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EXPLORING THE DESIGN OF A MANAGEMENT ACCOUNTING SYSTEM IN SMALL AND MEDIUM ENTERPRISES: THE CASE OF TEKNOWOOL

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ABSTRACT

Questa tesi ha l'obiettivo di indagare il design di un sistema di controllo di gestione nelle piccole e medie imprese (PMI), ossia le realtà che caratterizzano la maggior parte del contesto economico nazionale. Mentre precedenti ricerche si sono concentrate sull'innovazione e il cambiamento dei sistemi di controllo di gestione, vi è una limitata attenzione dedicata agli aspetti progettuali di tali sistemi, alla loro efficacia e al ruolo dei controller nelle PMI.

La tesi passa dunque in rassegna la letteratura sui sistemi di controllo di gestione, sulla progettazione di tali sistemi nelle PMI, sulle relative leve e barriere e presenta uno caso studio di un'azienda di medie dimensioni nel settore dei materiali isolanti, Teknowool S.r.l. Lo studio esplora il quadro istituzionale e i processi di cambiamento istituzionale, nonché le leve e gli ostacoli nella progettazione dei sistemi di controllo di gestione per le PMI. Lo studio approfondito del caso ha evidenziato le sfide legate alle risorse limitate e alla carenza di personale qualificato, nonché l'impatto dei sistemi di gestione dei dati inadeguati. Nonostante queste sfide, Teknowool ha adottato misure proattive come lo snellimento delle operazioni e il miglioramento della gestione dei dati per poter superare gli ostacoli. L'azienda ha sfruttato le proprie competenze finanziarie, ha implementato un sistema di contabilità gestionale completo e ha dato priorità alla trasparenza finanziaria. Teknowool ha utilizzato attivamente una serie di strumenti di controllo

di gestione, sfatando l'idea che le PMI adottino tali strumenti solo al susseguirsi di una crisi aziendale. Lo studio del caso ha confermato il ruolo centrale del controllo di gestione nelle PMI, che ha permesso all'azienda di migliorare le sue analisi, tra cui la conoscenza del mercato, l'analisi della struttura dei costi e la valutazione della redditività dei clienti, supportando la presa di decisioni informate.

Infine, lo studio rivela che il ruolo del controller, durante il processo di design dei sistemi di controllo di gestione all'interno delle PMI, può evolversi dalle tradizionali mansioni di controllo a un contributo attivo alla presa di decisioni e all'allineamento degli obiettivi finanziari con gli obiettivi organizzativi. Infatti, il caso studio evidenzia come le responsabilità aggiuntive del controller all'interno dell'azienda vadano oltre le sue funzioni principali. Egli funge da collegamento vitale tra i diversi reparti, offrendo assistenza al di fuori della sua area di responsabilità primaria, contribuendo a una comunicazione e a una collaborazione efficaci all'interno dell'organizzazione.

INTRODUCTION

In recent decades, the task of managing a company has become increasingly complex and challenging, necessitating the use of appropriate management accounting tools (Bhimani, Horngren, Datar, & Rajan, 2015).

Management accounting provides timely data for informed decision-making, evaluates business performance, controls costs, and aids in creating realistic budgets for growth and prosperity. It is also useful to identify underperforming areas and taking corrective action (Weygandt, Kieso, & Kimmel, 2015).

These tools are vital for small and medium-sized enterprises (SMEs). They can allow companies to improve financial management, enhance performance, and gain a competitive edge (Lopez & Hiebl, 2015). They optimize financial resources, reduce costs, and increase profitability, and enhance SMEs' access to financing by improving transparency and credibility and reliable financial reporting builds stakeholder confidence and fosters collaborations. By adopting these practices, SMEs strengthen resilience, unlock growth potential, and achieve sustainability in a dynamic business landscape (Horngren, Datar, & Rajan, 2012).

Over the years, the field of management accounting has witnessed extensive research and discussion on innovation and change (Atkinson, Kaplan, Matsumura, & Young, 2011). Numerous studies have delved into the transformation of management accounting practices, exploring their evolving nature and the challenges faced by organizations in adapting to dynamic business environments

(Bhimani, Horngren, Datar, & Rajan, 2015). However, one notable gap in the literature is the limited attention given to the design aspects of management accounting systems, the levers that drive their effectiveness, and the role of management accountants in facilitating this design process, particularly in the context of small and medium enterprises (SMEs) (Ahmad & Zabri, 2016).

While the importance of management accounting system design cannot be overstated, it has often been overshadowed by the emphasis on innovation and change (Broccardo, 2014).

Therefore, the primary objective of the present study is to address this research gap by exploring the design of a management accounting system in an SME. By focusing on this crucial aspect, we aim to shed light on the design principles, levers, and barriers encountered in developing an effective management accounting system in the context of SMEs. Additionally, the study seeks to examine the role of the management accountant in driving the design process and fostering its successful implementation. In order to achieve this aim, a theoretical and an empirical analysis, through a case study, will be carried out.

Hence, the work is composed of three chapters organized as follows.

The first chapter reviews the literature inherent the basic concepts of management accounting. The objectives and tools of management accounting will be examined with a focus on the three pillars of management accounting: Planning, Controlling and Decision-making. The benefits and critical issues that a management accounting system brings to the business will then be examined. Finally, the evolution that the role of the management accountant has undergone over the past decades will be analyzed.

The second chapter will examine the processes and ways in which a management accounting system should be designed within a company, as well as its levers and barriers in SMEs. In addition, the evolution of management accounting systems and its tools will be examined.

We recognized the dynamic nature of business environments and the necessity for systems to adapt and evolve accordingly. Technological advancements, globalization, and changes in organizational structures have driven the evolution of management accounting, leading to the emergence of modern and innovative practices (CIMA, 2011).

Furthermore, we focused on the change of management accounting systems, considering the Burns and Scapens framework and the Seo and Creed's framework, which emphasize the institutionalization of the change within the company.

Lastly, the third chapter deals with the case study of the company Teknowool S.r.l., a medium-sized enterprise, operating in the insulation materials industry, located in different Italian regions but with its headquarters in Camerata Picena, in the province of Ancona. Empirical material is collected through interviews, document analysis and direct observation in order to fully understand the steps that were applied over time in order to design a management accounting system from scratch as well as to explore the role of the management accountant within each of those steps. This chapter analyzes all the various tools developed by the company including reporting, budgeting, and cost accounting with the aim to shed light on the design principles, levers, and barriers encountered.

Finally, the section on discussion and conclusions concludes the thesis by presenting its main contributions.

1. INTRODUCTION TO MANAGEMENT ACCOUNTING

1.1. MANAGEMENT ACCOUNTING BASICS

Over the past two decades, numerous organizations in the manufacturing and service industries have faced dramatic changes in the business environment. Deregulation and extensive competition from foreign companies in domestic markets have meant that most companies now operate in highly competitive global markets (Ristovska & Aneta, 2014). At the same time, the product life cycle has been significantly shortened due to technological innovations and the need to meet high customer requirements has arisen. To succeed in today's competitive environment, the company has prioritized customer satisfaction (Dixon, Toman, & DeLisi, 2013). They also adopted new management methods, and manufacturing companies changed production systems and invested in new technologies. These changes have significantly affected the management accounting system.

A multitude of theories, analyses, and perspectives that have followed one another since the early twentieth century converge in the literature on management control, all of which have contributed to the determination and understanding of the importance of control for businesses as a "natural requirement" and guide for corporate governance itself (Bubbio, 2008). Management control is, first and foremost, a set of procedures, tools, and activities aimed at verifying the feasibility of operational programs, preparing conditions for the implementation of

\management operations, as well as evaluating results, and analyzing deviations from planned objectives (Garrison, Noreen, & Brewer, 2018).

Thus, management accounting, measures and reports financial and other information primarily to help managers achieve organizational goals.

It also involves the collection, analysis, and interpretation of financial and non-financial data to provide insight into the performance of a business (Drury, 2018). Cost analysis is a key aspect of management accounting, which concerns the identification and tracking of all costs associated with producing goods or services (Proctor, 2012).

Budgeting is a further important area of management accounting, it is the process of creating a plan for future financial performance (Marasca, Marchi, & Riccaboni, 2013). Managers use budgets to set targets and monitor progress toward achieving those targets. They can be used for a variety of purposes, including forecasting future revenues and expenses, setting performance goals, and identifying areas for cost reduction. Performance measurement is also a crucial component of management accounting, as it enables companies to assess the effectiveness of their operations and make necessary adjustments (Weygandt, Kieso, & Kimmel, 2015). Overall, management accounting provides businesses with the tools they need to make informed decisions and achieve long-term success.

1.2. MANAGEMENT ACCOUNTING VS FINANCIAL ACCOUNTING

Management accounting information differs from financial accounting information in various ways. As mentioned above, management accounting involves providing information to managers for use in the organization and its primary product is any report considered important by management. Financial accounting focuses on external reporting governed by authoritative guidelines and its products are financial statements (Warren, Reeve, & Duchac, 2018).

There are several major differences between these two branches of accounting, such as the main user, the legal obligation, the focus, the time dimension, and the frequency and accuracy of the reports.

Firstly, the major users of management accounting reports are people internal to the organization, such as managers. While financial statements are utilized mainly by external users such as creditors, shareholders, and public authorities.

Moreover, limited companies have a legal obligation to prepare annual financial reports, regardless of whether management believes the information is useful or not. In contrast, management accounting is entirely optional, and it should provide information only when the management benefits are believed to outweigh the costs of collecting it. Additionally, financial statements must be prepared in accordance with legal requirements and generally accepted accounting principles set by regulatory bodies such as the International Accounting Standards Board (IASB). These requirements are essential to ensure uniformity and consistency, allowing for inter-company and historical comparisons. Financial accounting data must be verifiable and objective. In contrast, management accountants are not required to follow accounting standards, such as GAAP[1], when providing management information for internal purposes. Instead, the focus is on meeting the needs of managers and providing information that is useful to managers in their decision-making, planning, and control functions. In fact, financial statements of publicly traded companies are audited by certified public accountants that express an opinion on the validity of the financial information provided in the report. Whereas, management reports must not be audited, even if the company could have an internal audit function that may check the procedures used to prepare those reports. Furthermore, financial accounting reports describe the entire company, while management accounting might focus only on those parts that are decided by the organization, such as the costs and profitability of products, services, divisions, customers, and operations.

Another important difference between the two categories is the time dimension. Financial accounting reports on what happened to the organization in the past, while management accounting focuses on both past and future information. Decisions are about future events and management requires information about expected future costs and revenues.

[1] GAAP: Generally Accepted Accounting Principles

Lastly, they differ in the frequency with which reports are published, and the importance attached to accuracy. A detailed set of financial statements is published annually and less detailed reports are published semi-annually. Management often needs information faster than this to take action. Managers are often more concerned with timeliness than accuracy. They prefer a good estimate as soon as possible rather than an exact answer much later. Thus, management accounting reports can be prepared for various daily, weekly, or monthly activities.

1.3. THE ANTHONY'S FRAMEWORK

Until the 1960s, North American and Italian literature exalted the informational and accounting dimensions of control activities, neglecting the links with the other different phases of the management process, such as behavioral or organizational ones.

Scholar Robert Newton Anthony developed a reference model in 1965, the purpose of which was to analyze and decompose systemically, the different decision-making activities, interpreting their relationship with the different related information needs. With this model, Anthony seeks to clarify the notion of control understood as an activity of operational feedback, or as a moment of guidance and direction for top management decision-making.

Anthony suggests an articulation of the control system into three major divisions (Anthony, 1965)(see Illustration 1.1):

Illustration 1.1 The Anthony's triangle

Source - Own elaboration

- Strategic planning: a process by which the goals of the organization and the strategies for achieving them are decided. Through strategic planning, directives are defined to guide managers in the implementation of management control in order to achieve the planned business strategies. Managers then create the ideal conditions so that human and material resources, are deployed in the company efficiently and effectively.

  Strategic planning is characterized by its irreversibility of decisions in the short term and also by a high degree of uncertainty.
- Management planning: the process by which managers induce other members of the organization to implement strategies. Long-term goals and

strategic directions are translated into management objectives and actions related to the current year, establishing guidelines for the exercise of operational control. It is a process that originates from the goals and resources defined in the strategic planning phase that are assumed as given.

The main differences between the strategic planning and the management control can be summarized as follow (see Illustration 1.2):

Illustration 1.2 The main characteristics of Strategic planning and Directional control

STRATEGIC PLANNING	MANAGEMENT CONTROL
• It is carried out by a part of corporate management. • It is a complex (creative) process. • It is a discontinuous process. • Data collected ad-hoc to support specific decisions. • It makes use of internal and external information, both monetary and nonmonetary in nature.	• It embraces all aspects of business operations. • It is a standardized and continuous process. • It is a periodic process. • Data are collected systematically over time. • It uses internal and monetary information.

Source - Own elaboration

- The last division is the Operational control: is the process by which the company ensures that specific tasks are carried out effectively and efficiently. It is centered on individual tasks that can be easily scheduled. It takes place within a pattern of well-defined procedures and rules. The data used are, often, in non-monetary form and are cast on the specifics of the area for which they are determined. The information produced must be accurate and timely. It is repetitive and the level of creativity is essentially zero.

It is important to note that within these activities there are both planning and controlling moments (Anthony, 1965). It is important to remember that initially only for directional control was it emphasized that within it there are moments of planning and control. Later Anthony clarifies that moments of planning and control are also present in the other two classes of activities, namely in strategic planning and operational control (Anthony, 1965).

Another thing to consider is that control includes a variety of activities to be carried out. It is specified that the activity of control is composed of planning, coordination, communication of information, deciding on actions to be taken, and influencing people to change their behavior (Anthony, Govindarajan, Hartmann, Kraus, & Nilsson, 2014).

One of the main strengths of Anthony's framework is the pragmatism. In fact, the distinction that is made across the three divisions traces the process of governance implemented by corporate managers. Anthony's model, in fact, should be credited with speaking for the first time of a systemic ideal, which needs rules, procedures, and mechanisms in order to be managed. While connoting, in fact, three classes distinct in elements and components, they must operate, inescapably, according to coordinated procedures that reflect unified ends. Additionally, it also possesses a high degree of ease of translation into operational norms as well as procedures in hierarchical structures.

On the other hand, the model is characterized by high rigidity, due to the clear separation between levels. In addition, there is too much focus on monetary information and too little on behavioral aspects. Finally, it discloses inputs and outputs but not cause-and-effect relationships.

If in the 1950s the main objective was the direct control of direct costs and thus the comparison between budget and actual values, with an initial saturation of markets and with the growth of the customer satisfaction criterion that occurred in the 1960s, an increase in structural costs referred to the different functional areas comes into being.

However, the concept of strategic planning started to lose its value as the oil crisis of the late 1970s forced strategic decisions to be made outside of approved plans. Strategic planning alone is no longer sufficient as it must incorporate sound strategic control based on previously unrecognized specific principles search as human resources, information, technology, and financial resources (Ansoff, 1976).

In this way, control achieves the additional aspect of continuous monitoring of the environment, markets, and customers, ensuring the level of competition necessary to face the ever-increasing competition in the market.

Over time, the term "control" has been often used for other concepts. For example, it establishes rules to follow and determines monitoring (Ouchi, & Maguire, 1975). Alternatively, to simply monitors, controls, measures, provides feedback, and performs repetitive tasks (Reeves & Woodward, 1970).

In general, administrative controls are more formal and have specific rules in medium and large enterprises, while in small enterprises they are informal.

One of the key assumptions of Anthony's model is that companies are viewed as cybernetic and bureaucratic systems with internal rationality expressed in rules and procedures aimed at integration and coherence between functions and parts.

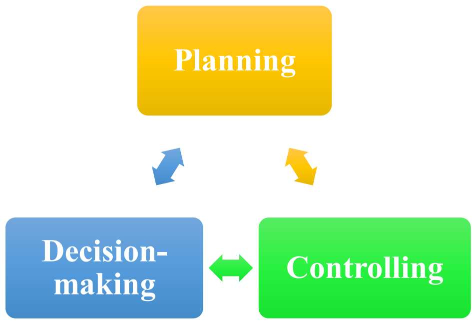
Anthony (1965) within his model draws generalizations about problems of designing planning and control systems.

First, it is clear that the starting point for establishing a global system is management control. Management control systems are related to the continuous operation of the entire enterprise. It must cover all parts of the company and helps management determine the balance of each part. A key function of management control systems is motivation. Systems should be designed to support and guide operational management in making decisions and acting in accordance with the overall objectives of the organization. Second, while the management control system is a logical starting point, it must recognize its relationship to other systems. In strategic planning, useful information can be obtained from the management control system, through which strategic decisions can be made. The criteria for the two systems are very different. Administrative control is a recurrent, cumulative, systematic, award-looking, people-oriented network function. Strategic planning focuses on specific problems, outward-looking, irregular, highly individual, and logically oriented. management control systems can be designed to meet the more important needs of strategic planners for current and historical operational information, but these needs cannot all be met and sometimes need not be provided consistently. Control management so receives information from areas where operational control equipment is used, but the relationship between the two is not necessarily close. Operational control usually includes a large amount of detail, and all that is needed for administrative control purposes is a way to summarize and transform this data to show whether operations are performing satisfactorily or if there are bottlenecks. Third, if we consider management control as a system built around others, then this central system must be the financial system. Money is the only common denominator that brings together the disparate elements of management-related expenses and income. Fourth, computers and mathematical models cannot be the essence of this central system. Administrative control is governed by people's judgment and emotions. It is not necessarily on your computer. In strategic planning, an enterprise-wide model can help examine the impact of a proposed strategic move on the entire enterprise. There are still very few such models, but many companies are expected to produce them in the near future. In operations management, models of specific areas to be controlled are important, and computers are often used.

1.4. THE PILLARS OF MANAGEMENT ACCOUNTING

Management accounting supports managers to perform three important activities: planning, controlling, and decision-making (see Illustration 1.3). These three management functions are aimed at inducing individual and organizational behaviors toward achieving the goals outlined by corporate governance (Marasca, Marchi, & Riccaboni, 2013).

Illustration 1.3 Planning, controlling, and decision-making process



Source - Own elaboration

Planning is a critical process that involves developing a comprehensive financial plan for the organization, it helps organizations establish their goals and objectives and identify the resources needed to achieve those goals (Garrison, Noreen, & Brewer, 2018).

Controlling is the process of monitoring and evaluating an organization's performance against its goals and objectives, and taking corrective action to ensure that performance is in line with the plan (Anthony, Govindarajan, Hartmann, Kraus, & Nilsson, 2014).

Decision-making involves selecting the best course of action from among several alternatives. Effective decision-making in management accounting requires a thorough understanding of the organization's goals and objectives, as well as a detailed analysis of the costs and benefits associated with each alternative (Garrison, Noreen, & Brewer, 2018).

1.4.1. Planning

Numerous organizations begin the planning phase by restating or updating their mission statement, which should send a strong message to people inside and outside the organization about the company’s purpose and the value it aims to establish in society. Business planners then gather information about the organization's external environment (political, economic, social, technological, environmental, and legal), industry conditions, and internal strengths and weaknesses, which are then compared with competitors. Managers use this information to decide on strategies (courses of action) to achieve organizational goals (Atkinson A. , 2012).

When planning, managers must look into the future, set goals and objectives for the company, and determine how to achieve these goals. These targets are often diverse: increasing short-term profits and market share, committing to environmental protection, and contributing to social projects. However, the main objective management tries to pursue with these objectives of different natures is to add value to the companies under its control.

1.4.1.1. Breakeven and Target Profit Analysis

An important part of the planning phase is the evaluation of the cost and profit results of a series of activities. Managers for this purpose, use Cost-Volume-Profit (CVP) analysis, a management accounting tool widely used for profit planning and financial modeling (Weygandt, Kieso, & Kimmel, 2015). CVP analysis examines the relationship between changes in operations and changes in total sales revenue, costs, and net income. This allows them to predict what would happen to financial results if a certain level or volume of activity fluctuates (Horngren, Datar, & Rajan, 2012). This information is essential to management because one of the most important variables affecting total sales revenue, total cost, and profit is production or volume. Knowing this ratio allows management to determine important output levels, such as levels at which neither profit nor loss will occur.

According to Hilton (2002), the economics of producing a product are mathematically represented through the CVP analysis.

CVP analysis is realized considering a period of usually a year or less, during which time the company's production may be limited to existing operating capacity. In the short run, some inputs can increase, and some cannot. It is also important to remember that most of the costs and prices of a company's product or service are predetermined in the short term, and the main area of uncertainty will be volume, therefore, short-term profitability is most sensitive to it.

However, in order for the CVP to be accurate, certain assumptions must be met (Warren, Reeve, & Duchac, 2018). First, the selling price has to remain constant throughout the range of relevant quantities, resulting in linear revenue. Second, managers can classify each cost (or component of the mixed cost) as variable or fixed, and these costs are linear over the relevant quantity range. Moreover, the inventory levels do not have to change. Finally, the product mix offered for sale must remain constant.

CVP analysis can be used to examine how different "what if" alternatives considered by decision-makers affect operational performance. Managers want to avoid the bias of losing money (Bhimani, Horngren, Datar, & Rajan, 2015). The breakeven point is one of the CVP tools that management uses in order to assess the output at which total revenue and total cost are equal, that is, the output at which operating profit is zero.

The breakeven analysis is the name given to the investigation of how volume, profit, and costs interact at different levels of activity (Lucey, 1996).

The first method of calculating the breakeven point is the weighted average contribution margin[2] method (see Equation 1.1). It relies on the basic profit equation where the profits are assessed by subtracting the costs from the revenues, but in a multi-product company the contribution margin is weighted for the sales percentage of each product the company sells (Wentworth & Cafferky, 2014).

Equation 1.1 Weighted Average Contribution Margin Method

$$\text{Breakeven in Units} = \frac{\text{Fixed Costs}}{\text{Weighted Average Contribution Margin}^{3}}$$

Source - Wentworth, J., & Cafferky, M. E. (2014). Breakeven analysis: The Definitive Guide to Cost-volume-profit analysis (Management Accounting Collection). Business Expert Press, p. 41.

Managers become more interested in finding product synergies as a company produces more products because doing so allows them to share essential resources across multiple products and increase production. Such synergy might reduce expenses, making it simpler to reach the breakeven point.

But in some circumstances or businesses, managers may decide not to spend the time and money identifying unit variable costs. These managers might benefit from the second method, the weighted average selling prices method (see Equation 1.2). Breakeven can be calculated for businesses that offer the same service but at various

[2] Contribution Margin (CM): Selling Price − Unit Variable Costs

[3] Weighted Average Contribution Margin (WACM)$= \sum_{i=1}^{n} \mathrm{CM}_n \times \sum_{i=1}^{n} \%\mathrm{Sales}_n$

prices, even if the unit variable costs are unknown. The product mix still has a significant impact on the breakeven point because of price variations.

Equation 1.2 Weighted Average Selling Prices Method

$$\text{Breakeven in units} = \frac{\text{FC} + \text{VC}^4}{\text{Weighted Average Selling Price}^5}$$

Source - Wentworth, J., & Cafferky, M. E. (2014). Breakeven analysis: The Definitive Guide to Cost-volume-profit analysis (Management Accounting Collection). Business Expert Press, p. 44.

This method might result appealing because it combines all costs into a single, round total cost due to its simplicity. As a result, it is no longer necessary to perform in-depth cost accounting to determine unit variable costs. There is no need to distinguish between fixed costs and variable costs when using this method. The weighted average selling price method can be applied in situations where big-picture figures are being discussed, like the total cost of launching a new company. This method represents a way to assess the breakeven point with calculations that can be completed fairly quickly but can still be used to discuss assumptions and strategies to be implemented (Wentworth & Cafferky, 2014).

Nevertheless, instead of just reaching the breakeven point, management typically sets a target for net income. It then determines the sales that are required to reach that certain level of income. To discover the number of units and dollars sold to

[4] Fixed Costs (FC) + Variable Costs (VC) = Total Costs (TC)

[5] $Weighted\ Average\ Selling\ Price\ (WASP) = \sum_{i=1}^{n} \mathrm{Price}_n \times \sum_{i=1}^{n} \%\mathrm{Sales}_n$

achieve a target profit, they can rely on the same two strategies that we have discussed up to this point, either the weighted average contribution margin method or the weighted average selling price method.

With the weighted average contribution margin method, the targeted profit can be computed by adding the target profit to the numerator of the equation (see Equation 1.3).

Equation 1.3 Target Profit - Weighted Average Contribution Margin Method

$$\text{Target Profit in Units} = \frac{\text{Fixed Costs} + \text{Target Profit (TP)}}{\text{Weighted Average Contribution Margin}}$$

Source - Own elaboration

Then, to compute the sales volume to reach a targeted profit with the weighted average selling price method, it needs to add the target net income to the numerator of the equation (see Equation 1.4).

Equation 1.4 Target Profit - Weighted Average Selling Price Method

$$\text{Target Profit in units} = \frac{\text{FC} + \text{VC} + \text{TP}}{\text{Weighted Average Selling Price}}$$

Source - Own elaboration

1.4.1.2. <u>Margin of Safety</u>

Managers in the planning phase utilize another tool, the Margin of Safety. It is the difference between the actual or expected turnover and the amount required to reach the breakeven point (see Equation 1.5). That is a safe limit used to determine how much sales are budgeted to anticipate a decline in sales to avoid experiencing losses

(Naning, 2021). The larger the margin, the more choices made by management will have a smaller risk. Managers assess both the risk of ongoing operations and the risk of new plans based on the Margin of Safety.

Equation 1.5 Margin of Safety in units

$$\text{Margin of safety in units} = \text{Expected sales in unit} - \text{Breakeven sales in unit}$$

Source - Own elaboration

The Margin of Safety can also be expressed in sales revenue (see Equation 1.6).

Equation 1.6 Margin of safety in dollars

$$\text{Margin of safety in dollars} = \text{Expected sales in dollars} - \text{Breakeven sales in dollars}$$

Source - Own elaboration

Dividing the Margin of Safety by the expected total sales, the margin can also be calculated by managers as a percentage of sales. It can be calculated using both ways (either in units or in dollars), but the same yardstick must be used in both the numerator and denominator. (see Equation 1.7).

Equation 1.7 Margin of safety as a percentage

$$\text{Margin of safety in percentage} = \frac{\text{Margin of safety in units/dollars}}{\text{Expected sales in units/dollars}}$$

Source - Own elaboration

1.4.1.3. Budgeting

There is another tool widely used by managers in the planning stage but also in the controlling stage, namely, budgeting. In the planning phase, the budgeting activity involves creating goals and creating different forecasts to achieve these goals (Anthony, Govindarajan, Hartmann, Kraus, & Nilsson, 2014). In the controlling process, budgets are used as input to ensure that the plan is properly executed or adjusted when necessary.

“A budget is a detailed plan for the future that is usually expressed in formal quantitative terms” (Garrison, Noreen, & Brewer, 2018, p. 363). It helps in the coordination and planning of implementation of projects and plans. It serves as a blueprint for the company to follow in the coming period and can cover both the financial and non-financial aspects of these plans.

One of the most important aspects of this process is establishing coordination between budgets so that the plans of one department overlap and complement the plans of other departments. This often entails trade-offs when it comes to making adjustments to the original budget. This means that senior management must be directly involved, and very often they are the same managers who are in charge of the responsibility centers (Atrill & McLaney, 2021).

Management's expectations regarding future earnings, cash flows, and financial position are quantified in financial budgets. These financial budgets can be supported by non-financial ones for things like the number of units produced, the number of new products launched, or the number of employees (Proctor, 2012).

The operating budget reflects the company's core activities, while the financial budget reflects financing and investing activities (Warren, Reeve, & Duchac, 2018). The master budget coordinates all these projections in each organization's budget into one set of budgets for the entire organization for a given period of time. It includes the impact of both operational and financial decisions. Operational decisions involve, for instance, the acquisition and use of scarce resources, while financial decisions focus on how to raise funds to obtain resources (Garrison, Noreen, & Brewer, 2018).

A key activity in the planning part is to define the responsibility centers within the company's organizational structure. These centers are the management units whose managers are held responsible for the achievement of a specific set of results and/or the use of specific inputs (Atrill & McLaney, 2021). Each manager is assigned short-term goals consistent with corporate goals, and each is required to have the decision-making levers to influence the goal and the controllability of the goal, which is considered controllable if the manager has the levers to influence it.

There are five types of responsibility centers (Garrison, Noreen, & Brewer, 2018):

1. Cost center;
2. Expense center;
3. Revenue center;

4. Profit center;
5. Investment center.

A cost center is a responsibility center where managers are generally responsible only for costs that are within their control. There are two types of cost centers: standard cost centers and discretionary cost centers (Garrison, Noreen, & Brewer, 2018). The key feature of a standard cost center is that production can be measured, and the cost required to produce each unit of output can be determined. Control is done by comparing standard costs[6] with actual costs. While cost center managers are not responsible for sales revenue, they can affect sales revenue if quality standards are not met, and products are not manufactured on time. Therefore, timely and high-quality non-financial performance indicators are also essential besides financial indicators (Braun & Tietz, 2018).

Discretionary cost centers are cost responsibility centers where outputs cannot be measured in financial terms and there is no clear observable relationship between inputs and outputs. Control usually includes ensuring that actual expenditures are in line with budget expenditures for each type and that the tasks assigned to each center are completed excellently. One of the main problems that arise in discretionary cost centers is measuring the effectiveness of expenses (Atrill & McLaney, 2021).

[6] "A standard cost is the predetermined budgeted cost of a regular manufacturing process against which actual costs are compared" (HarperCollins, 2023)

A revenue center is a responsibility center where managers are primarily responsible for financial results in the form of sales revenue. Revenue center managers may also be responsible for selling expenses such as salesperson salaries, commissions, and procurement costs. However, they are not responsible for the cost of the goods and services they sell (Drury, 2018).

A profit center is a responsibility center where managers and other employees control both the revenue and costs of the products or services they provide. A profit center is similar to an independent business, except for the fact that the level of investment in the responsibility center is determined by senior management and not by the responsibility center manager (Atkinson A. , 2012).

In the investment center, managers are responsible for generating revenue, controlling costs, and effectively managing the assets of the company. Investment centers are generally large branches of corporations. They are treated in the same way as if they were self-contained companies. Managers of this type of center often have various responsibilities, including making decisions about how assets are to be used, therefore, managers are responsible for generating the highest returns from these assets (Braun & Tietz, 2018).

The first step in the budgeting process is to prepare the sales budget, which is a detailed schedule outlining the expected sales during the budgeted period. The entire budgeting process relies on an accurate sales budget. If the sales budget is incorrect, the rest of the budget will be incorrect. Sales budgeting is based on a company's sales forecast, which sometimes may require the use of complex mathematical models and statistical tools (Drury, 2018).

The sales budget affects the variable portion of the selling and administrative budgets and is included in the production budget, determining the number of product units to be produced in the budget period. On the other hand, the production budget is used to determine the costs for direct materials, direct labor, and manufacturing overhead. After preparing these three production cost budgets, the company can prepare the final finished goods inventory budget (Merchant & Van der Stede, 2017).

The master budget ends with the preparation of the cash budget, the budgeted income statement, and the budgeted balance sheet. Information from the sales budget, administrative budget, and production cost budget affects cash budgeting, which is a model that shows how cash will be raised and used. The budgeted income statement provides an estimate of net income for the budgeted period and is based on information from the sales budget, the ending inventory budget, the selling and administrative budget, and the cash budget. Whereas the budgeted balance sheet is created using information from the balance sheet at the start of the budget period and information from the various budgets, and it assesses the assets, liabilities, and equity of a company at the end of the budget period. (Garrison, Noreen, & Brewer, 2018).

The benefits of budgeting are numerous, but they can be summarized as three key benefits (Kloock & Schiller, 2007). The first is planning, the budgeting process forces managers to spend time planning for the future, rather than just focusing on day-to-day operations. The sooner companies develop a plan and act on schedule, the more likely they are to achieve their goals .

Second, the budget coordinates the company's activities. It makes it easier for the business to coordinate its activities. It accomplishes this by connecting each segment's objectives to the overall business goals. As a result, the business can align production and sales promotion with anticipated sales.

Third, budgets act as a benchmark for performance evaluation and employee motivation. Especially if they participated in the budgeting process and the budget what set at a realistic level, the budget serves as a goal that most managers will attempt.

However, there are several problems with budgeting (Weygandt, Kieso, & Kimmel, 2015). First off, creating a budget involves a lot of guesswork. Shorter product life cycles and the quickly evolving business environment are the second reason why budgets are becoming more and more inaccurate (Prendergast, 2000). Last but not least, Prendergast says that the degree of budgetary sleight-of-hand is another issue. He argues that budgets have caused tension between upper management and their deputies over time.

Budgets are also frequently criticized for placing too much emphasis on short-term profits at the expense of ongoing long-term improvements like new product development and customer satisfaction (Hayes & Abernathy, 1980).

1.4.2. Controlling

The controlling cycle flanks the planning cycle, it begins right after the setting of short-term objectives, when it is called upon to check their consistency with long-term objectives. Then it develops during the action and at the end of the observation period. In doing so, it ensures constant verification of the degree to which the results achieved through business management are in line with the short-term objectives defined at the planning stage (Garrison, Noreen, & Brewer, 2018). Not only that, but it is also in the control phase that any misalignments between the system of objectives defined in the planning phase and the results achieved are subject to discussion and interpretation aimed at identifying the corrective actions necessary to ensure realignment or to stimulate a learning effect for the future (Lucey, 1996). The controlling system should be designed to measure the economic performance of the activities for which line managers are responsible.. To define the organizational structure of control, it is necessary to start with the corporate organizational structure by establishing what roles operate in that structure and what relationships there are between the various roles (Warren, Reeve, & Duchac, 2018).

Relationships are defined as the connections that develop between different roles. They can be vertical, the more they are developed, the more detailed information management control must develop (the control system must be deep). These relationships develop when the activities and decisions of the superior delegate to various more specific areas, and the manager in charge of management control must know what these delegations are (Horngren, Datar, & Rajan, Cost accounting: A managerial emphasis, 2012).

Otherwise, they can be horizontal, the more they are developed, the more the information differs from each other (the control system must be broad). The manager of management control must know the relationships between the various roles.

The roles represent a set of expectations formulated toward those who occupy a certain position and are embodied not only in the definition of tasks but also in the behavior to be maintained with other corporate entities. Based on the roles, the different corporate bodies are defined.

1.4.2.1. The Feed-back and Feed-forward Mechanisms

The controlling process, as mentioned above, is the sequence of activities to be put in place to provide useful information for managers to understand if and to what extent the objectives have been achieved, and it can be accomplished by either a feedback mechanism or a feed-forward mechanism (Marchi, Marasca, & Chiucchi, 2018). The first measures achievements at predefined intervals and compares them with targets to define corrective actions. In this mechanism, at the end of the previous year, goals are set and action programs are drawn up, and at the end of the new year, actual results are recorded, which are then compared with the set goals. The advantages of this mechanism are the certainty of the information collected and the complete view of management in relation to the objectives, but it does not allow the possibility of activating suitable corrective actions in a timely manner (Atkinson A. , 2012).

Whereas the feed-forward mechanism measures intermediate results, and projects them at the end of the period to check the probability of achieving the target and define corrective actions. With this mechanism, short-term goals are defined and action programs are developed in order to achieve them. But in this case, after a predetermined time (usually a quarter) an estimate is made of the results that can be expected in the absence of corrective action, to assess whether to continue as planned or to "course-correct". Then, these forecasts and objectives are compared. If there is a discrepancy, corrective actions are implemented to the action programs and in exceptional conditions, also to the objectives can be modified (Epstein, Manzoni, & Davila, 2010).

The main advantage of feed-forward is the ability to intervene in time and correct the range of action to further the achievement of goals. However, there remains uncertainty about the projections, which must be as accurate as possible by trying to get as much market information as possible. The uncertainty cannot be zeroed out but can only be reduced. And also, the feed-forward mechanism remains a fairly complex system to implement (Marasca, Marchi, & Riccaboni, 2013).

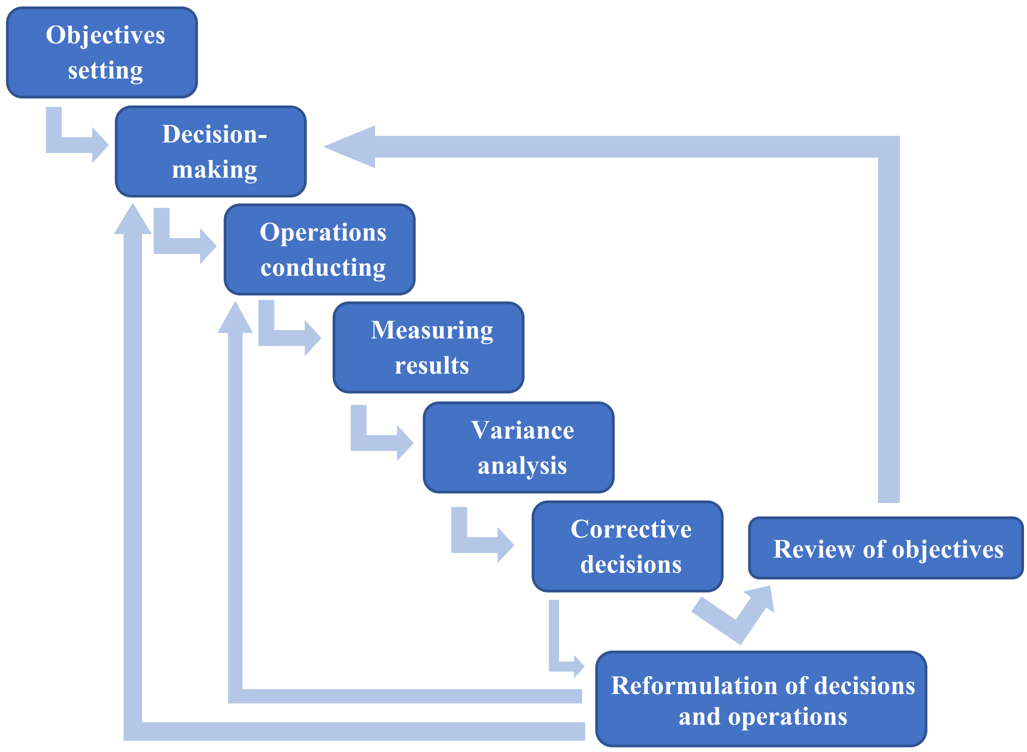
1.4.2.2. Variance Analysis

As mentioned earlier, the budget is a tool used also in the controlling process. Companies use performance reports at the end of the period to contrast "actual" revenues and expenses with budgeted revenues and expenses (Horngren, Datar, & Rajan, 2012). The variance, or difference between actual and budgeted numbers, is used to assess how well the manager-controlled operations are and to determine whether the plan needs to be revised.

Generally speaking, there are two main reasons why variance analysis can be considered of relevant importance by firms. First, cost variance analysis might help decision-makers enhance their present and upcoming budgeting and decision-making procedures. Second, it can be adopted in a way that holds managers accountable for the variances that are within their control. This ought to spur them on to exclude or prevent future variations (Kloock & Schiller, 2007).

The purposes of variance analysis can be varied: to understand management performance and what did not work compared to what was budgeted, to correct management and objectives, and to assign responsibility, with the provision of rewards or punishments to motivate and incentivize company personnel more (Illustration 1.4) (Marchi, Marasca, & Chiucchi, 2018).

Illustration 1.4 The budget and analysis of the results produced



Source - Marchi, L., Marasca, S., & Chiucchi, M. S. (2018). Controllo di Gestione. Giappichelli, p. 364

Analysis of variance can be performed at two levels: strategic and operational (Horngren & Sundem, 2014).

At the strategic level, the focus should be on the important business performance variables: the analysis of variance should address the goals to be pursued and the actions to be taken to effectively deliver a business strategy. In other words, the process is the link between strategy and key performance goals, allowing managers to control effective execution. Determining which variances should be considered significant and therefore which ones deserve to be investigated to establish their causes and define appropriate corrective measures lends effectiveness to the process. The choice of variables to be measured may be uncertain just as the setting of objectives may be inconsistent both in terms of compliance with the deliberate strategy and in terms of the degree of achievement. Additionally, even the setting of performance measures can be risky because the areas of responsibility for the action of each manager are derived from them (Drury, 2018).

The system of variance must be "tailor-made" and include not only typical changes in production (costs and revenues) but also a set of values that reflect the success variables of the company business, such as geographic area, product range, customers, and components.

Whereas, from an operational point of view, the procedure that is followed involves the following steps (Marasca, Marchi, & Riccaboni, 2013):

1. Highlighting the overall deviation and analysis of particular/elementary variances.
2. Identification of the causes of elemental variances.
3. Interpretation of analytical (management and organizational) causes and definition of possible corrective actions or possible expectations of next period's results if the events that impacted performance are judged to be extraordinary.

4. Implementation of current management in the next period with any corrective actions decided upon.

1.4.2.3. Reporting

Reporting is a structured set of reports[7] made available by management accountants to senior management, business unit managers, function or process managers, and other managers and resource managers to inform them of management performance, whether "current" or "strategic" (Brusa, 2012).

There is always information in a report that is addressed to someone. Its content cannot be standard because it must be tailored to a variety of factors, including the strategic and organizational profile of the company, the recipient's specific mission, his or her decision-making levers, and their understanding of the economic profile of management (Weygandt, Kieso, & Kimmel, 2015).

The articulation of the reports is on two levels, the temporal and the informational (Kloock & Schiller, 2007).

The former refers to the frequency of issuance with which the report and its component parts are prepared and communicated to recipients. Concerning the frequency of report issuance, a distinction is made between (Hilton, 2002):

- Periodic reports that are prepared systematically at the end of given time intervals (daily, weekly, monthly, annual).

[7] Reports mean all those periodic control statements.

- Reports on request that are drawn up precisely as a result of a specific request.
- Flash reports that are prepared in the event of relevant situations, are prepared upon the occurrence of relevant situations in terms of risk/opportunities predefined during planning. This type is characterized by high timeliness and selectivity.

On the other hand, a reporting system contains data of various types and sources. A distinction of the informational level of reports can be made in (Proctor, 2012):

- Reports oriented toward external communication or structured for the internal decision-making and control system.
- Quantitative reports, which are often hinged on economic-financial measures, however, it has some limitations. Economic-income measures highlight the effects but not the causes of performance, and furthermore, in this type of report the manager's focus is on the short term and poses a strong limitation for strategic management.
- Descriptive reports, that provide a concise but comprehensive view of the situations under observation: an overall picture expressed through data from key quantitative variables and through a summary of perceptions about problems to be solved and opportunities to be exploited. Those data can be grouped into:

a) Data-explaining of business, technical-productive, financial, and administrative trends.
b) Data-perception of internal and external strengths and weaknesses, problems, and opportunities.
c) Data-perspective on the evolving conditions of the political, economic, social, and technological environment.

- Reports based either on internal data or external data.
- Generic reports, that constitute the synthesis of the management accounting system and contain quantitative-monetary data, provide answers on the result of activities performed, trends in action, and problem-solving (Horngren & Sundem, 2014). It is the report that provides information on past management performance and current (current and future) developmental trends. These reports focus their attention on some key variables that can be:
    a) Controllable: these are reports with the purpose of evaluating the manager's performance; it focuses only on variables that are a target for the manager.
    b) Controllable and non-controllable: has the purpose of supporting decision-making and can also be used for evaluative purposes.

    Generic reports should also contain comparative data (actual data compared with data in budgets) and for exceptions (unusual data according to predetermined criteria), quantitative-monetary necessary for control. It would be appropriate to supplement these types of reports with non-monetary information.

- Analytical reports, typically refer to non-monetary dimensions and provide information regarding the technical aspects of business management. They can be:
    a) Referred to individual departments or activities.
    b) Prepared at small time intervals (weekly or daily).

  Their effectiveness is related to the accuracy and timeliness of updating physical-technical and accounting data.

In summary, reporting in management accounting involves the collection, analysis, and presentation of financial and non-financial data to support decision-making and planning in an organization (Garrison, Noreen, & Brewer, 2018). The reports can be customized to suit the specific needs of the organization and should be designed to provide actionable insights that can help managers make informed decisions. Therefore, it represents a critical function that helps organizations understand their performance, identify opportunities for improvement, and make data-driven decisions that drive success.

1.4.3. Decision-making

Providing up-to-date information for decision-making is one of the most crucial functions of management accounting. Decision-making involves choosing between alternatives. For example, managers may have to make decisions to discontinue a product or distribution channel, manufacture a part of the output internally or purchase from an external supplier, introduce a new product or service, replace outdated goods, or both. What these decisions have in common is that they are not routine. Special studies are done when looking at these types of decisions. Decision-making requires consideration of the costs and benefits associated with the alternatives (Garrison, Noreen, & Brewer, 2018). Wrong decisions can be made if irrelevant revenue and cost data are included in the valuation. Therefore, it is important to identify the associated costs and benefits that apply to the alternatives under consideration. Specific studies focus on whatever area of planning the decision-maker considers appropriate in a given situation. However, it is important not to focus too much on the short term because the goal is to maximize long-term benefits (Drury, 2018).

Moreover, with big data and ERP[8] systems in place, managers can easily get lost in the huge amount of data available. Managers must use critical thinking skills to

[8] Enterprise Resource Planning (ERP) "are application solutions designed to integrate on an enterprise-wide basis the operational and administrative processes that govern the conduct of various business activities, bringing back into a single logical scheme the information flows that accompany the operational transactions originated in different functional areas" (Agliati, Caglio, Meloni, & Miroglio, 2001, p. 10).

focus on the larger business problem, the specific problem to be solved, and the relevant data to answer the question. Managers need to be clear about the assumptions made, the gray areas[9] of the assessment, and the possible consequences of decisions (Braun & Tietz, 2018).

1.4.3.1. Product Mix with Constraint Capacity

In the short term, sales demand may exceed current production capacity. When demand for a product exceeds a company's production capacity, it is necessary to identify the resources responsible for limiting production. These limited resources are called limiting factors. It is unlikely that restrictions will be lifted, and additional investment will be raised shortly. When using limiting factors, profit is maximized when the largest possible contribution to the profit is made each time a scarce or limiting factor is used (Drury, 2018).

Managers are frequently faced with the challenge of managing limited resources in a way that maximizes profits. Since fixed costs do not change no matter how limited resources are used, managers must ignore them when making volume trade-off decisions and instead focus their attention on determining the product combination that maximizes overall profit (Hilton, 2002).

Assuming the absence of both production and market constraints, the product whose sales are best pushed is the one with the highest unit contribution margin.

[9] A gray area is a circumstance or area where it can be challenging to distinguish between what is morally right or wrong.

Each additional unit of that product makes a greater contribution than the other products to covering fixed costs, which are immutable by definition within the area of relevance, and to the subsequent generation of operating income.

Since some products need to be reduced when there is a limit, the key to maximizing the total margin seems obvious to favor the products with the highest contribution margin. But this is not entirely correct. Instead, the right decision is to prioritize those products that provide the most profit per unit of limited resources (see Equation 1.8) (Garrison, Noreen, & Brewer, 2018).

Equation 1.8 Contribution Margin per Quantity of Constrained Factor

$$CM\ per\ Unit\ of\ Constraint = \frac{Contribution\ Margin\ per\ Unit}{Quantity\ of\ Constrained\ Factor * Units}$$

Source – Own elaboration

In this way, the available resources are exploited to the fullest and the overall contribution margin and, therefore, the achievable operating income is maximized for the same inputs used (Proctor, 2012).

1.4.3.2. Discontinuation Decisions

The decision to remove product lines or other business segments and add new segments is one of the most complex decisions a manager has to make. Many qualitative and quantitative factors must be considered when making such decisions (Wentworth & Cafferky, 2014). Ultimately, however, the final decision to remove a business segment or a product depends primarily on its financial performance. To assess this impact, costs must be carefully analyzed (Garrison, Noreen, & Brewer, 2018).

The process used to identify financial data that changes in alternative action directions is known as differential analysis (Lucey, 1996). This is the technique used for given types of cost-effectiveness problems. It compares costs and revenues related to alternative courses of action to define the differential result arising from a decision compared to a starting situation. Only costs and revenues that vary from the starting situation are considered (the comparison concerns change in costs and revenues).

This method is based on identifying the relevant or differential cost and revenue values (concerning a specific choice problem) of the alternatives being compared (Proctor, 2012).

Relevant values are those that are present only in one of the compared alternatives, they are avoidable in alternative situations[10]. They are also called "eliminable," since they might not recur considering a different option. When a cost is eliminable, it means it is no longer borne by the recognized option (Anthony, Govindarajan, Hartmann, Kraus, & Nilsson, 2014).

[10] Relevant costs under differential analysis can be, in order of relevance: common fixed costs, generally not relevant; direct costs, may or may not be relevant; variable costs, generally are relevant.

Whereas irrelevant costs or revenues are those that are present, in the same magnitude, in all alternatives compared and therefore it does not make sense to use them to choose one over another option. Fixed costs, are generally irrelevant, not varying as a result of decisions, but not always (Coombs, Hobbs, & Jenkins, 2005). The most important merit of differential analysis is that it consists of a simple system that provides immediately understandable information. But at the same time, the importance of qualitative aspects is neglected, and through it, decisions are made and are destined to radically change the structure of business combinations.

1.4.3.3. Make or Buy Decisions

When a manufacturer assembles parts to create a finished product, management must decide whether to manufacture those parts or purchase them. The decision to purchase parts or services is often referred to as outsourcing[11] (Weygandt, Kieso, & Kimmel, 2015).

The company must evaluate whether it is more convenient to outsource the production of a given good or to carry it out internally.

This decision concerns short-term choices and is therefore eminently operational in nature, but it must nevertheless be part of a strategic assessment where aspects

[11] Sometimes people confuse the concept of outsourcing with the concept of offshoring.
Outsourcing refers to the involvement of an outside company in producing a product or providing a service. Outsourced work can be done locally or abroad.
Offshoring means working abroad. Foreign companies work in their own production facilities and call centers abroad or outsource the work abroad to another company (Braun & Tietz, 2018).

related to quality, timeliness of supplies, and opportunities to disseminate certain know-how should be also considered (Khan & Jain, 2013).

The decision to make or buy components should be made based on incremental analysis, through which only the relevant cost and revenue values are identified (Atrill & McLaney, 2021).

As a result, it may not be worthwhile to accept an external proposal if a supplier offers a component or service at a price that is lower than the internal unit cost of production incurred by the company. It should be emphasized, though, that the make-or-buy decision should not overlook the potential alternative use of freed production capacity, i.e., the resource that becomes available as a result of choosing to use outside suppliers (Drury, 2018).

The potential to increase production and sales of the most lucrative product lines using the resources that have been freed up, for instance, results in relevant costs and revenues, more specific source costs and revenues, which must be considered to properly guide the decision.

A further scheme, still based on the differential analysis method, that compares the relevant costs of the make alternative with the relevant costs of the buy alternative can be adopted to support make-or-buy decisions (Garrison, Noreen, & Brewer, 2018). This scheme is still based on the general one of differential economic advantages and disadvantages, as outlined in the previous section. The former are expenses that can only be avoided by outsourcing and are therefore only incurred when in-house production occurs. On the other hand, the latter costs are those that only occur in the buy hypothesis and are not present in the case of in-house production. In terms of the effect on corporate operating income, a comparison of the relevant costs of the two hypotheses reveals which option is more convenient (Horngren & Sundem, 2014).

1.5. THE CONTROLLING STYLE

The controlling stage is significantly influenced by the controlling style, which is the way the different activities of the control process are performed. It is a matter of clarifying what management behavior model is most effective, in pushing individuals to give their best, formulating correct decisions and stimulating them to carry them out in the best possible way (Brusa, 2012).

It concerns how the following actions occur: the formulation of objectives and programs, the evaluation of results, and the choice of corrective interventions.

The style of control depends on the consideration given to the social, human, and motivational aspects of control.

Depending on the style adopted by the enterprise, there will be a different degree of participation of subordinates in the formulation of goals, and the more engagement there is the more motivation there will be in achieving them. Even the grade of difficulty of the planned goals is considered motivating, but only when they are effortful but achievable. Managers are not very motivated by budgets that are either too "tight" (too challenging to achieve) or too "loose" (too simple to achieve).

Consistency between control style and corporate leadership style, which is the type of behavior adopted by management toward employees, is crucial.

The management accountant must first observe the context in which he or she finds himself or herself and to that adapt the control system and slowly implement change.

One extreme example of control style relies on internal motivation, and the other extreme case relies on outside pressure (Brusa, 2012).

The first style is characterized by widespread participation, fairly broad objectives, and evaluation using criteria other than just financial or qualitative criteria. The second, on the other hand, is characterized by restricted participation, constrained objectives, and rigidly anchored performance evaluation on budgeted results or other predefined parameters. A wide range of intermediate solutions is conceivable between the two, many of which "snapshot" concrete business situations quite well (Brusa, 2000).

It would certainly be wrong to propose prefabricated solutions without careful evaluation of the variables to which the control style needs to be adapted. Among these variables are primarily the culture and climate as well as the history of the company. The personalities and talents of the managers as well as the nature of the tasks to be performed and their complexity should also be taken into consideration, without neglecting the dynamism and competitiveness of the business in which the company operates.

Instead, the control style should be regarded as a flexible tool, appropriately differentiated within the same company, for example between different organizational areas, susceptible to change when very relevant circumstances require it (Marchi, Marasca, & Chiucchi, 2018).

1.6. BENEFITS AND CRITICISM OF MANAGEMENT ACCOUNTING

One of the main advantages of management accounting is that it provides managers with the information they need to make informed decisions (CIMA, 2011). By providing accurate and timely financial and non-financial data, managers can assess the impact of their decisions and make adjustments as necessary. Then, management accounting provides a framework for evaluating the performance of a business. By tracking key performance indicators such as revenue, costs, and profits, managers can identify areas of the business that are underperforming and take corrective action. All these actions performed by management accountants could lead to increased effectiveness and efficiency overall (Coombs, Hobbs, & Jenkins, 2005).

Furthermore, it helps companies control costs by providing detailed information on the cost of goods sold, operating expenses, and other costs associated with the business (Horngren, Datar, & Rajan, 2012). By analyzing this information, managers can identify areas where costs can be reduced, such as by renegotiating supplier contracts or optimizing production processes, the profitability can rise and the bottom line can be improved.

Management accountants with their work help companies create realistic budgets and forecasts. By analyzing historical data and market trends, managers can make informed decisions about how much to spend on various aspects of the business, such as marketing, R&D, and capital expenditures. This can help ensure that the business is well-positioned for future growth (CIMA, 2011).

Thus, implementing a management accounting system within an organization could prove vital to its survival and prosperity (Chenhall, 2003).

Despite its numerous advantages, such a system also brings with it disadvantages.

In fact, implementing a management accounting system can be expensive, especially for small businesses with limited resources (Proctor, 2012). This can be a barrier to entry for some companies, particularly those that are just starting. Additionally, the ongoing costs of maintaining and updating the system can also be significant. It involves collecting and analyzing a large amount of data, which can be complex and time-consuming (Coombs, Hobbs, & Jenkins, 2005). This can be challenging for companies that do not have the resources to dedicate to managing and analyzing data. Additionally, the complexity of the data can make it difficult for managers to interpret and use it effectively (Naning, 2021).

Furthermore, the accuracy of management accounting data is critical to making informed business decisions (Horngren & Sundem, 2014). If the data is inaccurate or incomplete, it can lead to poor decision-making and negative consequences for the business. Companies need to have reliable systems and processes in place for collecting and analyzing data.

Moreover, collecting and analyzing data can be time-consuming, which can be a disadvantage for companies that need to make quick decisions (Langfield-Smith, Thorne, Smith, & Hilton, 2014). More than that, managers may need to spend a significant amount of time reviewing and analyzing data, which can take away from other important tasks.

Lastly, management accounting can sometimes focus too heavily on short-term goals, such as meeting quarterly earnings targets (Garrison, Noreen, & Brewer, 2018). This can lead to decisions that prioritize short-term gains over long-term growth and sustainability. Companies need to balance short-term and long-term goals to ensure that the business is positioned for success over the long term.

In conclusion, while management accounting can provide significant benefits to businesses, such as giving a competitive advantage, it is important to consider the potential disadvantages as well. Companies should carefully weigh the costs and benefits of implementing a management accounting system and ensure that they have the resources and expertise to manage and analyze the data effectively.

Ultimately, companies should strive to balance short-term and long-term goals and consider a range of factors when making business decisions.

1.7. THE EVOLUTION OF THE ROLE OF MANAGEMENT ACCOUNTANTS

Most businesses had an accounting department approximately 20 years ago that included financial accounting specialists, management accountants, financial ledger clerks, tax experts, internal auditors, and more. The accountants were frequently cut off from the rest of the company, only emerging to speak with the business managers occasionally to go over the monthly accounting figures. Management accountants were regarded as experts in gathering and analyzing business data for control and decision-making. Their roles historically included performing routine "scorekeeping" duties, i.e. gathering performance information and "policing" business leaders against primarily financial objectives (Jablonsky, Keating, & Heian, 1993). Management accountants have historically been seen as impartial and independent judges of the financial performance of various business functions (Hopper, 1980). This role as a provider of objective accounting data to management suggests a rather passive role for the management accountant, one that is removed from line activities and only minimally involved in activities like performance evaluation. This contributes to a focus on external financial reporting requirements and "financial accounting mentality" (Johnson & Kaplan, 1987).

Over time, business managers have been motivated to learn new information by a variety of factors, which has had an impact on management accountants' roles.

The role of the management accountant has been significantly impacted by the growing globalization of business over the past three decades (Yazdifar, Askarany, Askary, & Daneshfar, 2005). Most businesses now compete internationally rather than locally or nationally due to global distribution networks, quicker and less expensive transportation, and real-time information. Many more details about one's rivals can be instantly known, and markets can be very large, with fewer and fewer barriers to international trade (Dixon, Toman, & DeLisi, 2013). Customers' tastes are more transient, and products frequently have shorter life cycles. Therefore, the average organization now experiences shorter periods of competitive advantage. These changes have an impact on management accountants because modern business managers require faster, more accessible access to global information that needs to be focused, as well as relevant and timely (Langfield-Smith, Thorne, Smith, & Hilton, 2014). So, many organizations have become more explicitly focused on product quality and customer satisfaction. The modern consumer is frequently pickier and more selective. They may not always be loyal, but they take the availability of a wide range of products for granted. As a result, the majority of businesses place a high priority on customer satisfaction, and today's management accountants are increasingly focused on customer profitability analysis (Bhimani, Caglio, Ditillo, & Morelli, 2008). Furthermore, there is more complexity and uncertainty surrounding transactions. As a result, various organizations now explicitly include business risks as part of their management process, and management accountants may take on greater responsibility for risk assessment in the future (Hopper, Northcott, & Scapens, 2007).

The roles of management accountants have been significantly impacted by the accelerating pace of technological change. Today, the traditional role of the management accountant is being scaled down by the evolution of information technology that frees (or can free) him or her from tasks pertaining to data collection and the preparation of standard reports (Bhimani, Caglio, Ditillo, & Morelli, 2008). Processing power has greatly increased, making, preparing, and distributing information much simpler. The increased computing power has had a significant impact on how organizations work and how information moves, which has implications for management accountants' roles. Information is now widely available thanks to a wide variety of business communication technologies that are portable and clear. Additionally, future management accountants will be able to assume that information technology will continue to advance (Hopper, Northcott, & Scapens, 2007).

To summarize, management accountants play a crucial role in the success of an organization. Their primary role is to provide financial information to the management team, which is essential for planning, controlling, and decision-making.

Moreover, the emphasis on moral behavior has never been more acute than it is right now (Coombs, Hobbs, & Jenkins, 2005). Given that management accountants are in charge of ensuring the accuracy of the financial data provided to internal and external parties, they have particular ethical responsibilities. High ethical standards are promoted by professional accounting organizations that represent management accountants internationally. Each of these organizations offers certification programs that, when completed, show the holder has the technical expertise in management accounting or financial management that is required by that organization (Horngren, Datar, & Rajan, 2012).

Overall, management accountants are responsible for providing financial information that enables management to make informed decisions about the organization's operations and strategy. They work closely with other departments, such as finance, operations, and marketing, to ensure the organization's financial goals align with its overall business objectives.

2. THE DESIGN AND CHANGE OF A MANAGEMENT ACCOUNTING SYSTEM

As we already mentioned in the first chapter, companies must continuously enhance the performance of activities and business processes in order to stay competitive in global markets. Managers need pertinent and timely feedback to assess the efficiency of courses of action because improving them is essential to long-term survival (Atkinson, Kaplan, Matsumura, & Young, 2011). Management accounting systems (MAS) must be developed and put into place because conventional financial and cost accounting systems do not produce the data that managers require. These management accounting systems must be created and implemented with two goals in mind (Drury, 2018):

1. To collect financial and operational data that accurately reflects the performance of activities.
2. To provide management with pertinent data to plan, manage, control, and steer the company's activities in order to enhance processes and products, cut waste, and carry out business operations and strategies.

The primary goal of a MAS's design is to establish methods, processes, and systems for gathering and reporting financial and operational data about an organization's operations. The outputs of this system must reflect the organization's activities and provide pertinent and useful information for management in order to achieve this design goal. A MAS's foundation is accurate information about the cost and performance of activities (Coombs, Hobbs, & Jenkins, 2005).

However, defining activities and establishing methods, procedures, and systems to fulfill the core design objective must be prioritized before implementation can begin. The design stage of a MAS must also take into account several other issues in addition to this fundamental design objective, such as (Miller, 1992):

- Defining the function and application of the system.
- Tying the company's operations and strategy together.
- Demonstrating the effectiveness of simplicity as a tool.
- Preserving the information's applicability to decision-making.
- Making use of target costing, best practices, and benchmarking.
- Examining software and hardware problems.

First, identifying an organization's goals and objectives is a critical step in designing an effective management accounting system. These goals and objectives provide a framework for decision-making and guide the allocation of resources toward achieving the desired outcomes. Without a clear understanding of the organization's objectives, it can be difficult to determine what information is needed to make informed decisions. By reviewing the organization's strategic plan, mission statement, and business objectives, managers can gain insight into the organization's overall direction and priorities. This understanding can then be used to develop a management accounting system that provides relevant and timely information to support decision-making and help the organization achieve its goals (Anthony, Govindarajan, Hartmann, Kraus, & Nilsson, 2014).

Second, determining the scope of a management accounting system is an important step in ensuring that the system meets the specific needs of the organization. A management accounting system's design is determined by how management defines the system's use and purpose. Although all of the managers involved in the design and implementation of a MAS are focused on ensuring that they receive the information they can use to enhance performance, the precise information needed varies from management team to management team, company to company, industry to industry, and customer base to customer base (Merchant & Van der Stede, 2017). As a result, management must take on the duty of clearly defining the parameters for the purpose and use of the new MAS early on in the design stage. For instance, a business that competes primarily in product innovation might design the MAS to give more weight to the cycle time of tasks related to product development.

On the other hand, a wholesale distributor that competes in various market segments based on availability or service might design its management accounting system to highlight the cost of resources used in the various distribution channels. Asking ongoing questions about how the output data from the MAS will be used and the decisions it will influence is a key component of designing for purpose and use. By taking into account factors such as size, complexity, and industry, managers can identify the areas of the organization where the system should be implemented and what types of information will be collected (Anthony, Govindarajan, Hartmann, Kraus, & Nilsson, 2014). This process often involves a careful evaluation of the organization's processes and workflows, in order to determine which departments or functions will be included in the system. For example, a manufacturing company may need to collect data on production costs in order to identify areas for cost savings, while a service organization may need to collect data on employee productivity to improve efficiency and customer satisfaction. By carefully defining the scope of the management accounting system, managers can ensure that the system provides the information needed to make informed decisions and drive improvements in the organization's performance (Atkinson A. , 2012).

A MAS must be designed with the starting idea that it can help create a competitive advantage over other companies. Competitive advantage comes from the choice, implementation, and improvement of activities, and the outcome of activities carried out over time is essentially the execution of a strategy. While some businesses and sectors compete primarily based on price, others do so on the basis of innovation, value, or product accessibility. The strategies used by different businesses in marketing, distribution, and manufacturing vary. Because of these variations, the management accounting system must be adapted to the company’s needs (Lucey, 1996). In order to tailor the MAS to the company’s needs is vital the identification of the activities, which include all of the organization's regular operations, conducted within the firm. Being a MAS based on activities, and activities allow the designer to connect operations to strategy, this is the key design point after the system's purpose and use are articulated.

Another aspect of paramount importance is avoiding complexity whenever possible. A procedure is easier to implement and offers management more support if it is simple. Complexity must constantly be eliminated from products and services because it increases cost and does not improve functionality. There is no reason to think that designers of a management accounting system might find it to be different. Creating a system for management accounting that is highly complex can compromise future flexibility and ensures that any modifications, upgrades, or changes will be challenging and expensive (Miller, 1992).

When creating a MAS, a fundamental rule to remember is that if the users of the system's output are unable to comprehend the system's fundamental features and functions, the system is likely to be complex.

A MAS must concentrate on the crucial elements of the business at a level pertinent to improvement initiatives and decision-making in order to be effective. MAS designers frequently make the mistake of defining activities at a level so low that they actually represent tasks rather than activities (Langfield-Smith, Thorne, Smith, & Hilton, 2014).

Then, selecting appropriate data collection methods is a crucial step in designing a MAS that aims to generate reliable and accurate information. The method chosen should be based on the type of information required, as well as the organization's resources and capabilities. Automated systems, such as enterprise resource planning (ERP) software, can be highly efficient for collecting and processing large amounts of data quickly and accurately. These systems can be customized to fit the specific needs of the organization and can automate many of the data collection processes, reducing the risk of errors and increasing efficiency (Weygandt, Kieso, & Kimmel, 2015).

On the other hand, manual systems, such as spreadsheets or paper-based forms, may be more appropriate for smaller organizations or for collecting less complex data. These systems may be more flexible and easier to implement but may also require more time and resources to manage. Ultimately, the choice of data collection method should be based on a careful evaluation of the organization's needs and capabilities, in order to ensure that the system provides the most reliable and accurate information possible (Coombs, Hobbs, & Jenkins, 2005).

Choosing also appropriate costing methods is a critical component of designing an effective management accounting system. The selection of the most appropriate costing method is based on the organization's size and the types of products or services it offers (Garrison, Noreen, & Brewer, 2018). A large company, for example, may choose Activity Based Costing as a method to allocate costs to different products, as this method can provide a more accurate allocation of costs although it requires a high level of business organization as well as appropriate tools. On the other hand, a small organization may use a cost center allocation which is less precise than Activity Based Costing but requires less effort in both required skills and resources. Moreover, the choice of costing method should be based on a careful analysis of the organization's operations, the types of costs being incurred, and the level of accuracy required for the information generated by the management accounting system. By choosing appropriate costing methods, managers can ensure that the system provides reliable information for decision-making and helps the organization achieve its goals (Horngren, Datar, & Rajan, 2012).

Another important step involves developing budgeting and forecasting tools. The use of these tools allows managers to plan and control the organization's activities, as well as to anticipate future events and trends. Budgeting involves developing a plan for the organization's future financial activities based on historical data and future projections. This helps managers to allocate resources effectively, make informed decisions, and identify potential areas for cost savings. Forecasting, on the other hand, involves predicting future trends and events that may affect the organization (Prendergast, 2000). This can be done through scenario analysis, which involves evaluating different strategic options based on a range of possible outcomes. By developing effective budgeting and forecasting tools, managers can make informed decisions, anticipate potential problems before they occur, and take proactive steps to address them. Additionally, these tools are essential for ensuring the long-term success and sustainability of the organization (Bhimani, Horngren, Datar, & Rajan, 2015).

Furthermore, identifying performance evaluation metrics is an important component of an effective management accounting system. These metrics are used to evaluate the organization's performance against its goals and objectives and provide managers with valuable insights into how the organization is performing (Kaplan & Norton, 1996). Performance evaluation metrics may include both financial and non-financial measures, depending on the nature of the organization's operations and the goals it is trying to achieve. Financial metrics, such as return on investment (ROI), can provide insight into the organization's profitability and financial health, while non-financial metrics, such as customer satisfaction, can provide insights into the organization's customer base and reputation. By identifying key performance indicators, managers can monitor performance over time and make adjustments to improve results. These metrics can also be used to benchmark performance against industry standards and competitors, providing valuable insights into areas where the organization may need to improve. The use of performance evaluation metrics is critical for driving continuous improvement and ensuring the organization's long-term success (Atrill & McLaney, 2021).

In addition, the integration between the management accounting system and the organization's financial accounting system is essential to ensure that data is consistent and accurate. Financial accounting and management accounting are closely related, and the two systems must work together to provide a complete picture of the organization's financial performance (Brusa, 2012). To integrate the two systems effectively, managers must ensure that the same chart of accounts is used for both systems. This helps to make sure that financial data is consistent and can be easily reconciled between the two systems. Additionally, financial reports prepared by the management accounting system must be consistent with accounting standards to ensure accuracy and compliance. Reconciling data between the two systems is also essential to ensure that the organization's financial statements accurately reflect its financial performance. By integrating the MAS with the financial accounting system, managers can ensure that financial data is accurate and reliable, allowing them to make informed decisions based on a complete picture of the organization's financial performance (Wentworth & Cafferky, 2014).

As could be inferred, each organization is unique, with different priorities, goals, and operational needs, and the management accounting system must be designed accordingly. Thus, customizing the MAS to meet the organization's specific needs is an important step in guaranteeing that the system is effective in supporting decision-making. Customizing the system may involve designing different reports and metrics for different departments or managers to ensure that they receive the information they need to make informed decisions (Langfield-Smith, Thorne, Smith, & Hilton, 2014). Moreover, incorporating additional data sources or analysis tools can provide greater insights into the organization's operations and performance. Customizing the system also involves ensuring that the system is user-friendly and accessible to all managers who need to use it. By tailoring the management accounting system to meet the organization's specific needs, managers can ensure that they have the information they require to make informed decisions and drive continuous improvement in the organization's performance (Epstein, Manzoni, & Davila, 2010).

One of the latest steps in designing a management accounting system is implementing the entire system and ensuring that it is effective in supporting decision-making in the organization. Once the system has been designed, it must be effectively implemented, and employees must be trained on how to use it to maximize its benefits. This may involve providing training on data collection methods, report generation, and analysis techniques to certify that employees have the skills and knowledge necessary to use the system effectively. By providing training, employees can better understand how to use the system and can ensure that data is collected and analyzed accurately (Warren, Reeve, & Duchac, 2018).

A MAS cannot be implemented without the support of management. This commitment goes further than the usual resource commitment made to enhance an existing management accounting system. This discrepancy can be explained in terms of the mental shift required by a new management accounting system for management (Weygandt, Kieso, & Kimmel, 2015). Additionally, management must be eager to pursue a plan for enhancing the operations of the company in order to implement a MAS. The funds invested in implementing a MAS would be wasted if improvement efforts were not made to cut back on or eliminate non-value-added activities and costs.

In order to avoid the most frequent errors that can be found in companies concerning the implemented management control tools, it is necessary to proceed to the design and definition of a control model with a systematic and comprehensive methodology that, starting from the analysis of the current state, concludes with the design or redesign of the control model and its implementation. Moreover, it is essential to provide ongoing support and maintenance to ensure that the system continues to meet the needs of the organization (Weygandt, Kieso, & Kimmel, 2015).

After that the system has been introduced, a regular review and update of the management accounting system is crucial to guarantee that it is providing relevant and accurate information to support decision-making in the organization. This requires a thorough assessment of the system's effectiveness, including the relevance and accuracy of data, the effectiveness of metrics, and the overall impact on organizational performance. This process involves continuous evaluation of the system's strengths and weaknesses, identifying areas for improvement, and making necessary adjustments to ensure that it remains a valuable tool for driving organizational performance (Horngren & Sundem, 2014). Furthermore, updates may be necessary to keep the system current with changing organizational goals, industry trends, and technological advancements. By regularly reviewing and updating the management accounting system, managers can safeguard that it continues to meet the organization's needs and supports informed decision-making at all levels of the organization.

2.1. DESIGNING AND CHANGING MANAGEMENT ACCOUNTING SYSTEMS IN SMEs: LEVERS AND BARRIERS

Small and medium-sized businesses (SMEs) are distinguished by a specific strategic model because they seek a niche positioning, and the strategic process is unstructured (Visconti, 2008). The management model of these types of businesses, which stipulates that the entrepreneur assumes all management responsibilities, is another characteristic that can be attributed to the firm size (Corbetta, 1995).

In the literature, it is frequently emphasized that the use of management accounting tools is inextricably linked to the development of management capabilities, but firms do not always adopt these tools properly, especially if they are small or medium-sized businesses (Aram & Cowen, 1990).

This distinct group of businesses clearly differs from large corporations, and numerous studies have highlighted the importance of these corporations to the overall health of the economy. They account for over 95% of businesses worldwide, employ about 65% of the labor force, and contribute about 25% to GDP (Ballantine, Levy, & Powell, 1998). The EU commission criteria used to identify these businesses are: 10 to 249 employees, revenues of 2 to 50 million euros, and total assets of 2 to 43 million euros resulting in a very high level of entrepreneurial influence on all corporate decisions.

Even though the management accounting system is seen as a crucial component for the success of the company, and it enables management to accomplish goals effectively and efficiently, management accounting tools are not as common in SMEs (Brusa, 2000). When the literature is analyzed, it is not clear what influences the spread of management control. Researchers have identified variables such as the national culture (Hofstede, 1980), as well as internal culture-related variables and firm size (Chenhall, 2003).

Kurniawati, Kurniawan, and Kristiani (2013) assert that SMEs' use of various accounting information depends on their company's characteristics. The accounting information needed by SMEs to make decisions about their operations and evaluate their performance must be provided by documents and records. Accounting data can be used to monitor and manage a company's performance. It implies that the performance of SMEs using accounting information will differ from SMEs not using accounting information. If a company uses accounting information, it will improve the quality of its planning, supervision, and strategic and operational decision-making, which will aid in boosting its business performance.

Studies indicate that many small and medium-sized enterprises (SMEs) do not fully capitalize on the potential of accounting data due to a lack of knowledge and expertise in effectively utilizing such information (Reddaway, Goodman, &

Graves, 2011). Among the management accounting tools commonly employed by SMEs, ratio analysis and the analysis of financial statement items take precedence. These tools often focus on taxation-related concerns and results that are particularly relevant to banks, such as net income, the aging of credits and debts, and overall financial stability. The significance of these indicators is underscored by the fact that banks are compelled to extend credit to undercapitalized businesses (Broccardo, 2009).

Conversely, the tools that enable the alignment of strategy and the identification of key success factors and performance indicators are often overlooked or underutilized in SMEs. Management accounting offers SMEs the opportunity to analyze their income statements, balance sheets, and cash flow statements, providing a comprehensive assessment of their financial position. This valuable information empowers SMEs to identify areas for improvement and make better-informed decisions regarding their finances (Busco, 2006).

Moreover, SMEs can benefit from expanding their utilization of management accounting tools beyond the traditional financial statements. These tools enable a holistic approach to strategic alignment, non-financial indicator monitoring, and efficient process management (Simons, 1995). SMEs must proactively plan for the future to ensure their survival and growth. By leveraging management accounting techniques, SMEs can create comprehensive budgets, forecast sales, and project future cash flows. This information equips SMEs to identify growth opportunities and make strategic decisions accordingly. Additionally, SMEs often face a high level of uncertainty, and informed decision-making becomes crucial for their survival. The utilization of management accounting allows SMEs to analyze relevant data and make well-informed decisions regarding pricing, production, and investments, leading to more favorable outcomes (Drury, 2018).

Furthermore, the use of tools that are not part of those used mostly in small and medium-sized enterprises allow the developing and evolving business strategy, monitoring non-financial indicators as well, and managing processes (Broccardo, 2009). SMEs need to plan for the future to ensure their survival and growth. They can use management accounting to create budgets, forecast sales, and project future cash flows. This information can help SMEs identify opportunities for growth and plan accordingly. Additionally, SMEs face a lot of uncertainty, and they need to make informed decisions to survive. Exploiting management accounting can allow SMEs to analyze data and make informed decisions about pricing, production, and investment. Consequently, this information can help SMEs make decisions that are likely to result in a positive outcome.

According to some authors, the motivation to think strategically, act strategically, and use management tools often come after a firm crisis in smaller businesses (Aram & Cowen, 1990). The daily environmental turbulences highlight the fact that an entrepreneur's management abilities are insufficient to ensure the survival of the company.

However, some factors hinder the adoption of management accounting tools in SMEs, including (Broccardo, 2014):

- Limited resources: SMEs often have limited financial and human resources, which can make it challenging to implement effective management accounting practices. They may not have the funds to invest in sophisticated financial systems or hire experienced management accountants. This can make it difficult to generate accurate financial data and analysis, which can impact decision-making.
- Lack of financial expertise: SMEs may not have access to the same level of financial expertise as larger organizations. This can make it challenging to interpret financial data and use it to make informed decisions. Without a deep understanding of financial analysis, SME managers may struggle to identify the key drivers of financial performance and develop effective strategies for growth.
- Inadequate data management systems: SMEs may not have the same level of technology infrastructure as bigger organizations, which can make it difficult to manage financial data effectively. They may rely on manual processes, spreadsheets, or basic accounting software, which can lead to errors and inconsistencies in financial reporting.
- Difficulty in accessing financing: SMEs may struggle to access financing due to a lack of financial transparency and credibility. Management

accounting practices can help SMEs generate accurate financial data and reports, but without these practices in place, lenders may be hesitant to extend credit.

- Limited strategic focus: SME managers may be focused on day-to-day operations and may not have the time or resources to focus on strategic planning. This can make it difficult to develop long-term financial plans and strategies for growth.

In summary, while management accounting is critical for SMEs, challenges such as limited resources, lack of financial expertise, inadequate data management systems, difficulty in accessing financing, limited strategic focus, and complexity of regulations can make it challenging to implement effective management accounting practices. However, SMEs that are able to overcome these challenges can use management accounting to gain a competitive advantage and achieve long-term success (Lopez & Hiebl, 2015).

In order to surmount these challenges that SMEs have to face, there exist some practices that SMEs can follow (Kurniawati, Kurniawan, & Kristiani, 2013):

- Develop a clear financial strategy: SMEs should have a clear financial strategy that outlines their long-term financial goals and how they plan to achieve them. This strategy should be aligned with the overall business strategy and take into account the organization's strengths, weaknesses, opportunities, and threats.

- Invest in financial systems and technology: SMEs should invest in financial systems and technology that can help them generate accurate financial data and reports. This may include accounting software, budgeting, and forecasting tools, and financial analysis tools. By using technology, SMEs can automate manual processes and reduce the risk of errors and inconsistencies in financial reporting.
- Hire experienced management accountants: SMEs should consider hiring experienced management accountants who have the expertise to interpret financial data and provide insights that can help SMEs make informed decisions. These professionals can also help SMEs navigate complex financial regulations and compliance requirements.
- Implement financial controls: SMEs should implement financial controls to ensure that financial data is accurate and consistent. This may include developing policies and procedures for financial reporting, establishing segregation of duties, and implementing a system of checks and balances to prevent fraud and errors.
- Use financial data to drive decision-making: SMEs should use financial data to inform their decision-making processes. By analyzing financial data, SMEs can identify trends, evaluate the financial impact of different decisions, and develop strategies to improve financial performance.

- Monitor and evaluate financial performance: SMEs should monitor and evaluate their financial performance regularly to ensure that they are on track to meet their financial goals. This may include developing key performance indicators (KPIs) and using financial analysis tools to track performance over time.

In conclusion, small and medium-sized enterprises face unique challenges in managing their financial resources. By adopting specific practices and implementing effective management accounting, small and medium-sized enterprises (SMEs) can enhance their financial management capabilities and improve their overall performance (Wentworth & Cafferky, 2014). These practices yield several benefits for SMEs, including improved financial performance through the optimization of financial resources, cost reduction, and increased profitability. With timely and accurate financial information provided by management accounting tools, SMEs can make proactive decisions, identify growth opportunities, and improve operational efficiency.

Furthermore, management accounting empowers SMEs to gain a competitive edge by providing insights into market dynamics, cost structures, and performance metrics. This enables SMEs to differentiate their products or services, develop effective pricing strategies, and respond swiftly and efficiently to changes in the market (Anthony, Govindarajan, Hartmann, Kraus, & Nilsson, 2014).

Effective management accounting practices also play a crucial role in enhancing SMEs' access to financing. By improving financial transparency and credibility, SMEs can increase their chances of securing financing from lenders, investors, or funding agencies. Reliable financial data resulting from sound management accounting supports loan applications, investment pitches, and negotiations for favorable terms (Ahmad & Zabri, 2016).

Aligning financial goals with the overall business strategy is another key aspect of management accounting. By doing so, SMEs can engage in long-term planning, allocate resources effectively, and manage risks. This strategic approach facilitates sustainable growth, enables SMEs to seize opportunities, and navigate challenges successfully (Warren, Reeve, & Duchac, 2018).

Moreover, reliable financial reporting and compliance with regulations foster stakeholder confidence. Customers, suppliers, investors, and regulatory authorities place greater trust in SMEs that maintain accurate financial records and comply with financial reporting requirements (Hamel, 2007). This enhances business relationships, improves reputation, and opens up opportunities for collaboration and partnerships.

By combining effective management accounting practices with these benefits, SMEs can lay a strong foundation for financial management, mitigate risks, and capitalize on growth opportunities (Brusa, 2012). Furthermore, the adoption of sound financial practices strengthens the overall resilience and competitiveness of the small business sector. With a focus on effective financial management, SMEs can navigate challenges, unlock their growth potential, and achieve long-term sustainability in today's dynamic and evolving business landscape (Horngren, Datar, & Rajan, 2012).

However, to successfully implement management accounting practices, small and medium-sized enterprises (SMEs) need to address critical issues that arise during the process (Ahmad & Zabri, 2016). These issues play a crucial role in shaping the effectiveness and impact of management accounting within SMEs. By recognizing and tackling these challenges, SMEs can optimize their financial management capabilities and achieve sustainable growth. The following key issues are worth considering (Broccardo, 2014):

- Tailoring management accounting tools: One of the primary challenges faced by SMEs is customizing management accounting tools to suit their specific needs, industry dynamics, and resource constraints. Generic management accounting frameworks may not fully align with the unique characteristics and requirements of SMEs. Therefore, it is essential for SMEs to adapt tools such as cost accounting, activity-based costing, and performance measurement frameworks to their specific contexts. By tailoring these tools, SMEs can enhance their relevance and effectiveness in supporting decision-making and performance evaluation.

- Building financial capabilities: Another critical issue is the need for SMEs to invest in developing their financial capabilities. This can be achieved by either hiring skilled professionals with expertise in management accounting or providing training to existing staff. Enhancing financial literacy and understanding of management accounting concepts empowers SMEs to make effective use of financial information and tools. By strengthening their financial capabilities, SMEs can improve their ability to interpret and analyze financial data, leading to more informed decision-making and strategic planning.
- Embracing technology solutions: SMEs often face resource limitations when it comes to managing financial data and adopting advanced management accounting practices. However, embracing technology solutions can help overcome these challenges. Cloud-based accounting software, data analytics tools, and digital platforms offer SMEs the opportunity to streamline financial data management, automate routine processes, and access real-time insights. By leveraging technology, SMEs can enhance their management accounting capabilities and improve their overall financial performance.
- Collaboration with external experts: SMEs can benefit from seeking guidance and collaboration with external experts, such as management accountants, consultants, or industry associations. These professionals

possess specialized knowledge and experience in management accounting and can provide valuable insights and guidance tailored to the specific needs of SMEs. Collaborating with external experts can help SMEs address complex financial challenges, implement best practices, and ensure compliance with regulations.

- Overcoming resistance to change: Implementing management accounting practices often requires a shift in mindset and culture within SMEs. Resistance to change may arise from employees or key stakeholders who are unfamiliar with or skeptical about the value of management accounting. Overcoming this resistance requires effective communication and education about the benefits and value of management accounting. Involving employees in the process, addressing concerns or misconceptions, and highlighting the positive outcomes of management accounting can help create a supportive environment for change. Building a culture that values financial management and supports continuous improvement is essential for long-term success.

By addressing these critical issues, SMEs can effectively implement management accounting practices and unlock the benefits they offer. Improved financial performance, enhanced competitiveness, access to financing, strategic growth, and stakeholder confidence are some of the advantages that SMEs can enjoy by leveraging management accounting effectively (Lucey, 1996). Moreover, a strong financial management foundation contributes to the overall resilience and competitiveness of the small business sector, promoting sustainable growth and success in a dynamic and evolving business landscape (Bhimani, Horngren, Datar, & Rajan, 2015).

2.2. THE EVOLUTION OF MANAGEMENT ACCOUNTING SYSTEMS

In the past 50 years, researchers have debated the issues surrounding the applicability, character, and functions of management accounting systems within organizations (Atkinson A. , 2012). Major changes in the organizational environment that have occurred over the past few decades have fueled this debate, which has become more heated (Marginson & Ogden, 2005).

Organizations today deal with a volatile business climate and escalating market competition. This means that in order to accomplish organizational goals, organizational resources, and processes must be organized and monitored. Management accounting systems are crucial in achieving this goal because they provide the information needed for decision-making (Weygandt, Kieso, & Kimmel, 2015).

In recent years, institutional theories have played an important role in expanding the study of management accounting and management accounting changes to the social and institutional dimensions of management accounting within organizations and their environment (Moll, Burns, & Major, 2006). In particular, from an institutional perspective, the management accounting system is considered to be inseparable from the existing rules and regulations that govern social and organizational life (Covaleski, Dirsmith, & Michelman, 1993). But until a few decades ago, the view of management accounting was different. At that time, in fact, it was not yet possible to speak of a real holistic system, being, in fact, not yet overcome the belief in a distinction between the activities performed within an organization, characterized by a pronounced differentiation of purposes, procedures and attribution of competencies to subjects belonging to entirely distinct roles (Anthony, 1965).

The development of management accounting over the years can be described as an evolution from relatively simple control concepts based on cybernetic[12] processes in formal closed systems to more complex and open controls (Atkinson, Kaplan, Matsumura, & Young, 2011). These more open controls have been developed to meet the management needs of organizations in an increasingly complex and uncertain environment, as well as the need to respond through expanding innovation (Simons, 1995).

The discussion of how management accounting processes change within a broad organizational context became a hot topic of discussion among management

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[12] The term "cybernetic" was coined by Norbert Wiener from the Greek *kubernetes*, the same Greek word from which we derive the word "governor" (Buckley, 1968). In the cybernetics concept, companies are seen as either closed or open systems, and control is seen as a stabilizing factor that keeps the organization on track through (mostly) negative feedback (Vosselman, 2002).

accounting researchers in the late 1980s. According to Johnson and Kaplan (1987), management accounting practices have not changed enough to keep up with changes in the organizational environment and to meet the rising demand for information. The importance of innovation to organizations has been recognized as an essential aspect of survival (Tushman & O'Reilly, 1997).

Studies on the origins and spread of management accounting innovations support the idea that management accounting is influenced by the external and internal environment of the organization (Lapsey & Wright, 2004).

According to Perera, McKinnon, and Harrison (2003) there are three elements that can help with the study of accounting change:

- The significance of inter-organizational pressures on the process of accounting change.
- The importance of focusing on the subjective values, norms, and past experiences of organization actors.
- The accounting practices or mechanisms can help an organization shift from one organizational practice to another by causing changes in how people think and behave as well as in the climate and culture of the organization.

Scapens, Ezzamel, Burns, and Baldvinsdottir (2003) identified four changes in the general business environment that have recently had an impact on management accounting:

- Globalization and customer focus.

- Technological changes.
- Changing organizational structures.
- Fashion and other internal factors.

These studies show that there are numerous causes or drivers for organizational change, especially in the area of management accounting. Change can happen as a result of internal pressures such as a change in the power dynamics of the organization, a change in how to deal with a process or behavioral problems, or changes in organizational size and complexity (Carruthers, 1995). Change can also happen as a result of external sources such as market pressures, government laws, consumer expectations, technology, social and political change (Greenwood & Hinings, 1996). According to Lawrence and Sharma (2002) and Tsamenyi, Cullen, and Gonzales (2006), adjustments can also be made in the pursuit of organizational strategies to increase efficiency. This would imply that businesses can choose to be seen as legitimate on purpose rather than waiting for legitimacy to be bestowed upon them.

Burns and Vavio (2001), introduced the "*Beginner's Guide to Management Accounting Change*", where three perspectives on change are proposed. These perspectives give the change-inspired accounting scholar at least some organization, while also highlighting the subjects that require more investigation right away (Burns & Vaivio, 2001).

The first perspective is the epistemological nature of change. This perspective addresses questions such as: What might be considered organizational change? Burns and Vaivio (2001) emphasize the importance of distinguishing normative demands for change as empirically proven phenomena. They also point out that the change in management accounting is regardless a positive phenomenon. However, innovation in management accounting can be progressive or regressive. The first is to question and transform previously dominant values and practices in order to improve certain aspects of organizational life (instrumental change). On the other hand, regressive change is conscious in nature and maintains existing power structures and limits institutional change (Hopper, Northcott, & Scapens, 2007).

The dichotomy between change and stability is another topic covered in the epistemology of change (Lukka, 2007). According to Scapens (2006), stability and change are not mutually exclusive phenomena but rather have a part to play in the process of change. Similarly, Siti-Nabiha and Scapens (2005), in their study of a Southeast Asian oil company, found that stability and change are not necessarily opposite or opposing forces, but can be interconnected in the process of evolutionary change.

The second perspective is the logic of change, it has to do with why and what motivates the company to initiate the change process. Burns and Vaivio (2001) distinguish management accounting's logic of change as either managed and formal or unmanaged and informal. In the first case, the changes in the management accounts are carefully planned and rationally implemented. From this point of view, the change process becomes something that the organizational actors have intentionally planned. Informal change, on the other hand, is not consciously prepared and rationally executed, and informal elements are reflected in the change process. The logic of change can also be classified as linear or non-linear. The former can be understood as systematic change with clear objectives, organized steps, and agreed procedures, while the latter is composed of disorganized and unpredictable objectives, rapid transitions, and negative stages of development.

Burns and Vaivio (2001) also discuss that change in management accounting can be a revolutionary phenomenon with disruptive consequences for an organization or an innovative phenomenon with a gradual process (Soin, Seal, & Cullen, 2002). Revolutionary change means a fundamental and radical breakdown of rules and order. Burns and Scapens (2000) argue that revolutionary change involves a radical change in the existing order and involves a radical challenge to the institution of government. These changes are probably due to external events such as invasions, recessions, and privatizations. Evolutionary change, on the other hand, is gradual and involves only small, sometimes unconscious adjustments to explicit assumptions. This kind of change involves the emergence of new experiences within a context that is shaped by a confluence of random, systematic, and inertial forces (Burns & Scapens, 2000).

The third, and last, perspective is the management of change which highlights the importance of studying how management accounting change processes have evolved. Burns and Vaivio (2001) suggest that change can be a key force exerted by the top management of an organization. On the other hand, changes in management accounting can be seen as fundamentally localized. This perspective also examines internal issues such as power relations, politics, and organizational culture that may influence the management accounting change process. The management accounting literature suggests that power, politics, organizational culture, and influences at different hierarchical levels of the organization play important roles in the process of management accounting change (Yazdifar, Askarany, Askary, & Daneshfar, 2005).

2.3. THE EVOLUTION OF MANAGEMENT ACCOUNTING TOOLS

In light of all the processes and steps analyzed above that are necessary in order to implement a management control system, management becomes aware that in order to introduce this type of system within the company they need to formulate a strategy that can then be transformed into concrete actions through tools they choose (Warren, Reeve, & Duchac, 2018).

Making a strategy is the task of those in the entrepreneurial hierarchy who hold the top management position, but at the same time, it requires the involvement of the entire organizational structure so that it is shared and implemented starting from the managers down to the various organizational units. Only in this way is the structure itself able to cope with increasing environmental complexities and turbulence. It is from these determinants, that traditional information tools and supports, find a far from marginal role within a process renewed in purpose and principles (David, 2010). There arises, in fact, a new need to jointly consider strategic and operational aspects, an objective that can be achieved by enriching an integrated use of innovative instrumentation oriented to new, strategic variables, such as to expand the range of information produced to support decision-making (Atkinson, Kaplan, Matsumura, & Young, 2011).

For a long time, businesses have shied away from carrying out an activity preparatory to any intent to plan management activity. In fact, the term planning has in itself a dual meaning, understood as a willingness to act, but also as a prediction of action. When performing the most mundane actions in everyday life, every individual is inevitably led to wonder what the consequences of his or her actions will be; not doing so may, in fact, result in reactions that are not always subsequently remediable or even effects whose control after the fact is certainly not feasible (Samson & Bevington, 2012).

Even in business, planning is comparable to an activity in which determinants, internal and external influences risk undermining the exercise itself, if careful reasoning about the future and the consequences that each action may produce is not carried out beforehand (Atrill & McLaney, 2021).

Forecasts, as well as other information systems, need an integration of internal and external information that will assist in improving the budgeting process, In fact, in the latter, as seen in Chapter 1, it becomes increasingly central to formulate hypotheses-objectives along the course of the exercise, which will allow for the prediction of outcome deviations before there is a full realization of them. Predictive models, simulations and budgets, are therefore not alternative management tools but rather integrated supports, belonging to the same technical-informational structure of control, finding, however, repeated usefulness no longer only along the process itself, but rather in support of strategic planning (Horngren & Sundem, 2014).

It was from the second half of the 1980s that companies began to seek new perspectives on cost calculation and recognition, capable of giving greater accuracy and reliability to information supporting decision-making processes and operational choices. The perspective, in some ways, becomes revolutionary, compared to what traditional doctrine has stated: from a management control in which the priority is the achievement of certain expenditure thresholds, we come to a system in which the real challenge is the management and reduction of the cost itself through its determinants (Govindarajan & Shank, 2008).

Underlying the new approaches to cost management and governance, traced to Cost Management tools and strategies, can be identified as a further discontinuity from the past view of business as a decomposition of actions and activities categorized into specific functions or rather areas of responsibility. In fact, this functional view is contrasted with the need to base management accounting on the link between individual activities, necessary for the performance of processes that contribute to the creation of value, no longer only from an internal perspective, but primarily from the perspective of the customer (Warren, Reeve, & Duchac, 2018).

In general, companies choose internal information systems that are primarily created to satisfy the needs of external financial reports. For this reason, Johnson and Kaplan (1987) demanded the creation and application of novel and innovative management accounting techniques.

Since that time, brand-new, "advanced" management methods have been created and distributed, such as the Activity Based Costing (ABC) (Johnson & Kaplan, 1987).

It fits right into the Cost Management toolkit, laying the foundation for a closely related management philosophy called Activity Based Management. The latter focuses on the purpose of wanting to improve the management of activities and processes in order to achieve profit goals (Bhimani, Horngren, Datar, & Rajan, 2015). In ABC, the determination of the full cost of output is done by calculating, first, the determinants of the use of resources in activities (resource drivers) and then the determinants of the "consumption" of activities by individual outputs (activity drivers). Then, after imputing the inputs directly attributable to the activities that absorb them, the costs of the factors employed by several joint activities are apportioned with appropriate drivers (Garrison, Noreen, & Brewer, 2018). After determining the total cost of the latter, the output cost is quantified by identifying the activities to be allocated based on their relatedness to the output itself. It is thus understood that the "management" approach takes over only if one goes to act on precisely these drivers, the management of which makes it possible to reduce, contain and minimize the expenditure of costs for the realization of the output. The determination of the cost of the output, be it a product or a service, through ABC becomes, as a result, only the first step in an analysis expanded, completely shifted to activities, whose ultimate goal lies in the desire to eliminate, to improve what does not create any added value, keeping the gaze focused on "business processes" rather than on individual business areas or units (Proctor, 2012). In the past, companies, in order to achieve a recovery of profitability in a short time short to make up for periods of a major crisis, used to resort to generalized cost "cuts" at various levels of the organization, effective in the short term, less so for long-term competitive preservation. The evolution brought by ABM, aimed at shedding light on the underlying causes of the onset of costs themselves, makes it possible, therefore, to adopt new advanced methods of recovering sustainable levels of efficiency in the long term, thanks to a deeper analysis of the relationships between costs, and the combination of resources and activities determinants of their occurrence (Anthony, Govindarajan, Hartmann, Kraus, & Nilsson, 2014).

Over the years, additional theories have developed whose focus is perfectly aligned with the logic followed by ABM. Prominent among these is Life Cycle Costing as a management philosophy that considers costs throughout the product life cycle. Closely related to this is Target Costing, a tool for prior determination of target cost levels from the study of the customer's price and product requirements (Stewart & Carpenter-Hubin, 2000). The latter, as analyzed above, becomes the focus of attention of firms, no longer oriented exclusively to their own productivity as much as to the creation of value superior to the competition, which satisfies the customer's needs and requirements. In fact, the response of companies to the accentuating climate of competitive complexity and growing threats from an increasingly global market must be to seek strategies that enhance and distinguish their "value proposition." To this challenge, management control must contribute at every stage, since strategy is no longer something limited to an ex-ante exercise, but becomes part of everyday reality through control itself, which is deputed to the implementation and continuous revision of strategic premises (Wentworth & Cafferky, 2014).

Instead, the role of the budget, although, in some ways changed, retains its relevance, even in the most impervious conditions, as a tool for guidance and orientation, capable of accompanying the organization through the uncertainty of the future and orienting it toward action, giving implementation to the new strategic objectives (CIMA, 2006). However, the budget as a rigid forecasting and performance evaluation budget runs the risk of creating a climate of stringent constraint on the actions of members, who, not adequately involved and evaluated to an excessively severe degree, may suffer motivationally. In order to restore the centrality of the budget, some modifications of technical aspects of the instrument should be made to it, as well as corrections in the way the budget itself is employed (Hope & Fraser, 2003).

One of these changes could be to increase the flexibility of the budget. First and foremost, a "flexible" budget should be structured on the definition of certain scenarios on which to base planning objectives, facilitating their modification as the conditions underlying the previously formulated forecasts change. Another factor that can mitigate the static nature of a budget that is traditionally made with standardized caducity, without being modified during the year, is to make periodic revisions through the construction of a so-called "Revised Budget." In this case, flexibility occurs with the reformulation of the original budget by reshaping each of the objectives underlying it, not necessarily by establishing a predetermined periodic cadence during which to reformulate it (Marchi, Marasca, & Chiucchi, 2018).

The budget, in addition to its programmatic function, serves as a comparative standard, at the end of the year, for performance evaluation, a role whose relevance is diminished when it proves problematic to assign objectives, which are not subject to external constraints that compromise their validity over the course of an entire fiscal year. In order for this function to be effectively carried out again, flexible methodologies can be sought, even at this stage, based on the comparison of results, no longer with the original objectives, but with hypotheses-objectives that are continually revised in order to verify their validity, throughout the course of the fiscal year (Braun & Tietz, 2018).

Another change that the budget could undergo is to expand the forecasting time horizon. The planning horizon traditionally understood, corresponds to the current fiscal year, a valid period at the time when one wants to plan "on sight" even considering the uncertainty of the future, on the other hand, however, it runs the risk of considering indicators and target standards that do not find the right correlation with the strategic goals. One solution, which could combine short- and long-term needs, is to implement a progressive budget that allows constant reorientation to the future, through a "rolling" mechanism (hence the name "Rolling Budget"). This type of budget allows, at the end of each reporting period (quarter or half-year), the budget corresponding to the same period, but for the following fiscal year, to be drawn up already at the beginning (Atkinson, Kaplan, Matsumura, & Young, 2011).

This is a new vision, which attempts to go beyond the rigid definition of objectives and targets, to approach a process that, thanks to an expanded vision over the long term, makes it possible to reduce the gap between the strategic plan and the actions prepared day by day. The latter remains the subject of continuous monitoring given by comparison with benchmarks pertaining to multidimensional aspects that focus on the critical levers for competitive success.

At the conclusion of the evidence illustrated, it is therefore not the budget that has totally lost its usefulness, when rather the manner in which it is employed. According to Gary Hamel (2007) the budget more than reinvented, it must be rethought. This statement is intended to restore importance to a tool whose effectiveness has been questioned several times over the years, not wishing, however, to extol its full validity, but rather to emphasize its potential arising from the aforementioned implementation evolutions, which can give the tool a new and strategic role.

It was around the beginning of the 1990s that the academic literature lent itself to the development of application models in response to the limitations of a performance measurement system that used exclusively quantitative-monetary meters. The concept of business performance, as the level of complexity of business management increases, should not remain anchored to the performance of economic efficiency and profitability related to consequences of past actions but should expand to future visions of the factors critical to the achievement of medium- to long-term competitive advantage. In the proliferation of models whose common purpose lies in aligning performance with strategies, the Integrated Performance Measurement System (IPMS), and the more famous Balanced Scorecard (BSC) stand out among the most relevant (Epstein, Manzoni, & Davila, 2010).

The IPMS is a management accounting tool that provides a comprehensive view of an organization's performance. It is designed to integrate financial and non-financial data to provide a balanced view of an organization's performance across multiple dimensions, such as customer satisfaction, employee engagement, operational efficiency, and financial performance. It is considered innovative because it provides a more holistic and comprehensive view of an organization's performance than traditional performance measurement systems. This allows managers to evaluate the organization's performance across multiple dimensions and identify areas for improvement that may not be immediately visible through financial metrics alone (Epstein, Manzoni, & Davila, 2010).

The IPMS is also innovative because it enables organizations to integrate data from multiple sources and systems, such as accounting software, customer relationship management systems, and supply chain management systems. By integrating both financial and non-financial metrics, the IPMS provides a more balanced and comprehensive view of an organization's performance. Furthermore, it is designed to be flexible and customizable, allowing organizations to tailor their performance measurement system to their specific needs and objectives. This means that organizations can focus on the metrics that matter most to them and adjust their performance measurement system as their priorities change over time (Kaplan & Norton, 1996).

Another key innovation of the IPMS is that it supports a more collaborative and integrated approach to performance management. It encourages managers and employees at all levels of the organization to work together to identify performance metrics and goals, track progress, and make data-driven decisions. This helps to create a culture of continuous improvement and ensures that everyone in the organization is working towards the same objectives.

Whereas the BSC is a tool born in 1992 from the insights of Kaplan and Norton (1992), who started precisely from the criticisms of control systems, which the academic world was advancing, to create a system called to verify the consistency between business results and deliberate strategies. This, for many years, turned out to be the original meaning of BSC, a definition that later turned out to be limiting of the purpose and usefulness of the instrument itself (Kaplan & Norton, 1992). The BSC thus finds its origin as a summary performance measurement tool in a system divided into four perspectives of analysis: internal perspective, customer perspective, innovation, and learning perspective, and finally the economic-financial perspective. The innovative scope, in addition to being given by the openness to inclusive performance of customer satisfaction, of the aptitude to know how to create value through product and process improvements and innovations, is given by the causal link, sought between each reference perspective. The key word becomes "integration" between internal and external surveys, between long-term and short-term measures, synthesized by balancing indicators having qualitative, economic-financial, and finally quantitative non-monetary nature (Stewart & Carpenter-Hubin, 2000).

Rather than placing control at the center, BSC places strategy at the center, representing for management, first and foremost, decision support, thanks to the correlation between result indicators with strategic objectives, capable of aligning the organization with them and stimulating understanding of the contribution of each to the achievement of strategic goals (Horngren, Datar, & Rajan, 2012).

One of the greatest implications is precisely the ability to translate strategy into everyday life, through measures that refer to operational processes and the link with the budget, an equally well-known tool of operational planning. Some empirical evidence has shown that there is a possible correlation between the adoption of the BSC in management systems and the way the budget is used. The latter, while remaining a tool with different purposes and methodologies from the Balanced, can with the latter, establish links that allow the planning process to take on a strategic guise, through a greater emphasis on defining objectives that start from the critical success factors identified by the BSC itself. The logic of extending the nature of indicators is, moreover, shifted to the type of budget objectives, with emphasis, especially on objectives that orient to long-term performance, which cannot always be captured through the economic-monetary standards on which the traditional budget model was based (Proctor, 2012).

In conclusion, one can speak of management control in an evolved form as a management system that allows one to maintain a constant vision of the future, of consistency between short-term actions and strategic objectives, and that is aimed at achieving a lasting and stable competitive advantage, even in a complex and changing environment such as the present.

2.4. THE CHANGE OF MANAGEMENT ACCOUNTING SYSTEM

2.4.1. The Burns and Scapens Framework

The understanding that management accounting practices are shaped by and have the potential to be shaped by the institutions that oversee an organization's operations serves as the foundation for the institutional framework developed by Burns and Scapens (2000). Institutions can be seen as imposing formality and social order on human behavior by producing and reproducing stable patterns of thought and processes. However, the organ itself evolves through the systematic process of human behavior. So, there is a duality between action and the institutions that make up that action.

The theories of old institutional economics, structuration theory, and evolutionary economics all had a big impact on the framework that Burns and Scapens (2000) created. For the development of such a model, the studies of Barley and Tolbert (1997) and Nelson and Winter (1982) have been of paramount importance. In particular, the framework is based on the model of Barley and Tolbert and succeeded in implementing it and incorporating its starting idea. Relatedly, we can say, the framework is divided into three main moments:

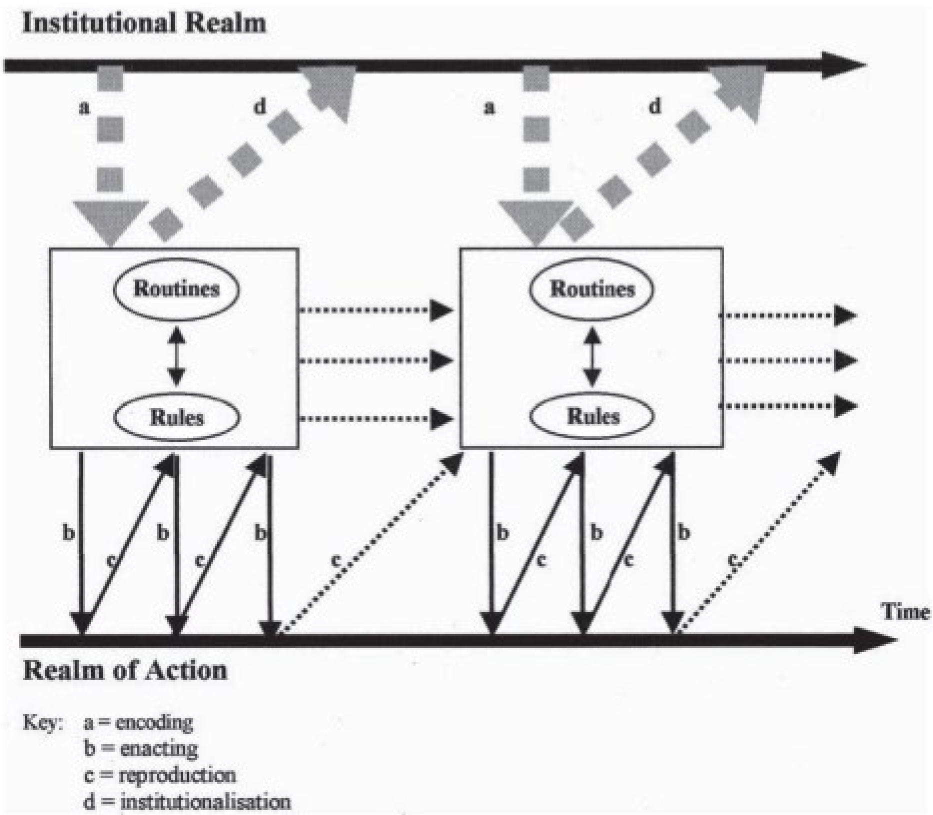
- How management accounting transposes the new rules.
- How the rules become routines.
- How the routines are institutionalized.

As a result, management accounting is depicted as a set of rules and stable routines. The model emphasizes how rules, refer to the formal ways in which things should be done. Moreover, these rules coordinate and give meaning to individual and group actions.

Routines, on the other hand, refer to the informal practices currently in use. Within organizations routines play a fundamental role in the relationship between activities and institutions. Another modification from Barley and Tolbert's model is found in the fact that the institutionalization process is divided into several divided processes (Illustration 2.1):

1. Encoding
2. Enacting
3. Reproduction
4. Institutionalization

Illustration 2.1 Burns and Scapens' Framework



Source - Burns, J., & Scapens, R. (2000). Conceptualizing management accounting change: an institutional framework. Management Accounting Research, p. 9

At the top of the figure, we can see the institutional setting, which influences the ways of thinking and basic assumptions that condition people's behavior. Burns and Scapens define institutions as the categories of actors and the relationships that are created by their activities. Burns adds that institutions inform and shape the actions of individuals, which in turn shape society.

Below we find the actions that are carried out over time by the actors in the enterprise. Both the institutional reality and the reality of actions are connected to and influenced by the rules and routines, which shape the actions taken by people.
The model combines synchronous and asynchronous elements. In particular, the two scholars state that institutions interact with actions synchronously (at a specific moment), which in turn influence institutions asynchronously (through their cumulative influence over time). The (a) and (b) arrows represent the synchronous process, while arrows (c) and (d) represent the asynchronous process.
As we have already pointed out, the institutionalization process follows 4 moments, encoding, enacting, reproduction, and institutionalization.
Arrow (a), represents the codification of existing institutions, still taking for granted the contents of new rules, routines, and procedures that embody organizational values such as management control procedures. Consequently, the new rules or procedures, are interpreted according to the current norms and values of the group.
The term "path-dependent" is introduced, of which it is intended to make clear how routines and existing institutions influence, to some extent, the selection and implementation of the new category of rules and routines. Burns and Scapens emphasize how even revolutionary change, which has at its core fundamental variations in routines and institutions, had a path dependent.
The second process, depicted by arrow (b), refers to the enactment through the corporate structure of activities carried out on a daily basis, incorporating rules and

routines based on institutional principles. Line (b) is represented by a fixed line because according to Burns and Scapens there is a direct link between rules, routines, and actions. Not so for line (a), represented by a dotted line, because again according to the two scholars, the institutions are usually general and the connections much more abstract and indirect.

According to Busco (2006), although this second process results from conscious choices, the result to which one incurs is generally formed by the tacit knowledge that exists among the agents of the enterprise. In addition to this, Burns and Scapens point out that resistance to change is very strong at this point in the process, especially if the new rules and routines produce large changes on established values, and the actors have strong power to intervene in the process of implementing the new rules.

The third process, represented by line (c), represents the reproduction of the rules and routines that become established in business practice over time. This third process can involve conscious and nonconscious changes. Conscious changes occur only when actors are able to learn the motivations for change from old rules to new routines. Unconscious changes occur when rules and routines are not properly shared and accepted by those who work in the company.

The fourth step (line d) focuses on institutionalizing the rules and routines that have been reproduced by corporate human resources. In this process, it denotes a detachment from behaviors due to historical circumstances, so that the new rules and routines take institutional forms. The new set of rules are taken as a reference by most actors. Again, the line (d) is drawn since the institutionalization process is gradual and indirect.

However, Burns and Scapens see institutionalization as a process of sedimentation embedded in everyday practices entrenched in the everyday activities of an organization's life. Organizational practices are disconnected from the against social, economic, and political context in which they are embedded and sometimes imposed. Nor do they consider the connection between organizational practice and the organizational sphere, or the possible influence of social factors or influential actors. The impact of these effects on organizations and actors within organizations should be investigated.

2.4.2. The Seo and Creed's Framework

In order to explain institutional change, the two academics Seo and Creed (2002) proposed a framework based on the dialectical perspective, drawing on Benson's (1977) studies.

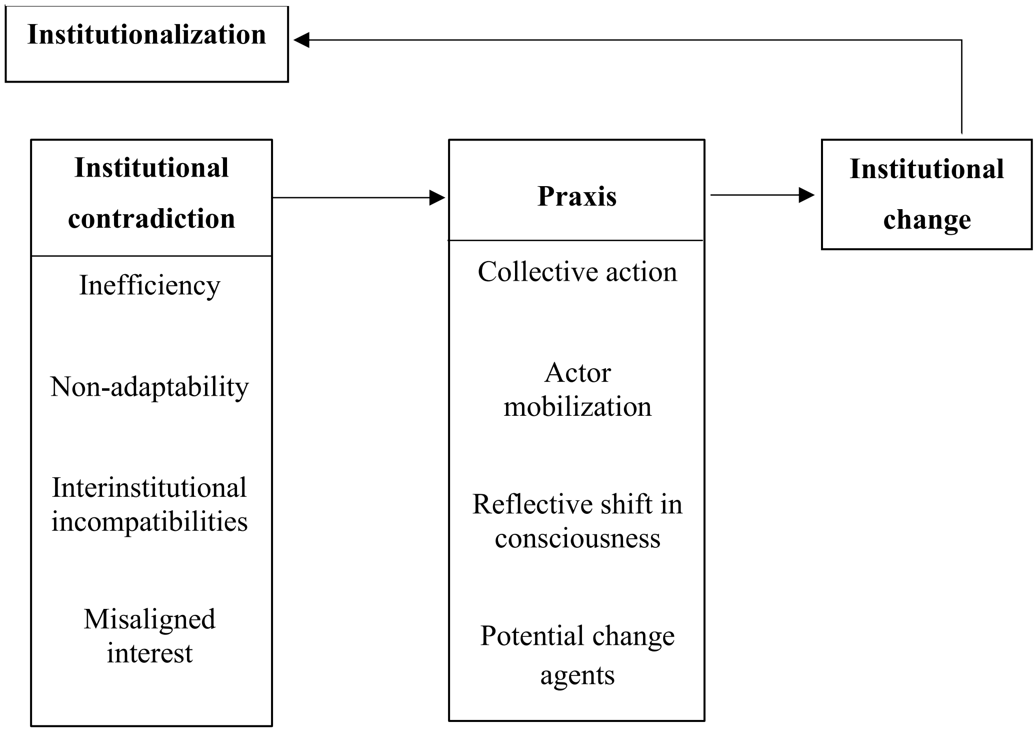
The cornerstone of this theory is based on the fact that institutional change can be understood as the result of dynamic interactions between institutional contradictions and human resource practice.

The concept of "institutional contradictions" is the key to Seo and Creed's model, since it explains, when how and why variables internal to institutional changes can go on to undermine and change their own strengths and other established stable characteristics among the firm's agents. Consequently, institutional contradictions may contain the basis of institutional change itself. These contradictions, generate conflicts to organizational actors and create the conditions for institutional change to take place, as groups or individual actors recognize the need for change, and consequently put their ideas into practice through everyday practice. Such contradictions generate internal ruptures and inconsistencies in corporate social arrangements. All this creates the conditions for institutional change, only after actors have had a perception of such contradictions, recognized their potential, and developed a critical sense necessary for change (Illustration 2.2).

Seo and Creeds identify four forms of contradictions:

- Technical inefficiency
- Lack of adaptation
- Institutional incompatibility
- Divergent interests

Illustration 2.2 Seo and Creed's Framework



Source - Seo, M., & Douglas Creed, W. (2002). Institutional contradictions, praxis, and institutional change: a dialectical perspective. Academy of Management Review, p. 232

First, the push for institutional legitimacy can come at the expense of technical efficiency. Many authors have pointed out that institutional arrangements create conflicts with technical activities and the need for efficiency (Powell, 1991). This dualism creates a strong discrepancy between the functional and technical requirements of society and institutional needs. This difference can be a source of institutional contradictions. Seo and Creeds conclude by saying that even if in the short run institutionalization has constructive goals and seeks technical efficiencies, these goals are not pursuable unless there is a logic of quality, and continuous work.

Second, contradictions can arise from the divergences one has with the external environment. This is because once institutions are put in place, they tend to be taken for granted. As a result, you have that there is no response to the change of external factors. This is all due to the psychological and economic blockade intra-company. Seo and Creed state that although the institutional process is adaptive, once put in place it has the defect of being both psychologically and economically blocked and isolated, such that it no longer responds to changes that have in the external environment. Because of this inability to adapt, spaces are created where, over time, contradictions between the current institutions and their external changes arise.

Third, contradictions result from intra-institutional conformities that give rise to inter-institutional incompatibilities. In other words, conformity to specific institutional arrangements often leads to conflicts with alternative institutions. According to academics, organizations and the people who work in them are becoming more exposed to a variety of institutional arrangements that are oftentimes connected. It follows that, institutional arrangements, are often incongruent with other settings often achieved in different spatial-temporal situations.

The fourth contradiction results from political struggles among the various participants in the business who have divergent interests and conflicting powers. Seo and Creed emphasize how actors whose ideas and interests are not sufficiently served by social beliefs existing social beliefs can act as potential change agents if they become aware of institutional conditions.

These four forms of contradictions just seen are not separate and are not mutually exclusive; on the contrary, they are likely to be interconnected over time. The institutional contradictions are the fundamental driver of change, but it is worth mentioning that they do not necessarily initiate the turning pattern. This because there is an additional step that allows mediation with actual change. This step refers to human resource practices. These are the operations of the actors operating within the enterprise that change the institution (Burns & Baldvinsottir, 2005). Benson (1977) points out that it is people in many circumstances who become the principal agents in change, including rebuilding their own social relations. The "praxis" can be defined as a particular kind of collective action, situated in a socio-historical context, but which is driven by the results of the contradictions of that very social context.

It can be defined as contradictions that create the openings for change institutional change, but it is praxis that encapsulates the "doing" of such change (Seo & Douglas Creed, 2002). Praxis in Seo and Creeds' theory is divided into three components:

- Self-awareness and critical understanding of existing social conditions, and How these conditions do not meet the needs and interests of actors
- Mobilization of actors, starting with knowledge about the institutional arrangements Present and on their own and collective knowledge

- Multilateral actions, including collective actions, to reconstruct social arrangements

A different classification of practices reconnected with human behavior was given by Benson (1977):

3. Reflection, the moment when actors criticize existing institutions and seek various alternatives
4. Action, the moment when mobilization kicks in and collective operations are triggered

Summing this up, we can say that institutional change kicks off from the accumulation of institutional contradictions. At this point, operational practices are triggered internally, which lead to change. Let us not forget that the relationship between contradictions and practices cannot be represented as a causal model linear since other complex internal dynamics may also intervene in the process of institutional change. In fact, Seo and Creed (2002) point out that in their framework they do not suggest that the only elements influencing institutional change are institutional contradictions, crises, and human practice. Instead, they do contend that institutional theories of either orthodox compliance or strategic resistance fail to adequately account for institutionally embedded practice, which is a far more frequent and significant factor in institutional change than either of these theories suggest.

3. MAPPING THE DESIGN OF A MANAGEMENT ACCOUNTING SYSTEM IN TEKNOWOOL

3.1. OBJECTIVES AND RESEARCH METHOD

Over the years, the field of management accounting has witnessed extensive research and discussion on innovation and change (Atkinson, Kaplan, Matsumura, & Young, 2011). Numerous studies have delved into the transformation of management accounting practices, exploring their evolving nature and the challenges faced by organizations in adapting to dynamic business environments (Bhimani, Horngren, Datar, & Rajan, 2015). However, one notable gap in the literature is the limited attention given to the design aspects of management accounting systems, the levers that drive their effectiveness, and the role of management accountants in facilitating this design process, particularly in the context of small and medium enterprises (SMEs) (Ahmad & Zabri, 2016).

While the importance of management accounting system design cannot be overstated, it has often been overshadowed by the emphasis on innovation and change (Broccardo, 2014). The design of a management accounting system encompasses the structure, components, and integration of various accounting tools, techniques, and processes within an organization. It acts as a framework that aligns financial information and decision-making processes, enabling organizations to effectively monitor, control, and plan their operations.

SMEs, in particular, constitute a significant sector of the economy, contributing to employment and economic growth. However, their unique characteristics, such as limited resources and organizational complexity, pose distinct challenges in designing and implementing management accounting systems. Despite the relevance of this topic, studies that specifically address the design of management accounting systems in SMEs remain scarce.

Therefore, the primary objective of the present study is to address this research gap by exploring the design of a management accounting system in an SME. By focusing on this crucial aspect, we aim to shed light on the design principles, levers, and barriers encountered in developing an effective management accounting system in the context of SMEs. Additionally, the study seeks to examine the role of the management accountant in driving the design process and fostering its successful implementation.

By investigating the design of a management accounting system in an SME, this research intends to provide valuable insights and practical implications. Ultimately, it is hoped that this study will contribute to a deeper understanding of the design of management accounting systems, particularly in the context of SMEs, and foster the development of more effective and tailored approaches to meet the unique needs of these organizations.

In order to reach the research aim, the thesis proposes a single, in depth case study of an Italian medium-sized company that has designed its management accounting system from scratch.

The chosen case study method allows for an in-depth exploration of the specific context (Yin, 2003), enabling us to examine the management accounting practices, decision-making processes, and levers and barriers encountered.

To collect comprehensive and reliable data, we utilized a variety of data collection techniques. Interviews (Qu & Dumay, 2011) were conducted with key stakeholders, including the management accounting manager, the CFO, subsidiaries managers, and administrative officers, to gather their perspectives, experiences, and insights regarding the department's functions, goals, and challenges.

Having worked closely with the organization, in particular with the management accountant, direct observation brings a unique insider perspective and deep familiarity with the company's operations and dynamics. This insider knowledge not only enhances our understanding of the case but also provides valuable insights into the intricacies of the management accounting processes and challenges faced within the organization.

These interviews, which lasted for four months with alternating daily frequency, provided valuable firsthand accounts and allowed for a deeper understanding of the management accounting practices and their implications within the company.

Additionally, document analysis (Bowen, 2009) played a crucial role in data collection. By examining relevant documents such as financial reports, budgetary records, and internal memos, we gained access to quantitative and qualitative information that shed light on the management accounting practices, decision-making processes, and their alignment with the organization's goals and objectives. This document analysis complemented the insights gained from interviews and observational data, providing a more comprehensive understanding of the case.

Furthermore, direct observation was employed to immerse us in the day-to-day operations of the management accounting department. By actively observing and engaging with the employees and processes, we gained a firsthand experience of the department's functioning, the challenges faced, and the interactions between different stakeholders. This direct observation facilitated a deeper comprehension of the practical aspects of management accounting within the organization and enriched the overall data collection process.

By employing the case study method and utilizing interviews, document analysis, and direct observation, this research study aims to provide a thorough analysis of the management accounting practices within the company. The combination of these data collection methods ensures a multi-faceted and comprehensive examination of the single case, enabling us to derive meaningful insights and contribute to the existing body of knowledge in the field of management accounting practices.

3.2. THE CASE COMPANY: TEKNOWOOL S.R.L.

Teknowool S.r.l. was founded in 1988 in Milan with two major goals in mind. The first objective was to pioneer the development of innovative thermoacoustic insulation in Italy. Leveraging new technologies, the company aimed to transform rock wool from block into a highly efficient and eco-friendly material. Rock wool, known for its natural properties, recyclability, and durability, proved to be an excellent choice for their insulation solutions. Teknowool set out to revolutionize the industry by introducing cutting-edge techniques and processes.

The second goal of the company was to establish a comprehensive nationwide distribution network. Recognizing the importance of accessibility and availability, Teknowool aimed to ensure that their products reached customers throughout Italy efficiently and effectively. By creating a robust distribution infrastructure, they sought to enhance customer satisfaction and meet the increasing demand for their innovative insulation solutions.

In 1998, a significant milestone was achieved with the birth of Teknowool Sud, which quickly became a key presence for the company in the southern region of Italy. This expansion allowed Teknowool to cater to a broader customer base, further solidifying their market position. Building on this success, Teknowool Adriatico was established in 2007. Today, it stands as the flagship location in terms of both size and revenue, serving as a testament to the company's growth and market influence.

The past decade witnessed an extraordinary phase of expansion for Teknowool. In 2012, Teknowool Triveneto was established, extending the company's reach and reinforcing its presence in the industry. Subsequently, in 2015, Teknowool took a significant step forward by creating four additional subsidiary companies scattered across Italy: Teknowool Roma, Teknowool Lombardia, Teknowool Toscana, and Teknowool Sardegna. This strategic move allowed Teknowool to tap into new regional markets, tailor their offerings to specific local requirements, and strengthen their relationships with customers across the country. These expansions culminated in the formation of Teknowool Holding in 2015, which brought together all the subsidiaries and created a unified entity capable of tackling even more ambitious challenges.

Furthermore, in 2019, Teknowool Holding expanded its business portfolio by acquiring Aerservice Components. This strategic acquisition marked the company's entry into the aeraulic market, which complements and aligns with its existing insulation business. By diversifying its offerings, Teknowool aimed to provide comprehensive solutions to customers and strengthen its position as a leading player in multiple sectors.

With 14 locations throughout Italy, Teknowool Holding opened new horizons for growth, innovation, and market leadership.

Today, Teknowool Holding operates across five different business sectors: construction, industry, nanotechnology, marine, and aeraulic. This diverse portfolio allows the company to cater to a wide range of customers and capitalize on various market opportunities. Each sector brings its unique challenges and opportunities, driving Teknowool's continuous innovation and commitment to excellence.

What sets Teknowool S.r.l. apart is its distinctive approach to its subsidiaries. While the holding company oversees and coordinates the activities of all the underlying companies, each subsidiary is empowered to operate autonomously. This approach ensures that the subsidiaries maintain the characteristics they have developed over time, influenced by the local cultural aspects and the expertise of the people involved. The management firmly believes that embracing the individuality and diversity of each subsidiary leads to enhanced effectiveness and efficiency. By allowing subsidiaries to tailor their working methods to their specific contexts, Teknowool fosters an environment that promotes collaboration, creativity, and local expertise. The company places significant value on the contributions of its employees, recognizing that they play a crucial role in shaping the success of each subsidiary.

In 2021, driven by its expanding operations and the need for more precise cost management, Teknowool made a strategic decision to implement a management accounting system. Prior to this, each location had managed its operations independently without a centralized control figure. However, as the company grew in size and complexity, the need for a reliable and standardized system to calculate product costs became evident. To facilitate this transition, Teknowool hired a seasoned management accountant with decades of experience, Dr. Fabrizio Peretti. This addition to the team was aimed at optimizing cost analysis, streamlining decision-making processes, and enabling proactive, data-driven strategies.

Throughout its journey, Teknowool S.r.l. has remained committed to innovation, sustainability, and the well-being of its employees. By adapting to market demands, embracing local expertise, and fostering strong relationships, the company has become a prominent player in the industry. Teknowool's remarkable growth, financial success, and emphasis on innovation have earned them a reputation as a reliable and forward-thinking organization. Their dedication to people, both within the company and the communities they serve, has become a hallmark of their business philosophy, setting them apart from their competitors.

3.3. CASE ANALYSIS

3.3.1. The Initial Stages: Where did we Start From?

As mentioned in the preceding paragraph, the unique characteristic of Teknowool S.r.l. with its numerous locations, each with its own distinct characteristics, posed unexpected complexities during the early stages of Dr. Peretti’s work. The initial focus of his role revolved around the controlling pillar, which entailed producing a plethora of reports. However, before diving into report development, a comprehensive review of the active cycle's business processes was conducted, and adjustments were made to the ERP system. The objective was to ensure the acquisition of reliable and consistent data across all the different companies within the organization. Before Dr. Peretti’s arrival, the ERP system lacked mandatory fields in the documents, resulting in varying data entry practices among the different subsidiaries. By implementing changes to data acquisition processes, the groundwork was laid for generating accurate and precise reports.

The first report to be tackled was a sales analysis report, involving the participation of sales agents, the logistics and customer service department, as well as the administrative department. This report held significant importance for the company's ownership, as it provided insights into product margins. Dr. Peretti’s role as the management accountant was to identify any missing data or process gaps within the company, allowing for the generation of precise and timely reports. However, this initial objective was not without its challenges. Many employees, being unfamiliar with a management accounting system, initially exhibited resistance to change. Thus, Dr. Peretti’s responsibility extended beyond report generation; he actively engaged with all members of the company, fostering their involvement and enthusiasm in embracing the change.

The second report that was developed was the customer status and past due analysis. This report proved to be an invaluable tool for both the commercial agents and the administration, enabling them to gain insights into customer statuses and outstanding payments. Initially, before the introduction of the management accounting system, the report relied on manual updates in Excel, leading to infrequent and labor-intensive processes. Dr. Peretti's role was to eliminate manual operations and transition to an automated system using business intelligence tools. Moreover, he introduced the concept of the "internal customer", emphasizing that improvements in work processes could contribute to overall efficiency and effectiveness across the entire business chain. Immediately after the introduction of this report, mainly due to the still lack of accurate and reliable data, commercial agents were reluctant toward the tool. However, in a short time, Dr. Peretti was able to collect enough data, accurate and reliable, to be able to provide a report that could be used by all commercial agents, without any errors. Overcoming initial challenges related to data homogeneity and reliability within the report fostered a growing trust and appreciation for the tool among the commercial agents, as they witnessed the benefits it brought to their work and the administration as a whole.

The third phase of reporting involved refining the consolidated report for internal use which contained the financial statements of the holding company and all subsidiaries, as well as some performance indicators. While an initial version of this report existed in manual Excel format, it lacked specificity. In this case, the refinement of the consolidated report went relatively smoothly as Dr. Peretti was able to manage the project independently without much involvement from other departments. The existing report was transformed and implemented in a way that not only provided valuable insights but also served as a performance indicator for assessing the individual companies. The absence of major obstacles during this phase allowed Dr. Peretti to focus on enhancing the report's functionalities and delivering a comprehensive tool for internal analysis.

The final objective of the initial controlling phase was to present the various reports that had been produced thus far to all the dispersed subsidiaries throughout Italy. The purpose of this objective was to introduce and explain the functionalities of the reports, ERP system, and business intelligence tools to the respective departments within each company. Dr. Peretti personally visited each location to present the new tools and provide guidance based on the specific functions performed by each entity. The whole environment gradually became enthusiastic about the new tools that were introduced, which facilitated his work. However, there were some challenges in getting employees from smaller locations to fully grasp the concept that they were part of a larger organization beyond their individual sites. Additionally, the initial unfamiliarity with business intelligence posed a learning curve for many employees, which required additional support and training.

Despite these challenges, Dr. Peretti's efforts to involve the entire company and create a cohesive understanding of the new tools gradually yielded positive results. The enthusiasm and willingness of employees, coupled with Dr. Peretti's guidance, helped bridge the gap between individual locations and instill a sense of unity within the larger organization. Over time, employees became more proficient in utilizing business intelligence tools, unlocking the potential for data-driven decision-making and improved overall efficiency.

In conclusion, Dr. Peretti's early work at Teknowool S.r.l. focused on establishing and refining the management accounting system. Through a meticulous review of business processes, implementation of standardized data acquisition practices, and development of comprehensive reports, Dr. Peretti played a pivotal role in empowering the company to make informed decisions. The initial challenges faced were overcome through active engagement, clear communication, and fostering a sense of ownership and enthusiasm among employees. As the company embraced the benefits of the management accounting system, it laid the foundation for enhanced performance, efficient operations, and a more unified organizational structure (see Illustration 3.1).

Illustration 3.1 - The Initial Stages: Where did we Start From?

Tool	Sales Analysis	Customer Status And Past Due Analysis	Refining Consolidated Report For Internal Use	Presentation of turnover reports to all companies
Pillar	Controlling	Controlling	Controlling	Controlling
Implementation	- AS-IS analysis - Modification of business processes	- At first was a basic work. - Over time it was deepened on insured credits	- Existing excel report modified to serve as a performance indicator. - Report now used for accurate analysis of individual companies. - Report also utilized for reviewing cost imputation	- Present the new tools in the various subsidiaries - Give directions according to the functions performed
Challenges	- Adversity to change - High number of subsidiaries and locations	- Initially salespeople were reluctant. - Making multiple departments work with one purpose	- None in particular because it is managed independently	- The company is divided into many small companies, but they need to be aware that they are part of a larger company. - Many employees did not know how to use BI
Levers	- Sponsorship by ownership. - Being able to involve the whole environment	- Making all stakeholders understand the benefit that the instrument would bring to everyone	- Convey to all the actors the improvements made to the existing tool	- Involvement of the whole environment to make all people within the company involved
Role of MA	- Analysis of active cycle processes and modification of these. - Centralize the management of the ERP system.	- Eliminating all manual operations and importing into BI in an automated way. - Introduction of concept "internal customer"	- Starting from the initial one modified and implemented	- Motivate the reasons for the changes to make it clear why they were introduced.
Departments involved	- Administration - Agents - Logistics and customer service	- Administration - Agents - Subsidiaries managers	/	- Administration - Direction - Logistics and customer service - Purchase

Source – Own elaboration

3.3.2. Consolidating the Role of Management Accounting: Where are we now?

During the second phase focused on strengthening the role of management accounting, the focus shifted towards planning and decision-making within the company, marking a significant milestone in the organization's evolution. This phase involved the implementation of several pillars and the introduction of key tools and processes that would shape the future of Teknowool S.r.l.

The first step in this phase revolved around the sales budget, a crucial element that received extensive support from the management team. Recognizing its importance, the management enthusiastically sponsored this tool within various offices and accompanied Dr. Peretti during his presentations. Before the implementation of the management accounting system, the responsibility of managing the budget fell solely on the shoulders of the company's owner. The owner would personally handle the budget, treating it as a confidential tool for evaluating the achievement of goals. This approach, although effective to some extent, lacked the necessary refinement and comprehensiveness needed to support the company's growth and development.

Recognizing the limitations of this approach, Dr. Peretti began to realize the need for a more robust and expanded sales budget. He understood that a comprehensive sales budget should go beyond simply tracking revenue figures. It should incorporate additional crucial details such as profit margins and the reactivation of customers, allowing for a more thorough evaluation of the company's financial performance.

By expanding the sales budget, Dr. Peretti aimed to gain a deeper understanding of the factors driving the company's revenue and profitability. This required a more granular analysis that delved into the different components contributing to sales, such as pricing strategies, cost structures, and customer segments. With this enhanced level of detail, he aimed to identify areas of improvement and growth opportunities within the company.

The inclusion of profit margins in the sales budget was a pivotal aspect. Dr. Peretti recognized that revenue alone was not a sufficient indicator of the company's financial health. Profit margins provided a more accurate measure of the profitability of each product or service, enabling him to identify high-margin products and focus on optimizing their performance. This shift allowed him to make informed decisions regarding pricing, cost management, and resource allocation, ultimately enhancing the company's profitability.

Additionally, Dr. Peretti acknowledged the importance of customer reactivation in driving sales growth. By incorporating this aspect into the sales budget, he aimed to track the success of initiatives aimed at re-engaging past customers. This enabled him to measure the effectiveness of marketing campaigns, loyalty programs, and customer retention strategies. By monitoring the reactivation of customers, he could assess the impact of these initiatives on sales performance and make data-driven decisions to further improve customer relationships and increase revenue.

Expanding the sales budget was not a one-time effort for Dr. Peretti. He understood that it was an ongoing process that required continuous refinement. As the company evolved and new challenges arose, he made adjustments to the sales budget, incorporating additional details and metrics as necessary. This iterative approach ensured that the sales budget remained relevant and aligned with the company's evolving goals and market dynamics. Although these enhancements aimed to provide more comprehensive insights, they encountered initial resistance from some individuals unaccustomed to the pressure of meeting specific targets.

Dr. Peretti’s role in this aspect was paramount, as he tirelessly emphasized that the budget was not merely a control tool for individuals but a means to monitor the collective achievement of company goals. Furthermore, he faced the challenge of enforcing strict deadlines for budget drafting, as commercial agents often prioritized other facets of their work. Through his unwavering determination and persuasive communication, Dr. Peretti gradually helped the team recognize the value of the sales budget in driving organizational success.

Another pivotal tool introduced during this phase was the purchasing analysis, which had far-reaching implications for the company. To generate accurate and insightful reports, it was imperative to have reliable and consistent data throughout the organization. Unfortunately, the internal working process within the passive cycle at Teknowool did not always adhere to these standards. The purchasing department faced difficulties in consistently uploading all necessary documents into the ERP system, resulting in inaccurate document counts for the administration and leading to longer work times and compromised warehouse management. Recognizing the urgency to rectify this issue, Dr. Peretti assumed the responsibility of transforming the purchasing department's workflow. However, he encountered resistance from individuals who were adverse to change and preferred the familiarity of existing processes, despite their inefficiencies. Guided by his expertise as a management accountant, Dr. Peretti embarked on a mission to explain and motivate the changes, involving all stakeholders gradually and step by step. By showcasing the long-term benefits and highlighting the improvements in operational efficiency, Dr. Peretti managed to sway the majority of individuals within the company, gradually overcoming their resistance to change.

One of the key tools introduced at Teknowool was margin analysis, which aimed to provide valuable insights into the profitability of the company's products or services. However, to generate meaningful and accurate margin analysis reports, a meticulous approach and reliable data were essential.

The process of conducting a comprehensive margin analysis required two crucial components: a detailed turnover report and a reliable cost report. The turnover report provided a comprehensive overview of the company's sales revenue, categorizing it by product, service, customer segment, or any other relevant metric.

This report allowed the management to gain insights into the revenue generated by different aspects of the business and identify areas of strength or untapped potential. On the other hand, the cost report provided an overview of the various costs incurred in the production or provision of goods and services. It encompassed direct costs such as materials, labor, and production expenses, as well as indirect costs like overhead expenses. By analyzing the cost report in conjunction with the turnover report, the management could calculate the margins associated with each product or service, providing a clear understanding of the profitability of different offerings.

To ensure the accuracy and currency of margin calculations, the management accountant played a vital role in performing monthly data corrections. They meticulously reviewed and validated the data inputs, making necessary adjustments or reconciliations to maintain the integrity of the margin analysis. Their expertise in handling financial data and their attention to detail were crucial in ensuring that the reports accurately reflected the company's financial performance.

However, the challenges faced in producing reliable margin analysis reports extended beyond data accuracy alone. The flawed purchasing processes that had been employed in the past had resulted in inconsistent and unreliable data, further complicating the margin analysis. Recognizing this issue, Dr. Peretti, with his expertise and determination, took on the task of rectifying the situation.

Dr. Peretti focused on process improvement, aiming to align the company's purchasing procedures with desired standards. He implemented measures to streamline the procurement process, ensuring that it followed best practices in terms of vendor selection, price negotiation, and contract management. By establishing clear guidelines and improving communication channels with suppliers, he aimed to eliminate inconsistencies and inefficiencies in the purchasing process.

Through Dr. Peretti's meticulous attention to detail and his commitment to process improvement, Teknowool was able to address the challenges in the margin analysis process. The purchasing procedures were rectified, ensuring consistent and reliable data, and the management accountant's role in data correction and validation became more effective. As a result, the company gained access to accurate margin analysis reports, providing valuable insights into the profitability of different products or services and supporting informed decision-making.

Furthermore, Teknowool's business model involves some level of transformation process for specific products called “sleeves”, that is made of insulating material in which the pipes are wrapped. Until before the introduction of management accounting, the production costs of these sleeves were calculated very roughly. Thus, recognizing the importance of accurately calculating the production costs for these sleeves, Dr. Peretti leveraged his expertise to guide the implementation of changes in the recording and analysis of processing costs. This involved a meticulous examination of the various cost components involved in the transformation process of sleeves, such as raw materials, labor, overheads, and any other relevant expenses.

To improve the accuracy of cost calculations, Dr. Peretti initiated changes in the processes of recording and allocating processing costs. He implemented more rigorous cost tracking mechanisms, capturing detailed information on the resources consumed and activities undertaken at each stage of the sleeve production process. This involved implementing cost tracking systems, utilizing technology solutions, and establishing clear guidelines and protocols for cost allocation.

The final tool introduced during this phase focused on inventory management, recognizing its pivotal role within the organization. The objective was to streamline the process of documenting inventory, preventing discrepancies, and avoiding negative inventory balances. Achieving this goal was of utmost importance to Teknowool, as the warehouse served as the central hub for the company's operations. Implementing changes in the warehouse processes posed significant challenges, compounded by the fact that Teknowool operated warehouses in multiple locations scattered across Italy. Nevertheless, Dr. Peretti embraced this challenge and played a crucial role in introducing rotation inventories. This involved conducting meticulous analysis, warehouse by warehouse, to determine the turnover rate of all products. By identifying which products sold most frequently and which ones remained in the warehouses for extended periods, Dr. Peretti facilitated a more optimized inventory management system. This analysis not only improved warehouse efficiency but also had a positive impact on other departments such as purchasing and logistics, streamlining their operations and enhancing overall organizational performance.

In conclusion, the second phase of strengthening the role of management accounting at Teknowool S.r.l. marked a significant milestone in the company's journey. Through the introduction of various tools and processes, Dr. Peretti, as the management accountant, played a pivotal role in driving the organization toward a more efficient and informed decision-making framework. Despite encountering initial resistance and facing numerous challenges, the whole company’s dedication, expertise, and ability to motivate and involve stakeholders contributed to the successful implementation of these tools, setting the stage for further growth and success within the company (see Illustration 3.2).

Illustration 3.2 - Consolidating the Role of Management Accounting: Where are we now?

Tool	Sales budget	Purchase analysis	Margin analysis	Inventory management
Pillar	Planning	Controlling	Controlling	Decision-making
Implementation	- Introduction of the first budget on turnover - Over time details were added.	- Change document upload processes	- It took time because it was necessary to have reliable turnover and cost reports first. - Dr. Peretti had to decide what data to take and what formulas	- Improving the process of uploading all documentation
Challenges	- Many did not know how to do it. - Getting people to accept the pressure of the budget - Getting people to adhere to the timeframe for writing the budget. - Priority was not being given to the budget but to other issues.	- Changing mindset of some people that used to work in a certain way for so long	- The purchasing process used previously had led to skewed data. - A small amount of processing is done for some products, so a cost had to be found for them.	- The warehouse is the focal part of the business. - Bringing changes within the warehouse processes is difficult. - Warehouses located in many locations.
Levers	- The direction cared about it. - The director was always present in external visits.	- Everyone realized that the implemented process worked and made the whole operation	- Management's great desire to know marginality.	- Carrying out these changes in the way of working gave the opportunity to have reliable inventories which is critical.
Role of MA	- He had the budget system introduced within the company. - Made it clear that it was not just a means of control over the individual but for a corporate goal achievement.	- Motivating the changes made on how people work. - Doing it in moderation by putting himself in the background.	- Monthly data correction. - Selection of data and formulas.	- Checking all the negative inventories - Analysis of passive cycle processes
Departments involved	- Agents - Direction	- Purchase - Warehouse	/	- Logistics and customer service - Warehouse

Source – Own elaboration

3.3.3. How barriers were overcome

As highlighted in the second chapter, the importance of implementing a management accounting system is often overlooked by many small and medium-sized enterprises (SMEs). Until 2021, Teknowool followed the same pattern as the majority of SMEs, neglecting the implementation of a management accounting system. However, the management at Teknowool eventually recognized that the sector in which the company operates was experiencing rapid growth. This realization prompted them to understand the necessity of introducing a management accounting system to foster a more organized company with reliable data on costs and revenues. Their overarching goal was to improve and refine all aspects of their business processes, spanning from the warehouse operations to the sales department.

In order to initiate this transformation, Teknowool took its first step by hiring an experienced professional in the field of management accounting. Dr. Peretti, a management accountant with decades of expertise, was brought on board to play a vital role in setting the tone for the company's pursuit of its goals.

The implementation of a management accounting system at Teknowool faced significant challenges related to limited resources, particularly in terms of human capital. This is a common hurdle encountered by many SMEs, as outlined in the literature.

Despite Teknowool's commitment to investing in the projects of their employees and managers, they faced a shortage of sufficiently skilled staff and human resources to effectively implement the management accounting tools. While the company had no reservations about allocating substantial financial resources to these initiatives, the lack of expertise and knowledge within the organization hindered their progress.

The shortage of human resources also placed a strain on the existing workforce. With limited personnel available, employees were often tasked with additional responsibilities and projects related to the implementation of the management accounting system. This increased workload could lead to fatigue and reduced productivity if not managed effectively. It also limited the time and attention employees could dedicate to the implementation process, potentially impacting the speed and quality of the system's integration.

Furthermore, the lack of expertise in management accounting within the organization posed challenges in terms of understanding and fully utilizing the potential of the introduced tools and processes. Employees may have required additional training and guidance to grasp the concepts and functionalities of the management accounting system. This learning curve could slow down the implementation process and potentially lead to inefficiencies in utilizing the system's capabilities to its fullest extent.

To overcome these challenges, Dr. Peretti Took on a larger than usual amount of work and, by evaluating and optimizing workflows and processes, Teknowool streamlined operations and made better use of available human resources.

Additionally, the literature also highlights another significant challenge faced by SMEs – the inadequacy of existing management systems (Ahmad & Zabri, 2016). The enterprise resource planning (ERP) system utilized by Teknowool did not fully support the development and utilization of specific management accounting tools, including activity-based costing. This presented a hurdle in effectively implementing the desired management accounting practices and leveraging them to their full potential. The ERP system's limitations restricted the company's ability to gather accurate cost data and perform in-depth analysis for decision-making purposes.

Recognizing the importance of having robust and suitable management systems in place, Teknowool took proactive measures to address this challenge. They made significant investments over the past two years to enhance their data management system, reinforcing their commitment to improving their management capabilities. The company allocated substantial financial resources, amounting to tens of thousands of euros, to acquire new servers and establish connections between the databases of all their subsidiaries operating in Italy. This initiative aimed to integrate and consolidate data from various sources into a centralized and unified system. By connecting the databases, Teknowool could access consistent and reliable data across the organization, enabling more accurate and comprehensive management accounting practices.

The investment in new servers and data integration laid the foundation for a more robust and efficient management system. It allowed Teknowool to gather, store, and process data more effectively, ensuring the availability of real-time and accurate information for decision-making purposes. The improved data management system facilitated the implementation of advanced management accounting tools, such as activity-based costing, by providing the necessary data infrastructure to support these practices.

By addressing the inadequacy of their existing management system, Teknowool demonstrated their commitment to enhancing their management capabilities and harnessing the power of management accounting for informed decision-making. The investments made in their data management system not only improved their ability to gather accurate cost data but also laid the groundwork for future advancements in their management accounting practices.

This proactive approach taken by Teknowool highlights the importance of recognizing and addressing the limitations of existing systems and infrastructure when implementing management accounting practices. By investing in the necessary upgrades and improvements, SMEs can overcome system-related challenges and unlock the full potential of management accounting in driving performance and growth.

Teknowool's journey in implementing a management accounting system aligns closely with the challenges described in the literature, particularly the need for a cultural shift within the organization (Broccardo, 2014). Introducing new tools and processes often requires a change in mindset and an adjustment to established routines. At Teknowool, this change was met with initial resistance from employees who were accustomed to their existing ways of working.

The management team at Teknowool, led by Dr. Peretti, recognized the importance of overcoming this resistance and actively took on the role of change agents. Their strong motivation to introduce management accounting tools and improve the overall organizational structure became the driving force behind their efforts. They understood that effective implementation would require not only the adoption of new tools but also a shift in the company's culture.

Dr. Peretti's leadership proved instrumental in this process. His expertise in management accounting, combined with his effective communication and engagement skills, enabled him to bridge the gap between the management team and the employees. He took the time to explain the rationale behind the changes and the benefits they would bring to the company as a whole. By emphasizing the positive impact on employees' day-to-day work and the long-term prospects of the organization, he was able to gain their buy-in and commitment to the implementation process.

Engaging all stakeholders involved in the changes was a crucial step in overcoming resistance. Dr. Peretti facilitated open and transparent communication channels, encouraging employees to express their concerns and providing reassurance throughout the transition. He worked closely with department managers and supervisors, ensuring that they understood the importance of the changes and their role in supporting their teams through the process.

Dr. Peretti and the management team also emphasized the benefits of the management accounting system to employees at all levels of the organization. They highlighted how the system would provide accurate and reliable data that could be used to make informed decisions, improve efficiency, and ultimately enhance job performance. By showcasing the value of the new tools and processes, they were able to garner support and collaboration from employees.

The management team's proactive approach to change management, coupled with Dr. Peretti's leadership, resulted in a successful transformation of the company's culture. Over time, employees began to embrace the new management accounting tools and processes as they witnessed the positive impact on their work and the organization as a whole. The resistance initially encountered was gradually replaced with enthusiasm and a sense of ownership over the changes.

Customization of management accounting tools was a crucial aspect of Teknowool's implementation process, and it posed its own set of challenges. The company recognized that off-the-shelf solutions might not fully meet their specific requirements and decided to leverage Dr. Peretti's experience to tailor the tools to their unique needs. This customization ensured that the reports generated by the management accounting system provided relevant and meaningful insights specific to Teknowool's operations.

As the implementation progressed, Teknowool encountered evolving challenges that required further adaptation of the management accounting tools. These challenges could arise from changes in the business environment, shifts in customer preferences, or advancements in technology. The company's agile approach allowed them to modify and refine the tools as needed to keep pace with these changes. Dr. Peretti's expertise played a crucial role in guiding this ongoing customization process, ensuring that the tools remained relevant and effective in supporting the company's decision-making processes.

To effectively tackle these critical issues and ensure a seamless implementation, Teknowool actively sought the collaboration of external experts, particularly IT consultants. These consultants brought specialized knowledge and experience in implementing and maintaining management accounting tools within a business intelligence system. They worked closely with the internal team to understand Teknowool's unique requirements and provided guidance on system configuration, data integration, and report customization.

The IT consultants played a vital role in translating the company's specific needs into technical requirements and configuring the management accounting tools accordingly. They provided valuable insights into best practices and industry standards, helping decision-makers confront complex challenges and make informed decisions. Their expertise and guidance were instrumental in fine-tuning the tools to meet Teknowool's evolving needs and ensuring the sustainability and well-being of the company.

By actively collaborating with external experts, Teknowool was able to tap into a broader knowledge base and leverage the experience of professionals who had successfully implemented management accounting systems in similar organizations. This collaborative approach not only accelerated the implementation process but also ensured that the tools were effectively integrated into the company's existing infrastructure and processes.

Despite the challenges faced in implementing the management accounting system, Teknowool was fortunate to have certain strengths that helped mitigate other common obstacles mentioned in the literature.

One such challenge often encountered by SMEs is a lack of financial experience or expertise. In the case of Teknowool, the management team, along with their experienced managers, possessed the necessary financial knowledge and skills to navigate the complexities of financial analysis and decision-making. They understood the importance of financial data and its role in driving the company's success. By leveraging the data generated by the management accounting system, they were able to inform their decision-making processes with accurate and relevant financial insights.

The management accounting system implemented at Teknowool provided the tools and information required to track and evaluate the company's financial performance over time. This allowed them to monitor key metrics such as revenue, costs, and profitability with precision. By having access to this valuable data, the management team was empowered to make informed decisions regarding resource allocation, pricing strategies, and investment opportunities. The system's ability to provide timely and accurate financial information was crucial in enabling the management team to react swiftly to market changes and optimize their business operations.

In addition to facilitating day-to-day operational decisions, the management accounting system at Teknowool played a vital role in supporting long-term strategic planning. The availability of historical financial data and performance metrics allowed the management team to analyze trends, identify patterns, and forecast future outcomes. Armed with this information, they were able to develop comprehensive and realistic plans for the future, setting ambitious yet attainable goals for the company.

The precise tracking and evaluation of financial performance over time also enabled Teknowool to monitor the effectiveness of their strategies and initiatives. By comparing actual results against projected targets, the management team could assess the success of their actions and make adjustments if necessary. This iterative process of continuous improvement was made possible by the management accounting system's ability to provide accurate and reliable data on an ongoing basis.

In conclusion, the case of Teknowool highlights the importance of implementing a management accounting system in small and medium-sized enterprises (SMEs) to drive organizational improvement and enhance decision-making capabilities. Despite initial challenges such as limited resources and a lack of expertise, Teknowool's proactive approach, led by Dr. Peretti, allowed them to successfully overcome these obstacles and transform their business processes.

By recognizing the sector's rapid growth and the need for reliable data on costs and revenues, Teknowool took the first step by hiring an experienced management accountant. Dr. Peretti's expertise and leadership were instrumental in setting the tone for the implementation process and bridging the gap between management and employees. Through effective communication and engagement, the management team gained buy-in from employees, resulting in a cultural shift that embraced the new management accounting tools and processes.

Teknowool's investment in enhancing their data management system was another crucial aspect of their success. By allocating substantial financial resources, the company established a centralized and unified system, enabling the gathering, storage, and processing of accurate and real-time data. This laid the foundation for advanced management accounting practices, such as activity-based costing, and facilitated informed decision-making throughout the organization.

The customization of management accounting tools to meet Teknowool's specific requirements further enhanced the system's effectiveness. The company's agile approach allowed them to adapt and refine the tools in response to evolving challenges, ensuring their continued relevance in a changing business environment. Collaborating with external experts, particularly IT consultants, provided valuable insights and guidance, accelerating the implementation process and ensuring effective integration into existing infrastructure and processes.

Despite the challenges encountered, Teknowool possessed strengths that helped mitigate common obstacles faced by SMEs. The management team's financial expertise and knowledge enabled them to leverage the data generated by the management accounting system for informed decision-making. The system facilitated both day-to-day operational decisions and long-term strategic planning, empowering the company to optimize business operations and set ambitious goals.

Overall, Teknowool's journey demonstrates the transformative power of implementing a management accounting system in SMEs. By addressing challenges, fostering a culture of change, and leveraging technology and expertise, Teknowool was able to refine their business processes, enhance decision-making capabilities, and position themselves for continued growth and success in their sector. This case serves as a valuable example for other SMEs seeking to unlock the full potential of management accounting in driving performance and achieving their goals.

3.3.4. The Objectives for the Future: where do we want to go?

Teknowool recognizes that achieving effective inventory management is a crucial aspect of their overall business strategy. While the company has made some progress in this area, they have ambitious plans for the future that involve the implementation of a specially designed Warehouse Management System (WMS). This advanced system, based on bar codes, is intended to revolutionize the way the company manages its warehouse operations by enhancing effectiveness, efficiency, and automation.

The introduction of a WMS represents a significant step forward for Teknowool as it aims to streamline and optimize its warehouse processes. The system will leverage barcode technology to track inventory movement, improve accuracy in stock management, enable real-time visibility of inventory levels, and facilitate seamless order fulfillment. By automating various aspects of warehouse management, the WMS will reduce manual errors, minimize the risk of stockouts or overstocking, and enhance overall operational efficiency.

However, the successful implementation of the WMS is contingent upon the deep integration of the modified business processes into the corporate culture. Teknowool recognizes that cultural alignment is critical for the adoption and effective utilization of new systems and processes. The management understands that simply implementing a WMS without fostering a culture that embraces change and values process optimization may limit the system's potential impact.

To ensure the smooth adoption of the WMS and its alignment with the corporate culture, Teknowool plans to embark on a comprehensive change management process. This process will involve communication and engagement initiatives to promote understanding and acceptance of the system's benefits among employees at all levels. It will be essential to highlight how the WMS can simplify their daily tasks, improve efficiency, and contribute to the overall success of the company.

Additionally, training programs will be developed to equip employees with the necessary skills and knowledge to effectively utilize the WMS. Training sessions will not only focus on the technical aspects of operating the system but also emphasize the value it brings to their individual roles and the organization as a whole. By highlighting the benefits of the WMS and demonstrating its alignment with the company's goals, Teknowool aims to foster a sense of ownership and enthusiasm among employees regarding the successful implementation of the system.

Furthermore, Teknowool will establish performance metrics and key performance indicators (KPIs) to monitor the effectiveness and impact of the WMS. These metrics will enable the management to assess the system's performance, identify areas for improvement, and make data-driven decisions to further enhance inventory management processes. Regular evaluation of the WMS's effectiveness will ensure continuous improvement and the realization of its full potential.

In addition to the implementation of a Warehouse Management System (WMS), Teknowool has identified another future objective related to analyzing the rotation index of products within their warehouses. The company plans to establish a new warehouse specifically dedicated to managing products with low rotation indexes. This strategic decision aims to optimize space utilization within the existing warehouses, making it easier to handle and manage products that are sold infrequently.

The establishment of a dedicated warehouse for low-rotation products reflects Teknowool's commitment to efficient inventory management. By segregating these items and housing them in a separate facility, the company can streamline operations and ensure the most effective handling of these specific products. This approach helps create a more organized and efficient warehouse environment, facilitating easier access to frequently sold items while still maintaining appropriate control and management of the low-rotation products.

Dr. Peretti's work will be instrumental in calculating the rotation indexes and producing reports that guide the decision-making process surrounding the establishment of the dedicated warehouse. As a skilled management accountant, Dr. Peretti will leverage his expertise to analyze historical sales data, assess product turnover rates, and determine the optimal inventory levels for low-rotation items.

This analysis will provide valuable insights into which products require dedicated storage and how best to manage them to maximize efficiency and minimize costs.

Dr. Peretti will collaborate closely with the warehouse management team to identify the specific criteria for classifying products as low-rotation items. These criteria may include factors such as sales volume, frequency of customer demand, shelf life, and seasonal variations. By establishing clear guidelines, the company can ensure consistent and accurate classification of products and facilitate effective decision-making regarding their storage and handling.

Once the low-rotation products are identified and segregated, Dr. Peretti will continue to play a crucial role in monitoring and analyzing their performance within the dedicated warehouse. He will regularly generate reports and conduct analyses to assess the efficiency of the warehouse operations, identify potential improvements, and evaluate the financial implications of managing low-rotation items separately. These reports will provide valuable insights to guide the ongoing optimization of inventory management strategies and support informed decision-making.

Furthermore, Dr. Peretti's expertise will extend beyond calculating rotation indexes and producing reports. He will collaborate with the warehouse management team to develop tailored inventory management strategies for low-rotation products. This may include implementing specialized storage methods, optimizing picking and packing processes, and exploring opportunities for product bundling or promotions to boost sales.

Moreover, Teknowool has developed an additional tool, known as the "traveling warehouseman," as part of their overall strategy to improve warehouse management. This innovative approach involves dispatching their most skilled warehouse worker from the Camerata Picena location to all other company locations. The purpose of this initiative is to educate and monitor warehouse staff throughout Italy on efficient warehouse management practices. According to the company's management accountant, this activity is expected to greatly enhance warehouse management across the board. It will contribute to improving various aspects, ranging from accurate recording of individual documents to the overall management of the warehouses. The result will be more precise and consistent inventory data, as well as faster determination of stock values.

Another important future objective for the company is the development of a comprehensive corporate budget, with a specific focus on monitoring corporate performance, particularly in relation to inventory management. This tool is highly desired by the administrative and financial departments, as well as the management accounting department, as it would provide them with an additional means to effectively monitor and control business performance. However, a potential limitation to implementing this tool lies in the corporate mindset. It is possible that those involved in the budget preparation may not fully grasp the importance of this tool and, as a result, may not allocate the necessary time and effort required for its proper execution. In this regard, the role of the management accountant becomes pivotal. He is responsible for enforcing timelines and ensuring the active involvement of all company departments in the budgeting process. By engaging each department, the budget can be prepared in a timely and coordinated manner, aligning with the company's overall goals and objectives.

One of the central future goals revolves around cost accounting, which necessitates a lengthy and arduous preparation process. The ultimate objective of cost accounting is to conduct a precise analysis that allocates fixed costs to individual departments and product lines. Initially, three product categories were identified for this purpose: construction, industrial, and marine. Subsequently, each product had to be classified according to its designated product line. However, several challenges arose during this classification process. It became apparent that many products within the company were not properly classified, requiring additional effort from Dr. Peretti and the team. This endeavor involved weeks of intensive work to accurately assign each product to its respective product line.

Fortunately, the previous period's reporting efforts proved helpful in this complex task. The existence of comprehensive and reliable data related to individual product lines allowed for the extraction of homogeneous and accurate information.

Another challenge was assigning employees to their respective product lines. In this case, the responsibility for the assignment process was delegated to an external consulting service, which handled the payroll and personnel matters. Dr. Peretti initially considered implementing activity-based costing, as discussed in previous chapters. However, due to limitations in the company's ERP system, which was not advanced enough to support such a system, it was decided that implementing activity-based costing would cause more disruption than advantages. As a result, Dr. Peretti opted to shift his approach toward an allocation based on cost centers.

This adjustment in the cost accounting methodology aims to ensure more accurate and insightful financial analysis, enabling the company to gain a comprehensive understanding of the costs associated with each department and product line. It will provide a solid foundation for making informed decisions and implementing effective cost management strategies.

Another significant step undertaken by Dr. Peretti was the meticulous identification of drivers to ensure precise and timely cost allocation. These drivers were carefully chosen using data from 2022 and included the following:

- Turnover: This driver was relatively straightforward to determine since it was readily available in the company's financial statements. However, assigning the total turnover to each individual product line posed a more complex challenge. To overcome this, we relied on reports generated in previous months, which not only listed all the products sold in 2022 but also included their corresponding product lines. This data proved invaluable in accurately allocating the turnover to the respective product lines.

- Number of purchase and sales document lines generated: Calculating these drivers proved to be among the most intricate tasks. After extracting all the purchase document lines from the ERP system, we faced the challenge of assigning the appropriate product line to each individual document line. To accomplish this, we utilized a combination of the ERP system and business intelligence tools. The reports generated in previous periods played a crucial role in assigning the correct product line to each document line. Moreover, we further divided this driver into two separate components: the number of purchase document lines generated without transportation and the number of purchase document lines generated with transportation. This division allowed for a more accurate allocation of costs, specifically for those items that included transportation expenses. However, identifying all the documents with transportation details involved several days of extensive work as we had to compare data from the ERP system, business intelligence, and various Excel tables.
- Square meters of warehouses: While determining the square meterage of each warehouse was relatively straightforward, it required a thorough analysis of all the lease agreements and ownership contracts associated with Teknowool's warehouses. After precisely calculating the square meters of each warehouse, we personally contacted the managers and warehouse operators at each location. This allowed us to estimate the proportion of

warehouse space occupied by the three product lines—construction, industrial, and marine.

- Value of warehousing: Once again, the reports generated in previous months and the ongoing maintenance of inventory management proved immensely helpful in easily determining the total value of each warehouse. This data provided crucial insights for accurate cost allocation.
- Number of total employees: For this particular driver, Teknowool engaged an external consulting agency, the same agency responsible for payroll services, to obtain precise information. They possessed the necessary data to determine which employees primarily worked for each product line. Our access to this level of detailed information was limited, necessitating the involvement of the consulting agency to ensure accurate cost allocation.
- Number of sales employees: To determine this driver, we conducted a meticulous assessment of the sales employees at each location. Through interviews and discussions, we assigned all sales employees to a single product line, corresponding to the primary product line they were responsible for selling. This allowed for a more targeted and precise allocation of costs.
- Total value of purchases: To calculate this driver, we cross-referenced data from the ERP system with the information within the business intelligence tools. We extracted the purchase documents and their respective values from

the ERP system, while relying on the product lines associated with the products within those purchase documents from the business intelligence platform. This comprehensive approach ensured accurate allocation of costs based on the product lines.

Through the diligent identification of these drivers, Dr. Peretti aimed to achieve more accurate and granular cost allocation within the company. The utilization of various data sources, including reports, interviews, and external consultants, ensured a comprehensive and meticulous approach to cost analysis. By allocating costs based on these drivers, Teknowool will gain valuable insights into the specific cost structure associated with each department and product line. This information will facilitate better decision-making, cost control, and performance evaluation, ultimately enhancing the company's financial management capabilities.

Another essential tool that Teknowool plans to introduce in the future is the budget for purchases. This tool is designed to provide the company with greater precision and control over the quantity and quality of its purchases, enabling more specific and targeted planning. The management team is keen to implement this tool as soon as possible as it promises several benefits, including improved organization in inbound logistics and cost savings. Implementing a budget for purchases holds significant potential for Teknowool. It provides a structured framework for planning and controlling the procurement process, enabling the company to optimize its purchasing decisions, negotiate better deals with suppliers, and minimize unnecessary costs. Moreover, a well-designed budget for purchases allows for proactive management of inventory levels, ensuring that the company has the right quantity and quality of materials available when needed, thus avoiding stockouts or excessive inventory carrying costs.

However, as with other budgeting initiatives, engaging the right individuals in the project can present challenges. Not everyone in the organization may possess the necessary training or mindset to work in an organized and forward-thinking manner. The management accountant's involvement is vital in two key aspects.

Firstly, he needs to emphasize the importance and benefits of the budget for purchases to the entire organization, particularly the purchasing department. By effectively communicating the value of this tool, the management accountant can foster a sense of urgency and enthusiasm among the team members, encouraging their active participation.

Secondly, the management accountant must provide guidance and support to the purchasing department throughout the implementation process. This includes offering training programs and resources to enhance their skills and knowledge in budgeting and predictive analysis. By equipping the purchasing department with the necessary tools and knowledge, they can work in a more organized and efficient manner, aligning their efforts with the company's strategic goals.

In addition to education and training, the management accountant can also facilitate collaboration and cross-functional communication between the purchasing department and other relevant stakeholders. This ensures that all parties are on the same page and working towards the shared objective of effective budgeting for purchases. By fostering a culture of collaboration and openness, the management accountant can help overcome any resistance or reluctance that may exist within the organization.

In conclusion, Teknowool's future plans encompass a comprehensive approach to warehouse management, cost accounting, and budgeting. The company's commitment to implementing a Warehouse Management System (WMS) tailored to their needs reflects their dedication to enhancing the effectiveness, efficiency, and automation of warehouse operations. By embracing advanced technologies such as bar codes and leveraging their modified business processes, Teknowool aims to optimize warehouse management, streamline operations, and ensure the efficient handling of low-rotation products through the establishment of a dedicated warehouse.

Furthermore, the introduction of the "traveling warehouseman" concept exemplifies Teknowool's proactive approach to disseminating best practices and improving warehouse management across their various locations. The company recognizes the critical role of the management accountant in engaging and educating the workforce, enabling them to work in an organized and efficient manner while aligning their efforts with the company's strategic goals.

In parallel, the future objectives of developing a comprehensive corporate budget and refining cost accounting processes demonstrate Teknowool's focus on financial management and performance evaluation. By allocating costs accurately and adopting a granular approach to cost analysis, the company will gain valuable insights into their cost structure, enabling informed decision-making, effective cost control, and better evaluation of department and product line performance.

Teknowool's future endeavors emphasize collaboration, education, and the utilization of advanced tools to drive operational excellence and financial success. With the guidance of the management accountant and the commitment of all departments, Teknowool is poised to become a leader in warehouse management, cost optimization, and financial performance within the industry.

By aligning their future plans with their overarching goals, Teknowool is well-positioned for continued growth, improved profitability, and success in a rapidly evolving business landscape. Through these strategic initiatives, the company can confidently navigate the challenges ahead and capitalize on new opportunities, ensuring a prosperous future in the industry (see Illustration 3.3).

Illustration 3.3 - The Objectives for the Future: where do we want to go?

Tool	Inventory management	Company budget	Logistics management	Cost accounting	Purchase budget
Pillar	Decision-making	Planning	Decision-making	Planning	Planning
Implementation	- WMS implementation - Introduction of rolling inventories.	- Try to monitor business performance with a focus on the warehouse.	- Trying to improve processes for inbound and outbound logistics. - Trying to change business processes to bring the company in an orderly.	- Being able to get an analysis that can get to the site and product line.	- Have purchases and plans as accurate as possible using next year's forecasts.
Challenges	- The warehouse is the focal part of the business. - Bringing changes within the warehouse processes is difficult. - Warehouses located in many locations.	- Being able to change the corporate mindset to understand that making a corporate budget is crucial.	- Many people are used to working without clear dates in mind	- Non-accuracy of product line - Data management system that is not advanced to be. - Find the drivers and the numbers that represent them. - Evaluation of the best driver for each account.	- Being able to engage people who do not always have the right training and mindset to be able to work in a certain organized and predictive way.
Levers	- Carrying out these changes in the way of working gave the opportunity to have reliable inventories which is critical.	- Administration and management accounting teams have great motivation to do it	- Easily demonstrate that it can bring great improvement in logistics management.	- Have reports in the BI so that data can be extracted. - Strong management propensity to have cost analyses by location. - External consultant for assigning the employees to product lines.	- Direction pressing to have the most accurate purchases possible.
Role of MA	- Checking all the negative inventories - Analysis of passive cycle processes	- Enforce timelines by involving all corporate departments	- Incentivize and involve people broadening the mindset of working in a more organized way	- Involve figures who will have extra work. - All processes from tool definition to construction.	- Engage and educate the purchasing department
Departments involved	- Logistics and customer service - Warehouse	- Direction -Purchase - Selling	- Logistics and customer service - Purchase	- Administration - External consultant	- Direction - Purchase

Source – Own elaboration

3.3.5. The Evolution of the Management Accountant's Role in Teknowool

As we already mentioned in the first chapter, management accountants hold a vital position within a company, where they perform a wide range of responsibilities to support effective decision-making and financial management. Their primary role is to provide essential financial information, analysis, and insights to the management team.

Management accountants work closely with management to create budgets, forecasts, and financial plans that align with the organization's goals and objectives. They gather and analyze financial data from various sources, ensuring accuracy and completeness, to develop comprehensive financial plans. These plans include revenue projections, expense estimates, and capital expenditure budgets, providing a roadmap for the organization's financial activities.

One key aspect of the management accountant's role is monitoring actual financial results against the budget and forecast. They track financial performance, identify any deviations or variances, and provide regular reports to management, enabling them to make informed decisions and take corrective actions if necessary.

In addition to financial planning and monitoring, management accountants play a vital role in analyzing the cost of production and identifying areas where costs can be reduced to improve profitability. They utilize various techniques, such as cost-volume-profit analysis, to identify cost drivers and recommend cost-saving strategies. For instance, they may suggest outsourcing certain functions, implementing lean manufacturing practices, or negotiating favorable supplier contracts to minimize expenses and maximize profitability.

Evaluating departmental performance is another important responsibility of management accountants. They employ financial and non-financial metrics to measure performance, such as return on investment, customer satisfaction, and employee turnover rates. By conducting performance evaluations, they identify strengths, weaknesses, and areas for improvement, providing valuable recommendations to enhance operational efficiency and effectiveness.

Management accountants also have a significant role in preparing financial reports, including balance sheets, income statements, and cash flow statements. These reports help management understand the organization's financial health, identify trends, and make informed decisions. Moreover, management accountants ensure compliance with accounting standards and regulations, preparing financial reports for external stakeholders such as investors and lenders.

Furthermore, ethical behavior is a fundamental aspect of the management accountant's role. They are responsible for maintaining high ethical standards and ensuring the accuracy and integrity of financial information provided to both internal and external parties. Professional accounting organizations promote ethical conduct and offer certification programs to validate the technical expertise and ethical competence of management accountants.

In small and medium-sized companies like Teknowool, the role of the management accountant expands beyond that of a traditional management accountant. Dr. Peretti, in this case, holds a significant position and assumes multiple responsibilities within the organization. Not only does he fulfill the role of a management accountant by providing financial information for planning, controlling, and decision-making, but he also becomes a catalyst for change within the company's processes.

Dr. Peretti's influence extends beyond his role as a financial expert. He serves as a key liaison and point of contact for various departments within the organization. Whenever there are doubts or uncertainties, employees from different departments seek his office to obtain additional information and guidance. This demonstrates the management accountant's expertise and the trust placed in his knowledge and insights.

Furthermore, due to his frequent visits to the scattered offices across Italy, Dr. Peretti has naturally become the primary point of contact for all subsidiaries, even beyond financial matters. Employees reach out to him for assistance with a range of issues, including those related to information technology. His role has evolved to encompass not only financial responsibilities but also serving as a reliable and accessible resource for problem-solving and support.

Dr. Peretti's expanded role highlights his effectiveness in bridging various departments and functions within Teknowool. He facilitates effective communication and collaboration by providing valuable insights and guidance across departments. His understanding of the organization's financial landscape, coupled with his broader engagement with different teams, positions him as a strategic partner in driving positive change and fostering a cohesive work environment.

The additional responsibilities Dr. Peretti has assumed demonstrate the value he brings to the organization beyond his accounting expertise. His active involvement in addressing departmental queries and IT-related issues reflects his commitment to the company's overall success. Through his multifaceted role, Dr. Peretti, contributes to enhancing operational efficiency, promoting interdepartmental collaboration, and supporting the achievement of Teknowool's objectives.

In addition to his extensive experience within companies, Dr. Peretti's expertise as a management accountant often leads him to be approached with questions unrelated to his primary role. Employees from various departments, such as the purchasing department, frequently seek his guidance on how to record specific types of documents within the ERP system.

Due to his deep understanding of financial processes and systems, the management accountant has become a valuable resource for addressing inquiries beyond his core responsibilities. His knowledge of the ERP system enables him to provide practical advice and assistance to colleagues seeking clarification on recording procedures or resolving issues related to document management.

The fact that employees turn to Dr. Peretti for support outside his main job as a management accountant demonstrates the trust and respect they have for his expertise and problem-solving abilities. Dr. Peretti's willingness to help and share his knowledge not only strengthens interdepartmental relationships but also contributes to the overall efficiency of the organization's operations.

By being a reliable source of information and guidance, Dr. Peretti further solidifies his role as a go-to person within Teknowool. His ability to provide insights and assistance beyond his formal responsibilities reflects his dedication to supporting the smooth functioning of the company as a whole. It also showcases his commitment to fostering a collaborative environment where employees can rely on each other for support and knowledge-sharing.

Overall, Dr. Peretti’s experience and expertise as a management accountant make him a valuable asset to colleagues seeking advice beyond his specific role. His willingness to assist employees from various departments, such as the purchasing department, with questions related to the ERP system highlights his proactive approach to problem-solving and his commitment to the overall success of Teknowool.

In conclusion, within Teknowool, the management accountant’s role extends beyond that of a traditional management accountant. Dr. Peretti’s influence and responsibilities encompass not only financial aspects but also acting as a facilitator for change and a trusted interlocutor for various departments. His expanded role exemplifies the importance of an adaptable and proactive approach in delivering value and fostering a cohesive work environment within a small to medium-sized company.

3.4. READING THE TEKNOWOOL CASE THORUGH THE FRAMEWORK OF BURNS AND SCAPENS

In the second chapter, we delved into the comprehensive theoretical framework proposed by Burns and Scapens, which provides a nuanced understanding of the process of institutionalizing change within organizations. This theoretical framework proves highly relevant and applicable to the case of Teknowool, as we can clearly identify the four distinct stages defined by Burns and Scapens in the various processes and tools that have been introduced since Dr. Peretti's arrival in Teknowool.

The first phase of the theory, known as "encoding" the current assumptions within the institutional framework, which entails describing the organizational values and guidelines. These established rules and routines then form an integral part of the newly introduced organizational values, becoming ingrained in the organization's fabric. In Teknowool, this first phase can be traced back to the "Early Stages" of the implementation process. This phase is characterized by a comprehensive analysis conducted by Dr. Peretti to assess the existing state of the company and identify areas for improvement. Dr. Peretti's analysis involved evaluating Teknowool's current practices, processes, and systems. He examined how the company operated before the introduction of the management accounting system and sought to understand the strengths, weaknesses, and opportunities for enhancement, i.e., the rules and routines within the company.

Moving on to the second process outlined by Burns and Scapens, namely enactment, that occurs through the daily activities of managers, establishing a direct link between the encoded rules and routines and the actions taken by the institute managers. In Teknowool, this second phase occurred after the identification of existing rules and routines within the company and involved the introduction of new tools and processes by the management accountant and the management team. During this stage, the management accountant, Dr. Peretti, together with the management team, faced the challenge of overcoming resistance to change, particularly in long-established rules and routines that had become institutionalized within Teknowool. These rules and routines had been ingrained in the company's culture and operations over time, making it difficult for employees to adapt to new management accounting tools and revised business processes.

Resistance to change is a common occurrence when introducing significant changes within an organization, and Teknowool was no exception. The disruption caused by the introduction of the management accounting system challenged the familiar ways of working and required employees to embrace new methods and approaches. This disruption, coupled with the potential fear of the unknown, often leads to resistance from employees who may be comfortable with the status quo.

To address this resistance, Dr. Peretti and the management team adopted a proactive approach to managing change. They recognized that effective implementation of the management accounting system would require not only the adoption of new tools but also a shift in the company's culture and mindset. They understood the importance of engaging employees and facilitating their acceptance of the changes. Open and transparent communication played a critical role in overcoming resistance. Dr. Peretti and the management team took the time to explain the rationale behind the changes and the benefits they would bring to the company. They emphasized how the new tools and processes would improve day-to-day work, enhance decision-making, and contribute to the long-term success of Teknowool. By clearly articulating the value of the changes, they aimed to gain the buy-in and commitment of employees.

In addition to communication, involving employees in the change process was crucial. Dr. Peretti and the management team encouraged employees to express their concerns, ideas, and suggestions, ensuring that their voices were heard. This involvement gave employees a sense of ownership and empowerment, fostering a more collaborative and inclusive environment.

The third process highlighted by Burns and Scapens involves the reproduction of the new rules and routines, which gradually become embedded in the company's practices over time. This phase encompasses both conscious and unconscious changes. Conscious changes occur among individuals who are receptive to and capable of understanding the motivations for change, embracing the introduced tools and revised business processes with the overarching aim of enhancing the efficiency and effectiveness of the entire company. Conversely, unconscious changes occur when certain employees remain resistant to change, unwilling to abandon their familiar routines and habits, even if they have the potential to contribute to the improvement of the entire business chain.

In Teknowool, the conscious change refers to the majority of the company's employees who, after a short period of time, were able to grasp and appreciate the improvements and benefits brought about by the introduction of management accounting tools and the modification of business processes. These employees recognized that the new tools provided them with better access to information, enhanced data accuracy, and improved decision-making capabilities. As they adapted to the changes, they experienced firsthand how the management accounting system increased their efficiency and productivity, leading to a positive perception of the new processes and tools. This conscious change was driven by the employees' understanding of the tangible benefits and their willingness to embrace the new system.

On the other hand, there were elements within Teknowool who remained reluctant to change even after two years of implementing the management accounting system. These individuals believed that the rules and routines institutionalized prior to the arrival of the management accountant were more productive and effective.

This resistance to change can stem from various factors, such as a preference for familiarity, a fear of disruption, or skepticism about the perceived benefits of the new system. These individuals may have developed a deep-rooted attachment to the old ways of doing things and are hesitant to let go of established practices that they view as successful.

Addressing this unconscious resistance to change requires a focused effort to communicate the advantages and demonstrate the effectiveness of the new management accounting tools and processes. The management accountant, Dr. Peretti, along with the management team, needs to engage with the reluctant employees and address their concerns and skepticism. By providing concrete evidence of the benefits and showcasing success stories from other employees who have embraced the changes, they can gradually break down the resistance and help individuals recognize the value of the new system.

Furthermore, it is important to create a supportive environment that encourages experimentation and learning. By allowing these individuals to test and experience the new tools and processes firsthand, they may start to see the potential benefits that were initially overlooked. Providing additional training and support tailored to their specific needs can also help them overcome the perceived barriers and build confidence in utilizing the management accounting system effectively.

Additionally, it can be beneficial to involve the reluctant individuals in the decision-making process. By seeking their input and incorporating their perspectives into the ongoing improvement and refinement of the system, they can feel a sense of ownership and influence over the changes. This participatory approach can help them overcome their resistance and become advocates for the new system within the company.

Over time, as the reluctant individuals witness the positive outcomes achieved by their colleagues and experience firsthand the benefits of the management accounting system, their resistance may gradually diminish. Continuous communication, reassurance, and support from Dr. Peretti and the management team are crucial in helping these individuals navigate through their reluctance and embrace the changes for the overall success of Teknowool.

Lastly, the fourth step described by Burns and Scapens focuses on the institutionalization of the newly reproduced rules and routines, wherein they become permanently established and replace the previous practices. In the case of Teknowool, we can draw parallels between this phase and the period of "Strengthening the role of management accounting" mentioned earlier. Dr. Peretti's presence and active involvement in the introduction of the new rules and routines played a significant role in facilitating their gradual institutionalization. His expertise allowed him to identify areas where improvements were necessary and develop tailored solutions that fit the specific needs of Teknowool. By working closely with the management team and the employees, Dr. Peretti ensured that the new rules and routines aligned with the company's strategic goals and operational requirements.

The successful institutionalization of the new rules and routines was not a one-person effort. It required concerted efforts from both Dr. Peretti and the entire workforce. Recognizing the importance of employee buy-in, Dr. Peretti actively engaged with the employees throughout the process. He conducted training sessions to ensure that everyone understood the rationale behind the changes and the benefits they would bring. By addressing any concerns or questions raised by the employees, he fostered a sense of ownership and commitment among the workforce.

The employees' active participation in the implementation process played a crucial role in embedding the new rules and routines into the company's culture. As they embraced and internalized the changes, the employees themselves became advocates for the new system. They shared their experiences, best practices, and success stories, creating a supportive environment where the new rules and routines became the norm rather than an imposed change.

Furthermore, the gradual institutionalization of the new rules and routines also required ongoing monitoring and evaluation. Dr. Peretti, together with the management team, regularly assessed the effectiveness of the implemented changes and made necessary adjustments based on feedback and performance data. This continuous improvement approach ensured that the new system remained aligned with Teknowool's evolving needs and supported the company's long-term objectives.

By applying Burns and Scapens' framework to the case of Teknowool, we gain valuable insights into the intricate process of change implementation within an organization. The management accountant’s active involvement and guidance have been critical at each stage of the process, from decoding the new tools to integrating them into the daily operations and ultimately institutionalizing them. The ongoing efforts to institutionalize these changes reflect Teknowool's commitment to growth and adaptation in a rapidly evolving business landscape.

In conclusion, the comprehensive framework proposed by Burns and Scapens sheds light on the multi-dimensional nature of change implementation within organizations. Teknowool's journey, guided by Dr. Peretti’s leadership and the collective efforts of its employees, exemplifies the effective application of this theory. Through clear communication, active engagement, and gradual institutionalization, Teknowool strives to create an organizational culture that embraces change, fosters efficiency and ensures its long-term success in a competitive market.

DISCUSSION AND CONCLUSIONS

The primary objective of the present study was to explore the design of a management accounting system in SMEs. By focusing on this crucial aspect, the study aims to shed light on the design principles, levers, and barriers encountered in developing an effective management accounting system in the context of SMEs. Additionally, the study seeks to investigate the role of the management accountant in driving the design process and fostering its successful implementation.

In order to achieve these aims, the study propose a single in-depth case study, that of Tecknowool S.r.l., which has been designing its management accounting systems for two years.

Consistently with the findings of Broccardo (2014), the case analysis of Teknowool's design of the management accounting system revealed several challenges arising from limited resources and a shortage of skilled staff. The company faced the task of implementing the new system with existing personnel, which led to additional responsibilities and an increased workload for employees. This situation raised concerns about potential fatigue and the ability of the workforce to effectively adapt to the changes. Furthermore, the lack of expertise in management accounting among the staff hindered, at an initial stage, their understanding and utilization of the new tools and processes introduced by the system.

Additionally, the case analysis confirmed the observation made by Broccardo (2014) regarding the impact of inadequate data management systems on the implementation of certain tools. In Teknowool's case, their ERP system was not capable of supporting the implementation of activity based costing (ABC) due to its advanced requirements. As a result, the management accountant had to rely on a cost center-based cost allocation system, limiting the accuracy and granularity of cost information.

To overcome these challenges, Teknowool took proactive measures, in line with the suggestions of Kurniawati, Kurniawan, and Kristiani (2013). The company undertook a streamlining of operations and optimization of workflows to make better use of the available resources. Recognizing the importance of data management, Teknowool made investments in enhancing their data management system, including the acquisition of new servers and the implementation of data integration processes. These improvements aimed to ensure the collection of consistent and accurate data across the organization, which in turn facilitated the implementation of more advanced management accounting tools.

Differently from the perspective presented by Broccardo (2014), the case analysis highlighted the strengths of Teknowool, particularly the financial expertise of the management team, which helped mitigate common obstacles encountered during the implementation process. The newly introduced management accounting system enabled precise financial tracking and provided the necessary information for informed decision-making. It also supported long-term strategic planning by enabling the management team to compare actual results against projections, facilitating continuous improvement efforts.

The successful implementation of the management accounting system in Teknowool demonstrated the company's commitment to overcoming challenges and leveraging its strengths. Through strategic investments in data management and optimization of operations, Teknowool not only addressed resource limitations but also improved its overall efficiency and accuracy in financial analysis. The integration of advanced management accounting tools allowed the company to make more informed decisions and establish a solid foundation for future growth and competitiveness in the industry.

Building upon the insights from Broccardo (2009), it becomes apparent that ratio analysis and analysis of financial statement items are widely recognized as indispensable management accounting tools, particularly within the context of small and medium-sized enterprises (SMEs). Teknowool, in alignment with this observation, prioritized the generation of comprehensive reports aimed at providing a comprehensive overview of the company's financial position to banks and other stakeholders. Such an emphasis on financial disclosure becomes crucial for SMEs, which often grapple with limited capital and rely heavily on credit facilities extended by banks to sustain their operations and foster growth.

In contrast to the assertions made by Busco (2006), Teknowool unequivocally refutes any notion of neglect or underutilization of tools facilitating the alignment of business strategy and the identification of key success factors and performance indicators. On the contrary, the company has demonstrated an active and deliberate employment of a range of management accounting tools. Notably, the implementation of the customer status and past due analysis report showcases Teknowool's proactive approach in monitoring customer accounts and managing credit risks effectively. Additionally, the company diligently employs budgeting processes to establish financial targets and benchmarks for performance evaluation. Looking ahead, Teknowool also has plans to introduce further tools such as inventory management and cost accounting, further attesting to their commitment to leveraging the entire spectrum of management accounting techniques. By embracing these tools, Teknowool endeavors to harness the full potential of management accounting to empower its decision-making processes, facilitating more accurate and well-informed choices that align with its strategic objectives.

Moreover, the case analysis presented by Teknowool challenges the widely held notion proposed by Aram & Cowen (1990) that small and medium-sized firms primarily resort to the adoption of management tools solely in response to crises. In the specific context of Teknowool, the impetus behind implementing a robust management accounting system was not born out of a crisis scenario but rather stemmed from the company's remarkable exponential growth in turnover and overall expansion in size. Fueling this strategic decision was the management team's unwavering ambition to propel Teknowool as a dynamic and thriving organization, actively seeking opportunities for further growth and continued investments. The management accounting system, thus, became an indispensable asset in supporting their aspirations by providing crucial insights, enabling effective resource allocation, and enhancing overall operational efficiency.

The case analysis conducted aligns with the research findings put forth by Anthony, Govindarajan, Hartmann, Kraus, and Nilsson (2014), which underscore the pivotal role of management accounting in enabling small and medium-sized enterprises (SMEs) to attain a competitive advantage. Specifically, it highlights how management accounting facilitates these companies in gaining insights into crucial aspects such as market dynamics, cost structure, and performance metrics. Teknowool's experience further illustrates the practical application of these findings, as the company leverages management accounting tools to enhance its market positioning and achieve differentiation.

One noteworthy tool in Teknowool's arsenal is inventory management, which plays a vital role in their pursuit of differentiation and effective pricing strategies. By utilizing inventory management techniques, Teknowool can closely examine turnover indices and gain a comprehensive understanding of market demand and customer preferences. This detailed insight empowers the company to develop targeted and competitive pricing strategies, allowing them to capitalize on market dynamics effectively. Furthermore, the ability to optimize inventory levels through efficient management practices ensures that Teknowool can minimize costs associated with excess inventory and avoid stockouts.

The case study provides further confirmation of the findings stated by Bhimani et al. (2008), particularly regarding Teknowool's emphasis on customer profitability analysis during the first stages. The company placed significant importance on assessing the profitability of its customers, which is reflected in their dedicated efforts to generate multiple reports for this purpose.

The result of our research shows us how vital it is for the enterprise, especially small and medium-sized ones, as it helps with decision-making, planning, and control. SMEs face challenges from intense competition and rapidly changing external factors. Traditional management systems are insufficient to address these challenges. Management accounting provides SMEs with the necessary tools and information to make informed decisions, align financial goals with strategic objectives, and ensure long-term cost-effectiveness. By leveraging innovative approaches and expanding the role of the management accountant, SMEs can overcome limitations, optimize operations, and achieve sustained growth and competitiveness.

The case analysis supports the study conducted by Hopper, Northcott, and Scapens (2007), confirming the notion that the role of the management accountant has expanded beyond traditional functions, particularly in relation to risk assessment.

Nonetheless, while Hopper, Northcott, and Scapens (2007) acknowledge that his role goes beyond traditional responsibilities, but they are still related to his core functions. In contrast, our case shows also a different outcome, in fact the case study highlights how the management accountant's additional responsibilities within the company extend beyond their core functions. He serves as a vital link between different departments, addressing IT-related issues and offering assistance outside their primary areas of responsibility. This role as a liaison contributes to effective communication and collaboration across the organization.

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