

**PERFORMANCE MEASUREMENT AND ORGANIZATIONAL EFFECTIVENESS:
BRIDGING THE GAP**

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ABSTRACT

The aim of this paper is to bridge the gap between the organizational effectiveness (OE) models developed in the field of organizational theory and the performance measurement models presented within the management accounting literature. The specific evolution of these two complementary streams of research stemming from two different fields of research are reconciled and integrated by analyzing their convergences and divergences. As a response to theoretical and practical pressures, the evolution of OE models reflects a construct perspective, while the evolution of performance measurement models mirrors a process perspective. Performance measurement models have moved from a cybernetic view whereby performance measurement was based mainly on financial measures and considered as a component of the planning and control cycle to a holistic view based on multiple nonfinancial measures where performance measurement acts as an independent process included in a broader set of activities. This paper contributes to the performance measurement literature by establishing the origins of the performance measurement models and by shedding light on unexplored fertile areas of future research.

INTRODUCTION

Performance measurement in the practical and theoretical spheres has attracted growing attention in recent years. Beyond the boundaries of the management accounting literature, several fields have contributed to the development of current knowledge, namely organizational theory, operation and production management, strategic management and finance. However, most of these fields have been studied in isolation, which has resulted in fragmented and disparate findings.

Organizational effectiveness (OE) has been one of the most extensively researched issues since the early development of organizational theory (Rojas 2000). Despite some consensus, there is still significant lack of agreement on the definition and operationalization of this concept (Cameron 1986). As a newer field of research, management accounting relies on these unstable foundations to build performance measurement models. The aim of this paper is to bridge the gap between the OE models developed in the field of organizational theory and the performance measurement models found in the management accounting literature. The specific evolution of these two complementary streams of research stemming from two different fields of research are reconciled and integrated by analyzing their convergences and divergences. This paper contributes to the performance measurement literature by establishing the origins of the performance measurement models and by shedding light on unexplored fertile areas of future research.

Although narrow in scope, this analysis undertakes an in-depth coverage of the literature. To preserve similar levels of analysis between both organizational theory and management accounting, I have focused on the management accounting research related to performance measurement at the *organizational level* only, and thus the stream of research related to

performance evaluation and agency theory is not considered.¹ Moreover, this paper investigates developments that have occurred primarily in mainstream research grounded in a functional-rationalistic paradigm (Macintosh 1994). The purpose is not to deny the importance of alternative approaches, but rather to reduce the scope of this study and to abide by space constraints.

It should be noted that the coverage of the management accounting literature is not limited to specific investigations of performance measurement issues. Particular attention is paid to management control systems (MCS) and management accounting systems (MAS) literature.² Both concepts encompass performance measurement as a specific component and share common issues addressed by the performance measurement literature. Thus, MAS and MCS provide global knowledge that is useful for the study of a performance measurement subsystem.

The remainder of this paper is organized as follows. The next section proposes a framework of the evolution of OE and performance measurement models, and reviews the organizational theory and management accounting literature related to these models. Thereafter, the two streams of research are compared in terms of convergences and divergences.

EVOLUTION OF ORGANIZATIONAL EFFECTIVENESS AND PERFORMANCE

MEASUREMENT MODELS

Organizational theory has spawned a rich body of literature that has had a major influence on management accounting studies (Hopper and Powell 1985). Since the 1950s, numerous studies within the organizational theory literature have focused on understanding the concept of effectiveness. As a newer field of research, management accounting has built on this knowledge to develop several performance measurement models. The aim of this section is to illustrate the specific evolution of the OE and performance measurement models.

Framework of analysis

Metaphorically, the evolution of OE and performance measurement models can be compared to the paths of two brothers that have been raised similarly. Despite similar parental and environmental influences, the two brothers progress differently and choose their own way. Nonetheless, the older brother is expected to exert an influence on his younger brother. In this perspective, one could say that the OE and performance measurement models have evolved differently in response to similar theoretical and practical pressures. As the older brother, the OE models have significantly influenced the performance measurement models. In essence, organizational effectiveness represents the *outcome* of organizational activities while performance measurement consists of an *assessment tool* to measure effectiveness.

Note that the terms ‘performance’ and ‘effectiveness’ are used interchangeably because problems related to their definition, measurement and explanation are virtually identical (March and Sutton 1997). Over a 35-year period, a survey of four leading management journals shows that the two concepts are not independent and that until 1978, effectiveness and performance

dominated the literature interchangeably. Since then, performance has become the most dominant concept (Shenhav, Shrum and Alon 1994). In this paper, even if a specific distinction is sometimes made between the two terms, ‘performance’ and ‘effectiveness’ are considered similar concepts.³ However, ‘performance’ and ‘performance measurement’ must not be confused; the former represents an outcome whereas the latter is a measurement tool.

Figure 1 summarizes the specific evolution of OE and performance measurement models in response to theoretical and practical pressures: OE models reflect a construct perspective while the latter embody a process perspective. The influence of organizational theory on management accounting literature is also underscored, as is the presence of convergences and divergences. Each of the elements of the figure is discussed in detail below.

Insert figure 1

Organizational effectiveness (or performance) mainly reflects a *construct perspective* in which the focus is on the definition of the concept in terms of assessment and conceptualization (Goodman, Pennings and Associates 1977). The aim is to determine properties and dimensions encompassed by the concept (Scott 1977). The explanation of effectiveness variation and the search for its true causal structure represent one of the most enduring themes in the study of organizations (March and Sutton 1997). For example, Chakravarthy (1986) identifies different conceptions of effectiveness including profitability, financial-market, multi-stakeholder satisfaction, and quality of firms’ transformations.

Initially focused on the achievement of goals (goal models), the OE models gradually considered the resources and processes necessary to attain those goals (system models), the powerful

constituencies gravitating around the organization (strategic-constituencies model), the values on which the evaluation of effectiveness are grounded (competing values model) and the absence of ineffectiveness factors as a source of effectiveness (ineffectiveness model).

In contrast, performance measurement endorses a *process perspective* where the focus is on the internal process of quantifying the effectiveness and the efficiency of action with a set of metrics (Neely, Gregory and Platts 1995). The measures and indicators act as surrogates or proxies for organizational phenomena (Ijiri 1975). Performance measurement represents management and control systems that produce information to be shared with internal and external users. Furthermore, as it encompasses all aspects of the business management cycle, this model constitutes a process for developing and deploying performance direction (Nanni, Dixon and Vollmann 1992).

The performance measurement models evolved from a cybernetic view whereby performance measurement was based mainly on financial measures and considered a component of the planning and control cycle to a holistic view based on multiple nonfinancial measures where performance measurement acts as an independent process integrated in a broader set of activities. Performance measurement is traditionally viewed as an element of the planning and control cycle that captures performance data, enables control feedback, influences work behavior (Flamholtz, Das and Tsui 1985) and monitors strategy implementation (Simons 1990). It is mainly underpinned by a financial perspective (Johnson and Kaplan 1987). In a holistic view, performance measurement plays a key role in the development of strategic plans and evaluating the achievement of organizational objectives (Ittner and Larcker 1998a) as well as acting as a signaling and learning device (Simons 1990).

Theoretical and practical pressures

Central to the theoretical and practical spheres, the concepts of effectiveness and performance have evolved as a result of considerable pressure. From a theoretical standpoint, the main pressure arises from the difficulty of conceiving a theory of organizations that does not include the construct of effectiveness (Goodman et al. 1977). The construct must eventually be discussed to explain intra or interorganizational variations. Consequently, constant pressure is generated by the need to improve the conceptualization, measurement and assessment of the construct.

Moreover, the ambiguity and confusion surrounding the construct of effectiveness is another source of pressure. The numerous areas of conflict originate from the OE's ambiguous meaning and definition, the lack of agreement on how to measure it and the disparity in its use by practitioners and academics (Cameron 1984). Even if today there is some agreement that (i) organizational effectiveness requires multiple criteria, (ii) it must consider both means and ends (Robbins 1983), and (iii) the choice of model and criteria should be flexible and appropriate for the context (Cameron 1986), the definition, circumscription and criteria identification of organizational effectiveness remain problematic, and no definitive theories have been put forth. Cameron and Whetten (1983) define seven critical questions for bounding and assessing effectiveness models. These questions represent a source of pressure that motivate the analysis, improvement and criticism of existing models and the development of new ones: (i) From whose perspective is effectiveness being assessed? (ii) On what domain of activity is the assessment focused? (iii) What level of analysis is being used? (iv) What is the purpose of assessing effectiveness? (v) What time frame is being employed? (vi) What type of data are being used for assessments? (vii) What is the referent against which effectiveness is judged?

From a practical standpoint, it is commonly recognized that the contemporary economic environment represents a source of pressure on almost every aspect of the organization. Moreover, as outlined by Ittner and Larcker (2001), management accounting research is significantly driven by changes in practice. The aim of this paper is not to describe this reality in detail but simply to clarify the main factors that trigger changes in the performance models. The notion of ‘value-added’ has been emphasized by the shift in global competitive conditions, deregulation, rapid progress in product and process technology, power of information technology, shortening product life cycles, changing nature of work and organizational roles, changing external demands, and new manufacturing practices such as total quality management, just-in-time, computer-integrated-manufacturing systems and customization (Johnson and Kaplan 1987, Neely 1999). Crucial for the organization’s survival, performance and effectiveness issues cannot be ignored by managers that exert pressure on the performance measurement systems and implicitly expand the boundaries of the performance definition and criteria.

Organizational effectiveness models

Several models have been developed to capture the richness of the organizational effectiveness construct. This multiplicity can be explained by the nature of the effectiveness construct, specifically its has unspecified boundaries, and also by the various conceptualizations of organizations that yield different models of effectiveness (Cameron 1984).

Goal model

The traditional model relies on a vision of the organization as a rational set of arrangements oriented toward the achievement of goals (Goodman et al. 1977). Effectiveness is measured in

terms of accomplishment of outcomes (Etzioni 1960). The focus is exclusively on the ends: achievement of goals, objectives, targets, etc.

System model

The system model, while not neglecting the importance of the ends, emphasizes the means needed for the achievement of specific ends in terms of inputs, acquisition of resources and processes (Yuchtman and Seashore 1967). The conception of the organization is grounded in the open system approach whereby the inputs, transformation process and outputs are considered part of a whole and not independent components.

Strategic-constituencies model

This model broadens the scope of the two previous models by adding the expectations of the various powerful interest groups that gravitate around the organization (Connolly, Colon and Deutch 1980). Thus, the organization is perceived as a set of internal and external constituencies that negotiate a complex set of constraints, goals and referents (Goodman et al. 1977). That is, the owners, employees, customers, suppliers, creditors, community and government represent interest groups that must be satisfied in order to ensure the effectiveness and survival of the organization.

Competing-values model

The competing-values model constitutes a synthesis and an extension of the previous models (Quinn and Rohrbaugh 1983). It views the assessment of OE as an exercise grounded in values. Using organizational values as a starting point, three sets of competing values are juxtaposed to form different definitions of effectiveness. These sets of values encompass various aspects of previous models: (i) means-ends dilemma refers to the goal and system model, (ii) the internal-

external focus dilemma refers to the different stakeholders' needs, and (iii) the control-flexibility dilemma is an open debate in organizational literature. Based on these competing values, Quinn and Rohrbaugh (1983) identify four models of effectiveness: rational goal, internal process, open system and human relations.⁴

Ineffectiveness model

By focusing on the factors that inhibit successful organizational performance, this model evinces a different perspective by conceiving the organization as a set of problems and faults (Cameron 1984). Its basic assumption is that it is easier, more accurate, more consensual and more beneficial to identify problems and faults (ineffectiveness) than criteria of competencies (effectiveness). Hence, organizational effectiveness is defined as the absence of ineffectiveness factors. Table 1 summarizes the various models in terms of conceptualization of the organization, focus and main advocates.

Insert table 1

Research on the OE models educes conflicting positions about the relationships between the five models. These relationships can be defined from three different stances: exclusionary, cumulative and complementary. The *exclusionary stance* represents the situation where a model is presented as the single best approach, sufficient and applicable to any context and conditions. For example, the five models discussed in Table 1 have various proponents who advocate their superiority. The *cumulative stance* reflects the position where the various models are perceived as building blocks in a mapped domain in which the boundaries are specified. Every model adds something to the previous ones in order to increase the accuracy of the whole picture. For instance, Robbins (1983) outlines the links between the various models. The system model is

defined as encompassing the ends-focus of the goal model, together with the means and environmental actors. The strategic-constituencies model, unlike the previous model, is portrayed as focusing solely on the constituencies that can threaten the survival of the organization. Lastly, the competing-values model is presented as an integrative framework of the previous models. The *complementary stance* mirrors the situation where each model is perceived as capturing one portion of the multiple facets of the reality along with the specific context to be applied. Cameron (1984,239) reflects this stance: “Effectiveness...should be treated as representing an unmapped terrain where different approaches and models add to the completeness of the map...But none of these models captures the total construct space of the total meaning of effectiveness. Whereas each is valuable in its own right because it includes distinctions absent in the others, none has enough explanatory power to supersede other approaches.”

Performance measurement models

The aim of this section is to portray the evolution of performance measurement models from a cybernetic to a holistic view.⁵ An overview is first provided, then each of these views is analyzed.

From Simon to Simons: an overview

In his recent work, Simons (2000) summarizes the use of information in a context of performance measurement and management control. Five different uses are presented, which reflect the cybernetic and holistic views of performance measurement: decision making, control, signaling, education and learning, and external communication. The information encompasses either financial or nonfinancial measures. More specifically:

- Decision making refers to the improvement of decision processes through *planning* (setting performance and strategic goals and ensuring an adequate level and mix of resources) and *coordination* (integrating disparate parts of a business to achieve objectives).
- Control refers to *feedback* to ensure the input-process-output system is properly aligned and to motivate and evaluate employees.
- Signaling refers to *cues* sent by managers throughout the organization related to their values, preferences and where the employees should be focusing their attention and energy.
- Education and learning refers to the organizational *understanding* of changes in the internal and external environment and the *links* between their components.
- External communication refers to the diffusion of information to external constituents (stockholders, investments analysts, lenders, suppliers, business partners, customers etc.)

More than 45 years earlier, in a study related to the organization of a controllership function, Simon, Guetzkow, Kozmetsky and Tyndall (1954) directly or indirectly addressed some of these five uses by providing three types of questions answered by accounting information: (i) Am I doing well or badly? (score-card uses), (ii) What problems should I look into? (attention-directing uses), and (iii) Of the several ways of doing the job, which is the best? (problem-solving uses). They maintain that no sharp dividing line can be drawn between the score-card and the attention-directing uses. That is, employees tend to redirect their attention in accordance with the variances that issue from the score keeping process. Thus, these two uses are implicitly associated within a control perspective. However, for higher-level management, the attention-directing use arises from the executives' need to keep their subordinates alert and to convince them that "the boss knows what is going on". This perspective is thus more strongly related to

the notion of signaling. Furthermore, the problem-solving use, because of its contribution to the managers' decision process, represents an extension of the decision-making role.

Surprisingly, after Simon et al. (1954), the majority of researchers in the management accounting field studied performance measurement as part of the planning and control cycles, and the roles addressed were limited to control, decision making and external communication. It was not until the early 1990s that signaling and learning preoccupations emerged, as scholars differentiated between diagnostic and interactive control (Simons 1990). The former is associated with routine monitoring and strategy implementation, while the latter is linked to top management monitoring, attention-focusing, learning and strategy formulation. It is commonly recognized that Anthony (1965) seminal work played a major role in the development of the management control systems (MCS) literature. Nonetheless, his definition of MCS led researchers to envision these systems as accounting-based controls of planning, monitoring, measuring performance and integrative mechanisms (Langfield-Smith 1997). "He saw management control as being sandwiched between the processes of strategic planning and operational control" (Otley, Broadbent and Berry 1995,32). Consequently, the specification of control systems and measures were seen as common to all strategies, accounting measurement was stressed and nonfinancial measures were neglected (Otley 1999). Management accounting systems original purpose of providing information to facilitate cost control and organizational performance measurement has been transformed to one of compiling costs from a periodic financial statement perspective (Johnson and Kaplan 1987).

This role of short-term financial performance measurement became inadequate for the new reality of organizations (e.g. accelerated changes in technology, needs for innovation and flexibility, shortened product life cycles). The crucial importance of nonfinancial indicators,

which are based on organizational strategy, which include key measures of success and which are perceived as immune from the various shortcomings of financial measures, was stressed by several authors (e.g. Kaplan 1983, Eccles 1991). Gradually, performance measurement frameworks began to reconcile the use of financial and nonfinancial measures; examples include the balanced scorecard (Kaplan and Norton 1992, 1996), integrated performance measurement (Dixon, Nanni and Vollman 1990), stakeholder model (Atkinson, Waterhouse and Wells 1997), and performance management framework (Otley 1999).

To summarize, within the management accounting literature, performance measurement has evolved from a component of the planning and control cycle relying on financial information (cybernetic view) to an independent process used as signaling and learning devices for strategic purposes based on multiple nonfinancial measures (holistic view). Figure 2 presents and summarizes the main differences between cybernetic and holistic views in terms of role, design and organizational impacts. Note that the division between those two views is mainly artificial (in terms of content and time boundaries), caricatured, and is intended to illustrate the evolution of the role of performance measurement. Obviously, performance measurement systems of the past and present combine characteristics from both perspectives. The epistemological issue related to the notion of 'evolution' will be discussed below.

Insert figure 2

Cybernetic view

Roles and design of performance measurement. Traditionally, performance measurement has been viewed as an important requirement of a cybernetic model of control that also includes stated objectives or goals, a predictive model and a tool to facilitate the choice of

alternative actions. Cybernetic models are seen as an enduring effort to capture the processes of planning, comparison and evaluation in a rigorous fashion (Merchant and Simons 1986). The application of cybernetic concepts to control processes is coherent with (Anthony 1965,17), who defined management control as “the process by which managers assure that resources are obtained and used effectively and efficiently in the accomplishment of the organizations’ goals”. Two distinct sets of variables need to be measured: those defined by objectives and those required by predictive models. Traditionally, control systems have emphasized objective-oriented measures (Otley and Berry 1980), and performance measurement has become associated with a negative feedback model relying on detection of variances when the planned objectives and the measured actual results are compared (Hofstede 1978). Measurement involves both ex post and ex ante forms of control, and encompasses informational and behavioral dimensions (Flamholtz et al. 1985).

The pure cybernetic model is not applicable to every organizational context. One reason is the measurability of the outcomes defined as the possibility of translating the outputs into unambiguous and quantitative standards against which performance can be measured (Hofstede 1978). Several non-cybernetic models are proposed in the literature to address this issue. For example, based on uncertainty factors (e.g. outcome measurability), Macintosh (1994) presents a control typology where each of the five categories requires different types of performance measurement. Efficiency, effectiveness, social test, benchmarking information, and the attainment of organizational mission are potentially useful measures of performance. Of the three non-cybernetic models proposed by Hofstede (1981), judgemental control is recommended when the outputs are not measurable and no acceptable surrogate measures can be found.

To summarize, from a cybernetic perspective the use of performance measurement is associated mainly with control of accomplishment of organizational objectives and strategy implementation. Performance measurement is thus implicitly linked to the notion of diagnostic control systems (Simons 1995), described as formal feedback systems used to monitor organizational outcomes and correct deviations from preset standards of performance.

Financial information is associated with traditional planning and control cycles (Nanni et al. 1992). Within traditional management accounting systems, the focus and resources are fully devoted to managing the external financial accounting information (Johnson and Kaplan 1987). Financial measures express results of decisions in a comparable measurement unit and capture the cost of trade-offs between resources as well as the cost of spare capacity (Epstein and Manzoni 1997). Moreover, they support the contractual relationships and the capital markets (Atkinson et al. 1997).

Organizational impact. Traditional performance measurement systems may encourage conservatism and a ‘playing it safe’ attitude: “Managers need to be encouraged to identify defined areas within which a degree of experimentation and risk-taking might be beneficial. Too often we stifle creativity and learning by insisting upon good performance from all activities” (Otley 1994,297). Measurements like ROI discourage senior managers from innovating, investing in market share or developing sources of competitive advantage (Dent 1990) and encourage conformity (Roberts 1990). Moreover, strategic planners’ flexibility and creativity may be inhibited by formal control systems (Langfield-Smith 1997) which prompt management to engage in systematic planning (Flamholtz et al. 1985). Control systems create a climate that can act against successful strategy implementation and formulation processes. Dent (1990) illustrates how MCS could foster or inhibit innovation depending on their design. The design of

an information system and MCS necessitates several decisions regarding the choice of information measured, omitted and reported. A design that filters inconsistencies will promote fictitious comfort and clarity and will confirm conventional reasoning. The perception of managers is limited to the information available (Flamholtz et al. 1985).

Holistic view

Roles of performance measurement. The holistic view of performance measurement follows the extension of the cybernetic model, which has been broadened to consider the addition of a second higher-order feedback loop to control the objective setting (Hofstede 1981). This second loop involves modification of the organizational assumptions, targets and strategic plans and thus represents a learning experience. The performance measurement role is extended from a single loop to a double loop learning dimension (Argyris and Schön 1978). Specifically, performance measurement is seen as fostering organizational learning, owing to its capacity to acquire, distribute, interpret and store knowledge. “The relationship between organizational learning and management control system is both recursive and two-way, with the two concepts inextricably interwoven” (Kloot 1997,69). Otley (1999) introduces a performance management framework that is designed to go beyond the measurement of performance and clearly represents the essence of the holistic view. The framework is basically grounded in a cybernetic approach where (i) stakeholder interests determine the organizational key objectives, (ii) strategies and plans are adopted, and the processes and activities required are identified, (iii) performance is measured and rewarded, and (iv) feedback is provided. However, the latter step gives precedence to the learning process that is enhanced by the opportunity to revise ineffective strategies and foster the emergence of new ones.

In order to stimulate learning and contribute to strategy formulation, performance measurement systems focus attention on strategic priorities, create visibility within the organization to ensure coordination, inspire action and enhance communication considered essential to learning (Vitale and Mavrinac 1995). By providing and measuring information on critical uncertainties, top managers help focus organizational attention and efforts toward those uncertainties. The discussions, debates, action plans, ideas and tests throughout the organization foster learning that encourages the gradual emergence of new strategies and tactics. More than just being a diagnostic system, performance measurement also represents an interactive device (Simons 1990).

Performance measurement contributes to strategy formulation and implementation by revealing the links between goals, strategy, lag and lead indicators (Kaplan and Norton 1992, 1996) and subsequently communicates and operationalizes strategic priorities (Nanni et al. 1992). The role of performance measurement evolves from a simple component of the planning and control cycle to an independent process that assumes a monitoring function. This function entails measuring movement in a strategic direction instead of distance from a goal, which is different from the planning and control cycle (Nanni et al. 1992).

To summarize, the holistic view of performance measurement encompasses several uses that have been summarized above by means of five elements: decision-making, control, signaling, education and learning as well as external communication (Simons 2000). A stakeholder approach defines the contribution of performance measurement according to three roles: coordination, monitoring and diagnosis (Atkinson et al. 1997). The coordinating role refers to the decision makers' attention that must be focused on organizations' primary and secondary objectives. The monitoring aspect is associated with the measurement and reporting of

performance in meeting stakeholders requirements. Lastly, the assessment of the cause-and-effect relationships between process performance, organizational learning and organizational performance refers to the diagnosis role.

Design of performance measurement systems. The emphasis of the cybernetic view on the financial information has lead to distortion in product costing, inadequacy of control information and the absence of long-term performance measures (Johnson and Kaplan 1987). The information developed for external users is inadequate and insufficient for internal users. A recent survey of senior executives reveals that short-term financial measures rank fifth behind four nonfinancial measures in terms of perceived importance (Ittner and Larcker 2001). Atkinson et al. (1997,25) conclude that “performance measurement systems based primarily on financial performance measures lack the focus and robustness needed for internal management and control”. Moreover, as suggested by Kaplan and Norton (1992,71), they “worked well for the industrial era, but they are out of step with the skills and competencies companies are trying to master today”. Today, the perceived limitations of traditional accounting-based measures are numerous and well-known: (1) too historical and “backward-looking”, (2) lack of predictive ability to explain future performance, (3) reward short-term or incorrect behavior, (4) lack of actionability, (5) lack of timely signals, (6) too aggregated and summarized to guide managerial action, (7) reflect functions instead of cross-functional processes, and (8) give inadequate guidance to evaluate intangible assets (Ittner and Larcker 1998a). Interestingly, some of these elements had previously been outlined by Simon et al. (1954,31):

“In those companies where the products can be measured, at least roughly, in physical units, manufacturing and some sales executives make more use of data expressed in physical units than data measured in dollars... One reason for the general preference for physical units appears to be that operating men have to take action in terms of physical variables... Thus, most factory department heads prefer to have

delay time reported in hours of machine time, yield in percent, efficiency in terms of tons per machine-hour or man-hour, and so on.”

Nonetheless, nonfinancial measures are also problematic. The relation between improvement in nonfinancial measures and profits is unclear. Moreover, as with all measurement systems, dysfunctional behavior can be observed in employees that use “gaming” to optimize individual performance (Fisher 1992). Several empirical results provide interesting insights into the issues surrounding the use of financial and nonfinancial measures. These results are classified in three categories: (i) usefulness and predictive ability of nonfinancial measures, (ii) mix of financial and nonfinancial information, and (iii) manufacturing performance measurement.

Usefulness and predictive ability of nonfinancial measures. This category contains studies that investigate trends in the choice and use of performance measures. Based on a survey of 203 firms, Lingle and Schiemann (1996) demonstrate that while financial information is still very important, nonfinancial measures like customer satisfaction, operating efficiency, employee performance, community and environment as well as innovation and change are highly valued by executives. These factors are also included in regular management reviews and serve to power organizational change. In a context of healthcare organizations, Chan and Ho (2000) find moderate success in the development of balanced scorecards for which, however, measures are reported on all four perspectives, while Malina and Selto (2001) demonstrate its effectiveness as a strategy communication and control device. A rate of adoption of 30% of the new performance measures approach (balanced scorecard and integrated performance measurement) is reported in Canadian manufacturing firms (Gosselin 2001). These results are purportedly comparable to those obtained in Europe and North America.

The use of financial and nonfinancial measures to evaluate unit performance is examined by the experimental design of Schiff and Hoffman (1996) and Lipe and Salterio (2000). The former demonstrates that both types of information are used, but that financial cues may have more weight for a department performance judgment. The latter suggest that managers are not paying enough attention to the nonfinancial measures of balanced scorecards to drive the expected benefits of this approach.

Another type of study examines the extent that nonfinancial measures are better predictors of long-term financial performance and share value than current financial measures. Customer satisfaction and environmental measures are analyzed in several studies with mixed and inconclusive results. For instance, recently published studies of the cellular telecommunication industry (Amir and Lev 1996) find that on an individual basis, financial measures are largely irrelevant to explain share value while nonfinancial measures appear to be highly relevant. Ittner and Larcker (1998b) independently examine telecommunication firms, financial services providers, and a random sample of large firms with substantial market share. The relation between customer satisfaction and future accounting performance is only modestly supported, while evidence is provided for the relationship between satisfaction measures and the stock market, even if the satisfaction measures are partially reflected in current accounting book values. Data from hotels managed by a hospitality firm support the claim that customer satisfaction is significantly associated with future financial performance (Banker, Potter and Srinivasan 2000). The relation appears to be stronger for long-term rather than short-term financial performance. Barth and McNichols (1994) study the association between a nonfinancial measure of remediation costs and share price. Evidence is provided for the claim that investors discount share price according to their assessment of unbooked corporate liability. In the context of electric utility industry firms, the relationship between nonfinancial pollution measures and

market value of equity is examined (Hughes 2000). Acting as a proxy for the firm's exposure to future environmental liabilities, pollution measures appear to be value-relevant when environmental exposure is high but not when it is low. In other words, they can reflect significant unaccrued environmental liability. To summarize, despite the lack of agreement between these studies, nonfinancial information appear to provide useful information. In addition, it possesses predictive ability and complements financial information, which remains important.

Mix of financial and nonfinancial information. Grounded in a contingency approach, this group of studies reveals different factors or contexts that may affect the mix and use of financial and nonfinancial measures. Three streams of research are examined, namely MAS broad scope of information, MCS attributes and use of multidimensional performance measures.

First, several factors influence the mix of financial and nonfinancial measures within MAS. These include environmental uncertainty, decentralization, organizational interdependence, task uncertainty, market competition and life-cycle stage (Gordon and Narayanan 1984, Mia and Chenhall 1994, Chong 1996, Mia and Clarke 1999, Moores and Yuen 2001).

Second, in terms of MCS attributes, Simons (1987), Abernethy and Guthrie (1994) and Collins, Holtzmann and Mendoza (1997) examine differences in control systems of firms that follow different business strategies. They provide conflicting evidence on either prospector or defender firms appear to pay more attention to the following aspects related to performance measurement control than defender firms: results monitoring, goals related to output effectiveness and reporting frequency.

Third, several contingent factors specifically influence the use of multidimensional performance measures. In a field study, Bruns and McKinnon (1993) observe that unit data is the metric that feeds managers' communications and actions. Monetary measures are usually applied to confirm the intended effects of a decision or to provide information on current status of resources or capacities. The right mix depends on three critical dimensions: (i) the level in the management hierarchy, (ii) market stability and, (iii) integration of process technology (Dixon et al. 1990).

The first dimension concerns the level of management hierarchy. To explain the mix of information, Morissette (1997) provides evidences concerning four factors that rely directly or indirectly on the managers' hierarchical level, namely level of decision-making, functional area of membership, level of experience and work perception as routine or nonroutine. Furthermore, decentralized organizations appear to use a mix of performance measures to a greater extent than centralized organizations (Abernethy and Lillis 2001, Gosselin 2001). Globally, nonfinancial measures appear to be more appropriate for lower levels which need direct feedback related to operational activities, whereas financial consideration are more useful for higher level management that resolve strategic issues (Dixon et al. 1990, Anthony and Govindarajan 1995).

Market stability is the focus of the second dimension, whereby nonfinancial measures are described as more satisfactory in complex or uncertain competitive environments than in stable conditions (Dixon et al. 1990). However, recent research provides conflicting results. While Hoque and James (2000) find no relation between the four dimensions of the balanced scorecard and market position, Hoque, Mia and Alam (2001) suggest that businesses facing high competition rely on multiple performance measures. In contrast, Gosselin (2001) demonstrates that both financial and nonfinancial measures are used by firms facing environmental uncertainty.

The third dimension concerns the integration of process technology. Nonfinancial information is presented as more relevant when internal work flow is integrated (Dixon et al. 1990). This relation is strengthened by Hoque et al. (2001) whose results show that firms making greater use of computer-aided manufacturing processes tend to rely more extensively on nonfinancial performance measures. To summarize, unlike the cybernetic view that is dominated by financial measures, the holistic view considers the importance of both financial and nonfinancial measures as well as several factors and contexts that may affect their use and mix. Nevertheless, conflicting results and unanswered questions remain, justifying future research.

Manufacturing performance measurement. Kaplan (1983) was among the first to educe the challenge related to the measurement of manufacturing performance by insisting on the need of senior management to abandon short-term financial measures based on manufacturing assumptions of standardization⁶ in favour of developing indicators that foster long-term competitiveness and profitability. Kaplan suggested that emphasis must shift from controlling operations to continuous improvement by providing timely and relevant information to workers and managers (Kaplan 1990).

Banker, Potter and Schroeder (1993) empirically found a positive relationship between the reporting of manufacturing performance measures to line personnel and the implementation of just-in time (JIT), teamwork and total quality management (TQM) practices. Abernethy and Lillis (1995) study the impact of strategic commitment to manufacturing flexibility on MCS, with a specific focus on performance measurement systems. The latter is operationalized as the use of efficiency-based performance measures (financial) and a quantitative and qualitative set of measures designed to support flexibility (nonfinancial). They provide evidence that the use of

efficiency-based measures decrease as the firm's commitment to flexibility improves. Perera, Harrison and Poole (1997) support this association but find no evidence of its impact on organizational performance. Furthermore, the impact of customization as a strategic priority on MAS broad scope is examined (Bouwens and Abernethy 2000). Their results indicate that MAS is affected by customization, but via organizational interdependence instead of directly.

In terms of frequency of feedback, evidence is provided in support of the argument that the success of a quality strategy is associated with more frequent feedback (Daniel and Reitsperger 1991). Similar conclusions were reached by Chenhall (1997), who maintained that manufacturing performance measures provide feedback that focuses attention on the various processes related to TQM initiatives and improve organizational performance. These results are challenged by Sim and Killough (1998) who find no evidence of performance effects from complementarities between JIT or TQM and the frequency of reporting performance measures.

To summarize, the holistic view of performance measurement reveals the importance of nonfinancial measures at the manufacturing level, where the information needs differ from those of the top management level. Both levels, as well as financial and nonfinancial dimensions, are handled by various performance measurement models which have been developed during the last decade such as balanced scorecard, stakeholder model, integrated performance measurement system and performance pyramid. These models are discussed next.

Models of performance measurement systems. Acting as a generic multi-dimensional instrument, the balanced scorecard aims to extend the scope of management information from financial measures to include other nonfinancial aspects linked to business unit strategy. Furthermore, these systems measure the achievement of the components of the strategic plan and

act as a strategic management system (Kaplan and Norton 2001). Three areas of performance are added to the financial dimension: customers, internal business process and innovation as well as learning and growth. However, the literature reports several weaknesses in the balanced scorecard, including the absence of procedures for mapping means-end relationship, neglected links with reward structure, the establishment of information systems and feedback loops that are taken for granted, the absence of target-setting directives (Otley 1999), the time dimension, the relationships between measures, and the interdependencies of the four dimensions (Norreklit 2000). Moreover, judging this approach incomplete because it fails to highlight contributions from employees, suppliers and the community, Atkinson et al. (1997) propose a stakeholder approach whereby the primary and secondary objectives of environmental stakeholders (customers, owners, community) and process stakeholders (employees, suppliers) are the focus of the performance measurement system.

An integrated performance measurement system is defined as the process of acquiring cost and other performance knowledge and employing it operationally at every step in the strategic management cycle (Nanni et al. 1992). As discussed previously, the role has evolved significantly from the traditional planning and control cycle. A similar approach is proposed by Lynch and Cross (1991) with a performance pyramid. The main objective is to link strategy and operations by translating strategic objectives from the top down and measures from the bottom up. Objectives and measures flow among four successive levels: corporate vision, business units, business operating systems and departments and work centres. To summarize, these four models all use financial and nonfinancial measures for strategy formulation and implementation.

Organizational impact. Curiosity and experimentation can be fostered by the performance measurement system. Several case studies reveal that “embryonic management notions can become manifest through new systems of planning, accountability and performance measurement, which in turn can provide conditions of possibility for organizational reform and the emergence of new strategies” (Dent 1990,19). Planning and control systems could create for employees new images of the organization and the way it interacts with its environment. Thus, obsolete paradigms and organizational attempts can be uncoupled (unlearning) and coupled in a different way (learning). More generally, accounting can penetrate into the organizational culture to create rationales for action and generate new internal patterns (Dent 1991).

Performance measurement can encourage experimentation through the continuous evolution of aspirations and perspectives. The importance of constant addition and deletion of performance measures to reflect the spirit of continuous improvement must be highlighted (Nanni et al. 1992). Considering that performance measures tend to have a limited useful lifetime (Meyer and Gupta 1992), Vitale and Mavrinac (1995) mention that “well-constructed strategic measurement systems include a dynamic capability that fosters continual change and evolution in the measurement set. That sort of change can promote learning and experimentation by continually reframing aspirations and perspectives”.

Evolution as the diffusion of a discourse or practices

The notion of evolution may not be as clear as currently discussed and raises several questions: Have performance and effectiveness really evolved or have definitions of their models evolved? Has it evolved in organizations or only for academics? For instance, the finality of performance measurement appears to move from a control emphasis focused on financial information to considerations of direction, signaling, learning and nonfinancial information. Most of these

observations are grounded in case and field studies (e.g. Simons 1990, Dixon et al. 1990, Atkinson et al. 1997). However, one could argue that performance measurement already had these features but this has not been fully recognized in the literature. For example, Simon et al. (1954) discuss the use of nonfinancial metrics while Johnson and Kaplan (1987) refer to General Motors' system of performance measures in the 1970s which included several nonfinancial indicators. The answers may lie somewhere between these two extremes. The importance and emphasis on specific objects may have changed for academics but these objects are not necessarily new for practitioners. Zan (1995) distinguishes between changes within the 'real world' and results of dynamics within the 'world of ideas'. Without denying the relevance of socio-economic arguments to explain the evolution of performance and effectiveness models, these arguments rest on a deterministic assumption of linearity between managerial practices and theories. Moreover the comparison of economic and social contexts may contain 'presumption of hindsight'. Whitley (1984) suggests that different perspectives emerge from a process of 'complexification' concerning epistemological and theoretical issues and are related to the community of knowledge producers.

To summarize, I have so far distinguished five models of organizational effectiveness (goal, system, constituencies, values and ineffectiveness), two views of performance measurement (cybernetic and holistic), two perspectives of evolution (construct and process) as well as practical and theoretical pressures that have fostered this evolution. Moreover, the relationships between OE models have been expressed in terms of exclusionary, cumulative and complementary stance. The three stances can also be detected in the management accounting literature. For example, several studies adopt an exclusionary stance to discuss the advantages, shortcomings and predictive ability of financial and nonfinancial measures. The various performance measurement frameworks (e.g. balanced scorecard, performance management)

represent a cumulative stance where both financial and nonfinancial are considered. Finally, the contingency literature reflects a complementary stance in which the use of multidimensional performance measurement systems depends on several environmental and organizational contexts. Although traces of the three stances are still apparent in the performance measurement literature, this paper adopts a cumulative stance. Thus, the evolution of performance measurement from a cybernetic to holistic view is perceived as a set of notable improvements. The next section establishes a parallel between the OE and performance measurement models in terms of influence as well as convergent and divergent perspectives.

CONVERGENT AND DIVERGENT DISCOURSES

The aim of this section is to identify the influence of the organizational effectiveness stream of research on the performance measurement literature. The influence is analyzed not only in terms of convergent perspectives (i.e. direct or indirect application of a concept, theory, model, approach, etc.) but also of divergent perspectives (i.e. different application or absence of considerations for a concept, theory, model, approach, etc.).

The management accounting and organizational theory literature differ mainly on the relative importance of the construct and process perspectives. Focussing mainly on the properties and dimensions associated with the concept of effectiveness, OE models are grounded in a construct perspective. Conversely, the performance measurement models place considerable emphasis on a process perspective where the focus is on the use of information, the roles played by the performance measures and the analysis of their organizational and behavioral impacts.

However, the management accounting literature also addresses the identification of performance parameters, and organizational theory also discusses performance measurement from a process perspective, but not with the same intensity. For example, in the management accounting literature, the discussion on the mix of financial and nonfinancial information to best capture the dimensions of organizational performance represents a construct perspective. The balanced scorecard is an attempt to capture several dimensions of performance and identify their causal linkages (Kaplan and Norton 1992). Similarly, the discussions found in the organizational theory literature related to the influence of performance measurement on organizational phenomena represent an example of a process perspective. In several studies, pressures related to performance measures are identified as a major force that explains organizational change (Cyert and March 1963, Levinthal and March 1981, Tushman and Romanelli 1985), innovation (Hage 1980), and organizational learning (Huber 1991, Nevis, Dibella and Gould 1995).

Cybernetic view and goal model

The foundations of the goal model and cybernetic view are grounded in a similar logic where the outcomes are compared with the target in order to determine organizational effectiveness. Several assumptions implicit in the goal model are encompassed in the cybernetic approach: the organization must have ultimate goals that are defined well enough to be understood, these goals must be few enough to be manageable, a general consensus or agreement must be reached on these goals, and progress toward these goals must be measurable. Moreover, the cybernetic view is characterized by performance measures that are mostly short-term oriented. The same criticism has been lodged at the empirical studies of the goal model, which assume a short-run perspective in the goals used to determine effectiveness⁷ (Hannan and Freeman 1977).

Management accounting and organizational studies differ in their emphasis of the various limits of the cybernetic approach. The management accounting literature stresses several factors that limit the application of the cybernetic model: knowledge of the effects of intervention and degree of repetitiveness (Hofstede 1981), available choice of action (Otley and Berry 1980) and environment and task uncertainty (Macintosh 1994). In contrast, the organizational literature raises the issue of cybernetic model's adaptability. Hage (1980) lists several factors that influence the cybernetic process and responsiveness to change: (i) lack of resources to procure information related to quantity and quality, (ii) institutionalization of past success that inhibits the perception of necessity for transformation, (iii) degree of centralization and concentration of specialists, (iv) elite values and, (v) hierarchy of responses in terms of time to find the correct answer. Moreover, Hage reinforces the traditional criticism of the implicit assumptions that leaders monitor performance and invariably make corrections when necessary.

However, some concerns are common to both fields. In fact, both have questioned the assumption that goals have to be unambiguous and outputs measurable, which is not always the case. First, considering three difficulties related to defining organizational goals, namely multiplicity, specificity and the temporal dimension, it is argued that goals cannot be produced by objective and apolitical processes (Scott 1977, Hannan and Freeman 1977). Second, the problem of measurement is associated with a context where it is difficult or expensive to gather information (Ouchi 1979, Hofstede 1981)

Holistic view, system model and strategic-constituencies model

Numerous similarities can be outlined between the system model and the holistic view of performance measurement. The system model emphasizes the means needed for the attainment of specific ends. Campbell (1977) reviewed the literature and presented 30 criteria of

effectiveness including productivity, quality, accidents, absenteeism, job satisfaction, motivation, flexibility and innovation. These nonfinancial indicators later emerged in the performance measurement literature in the context of new measurement approaches (e.g. manufacturing performance measurement, balanced scorecard). The advantages of the system model over the goal model are grounded in similar arguments used to compare financial and nonfinancial measures. It is argued that the system model allows the assessment of progress towards the goals, long-term health and survival, and interdependency of organizational activities (Robbins 1983). The same logic is reflected in the discussion of the advantages of nonfinancial information, which is described as actionable, timely, long-term oriented and reflecting cross-functional processes. Furthermore, neither body of literatures negates the importance of specific end goals, but both address the causal relationships among means and between means and ends (Fisher 1992, Otley 1999, Campbell 1977). For example, the balanced scorecard literature integrates both means (e.g. internal business process) and ends indicators (e.g. financial performance), but it is also criticized for the lack of rigor in the mapping of the means-end relationship (Otley 1999).

The performance measurement model based on a stakeholder approach (Atkinson et al. 1997) and the strategic-constituencies model (Connolly et al. 1980) rely on the same organizational logic: an organization must satisfy the demands of different interest groups in order to survive and grow. However, the approach to achieve this requirement differs slightly between models. The organizational theory strategic-constituencies model includes four general steps: (i) identification of stakeholders, (ii) determination of each stakeholder's relative power, (iii) identification of their expectations and (iv) strategic planning based on common and incompatible expectations as well as the weight of each of the constituencies (Robbins 1983). The performance measurement model based on a stakeholder approach is much more directional.

The stakeholders are pre-identified (owners, customers, employees, suppliers and community) and separated into two groups (environmental and process). The issue of stakeholder relative power and incompatible expectations does not have the same importance. Atkinson et al. (1997) clearly establish the owners' objectives as the primary goals. In contrast, the secondary objectives are instruments used to achieve these primary goals. The constituencies model refers to determinants of stakeholder power that must be identified, ordered and responded to (Robbins 1983). Several sources of power are identified, such as possession of resources, dictations of alternatives, authority and influence (MacMillan 1978). To identify stakeholder salience, Mitchell, Agle and Wood 1997 present three attributes: power, legitimacy and urgency.

Unexploited richness: competing-values and ineffectiveness model

The competing-values model outlines interesting insights that are not directly addressed by the performance measurement models. This model views the assessment of OE as an exercise grounded in values. There is no single model that adequately assesses all organizations' performance. This contingent view of effectiveness based on organizational values differs from the more formal view observable in the management accounting literature. Although I would not assert that performance measurement models suggest that all organizations should have the same criteria to measure performance, it appears that accounting literature proposes a more objective process for identification of performance measures. Accordingly, performance measures are described as being derived from stated objectives (Hofstede 1978), strategy (e.g. Dixon et al. 1990, Kaplan and Norton 1992, Abernethy and Lillis 1995) and stakeholders' objectives (Atkinson et al. 1997). The competing-values approach goes further and suggests that organizational values drive performance measurement. One could argue that values influence strategy, objectives and stakeholders' priorities but this would imply that the link between values and performance measurement is indirect. To my knowledge, no published management

accounting studies have examined performance measurement directly from a competing-values perspective.

The ineffectiveness approach focuses on factors that inhibit organizational performance (Cameron 1984). While it is not formally mentioned, this logic is implicitly but partially taken up by the management accounting literature. Specifically, it is embodied in the concept of boundary systems (Simons 1995) and the discussion related to the use of nonfinancial measures. First, boundary systems are defined as formally stated limits and rules that must be respected. Performance measures can be used as a strategic boundary system in the capital budgeting system for instance, or used in the strategic planning systems to ensure that an organization respects its specified boundaries. Considering their emphasis on elements to be avoided, the notion of boundaries and ineffectiveness are comparable. Second, several nonfinancial indicators are defined with an emphasis on timeliness, actionability and controllability. Hence, it can be argued that, various nonfinancial performance measures are designed based on ineffectiveness factors linked with strategic priorities (e.g. production defects, customer complaints, production waste, worker injuries.). Alternatively, multiple measures grounded in effective criteria (sales growth, market share, net income, ROI, etc.) are commonly used and also provide useful and relevant information. Table 2 summarizes the divergences and convergences in terms of main focus as well as specific OE and performance measurement models.

Insert table 2

CONCLUSIONS AND IMPLICATIONS

The purpose of this paper was to reconcile and integrate the management accounting literature related to performance measurement with various models of organizational effectiveness formulated within the field of organizational theory. It has been shown that in response to theoretical and practical pressures, the OE and performance measurement models have evolved differently based on a construct or process perspective.

The organizational effectiveness literature contains several models including the goal, system, strategic-constituencies, competing-values and ineffectiveness models. The first three are well integrated in the performance measurement cybernetic and holistic views. Future research could explore the richness of the competing-values and ineffectiveness model. Specifically, the competing-values model identifies four models of effectiveness based on three sets of competing values. Determining the performance measurement system design, the mix of financial and nonfinancial information and the use of the diagnostic and interactive approach under these four models merit further research. Future research could also examine the use of performance measurement systems as a means of increasing flexibility as opposed to control. The dynamic use of these systems reflected by flexibility concerns may be analyzed in terms of antecedent factors including organizational life cycle, management style, strategic orientation, organizational structure and environmental uncertainty. Moreover, the impact of the dynamic use of performance measurement on managers' decisions and behaviors, organizational change, innovation and organizational learning could be examined.

The ineffectiveness model also provides many research opportunities. Ineffective factors may be studied in terms of perceived usefulness, controllability, timeliness and actionability. Research could also attempt to determine the adequate mix of ineffective and effective factors in the design of performance measurement systems. Determining the impact of ineffective factors on

organizational learning, organizational change, innovation as well as signaling and directing processes may provide interesting insights. The role of performance measurement as boundary system also represents a fertile avenue of future research.

An open debate remains concerning the relationship between performance measurement and innovation, organizational learning and change. Some authors suggest that performance measurement acts as a trigger for these phenomena while others consider it an obstacle. This debate represents a broad topic for research. It remains unclear how and why performance measurement could positively or negatively affect innovation, change and learning. Can performance measurement be expected to favour these organizational phenomena and control purposes simultaneously? Determining the factors or context where performance measurement engenders or inhibits these phenomena may be an important research question.

In conclusion, in its transition from a cybernetic to holistic view, the management accounting literature reflects an evolution in the role, design and organizational impacts of performance measurement. As the older brother, organizational theory has contributed to this development and has the richness to do so in the future. Synergistic effects could be obtained from the combination of specific knowledge and expertise from accounting and organizational theory as well as fields such as strategic management, operation and production management and finance. Multidisciplinary perspectives could contribute to a more comprehensive understanding of performance measurement issues.

TABLE 1 Models of organizational effectiveness

Model	Conceptualization of the organization	Focus	Advocates
1- Goal model	Organization as a rational set of arrangements oriented toward achieving goals.	Accomplishment of outcomes (ends)	(Etzioni 1960)
2- System model	Organization as an open system (input, transformation, output).	Inputs, acquisition of resources and internal processes (means)	(Yuchtman and Seashore 1967)
3- Strategic-constituencies model	Organization as internal and external constituencies that negotiate a complex set of constraints, goals and referents.	Response to the expectations of powerful interest groups that gravitate around the organization	(Connolly et al. 1980)
4- Competing-values model	Organization as a set of competing values which create multiple conflicting goals.	Three dimensions of competing values: <ul style="list-style-type: none"> ▪ Internal vs external focus ▪ Control vs flexibility concern ▪ Ends vs means concern 	(Quinn and Rohrbaugh 1983)
5- Ineffectiveness model	Organization as a set of problems and faults.	Factors that inhibit successful organizational performance	(Cameron 1984)

Source: Goodman et al. (1977), Cameron (1984)

**TABLE 2 Summary of the convergent and divergent perspectives between
OE and performance measurement models**

ORGANIZATIONAL EFFECTIVENESS (OE)	PERFORMANCE MEASUREMENT (PM)	
	Convergences	Divergences
Focus	<ul style="list-style-type: none"> ▪ PM and OE reflect process and construct perspectives but with differing intensity ▪ PM and OE mirror three theoretical stances: exclusionary, cumulative and complementary 	<ul style="list-style-type: none"> ▪ PM mainly reflects a process perspective ▪ OE mainly reflects a construct perspective
Goal model	<p>Cybernetic view:</p> <ul style="list-style-type: none"> ▪ Same logic based on a cybernetic approach ▪ Emphasis on goal ambiguity and output measurability 	<p>Cybernetic view:</p> <ul style="list-style-type: none"> ▪ Limits of a cybernetic approach
System model	<p>Holistic view:</p> <ul style="list-style-type: none"> ▪ Emphasis on means / nonfinancial measures ▪ Advantages over goal model / financial measures ▪ Concerns for causal relationship between means and ends 	<p>Holistic view:</p> <ul style="list-style-type: none"> ▪ Time dimension: <ul style="list-style-type: none"> - System model - 1960's (e.g. Yuchtman and Seashore 1967) - Nonfinancial measures - 1980's (e.g. Johnson and Kaplan 1987)
Strategic-constituencies model	<p>Holistic view:</p> <ul style="list-style-type: none"> ▪ Same organizational logic between strategic-constituencies model and stakeholder approach 	<p>Holistic view:</p> <ul style="list-style-type: none"> ▪ Time dimension: <ul style="list-style-type: none"> - Strategic-constituencies model - 1980s: (e.g. Connolly et al. 1980) - Stakeholder model 1990's: (Atkinson et al. 1997) ▪ A stakeholder model has a more directional approach
Competing-values model	-	<p>Cybernetic and holistic views:</p> <ul style="list-style-type: none"> ▪ No direct approach based on organizational values ▪ Objective vs subjective process to determine performance measures
Ineffectiveness model	-	<p>Cybernetic and holistic views:</p> <ul style="list-style-type: none"> ▪ Indirect use of ineffectiveness factors

FIGURE 1 Framework of the evolution of organizational effectiveness and performance measurement models

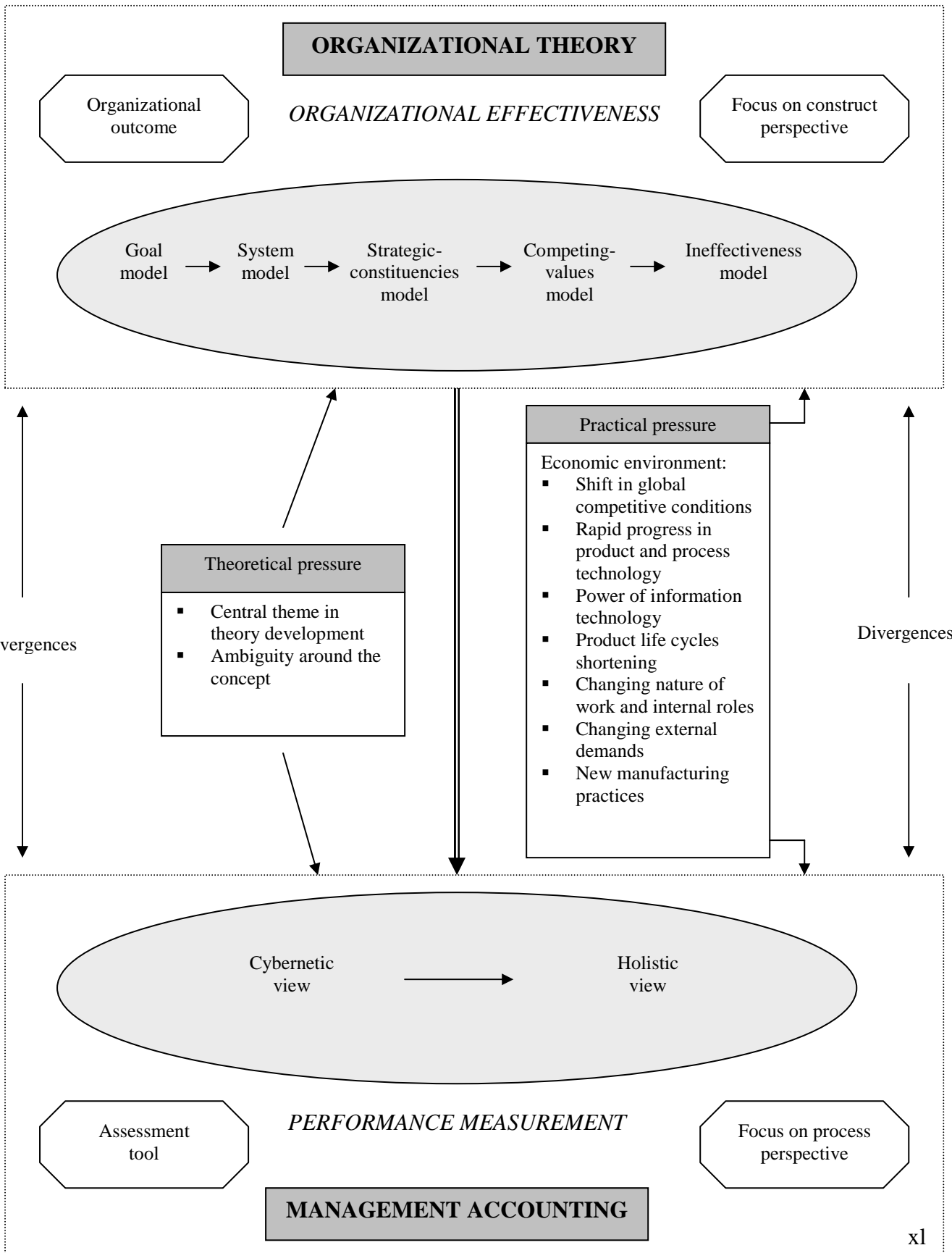
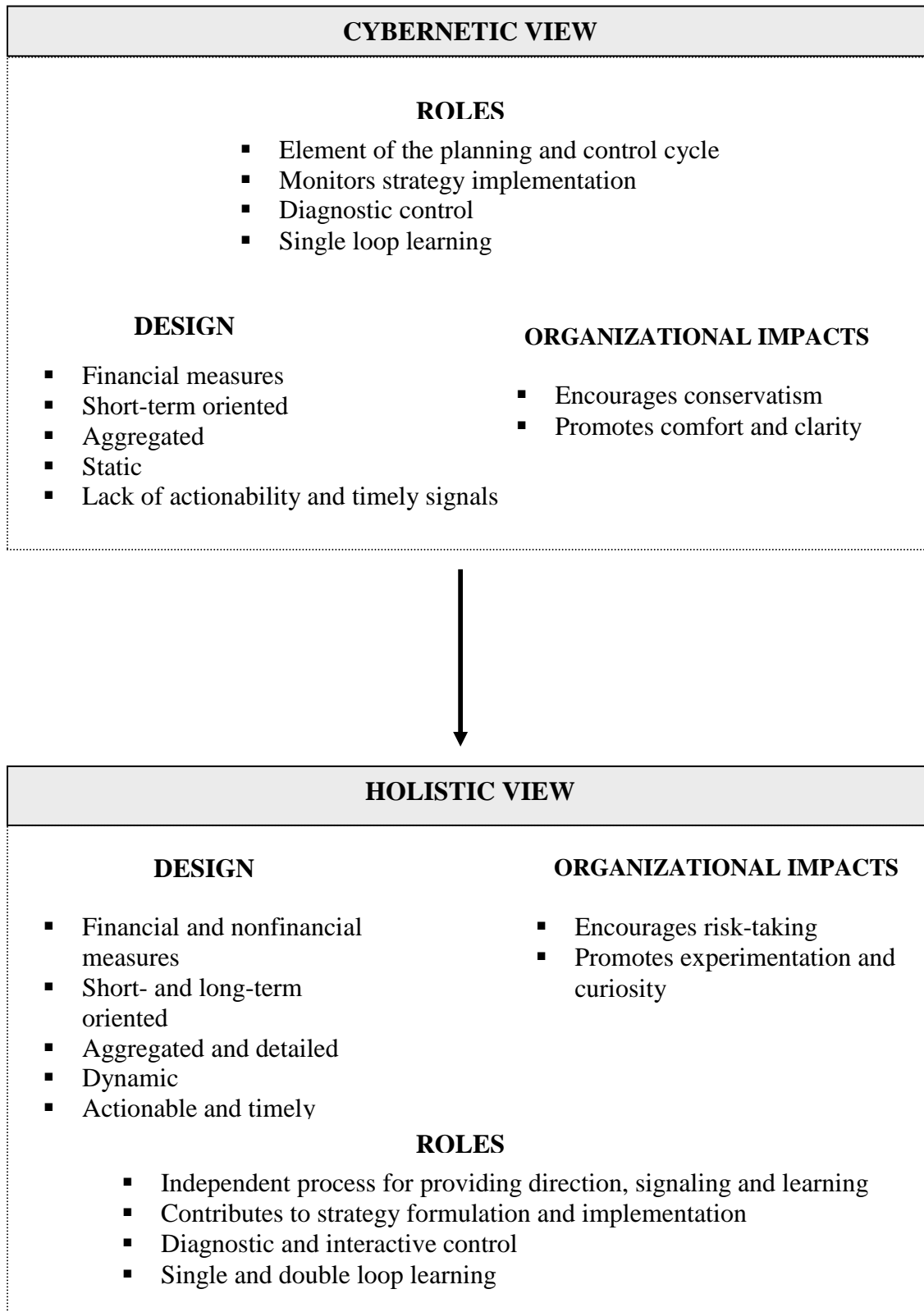


FIGURE 2 Evolution of performance measurement



ENDNOTES

1. The former is the link between performance measurement and the kinds of incentives that organizations design and employ to evaluate and reward individuals (Burns 1992) while the latter is primarily related to individual contracting.
2. MAS are defined as a formal system designed for providing information to managers (Bouwens and Abernethy 2000) as well as an integral part of the MCS (Kren 1997). MCS are the formalized procedures and systems that use information to maintain or alter patterns within the organizations (Simons 1987).
3. For example, Venkatraman and Ramanujam (1986) consider business performance as a subset of the overall concept of organizational effectiveness. For Hannan and Freeman (1977) performance represents the quantity and quality of output while effectiveness is associated to the comparison of outcomes to goal.
4. Later, Quinn (1988) reduces his model to only two sets on value: internal versus external focus and control versus flexibility concern. He demonstrates that these two dimensions are sufficient to describe four models of organizational effectiveness.
5. In terms of evolution within the management accounting literature as described by Ittner and Larcker (2001), the financial view encompasses the first two periods (i.e. focus on cost determination / financial control and management / planning control) while the holistic view roughly encompasses the last three periods (i.e. focus on the reduction of waste in business process, focus on valued-added and value-based management).
6. The assumptions of standardization are described as (i) an ability to specify unproblematic input/output relationships, (ii) mass production of mature products with known characteristics and, (iii) simple and stable environment.
7. Note that from the conceptual standpoint this model does not reject the long-run perspective in goal establishment.

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