

GIANLUCA MELONI
MARCO MORELLI

ALIGNING STRATEGY AND INDICATORS MEASUREMENT SYSTEMS DRIVING EXECUTION

A well-aligned business strategy is all about integrating financial and operational indicators into systems for measuring corporate performance. While structured models such as the Balanced Scorecard are widely used, strategic depth is often lacking as far as execution, which translates into limited effectiveness. Diagnostic, predictive, and behavioral benefits come from well-integrated systems that are dynamic and context-sensitive, unconstrained by rigid frameworks. We propose a three-step implementation process – strategic modeling, financial modeling, and execution planning – to develop truly integrated, responsive measurement systems for better strategic decision-making.

PERFORMANCE MEASUREMENT//BUSINESS STRATEGY//BALANCED SCORECARD (BS)//MEASUREMENT SYSTEMS//INNOVATION



GIANLUCA MELONI

is Associate Professor of Accounting and Control Practice at SDA Bocconi School of Management. He also teaches Performance Measurement at Bocconi University in Milan.

MARCO MORELLI

is Associate Professor of Accounting and Control at SDA Bocconi School of Management, as well as an Adjunct Professor of Planning and Control at the Department of Accounting at Bocconi University in Milan.

Supplementing traditional economic and financial indicators in corporate measurement systems with operational metrics representing a company's business model and overall business approach: This has been the topic of ongoing discussion for many years now. And the idea has inspired new measurement models such as Kaplan and Norton's Balanced Scorecard (BSC). Developed in the 1990s and still generally popular today, the BSC has seen progressive integrations and adaptations to keep pace with the changing social and competitive environment.

Even though the subject is well understood and frequently discussed in the relevant literature, there are few concrete applications that companies are fully satisfied with. Sometimes it seems that integrated measurement models, capable of

combining economic and financial perspectives with operational ones, are more of a managerial trend than a technical response to a real business need. And in many companies, managers revert to a de facto result-oriented control logic. In other words, they delegate the monitoring of operational indicators to functional perimeters and assign these indicators a day-to-day management role.

REASONS FOR ADOPTING INTEGRATED MEASUREMENT SYSTEMS

One reason for the deviation between the theoretical potential and the limited practical application of integrated measurement models is undoubtedly the lack of a clear rationale for adopting them – a rationale that should be grounded in the well-known limitations of traditional economic and financial indicators. While classic metrics effectively represent business results broken down in various ways according to a strategic and/or organizational logic, they provide no indication of what led to these results. Economic and financial reporting allows us to identify a company's strengths and weaknesses (that is, areas that can create or destroy value) but it doesn't give us any deeper understanding of the strategic decisions, projects, and business processes underlying this value creation/destruction.

More efficient, comprehensive diagnostic systems

Since traditional metrics don't help us figure out which managerial decisions need validation or correction, the organizational learning process becomes distorted. This in turn hinders the conscious guidance of evaluation and decision-making processes in the organization. In contrast, by integrating outcome measures with indicators that reflect the company's strategic, organizational, and operational determinants, we can effectively link the causes and effects of corporate actions.

In this sense, merging the two perspectives is constructive because it empowers us to develop diagnostic systems that can pinpoint areas of excellence or weakness, and clearly emerge the

underlying causes as well. Of course, first we must select operational performance indicators that represent strategic business choices. Otherwise, the measurement system will be redundant and unfocused, creating confusion and disorientation instead of guiding diagnosis and action.

So the primary reason for integrating financial and operational measures is the potential to have effective, comprehensive diagnostic systems. But as we've said, we need to choose our operational indicators carefully to ensure that they accurately reflect the company's strategic priorities. In fact, one reason for failure in company integration projects is exactly that: the inability to select the most relevant indicators. This in turn compromises the diagnostic function of the control system, which risks becoming a mere formal, bureaucratic mechanism, and sometimes even a source of internal conflict.

Increased predictive capability

In fact, introducing analytic metrics not only boosts the diagnostic capacity of the measurement system, but also its predictive capacity. Referring back to outcome measures, a second limitation is their tendency to be delayed; in other words, they reflect the effects of past decisions and actions (with a varying time lag). This delay also stems from the fact that these metrics are derived. In other words, they are the output of computational processes and control and reconciliation mechanisms, all of which take time, meaning detecting and representing business phenomena can be slower. Conversely, by monitoring operational parameters, companies can spot current dynamics and trends that may affect future economic and financial performance in real time. Therefore, an integrated measurement system is useful for both retrospective analysis and to shore up the company's forecasting capacity. Recent advances in predictive analysis, including technological innovations, are related, at least in part, to the development of integrated models.

However, exploiting the predictive power of key performance indicators requires additional effort; selecting the most meaningful metrics to represent

corporate strategy is not enough. We need to go further to ascertain causal links between operational and outcome indicators. In fact, only with a detailed description of cause-and-effect relationships can we use the dynamics of “cause” parameters as predictors of future “effects.” Many projects that implement systems such as the Balanced Scorecard fall short in this respect, failing to deliver on one of these models’ most salient functionalities. This limitation is even more critical than ever in today’s turbulent environment, where the ability to make accurate predictions is a source of strategic value.

Greater alignment with business strategy

Improved diagnostic and predictive capabilities are not the only motivations spurring companies to strive for greater alignment between the measurement system and corporate strategy. In fact, incorporating KPIs with strategic value into control tools and processes makes it possible to verify, on the one hand, whether management is executing the deliberate strategy and, on the other, whether the results meet initial expectations when execution synchs with strategy. The first check ascertains whether there is effective harmonization between the company’s strategy and operations and pinpoints choices that are inconsistent with the company’s intentions and requirements during execution. In this sense, integration facilitates checking behavior with an eye to corroborating alignment, rather than running an inspection. To this end, models such as the BSC are designed to encourage people to coordinate their efforts while avoiding organizational schizophrenia or, worst case, outright conflict. The second audit allows for testing corporate strategy. When behaviors match up with strategic intentions but results consistently fall short of the company’s requirements and/or expectations, de facto measurement systems help signal the need to revise priorities and patterns. In this dual sense, harmonizing measures with strategy enables us to verify the strategy’s execution and validity. This confirms the role of indicators as inputs to the managerial learning circuits mentioned at the beginning of this section.

Toward conscious integration

Now that we’ve clarified why performance measurement systems should be consistent with corporate strategy, it’s essential to understand how to achieve this alignment and why companies often struggle to do so. As mentioned in the previous section, the connection between strategy and performance measurement systems is not an advanced evolutionary element of the latter, but rather a unique aspect of their design and implementation. In fact, the performance measurement and governance process is designed to link managerial actions and decisions to corporate strategy. Specifically, these systems must guide managers in making trade-offs between short- and long-term objectives and balancing the interests of key stakeholders.

Not until the 1980s did the literature begin to explicitly recognize the centrality of corporate strategy in terms of designing performance measurement systems. The issue of synchronizing strategy and measurement systems remains highly relevant to this day, both in management literature and in business practice. Initially relevant investigation took on a *contingency* perspective; that is, oriented toward the search for optimal control system configurations in relation to certain strategic and contextual characteristics of the company. But this approach proved insufficient to explain why in many cases performance measurement systems are not adjusted even when they are demonstrably misaligned with strategic and organizational changes in the business.

Barriers to innovation: adaptive delay and pro-innovation bias

This difficulty mainly stems from two closely related phenomena. First, control systems have historically been slow to adopt management and business innovations in planning, scheduling, and control mechanisms. A notable example is the time between Porter’s introduction of the value chain concept and the adoption of activity-based costing systems. For a more recent example, consider the difficulty companies face in integrating measures

into reporting systems that can define and monitor environmental, social, and governance (ESG) issues. This delay is usually due to the complexity of incorporating new objects of analysis and indicators into systems designed primarily to establish a shared language in the company. Furthermore, several studies demonstrate that changes to performance measurement systems often fail due to inadequate oversight during implementation. Essentially, managers have traditionally focused on defining the structural features of performance measurement systems – primarily objects and measures – and have paid much less attention to governing the process.

Second, the contingency approach, which has dominated the debate on aligning control systems with business strategy for many years, is characterized by a pro-innovation bias, the assumption being that new is always better for organizations. In fact, in this paradigm, organizations are considered capable of rationally identifying their objectives and selecting the most effective innovations to maximize business efficiency. However, as previously mentioned, this approach cannot explain why many companies adopt suboptimal innovations or reject higher-performing systems. To overcome the limitations of the contingency approach, some studies introduce the *fashion perspective*, highlighting how the diffusion of administrative innovations is also influenced by so-called fashion-setting networks, such as consulting firms, business schools, and mass media.

The Balanced Scorecard: a “one-size-fits-all” solution?

Beginning in the 1990s, frameworks designed to overcome the limitations of traditional performance measurement and planning systems began emerging in management literature and practice. The most prominent of these is undoubtedly one we’ve cited before: the conceptual apparatus proposed by Kaplan and Norton (1992) with the Balanced Scorecard (BSC) and strategy maps. The BSC framework was created precisely to convert corporate strategy into specific objectives, measures, targets, initiatives,

and allocated resources to foster organizational alignment during rollout. In particular, the model emphasizes integrating different performance dimensions, balancing leading and lagging indicators, and recognizing the importance of intangible resources for maintaining competitive advantage. So if BSC addresses the critical issues we’ve just listed, why is it also seen here as potentially complicating the way companies manage the relationship between strategy and performance measurement systems?

Undoubtedly, the popularity of BSC is partly due to the fashion effect. Just as with activity-based costing systems, there are many BSC successes, but also many failures. Nonetheless, the latter are not imputable to limitations of the approach itself, but rather to errors in the execution phase. The idea of a one-size-fits-all solution, which involves synching performance measurement systems and strategy by adopting standardized models, has gained ground in debates on the subject. Although tools such as the BSC and Lynch and Cross’s (1991)¹ performance pyramid stand out by integrating financial and non-financial measures, a rigid, prescriptive approach can result in static systems incapable of adapting to the dynamic nature of the competitive environment and evolving business strategy. Many companies have failed to embrace the lessons from models like Simons’ levers of control, which states that the proper orientation between strategy and performance measurement systems depends not only on the structural features of the system (objects, measures, etc.) but also on how these systems are used. The approach here might be purely diagnostic, or more interactive, to stimulate debate on how the company analyzes and deals with the strategic uncertainties generated by the dynamism of the surrounding competitive environment.

Now let’s go back to our initial question: *What does it mean to implement a strategy-aligned performance measurement system?* We can’t find the answer in an optimal model or framework. Rather, we need to discover the characteristics that a performance

¹ For an introduction to the main measurement frameworks, see Neely A. (2002). *Business Performance Measurement: Theory and Practice*, Cambridge University Press.

measurement system should have to be truly effective. Specifically, the system should be:

- **Integrated:** Combining economic, financial, and operational measures, but also connecting different business areas while preserving their peculiarities.
- **Dynamic:** Designed to adapt to changes in the competitive environment, business models, and business strategy.

The objective of the next section is to discuss the steps and key elements to consider when rolling out a performance measurement system with these characteristics.

HOW TO ACHIEVE INTEGRATION

The concept of integration is characterized by two fundamental aspects, which go beyond the admittedly relevant issue of balancing measures (already extensively covered in management literature and practice). The first aspect concerns the very meaning of a performance measurement system. As succinctly summarized by Grabner and Moers (2013), there is a tendency in the literature, and consequently also in corporate practice, to confuse the concepts of a performance measurement “system” and a performance measurement “package.” Indeed, many companies design and apply operational measurement mechanisms by taking a “package” approach. Typically, this involves working in silos without considering the interdependence of processes and instruments, something that happens because the mechanisms in question are usually designed at different times by different people in different areas of the organization. The result is a lack of internal consistency, which undermines the measurement system’s ability to effectively align with business strategy.

Evidence of this issue often emerges in two recurring phenomena in companies. First, many organizations attempt to match their measurement systems with strategy simply by designing multidimensional

reporting systems. But these systems are detached from the forecasting and goal-setting processes, particularly planning and budgeting, which continue to be dominated by economic and financial language and accounting-based logic. Second, there is often a disconnect between strategic planning and budgeting processes. This is particularly critical since budgeting is supposed to translate long-term goals or strategy set down in the planning phase into short-term action initiatives and objectives.

The second aspect of integration we want to highlight is the unnecessary reference to the structure of codified models, such as the BSC or the Lynch and Cross pyramid. As we’ve pointed out in previous paragraphs, the value of these frameworks lies in their design principles, not their formal structure. Often when organizations mechanically adopt similar models, they get overly rigid systems or failed implementation processes. Instead, it’s the company’s strategic plan that should serve as the real framework for designing an integrated measurement system. The measures used in forecasting performance and analyzing results should be traced back to the goals set down in that document.

The three phases of implementation

As mentioned in the previous section, dynamism is the second key characteristic of a good strategy-aligned performance measurement system. This quality is essential for adapting to uncertainty, changes in the competitive environment, and evolving strategic choices. Building dynamic systems means, first and foremost, expediting the processes of planning and measuring results. One of the most frequently cited evolutionary vectors in academic and practitioner literature is the development of algorithmic systems, which can trace results back to their determinants at the diagnostic stage and define alternative scenarios more effectively during forecasting and goal setting. In fact, scenario analysis is no longer limited to depicting best- or worst-case scenarios, as it was until recently. Instead, it’s based on an in-depth assessment of the variables that influence business results. This means that forecasting focuses on understanding the trends

of the variables that determine the results, rather than the results themselves. So as we can see, these two aspects (an algorithmic approach and scenario analysis) are closely interrelated, and both can get a big boost from the evolution of machine learning and artificial intelligence systems.

To design a strategy-aligned performance measurement system that exhibits the characteristics of integration and dynamism described above, there are three basic steps (Kaplan and Norton, 2008; Cugini et al., 2016):

1. *Strategic modeling*: This involves breaking down corporate strategy into key thematic areas outlined in strategy-defining documents, primarily the strategic plan. The identification process can be inspired Kaplan and Norton's strategy map methodology, though without necessarily relating these areas to the BSC framework. Once the relevant strategic objectives are clarified, an initial analysis should be done by creating a database of the company's measures to find any gaps between the relevance of the strategic areas and the level of attention they receive from the measurement system. For this analysis, which reveals any over/underrepresented areas, the company needs to be able to link the metrics it uses to the relevant thematic areas of corporate strategy.
2. *Financial modeling*: This step consists of breaking down income statement and balance sheet line items into key variables, using a logical approach at an accounting level, to understand possible cause-and-effect relationships with other measures. These relationships can be validated through statistical analysis to verify that there is concrete evidence to support the logical associations between the metrics/indicators and the income statement/balance sheet items.
3. *Strategy execution plan*: This involves creating a matrix that explicitly connects the strategic objectives identified in the first step and the initiatives included in the plan. Making these links explicit has three main advantages. First, it facilitates the connection between strategic

and operational planning (budgeting), which is usually critical, as mentioned above. Second, it allows us to assess the completeness of the portfolio of initiatives and verify that each strategic objective is actually supported by concrete actions with a clear strategic focus. Third, it clarifies which resources are allocated to each initiative (STRATEX or strategic expenditures). This is done not by taking the traditional budget view, which is usually broken down by type of expenditure or operational unit, but by adopting a cross-sectional perspective, which is essential to give the performance measurement system a strategic orientation.

A process designed in this way achieves three fundamental goals:

- To tie the system of measures into a company-specific strategic framework, bolstering the effectiveness of the measures in guiding the implementation of the business strategy.
- To integrate the processes of planning, scheduling, and evaluating business performance to ensure a consistent language throughout the company.
- To clarify the logical and mathematical links between economic and financial results and their determinants.

THE MISTAKES TO AVOID

Despite the undeniable advantages – and necessities – related to integrating measurement system and business strategies, cases of failure in aligning these two perspectives are not uncommon. This can mean abandoning integrated measurement systems or not actually using them as tools for guiding and evaluating managerial actions. The reasons for this disconnect between theoretical requirements and practical application are myriad, but we can trace them for the most part to two basic dimensions: errors in system design and application difficulties.

Noise effects and “excessive” measurement systems

The first issue concerns selecting metrics to input into the system. The complexity of strategies leads to the development of equally complex measurement systems, characterized by a multitude of metrics that are sometimes redundant, inconsistent, unsynchronized, or even contradictory, with no clear distinction between strategic and operational measures. These overly complex monitoring tools are not functional for strategic execution. Instead, they risk generating what Kahneman calls the noise effect (Kahneman et al., 2021). According to this author, excess data and information used to support decision-making processes often leads to diagnostic and evaluation errors in management, medical, and legal contexts. This phenomenon stems from the difficulty of interpreting large amounts of data, which Kahneman refers to as noise. Consequently, choices are likely to be driven by randomness rather than analytical activity. In other words, measurement systems that are excessive in terms of perspectives and metrics can generate counterproductive effects, such as disorientation, inattention, and defocusing. While technology reduces the cost of accessing and using data, it can also amplify these risks by facilitating the unguided, uncoordinated, and, above all, misaligned use of data with respect to the company's true priorities.

From this perspective, a measurement system is only a good one if it can highlight the essential functional aspects for strategic execution and translate them into clear objectives and measures. Effective diagnosis doesn't depend on measuring every aspect of an enterprise's operation; rather, it calls for focusing on the relevant aspects. Recognizing what these are is the most problematic issue in designing measurement systems, especially when faced with opaque, inadequately stated, ambiguous strategies. In these cases, the issue isn't constructing the measurement tool but elaborating the business strategy. In other words, strategies and indicators are difficult to line up if the former are not defined with clarity and, ultimately, a sense of accountability. Measuring more is certainly not the solution.

Bias effect and outdated measurements

A second risk must be added to the noise effect: the bias effect. We must acknowledge that the choice of metrics may be influenced by our beliefs, habits, and prejudices. In fact, people tend to feel more confident about parameters they are familiar with because they understand them more easily after they've used them frequently. This makes such metrics more appealing than new indicators that are unclear in terms of definitions and dynamics. This attitude, which is entirely natural and understandable, leads many companies to develop measurement systems that are backward facing, rather future forward. This is especially true for organizations that have strong track records. It's difficult to question behaviors (and the metrics that represent them) if they have consistently produced solid economic and financial performance over time.

In a dynamic and sometimes turbulent environment, where companies often experience changes in their strategic orientation and resulting actions, relying on past-oriented measurement systems can lead to cognitive distortions and encourage behaviors that no longer keep pace with the company's priorities. In other words, there is a risk of creating diagnostic systems that focus more on the past than the future. Partly contributing to this risk is the typical resistance to change by measurement system owners. Introducing new metrics, which may be unconventional and involve complex input data and calculation algorithms, requires redesigning processes for data collection, creation, certification, and translating all this into useful information. This is no mean feat, especially for companies operating in changing strategic scenarios that struggle to find the time, resources, and skills needed to do constant system updates. After all, metrics inevitably become obsolete, often at an accelerated rate. A metric system may initially align with business strategy, but without the proper ongoing maintenance, such alignment is temporary. Over time, outdated measurements can lead to execution that runs counter to the company's new strategic priorities.

General indicators, practical feasibility, and system issues

A third design error is the lack of depth in the measurement system. Ambiguous strategies can cause such systems to lack sufficient focus. This usually occurs when the selected measures are generic and not linked to action levers that can be traced back to specific business processes and projects, in part due to vague objectives. As previously mentioned, a metric must be clearly linked to the company's strategic initiatives to be meaningful and useful. Only then can company managers effectively control it. Whole generic indicators may provide broad guidance for execution, but they cannot support truly strategy-oriented, consistent managerial action.

In addition to design considerations, it is important to point out practical feasibility problems that can lead to the failure of integrated measurement systems. Chief among these problems is data availability. Although accessing detailed, timely, specific information is easier and less expensive today, implementing diagnostic systems often runs into obstacles, especially with new metrics. Companies cannot assume that their data will always be accurate, up-to-date, or in a format or timeframe that allows them to properly feed the performance measurement system. Even if the data exist, they are often not useful or suitable for decision-making purposes if they are not used on a regular basis. This means it's critical to understand where the data come from, how they're collected, and how reliable they really are. This work is often overlooked, yet if not done properly, it can undermine even the most carefully designed measurement systems.

Finally, it is critical to remember that a measurement system with a "directional" function must be fully integrated at every stage, from forecasting (planning, budgeting, and operational programming) to reporting, and with all operational measurement tools. Some errors are not due to the system itself, but rather to its misalignment with other diagnostic systems in the company regarding objectives, language, and timing. What's more, the effects of noise and bias may impact monitoring

systems as a whole, not just individual instruments. In this respect, mapping what the company already measures to meet multiple cognitive needs is also vital. In summary, a good measurement system must be lean, dynamic, and aligned to the company's priorities, while avoiding ambiguity and defocusing. At the same time, metrics must be solid, high-quality, and completely reliable. Adhering to these basic requirements can prevent errors that could erode the value of integrated strategies and measures.



REFERENCES

- | | |
|--|---|
| Cugini, A. et al. (2016). <i>Strategia, Azioni, Misure</i> , EGEA. | Kaplan, R.S., Norton, D.P. (1992). "The Balanced Scorecard – Measures that Drive Performance." <i>Harvard Business Review</i> , gennaio-febbraio. |
| Grabner, I., Moers, F. (2013). "Management control as a system or a package? Conceptual and empirical issues." <i>Accounting, Organizations & Society</i> , Vol. 38, 2013. | Kaplan, R.S., Norton, D.P. (2008). <i>The Execution Premium</i> , Harvard Business School Press. |
| Kahneman, D., Sibony, O., Sunstein, C.R. (2021). <i>Rumore – Un difetto del ragionamento umano</i> , Utet. | Lynch, R.L., Cross, K.F. (1991). <i>Measure Up: Yardsticks for Continuous Improvement</i> , Blackwell Pub. |