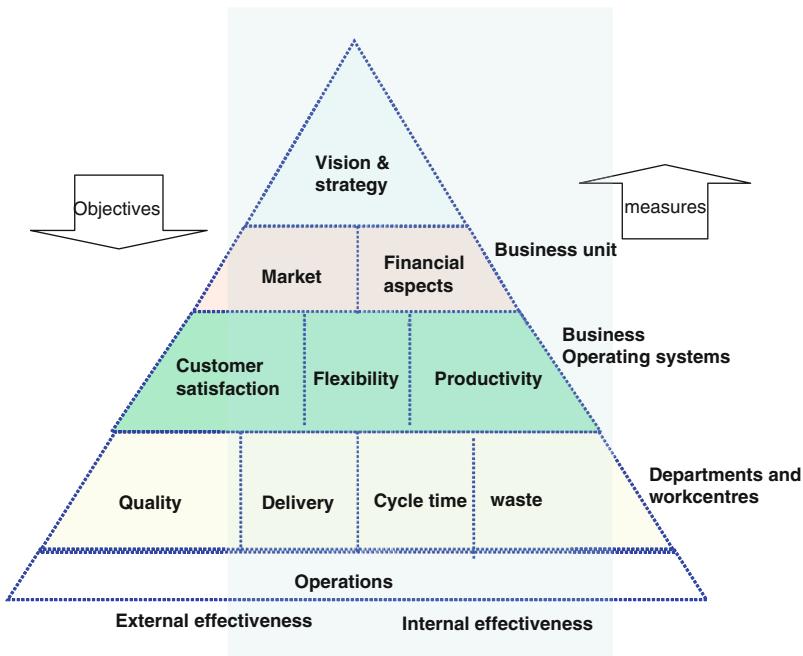


Fig. 4.3 The performance pyramid

indicators of different levels (Fig. 4.4). This is an elaborate organisational approach whose application may be of a complex nature.

- The Performance Measurement System for Service Industries by Fitzgerald et al. (1991), also known as the Results and Determinants Framework because of the specific attention that it pays to the relationship between results and determinants. The model focuses upon six dimensions, divided into results (competitive positioning and economic-financial results) and determinants of such results (quality of service, flexibility, employment of resources and innovation) highlighting the need for carefully defining the necessary performance indicators to achieve the company's performance goals (Fig. 4.5).

The model is closely connected with the company's predefined strategy and considers the competitive context that the organisation is in. Its use is limited to service industries that the authors divided into three typologies (professional services, service shops and mass service); each typology has distinctive characteristics (performance variability, no warehouse, contextual production and distribution, intangibility, etc.) that can all influence the way performance is measured.

- The Balanced Scorecard by Kaplan and Norton (1992, 1996), which has been extensively described in Chap. 1, is the most renowned architecture, both in scholarly literature and in practice. The model features four perspectives: the

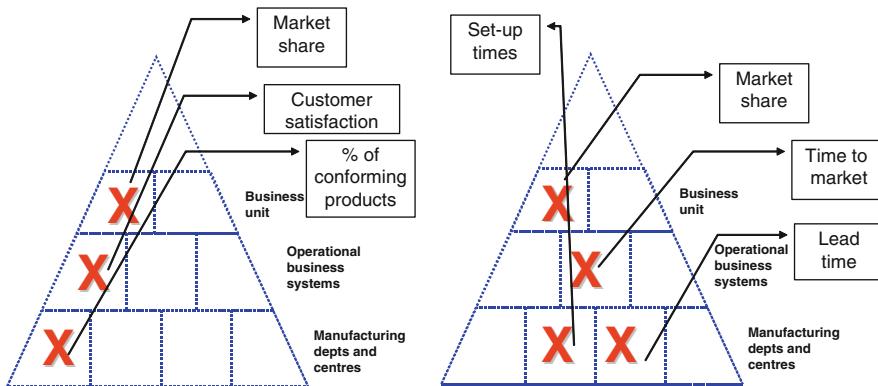


Fig. 4.4 Deployment of indicators along the hierarchical line

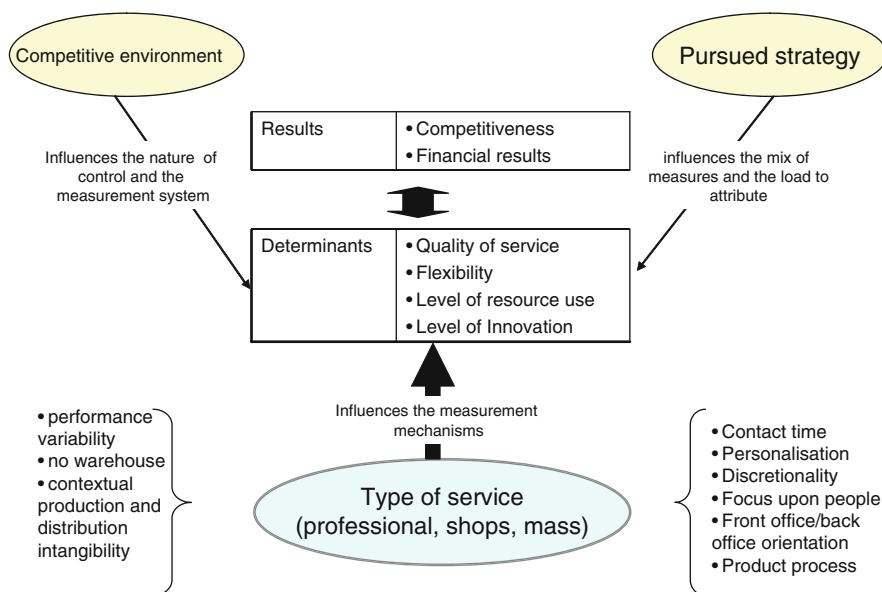


Fig. 4.5 The performance measurement system for service industries

Financial Perspective, that is the ability of the organisation to achieve predefined strategic goals in an economic manner; the Customer Perspective, which measures the proposed value by means of direct and indirect indicators; the Internal Process Perspective, which features the presence of guiding indicators connected with the organisation's business processes, defined as the key processes that the organisation must excel in order to maintain a competitive position; finally, an Innovation and Learning Perspective is considered for the purpose of measuring the organisation's innovative ability, as well as its ability to create value.

- The Integrated Performance Measurement System (IPMS) by Bititci et al. (1997). The authors define the PMS as an “information system which is at the heart of the performance management process and it is of critical importance to the effective and efficient functioning of the performance management system” (Fig. 4.6).

The authors of this model identified two key characteristics of an IPMS: the “Integrity”, that is the ability of a performance measurement system to promote the integration of a business area with others, and the “Deployment”, that is the ability to support the implementation of the strategy all through the hierarchical structure of the organisation. The proposed construct is based upon four hierarchically-distinct levels (Corporate, Business Units, Business Processes and Activities); each level features five key factors to be taken into consideration during the performance measurement process: the stakeholder needs, the adequacy of internal and external performance indicators, the control criteria and the objectives to be pursued for the continual improvement of the system.

- The Performance Prism by Neely et al. (2002a). This is a model that features the establishing of multiple balanced scorecards, based on the different types of stakeholders. Each balanced scorecard consists of indicators divided into five perspectives that guide the implementation of the model.

This model enables the representation of the organisation in its entirety, as well as punctual considerations on specific aspects being analysed (either a single stakeholder category or one business process, either the whole company or one business unit). The architecture is graphically represented as a prism where each

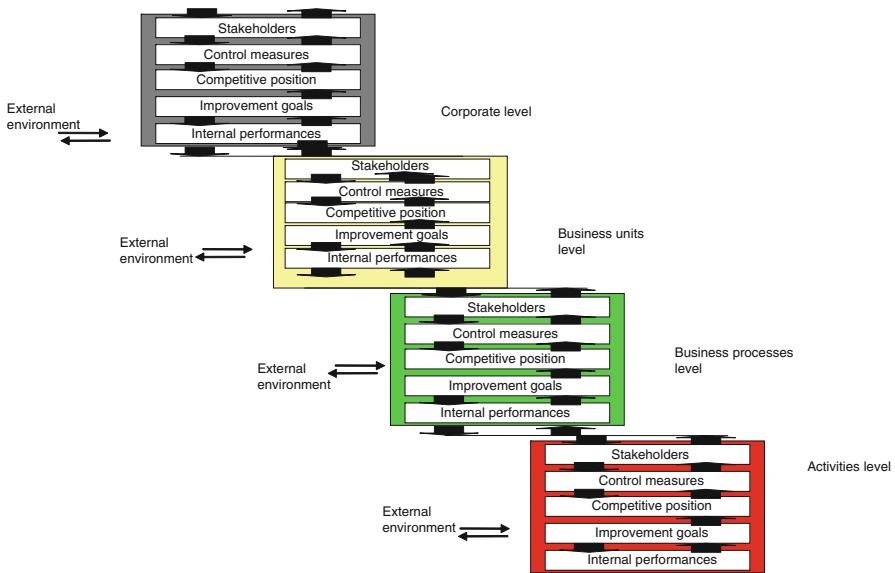


Fig. 4.6 The integrated performance measurement system (Bititci et al. 1997)

facet corresponds to an area of analysis, identified on the basis of the main aspects that an organisation should manage with a performance measurement system. Such aspects are listed below.

- Stakeholder satisfaction: knowing what the needs of all stakeholders are;
- Strategies: defining the strategic goals to pursue to satisfy the stakeholders;
- Processes: identifying the key processes to be executed in order to pursue the organisation's strategic goals;
- Available resources: having the necessary capabilities (human and technological resources, infrastructures and managerial practices) to implement the key processes;
- Stakeholder contribution: defining what the organisation requires from its stakeholders.

Figure 4.7 shows the customer perspective according to what the model features.

- The Organisational Performance Measurement (OPM) by Chennell et al. (2000). This model revolves around three principles, as follows:
- Alignment: the selection of indicators is described as a tool that must serve to encourage people to align their efforts with the strategic directions of the enterprise;

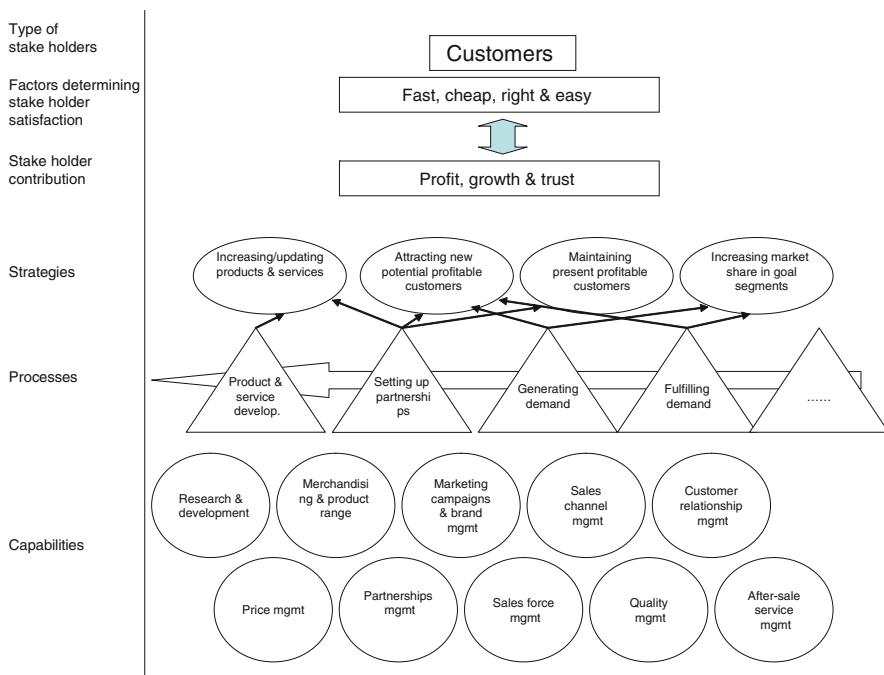


Fig. 4.7 The prism model – customer perspective

- Process thinking: the measurement system is linked appropriately to system and process monitoring, control and improvement;
- Practicability: at any level in the organisation there is a consistent process that identifies the sorts of measurements that need to be collected, and ensures the quality of the data and the alignment with the goals.

The system incorporates two constructs (Fig. 4.8); the first is called “Zones of Management”, which describes three levels of management (strategic, tactical and operational) with clearly differentiated positions of authority and responsibility; the second, called “Open Systems Theory”, focuses upon the organisation’s environment of reference through the analysis of the stakeholder satisfaction (investors, customers, employees, suppliers and community). The model describes the measurement of the satisfaction of the various stakeholders as the main indicator of success of the enterprise.

- The Integrated Performance Measurement for Small Firms designed by Laitinen (1996, 2002). The architecture, which is common to all businesses and to different environments, is specifically developed for small and medium enterprises, and features two dimensions; the first one considers internal/external aspects, the second one distinguishes the economic-financial aspects from the non-economic-financial aspects.

This model features seven key factors: five of them are internal, while two are external (Fig. 4.9); for each factor, economical-financial and/or other aspects are considered, as follows.

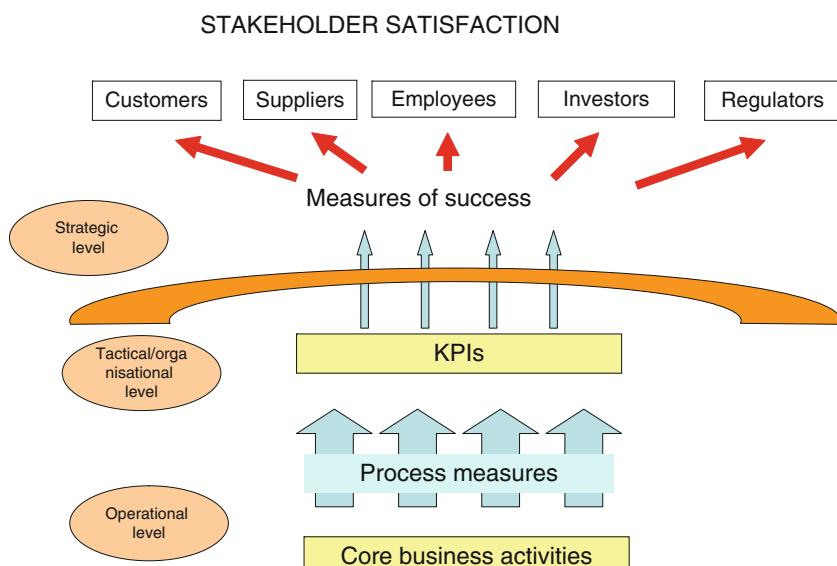


Fig. 4.8 The organisational performance measurement

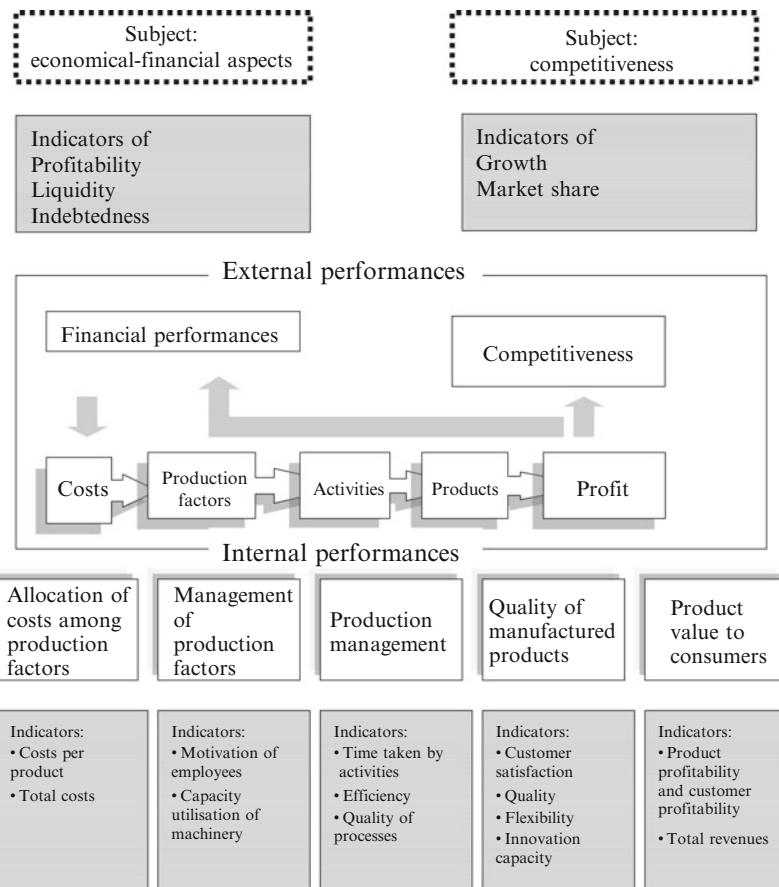


Fig. 4.9 The integrated performance measurement for small firms (Laitinen 2002)

Internal factors:

- Costs of production factors (economic-financial dimension)
- Production factors (non-economic-financial dimension)
- Activities (economic-financial and non-economic-financial dimension)
- Products (non-economic-financial dimension)
- Product cost and profitability (economic-financial dimension).

External factors:

- Competitiveness (economic-financial dimension and non-economic-financial dimension)
- Economic-financial performance (economic-financial dimension).

Measuring internal performances enables an organisation to monitor its production process from beginning to end; measuring external ones to assess its position in

the competitive market. The two types of performances (internal and external) are inter-related by a causal link. This construct adopts a managerial viewpoint and is therefore to the exclusive use of the management to meet the needs of SMEs where a single entrepreneur, or a small group of investors, holds the overall control of the enterprise.

Table 4.1 briefly shows the characteristics of the above models. Firstly, from the left, are the generic models, organised according to publication date; secondly, there are the two specific models for small- and medium-sized enterprises. As illustrated in the table, almost all of the analysed models feature an alignment between the PMS and the strategy that a company is pursuing; this aspect received special emphasis in the models developed in the 1990s (left part of Table 4.1) further to the criticism over traditional models, which had no links to the company's strategic aspects; for example, the Balanced Scorecard by Kaplan and Norton (1996) was presented as a construct for the "translation of strategy into action", the Performance Pyramid System by Lynch and Cross (1991) was introduced with the purpose of linking the management's strategy to the pursued goals at the lowest levels of the organisation. However, over the last years, the characteristic of strategic alignment, although maintaining a position of crucial importance in the design of performance measurement systems, has been progressively reorganised. There were two reasons that determined such a change. On the one hand, there was evidence of increasing attention paid to stakeholders, whose needs became the starting point of the most recent models; on the other hand, the progressive interest of small and medium enterprises in performance measurement systems was leading to a process where such a characteristic would be adapted to the needs of SMEs, which sought to introduce their strategic dimension to PMSs while maintaining special focus upon their operational aspects.

All the constructs that this study is analysing are balanced. This characteristic is of crucial importance and, in the models under consideration, is mentioned in an explicit way to point out the difference that exists between them and the traditional models, which exclusively focus upon economic and financial aspects.

The development of process-oriented performance measurement systems is recent and mostly interests the models developed during the last years and those that focus upon small and medium enterprises. PMS process thinking probably developed in response to organisations' need for integration and to the need for adopting a process-based approach in management. The most recent constructs are wide, that is they enable a company to synthesize its performances as a whole; as has been previously stressed, the models introduced over the last years have provided a holistic view of the organisation that supports the introduction and development of integrated management systems.

Except for the Performance Measurement Matrix, which is so simple that it neglects several important measures (Neely et al. 1995), all of the generic models can be used to support the design of wide and deep systems in response to enterprises' need for a complete and detailed measurement system, able to give an overall assessment of their performances; such models are, at times, complex to

manage and show some issues when it comes to respond to the variations of a company's internal and external contexts. The two models for small firms feature the design of much shallower and narrower systems, probably so because they are expected to meet the need for more simplicity.

The use of the type of models designed by De Toni and Tonchia (2001) shows a clear difference between the structure of most generic models (Performance Measurement Matrix, Performance Pyramid System, Results and Determinants Framework and Balanced Scorecard), which are mainly vertical, and those of the two specific models for SMEs (Organisational Performance Measurement by Chennell and Integrated Performance Measurement for Small Firms), which feature an horizontal type of structure. The placement of the models in Table 4.1 can be dually interpreted. On the one hand, there is emphasis on the difference between the models for large enterprises and those for small and medium enterprises and, on the other hand, there is evidence of a time-related evolution of the considered models. All of the more recent models, including those for SMEs (right side of Table 4.1), show an horizontal structure, probably in response to the need for going from bureaucratic/vertical management systems to reactive/horizontal systems.

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Chapter 5

Empirical Evidence: Implementing the BSC in SMEs

Abstract. The chapter describes the experience of three leading SMEs that successfully experimented the proposed approach. With the description of the three case studies, the reader will be guided through the understanding of both the process that led to the adoption of a circular approach and the main critical aspects that can promote the implementation of a measurement system in SMEs. The Valbona case narrates in detail the integral design and implementation process of a management dashboard that firmly adhered to the four phases of the circular model; the Home Cucine case stresses the key role of TQM in the development of SMEs, as well as the need for integrating the directives that such an approach imposes and adequate performance management tools. Only upon integrating the two approaches is it possible to build a system capable of supporting the management activity of small enterprises. The Uniflair case shows how important it is to accurately analyse and define single performance indicators, as an indispensable requirement to the effective management of performances.

Keywords BSC implementation • Implicit dashboard • BSC design • Strategy map • Dictionary of indicators • Management dashboard • Performance measurement system

As scholarly literature has pointed out, very little empirical research has been carried out on performance measurement in SMEs. The countries that are traditionally more interested in studying this topic are Australia (Barnes et al. 1998), where a specific organisation was created to support the development of PMSs for SMEs (called the Commonwealth Scientific and Industrial Research Organization – CSIRO), Finland (Laitinen 2002; Rantanen and Holtari 2000; Tenhunen et al. 2001), the UK (Bhimani 1994; Bititci et al. 2000; Collis and Jarvis 2002;

Jarvis et al. 2000; Neely and Mills 1993) and Denmark (Hvolby and Thorstenson 2000). The analysis of these studies has shown how the issues concerning the implementation of the BSC do not depend much on cultural characteristics connected with the country, but rather on the specific implementation methodologies and strategies that are being used (Garengo et al. 2005).

Based upon these considerations, the present chapter will describe the experience of three leading SMEs situated in Northern Italy that successfully experimented the proposed approach. With the description of the three case studies, the reader will be guided through the understanding of both the process that led to the adoption of a circular approach and the main critical aspects that can promote the implementation of a measurement system in SMEs. The Valbona case narrates in detail the integral design and implementation process of a management dashboard that firmly adhered to the four phases of the circular model; the Home Cucine case stresses the key role of TQM in the development of SMEs, as well as the need for integrating the directives that such an approach imposes and adequate performance management tools. Only upon integrating the two approaches is it possible to build a system capable of supporting the management activity of small enterprises. The Uniflair case shows how important it is to accurately analyse and define single performance indicators, as an indispensable requirement to the effective management of performances.

The three business cases to follow represent three exemplary situations in the development process of a SME: namely, the case of a small enterprise with one owner who is also the CEO (as in Home Cucine); the case of a company that started developing and growing both from a quantitative viewpoint and an organisational one, and where a non-partner became the top manager (as in Valbona); the case of a firm that was mature from an organisational viewpoint and featured a complex structure, and was guided by a general manager/director and a steering committee consisting of all the middle managers of this company.

The case studies cover the development progress that is typical of SMEs (from the small one with one owner to the larger one with a manager and a committee); moreover, the three companies operate in three very different industries (i.e. design and simple technology; mass retailing with low value per unit and a process-based production; technologically complex products). The place where these firms are located is Northern Italy, which is an area largely recognised as one of the areas in Europe where SMEs have mostly contributed to economic growth and where the need for improving managerial practices is just as huge as that of other European countries.

We believe that the above-mentioned characteristics would facilitate the generalisation of the considerations that this book proposes to SMEs with a different organisation that could exist in an international context.

5.1 The Valbona Case: Implicit Dashboard and BSC Design¹

Valbona is a leading company in the Italian industry of canned vegetables; it produces and commercialises pickles and vegetables in oil with its own label, as well as third-party labels, and employs about 95 people. The company was founded in 1962; the founding partners bought its first trade mark “Gallina” and a few tools from an old craftsman who had been producing vinegar and pickled vegetables since 1920.

The year 1980 gave start to the first partnerships with leading distribution chains for the production of private labels (i.e. productions with the distributor's trademark), as well as to productions that featured the Valbona and Gallina trademarks. The company rapidly grew and triplicated its turnover and production volume in less than 10 years; in the early 1990s, it began designing its new factory, which was operational in 1994.

The years between the two millennia saw a strong advance in technological developments and a great increase in the company's production volumes: the ISO quality standard certification, the beginning of foreign sales, the success of the new “grilled” line and the creation of the new production line of sauces, are just some of the events that marked the success of Valbona. The most recent development step that the company took was the 2005 inauguration of the new 10,000-square-meter logistic centre that ensures a large stocking capacity and is able to maintain seasonal productions in the best conditions and to meet delivery times with speed and punctuality, thus making Valbona a company that is ready to seize future opportunities and challenges.

The attention on the consumer is the engine that drives this business reality. The company's mission stresses the importance of “Evaluating customer/consumer needs and meeting them with products of local canning tradition by always offering new products in line with current lifestyles”. The firm believe in the fundamental values of tradition, certified quality, safety and innovation; the latter is sustained with big investments in structures and technologies that enable the company to keep producing new lines and increasing its production capacity (which now consists of over 300,000 items a day produced by a factory that features two filling operation lines) so to meet customer needs and stay within production costs.

Valbona's business can be divided into two big categories: *private labels* (for mass retailing) and its *own labels* (Valbona and Gallina). Its main customers are mass retailers, both in Italy and abroad.

In this market mass retailers have a strong contractual power and competition mainly occurs over cost prices to mass retailers. In this context, Valbona continues investing so to constantly improve its offer, trying to sponsor new initiatives through an important marketing campaign addressed to the trade by means of specialised press. The Valbona trademark is mostly present in large grocery stores and in some mass retailers (such as Auchan, Iper, Gigante; Carrefour, Selex, Pam and

¹ Thanks to Alberto Rioda (General Manager of Valbona) for his contributions to this chapters.

Panorama) with special references (grilled canned vegetables, mixed mushrooms and artichokes in various recipe creations) in packages and formats that offer the final user great price convenience (1,062-mL jar).

Valbona's products can be divided into eight "categories": in oil, pickled, sauces, grilled, seasonings, olives, sweet and sour, mushrooms. Various specialties and recipes have been developed for each category to enable the company to offer the market a large and complete selection of products with approximately 650 references. The most popular items are those in the pickled and in oil categories: they count for over 70% of the company's total turnover.

The seasonal nature of vegetables represents the company's main source of complexity. Because the company deals with vegetables, both the quantity and the quality of the produce are subject to weather conditions, which are difficult to foresee and plan. The seasonal aspect then determines wide fluctuations in terms of quality, availability and cost throughout the year: whenever possible, to overcome the first two problems, over the years the firm has looked for evermore "reliable" suppliers that are available to invest in their own products with high-quality standards; however, this last aspect is inevitably very delicate as the main suppliers of vegetables are very small farms or companies.

Aware of the fact that the uncertainty that comes from the supplies and, in general, from the environment outside of the company, Valbona has always aimed at continually improving its production processes, even thanks to the adoption of modern technologies: the firm features two very flexible production lines that have a very variable set-up with the possibility to change format or product several times throughout the day (Fig. 5.1). Each production line, which functions every day over one or two shifts, has a production capacity of 300 jars per minute.

Product processing varies a lot. In the pre-processing department (which precedes the packaging), the produce may undergo various types of processing: from the "simple" blanching (when working with freshly picked vegetables) to the more complex process of blanching, acidification, grilling (for the production of grilled items – the grilled line has a production capacity of about 600 kg/h of grilled



Fig. 5.1 Valbona's production lines

vegetables) or the process of desalination and acidification (when working with semi-processed raw items preserved in brine). Regardless of the type of processing, in the production department vegetables are also washed, cut, mixed and homogenised.

All the phases of the production process are carefully monitored by a quality control system and an internal laboratory for analyses that checks all the critical points of the entire process, from the initial receiving to the finished product. To protect the quality of its products, the company completely relies on the computerised trackability of their products; all the handling of the single lot of materials are automatically recorded, from the time unprocessed items come in to the time finished products are delivered to end users.

In order to keep up with this variability, the company manages its production in a flexible manner. Therefore, Valbona functions without ever completely saturating its production capacity and it is able to continually change its production programs with variations, both in processing systems and in formats. Needless to say, this type of production management determines, in some instances, increases in costs, but it also enables the firm to efficaciously meet the continuous variations in the programs of incoming raw foodstuffs and promptly meet customer requests.

Flexibility and speed in the management of production program variations is done without ever compromising the quality of the product that the company offers. Valbona performs ongoing controls so to avoid possible foreign material inside the final product: variation of pasteurisation, in terms of duration and temperature, capsules' airtight closing system, correct acidification of products, presence of allergens in some products and therefore the need for separating products containing allergenic elements from those that do not, and sound functioning of control machines (x-rays, metal detectors) to ensure end consumers receive products that are free of contaminations. Reliability, as one of Valbona's strengths and as something it has always prided itself of, is guaranteed by an extremely rigorous HACCP (Hazard Critical Control Point) and Quality Control plan, as well as by the observation of the regulations of reference (Table 5.1).

The considerable growth that Valbona has undergone, in terms of turnover and volumes, over the last 10 years determined a structural and organisational crisis. Thanks to the far-sightedness of the top management though, the difficulties that had emerged became the engine that drove the change. Once the managers realised that the ISO quality standards had their limits if applied to an evermore complex reality, they started travelling the road that led to the managerial growth of the organisation.

In particular, the Balanced Scorecard development project in Valbona followed a self-assessment activity based on the EFQM, which took place in the framework of the *EFQM Levels of Excellence* initiative, and enabled the firm to reach the *Committed to Excellence* level, after the implementation of the BSC. Through this activity, the top managers realised that the enterprise had little capacity to monitor its key performance results and acknowledged that the analysed data were insufficient, some fundamental processes were not adequately measured and, especially, the key results were not assessed in a systematic way and were not organised in a synthetic and effective manner so they could be read. Further to these observations came the need for using a performance measurement system that, besides enabling

Table 5.1 Certifications that Valbona obtained and legislative context

Typology	Short description
UNI EN ISO 9001:2008	Quality management systems – requirements
UNI EN ISO 22005:2008	Tracking system in agricultural and food supply chains
Global Standard for Food Safety	Global standard for food safety
International Food Standard	International standard for food quality and safety for suppliers of private food labels
Law no. 283 of 30 Apr. 1962	Rules of hygiene applicable to the production and sale of foodstuffs
Ministerial decree of 21 Mar. 1973	Provisions on the packaging, containers and kitchenware designed to come into direct contact with food or items for personal use
Legislative decree no. 109 of 27 Jan. 1992	Actuation of directives 89/395/CEE and 89/396/CEE concerning labelling, presentation and advertising of foodstuffs
EC regulation no. 1895/2005	Restriction of use of certain epoxy derivatives in materials and articles intended to come into contact with food
EC regulations no. 1829/2003 and no. 1830/2003 of 22 Sept. 2003	Regulations on genetically modified food
EC regulation no. 178/2002	General principles and requirements of food law establishing the European Food Safety Authority and procedures in matters of food safety
EC regulation no. 852 of 29 Apr. 2004	Hygiene of foodstuffs
EC regulation no. 2073/2005	Microbiological criteria
EC regulation no. 882/2004	Official controls
Legislative decree no. 114 of 8 Feb. 2006	Actuation of directive 2003/89/CEE indicating the ingredients present in foodstuffs
EC regulation no. 1881/2006	Setting the maximum levels for certain contaminants in foodstuffs
EC regulation no. 1935/2004	Materials and articles intended to come into contact with food

the company to see whether its goals had been achieved and whether its processes were effective and efficient, would also work as a tool that could help it tackle the issue concerning the actuation of its strategies.

The implementation of the Balanced Scorecard followed a circular approach, which we discussed in Chap. 2, and hence featured these phases: determination of individual dashboards, identification of the implicit strategy map, definition of the desired strategy map and definition of a balanced dashboard. These phases are described in the paragraphs to follow.

5.1.1 Determination of the Implicit Dashboard

The direction to follow for the construction of the implicit management dashboard consisted of involving all the main organisational positions (namely the top

managers and the middle managers of first and second levels) in order to have a complete and thorough picture of what was being monitored both at the management level and at the operation level: a total of 17 people were involved. The duration of the interviews that took place varied according to the position of the interviewed manager within the organisation: the three managing partners, as well as the production manager, the sales manager, the accounts and purchasing manager, the quality assurance manager and the logistics manager required more time to express the measures that were under control and used, to better manage their activities, both at the “managerial” level and at the operational level. The interviews with the other managers instead took about an hour each. All the interviews took place in the managers’ offices (except for those with the heads of the production department and the head of the maintenance department) so to enable them to view or look up any document, report, file if needed for reconstructing the control system that each of them used.

Upon conclusion of each interview, all the collected measures (a total of 60) were categorised by highlighting the following aspects (Table 5.2):

- Definition: “what” was kept under control, the title of the measure in the interviewee’s jargon;
- Period of reference: the timeframe (daily, monthly, quarterly, semi-annually, annually) that the information/measure under control referred to;
- Type of support: the name, acronym or some type of general reference to a document, printed material or report where it was possible to see the information/measure that was under control;
- Reason for use: the reason, whenever expressed, why the information/measure was kept under control; who needed the information/measure; how the information/measure was used (for decision making or activity management);
- Data source: the sources that the data came from (these could be documents, but also offices) and contributed to providing the information/measure;
- Update frequency: how often the information/measure was updated;
- Use frequency: how often the information/measure was kept under control and hence used.

The division of the data into categories during the interviews enabled to formalise and share with the BSC development team a significant number of measures. The collected measures were synthesized into a report that, for the first time, informed the top managers about the indicators that were actually used within the company. Prior to this activity, the managers referred to an annual plan of indicators that was included in the quality manual – which was annually defined during the management review – where the following information was present: a name for each measure, the measured processes, the person in charge of the measure, the duration and frequency of the monitoring and a brief description of the measure – there were 19 measures. The reconstruction of individual dashboards thus contributed to greatly widening the view of the company’s implicit management dashboard because it was built after the information that was actually used in support to the decision-making process was analysed.

Table 5.2 Form for data collection

Definition	Period of reference	Type of support	Reason for use	Data source	Update frequency	Use frequency
Management-related complaints, divided by typology, with respect to the number of shipments	Every 3 months	Report: "ANALYSIS OF CUSTOMER COMPLAINTS"	"Indirectly verify the effectiveness and efficiency of the warehouse management"	Monthly recording of complaints in the ISO system, Access database	Monthly	Every 3 months
Percentage (per lot produced) of difference between production's total final cost and standard cost.	Daily		"Keep under control the return of the production dept. compared to the previous year"	Recording industrial accounts	Daily	Daily

5.1.2 Identification of the Implicit Strategy Map

The analysis of the individual dashboards led to the identification of 60 measures; in the table below we placed a selection of those measures in the four perspectives of the BSC (there was a total of 12 measures in the economic-financial perspective; 6 in the customer perspective; 41 in the processes perspective and one in the human resources perspective).

From the implicit dashboard then the implicit strategy map was derived; to this end, the motivations that each person had for using a certain indicator were examined, measure by measure, and briefly described in one sentence that expressed the underlying phenomenon. This operation was carried out in two steps: the first one consisted of associating the phenomenon with each single measure; then, using the affinity diagram² technique, the similar phenomena were grouped together (Fig. 5.2).

The final list of phenomena was subsequently placed in the four perspectives to visualise the implicit strategy map (Fig. 5.3), however, the ties among phenomena were not precisely pointed out; there was also a discussion on the systemic relationship that existed among the various factors and on the fact that the most

MEASURES	HOW OFTEN USED	OBJECTIVES (or CSFs)
New products required /product launched	as needed	Monitoring the innovation capability
% punctual deliveries from suppliers	daily	
Quality of raw materials received	daily	Monitoring the “reliability” of suppliers
Relationship between expected arrivals and final arrivals	monthly	
MR (compliance with standards in materials returned)	daily	
SoP (compliance with standards in production speed)	daily	Monitoring production efficiency
Line stop	daily	

Concise statement that describes the phenomenon to be measured

Association of different measures with one objective (or CSF)

Fig. 5.2 Clarification of the linkage between measures and CSFs

² An “Affinity diagram” is a business tool designed to help organise and group a large amount of data (ideas, topics, solutions, problems) into logical categories according to the ties that exist among them.

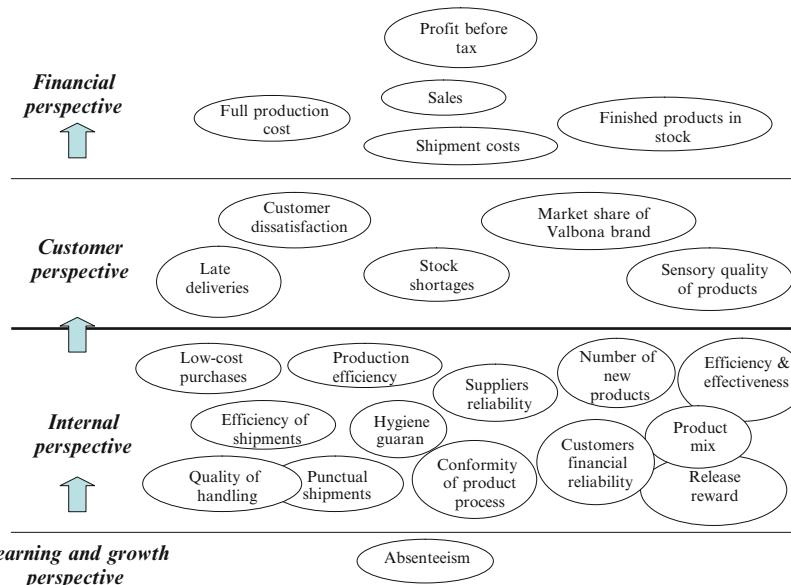


Fig. 5.3 Valbona's implicit strategy map

critical inter-dependencies (those where there is a trade-off between factors) were all well evident and shared by everybody Table 5.3.

5.1.3 *Definition of the Desired Strategy Map*

The implicit strategy map was drawn up on a big poster board where a post-it note was affixed for each phenomenon; this was the basis for the definition of the desired strategy map; from an operational viewpoint, it was decided to work by single perspective, with a sequence that differed from the traditional approach that Kaplan and Norton had proposed, which once again recommended a top-down logic (that implied starting from the economic-financial perspective and getting to the human resources one): it was indeed decided to adopt the sequence illustrated in Chap. 2, where the “triggering questions” that had been submitted were also added; four white poster boards were affixed next to the implicit strategy map – one for each perspective (Fig. 5.4).

The customer perspective worked as a good starting point as it easily introduced some strategic observations: the fact of focusing the attention upon the “value proposition” made the business strategy theme extremely operational and concrete, and created the right foundations for the selection of processes and critical performance areas; in addition, the identification of critical parameters of economic-financial nature was performed after the critical success factors had been clarified in the value proposition and in the functioning of internal processes. The human resources

Table 5.3 Valbona's implicit dashboard (excerpt)

Financial perspective (12 indicators)	<ul style="list-style-type: none"> • Percentage (per lot produced) of difference between final “production total cost” and standard cost • Cost to ship 1,000 kg • Unit cost per hour of labour • Sales volumes and values based on former data, budget and sales •
Customer perspective (6 indicators)	<ul style="list-style-type: none"> • Complaints, divided by typology, with respect to the number of shipments • Valbona's market share • Delivery reminders with respect to the number of shipments •
Internal perspective (41 indicators)	<ul style="list-style-type: none"> • Total number of new products requested • Punctual deliveries from suppliers • Quality of raw materials • Comparison between purchase prices of raw materials and accessories and budget prices • SoP (speed of production with respect to standards) • Line stop • Orders shipped late • Expiring articles • Quality indexes (pertaining to critical process points of HACCP) • Non-Conf. (process NC; process NC due to suppliers; NC on finished products; on raw materials) •
Learning and growth perspective (1 indicator)	% of absences

perspective was dealt with last, because its development was supposed to start from a clear specification of the critical factors in the three other perspectives.

The first two meetings to discuss the definition of the desired map were hence dedicated to the customer perspective; starting from a critical observation on the implicit map, a number of aspects pertaining to Valbona's *value proposition* emerged. Listed below are those aspects, classified into the three components of the value proposition, exactly as they were expressed on the post-it notes.

Product attributes:

- Relative price (for the Valbona label)
- Sensory quality
- Conformity to specifications
- Packaging (for the Valbona label)
- Product safety
- Trackability in the supply chain
- Easy to use
- Binding observation of regulations

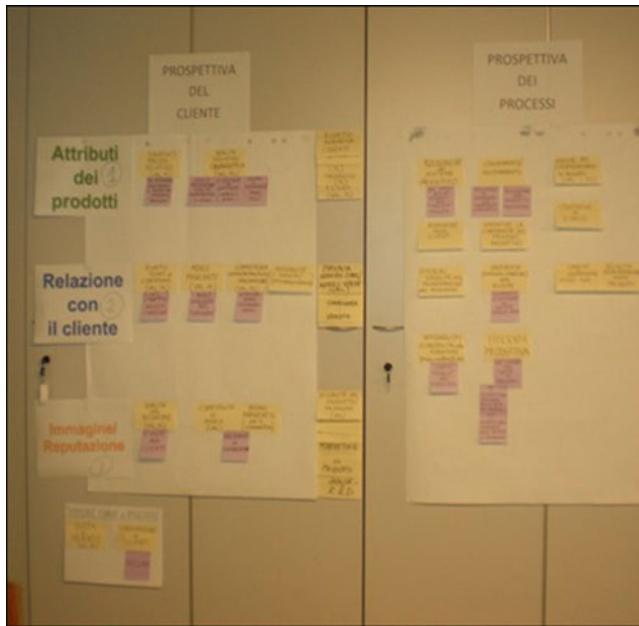


Fig. 5.4 Building the desired strategy map

Customer relationship:

- Delivery times
- Stock breaks
- Complete line/dynamism/innovation
- Profit margins
- Relationship with consumers (for the Valbona label)
- Effectiveness of customer service/toll-free number (for the Valbona label)
- Observance of sales conditions
- Integrity of delivered goods
- Correct order processing
- Management of pre- and post-sale problems

Image/Reputation:

- Trade marketing
- Quality of the sales force-customer relationship
- Institutional communication
- Product communication
- Product visibility (for the Valbona label)
- Brand notoriety (for the Valbona label)

During two subsequent meetings, the above-mentioned elements were summarised into a series of critical success factors; in the formulation of the

CSFs Valbona preferred to adopt, whenever possible, some verbal expressions that would emphasize an action and a goal; meaning that the critical success factors were formulated in terms of “strategic objectives”:

- Comply with delivery times
- Improve sensory quality
- Decrease stock breaks
- Increase market share
- Improve customer service
- Increase brand notoriety
- Improve quality of sales force–customer relationship
- Monitor price variations with respect to the leader’s
- Look for product range completeness.

The next step then was to explore the processes perspective: two more workshops were planned for the purpose of identifying the activities that were especially important for the achievement of the customer perspective goals. The first goal, which everyone in the team deemed as extremely relevant from a strategic viewpoint, was to increase suppliers’ reliability because the quality, timeliness and exact quantity of the supplies – especially of fresh vegetables – were essential for planning optimal production and ensuring efficiency and quality. Other goals, which were closely connected with the first one, were identified and consisted of increasing the company’s production efficiency, increasing the production system’s flexibility, improving the stability of production planning and complying with production process conformity: in fact, pursuing these results can not be disconnected from improving suppliers’ performances because substandard supplies, in terms of quality and quantity, as well as late-coming supplies, could require an increase in flexibility and could force the planning department to continually modify its production plans with the result of losing efficiency.

Expecting reliable supplies was also strategically important because of the influence that this had on some objectives that had been previously identified in the customer perspective: decreasing the company’s stock breaks, observing delivery times and improving the products’ sensory quality were easier-to-achieve objectives when a rigorous control of supplies was performed with attention to quantity, quality and timing.

The work team then identified two important objectives pertaining to customer management with possible positive benefits for the notoriety of the Valbona brand: both had to do with the continuing presence of the brand inside sales points, especially in mass retailers. With continuing presence we mean the presence of Valbona products on the shelves all through the year, not only as items in promotional “stations” or dedicated end caps. These two objectives were specifically expressed as the intention to increase the continuing presence of the Valbona brand in mass retailers and, in the national market, to increase the sales of Valbona articles located on the shelves. Finally, as far as innovation management processes were concerned, two main objectives were identified: the first one was to increase

the development speed of new products; the second one was to improve the timeliness of new products to be launched.

As for the economic-financial perspective, the work team was advised to reflect on aspects concerning productivity/efficiency, growth and profitability. Emphasis was also put on the relationship between the BSC and accounting reports: the economic-financial perspective of the BSC is not supposed to be a copy of accounts indexes; on the contrary, it should represent an accurate selection of the performance measures that are thought to be especially important and that should be emphasized and analysed more frequently than traditional accounting reports. About productivity and profitability, the following aspects were considered as especially critical:

- Monitoring contribution margins;
- Decreasing production costs of finished products and purchasing costs of raw materials.

In stressing the importance of reducing purchasing costs, a difficult trade-off was pointed out: that of “balancing” the improvement of suppliers’ reliability with the decrease in purchasing costs of raw materials; pursuing these two objectives at the same time could be difficult because the most reliable suppliers are usually those with the highest prices. Regarding the company’s growth strategy, two more relating objectives were formulated, just like the previous ones, and with results highlighted in the other perspectives. The work team deemed it essential to highlight the progress of the company’s turnover from a strategic point of view (both the total and the segmented turnover for the Valbona brand) and the turnover that the new references made; sales of the latter were closely connected with the company’s proactive and innovative capacity.

The last perspective dealt with – the human resources one – happened to be the most difficult to define in terms of results to pursue because, like in many SMEs, Valbona did not have any competency map, not even any systematic data on corporate climate and cultural profile. In this view, two *generic* objectives were identified (aligning individual competencies and improving personnel satisfaction and corporate climate) in order to stress the importance of such aspects and to formalise the necessary initiatives to be undertaken for the realisation of the operational measures accountable for the achievement of such objectives. Figure 5.5 shows the desired strategy map; the next paragraph will illustrate the translation of each of the preset objectives into one or more performance measures that will make up the first version of the BSC in Valbona.

5.1.4 From a Strategy Map to a Balanced Dashboard

The translation and formalisation of all the performance measures, bound to numerically represent the various strategic objectives, are described below, for simplicity and clarity, as activities that occurred after the objectives themselves

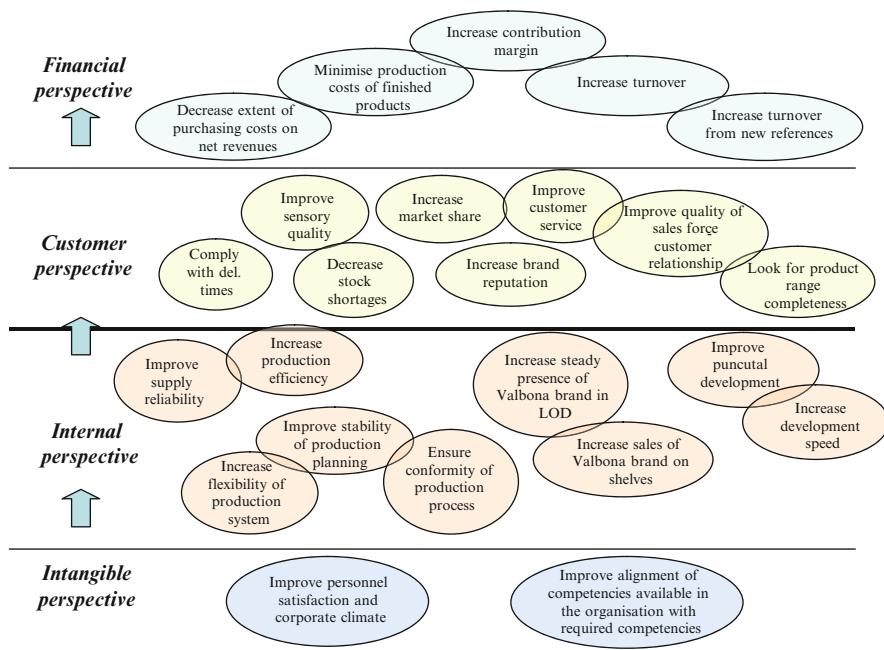


Fig. 5.5 Desired strategy map

were defined. However, the majority of the indicators – the conceptually simplest ones – were built in concurrency with the clarification of the strategy elaborated during the meetings described in the previous paragraph; the specification of the indicator took place at the same time as the attempt to clarify the meaning of the objective. The definition of the indicators that required more thorough observations instead was postponed and realised once the meetings on the definition of the desired strategy and of the strategy map were concluded.

Without regard to when they were defined, every measure was documented in view of drawing up a *dictionary of indicators*; even in a small-sized enterprise, it is essential to keep the important information that pertain to the performance measures being used up to date and shared. For each indicators, the dictionary reports the following items: the perspective of reference; the name of the measure; the objective that the measure referred to; the calculation formula; the meaning of the measure; and the timeframe the measure referred to (see Fig. 5.6).

Table 5.4 lists the measures that were associated with the objectives identified in the strategy map (note that there is no human resources perspective; the first implementation of the Balanced Scorecard focused upon the other perspectives, while waiting for the results of the competence mapping project that began upon conclusion of the BSC project).

It is interesting to compare the implicit dashboard with the BSC that the work team came up with. An initial observation regarded the number of measures: as

Name LINE CHANGE TIME	
OBJECTIVE: Increase production flexibility	TARGET XXX
FORMULA $\text{Total minutes of line stop} / \text{Total number of format changes and/or line products}$	PERSPECTIVE: Internal processes
MEANING OF INDICATOR : Measures the average number of minutes that the production line needs to stop for, in order to change a format or a product. The lower the value of the indicator, the better the production system can “support” a great variety of products (intended as different formats and articles produced), thus becoming more flexible.	TIMEFRAME Month
	OWNER XXX

Name FREQUENCY OF LINE CHANGE	
OBJECTIVE: improve the stability of the production planning	TARGET XXX
FORMULA $\text{Total hours of production line} / \text{Total number of format changes and/or line products}$	PERSPECTIVE: Internal processes
MEANING OF INDICATOR : Measures how often (time expressed in hours) a production line must be equipped in order to change the format and/or product. With a higher indicator's value there should also be a greater quantity of articles produced between set-ups; this is a symptom of a stable and efficient production planning.	TIMEFRAME Month
	OWNER XXX

Fig. 5.6 Valbona’s dictionary of indicators

Table 5.5 illustrates, the company went from 60 measures in the implicit dashboard to 32 of the BSC, with a greater balance among the three perspectives that developed. Another observation regarded the newer measures: of the 31 BSC measures, a good 18 of them were new. This observation enabled us to reaffirm

Table 5.4 The BSC's first version in Valbona

Objectives	Measures
F1: Increase marginality	Contribution margin
F2: Increase turnover	Turnover
F3: Increase turnover from new references	Turnover from new references
F4: Decrease the cost rate of raw materials on net revenues	Purchasing prices (difference between current-price purchases and standard-price purchases of same products)
F5: Minimise production costs per product	Actual production costs
C1: Comply with delivery times	Delivery reminders Late deliveries
C2: Decrease stock shortages	Stock shortages of seasonal merchandise Stock shortages of rotation merchandise's turnover
C3: Improve customer satisfaction	Total complaints Foreign body complaints
C4: Increase market share of Valbona brand	Valbona brand's market share
C5: Increase quality of sales force-customer relationship	Visits per customer Turnover per potential Nielsen point Valbona brand's turnover from cross-selling
C6: Improve sensory quality of products	Products with general index above standard Derogations on specifications concerning raw materials
C7: Increase brand notoriety	Listing expenses Investments in communication
P1: Improve production efficiency	Range of raw material Production speed
P2: Improve stability of production planning	Daily variations of production plans Frequency of line change Productions per reference
P3: Increase flexibility of production system	Line change time
P4: Increase sales of Valbona articles on shelves of national markets	Turnover from Valbona products that are not on promotion
P5: Increase ongoing presence of Valbona brand in mass retailers	Hypermarkets with ongoing addition of Valbona products
P6: Improve reliability of supplies	Purchasing NC
P7: Ensure conformity of production process	Production NC
P8: Improve timely development of new products	% variance of actual times with respect to expected times
P9: Increase development speed of new products	Actual days for development of new products

what was stated in the first chapter: a “management dashboard” is not a mere collection of data and indicators; enterprises are all full of measurements, but that fact does not solve the issue of a control system’s strategic importance, which can only be dealt with through a systematic analysis that makes it *visible*.

Table 5.5 From the old dashboard to the Balanced Scorecard

The diagram illustrates the evolution of the scorecard. It starts with a table comparing the 'Implicit organisational dashboard' and the 'BSC' across four perspectives. Arrows point from the total indicator counts (60 and 32) to a second table below, which details the difference between 'New indicators' and 'Old indicators' for each perspective.

	Implicit organisational dashboard	BSC
Financial perspective	12	6
Customer perspective	6	14
Internal perspective	41	12
Learning and growth perspective	1	?
Total # of indicators	60	32

	New indicators	Old indicators
Financial perspective	1	5
Customer perspective	9	5
Internal perspective	8	4
Learning and growth perspective		
Total#of indicators	18	14

The Balanced Scorecard prototype that was presented met the work team's expectations, although it was clear from the start that the definition and establishment of some measures required more refining efforts. For example, as far as the monitoring of the suppliers' reliability was concerned, even though on the first attempt it had been enough to keep the number of non-conformities under control, it was agreed that an important objective was to integrate this indicator with further information that could be derived from the inspections that the company's technicians performed at the suppliers' premises; the provided documentation, the availability and the promptness in meeting certain requests, should represent some additional elements on which suppliers may be assessed, without forgetting the fact that, in the measure that the dashboard featured at that time, the same degree of importance was assigned to all the non-conformities, regardless of, for example, the extent of the delay in supply delivery, the smaller quantity of delivered goods and the "qualitative" reason that made the company label a product as a non-conforming one. Another indicator that required further attention was that of sensory quality of the product; besides the influence that an internal tasting team could have on the company's assessments, this measure should have also taken into consideration the results of the processed data directly coming from end consumers (for example, with "in-store" tasting campaigns that useful information could be drawn from). These two examples emphasize the dynamic aspect of a BSC: the



Fig. 5.7 The BSC software in Valbona

efforts put into the design, analysis and review should never be considered as conclusive; otherwise the dashboard could become obsolete, more or less rapidly, depending on the environmental turbulence. Figure 5.7 reports one of the displays from the BSC management software (featuring some artificial data for privacy reasons), which was developed inside Valbona.

The implementation of the dashboard led to some important changes within the enterprise. The top management's decisions are now supported – at least partly – by information on structured performances based upon specific business needs.

As Fig. 5.7 shows, the company has yet to identify some indicators for the intangible perspective. However, an in-depth analysis and design work centring on human resources management has already been concluded. Since the conditions of the organisational climate are especially favourable and the top management pays a lot of attention to human resources, we are confident that the Balanced Scorecard will soon include those aspects as well.

5.2 The Home Cucine Case: The BSC as Pivot of the Management System³

Home Cucine was established in 1988 by three partners whose intent was to produce and sell modular kitchens in the Italian market. Thanks to the heterogeneous experiences and aptitudes of the three founders, Home Cucine began

³ Thanks to Andrea Frezza (Quality and Product Certification Manager) and Agostino Mirsajev (Sole Administrator) for their contributions to the chapter

developing right away some important competencies in the technical (design and production) and organisational fields, that promoted both a rapid increase in production volumes and the improvement of management processes. A few years later, one of the partners, Mr. Agostino Mirsajev, became the sole owner and manager of the whole company further strengthening his expansion policy and promoting the development of management systems in support of decision processes from the top management.

In 1993 the legal and operational headquarters of Home Cucine were moved to the current location, which is the actual production plant where, in 2005, more space was added thanks to the annexation of a nearby factory. With the size increase came a surprising increase in turnover (currently consisting of EUR 16 million): as opposed to the trend in this industry, in 2000 the company's turnover increased by 115% and in 2004 Home Cucine ranked 37th in the nation for the production of kitchens (over 600 producers). These results are especially positive if we consider the time when the company was established and how specific the business it belongs to is. There is in fact a lot of competition in the kitchen furniture business, with a trend of negative growth and high concentration of firms; approximately 100 medium and large-sized enterprises and over 500 artisans. The top 10 enterprises of this industry represent 36% of the national market; the following 30 cover 28% of the market. Besides the high concentration, in 2005 Home Cucine joined the group of the top 10 companies for sales of kitchen furniture in the medium economic price range and of kitchens with veneer panels.

The reason for the company's quick success depended on a number of aspects: its ability in identifying a need that had not been completely met (that of good-quality kitchens at convenient prices) in a business sector that was already saturated; its capacity to ensure a level of customer service that is usually offered by larger enterprises; and its attention to improvement and innovation, not only in the production realm, but also in the organisational-managerial one.

Ever since the end of the 1990s, along its quality certification, the company started introducing the first concepts of total quality management. The boost that the certification process gave, by operating at the organisational and process levels, had an immediate positive impact on the quality of the products that the company offered. A few years later, the managing director was able to promote the dissemination of the *Total Quality Management* concept; he was convinced that the quality of the entire organisational system was a requirement that the company could not do without, if it wanted to generate good-quality products and services, and also if it wanted to satisfy its customers and promote increases in turnover and profitability.

The result that the firm obtained showed how the continual evolution of the quality system, as Table 5.6 illustrates, contributed to the improvement of the quality-price relationship of the products over time, promoting the development of a performance management system that was especially advanced.

Table 5.6 Quality system evolution and acknowledgements

1999	ISO 9002 certification	
	Product certification (old European regulation 1153) + ISO 9001/00 ^c certification	
2002	Italian quality award (European Foundation for Quality Management model)	First place in the Treviso province
2004	Italian quality award (EFQM model)	First place in the Veneto region
2005	Italian quality award (EFQM model)	Special mention, Rome
2008	Product certification (new European regulation 14749)	

5.2.1 Products and Markets

This company offers both classic and modern modular kitchens in the medium price range that are appreciated for the good price-quality relationship. Since 2006, thanks to investments in technology and design, the company has progressively advanced its position in the market. The kitchens it produces are not offered as a mere furniture product, but as “the heart of the home” (where we eat, drink, talk) and, as such, their prices are competitive (accessible to a large number of people), whilst maintaining a good level of quality in all their components.

The development policy of the business induced the entrepreneur to invest in the sales of the products even in foreign markets, which still featured some interesting opportunities. Whereas in other sectors the economic weight of Western Europe is about 20%, in the kitchen industry the old continent has a position of dominance compared to other parts of the world. As far as production sites are concerned, Germany and Italy still predominate with 70% of European exports in the industry. At the moment, 22% of the national production is sold to European markets (especially France, Greece, Russia and Spain) and any further development of these markets will occur, not only because the internal population will increase, but also because a new *furniture trend* is taking place. The trend is to choose integrated products instead of other types of pieces (especially single credenzas, as an alternative to modular kitchens), even in countries such as France or Greece.

Home Cucine's kitchens are known for their reliability and availability at competitive prices; the reliability is ensured by the “Safe Product” brand, which not only ensures that there is careful monitoring of the processes all through production, but also careful management of the five activities listed below.

- *Selection of materials.* The product certification by the independent foundation DNV requires, throughout the design period, the assessment of materials to ensure that any new product functions correctly before including it in sales catalogues. The company's Technical Manager only selects materials that can withstand specific mechanical requirements, documented by technical forms and in-depth tests.
- *Periodical supplier evaluation.* Every year, the Purchasing Office evaluates the company's suppliers by using two key parameters: defective material and late deliveries. The suppliers that do not meet the company's requirements are carefully monitored and, if necessary, replaced.

- *In-factory product checks (raw materials, semi-manufactured and assembled products).* All labourers perform their jobs following a pre-defined table for product controls (which are periodically updated); the Quality Manager annually verifies that the labourers are familiar with and actually perform the assigned checks.
- *Mechanical tests on finished furniture.* Every year, a sample of furniture is selected by the DNV and analysed by accredited laboratories, which put the furniture through some strength and duration tests. In case of a negative result, the technical and production managers immediately make the necessary corrections.
- *Analysis of complaints and production rejects.* Every 3 months, the top management examines the data regarding customer returns and production rejects. If any of the departments shows a high number of problems (either too many returns or rejects), the main cause of the problems is analysed in detail.

The company distributes its products through a network of specialised furniture retailers (kitchens, bedrooms, living rooms), whose size is either small or medium 83% of them have a purchase turnover of less than EUR 30,000. Besides the small size of his customers, the owner's passion for information technologies made it possible to introduce numerous solutions for the improvement of customer service; Home Cucine was ahead of its competitors by at least 3–4 years when it started offering a number of different services; the main ones are listed below.

- *Internet site (since 1993).* Detailed information on the company, on a selection of products (panels, handles, counter tops, mechanisms, hoods, etc.) and on quality are available on line and updated in real time.
- *Newsletters (since 2004).* The traditional newsletter on paper was replaced by a digital one which is sent out every month to all customers by e-mail. The newsletter is a tool that enables the company to quickly and effectively communicate information on products and services, as well as submit targeted questionnaires to evaluate customer satisfaction promptly and rapidly. As the entrepreneur has stated “There is no need to ask what we already know: processing data becomes a waste of time and we unnecessarily bother our customers”.
- *Retailers Area (since 2006).* Implementation of a section on the website dedicated to retailers. This area is a useful support tool for the company's retailers, as it contains all the last-minute information that they might need regarding price lists, order copies, showroom proposals, saved newsletters and a graphic programme for kitchen design.
- *Digital Invoices (since 2007).* Paper invoices were replaced by digital documents with the result of speeding the process and facilitating their storage.
- *SMS (since 2008).* SMS messages are sent to customers' mobile phones to keep them informed about the status of their deliveries.
- *Barcode Info System (since 2009).* Barcode monitors and readers in the production department are used to better check the product that the customer will receive.
- *Driver check-list (since 2009).* The drivers use special hand-held devices where they can check the deliveries.

5.2.2 *The Performance Measurement System: How and Why It Was Introduced*

The need for measuring performances was born in Home Cucine as a direct consequence of the top management's decision to "non-ritually" implement the ISO 9001 quality standards (Biazzo 2005). The regulation indeed stated that: "The organisation shall determine, collect and analyse appropriate data to demonstrate the suitability and effectiveness of the quality management system and to evaluate where continual improvement can be made. The analysis of data shall provide information relating to customer satisfaction, conformity to product requirements, characteristics and trends of processes and products, and suppliers." The ISO regulation hence indicated that the firms intending to become certified are supposed to collect and analyse information regarding their performances. In other words, it described the performance measurement system but did not indicate what tools or models to use for that purpose.

In 1999, Home Cucine obtained its ISO 9002 certification (updated in 2002 with the ISO 9001 standards). The sole administrator took it upon himself to promote the adoption of a quality system that would be fit for supporting the management. To ensure that the certification process would not be undertaken as a mere formal task, but as an actual guideline toward improvement, from 1999 to 2003 Agostino Mirsajev also took upon the role of Quality Manager. With the same approach, the entrepreneur introduced the first analyses of results through indicators, as he had no doubt that an adequate system to measure performances was an essential tool for fully controlling *entrepreneurial risks and best managing the company*.

Ever since the first applications of the ISO 9001 norms and the first performance indicators, the top management focused its attention upon two key objectives: Customer Satisfaction and Production Efficiency. Year after year, the company invested resources to improve the collections of data pertaining to the performances achieved, thereby increasing the amount of details gathered. The entrepreneur believed that a synthetic indicator could not help improve performance if it was not then possible to go into the details of the negative trend.

The top management organised several meetings to make the whole organisation aware of the importance of carefully gathering the necessary information. A couple of examples are listed below (Table 5.7).

In 2002, Home Cucine's performance management envisaged the use of 44 indicators, divided according to the themes of the ISO standards and of business functions (ref. Table 5.8). If, on the one hand, the positive effect of the ISO standards was evident in its ability to promote the introduction of performance indicators, on the other hand, the lack of a connection between monitored performances and business strategies was starting to show. If we take into consideration what the norms stated, the company had in fact identified a group of performance indicators with the purpose of *supplying* information on various aspects – customer satisfaction; conformity of product; trends in products and processes; suppliers – but had failed to use a suitable model for the definition of a performance measurement system that was integrated and had a strategic nature.

Table 5.7 Material that the top management prepared to make the personnel aware of the importance of accurately and thoroughly collecting information

Event		What happens in case of brief registrations	What happens in case of detailed registrations
Returned merchandise	... the merchandise that a customer returns increases and focuses upon specific products (e.g. panels of model X) or upon specific causes (e.g. supplier's error – wrong hue)	It is not possible to identify what the causes or the most contested articles are and no important action is taken to remove the origin of the problem. We only know that returns have increased.	It is possible to carry out an efficacious analysis of complaints every 3 months (divided by subject, cause, and customer). It is easy to identify the articles or the most critical causes and focus upon them with actions to be taken
Rejects in production	... rejects in production have increased and one department alone generates half of the whole factory's rejects	The Production Manager and the Top Management do not know how rejects per department are distributed and hence cannot make important decisions about single departments. We only know that rejects have increased.	The department that generated half of the rejects can be easily identified (along with the type of wasted products); decisions can be made to improve the department in question.

Over a short period of time, the top management became aware that, despite the small size of the company, if individually managed, performance indicators could not completely detect the complex nature of business performances. While trying to define a suitable model that would guide the company toward excellence, in 2003 Home Cucine adopted the EFQM (European Foundation for Quality Management) framework as a management model of reference. Such a model introduced five important guidelines aiming to direct the organisation toward a more effective administration.

The five main guidelines that were adopted are listed below.

1. Establish the company's mission to better outline its values and what the top management wants.
2. Periodically analyse the top and middle managers' leadership.
3. Establish the organisation's policies and strategies following a pre-defined methodology.
4. Assess strengths and weaknesses of the internal structure and of the market (SWOT analysis).
5. Define the indicator dashboard based upon the business processes.

Table 5.8 Indicators used in the first edition of Home Cucine's PMS (year 2002)

Audits results:	Efficiency of production processes:
# observations accepted in audit	Micro non-conformity
# non-conformities accepted in audit	Turnover per person
# non-conformities per area	Analysis of corrective and preventive actions:
	Effectiveness of corrective actions
Information on the customer	Effectiveness of corrective action planning
Customer complaints	Effectiveness of the analysis of the technical and design
Economic Value of the customer complaints/turnover	% of new validated projects
Type of more frequent complaints	Performance of the suppliers
Customer satisfaction	Change in supplier list
# questionnaires retuned	% of non conforming supplies
# positive questionnaires returned by the customer	Analysis of competence and training:
	Absenteeism
Trade function analysis	Employee satisfaction
Turnover	Accidents at work
Previous year turnover/year turnover	Training costs
Turnover (Northern Italy)	Workers training cost/turnover
Turnover (Central Italy)	Employees training cost/turnover
Turnover (Southern Italy)	Policies and objectives:
Turnover abroad	Decision-making capacity
New customers	Employee satisfaction with management
New customers in current years	Improvement plans
New customers (geographical area)	Maintenance analysis:
# audits	Cost of maintenance
Web contacts	
Rate of showroom renewal	
Agents involvement	
Agents satisfaction	
Outstanding agents	
Payment terms	
Market share	

The introduction of these criteria helped improve the management of performances within the company; the goal of setting up a dashboard of indicators, based upon the company's processes, especially led to the introduction and review of several indicators. The main changes are listed below, with reference to the interested processes that were classified into four macro-categories.

- Customer Process and Internal Process: keeping the same indicators but redefining their position by activity: brand new inclusion of numerous accounts indexes
- Managerial-Financial Process
- Innovation-Learning Process: inclusion of new indicators to better measure the Product Innovation and Design activities.

In 2006, the performance measurement system was further improved thanks to the use of information technologies that collected data: the company implemented

some software, which was internally produced with Microsoft Access and customised to meet the specific needs of Home Cucine. The replacement of the Excel spreadsheets with a simple database containing all the information on performances provided a more rapid and precise management, both with regards to the update of indicators, results and targets, and with regards to the printing of reports (to review or to fill in) to be handed out to the middle managers.

Having internally produced the software for the Management of Indicators also enabled a fast and continual update of the software itself without having to turn to external suppliers, so that the company could at any time modify either the structure or the indicators in the system.

The set of performance indicators used up until 2007 soon showed the need for a clear connection among the company's Mission, Strategies and Indicators. The Management of Indicators took place in a systematic and punctual fashion, thanks to the application of the ISO standards and the EFQM model, but the use of the EFQM model made it easier to measure some business aspects that were not at all linked to the company's strategies. The indicators were gathered according to processes and activities, but there was no logical linkage between indicators and strategic objectives of the top management. For example, the numerous indicators of the Managerial-Financial Process (Stock Rotation Days, Cost of Labour/Production Value, Debt Level, Current Ratio, Hedging of Fixed Assets, etc.) were systematically monitored but appeared absolutely disconnected from the strategic objectives (Table 5.9).

While reviewing the system, it also seemed clear that there was a tendency to increase the number of indicators, rather than trying to better understand them. As a consequence, there was an increase in the organisational complexity of the performance measurement system (from 44 indicators in 2002 to 49 indicators in 2006).

In the annual ISO 9001 report, edited on 19 April 2007, the DNV examiner gave the following observation with regards to management and analysis of data and to process measurement: "Among the objectives established by the top management in the Review process, reducing the time it takes to process orders is mentioned: with regards to this, we would like to bring to attention that, although there is complete information on the actual performances, the following are still missing:

- Mapping of the processes, further to the recent organisational changes;
- Positioning, in the mapping, of the indicators being used to analyse process trends;
- An adequate synchronisation of the various business processes."

The observation of the certification company reinforced, in the business owner, the perception that the business performances had not been best managed. Three factors had strongly motivated the top managers to measure performances: the management of entrepreneurial risk, the policy of continual improvement and the ongoing search for a clear division of tasks and responsibilities.

Table 5.9 New list of indicators after the adoption of the EFQM model (year 2006)

Code	Indicator	Business activity	Process
ind45	Number of customers top 200n (turnover >50.000) that reduced their turnover by at least 20% in 200n + 1	Customer loyalty	1 – Customer management
ind05	Number of appointments made by the sales manager	Management of sales network	
ind06	Percentage of agents who stayed within the budget		
ind07	Increase of kitchens displayed compared to previous year		
ind10	Number of complaints from customers	Measuring customer satisfaction	
ind01	Total Sales: turnover increase	Commercial	
ind02	Number of new customers in database in current period	development	
ind03	Customers who purchased in current year		
ind08	Market share		
ind20	Southern Italy & Islands: turnover increase		
ind24	Northern Italy: turnover increase		
ind39	Central Italy: turnover increase		
ind53	Foreign: turnover increase		
ind11	Complaint value/total turnover	Measuring customer satisfaction	
ind12	Customer questionnaire: positive replies/ total replies		
ind48	Number of retailer questionnaires received over the year		
ind63	Value of customer returns due to “Customer Errors + Sales Dept. Errors”/turnover	Order management and Customer assistance	2 – Internal
ind64	% positive feedback from customer quest. on tracking, availability, promptness		
ind31	Implementation of intranet by December 2007	IT network management	
ind51	Number of newsletters sent out over the year		
ind62	Number of Customers who open newsletter/ those who receive it		
ind22	Value of Customer returns due to “Production Defects”/turnover	Production	
ind23	Value of Micro non conformity/turnover		
ind14	Value of returns to suppliers/value of purchased product	Research, selection and management	
ind61	Value of Customer returns due to “Supplier Defects”/turnover	of suppliers	
ind04	Achieved objectives/defined objectives	Definition of strategies	3 – Managerial – financial
ind09	Effectiveness of planned actions		
ind17	Stock rotation days	Financial management	
ind19	Cost of labour/production value		
ind25	Debt level		
ind26	Current ratio		

(continued)

Table 5.9 (continued)

Code	Indicator	Business activity	Process
ind27	Hedging of fixed assets		
ind55	Value of agents' outstanding/turnover		
ind59	Average duration of debts		
ind60	Average duration of credits		
ind15	ROS = Operating profit/Sales	Investments	
ind29	EBITDA = Gross Operating Margin		
ind30	ROE = Net income/Equity		
ind40	ROI = Net Income/Cost of Investments		
ind37	Training hours in office/number of staff	Personnel	
ind38	Training hours in factory/number of labourers	management	4 – Innovation – learning
ind41	Resignations over the year		
ind42	Absenteeism = total absence days		
ind47	Overtime/total hours worked		
ind57	Pos. Answers from employee quest. (Factory)		
ind58	Pos. Answers from employee quest. (Offices)		
ind35	Number of models in catalogue	Product innovation	
ind36	Improvements to products and new elements introduced over the year	and Design	
ind44	Days of work injuries/days worked	Safety at work	

The management of business performances based upon the EFQM model though, was not bringing the expected benefits.

Collaborations with the authors were then activated with the intent of implementing a performance measurement system based upon the Balanced Scorecard model. This model was implemented in November 2007 and was able to answer the question that Agostino Mirsajev had been asking for a while: “Is there a methodology that can guide the enterprise in the selection of the measures that are truly important and get rid of the excess?”

The BSC in fact introduced three important innovations, as illustrated below.

- Strategies defined in a rational way because they derive from the analysis of the Value Curve and from the Mission: clarity in the path to follow;
- A Package of Indicators (management dashboard) that is in line with the top management’s strategies: usefulness of the selected indexes (indicators reduced to 41);
- A Strategy Map fit for representing the progress of Strategies and Indicators, as well as the linkage to the various Strategic Objectives: overall view of the company.

The circular approach followed in the implementation also enabled the company to make some considerations on the objectives that were actually being pursued, as well as on their coherence with the strategy that the top management wanted. All the indicators were analysed and “translated” into critical success factors implicitly

pursued; business strategies were re-formulated based upon what the value curve and the company's mission highlighted; finally, the coherence between pursued strategy and desired strategy was evaluated. Everyone in the company became aware that measuring the performances of the various functions/activities only mattered if such measurements enabled the company to monitor the achievement of the strategies that the top management had set. The indicators that had no link to the business strategies (as highlighted by the value curve and the mission) were removed from the management dashboard. This did not mean that the removed indicators were not important, but that they simply were not fit for being included in the dashboard, because they did not have any strategic importance.

Home Cucine currently uses a dashboard with 41 indicators, which enables it to evaluate its ability to achieve its strategy. The top management continues promoting attention to the connection between indicators and strategy, as well as the importance of striving toward essentiality.

After a careful analysis of the implicitly controlled critical success factors and comparing them with the company's strategy, the set of indicators was reviewed and formalised, based on the Balanced Scorecard model. The configuration of the new management dashboard is illustrated in Fig. 5.8.

The inclusion of the Management system to the ISO Norm made it easier for the company to approach performance measurement models. Introducing the BSC enabled the company, not only to adopt a model that would support its performance management, but also to create an integrated quality management system gearing toward managerial excellence, inside of which a management dashboard was placed. Attention was no longer on critical performance measurement but on the introduction of a management system that would focus upon critical success factors. The following paragraph will illustrate the structure of Home Cucine's management system.

5.2.3 Home Cucine's Management System: The Management Dashboard as an Integral Part of the PDCA Cycle

The structure of Home Cucine's management system summarises and combines the evolution of quality standards with the recent changes that performance measurement systems have undergone. On the one hand, the 2000 version of the ISO 9001 standards, assimilating the requests of users, set forth the implementation of a dynamic system and promoted continual improvement, thus getting along well with the analogous standards for management systems (environment ISO 14000, safety OHSAS 18000, social liability SA 8000, etc.). On the other hand, the complex matter of performance measurement called for the adoption of a specific model, able to guide organisations in the implementation of business strategies.

By combining the tools and approaches that the TQM proposed through the BSC model, Home Cucine almost seemed to anticipate the formalisation of the management system that Kaplan and Norton illustrated in 2008 (see Garengo and

PERSPECTIVE	STRATEGIC OBJECTIVE	OWNER	IND EX	DESCRIPTION
Customer	Increase brand reputation	Mkt manager	Ind15	No. web contacts Average score of the Home Cucine brand (product and service)
	Increase the compliance of deliveries	Sales manager	Ind04	Pieces missing at the time of loading
	Maintain excellence in delivery time	Sales manager	Ind63	Value of complaints for "commercial errors" / revenues Difference between the date of the receipt order AND the date of the loading order
	Continually improve customer satisfaction	Quality managers	Ind10	# complaints by customers Complaints value/ revenues
	Improve the relationship customers/salesmen	Trade manager	Ind02	Questionnaire to customers: positive answers/total answers
	Offers of new services to customers	Trade manager	Ind03	# new customers Customers handled over the year (revenue > 1.000)
	Support customers when /presenting designs	Mkt manager	Ind64	Innovative Services been successful over the year
	Keep price/quality high	Showroom M.	Ind05	Visits of the sales manager
		Showroom M.	Ind07	Kitchens exported over the year
		Mkt manager	Ind06	Average rating of Q/P
Financial	Monitor fixed and variable costs	Account manager	Ind19	Fixed costs / variable costs
	GM		Ind01	Total revenues
	GM		Ind08	Market share (total sales Italian kitchens)
	Maintain/increase turnover	GM	Ind20	Revenue (Southern Italy and Islands)
	GM		Ind24	Revenue (Northern Italy)
	GM		Ind49	Revenue (Central Italy)
	GM		Ind45	# of clients in the turnover range 50,000-400,000 Euros
	GM		Ind53	Turnover abroad
	Monitor the customers' financial reliability	Account manager	Ind17	# insured customers/ # non insured customers
	Maintain EBITDA	Account manager	Ind55	Outstanding value (agent) / Value received submitted
Internal process	Maintain qualified suppliers	Purchase manager	Ind14	Value non-conformity of the suppliers/ Value purchased
	Follow the most innovative companies whilst maintaining industrial flexibility	Purchase manager	Ind61	Value complaints for "supplier's defects"/ revenue
	Keep work safety standards high	Techn. Manager	Ind36	Improvements to the product and new elements
	Verify product quality throughout the production process	Safety manager	Ind44	# accidents
	Mft manager		Ind18	UV errors on drilling kitchen doors
	Mft manager		Ind22	Value of complaints for "Production defects"/ revenue
	Mft manager		Ind23	Value of the micro NC/ revenues
	Continually improve individual competencies	GM	Ind37	Hours of training to employees / # employees
	Fully exploit the existing IT resources	GM	Ind38	Hours of training to workers / # workers
	Satisfy employees	IT manager	Ind60	Average age of employees
Learning and growth		IT manager	Ind09	Customers using 3CAD
		IT manager	Ind62	Open newsletters/ sent newsletters
		GM	Ind41	Resignation over the year
		GM	Ind42	Absenteeism = # days of total absences
		GM	Ind57	Positive answers of the employee questionnaire (factory)
		GM	Ind58	Positive answers of the employee questionnaire (office)

Fig. 5.8 New management dashboard based upon the Balanced Scorecard model (year 2007)

Biazzo 2009). This yielded a Deming cycle-based management system for continual improvement known as PDCA (Plan-Do-Check-Act), with the BSC in the centre, which enabled the company to connect strategy with actions and promote the dissemination of a holistic approach based on cyclical–progressive logics.

Thanks to the BSC model, but also to the cycle proposed by Deming, Home Cucine discovered its need for a planned system on how to operate and what resources were necessary for implementing its processes, as well as the need for future feedbacks. However, in the definition of the management process (unlike the conventional PDCA cycle), Home Cucine downsized the Plan phase and enhanced the Do, Check and Act phases, coming up with a management system that integrated its processes with the tools being used to define its business strategy, translated it into operational actions, and monitored and identified the right improvements, both at the strategic level and at the operational level. The cycle

that Home Cucine developed featured five phases that are illustrated in Fig. 5.9 and can be summarised as follows:

1. Analysis of competitive factors and success factors, as indicated by the value curve and the company's mission;
2. Development of the company's strategy, which is formalised in the strategy map, expressed both in terms of strategic objectives and in terms of performance indicators (Plan);
3. Implementation of what was planned through operational and improvement actions, job descriptions and other quality system documents (Do);
4. Monitoring of objectives achievement by use of the management dashboard and with operational meetings (Check);
5. Set-up of actions for the improvement of the company (Act).

The five key tools of Home Cucine's management system (i.e. Value Curve, Mission, Strategy map, Management Dashboard, Management Review and Job Description) are illustrated in the paragraphs that follow.

5.2.3.1 The Value Curve

Every year, Home Cucine analyses the competitive factors that pertain to its industry and, using the Value Curve proposed by Kim and Mauborgne (2005), compares the critical success factors that are relevant to competitors' offers with its own.

To Home Cucine, the value curve represents a simple and effective tool. By choosing to use it, the company undertakes to periodically and systematically analyse the factors that competitor products feature; at least once a year, the top management combines all its knowledge with that of the sales manager and with the analyses regarding the specific industry, in order to identify the critical factors that pertain to the industry and the company offer. The two curves provide a clear graphic representation of the company's positioning and the level of differentiation of its offer, promoting the definition of some Strategic Objectives. For example, the objective "Increase brand reputation" (ref. strategy map, Objective 9 in Fig. 5.11) was identified further to the first representation of the value curve. The analysis in fact showed that there was a lower value than what was expected for the competitive factor "brand notoriety" (Fig. 5.10 the value curve).

5.2.3.2 Mission

In its mission statement, Home Cucine not only summarised the reason for being in business, but also explained what makes it stand out in the market place, describing the values that feed the determination of its critical success factors. Briefly, the company's ultimate goal is as follows: "To produce kitchen furniture for domestic use that satisfy the expectations of our customers in terms of safety, functionality,

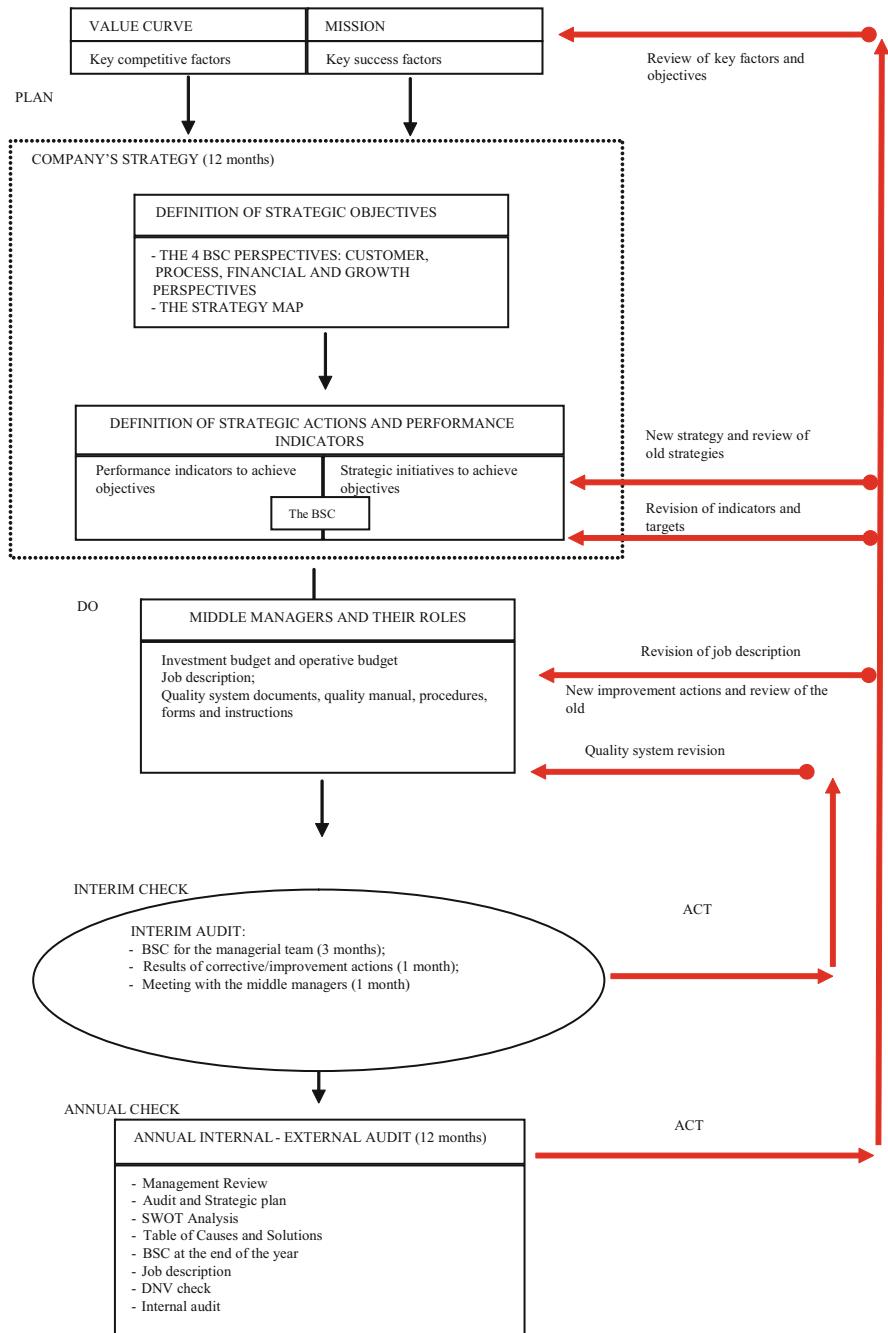


Fig. 5.9 Structure of Home Cucine's performance measurement system

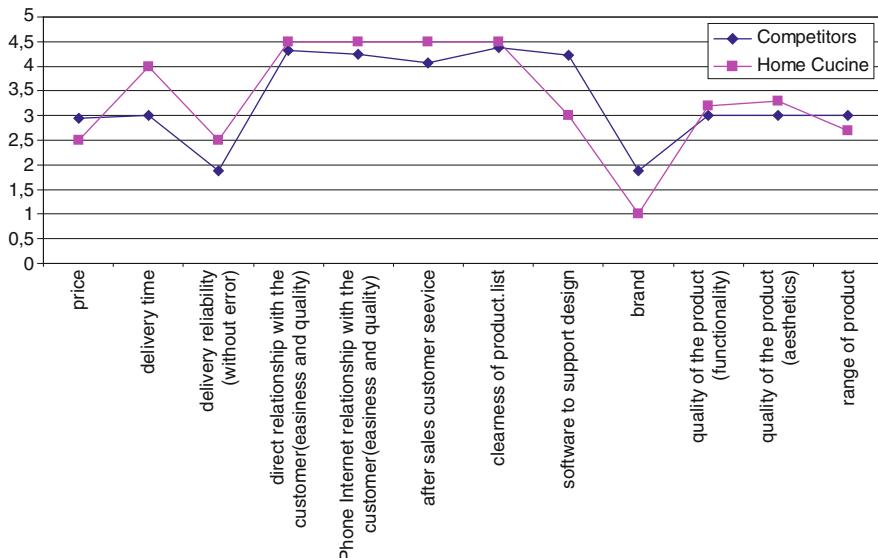


Fig. 5.10 Home Cucine's value curve

quality/price ratio. Through continuous improvement of internal expertise, Home Cucine also intends to offer its customers highly innovative services, without losing sight of the interests of all the stakeholders of the company (especially of the employees)". The fundamental values of the company are hence as follows:

1. Reliability of the product (security and functionality)
2. High quality-price ratio
3. Customer and employee satisfaction
4. Continuous improvement of internal expertise
5. Innovative services available to customers
6. Attention to all stakeholders (retailers, end customers, agents, employees and their families, suppliers and local communities).

From the values inferred from its mission statement, Home Cucine identifies the following critical success factors.

- (a) Checking production and finished product performances
- (b) Periodically monitoring the quality-price ratio
- (c) Periodically monitoring customer satisfaction and employee satisfaction
- (d) Planned management of human resources and their formation
- (e) Using innovative software for the improvement of customer service and internal management
- (f) Periodically monitoring economic/financial indicators
- (g) Periodically monitoring the market and competitors

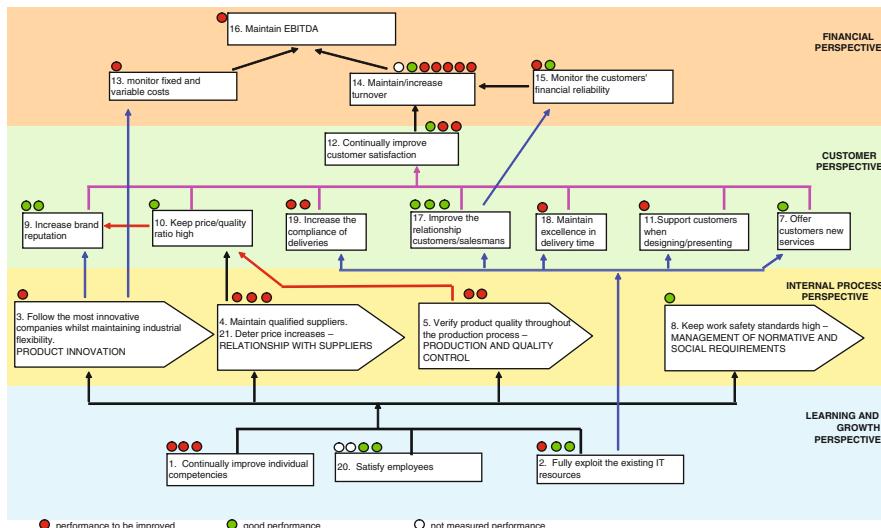


Fig. 5.11 Home Cucine's strategy map

From the above-mentioned factors, the top management derived the goals and actions to be pursued. For example, in the strategy map, the following objective was mentioned: “Verify product quality throughout the production process” (Fig. 5.11 – No. 5). This objective was a direct consequence of one of the factors that stemmed from the mission, the one about “Checking production and finished product performances”.

5.2.3.3 Strategy Map

By combining the competitive factors that the value curve pointed out with the values that stemmed from the mission, Home Cucine identified the strategic objectives (SOs) to be pursued in a coherent and integrated way; such objectives were then represented by using a strategy map, so to promote the dissemination of the company's strategy and provide a valid support to the analysis of the balance among perspectives and of the inter-relationships among objectives (Fig. 5.11).

As Fig. 5.11 shows, Home Cucine's current strategy map was intentionally “pending toward the customer”, which is a confirmation that the customer was at the centre of the company's policies and management [Economic-Financial (4 SOs); Customer (7 SOs); Internal processes (5 SOs); Resources and Organisation (3 SOs)].

In the strategy map there was also emphasis on the positive or negative performances of the indicators that measured the achievement of the strategic objectives, with the positive results in green dots and the negative ones in red dots. The presence of negative performances must not be taken as a negative factor; but rather as a confirmation of the effectiveness of this tool to monitor the factors that are

really critical to the success of a company. As the entrepreneur stated: “If a dashboard only has green lights, it means that we are monitoring what we do not need”.

5.2.3.4 Management Dashboard

All the strategic objectives were listed in the management dashboard, translated into performance indicators and assigned to a manager. For example, objective number 20 “Satisfy employees” was monitored through four indicators [Resignations over the year; Absenteeism; Positive answers to employee questionnaire (factory); Positive answers to employee questionnaire (offices)] (see Fig. 5.9). Although the strategy map gave an overview of the objectives being pursued and of the level of target achievement, the dashboard highlighted, for every indicator, the variance between the targets that the top management had defined and the results that were actually achieved (Fig. 5.12).

5.2.3.5 Management Review

The management review represented an important moment for the annual analysis of the business management, one from which Improvement Actions derive. The review summarised the business management of the previous year with reference to the most

prosep	OB	responsabile	IND	DES_IND	UM	TGT_09	ACT	semaf
cl	7	resp. marketing	ind64	Innovazioni informatiche a vantaggio Diretto del Cliente	N	> 1,8	2	█
cl	9	resp. marketing	ind15	Contatti richiesti via WEB	N	> 400	980	█
cl	9	resp. marketing	ind21	Voto medio Merchio Home (prodotto e Servizio)	N	> 7,5	7,89	█
cl	10	resp. marketing	ind06	Voto Medio Rapporto Q/P	N	> 7,5	8,07	█
cl	11	resp. mostra	ind07	Cucine esposte nell'anno	N	> 400	401	█
cl	12	resp. gest. qualità	ind10	Numero di ercalami da clienti	N	> 1999	1874	█
cl	12	resp. gest. qualità	ind11	Valore reclami / fatturato	%	> 0,55	0,81	█
cl	12	resp. gest. qualità	ind12	Quesit. Clienti: Risposte positive / totale risposte	%	> 80	98	█
cl	17	resp.commerciale	ind02	Nuovi clienti in analgrafica nel periodo	N	> 170	189	█
cl	17	resp.commerciale	ind03	clientvi movimentati nell'anno (fatturato>1.000)	N	> 950	930	█
cl	17	resp.commerciale	ind05	Visite realizzate dal Responsabile Commerciale	N	> 520	522	█
cl	18	resp.lif. vendite	ind16	Differenza media tra data ricezione ordine e data inserimento	99	< 2	2,41	█
cl	19	resp.lif. vendite	ind18	errori UV su Foratura Ante	N	< 250	320	█
cl	19	resp.lif. vendite	ind63	Valore Reclami per "Errori Commerciale" / Fatturato	%	< 0,05	0,1	█
ec-fin	13	amm. Unico	ind19	Valore prodotto per addetto	%	> 350000	338561	█
ec-fin	14	amm. Unico	ind01	Fatturato complessivo	€	> 16500000	15573819	█
ec-fin	14	amm. Unico	ind08	Quota di mercato (vendite totali cucinieri Italiani)	%	> 0,6	0,6	█
ec-fin	14	amm. Unico	ind20	Fatturato Sp.-Isole- Italia	€	> 1464000	1352637	█
ec-fin	14	amm. Unico	ind24	Fatturato Nord Italia	€	> 11534000	10645599	█
ec-fin	14	amm. Unico	ind39	Fatturato Centro Italia	€	> 662000	941841	█
ec-fin	14	amm. Unico	ind45	N' clienti della fascia Fatturato 50-400 mila euro	N	> 54,9	55	█
ec-fin	14	amm. Unico	ind53	Fatturato Esteri	€	> 2832000	2633743	█
ec-fin	15	resp.ammmin.	ind17	N' clienti assicurati / N' clienti assicurabili	%	> 4000	52,9	█
ec-fin	15	resp.ammmin.	ind55	Valore insoluti agenti / Valore Ricevute presentate	%	< 8	10	█
ec-fin	16	amm. Unico	ind29	Ebitda = Marine Operativo lordo	€	> 970000	1050000	█
proc-int	3	resp.tecnico	ind36	Migliorale al prodotto ed elementi nuovi	N	> 20	24	█
proc-int	4	resp. acquisti	ind04	pezzi mancanti al carico causa Fornitore = Uff.Acquisti	N	< 45	37	█
proc-int	4	resp. acquisti	ind14	Valore NC forniture / Valore acquistato	%	< 0,4	0,62	█
proc-int	4	resp. acquisti	ind61	Valore Reclami Causa Fornitore / Fatturato	%	< 0,15	0,18	█
proc-int	5	resp.produzione	ind22	Valore Reclami per "Difetti Produzione" / Fatturato	%	< 0,2	0,24	█
proc-int	5	resp.produzione	ind23	Valore Micro non conformità / Fatturato	%	< 0,2	0,22	█
proc-int	5	resp.produzione	ind25	NC ripetitive in Produzione	N	<		
proc-int	8	resp.sicurezza	ind44	gg inforuni	99	< 1	11	█
ris-org	1	amm. Unico	ind37	Ore di formazione UFFICIO / N' IMPIEGATI	ore	> 5	5,82	█
ris-org	1	amm. Unico	ind38	Ore di formazione FABBRICA / N' OPERAI	ore	> 6	1,05	█
ris-org	2	resp. C.E.D.	ind09	Clienti che hanno attivato 3 CAD (escluso Agenti)	N	> 100	157	█
ris-org	2	resp. C.E.D.	ind13	Innovazion informatiche implementate	N	> 2	3	█
ris-org	2	resp. C.E.D.	ind62	Newsletter aperte / Newsletter inviate	%	> 50	42,74	█
ris-org	20	amm. Unico	ind41	Dimissioni nell'anno	N	< 5	0	█
ris-org	20	amm. Unico	ind42	Absenteismo = gg assenza totali	99	< 150	97	█
ris-org	20	amm. Unico	ind57	Risp. Pos. Q.Dipend. (FABBRICA)	%	> 80	77	█
ris-org	20	amm. Unico	ind58	Risp. Pos. Q.Dipend. (UFFICIO)	%	> 90	97	█

Fig. 5.12 Current dashboard with emphasis on targets

important aspects regarding the indicators. The review documentation was grouped according to the four BSC perspectives and contained data, tables, charts and indicators that enabled the company to carefully analyse the aspects listed below:

- Turnovers and exhibition
- Complaints and customer satisfaction
- Supplier non-conformities and micro-NCs
- Human resources
- Product innovations.

5.2.3.6 Table of Causes-Solutions and Improvement Actions

Once the management review document was verified, all the middle managers were required to fill in a form called *Table of Causes and Solutions* (Fig. 5.13), where they could indicate the causes that they believed had determined negative performances and the appropriate solutions to solve the problems and thus achieve positive performances.

Figure 5.13 below shows an example pertaining to SO #5 “Verify product quality in production”.

All the solutions that the middle managers proposed were evaluated and selected by the sole administrator; the most valuable solutions became part of the Improvement Actions for the year in progress. This was indeed a key process that in Home

Causes and Solutions of negative performance			
Objective 5: verify product quality in production			
Function	Causes of red indexes	Proposed solution	Audit notes
Sales Manager	Customised dept. often having difficulties verifying the quality of furniture	In need of a professional figure to refer to in the dept	
Quality Manager	No random checks on furniture	Re-establish random checks in case there are (hopefully seldom throughout the year) precise and reliable referrals from the sales office. Use the database in a systematic way “Reports from sales office to sales mgr.” that was re-implemented last Jan.	
Sales office Manager	Some production depts. are not held responsible enough	Re-establish random checks on finished products, at least once a month	
Sales office Manager	Columns are not packed in the best way	Also pack the borders that are on the backside of the columns (those that are placed on the truck’s edge to download columns). If the back border receives a blow on the side of a column on display, a complaint ensues	

Fig. 5.13 Causes and solutions (example of a filled-in form)

Cucine acted as an actual change promoter: at the beginning of 2009, an improvement action that contained 26 Operational Actions was activated, featuring people in charge and well-defined timing. Of the 26 initiated actions, 18 were positively closed during that year, 7 still remain to be closed and 2 were voided.

5.2.3.7 Job Description

The job description contains information on the tasks and responsibilities of every collaborator, starting from their initial inclusion in the company onward. Along with the flow chart, it defines roles, hierarchical relationships and functions of each individual. Drawing up this description was an especially useful process for the top management, as it implied the analysis and, if necessary, the review of the business flows, in terms of products, documents and communications. By describing the job of a new collaborator, any potential contrast with “neighbouring” jobs were spotted, as well as any operational problems that could impede the smooth carrying out of the newly assigned jobs.

In Home Cucine’s job description, there were also the necessary requirements and competencies for a specific role, as well as the strategic objectives, that each person was expected to contribute to. Therefore the job description was closely connected with the objectives illustrated in the strategy map and it promoted “continual improvement of individual competencies” (OBJ. 1).

The introduction of the Balanced Scorecard enabled the entrepreneur to delegate more of his management activities and increase his control over the implementation of strategic decisions. In the company, employees now believe that only by methodically and globally measuring performances can they guarantee constant monitoring of all the functions within the organisation.

The entrepreneur believes it to be an essential tool for the management of small- and medium-sized enterprises: “By comparing ourselves with other firms, we noticed that SME entrepreneurs are seldom aware of the importance of a management dashboard and how much they lack in the management of such a tool. Some underestimate it and only consider it useful for larger enterprises; some others, who are often in charge of operational functions (for example, sales managers), do not have the time to stop and think about how to improve their organisation and just trust their own instincts, counting on their leadership skills. By doing so though, they fail to see the explosive strength of an integrated performance management in view of continual improvement”. Andrea Frezza, who is the current Quality Manager, stressed the importance of involving top managers in the management of the adopted system: “When business owners devote a few hours to the definition of strategic objectives, performance indicators and job descriptions, they are not wasting their time because they are clearing their head so they can understand what solution is to be preferred and they can send better instructions to whom they work with. Clarity for us is a fundamental requirement to efficiency”.

5.3 The Uniflair Case: UNIBOARD and the Indicator Dictionary⁴

Uniflair was founded in 1988 and began its activities in the business of modular access floors. Uniflair products are used both in residential environments and in industrial settings, because they guarantee easy installation and offer extreme flexibility and a very large selection of finishes (from carpeting to fine woods, from linoleum to Florentine tiles, from ceramic to marble, with options to personalise the look of floors with further decorations). The following year the company entered the precision air conditioning market, offering systems with the capacity to control temperature and humidity inside technological rooms (such as computing centres, server rooms, telephone communication centres, laboratories, climate-controlled warehouses, etc.). In 1996, it began producing water chillers under its own brand: these are very powerful refrigeration systems designed to be installed in large facilities (shopping centres, hotels, conference rooms, etc.) or to be directly used for the refrigeration of water or air in special industrial processes.

The combination of these activities (Fig. 5.14), which explains the origin of the company's name (Uniflair – Union of floor and air conditioning) has always been one of its strengths and has enabled it to diversify its offer with heterogeneous products as far as the production process (mostly manual assembly for conditioning and refrigeration systems, highly automated systems for the processing of floor panels), the intended use and the type of customers (from small construction sites and domestic installations, to large multinationals such as Google, Sky, BBC, Ferrari and Telecom). Ever since the first few years, the complementary quality of its products has enabled the company to offer its customers complete and more effective solutions than those of its competitors, which often specialise in a single production activity, and to obtain some interesting synergies between the various product lines. Synergies are also evident between modular access flooring, which is the company's original core business, and air conditioning: access and easy to disassemble floors can not only



Fig. 5.14 Uniflair products (modular access floor, precision conditioning and refrigeration systems)

⁴Thanks to Riccardo Brocadello (Financial Controller), Valentina Battiston (Controller) and Francesco Zocca (IT Manager for their contributions to the chapters

hide conditioning and heating pipes, but also makes it easy to perform routine maintenance or solve any localised technical problem. There are also some interesting interactions between precision conditioning and refrigeration systems: conditioners can indeed function thanks to their own refrigeration system with direct expansion, or by using the cold water that other systems produce, such as Uniflair chillers.

At the moment, precision conditioning makes up 60% of the overall turnover, which reached almost EUR 100 million in the financial year 2008. Approximately 15% of the turnover consists of refrigeration systems, whose market of reference is very competitive, fragmented and features a stable demand with very small margins. Lately though, thanks to the increase in the product range and the improvement of margins, due to a more advanced industrialisation of the product, its importance has progressively increased. Finally, the remaining 25% or so of the turnover consists of modular access floor production; even this value has increased lately, to the detriment of the conditioning production, making Uniflair a leader in the industry in Italy.

It is important to point out the weight that exports have over the domestic market: sales activities are addressed by 80% of the turnover to foreign markets, thus confirming the successful position of the firm at the international level. Uniflair quickly incremented the number of its customers and supplies some of the most important multinational companies at the global level (such as Ferrari, BMW, Shell, Philip Morris, Nokia, Google and Sky) using three production plants, four subsidiaries (one in South Africa and three in Europe), 51 distributors all over the world (the USA excluded) and a widely-established network of independent agents.

5.3.1 *Organisational Structure*

The increase in the company's range of activity and its corresponding growth, in terms both of turnover and of profitability, has continued and advanced over the years, to the point where it was necessary to add adequate space for an efficient organisation of production and offices. From 1988 to 2000, the company went from a single 1,200-m building to an actual industrial centre with a total area of 22,500 m. The strategic project that began in 2001 resulted in the construction of the current industrial facility that hosts all the production processes: the production area and technical divisions occupy about 30,000 m, whereas the offices occupy the 1,600 m of open space. The move to the new headquarters coincided with the reorganisation of the entire business, which featured a process-based methodology and had an impact on the structure of the offices. Labour is organised around a long table measuring about 200 m where the various activities take place, ideally following the product from its design to the invoicing, up to the relevant support services. For special meetings, the personnel can use the so-called "bubbles", which are spaces situated near the long work table. In there, especially complex or confidential issues can be discussed with colleagues or guests (Fig. 5.15).



Fig. 5.15 Organisation and processes: Uniflair's "long table"

A process-based logic enabled the company to improve its efficiency, but this logic also found some opposition that led to an increase in personnel turnover and losses of important human resources. In mid-2005 a new reorganisation took place, with the result of recuperating a mostly functional organisational structure, maintaining the labour benefits and the previously made considerations, especially for the analysis and management of complex processes, such as product development and order processing.

5.3.2 *Evolution of the Performance Measurement System*

In order to appropriately govern the growing and complex organisation, in 2000 a management control position was introduced in Uniflair. Initially, this function used traditional business reporting systems, which mainly focused upon economic and financial data. The Controller received all the management-related information and then assessed it as a whole. However, there was not a system in place that could highlight important information, thus causing valuable resources, such as time and attention from the top management, to be lost.

The intense growth that the company has undergone over the last few years generated an increase in its managerial complexity and, as a consequence, in the phenomena that needed to be kept under control. The huge amount of information that the Controller had to administer required an urgent solution featuring the adoption of performance management systems that would focus upon the truly important measures for the monitoring of critical business activities. As a result, over the years, the role of the management control system in Uniflair has gone through some major changes and, along with it, even the spectrum of activities that the Controller performed were modified. The evolution of the environment, and the realisation that critical variables were important for the success of the enterprise, shifted the focus from the financial measures to qualitative or non-financial aspects. In order to adequately support the tightening needs for information that the top management had, it became clear that it was necessary to change the activities that

the Controller function carried out, the assigned position in the organisation and the level that the top managers assigned to performance management activities.

Governing such heterogeneous variables required the use of new performance management systems that would include different types of indicators for the assessment of the various management areas and would thoroughly outlined the progress of the company's performance. The company had therefore developed new performance measures that broadened the range of non-economic-financial indicators, but had led the company to make the classic mistake of producing an excess of indicators, which were not always meaningfully related to one another and, most of the times, were hard to read and were hence of little use for decision-making purposes. The use of the first indicator system in the company had highlighted two main issues:

- There was no clear connection between pursued strategy and performance indicators. The number of indicators being used had grown over time as a response to individual requests from the part of the top or middle managers, but without a predefined project suitable for the determination of the link between indicators and strategy. It was then clear that it was necessary to select and organise the numerous indicators being used according to a logical and effective criterion, taking into consideration only those few performance indexes that would be suitable for monitoring the important phenomena of the business with a global view.
- It was difficult to interpret the results and, as a consequence, it was also difficult to use the collected data to plan possible solutions. The indicators being used were not clearly and formally defined; some analyses reported that, at times, information was ambiguous and difficult to read and this situation led to behavioural distortions which could compromise the achievement of the pre-set objectives. Unreliable indicators and reports were bound to propagate a sense of distrust toward the instrument, with the risk of making the monitoring mechanism ineffective.

In 2007, the control manager formally initiated a project for the review of the performance measurement system and the implementation of a management dashboard based on the BSC model.

The first project phase focused upon a thorough and systematic review of the indicators being used. The level of clarity and reliability is a critical element in the measurement of performances. As has been highlighted in Chap. 2, in order to be effective, performance indicators must firstly be understandable to those who use them, be promptly computed and be suitable for supporting a correct and objective assessment of achieved performances. It was then necessary to select the indicators that were deemed important and analyse each of the important indicators so to assess its reliability and effective suitability for representing the investigated phenomenon, introduce any necessary change and formalise a dictionary of the indicators being used in order to facilitate their correct computation and interpretation.

The second phase focused upon aggregating the indicators being considered as the most important ones into a single dashboard (called UNIBOARD). The selected indicators, appropriately integrated and balanced, were grouped into a single “dashboard” that made it possible to view in one sheet all the important information,

promptly showing problem areas and effects at the overall strategic level. Uniflair hence decided to define a dashboard that would work as the only reference for all middle managers. The middle managers were no longer required to independently elaborate and monitor indicators, but to use only what would be formalised on Uniboard for their decisions, and to propose modifications or integrations if the use of the dashboard pointed out the need for assessing aspects that were deemed strategically important but that were currently not under control. This would not stop the top managers from using detailed indicators, but would promote the use of a common language to be used when managing meetings that aimed at planning improvement actions.

5.3.3 *Redefinition of Indicators*

The systematic review of the indicators focused upon the internal processes perspective and upon the customer perspective because they were considered as essential to the success of the company and they showed that it was necessary to clarify the current performance control systems. The work team analysed all of the indicators of these two areas with the cooperation of the interested functions for the purpose of redefining or completing the set of available indicators. The following two goals were pursued:

- Maximise the coherence between indicator(s) and critical success factors to enable the creation of a dashboard suitable for guiding the actual implementation of the deliberate strategy;
- Ensure the maximum level of reliability of the collected information. To this end, not only were the calculation formulas reviewed, but also the name of each indicator, so to avoid any misunderstanding and possibly compromise the interpretation of their meaning and communicate misleading information.

As it has not been possible to report the whole work, below is an example of the analysis and review of the time-related performances that had to do with the management of customer orders. An initial analysis that had been performed in the project framework had highlighted some lack of information and some intrinsic inaccuracies in the measurement of orders management, because the company used to monitor the process using, as a timeframe, the interval between the date the order was input into the system and the delivery date agreed upon with the customer, without differentiating among the intermediate lead times (LTs) suitable for the analysis of the process (such as delay LT, receiving LT, logistics-production LT and order fulfilment LT). It was then decided to monitor the entire process considering a group of indicators with the purpose of separately highlight the time-related performances that related to heterogeneous areas and activities according to the diagram illustrated in Fig. 5.16.

The analysis of performances pertaining to the order management process required the review and integration of the indicators being used, with reference to

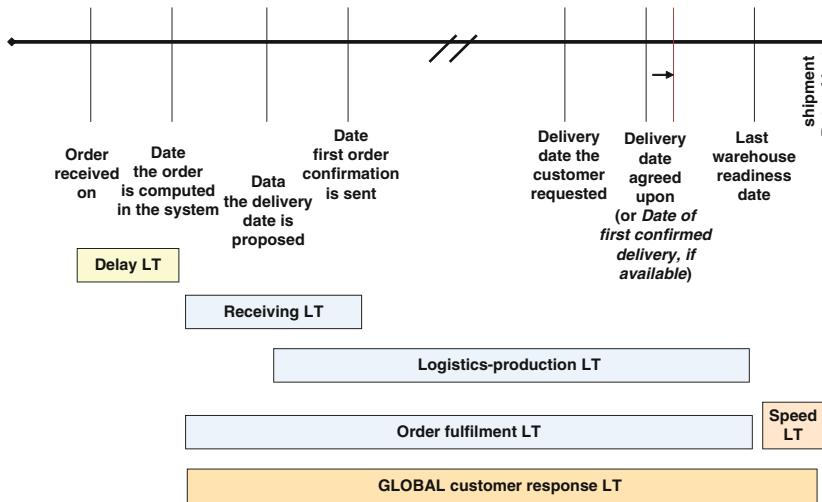


Fig. 5.16 Customer order management

the three areas which were deemed essential for the effective management of customer orders:

1. Adaptation
2. Timeliness
3. Speed.

For each of the three areas the indicators being used were analysed and discussed assessing both their information capacity and their reliability; then the necessary changes and integrations were made. For each indicator, a detailed form was developed to clearly define the scope of the measure, the computation method, the target (if defined), the analysis dimension (whether it referred to single businesses – precision air conditioning, refrigeration systems or access floors – or to the company as a whole), the timeframe (that the measurement referred to), the localisation (if the data were saved on the company's IT system) and the person in charge of the measure. It was possible to add some notes to the form and, if the measure was available, to also add the date when the implementation was supposed to start by. Below is a summary of the main observations that the work team made on the indicators of the three areas being analysed and the forms of the indicators that were deemed suitable for monitoring the order management process.

5.3.3.1 Area 1: Adaptation

Prior to this analysis, the ability of the company to agree upon a delivery date that would coincide with, or would be closest to the date that the customer had requested, was called “customer satisfaction”. From the analysis and the discussion though, it emerged

<i>Name of the measure:</i> ADAPTATIONS	
<i>COMPUTATION METHOD:</i> Percentage of purchase items where the "Delivery date as requested by customer" is less than the "Delivery date agreed upon" Computed in two versions: on time and within a week (+7)	TARGET XXX
<i>SCOPE OF THE MEASURE (phenomenon to be controlled)</i> Ability to meet customer requests, that is to agree upon delivery dates	PERSON IN CHARGE Masiero Luca (CDZ-SIS)
<i>TIMEFRAME (that the measurement refers to: month, progressive, etc.)</i> Mobile average (12 months), Progressive, Monthly	<i>ANALYSIS FRAMEWORK</i> Total calculation and by line (CDZ, SIS) and category(Leonardo, Amico, Leo Max, Telefonia, Sistemi) and ITALY / ABROAD
<i>NOTES</i> At the moment, it is not computed for the Floor line (the "Delivery date agreed upon" is missing) Computed within the first 15 days of the following month. Management Control Elaboration.	LOCALISATION Jump Web (path: UNIDAT_UOAOCD00) Management Control Elaboration.
<input checked="" type="checkbox"/> AVAILABLE <input type="checkbox"/> AVAILABLE WITH IMPROVEMENTS BY _____ <input type="checkbox"/> TO BE DONE BY _____	

Fig. 5.17 “Adaptation” form

that the denomination did not accurately reflect the underlying phenomenon. It was hence decided that it needed to be changed into “Meeting customer requests”. Since Uniflair’s goal was to meet customer requests within 7 days at the most, for this index two values were calculated: the first determined the percentage of purchase order items where the delivery date that the customer requested was before the delivery date agreed upon; the second considered a tolerance range of seven business days (Fig. 5.17).

In order to maximise the reliability of the collected data, the cases where it would be necessary to modify the dates in the system were also defined. Whenever the customer asked for a variation in the delivery date, it was necessary to change the “Delivery date the customer requested” determining a change in all the dates that had already been registered. In case the change was made by Uniflair, it was instead necessary to change the “Delivery date agreed upon”.

5.3.3.2 Area 2: Timeliness

The timeliness index makes it possible to keep under control the ability of the company to fulfil its orders while meeting delivery times. After careful analysis, the work team decided to calculate this index by comparing the delivery date initially agreed upon, regardless of any subsequent change, with the warehouse readiness date.

<i>Name of the measure:</i> TIMELINESS	
<i>COMPUTATION METHOD:</i> (% of purchase order items with warehouse readiness date before delivery date expected)	<i>TARGET</i> XXX
<i>SCOPE OF THE MEASURE (phenomenon to be controlled)</i> Timeliness in fulfilling the order (with respect to delivery times)	<i>PERSON IN CHARGE</i> Masiero Luca (CDZ-SIS)
<i>TIMEFRAME (that the measurement refers to: month, progressive, etc.)</i> Mobile average (12 months), Progressive, Monthly	<i>ANALYSIS FRAMEWORK</i> Total calculation and by line (CDZ, SIS) and category (Leonardo, Amico, Leo Max, Telefonia, Sistemi) and ITALY / ABROAD
<i>NOTES</i> At the moment, it is not computed for the Floor line (the "Delivery date agreed upon" is missing). Computed within the first 15 days of the following month.. Management Control Elaboration	<i>LOCALISATION</i> Jump Web (path: UNIDAT_UOAOCDO0)
<input checked="" type="checkbox"/> AVAILABLE <input type="checkbox"/> AVAILABLE WITH IMPROVEMENTS BY _____ <input type="checkbox"/> TO BE DONE BY _____	

Fig. 5.18 “Timeliness” form

Uniflair system mainly worked ex-works; therefore, from a logical viewpoint, the final date of the process coincided with that of the last date the warehouse had been ready with finished products, not with the date when the final products were picked up by the customer, which could be just a few weeks after the warehouse had been ready.

In order to increase the information capacity of the indexes being used, it was deemed appropriate to measure timeliness without referring to the date of delivery to the customer, but to the date when the product was ready, which, in Uniflair case, was well represented by the warehouse “last readiness date”.

In view of keeping the “last readiness date” into consideration, the possibility to define some “timeliness classes” was evaluated: for example, general timeliness (% of purchase order items with warehouse readiness date before delivery date expected), early deliveries and delays. Uniflair chose to focus on delays (see Fig. 5.18).

5.3.3.3 Area 3: Speed

With the performances regarding speed came the need for separating the product categories that had very different LTs, due to the nature of the product (in addition to the division between special and standard products – it is worth remembering that

about 36% of air conditioning products and refrigeration systems, CDZ-SIS, was “special”) and for considering three types of lead times: the order fulfilment LT (Fig. 5.19), receiving LT (Fig. 5.20) and the logistics-production LT (Fig. 5.21).

The draw up of a dictionary of indicators through a set of forms (an excerpt of which was presented in the previous pages) made it possible to clarify the relationship between indicators and underlying phenomena. Uniflair’s strategy map thus became clear, as Fig. 5.22 illustrates.

The strategy that Uniflair adopted appeared to be that of focused differentiation: competitive advantage is mainly based upon the company’s capacity to offer a single product-system, that customers are willing to pay a higher price for than the cost of customization. The products that Uniflair offers have in fact a degree of complexity which is rather high and allows it to differentiate based upon both tangible aspects of the product (technical features, performance, reliability) and intangible ones (reputation, design, meeting specific customer requests, delivery timeliness, pre- and post-sale customer assistance). This strategic positioning determines, in some way, also the high specificity of the offered products: the highly technological products that feature many configuration and personalisation options allow the enterprise to focus upon limited and specialised market segments and, in some cases, even upon niche markets.

Uniflair’s official mission statement indeed expresses its clear willingness to “design, produce and commercialise products and to offer services on a global

<i>Name of the measure:</i> ORDER FULFILMENT LEAD TIME	
COMPUTATION METHOD: Average of the differences between "Data Ultimo Versamento a Magazzino PF" and "Data Inserimento Ordine"	
SCOPE OF THE MEASURE (phenomenon to be controlled) Efficiency / Speed in replying to customer when fulfilling orders	
TIMEFRAME (that the measurement refers to: month, progressive, etc.) Mobile average (12 months), Progressive, Monthly	
NOTES A long order fulfilment time may have to do with specific customer requests with orders placed well in advance. Response capacity is to be assessed by most of all observing the lead times on the left of the graph average. Calculated within the first 15 days of the following month. It is not calculated for the Floor line because unimportant. Management Control Elaboration	
TARGET XXX	
PERSON IN CHARGE Clienti Giovanni (abroad) and Ferraresco Mario (Italy)	
ANALYSIS FRAMEWORK Calcolo per Linea (CDZ, SIS) e famiglia (Leonardo, Amico, Leo Max, Telefonia, Sistemi) e ITALY / ABROAD	
LOCALISATION JUMP Web (path: UNIDAT_UOAOCDO0) Histogram	
<input checked="" type="checkbox"/> AVAILABLE <input type="checkbox"/> AVAILABLE WITH IMPROVEMENTS BY _____ <input type="checkbox"/> TO BE DONE BY _____	

Fig. 5.19 “Order fulfilment Lead Time” form

<i>Name of the measure:</i> ORDER RECEIVING LEAD TIME	
COMPUTATION METHOD Avergae of the differences between "Date first confirmation was sent" and "Date order was computed". Histogram	TARGET XXX
SCOPE OF THE MEASURE (fenomeno da controllare) Efficiency / Speed of sales staff in defining the details that the final order consists of. If the "Date first confirmation was sent" is less than the "Date order was computed", the difference is equal to zero (this happens when purchase item is computed at a later time)	PERSON IN CHARGE Clienti Giovanni (abroad) and Ferraresto Mario (Italy)
TIMEFRAME (that the measurement refers to: month, progressive, etc.) Mobile average (12 months), Progressive, Monthly	ANALYSIS FRAMEWORK Calculation by line (CDZ, SIS) and category (Leonardo, Amico, Leo Max, Telefonia, Sistemi) and ITALY / ABROAD
NOTES It is not calculated for the Floor line. Calculated within the first15 days of the following month. Management Control Elaboration. It would be interesting to also verify the percentages of the order confirmations that are re-sent (over the 2006-2007 period, re-sends occurred 30% of the time)	LOCALISATION Jump Web (path: UNIDAT_UOAOCDO0)
<input checked="" type="checkbox"/> AVAILABLE <input type="checkbox"/> AVAILABLE WITH IMPROVEMENTS BY _____ <input type="checkbox"/> TO BE DONE BY _____	

Fig. 5.20 “Order receiving Lead Time” form

<i>Name of the measure:</i> LOGISTICS-PRODUCTION LEAD TIME	
COMPUTATION METHOD Average of the differences between "Date last Versamento a Magazzino PF" and "Date first Datazione" (data in cui ho la prima proposta di datazione) Se la "Data Prima Datazione" non è presente (3.75% of the times over the 2007-2008 period), we take the "Date order was computed" (as it has already been tentatively defined prior to the date the order was computed). Histogram	TARGET
SCOPE OF THE MEASURE (phenomenon to be controlled) Efficiency / Response speed of the logistics-production system.	PERSON IN CHARGE Masiero Luca (CDZ-SIS) and Spinello Valeriano (PAV)
TIMEFRAME (that the measurement refers to: month, progressive, etc.) Mobile average (12 months), Progressive, Monthly	ANALYSIS FRAMEWORK Calculation by line (CDZ, SIS) and category (Leonardo, Amico, Leo Max, Telefonia, Sistemi) and ITALY / ABROAD
NOTES It is not calculated for the Floor line. Along order fulfilment time may have to do with specific customer requests with orders placed well in advance. Response capacity is to be assessed by most of all observing the lead times on the left of the graph average. Calculated within the first 15 days of the following month. Management Control Elaboration	LOCALISATION Jump Web (path: UNIDAT_UOAOCDO0)
<input checked="" type="checkbox"/> AVAILABLE <input type="checkbox"/> AVAILABLE WITH IMPROVEMENTS BY _____ <input type="checkbox"/> TO BE DONE BY _____	

Fig. 5.21 “Logistics-production Lead Time” form

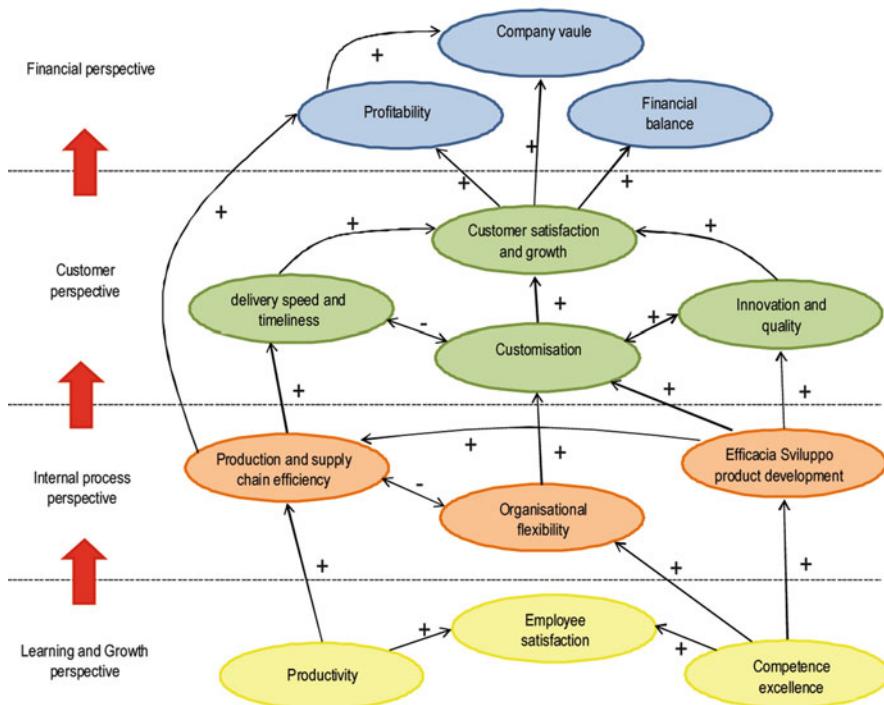


Fig. 5.22 Uniflair's strategy map

scale, that will satisfy its customers with solutions that meet their needs for high performance, efficiency and reliability, in any working condition, with attention also given to competitive prices". The basic values that Uniflair's mission features firstly revolves around product quality, in terms of technology and reliability: because of the large number of resources involved in every single product, customer satisfaction mostly depends on making sure that the products work and comply with advanced technical standards. Respect for and protection of the environment are also very important aspects that the company promotes by ensuring high standards of energy efficiency, which in turn provide high levels of efficiency and savings in terms of costs for the company. In the definition of its mission statement, Uniflair not only considered the satisfaction of its shareholders, but also that of its stakeholders in general. It is interesting to spend a few words on the most important and peculiar critical success factors of Uniflair's strategy.

Quality and innovation. The company's ongoing research activity for the improvement of performances, reliability and energy efficiency of the products has always been a strength. In the last few years, large investments – about 5% of the turnover– have been devoted to Research & Development, showing how

important this matter is to Uniflair. Also important is its Research Centre, which occupies an area of approximately 2,000 m² and is considered as one of the most technologically advanced international centres. Besides developing and optimising new product lines, technicians also test and approve new components before they are used in the production plants, and perform “Witness Tests” on machinery at the customer’s request. The company has already deposited about 20 industrial patents for precision conditioning and modular access flooring, as further proof that Uniflair is very competitive. Uniflair’s attention to the theme of process quality, just like product quality, has been rewarded with the ISO 9001 certification, which Uniflair obtained and has maintained since 1995, and the ISO 14001 environmental certification obtained in 2008.

Personalisation/Customisation. The ability to provide on-demand personalised solutions to customer specific requests is a special characteristic of Uniflair. The so-called “special” products do not represent stand-alone cases but an important reality; they represent 35% of the turnover, as far as precision air conditioning and refrigeration systems are concerned. Almost 100% of the access floor production is considered as “special” because the materials that will be used to finish the top and the internal structure of the floor are chosen every time by the customer, so that no stocks of finished products are available. Due to product configuration, the line selection is quite large but it can be further increased to better meet customer requests. As a result, Uniflair is often selected to carry out especially complex projects, with stretched operational conditions or very original project specifications.

Production flexibility. The variety and quality of Uniflair’s products require its production system to be very reactive and flexible, especially for air conditioning and refrigeration systems: the range of these two lines is very wide and the manufactured machines are very different from one another. In addition, as has already been stressed, the same product can be differentiated and hence many variations are potentially available. That is why forecasts on demand are extremely complex and Uniflair has no choice but to work in “Just in Time” mode. Within this JIT system, which ensures optimal performances in terms of flexibility, the challenge for Uniflair is on another objective – typical of planning and control production systems – which is that of speed: their goal is to shorten their product delivery lead times, which are currently in line with those of major competitors.

Efficiency. This is a critical objective for Uniflair because it is in trade-off with the critical success factors that were previously identified: quality, large selection of products and flexibility must in fact be counterbalanced with special attention to costs, so to offer the final product at a still competitive price.

With regards to production *per se*, the company adopted a continual improvement approach. This approach is currently of little importance to the floor business, where production is highly automated and, most of the times, improvements consist of upgrades or replacements; it has a key role instead for the air conditioning and refrigeration systems, where the production activity essentially consists of a manual type of assembly. In order to promote continual improvement, the company developed the “5S” project which enabled it to optimise its organisation and the

rationality of its work stations, promoting employees' training. As far as the activities connected with the supply chain are concerned, efficiency is pursued through policies that aim at containing the warehouse's value and at optimising purchases and stocks, so to minimize the slow movement and obsolescence of the components. The goal of reducing the cost of stock management has to necessarily be balanced with other business needs: firstly, the product variety, which implies a high number of codes, and secondly, speed, which would require a rather well stocked warehouse, so not to depend on the lead times of suppliers' deliveries.

5.3.4 Building a Single Dashboard

As has been stated in the first chapters, it is essential for a management dashboard to be transparent, understandable, complete and accessible. It should hence be available as a support tool suitable for responding to the top management's information needs and, as a consequence, the data must be presented in a clear fashion, with opportune comments and useful diagrams and other visual means, so they can be correctly used.

To build a dashboard with those characteristics, Uniflair drew up the table that Fig. 5.23 illustrates and called it Uniboard. Figure 5.24 also shows the synthetic dictionary of indicators for Uniflair (the detailed definition of each indicator was summarised using some specific forms, as previously illustrated).

UNIBOARD - BALANCED SCORECARD 2009			UNIFLAIR®							
Month	Progressive #	Analysis framework	Performance indicators	Ref. function	Measurement date and frequency	2009 target	% var. from target	Categories	Total score over 100	Score
A. ECONOMIC-FINANCIAL PERSPECTIVE										
TOTAL I. Sales turnover			General Mgmt	30-nov-09	Monthly	%	-40	30	5	55
TOTAL II. Industrial contribution margin			General Mgmt	30-nov-09	Monthly	%	-	-	-	4
TOTAL III. % industrial contribution margin			General Mgmt	30-nov-09	Monthly	%	-	-	-	5
TOTAL IV. Facility general costs			General Mgmt	30-nov-09	Monthly	%	-	-	-	8
TOTAL VI. % EBITDA / Turnover			General Mgmt	30-nov-09	Monthly	%	-	-	-	9
TOTAL VII. Investments			General Mgmt	30-nov-09	Monthly	%	-	-	-	4
TOTAL VIII. Average receivables due by +30 days			Sales	30-nov-09	Monthly	%	-	-	-	10
TOTAL VIII. Operations cash flow			Accounts	30-nov-09	Monthly	%	-	-	-	3
TOTAL IX. Net cash/debt			Accounts	30-nov-09	Monthly	%	-	-	-	2
TOTAL X. % exposure / bank overdraft			Accounts	30-nov-09	Monthly	%	-	-	-	7
B. COMPETITOR OR CUSTOMER PERSPECTIVE										48
TOTAL I. Confirmed sales orders			Sales	30-nov-09	Monthly	%	-	-	-	5
TOTAL II. Annual variation of confirmed orders			Sales	30-nov-09	Monthly	%	-	-	-	5
TOTAL III. New markets turnover			Sales	30-nov-09	Monthly	%	-	-	-	3
COND-R-SYS IV. Ecofair sales			Sales	30-nov-09	Monthly	%	-	-	-	1
TOTAL V. Backlog expired by +30 days (excl. cant.app.)			Sales	30-nov-09	Monthly	%	-	-	-	4
TOTAL VI. Production capacity coverage over following month			Sales	30-nov-09	Monthly	%	-	-	-	3
COND-R-SYS VII. Meeting requested delivery dates			Logistics (ML)	30-nov-09	Monthly	%	-	-	-	7
COND-R-SYS VIII. Timeliness			Logistics (ML)	30-nov-09	Monthly	%	-	-	-	6
COND-R-SYS IX. On-the-spot quality			Quality (CG)	30-nov-09	Monthly	%	-	-	-	4
COND-R-SYS X. Avg # open claims exceed. 30 days			Post-sales (RF)	30-nov-09	Monthly	%	-	-	-	10
C. INTERNAL PROCESSES PERSPECTIVE										51
TOTAL I. Production capacity used on potential sales			Production	30-nov-09	Monthly	%	-	-	-	4
TOTAL II. % prop. over actual hours worked (labourers)			Production	30-nov-09	Monthly	%	-	-	-	5
COND-R-SYS III. Efficiency - Productivity COND-R-SYS			Prod. Cond-Sys (BF)	30-nov-09	Monthly	%	-	-	-	6
FLOORS IV. Plants productivity FLOORS			Prod. Fl. (SV)	30-nov-09	Monthly	%	-	-	-	5
TOTAL V. Average purchase price variation			Purchasing (MV)	30-nov-09	Monthly	%	-	-	-	7
COND-R-SYS VI. Components in warehouse			Logistics (ML)	30-nov-09	Monthly	%	-	-	-	5
COND-R-SYS VII. Design quality			New Products (MD)	30-nov-09	Monthly	%	-	-	-	4
COND-R-SYS VIII. Avg # product modifications open for >30 days			New Products (MD)	30-nov-09	Monthly	%	-	-	-	4
COND-R-SYS IX. Avg # modifications opened >30 days			New Products (MD)	30-nov-09	Monthly	%	-	-	-	10
COND-R-SYS X. Cost of no on-the-spot quality			Quality (CG)	30-nov-09	Monthly	%	-	-	-	1
D. LEARNING AND INNOVATION PERSPECTIVE										75
TOTAL I. Absentism			Human Resources	30-nov-09	Monthly	%	-	-	-	25
TOTAL II. Employee turnover (#.resign. / tot.emplo.)			Human Resources	30-nov-09	Monthly	%	-	-	-	50

Fig. 5.23 UNIBOARD: Uniflair's Balanced Scorecard (the above data are fictitious so to preserve anonymity)

UNIBOARD: DICTIONARY OF INDICATORS - FISCAL YEAR 2009		
Performance-measuring indicators	Target 2009	Dictionary
A. ECONOMIC FINANCIAL PERSPECTIVE		
I. Sales turnover		Revenues for fiscal year in progress and corresponds to item A1 of budget IV D.CE.
II. Industrial contribution margin		Difference between turnover and cost of sales (equals to materials and direct labour), following "direct costing".
III. % industrial contribution margin		Percentage of cost of sales (materials and direct labour) over sales turnover.
IV. Facility general costs		All the facility fixed costs, to get the EBIT. These costs are divided in detail among the responsibility centres.
V. % EBITDA / Turnover		Percentage of the EBITDA over the sales turnover for that period. The index is included in the Corporate Agreement.
VI. Investments		It corresponds to the sum of investments in tangible, intangible and financial assets.
VII. Customer credits due by +30 days		It corresponds to credits toward customers that are expired by over 30 days. Every seller receives a reward once its goal is met.
VIII. Operations cash flow		Equals to the sum of fiscal year profit, depreciation and provisions of current fiscal year.
IX. Net cashflow		Balance of asset and liability bank accounts. Difference between liabilities and liquid assets. Difference between invested capital and equity.
X. % exposure / bank overdraft		Percentage of bank exposure (overdraft and warranties) over total bank overdraft.
B. COMPETITOR OR CUSTOMER PERSPECTIVE		
I. Confirmed (sales orders)		The value of confirmed orders from 1st Jan. to the measuring date.
II. Annual variation of confirmed orders		Annual percentage of confirmed orders over last 12 months with respect to previous 12 months. It is an approximation to measure Uniflair's progress in the market.
III. New markets turnover		It corresponds to the turnover in new markets and foreign markets. Every seller receives a reward once its goal is met.
IV. Ecofair sales		Value of turnover from sales of ECOfAIR products.
V. Backlog reported >30 days (excl. cant.app.)		Order backlog to be filled, expired by over 30 days. Every seller receives a reward once its goal is met.
VI. Production capacity coverage over following months		It measures the percentage in months of the existing order backlog.
VII. Meeting requested delivery dates		100% - % purchase order items COND-R.SYS where the "Delivery date as requested by customer" is < the "Delivery date agreed upon" - 5
VIII. Timeliness		100% - % order items where "warehouse last readiness date" is > the "Delivery date agreed upon" (or the "Date of first confirmed delivery", if it exists).
IX. On-the-spot quality		Number of on-the-spot claims, excluding those due to wrong customer activity and administrative error.
X. Avg # open claims exceed. 30 days		An approximation of how fast the claims are taken care of. It gives a picture of the unresolved load.
C. INTERNAL PROCESSES PERSPECTIVE		
I. Production capacity used on potential sales		It measures the used production capacity over the potential production capacity (progressive #).
II. % # prop. over actual hours worked (labours)		It measures productivity (men hours' budget / men hours' actual)
III. Efficiency - Productivity COND-R.SYS		Ratio measured in percentage between "# of budget hours in production needs" (hours standard time cycle) and "# hours as punched in by direct labours".
IV. Plants productivity FLOORS		Number of panels produced per hour as registered by direct labours' punches in flooring dept. (progressive #).
V. Components purchase price variation		Percentage variation of average purchase prices of that period with respect to those of the previous year (progressive #).
VI. Components with Warehouse		Percentage of final matching of production to order for components systems over sales turnover COND-SYS of last 12 months.
VII. Delivery time		# of days to report a production to on-the-spot claim due to delayed problem.
VIII. Avg # product modifications open for >30 days		It is an approximation of how fast the modifications process is managed. It gives a picture of the unresolved load.
IX. Avg # modifications opened >30 days		It is an approximation of how fast the modifications process as per bills of materials is managed. It gives a picture of the unresolved load.
X. Cost of no-on-the-spot quality		Warranty costs from instalat, average cost of GO movements (guaranteed output) and CO (complementary output) for countries outside of the European Community.
D. LEARNING AND INNOVATION PERSPECTIVE		
I. Absenteeism		Percentage of absentee hours over total workable hours (excluding paid leave).
II. Employee turnover (# resign. / tot.empl.)		Percentage of number of discharged employees in the last 12 months (mobile average) over the # of punctual employees present at the end of the month.

Fig. 5.24 Uniflair's dictionary of indicators

The synthesis of the dashboard is realized through the so-called “value parallelogram”; every perspective receives a score which is added onto a graph, as Fig. 5.25 illustrates.

The “score” is calculated by assigning each indicator a number from 1 to 10, depending on the level of goal achievement, which is expressed in terms of percentage variation with respect to the target. The scores are obtained by positioning the variation on the corresponding category of goal achievement; a result between, let us assume, -30% and -20% ensures a score of 4 (that will be marked in red because the goal has not been achieved). The scores are then weighed based upon the number of indicators for every perspective. For example, a score of 4 for an indicator of a perspective that includes a total of ten indicators will receive a score of 4, whereas in a perspective that includes a total of eight indicators, it will determine a score of 5. The sum of the scores that each indicator obtains will determine the total score for every perspective, which represents the synthetic data feeding the final graph of the “value parallelogram”.

During the first year, this instrument was especially useful because it allowed the different business functions to use a common language and enabled every manager to, not only view his/her own specific result, but also that of the others, so that everyone became aware of the impact of his/her actions on the company’s results as a whole.

Although the Balanced Scorecard was only recently introduced to Uniflair’s management control system, it was nonetheless an effective planning and control tool, which promoted a better knowledge of the business and the development of a new corporate culture that is more attentive to the countless variables that the

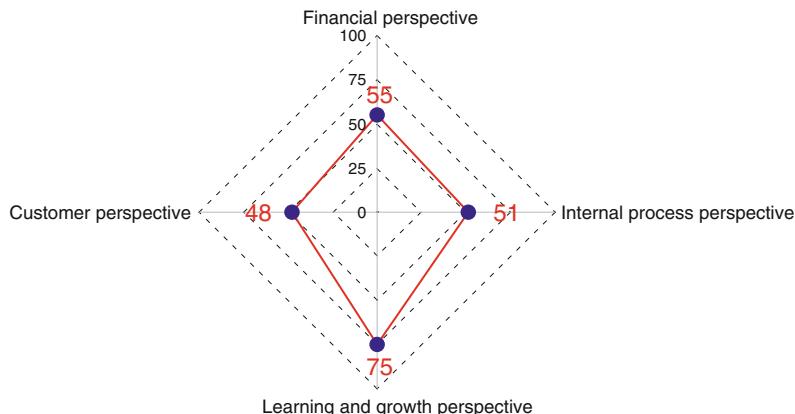


Fig. 5.25 The “value parallelogram” (the above data are fictitious so to preserve anonymity)

success of the deliberate strategy depends on. This awareness will become the intangible asset that will be passed on at the corporate culture level.

In conclusion, for Uniflair the BSC does not represent a mere tool to measure and control performances, but an actual management tool for encouraging and involving people in the implementation of the company strategy. An important effect that we hope the company will derive from the implementation of the balanced scorecard is to promote the establishment of an interactive type of control system, not only a diagnostic type, thus developing a “bottom-up” approach that should facilitate the communication between the various hierarchical levels and, as a consequence, support and promote progress and innovation.

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