

POLITECNICO DI TORINO

Master of Science in
Engineering and Management

**How the introduction of Financial PMSs
impact SMEs performance operating in
the Italian IAM Wholesale Spare Part
Distributors sector**



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Abstract

Incremental competition in the Italian Independent Aftermarket (IAM) is forcing local Small and Medium Enterprises (SMEs) to exert a tighter control over their performance and financial results. As new big players have entered the market, SMEs were encouraged to introduce performance management systems (PMS) in order to support senior leadership teams with the decision-making process. Nonetheless, the introduction of these systems in SMEs is still scarce due to limitations regarding both SMEs specific characteristics and dynamics (Garengo *et al.* 2005) and characteristics of the traditional performance measurement systems (Busi *et al.*, 2015).

The objective of this dissertation is to investigate whether the introduction of financial PMS in Italian IAM SMEs operating in the Wholesale Spare Part Distributors sector leads to significant improvements in their financial performance. In order to corroborate this hypothesis with high quality and diversified data, two research methods were selected: a research trial involving the development and implementation of a PMS in a SME operating in the Italian IAM; and a quantitative study among 30 companies that operate in the market.

Both methodologies have shown high consistency of results. Statistical analysis of the Income Statement of the company taking part in the trial (before and after the implementation of the PMS) shows that the company has been able to reduce both fixed and variable costs while producing more efficiently. This is corroborated by findings from the quantitative study. As such, this dissertation successfully proves that the implementation of PMS in SMEs operating in the Italian IAM Wholesale Spare Part Distributors sector has a positive impact on company performance, and in particular on cost management and responsiveness.

Résumé

La compétition grandissante au sein du marché secondaire indépendant italien (Italian Independent After Market – IAM) accueille des petites et moyennes entreprises (PME) pour exercer un contrôle plus approfondi sur leurs performances et leurs résultats. L'émergence de nouveaux importants acteurs sur le marché a forcé les PME à introduire des systèmes de gestion de performance afin d'aider la direction à prendre les décisions stratégiques. Selon la littérature, l'influence de logiciels financiers sur les entreprises est majoritairement positive. Néanmoins, l'introduction de ces systèmes sur les PME reste rare due à certaines limitations concernant autant les caractéristiques et les dynamiques de la PME (Garengo et al. 2005) que les caractéristiques des systèmes de gestion de performance traditionnels (Busi et al., 2015).

L'objectif de ce projet de thèse est de découvrir si l'introduction des systèmes de gestion de performance bénéfiques aux PME italiens opérant dans le secteur de la distribution en gros de pièces de rechange. Pour corroborer cette recherche avec des données diversifiées et fiables, deux méthodes de recherches ont été sélectionnées : le développement et l'implantation d'un système de mesure de performance sur une PME en lien étroit avec le marché secondaire indépendant italien (Italian Independent After Market - IAM) et la création d'un questionnaire ponctuel spécifique présenté par 30 compagnies appartenant toutes au même marché.

Les deux méthodologies ont montré une grande cohérence des résultats. Les premiers jets ont été obtenus en réalisant des analyses quantitatives basées sur la déclaration de revenus de la compagnie (avant et après l'implantation de système de gestion de performance) permettent de trouver une correspondance avec les résultats du questionnaire. Par conséquent, ce projet de thèse confirme que la mise en œuvre et l'utilisation des systèmes de gestion de la performance dans les PME italiens du secteur de la distribution en gros de pièces de rechange ont un impact positif sur la performance des entreprises, en particulier sur la gestion des coûts et la réactivité.

Resumen

El aumento de la competitividad en las piezas italianas de *aftermarket*, del inglés *Independent After Market* (IAM), está exigiendo a las pequeñas y medianas empresas (PME) a ejercer un mayor control sobre sus productos y resultados. La aparición de nuevos grandes jugadores en el mercado ha forzado a las PME a introducirse en sistemas de gestión del rendimiento (SGR) para poder soportar la gestión de procesos de toma de decisiones. En referencia a la literatura revisada, la influencia de los sistemas basados en *software* financiero es notoriamente positiva. No obstante, la introducción de estos sistemas en las PME es aún complejo debido a las limitaciones tanto dinámicas de las PME (Garengo et al. 2005) como las características de los sistemas tradicionales de medida (Busi et al., 2015).

El principal objetivo de esta tesis es la investigación de los beneficios de la introducción de SGR en PME italianas del sector IAM, en concreto aquellas que operan en el sector de distribuidores mayoristas de piezas de repuesto. Para poder corroborar este estudio con datos de alta diversidad y calidad se ha hecho uso de distintos métodos. El primer método aplicado es el desarrollo y la implementación de un SGR en una PME que opera en el sector IAM italiano. El segundo procedimiento que se ha usado es la formulación de un cuestionario *ad-hoc* presentado a 30 empresas pertenecientes al mismo mercado.

Ambas metodologías han mostrado una alta consistencia en los resultados. Los primeros datos obtenidos al realizar un análisis cuantitativo en el estado de los ingresos de la compañía, tanto antes como después de la ejecución del SGR, coinciden con los resultados del cuestionario realizado. Como consecuencia, esta tesis confirma que la implementación y el uso de SGR en PME italianas que operan en el sector IAM, las cuales se desarrollan en el área de distribuidores mayoristas de piezas de repuesto, tiene un impacto positivo. En concreto, la mejora se produce en la gestión de costes y la capacidad de respuesta.

Introduction

In today's fast changing business environment, increasingly challenged by a globalised and digital economy, the contribution of *micro, small and medium-sized enterprises (SMEs)* in the creation of value and social wealth is critical. SMEs represent the backbone of the European entrepreneurial landscape, accounting for 99,8% of total enterprises operating in the EU-28 non-financial business sector in 2016. Due to their significant presence, SMEs play a crucial role in the transformation of the European Union's economy into a more competitive and fairer ecosystem. Thanks to their dynamism, workforce flexibility, tight relationship with local entities, responsiveness to change and their innovative potential, SMEs are the key driving force behind the harmonious economic development of a country.

Statistics show that the number of SMEs in the Italian economic landscape is aligned with the European scenery, being SMEs the largest number of enterprises in Italy. In fact, 4.334.767 out of 4.338.085 enterprises in Italy are SMEs; this means that they represent 99,9% of the total Italian entrepreneurial landscape. In the Italian market, SMEs assume particular importance in the automotive Independent Aftermarket (IAM), which boasts over five thousand SMEs. Due to their important presence, they have historically constituted the primary driving force of this sector. The Italian IAM is an interesting market because of its high profits (around 30%) and the increasing compounded annual growth rate (CAGR). As a result of its qualities, this market has become really attractive for big corporations that are entering the market and competing directly with local SMEs.

The incremental competition within the Italian Independent Aftermarket is forcing local SMEs to exert a tighter control over their performances and financial results. As new big players have entered the market, SMEs were encouraged to introduce performance management systems (PMS) in order to support senior leadership teams with the decision-making process. Nonetheless, the introduction of these systems in SMEs is still scarce due to limitations related to SMEs' specific characteristics and dynamics (Garengo *et al.* 2005), and due to characteristics of the traditional performance measurement systems (Busi *et al.*, 2015). As a result, this dissertation has the objective of exploring whether the introduction of PMS in Italian IAM SMEs operating in the Wholesale Spare Part Distributors sector can

lead to uplifts in performance. Therefore, this thesis focuses on the following research question: does the utilization of financial PMS improve the performance of SMEs in Italian IAM Wholesale Spare Part Distributors sector?

Existing literature does not fully address this research question. As a result, research methods for this research project were selected specifically with the aim of collecting *primary data*. To corroborate this research with high quality and diversified data two research methods have been selected:

- A research trial involving the development and implementation of a PMS in a SME operating in the Italian IAM;
- A quantitative study among 30 companies that operate in the same market.

The choice of developing a financial PMS specifically for this research trial was made in order to overcome some of the system-specific limitations cited in existing literature. In doing so, it was possible to make a direct comparison between the company financial performances before and after the implementation of PMS.

Qualitative results obtained during the trial were subsequently tested in a quantitative study in order to verify statistical relevance of the initial findings. The questionnaire was specifically developed to gather information about the actual impact of financial PMS on 30 SMEs operating in the same industry.

In the case that the two research streams provide consistent results, this would lead to a clear argument in favour of confirming the research hypothesis. However, in the case that results of the two research streams are contrasting, new research would be required in order to validate or refute the research hypothesis.

1. SMEs in the European and Italian economic landscape

1.1 SMEs in the European Union

In today's fast changing business environment, increasingly challenged by a globalised and digital economy, the contribution of *micro, small and medium-sized enterprises (SMEs)* in the creation of value and social wealth is critical. SMEs represent the backbone of the European entrepreneurial landscape, accounting in 2016 for the 99,8% of the total enterprises operating in the EU-28 non-financial business sector¹. In the same year, SMEs accounted for the 67% of the EU-28 non-financial business sector total employment (employing 93 million people) and generated around 4.030 Trillion Euro of value added, the 57% of value added created by the whole sector (Table 1.1). Moreover, the impact that these companies have on the EU economy and social environment is even more relevant if considered that almost 93% of the SMEs are *micro* SMEs, employing less than 10 people (European Commission, 2017).

Table 1.1. SMEs and large enterprises: number of enterprises, employment and value added in 2016 in the EU-28 non-financial business sector (*source: Eurostat, National Statistical Offices, and DIW Econ*).

	SME	Large	Total
Number of enterprises			
In thousands	23.849	45	23.894
In % of total enterprises	99.8%	0.2%	100%
Number of people employed			
In thousands	93.049	46.665	139.714
In % of total employment	66.6%	33.4%	100%
Value added			
In EUR Trillion	4.030	3.065	7.095
In % of total value added	56.8%	43.2%	100%

¹ This sector includes all the sectors of the economies of the EU-28 Member States, except 'financial services', 'government services', 'education', 'health', 'arts', 'culture' and 'agriculture, forestry, and fishing'.

The official definition of SME can be found in the recommendation No. 2003/361/EC, which was adopted by the European Commission on 6th May 2003. According to this definition, the classification of an enterprise as SME is based on three main factors: number of people employed, level of turnover and size of the balance sheet. The abovementioned recommendation defines a SME as follows: "The category of micro, small and medium-sized enterprises (SMEs) is formed of enterprises which employ fewer than 250 persons and which have an annual net turnover of up to 50 million euro and/or hold total assets of up to 43 million Euros" (Excerpt from Article 2 of the annex to Recommendation 2003/361/EC, The official Journal of the European Union).

The overwhelming majority of companies in the EU-28 non-financial sector is composed by micro-enterprises (93%) which employ less than 10 people. Small-enterprises employ between 10 and 49 people and account for the 5,8% of the total enterprises in the EU-28 non-financial sector. Only the 0,9% are medium-sized enterprises which employ between 50 and 250 people. Even though the large majority of SMEs are micro enterprises, the contribution to the overall EU-28 non-financial sector employment is almost equally distributed between the categories: micro enterprises contribution is 29,8%, small-size enterprises contribution is 20,0% and the medium-size contribution is 16,7% (Table 1.2).

Table 1.2. SMEs: number of enterprises and employment in 2016 in the EU-28 non-financial business sector (*source: Eurostat, National Statistical Offices, and DIW Econ*).

	Micro	Small	Medium
Number of enterprises			
In thousands	22.232	1.392	225
In % of total enterprises	93.0%	5.8%	0.9%
Number of people employed			
In thousands	41.669	27.982	23.398
In % of total employment	29,80%	20.0%	16.7%

1.2 SMEs: a key asset for the European socio-economic environment

Micro, small and medium size enterprises (SMEs) play a crucial role in the transformation of the European Union economy in a more competitive, fairer and growing ecosystem. According to the literature, the importance of SMEs consists mainly in their contribution towards the economic growth of the states, in the significant number of people that rely on them (both directly and indirectly) and in their strong influence on the process of achieving socio-economic objectives such as poverty and unemployment reduction (Ciubotariu, 2013).

The close relationship between SME and social impact makes the role of SMEs even more important in today's society and economy. It can be demonstrated that a successful and efficient SMEs development programme has positive impacts on the overall social environment. As first instance, the development of SMEs implies numerous possibilities of job creation. This has a significant effect on the unemployment rate, which will be strongly lowered, leading to the reduction of the demographic problems caused by augmentation of life expectancy. In addition, the development of the SMEs sector can help raising productivity and competitiveness, increasing the global wealth generation and involving higher income both overall and per capita. As a consequence, the increment of wealth generation fosters the structural transformation through larger investments in innovation and advanced technologies affecting the society as a whole (Oualalou, 2012).

The impact of SMEs on the social environment is not only limited to a global scale. SMEs help regional and local development, foster social cohesion and contribute to the reduction of inequalities. In fact, the income increase of a larger section of population creates higher demand for a better governance (Note on "the role of small and medium-sized enterprises in the Mediterranean basin" prepared by the Aston Centre for Europe for the members of Arlem's Ecoter commission).

It can be argued that, thanks to their dynamism, workforce flexibility, tight relationship with local entities, responsiveness to change and their innovative potential, SMEs are the key driving force for a harmonious economic development. As a consequence, they contribute to the positive development of the society in general by creating new jobs,

reducing inequalities, addressing demographic problems and by increasing the global wealth generation both at a global and individual scale.

1.3 SMEs in the Italian economic landscape and in the Italian IAM

Statistics show that the number of SMEs in the Italian economic landscape is aligned to the European situation, being SMEs the largest number of enterprises in Italy. In fact, 4.334.767 out of 4.338.085 enterprises in Italy are SMEs; this means that they constitute the 99,9% of the total Italian enterprises. Moreover, they employ more than 16 million people, that is the 70% of the total Italian employment (Istat, 2017). As it can be observed in the European economic landscape, the Italian micro-enterprises are the large majority within the Italian SMEs (95% of Italian SMEs; 2,1p% higher than the European average). Small enterprises account for the 4,5%, while only 0,5% are large enterprises (Confcommercio, 2009). Their prevalent presence in the Italian economic landscape makes SMEs the most important assets for the Italian economy.

Taking into account the Italian situation, it can be noticed how the importance of SMEs is critical in the automotive Independent After Market (IAM). Over five thousand SMEs constitute the primary driving force of this sector. The automotive IAM is the secondary market of the automotive industry and it is mainly focused on the manufacturing, remanufacturing, distribution, retailing and installation of accessories, vehicles parts, chemicals and equipment after the sale of the automotive from the Original Equipment Manufacturer (OEM) to the customers. These replacement parts or accessories can be manufactured also by third-party companies, which constitute the automotive independent after market. The aftermarket provides a wide range of parts characterized by different prices and qualities that are suitable for almost any type of vehicles and models.

The Italian IAM is an attractive market mainly because of its high profits (around 30%) and the increasing compounded annual growth rate (CAGR). The Italian Independent Aftermarket is composed by more than five thousand Limited Companies between Component Manufacturers, Wholesale Spare Parts Distributors and Spare Parts Retailers. This thesis narrows down its focus to the Wholesale Spare Part Distributors sector because it is characterized by one of the highest gross margin (34,7%) and it the sector in which the Research Centre “Competitive Risk and Enterprise Value” of the Polytechnic of Turin set

up the Market Observatory whose mission is to develop models and metrics for measuring business performance. This experience represents a considerable contribution to this research, providing a significant amount of information and contacts of SMEs currently operating in the Italian IAM Wholesale Spare Part Distributors sector.

The market overview of the Wholesale Spare Part Distributors sector over the last 5 years shows that the market opportunities are increasing (the market is expanding with a CAGR of +6% between 2013 and 2017), but the overall marginality of the sector is decreasing. In fact, the gross operating margin of the top 12 enterprises in 2017 is on average 34,7% (-1,7p% as against 2013), while it is 30,2% for the others (-0,4p% compared to 2013). Following the same trend, the return on capital employed (ROCE) of the top 12 companies in 2017 shows an average of 5,6% (-2,1p% as against 2013), while the one of the other companies is slightly increasing, bringing the average ROCE to 8,5% (+0,7p% compared to 2013). In addition, the net profit is increasing for all the players in the market. The average net profit for the top 12 companies is 177.351 k€, +60k€ in comparison to 2013 while the average is 17.117k for all the other companies in the market. (Guelfi, 2018).

This market has become really attractive for big companies due to its incremental growth over the past few years and its high margins. In fact, new big players are entering the Italian IAM Wholesale Spare Part Distributors sector, competing directly with local SMEs. Two patterns can be highlighted: the gap between the big enterprises and the small ones has significantly widened, resulting in an increased number of small companies acquired by bigger ones; foreigner big companies are entering the market due to its high attractiveness. As a consequence, it can be noticed a deepening polarization of the market where only big players are involved.

1.4 Research Question

The incremental competition within the Italian Independent Aftermarket is forcing local SMEs to exert a tighter control over their performances and financial results. As new big players have entered the market, SMEs were encouraged to introduce performance management systems (PMS) in order to support senior leadership teams with the decision-making process. Nonetheless, the introduction of these systems in SMEs is still scarce due to limitations related to SMEs' specific characteristics and dynamics (Garengo *et al.* 2005),

and due to characteristics of the traditional performance measurement systems (Busi *et al.*, 2015). As a result, this dissertation has the objective of exploring whether the introduction of PMS in Italian IAM SMEs operating in the Wholesale Spare Part Distributors sector can lead to uplifts in performance. Therefore, this thesis focuses on the following research question: does the utilization of financial PMS improve the performance of SMEs in Italian IAM Wholesale Spare Part Distributors sector?

1.5 Literature review

Since the mid-1980s, the study of *Performance Management Systems* application on businesses has incrementally drawn the attention of many researchers. A PMS is a balanced and dynamic system which gathers, elaborates and analyses business information in order to support the management in the strategic decision-making process (Neely *et al.* 2002).

In recent years, the growing complexity of the competitive landscape and of the SMEs processes has highlighted the need for a transformation in two main directions: a change in the managerial culture and a more structured and rationalized management system (Bernardi and Biazzo, 2003; Marchini, 1995; Martins and Salerno, 1999). In fact, even though SMEs are significantly strengthening their technical and technological position, more formalized managerial practices are still missing.

Even though the adoption of performance monitoring tools would be required, SMEs are facing several difficulties because of two main reasons: limitations due to SMEs specific characteristics and dynamics (Garengo *et al.* 2005) and limitations due to the characteristics of the traditional performance measurement systems (Busi *et al.*, 2015).

According to Garengo, Piazzo and Bititci, the complexity of SMEs ecosystem deeply influences the introduction of PMS in the company. In fact, it would have to deal with *exogenous* barriers like limited financial and human resources and with *endogenous* barriers like short-term strategic planning and the negative perception of PMS. This perception is a result of their consideration as a cause of rigidity and a source of bureaucratisation.

Some of the most important characteristics of a SME, which are considered as obstacles in the PMS implementation, are listed and explained as follow:

- *Managerial capacity.* The technical or operational excellence is the only factor on which SMEs focus. In addition, managerial tools and techniques are perceived of being of little benefit to the management because SMEs usually lack of a strong managerial culture (Marchini, 1995);
- *Limited capital resources.* The financial contribution needed to implement a customised PMS is proportionally heavier in SMEs than in large companies (Barnes *et al.* 1998; Hvolby and Thorstenson, 2000). Moreover, the lack of affordable software-based tools makes their introduction in SMEs even more difficult (Bititci *et al.* 2002);
- *Reactive approach.* SMEs tend to be short-term oriented by using a reactive approach to manage different activities, instead of a predictive approach. This is due to the lack of explicit strategies and methodologies to support and control processes, together with the poor strategic planning and the informal decision-making process (Brouthers *et al.* 1998; Marchini, 1995);
- *Tacit knowledge and little attention given to the formalization of processes.* The lack of formalized process management and the knowledge characteristics, which is mostly tacit and context-specific, make it difficult to collect the information required for a successful implementation of a PMS (Jennings and Beaver, 1997; Marchini, 1995; Martins and Salerno, 1999);
- *Misconception of performance measurement.* An effective implementation and use of a PMS in a SME is possible only if the company understands the advantages of the PMS. SMEs do not often recognize the potential benefits of adopting a PMS (Bourne, 2001).

Besides SMEs specific characteristics, some other aspects can threat the adoption of PMS. In particular, according to the study made by Busi, Alfnes and Fauske in 2015, it is possible to identify some limitations of the current structure of PMS (Table 1.3). The authors have classified these limitations into four main categories: performance measurement (focal firm perspective); KPIs; supporting technology and performance measurement (supply chain perspective). For the sake of simplicity, the performance

measurement (supply chain perspective) will not be taken into consideration in the table below because it is not directly correlated with the scope of this thesis.

Table 1.3. Limitations of traditional performance measurement systems (adapted from Busi *et al.* 2015).

Groups	Limitation of traditional PMS	Reference
Performance Measurement (Focal firm perspective)	Encourage short-termism	Neely (1999)
	Lack strategic focus and fail to provide data on quality, responsiveness and flexibility	Neely (1999)
	Encourage local optimisation	Neely (1999); Busi (2004); Busi et al., (2003); Busi and Strandhagen (2004); Chan (2003)
	Do not encourage continuous improvement	Neely (1999)
KPIs	Mainly making use of lagging measures (i.e. historical PMS with out-of-date and irrelevant information)	Ghalayini et al. (1997); Holmberg (2000); Love and Holt (2000); Bititci et al. (2002); Hudson et al. (1999); Busi et al. (2003); Busi and Strandhagen (2004)
	Lack of predictive ability to explain future performance (i.e., lack of leading indicators)	Ittner and Larcker (1998); Yenyurt (2003); Busi et al. (2003) Busi and Strandhagen (2004)
	Strategy and measurement are not connected	Ghalayini et al. (1997); Adams et al. (1995); Eccles (1991); Holmberg (2000); Busi et al. (2003) Busi and Strandhagen (2004); Chan and Qi (2003)
	Inflexible: they have predetermined format	Ghalayini et al. (1997)
	Over-rely on financial aspects	Love and Holt (2000); Clarke and Clegg (1999); Holmberg (2000); Ghalayini et al. (1997)
	Do not accurately reflect the interest of stakeholders	Love and Holt (2000); Kaplan and Norton (1996)
	Missing link between non-financial metrics and financial numbers	Kaplan and Norton (1992); Yenyurt (2003); Chan (2003)
	Too many isolated and incompatible measures	Holmberg (2000); Yenyurt (2003); Kaplan and Norton (1992)
Supporting technology	Lack of appropriate integrated ICT infrastructure	Bititci et al. (2002); Busi (2004)
	Time consuming (require a large amount of data)	Bourne and Neely (2000); Bititci et al. (2002); Busi et al. (2003)
	Lack of a structured framework	Bititci et al. (2000); Busi (2004)

Even though the greater part of researchers focuses on the above-mentioned limitations, a minor part of them concentrate on the benefits arising from the implementation of PMS. Before proceeding with the analysis of literature, it is important to clarify the meaning of what a *management control systems* (MCS) consists in.

From now on, the focus of this literature review will move to the use of MCS. According to part of the academics, it can be argued that MCS and PMS cover different aspects and emphasise different shapes of the same form. Nevertheless, the research carried out by Siska (2015) concludes that the two systems are synonymous.

“MCS is perceived as a set of controls which manager have at their disposal to steer the organisation towards predetermined goals. [...] Because performance is usually perceived as achieving organisational goals, it is obvious that there has to be significant overlap between Performance Measurement (PM) and Management Control Systems. Both systems have the same ultimate objective in supporting achievement of the company’s goals and may be, and sometimes are, regarded as synonyms”. (Siska, 2015)

Siska draws this conclusion providing a general definition of MCS, but different interpretations can be found in literature. One of these, and probably the most relevant categorization, is the division between financial and non-financial MCS. It has been claimed that it can make MCS more related to the present environment of competition. (Chenhall, 2003; Nyamori *et al.* 2001). In order to understand the difference between financial and non-financial MCS, it is meaningful to take into account the classification of controls into *diagnostic* and *interactive* (Simons, 2005): on one hand the *diagnostic control systems* (DCS), which refers to the financial MCS, tend to be “inward and backward”; on the other hand, the *interactive control systems* (ICS), related to non-financial MCS, tend to be “outward and forward”. (Widener, 2007; Henri, 2006; Tuomela, 2005; Simons, 1995, 2000). Nevertheless, both type of systems are essential for the development of an effective business strategy (Bhimani and Langfield-Smith, 2007).

Porter (1980) and later Auzair and Smith (2005) identified two main strategies that could be chosen by an organisation in order to compete effectively: *cost leadership strategy* or *differentiation strategy*. The cost leadership strategy has to build an offensive position in the construction of efficient scale facilities, to leverage on the company-specific know-how in order to follow an aggressive cost reduction, to have a tight control over costs and to avoid marginal customers account. Conversely, the differentiation strategy focuses on the creation of a wide range of products or services that are perceived as unique by customers. Their *unique selling proposition* (USP) should be based on quality, availability of product

offerings, product flexibility, customer service and on a high degree of technology (Porter, 1980).

A study on 215 enterprises was conducted by Tsamenyi *et al.* (2011) in order to understand the linkage between MCS, business strategies and firms performance. It gets to the conclusion that the use of financial based MCS has a positive impact on firms performance which are pursuing a low-cost strategy. The implementation of DCS strengthens the relationships between cost leadership strategy and firms performance. Similarly, the study made by Acquaah (2013) aimed at giving a better definition of the relationship between MCS, business strategies and firms' performance in both family and non-family businesses demonstrates that DCS influences the implementation of an effective cost leadership strategy in both businesses.

As reported by Henri (2006), it can be claimed that the introduction of effective PMS improves the capabilities of a company concerning market orientation, entrepreneurship, innovativeness and organisational learning. This result is in accordance with the model developed by Simons (1990) which considers control systems tools as more than a mechanistic tool to support the implementation of a strategy.

Finally, according to the study conducted by Akroyd and Maguire (2011) the effects of the implementation of MCS on the performance of an enterprise are difficult to predict as, this performance is influenced by various factors. Nevertheless, it is more likely that the use of MCS will positively impact performance of a company if it provides significant information for coordination, learning and strategy implementation.

1.6 Research methods

Existing literature does not fully address this research question. As a result, research methods for this research project were selected specifically with the aim of collecting *primary data*. To corroborate this research with high quality and diversified data two research methods have been selected:

- A research trial involving the development and implementation of a PMS in a SME operating in the Italian IAM;
- A quantitative study among 30 companies that operate in the same market.

The choice of developing a financial PMS specifically for this research trial was made in order to overcome some of the system-specific limitations cited in existing literature. In doing so, it was possible to make a direct comparison between the company financial performances before and after the implementation of PMS.

Qualitative results obtained during the trial were subsequently tested in a quantitative study in order to verify statistical relevance of the initial findings. The questionnaire was specifically developed to gather information about the actual impact of financial PMS on 30 SMEs operating in the same industry. It has to be noted that the targeted companies have been using PMS similar to the one developed and analysed throughout this thesis project.

Analysing the results of the two research methods explained above, two scenarios can be hypothesized. In the case that the two research streams provide consistent results, this would lead to a clear argument in favour of confirming the research hypothesis. However, in the case that results of the two research streams are contrasting, new research would be required in order to validate or refute the research hypothesis.

2. PMS and questionnaire development

2.1 The Performance Management System

The development of the Performance Management System aims to create a flexible, effective, simple to implement and easy-to-use tool in order to help SMEs to keep track of their financial performance and to help the management team in the decision-making process. The PMS intends to facilitate three main activities:

- *Monitoring*: once the system has been connected to a database containing the chart of accounts, it automatically creates the Income Statement, Balance Sheet and Cash-Flow Statement;
- *Budgeting*: the budgeting function is provided both for the Income Statement and the Balance Sheet;
- *Reporting*: two types of reporting systems have been implemented. The “*KPIs*” sheet containing all the KPIs clustered per financial document and the “*Management Dashboard*” containing the most important KPIs (based on the Integrated Value Creation model) and the strategic positioning and sequencing map. The dashboard provides a snapshot of the company’s ability to create value both in the short and medium-long term.

The full implementation of these services enables SMEs to recognise the quality of their value creation processes. Based on this, they can set strategic objectives and implement a forward-looking strategy while strengthening their competitive long-term position.

2.2 Traditional PMS limitations overcome

Before approaching the practical development of the PMS, a strong analysis of the limitations of traditional performance measurement system has been carried out mainly focusing on the problems highlighted by the literature of Busi, Alfnes and Fauske in 2015. With reference to Table 1.3 of the literature review, this tool aims specifically to overcome some of those limitations. In particular:

- *Inflexibility, they have predetermined format*: the PMS is based on an algorithm that offers high flexibility and provides an easier customisation of the financial statements. Moreover, if the accounting structure undergoes any changes, the user can add, delete or edit captions in order to keep the PMS updated;

- *Too many isolated and incompatible measures*: the PMS aggregates the most important financial data into a set of different KPIs. In addition, the dashboard gives a snapshot of the company ability to create value by the combination of interconnected metrics;
- *Lack of predictive ability to explain future performance*: both lagging and leading indicators have been used in the construction of the management dashboard. In particular, one of the most relevant leading indicators is the strategic positioning and sequencing map. Since it is based on the integrated value creation model, it highlights the ability of the company to create value in the short-term while investing and strengthening its competitive position in the medium-long term;
- *Lack of appropriate ICT infrastructures and time consuming*: the system has been developed on Excel in order to facilitate use and implementation for the company. Moreover, the interaction with a database server management system allows the PMS to retrieve only required data, thus, optimizing substantially the data processing time.

It follows a more detailed overview of the main functionalities of the PMS. It includes also an analysis of the financial documents and the budgeting system; the definition of the main KPIs and the explanation of the integrated value creation model, backbone of the strategic positioning and sequencing map.

2.3 Home Page

The Home Page represents the first contact between the user and the PMS. After choosing which items to display and inserting the necessary input data (I.R.E.S., I.R.A.P., month and year of reference), the user can start using the tool (Figure 2.1).

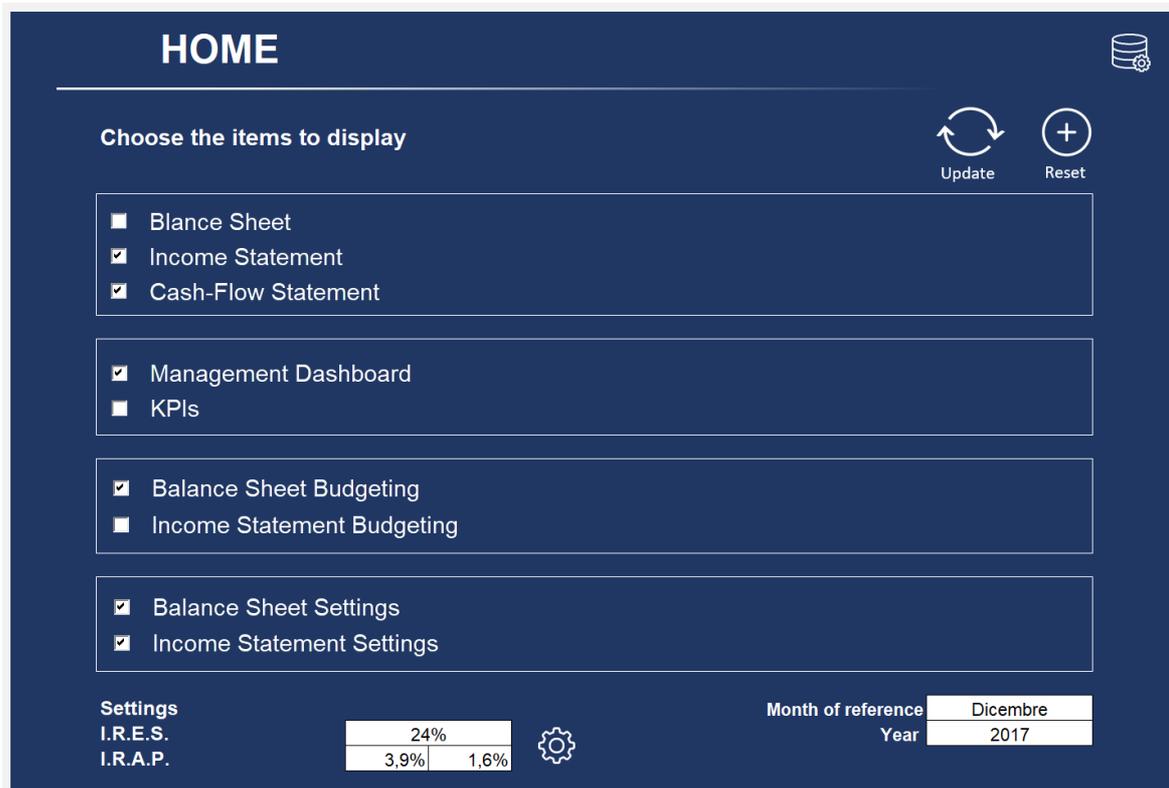


Figure 2.1. Home Page.

By clicking on the *Check Boxes* the user can choose whether to show or hide the corresponding sheet. Figure 2.1 shows an example where the Balance Sheet the KPIs and the Income Statement budgeting are hidden. The Home Page is the control panel for the whole system. In fact, the user decides whether to update existing data contained in the main financial documents or to reset the whole system. If the system is reset, the layout will not be modified but any kind of data will be removed. This is because the layout settings and the formulas have been coded into a VBA macro to avoid the risk that the user could erroneously modify the properties of some cells and to damage the functionalities of the PMS.

Before resetting and updating the system, three input parameters need to be set in order to have a correct implementation of the financial documents:

- *I.R.E.S. (Imposta sul Reddito delle Società)*: a corporate income tax for all the companies that have an income in Italy. If the company is based in Italy, both incomes generated in Italy and abroad are subject to the I.R.E.S.; but if the company is based abroad, only the income generated in Italy is subject to the I.R.E.S.;
- *I.R.A.P. (Imposta Regionale sulle Attività Produttive)*: a regional business tax levied on the value of production generated in each tax period in Italian regions. Non-resident companies are subject to I.R.A.P. only regarding the value of production generated by permanent establishment in Italian territories;
- *Year and month of reference*: the time period the financial documents refer to.

Once all the parameters have been set and data has been uploaded correctly, all the functionalities are accessible to the user.

2.4 Financial statements

The financial statements used for the analysis of SMEs performance are the Balance Sheet, the Income Statement and the Cash-Flow Statement. Any financial statement is characterised by a dedicated Excel sheet which offers the possibility to benchmark the current performance with the previous years performance and with the target. In addition, the system computes the performance forecast and its projection until the end of the year. Financial statements can be displayed either in an extended version, with all the financial items shown, or in a compressed version, with only the relevant lines.

2.4.1 Balance Sheet

The Balance Sheet is a financial statement that records company assets, liabilities and shareholders' equity at a specific point in time and it is considered as a basis for computing rates of return and evaluating capital structure of the company. By looking at the balance sheet it is possible to have an overview of what the company owns and owes as well as the amount invested by shareholders. As stated before, the balance sheet can be presented both in an extended or compressed version (Figure 2.2).

Balance Sheet									
Main actions									
<div style="display: flex; justify-content: space-between; align-items: center;"> Quadratura Forecast Past </div>									
Year to date									
	Actual	Impact %	Budget	Impact %	Δ vs Budget	2016	Impact %	Δ vs 2016	
Balance Sheet									
IMMOBILIZZAZIONI IMMATERIALI	341.399	7,9%	0	0,0%	341.399	419.613	11,5%	-78.213	
IMMOBILIZZAZIONI MATERIALI	850.128	19,7%	0	0,0%	850.128	813.625	22,3%	36.503	
IMMOBILIZZAZIONI	1.191.528	27,7%	0	0,0%	1.191.528	1.233.238	33,8%	-41.710	
DEPOSITI CAUZIONALI	1.528	0,0%	0	0,0%	1.528	3.528	0,1%	-2.000	
COSTI PLURIENNALI	0	0,0%	0	0,0%	0	0	0,0%	0	
CAPITALE FISSO NETTO OP.	1.193.056	27,7%	0	0,0%	1.193.056	1.236.765	33,9%	-43.710	
MAGAZZINO	2.971.481	69,0%	0	0,0%	2.971.481	2.993.436	82,1%	-21.955	
CREDITI VS CLIENTI	4.803.105	111,5%	0	0,0%	4.803.105	3.868.096	106,1%	935.009	
CREDITI DIVERSI	0	0,0%	0	0,0%	0	0	0,0%	0	
FATTURE DA EMETTERE	-219.000	-5,1%	0	0,0%	-219.000	-123.946	-3,4%	-95.055	
CREDITI TRIBUTARI	-14.378	-0,3%	0	0,0%	-14.378	-85.231	-2,3%	70.853	
RATEI E RISCOENTI ATTIVI	176.208	4,1%	0	0,0%	176.208	163.107	4,5%	13.101	
CAPITALE CIRCOLANTE LORDO	7.717.416	179,2%	0	0,0%	7.717.416	6.815.463	186,9%	901.953	
DEBITI VS FORNITORI	-3.649.809	-84,7%	0	0,0%	-3.649.809	-3.512.607	-96,3%	-137.202	
DEBITI VS PERSONALE	-291.574	-8,8%	0	0,0%	-291.574	-276.684	-7,6%	-14.890	
DEBITI VS AMMINISTRATORI	0	0,0%	0	0,0%	0	-9.211	-0,3%	9.211	
DEBITI VS ISTITUTI PREVIDENZIALI	-336	0,0%	0	0,0%	-336	-324	0,0%	-12	
DEBITI TRIBUTARI	-10.950	-0,3%	0	0,0%	-10.950	-53.410	-1,5%	42.459	
DEBITI DIVERSI	0	0,0%	0	0,0%	0	0	0,0%	0	
RATEI E RISCOENTI PASSIVI	-17.507	-0,4%	0	0,0%	-17.507	-12.985	-0,4%	-4.522	
FONDO RISCHI CREDITI	-137.552	-3,2%	0	0,0%	-137.552	-103.643	-2,8%	-33.910	
FONDO RIVALUTAZIONE	0	0,0%	0	0,0%	0	0	0,0%	0	
FONDO T.F.R.	-481.656	-11,2%	0	0,0%	-481.656	-427.615	-11,7%	-54.041	
FONDO RISERVA	0	0,0%	0	0,0%	0	0	0,0%	0	
FONDO IMPOSTE	0	0,0%	0	0,0%	0	0	0,0%	0	
ALTRI FONDI	-14.435	-0,3%	0	0,0%	-14.435	-9.508	-0,3%	-4.928	
DEBITI OPERATIVI	-4.603.820	-106,9%	0	0,0%	-4.603.820	-4.405.958	-120,8%	-197.834	
CAPITALE CIRCOLANTE NETTO OPERATIVO	3.113.596	72,3%	0	0,0%	3.113.596	2.409.478	66,1%	704.118	
CAPITALE INVESTITO NETTO OP.	4.306.652	100,0%	0	0,0%	4.306.652	3.646.243	100,0%	660.409	
CAPITALE SOCIALE	1.073.478	24,9%	0	0,0%	1.073.478	972.215	26,7%	101.262	
UTILE/PERDITA D'ESERCIZIO	-7.100	-0,2%	42.664	100,0%	-49.764	101.262	2,8%	-108.362	
PATRIMONIO NETTO	1.066.378	24,8%	42.664	100,0%	1.023.714	1.073.478	29,4%	-7.100	
CASSA	-100.188	-3,3%	0	0,0%	-100.188	-72.975	-2,0%	-27.213	
IMMOBILIZZAZIONI FINANZIARIE	0	0,0%	0	0,0%	0	0	0,0%	0	
BANCHE	3.340.462	77,6%	0	0,0%	3.340.462	2.645.740	72,6%	694.721	
POSIZIONE FINANZIARIA NETTA	3.240.274	75,2%	0	0,0%	3.240.274	2.572.766	70,6%	667.508	
CAPITALE INVESTITO NETTO OP.	4.306.652	100,0%	42.664	100,0%	4.263.987	3.646.243	100,0%	660.409	

Figure 2.2. Compressed version of the Balance Sheet.

For each account, the *actual value*, the *budget* and the *previous year value* are shown. Moreover, for each of these categories a *percentage impact* is calculated in order to understand the relative importance of each account on the *Operative Net Invested Capital*.

The user can benchmark the Balance Sheet against the budget and against the Balance Sheets from previous year. There are four main functions, each of them activated by a button:

- The button on the extreme left (two opposite arrows) is used to compress or extend the financial document;
- *Quadratura* button is used to balance the inconsistencies in value between the two sides of the balance sheet. This functionality is used when there are accounts which have not been closed yet;
- *Forecast* button shows or hides the *End Year Projection* (Figure 2.3);
- *Past* button shows or hides the columns containing the values from past years performance (Figure 2.3).

Balance Sheet Main actions	End Year Projection			Past (Annual)				
	2017	Δ vs Budget	Δ vs 2016	2017	2016	2015	2014	2013
Balance Sheet								
IMMOBILIZZAZIONI	1.191.528	1.191.528	-41.710	0	1.233.238	1.270.122	0	0
DEPOSITI CAUZIONALI	1.528	1.528	-2.000	0	3.528	4.468	0	0
COSTI PLURIENNALI	0	0	0	0	0	0	0	0
CAPITALE FISSO NETTO OP.	1.193.056	1.193.056	-43.710	0	1.236.765	1.274.590	0	0
MAGAZZINO	2.971.481	2.971.481	-21.955	0	2.993.436	2.937.181	0	0
CREDITI VS CLIENTI	4.803.105	4.803.105	935.009	0	3.868.096	3.375.559	0	0
CREDITI DIVERSI	0	0	0	0	0	0	0	0
FATTURE DA EMETTERE	-219.000	-219.000	-95.055	0	-123.946	-140.343	0	0
CREDITI TRIBUTARI	-14.378	-14.378	70.853	0	-85.231	87.271	0	0
RATEI E RISCONTI ATTIVI	176.208	176.208	13.101	0	163.107	207.691	0	0
CAPITALE CIRCOLANTE LORDO	7.717.416	7.717.416	901.953	0	6.815.463	6.467.360	0	0
DEBITI VS FORNITORI	-3.649.809	-3.649.809	-137.202	0	-3.512.607	-4.118.132	0	0
DEBITI VS PERSONALE	-291.574	-291.574	-14.890	0	-276.684	-262.363	0	0
DEBITI VS AMMINISTRATORI	0	0	9.211	0	-9.211	-9.211	0	0
DEBITI VS ISTITUTI PREVIDENZIALI	-336	-336	-12	0	-324	-324	0	0
DEBITI TRIBUTARI	-10.950	-10.950	42.459	0	-53.410	-7.801	0	0
DEBITI DIVERSI	0	0	0	0	0	0	0	0
RATEI E RISCONTI PASSIVI	-17.507	-17.507	-4.522	0	-12.985	-9.441	0	0
FONDO RISCHI CREDITI	-137.552	-137.552	-33.910	0	-103.643	-113.453	0	0
FONDO RIVALUTAZIONE	0	0	0	0	0	0	0	0
FONDO T.F.R.	-481.656	-481.656	-54.041	0	-427.615	-374.843	0	0
FONDO RISERVA	0	0	0	0	0	0	0	0
FONDO IMPOSTE	0	0	0	0	0	0	0	0
ALTRI FONDI	-14.435	-14.435	-4.928	0	-9.508	-9.441	0	0
DEBITI OPERATIVI	-4.603.820	-4.603.820	-197.834	0	-4.405.985	-4.905.010	0	0
CAPITALE CIRCOLANTE NETTO OPERATIVO	3.113.596	3.113.596	704.118	0	2.409.478	1.562.350	0	0
CAPITALE INVESTITO NETTO OP.	4.306.652	4.306.652	660.409	0	3.646.243	2.836.940	0	0
CAPITALE SOCIALE	1.073.478	1.073.478	101.262	0	972.215	976.369	0	0
UTILE/PERDITA D'ESERCIZIO	-7.100	-49.764	-108.362	42.664	101.262	-854	0	0
PATRIMONIO NETTO	1.066.378	1.023.714	-7.100	42.664	1.073.478	975.515	0	0
CASSA	-100.188	-100.188	-27.213	0	-72.975	-38.376	0	0
IMMOBILIZZAZIONI FINANZIARIE	0	0	0	0	0	0	0	0
BANCHE	3.340.462	3.383.126	694.721	-42.664	2.645.740	1.899.800	0	0
POSIZIONE FINANZIARIA NETTA	3.240.274	3.282.938	667.508	-42.664	2.572.766	1.861.424	0	0
CAPITALE INVESTITO NETTO OP.	4.306.652	4.306.652	660.409	0	3.646.243	2.836.940	0	0

Figure 2.3. Balance Sheet - End Year Projection and Past Performance.

2.4.2 Income Statement

The Income Statement shows the company profit and loss referring to a specific period: it could be reported weekly, monthly, quarterly, semi-annually, or annually. The weekly and monthly Income Statement are used by the management team to evaluate the performance time to time. Quarterly, semi-annually and annually Income Statement are mainly used by investors and creditors in order to track the overall performance of a company over time. The profit or loss is defined considering all revenues and subtracting all expenses from both operating and non-operating activities.

In general, the Income Statement is characterised by three main sections: Revenues, Expenses, and Net Income/Loss. Revenues are listed in the highest part of the document, while expenses are listed below (Figure 2.4). Finally, the Net Income is calculated by subtracting the total expenses from the total income.

Income Statement								
Main actions	<div style="text-align: right;"> Forecast Past </div>							
	Year to Date							
	Actual	Impact %	Budget	Impact %	Δ vs Budget	2016	Impact %	Δ vs 2016
Income Statement								
Ricavi ricambi - resi	15.141.461	103,3%	15.298.607	103,2%	-157.146	12.311.076	102,3%	2.830.384
Premi a clienti	-256.372	-1,7%	-256.372	-1,7%	0	-167.659	-1,4%	-88.713
Sconti a Clienti	-223.347	-1,5%	-223.347	-1,5%	0	-113.359	-0,9%	-109.988
RICAVI NETTI TOTALI	14.661.742	100,0%	14.818.888	100,0%	-157.146	12.030.059	100,0%	2.631.683
VALORE DELLA PRODUZIONE	14.661.742	100,0%	14.818.888	100,0%	-157.146	12.030.059	100,0%	2.631.683
Acquisto Merci	-10.887.637	-74,3%	-10.996.514	-74,2%	108.876	-8.874.128	-73,8%	-2.013.510
Premi da Fornitori	529.053	3,6%	534.343	3,6%	-5.291	506.996	4,2%	22.057
Sconto da Fornitori	35.371	0,2%	35.725	0,2%	-354	30.532	0,3%	4.839
Variazione Magazzino Prodotti Finiti	-21.955	-0,1%	-22.175	-0,1%	220	56.255	0,5%	-78.210
CONSUMI	-10.345.169	-70,6%	-10.448.621	-70,5%	103.452	-8.280.344	-68,8%	-2.064.825
MARGINE COMMERCIALE	4.316.573	29,4%	4.370.267	29,5%	-53.695	3.749.714	31,2%	566.858
Ricavi Diversi	44.657	0,3%	44.657	0,3%	0	37.187	0,3%	7.470
Costi Logistica IN e OUT	-504.304	-3,4%	-504.304	-3,4%	0	-413.388	-3,4%	-90.916
Costi Autocarri	-19.679	-0,1%	-19.679	-0,1%	0	-21.833	-0,2%	2.154
Costi Autovetture	-87.945	-0,6%	-87.945	-0,6%	0	-103.495	-0,9%	15.550
Costi Commerciali BC S e AUTOCREW	48.037	0,3%	48.037	0,3%	0	57.437	0,5%	-9.400
Altri Costi Commerciali	-149.250	-1,0%	-149.250	-1,0%	0	-163.979	-1,4%	14.729
Costi Formazione	44.254	0,3%	44.254	0,3%	0	34.846	0,3%	9.409
Costi Programmi Informatici	-3.063	0,0%	-3.063	0,0%	0	-2.327	0,0%	-735
Costi Pubblicitari	-27.206	-0,2%	-27.206	-0,2%	0	-13.188	-0,1%	-14.018
Provvigioni	-1.027.775	-7,0%	-1.018.008	-6,9%	-9.766	-627.322	-5,2%	-400.452
COSTI COMMERCIALI	-1.682.274	-11,5%	-1.672.508	-11,3%	-9.766	-1.216.063	-10,1%	-466.211
COSTI VARIABILI ESTERNI	-12.027.443	-82,0%	-12.121.129	-81,8%	93.685	-9.496.408	-78,9%	-2.531.035
MARGINE DI CONTRIBUZIONE	2.634.299	18,0%	2.697.760	18,2%	-63.461	2.533.651	21,1%	100.648
ALTRI ACQUISTI	-38.885	-0,3%	-38.259	-0,3%	-626	-37.135	-0,3%	-1.750
Canone e assistenza	-51.672	-0,4%	-50.677	-0,3%	-995	-84.481	-0,7%	32.809
Altre manutenzioni	-50.275	-0,3%	-49.507	-0,3%	-768	-20.852	-0,2%	-29.423
CANONI ASSISTENZA E MANUTENZIONI	-101.947	-0,7%	-100.184	-0,7%	-1.763	-105.333	-0,9%	3.386
Utenze	-106.817	-0,7%	-106.817	-0,7%	0	-96.980	-0,8%	-9.838
Noleggi	-132.092	-0,9%	-133.971	-0,9%	1.879	-127.720	-1,1%	-4.372
Affitto	-21.123	-0,1%	-21.123	-0,1%	0	-21.123	-0,2%	0
Altri costi di struttura	-56.522	-0,4%	-57.097	-0,4%	575	-57.422	-0,5%	900
COSTI DI STRUTTURA	-316.554	-2,2%	-319.008	-2,2%	2.453	-303.244	-2,5%	-13.310
Consulenze	-43.468	-0,3%	-43.468	-0,3%	0	-42.560	-0,4%	-908
Compensi amministratori	-278.086	-1,9%	-275.736	-1,9%	-2.350	-218.977	-1,8%	-59.109
Emolumenti sindaci	-19.583	-0,1%	-19.583	-0,1%	0	-19.895	-0,2%	312
Imposte ed altro	-65.359	-0,4%	-65.153	-0,4%	-207	-58.036	-0,5%	-7.324
COSTI GENERALI	-406.496	-2,8%	-403.940	-2,7%	-2.557	-339.468	-2,8%	-67.029
COSTI FISSI ESTERNI	-863.883	-5,9%	-861.390	-5,8%	-2.493	-785.180	-6,5%	-78.703
VALORE AGGIUNTO	1.770.416	12,1%	1.836.369	12,4%	-65.954	1.748.471	14,5%	21.945
Costo del personale	-1.401.404	-9,6%	-1.429.432	-9,6%	28.028	-1.226.071	-10,2%	-175.333
Accantonamento TFR	-85.518	-0,6%	-87.229	-0,6%	1.710	-71.906	-0,6%	-13.612
Altri costi del personale	-9.803	-0,1%	-9.999	-0,1%	196	-8.588	-0,1%	-1.215
COSTI DEL LAVORO	-1.496.725	-10,2%	-1.526.660	-10,3%	29.935	-1.306.565	-10,9%	-190.160
MARGINE OPERATIVO LORDO (EBITDA)	273.690	1,9%	309.710	2,1%	-36.019	441.906	3,7%	-168.215
MARGINE OPERATIVO LORDO Adj. (EBITDA Adj.)	383.644	2,6%	421.374	2,8%	-37.730	533.564	4,4%	-149.920
Ammortamenti	-257.127	-1,8%	-251.984	-1,7%	-5.143	-229.883	-1,9%	-27.244
AMMORTAMENTI	-257.127	-1,8%	-251.984	-1,7%	-5.143	-229.883	-1,9%	-27.244
RISULTATO OPERATIVO LORDO (EBIT)	16.564	0,1%	57.725	0,4%	-41.162	212.023	1,8%	-195.460
Minusvalenze	0	0,0%	0	0,0%	0	0	0,0%	0
Plusvalenze	10.656	0,1%	10.656	0,1%	0	14.150	0,1%	-3.494
Interessi ed Oneri Straordinari	84.557	0,6%	92.529	0,6%	-7.972	10.707	0,1%	73.850
GESTIONE STRAORDINARIA	95.213	0,6%	103.185	0,7%	-7.972	24.857	0,2%	70.356
Provenienti Finanziari	55.217	0,4%	55.217	0,4%	0	47.066	0,4%	8.151
Oneri Finanziari	-109.678	-0,7%	-109.048	-0,7%	-630	-109.533	-0,9%	-146
PROVENTI ED ONERI FINANZIARI	-54.461	-0,4%	-53.831	-0,4%	-630	-62.467	-0,5%	8.006
RISULTATO EXTRA OPERATIVO	40.752	0,3%	49.354	0,3%	-8.603	-37.610	-0,3%	78.361
RISULTATO ANTE IMPOSTE (EBT)	57.315	0,4%	107.079	0,7%	-49.764	174.413	1,4%	-117.098
IMPOSTE	-64.415	-0,4%	-64.415	-0,4%	0	-73.151	-0,6%	8.736
UTILE (E)	-7.100	0,0%	42.664	0,3%	-49.764	101.262	0,8%	-108.362

Figure 2.4. Compressed version of the Income Statement.

The user can benchmark the Income Statement against the budget and against the Income Statement from previous year. The *percentage impact* in the Income Statement is calculated for any category as a ratio between each account value and total revenues. As for the Balance Sheet, it is possible to show or hide End Year Projection and the Past Years Performance.

2.4.3 Cash-Flow Statement

The Cash-Flow Statement completes the set of the main company's financial statements. It summarises the amount of cash and cash equivalents that enters and leaves the company over a given period of time. It provides aggregate data regarding all cash inflows the company receives from its ongoing operations and external investment sources, as well as all cash outflows that pay for business activities and investments during a given period (Figure 2.5). By analysing the Cash-Flow Statement it is possible to measure how well a company manages its cash position. Specifically, it evaluates the ability of the company to generate cash to pay its debt obligations and to fund its operating expenses. It helps investors to determine if the company has a solid financial position or not.

Cash-Flow Statement					
Show/Hide					
	Forecast	Past			
	Year to Date				
	Actual	Impact %	Budget	Impact %	Δ vs Budget
Cash-Flow Statement					
VALORE DELLA PRODUZIONE	€14.661.742	100,0%	€14.818.888	100,0%	(€157.146)
COSTI VARIABILI ESTERNI	(€12.027.443)	-82,0%	(€12.121.129)	-81,8%	€93.685
COSTI FISSI ESTERNI	(€863.883)	-5,9%	(€861.390)	-5,8%	(€2.493)
COSTI DEL LAVORO	(€1.496.725)	-10,2%	(€1.526.660)	-10,3%	€29.935
AMMORTAMENTI	(€257.127)	-1,8%	(€251.984)	-1,7%	(€5.143)
RISULTATO OPERATIVO LORDO	€16.564	0,1%	€57.725	0,4%	(€41.162)
ACCANTONAMENTO TFR	(€85.518)	-0,6%	(€87.229)	-0,6%	€1.710
10 -ACCANTONAMENTO F.I.R.R.	(€14.435)	-0,1%	(€14.435)	-0,1%	€0
08 -ACCANTONAMENTO RISCHI SU CREDITI	(€10.000)	-0,1%	(€10.000)	-0,1%	€0
69 -ACCANT.TO FONDO RISCHI TASSATO	€0	0,0%	€0	0,0%	€0
AMMORTAMENTI	(€257.127)	-1,8%	(€251.984)	-1,7%	(€5.143)
MARGINE OPERATIVO LORDO ADJUSTED (EBITDA Adjusted)	€383.644	2,6%	€421.374	2,8%	(€37.730)
MAGAZZINO	€21.955	0,1%	€2.993.436	20,2%	(€2.971.481)
CREDITI VS CLIENTI	(€935.009)	-6,4%	€3.868.096	26,1%	(€4.803.105)
CREDITI DIVERSI	€0	0,0%	€0	0,0%	€0
FATTURE DA EMETTERE	€95.055	0,6%	(€123.946)	-0,8%	€219.000
RATEI E RISCOINTI ATTIVI	(€13.101)	-0,1%	€163.107	1,1%	(€176.208)
DELTA CAPITALE CIRCOLANTE LORDO OPERATIVO	(€831.100)	-5,7%	€6.900.694	46,6%	(€7.731.794)
DEBITI VS FORNITORI	€137.202	0,9%	(€3.512.607)	-23,7%	€3.649.809
DEBITI VS PERSONALE	€14.890	0,1%	(€276.684)	-1,9%	€291.574
DEBITI VS AMMINISTRATORI	(€9.211)	-0,1%	(€9.211)	-0,1%	€0
DEBITI VS ISTITUTI PREVIDENZIALI	€12	0,0%	(€324)	0,0%	€336
DEBITI DIVERSI	(€0)	0,0%	€0	0,0%	(€0)
RATEI E RISCOINTI PASSIVI	€4.522	0,0%	(€12.985)	-0,1%	€17.507
FONDO RISCHI CREDITI	€33.910	0,2%	(€103.643)	-0,7%	€137.552
FONDO RIVALUTAZIONE	€0	0,0%	€0	0,0%	€0
FONDO T.F.R.	€54.041	0,4%	(€427.615)	-2,9%	€481.656
FONDO RISERVA	€0	0,0%	€0	0,0%	€0
FONDO IMPOSTE	€0	0,0%	€0	0,0%	€0
ALTRI FONDI	€4.928	0,0%	(€9.508)	-0,1%	€14.435
DELTA DEBITI OPERATIVI	€240.294	1,6%	(€4.352.576)	-29,4%	€4.592.869
DELTA CAPITALE CIRCOLANTE NETTO OPERATIVO	(€590.807)	-4,0%	€2.548.118	17,2%	(€3.138.925)
FLUSSI DI CASSA CORRENTI LORDI	(€707.162)	-1,4%	€2.969.492	20,0%	(€3.176.654)

Figure 2.5. Extended version of the Cash-Flow Statement.

The Cash-Flow statement is compared with the budgeted one and the one from the previous year. Moreover, the *Impact %* is calculated as a ratio between each line and the total value of production. It is possible to show or hide the End Year Projection and the Past Years Performance by clicking respectively on the *forecast* and *past* buttons.

2.5 The algorithm

One of the strengths of this performance measurement system is represented by its strong and flexible algorithm which enables a frictionless implementation and customisation of the whole system. It consists in the creation of a connection between the PMS and a database server management system containing the company chart of accounts. Thereafter, the system automatically creates the financial documents, the budgeting models and the management dashboard.

The algorithm is based on a sequence of numbers which associate a unique code to each account. By screening each account code, the system automatically defines the structure of the financial statements and sets all the parameters necessary for the implementation of the performance analysis. The code assigned to each account, called the *StandardReferenceCode*, has to be defined manually during the implementation and it is based on the company's structure of financial statements.

The *StandardReferenceCode* is composed by five digits. By combining them, it is possible to uniquely identify the position of each account in the financial statements. In fact, the *StandardReferenceCode* is based on a cascade model where each digit refers to a determined section of the document. Consequently, each account is positioned in a hierarchy where the value of the account in a higher level is the sum of the accounts values in a lower level.

The *StandardReferenceCode* needs to be generated both for the accounts of the Balance Sheet and for the Income Statement ones. The code for Balance Sheet accounts is defined in a sheet called "*INSERT_DescrStandard_BS*" while the one for the Income Statement accounts is determined in a sheet called "*INSERT_DescrStandard_IS*". Since the two configurations are identical, only the Income Statement configuration will be shown in the following section (Figure 2.6).

	A	B	C	D	F	G	H	I	K
1	Level 1	Level 2	Level 3	Level 4	Level 5	StandardReferenceCode	Description	Comments	Account Code
2	1	1	1	1	1	1-1-1-1-1 01	-RICAVI CLIENTI		707001
3	1	1	1	1	2	1-1-1-1-2 37	-RESI SU VENDITE	Ricavi dalle V	707037
4	1	1	1	1	3	1-1-1-1-3 58	-RESI CARCASSE HELLA - BOSCH		707058
5	1	1	1	1	4	1-1-1-1-4 59	-ACCRED. A CLIENTI X GREEN TEAM		707059
6	1	1	1	1	5	1-1-1-1-5 63	-ADDEBITI PER GARANZIE BOSCH		707063
7	1	1	1	1	6	1-1-1-1-6 39	-BATTERIE ESAUSTE GREEN TEAM		707039
8	1	1	1	1	7	1-1-1-1-7	Ricavi ricambi - resi		
9	1	1	1	2	1	1-1-1-2-1 02	-PREMI FEDELTA' A CLIENTI		707002
10	1	1	1	2	2	1-1-1-2-2 14	-PREMI SU CONTRATTI LUBRIFICANTI		707014
11	1	1	1	2	3	1-1-1-2-3 56	-PREMIO SU FATTURATO EVOLGO		
12	1	1	1	2	4	1-1-1-2-4	Premi a clienti		
13	1	1	1	3	1	1-1-1-3-1 04	-SCONTI PASSIVI		505004
14	1	1	1	3	2	1-1-1-3-2 65	-ACCREDITI A CLIENTI COUPON		707065
15	1	1	1	3	3	1-1-1-3-3 08	-ACQUISTO OMAGGI X CAMPAGNE PROM		414108
16	1	1	1	3	4	1-1-1-3-4	Sconti a Clienti		
17	1	1	1	4	0	1-1-1-4-0	RICAVI NETTI TOTALI		
18	1	1	2	0	0	1-1-2-0-0	VALORE DELLA PRODUZIONE		
19	1	2	2	1	1	1-2-2-1-1 01	-ACQUISTO MATERIALE		414101
20	1	2	2	1	2	1-2-2-1-2 07	-ACQUISTI INTRA CEE		414107
21	1	2	2	1	3	1-2-2-1-3 20	-RESI SU ACQUISTI	Resi su acqui	414120
22	1	2	2	1	4	1-2-2-1-4 20	-RESI SU ACQUISTI E ACCREDITI		414120
23	1	2	2	1	5	1-2-2-1-5	Acquisto Merci		
24	1	2	2	2	1	1-2-2-2-1 02	-PREMI SU TARGET		414102
25	1	2	2	2	2	1-2-2-2-2 13	-PREMI FORNITORI SU PERIODO		414113
26	1	2	2	2	3	1-2-2-2-3	Premi da Fornitori		
27	1	2	2	3	1	1-2-2-3-1 18	-SCONTI ATTIVI DA FORNITORE		414118
28	1	2	2	3	2	1-2-2-3-2 19	-SCONTO GARANZIA		414119
29	1	2	2	3	3	1-2-2-3-3 18	-SCONTI CASSA DA FORNITORE		414118
30	1	2	2	3	4	1-2-2-3-4 01	-SCONTI E ABBUONI ATTIVI		717101
31	1	2	2	3	5	1-2-2-3-5 21	-ACCREDITI BOSCH PER COUPON		414121
32	1	2	2	3	6	1-2-2-3-6	Sconto da Fornitori		
33	1	2	2	4	1	1-2-2-4-1 01	-MAGAZZINO VARIAZ.RIMANENZE FIN.		808001
34	1	2	2	4	2	1-2-2-4-2 03	-MAGAZZINO RIMANENZE INIZIALI		808003
35	1	2	2	4	3	1-2-2-4-3	Variazione Magazzino Prodotti Finiti		
36	1	2	2	5	0	1-2-2-5-0	CONSUMI		
37	1	2	3	1	1	1-2-3-1-1 31	-RIMB.RIPARAZ.APPAR. C/O CLIENTI		707031
38	1	2	3	1	2	1-2-3-1-2 22	-CONTRATTI ASSISTENZA TELEFONICA		707022
39	1	2	3	1	3	1-2-3-1-3	-VENDITA ROTTAMI		707066

Fig 2.6. Definition of the StandardReferenceCode for each account of the Income Statement.

Figure 2.6 shows how the hierarchy between different accounts is managed by the StandardReferenceCode. The first account has code 1-1-1-1-1 and it is placed on level 5. By proceeding downwards, it is possible to notice that only the last digit of the code increases by one (1-1-1-1-2, 1-1-1-1-3 etc.). This happens because following there are all accounts on the same level as the first one. When it comes to the account next “*Ricavi ricambi – resi*”, the digit corresponding to level 4 increases by one while the level 5 is reset to one. This is because “*Ricavi ricambi – resi*” is placed on level 4 and it is the sum of all the accounts in level 5 below it. In the same way, “*Ricavi netti totali*”, positioned in level 3, is the sum of “*Ricavi ricambi – resi*”, “*Premi a clienti*” and “*Sconti a clienti*”, which are positioned in level 4. By uniquely identifying each account, the system is able to place each account in its position, to create the layout of the document and to set the formulas for each account.

The algorithm has been coded in VBA and it has been defined in the Module 5. The function on which the algorithm is based screens the StandardReferenceCodes and defines

the structure of the financial statements. It also defines the layout for each account and fills the corresponding cells with formulas or values. This function has been assigned to a macro which the user can activate by pressing a button in the Home Page (Figure 2.7).

```

For x0 = 1 To maxL0
  For x1 = 1 To EsequiQuery_conConnessioneAperta("select isnull(max([Livello1]),0) from [dbo].[DescrStandard_CE] where [Livello0]='" & x0, cn)
    For x2 = 0 To EsequiQuery_conConnessioneAperta("select isnull(max([Livello2]),0) from [dbo].[DescrStandard_CE] where [Livello0]='" & x0 & " and [Livello1]='" & x1, cn)
      For x3 = 0 To EsequiQuery_conConnessioneAperta("select isnull(max([Livello3]),0) from [dbo].[DescrStandard_CE] where [Livello0]='" & x0 & " and [Livello1]='" & x1 &
        For x4 = 0 To EsequiQuery_conConnessioneAperta("select isnull(max([Livello4]),0) from [dbo].[DescrStandard_CE] where [Livello0]='" & x0 & " and [Livello1]='" &
          For x5 = 0 To EsequiQuery_conConnessioneAperta("select isnull(max([Livello5]),0) from [dbo].[DescrStandard_CE] where [Livello0]='" & x0 & " and [Livello1]='" &
            desc = ""
            query = "select [DescrizioneConto] from [DescrStandard_CE] where [Livello0]='" & x0 & " and [Livello1]='" & x1 & " and [Livello2]='" & x2 & " and [Livello3]='" & x3 & " and [Livello4]='" & x4 & " and [Livello5]='" & x5 & ""
            query = "select [CodConto] from [dbo].[Movimenti Economici] where [DescrizioneConto]='" & Replace(desc, "'", "'") & "' and Mese='" & maxMeseAc & " and
              codiceConto = EsequiQuery_conConnessioneAperta(query, cn)

            If desc <> "" Then
              If prima2 = 1 Then 'se sei nella prima riga
                oldx0 = x0
                oldx1 = x1
                oldx2 = x2
                oldx3 = x3
                oldx4 = x4
                oldx5 = x5
                prima2 = 0
                riga = contaRigaScritta + righeSaltateIntestazione
                rigaIniziaSomma = riga
                primaRiga = riga
              Else
                IF x0 <> oldx0 Then
                  riga = contaRigaScritta + righeSaltateIntestazione

                  'Layout livello 1
                  Sheets("CE_Analitico").Range(Cells(riga, 2), Cells(riga, 12)).Select
                  Call cellaLayout(1)
                  Sheets("CE_Analitico").Range(Cells(riga, 14), Cells(riga, 16)).Select
                  Call cellaLayout(1)
                  Sheets("CE_Analitico").Range(Cells(riga, 18), Cells(riga, 25)).Select
                  Call cellaLayout(1)
                  contaRigaScritta = contaRigaScritta + 1
                  contaRigaScritta = contaRigaScritta + 1
                End If
              End If
            End For
          End For
        End For
      End For
    End For
  End For
End For

```

Figure 2.7. Nested for-cycles used for the creation of the financial statements structure.

2.6 Configuration of the PMS

The configuration of the PMS is a process which takes place only the first time it is implemented in a company. Several safety measures, both in the coding part and in the user interface part, have been implemented in order to reduce the possibilities to damage the system functionalities. This increases the solidity of the PMS while keeping the system easy to use, even without any specific IT knowledge.

The configuration of the PMS requires three main steps:

1. Connecting the PMS to a database server management system;
2. Defining the StandardReferenceCode for each account;
3. Creating the financial statements.

2.6.1 Step 1: Connecting the PMS to a DB server management system

As first step for a correct implementation of the system, the connection between the PMS and the database server management system needs to be created. The default connection of the PMS is with *Microsoft SQL Server Management System*. The database management

system needs to contain the database of the company chart of accounts. Once the main procedures have been defined and saved for the first time, there is no need to recreate them again manually. Once connected to the database management system, the PMS retrieves from the system the data necessary for the implementation of financial documents and for the evaluation of the performance analyses.

2.6.2 Step 2: Defining the StandardReferenceCode for each account

As second step, the StandardReferenceCode needs to be defined for each account of the Balance Sheet and Income Statement. This procedure is needed in order to automate the creation of financial statements. It is the most time consuming operation because each code is defined manually. If a new account is added, it needs to be placed in the right section and a new StandardReferenceCode needs to be determined. Afterwards, by clicking on the reset and update buttons in the Home Page, the structure of the financial documents is updated and the new account will be displayed.

2.6.3 Step 3: Creating the financial statements

As last step, the financial statements will be created by using the buttons in the Home Page (see Fig. 2.1). By clicking on the reset button any data is removed from the system and a new layout is created. Only after, it is possible to populate the financial statements with new data by using the button update. Being everything set, it is now possible to consult the KPIs and the management dashboard.

2.7 Budgeting

Budgeting is one of the most important activities for the success of a company. Budgeted financial statements follow the same structure of the company financial statements. Budgeting is particularly helpful to estimate the company's future financial results, financial position and cash flows. Moreover, it is notably useful to prospect the impact of operational and financial adjustments on the budgeted financial statements. The management team goes through several iterations of the budget model in order to align it with the business financial and operational expectations.

The PMS offers the possibility to perform the budgeting activity for both the Income Statement and the Balance Sheet. To ease the process of iteration, the PMS allows to decide whether to create a new budget model or to upload the previous one. As for the other financial statements, it can be presented both in an extended or compressed form. Since the budgeted versions of the Balance Sheet and Income Statement are really similar, only the Income Statement is reported (see Fig. 2.8).

Income Statement Budgeting						
Main actions	Load Previous Budget		Compute budget		Save	
Budgeting						
	Actual/End year projection	%	€	Target 2019 (€)	% Incr / Decr	Seasonality
Income Statement						
Ricavi ricambi - resi	15.141.461 €		15.300.000 €	15.300.000 €	1%	Yes
Premi a clienti	-256.372 €			-256.372 €	0%	Yes
Sconti a Clienti	-223.347 €			-223.347 €	0%	Yes
RICAVI NETTI TOTALI	14.661.742 €			14.820.281 €	1%	Yes
VALORE DELLA PRODUZIONE	14.661.742 €			14.820.281 €	1%	Yes
Acquisto Merci	-10.887.637 €			-10.996.514 €	1%	Yes
Premi da Fornitori	529.053 €			534.343 €	1%	Yes
Sconto da Fornitori	35.371 €			35.725 €	1%	Yes
Variazione Magazzino Prodotti Finiti	-21.955 €		-20.000 €	-20.000 €	-9%	Yes
CONSUMI	-10.345.169 €	1%		-10.446.446 €	1%	Yes
MARGINE COMMERCIALE	4.316.573 €			4.373.835 €	1%	Yes
Ricavi Diversi	44.657 €			44.657 €	0%	Yes
Costi Logistica IN e OUT	-504.304 €			-504.304 €	0%	Yes
Costi Autocarri	-19.679 €			-19.679 €	0%	Yes
Costi Autovetture	-87.945 €			-87.945 €	0%	Yes
Costi Commerciali BCS e AUTOCREW	48.037 €			48.037 €	0%	Yes
Altri Costi Commerciali	-149.250 €			-149.250 €	0%	Yes
Costi Formazione	44.254 €			44.254 €	0%	Yes
Costi Programmi Informatici	-3.063 €			-3.063 €	0%	Yes
Costi Pubblicitari	-27.206 €			-27.206 €	0%	Yes
Provvigioni	-1.027.775 €			-1.018.008 €	-1%	Yes
COSTI COMMERCIALI	-1.682.274 €	-1%		-1.672.508 €	-1%	Yes
COSTI VARIABILI ESTERNI	-12.027.443 €			-12.118.954 €	1%	Yes
MARGINE DI CONTRIBUZIONE	2.634.299 €			2.701.327 €	3%	Yes
ALTRI ACQUISTI	-38.885 €			-38.259 €	-2%	Yes
Canone e assistenza	-51.672 €			-50.677 €	-2%	Yes
Altre manutenzioni	-50.275 €			-49.507 €	-2%	Yes
CANONI ASSISTENZA E MANUTENZIONI	-101.947 €	-2%		-100.184 €	-2%	Yes
Utenze	-106.817 €			-106.817 €	0%	Yes
Noleggi	-132.092 €			-133.971 €	1%	Yes
Affitto	-21.123 €			-21.123 €	0%	Yes
Altri costi di struttura	-56.522 €			-57.097 €	1%	Yes
COSTI DI STRUTTURA	-316.554 €	1%		-319.008 €	1%	Yes
Consulenze	-43.468 €			-43.468 €	0%	Yes
Compensi amministratori	-278.086 €			-275.736 €	-1%	Yes
Emolumenti sindaci	-19.583 €			-19.583 €	0%	Yes
Imposta di bollo	66.950 €			66.153 €	-1%	Yes

Figure 2.8. Compressed form of Income Statement budgeting model.

The budgeted value for each account can be defined in two different ways:

- as percentage change in respect to the current value;
- as total amount in Euro.

The new account value needs to be defined in the yellow area of the budgeting model.

The PMS provides four main functionalities that can be utilised when computing the new budget model:

- *Save*: once the budget has been defined, it is possible to save it in the database. The budgeted value for each account is then displayed in the correspondent financial statement;
- *Load previous budget*: it is possible to load previous budgets from the database (if exist) in order to use them as starting point for a new budget iteration. In this way, the user can easily make further adjustments in order to get to the final result;
- *Compute budget*: it is an auto-computing function which automatically evaluates the budget value for each account based on defined parameters. For example, if the user wants to increase by 2% the account “premi a clienti” but wants to increase only by 1% “premi fedeltà clienti”, the tool will automatically define the percentage change of the other accounts in order to get to that result. In this case, this result has been achieved by decreasing “premio su fatturato evolvo” by 99% (Fig. 2.9). This functionality is based on the Excel function “goal seek” and has been introduced to be used as a reference by the management team;
- *Reset budget*: this function enables to reset the budgeted financial statement: any previous adjustment will be deleted and a new empty document will be uploaded.

Income Statement Budgeting							
Main actions		Budgeting					
↖ ↗		 Load Previous Budget	 Compute budget	 Save	 Reset Budget		
		Actual/End year projection	%	€	Target 2019 (€)	% Incr / Decr	Seasonality
Income Statement							
707001	01 -RICAVI CLIENTI	15.714.633 €	1,0%		15.871.779 €	1%	Yes
707037	37 -RESI SU VENDITE	-801.393 €			-809.784 €	1%	Yes
707058	58 -RESI CARCASSE HELLA - BOSCH	217.763 €			220.043 €	1%	Yes
707059	59 -ACCRED. A CLIENTI X GREEN TEAM	-180 €			-182 €	1%	Yes
707063	63 -ADDEBITI PER GARANZIE BOSCH	10.637 €			10.749 €	1%	Yes
707039	39 -BATTERIE ESAUSTE GREEN TEAM	0 €			0 €	0%	Yes
	Ricavi ricambi - resi	15.141.461 €	1%	15.300.000 €	15.300.000 €	1%	Yes
707002	02 -PREMI FEDELTA' A CLIENTI	-254.938 €	-1%		-252.389 €	-1%	Yes
707014	14 -PREMI SU CONTRATTI LUBRIFICANTI	0 €			0 €	0%	Yes
464656	56 -PREMIO SU FATTURATO EVOLGO	-1.434 €			-14 €	-99%	Yes
	Premi a clienti	-256.372 €	-2%		-252.403 €	-2%	Yes

Figure 2.9. Example of Income Statement budgeting

2.8 KPIs

Once all the financial statements have been set-up using data from the database, the PMS computes different KPIs in order to help the management in the strategic decision-making process. More than 30 KPIs have been implemented in the KPIs sheet in order to present a broader overview of the company performance. The KPIs have been clustered in three categories based on the financial statement of reference: Income Statement, Balance Sheet or Cash-Flow Statement (Fig. 2.10)

		Year to Date				
		Actual	Target	Previous Year	Act VS Target	Act VS PY
Show Projection Show Past						
KPI	unit					
KPIs Balance Sheet						
Elasticità del Cap. Inv. Netto Op.	%	72%	n.s.	66%	n.s.	6%
Tasso di sviluppo Cap. Inv. Netto Op.	%	18%	-100%	29%	118%	-10%
Tasso di sviluppo del Cap. Circ. Netto Op.	%	29%	-100%	54%	129%	-25%
Tasso di sviluppo Pos. Fin. Netta	%	26%	-102%	38%	128%	-12%
Tasso di sviluppo del Patrimonio Netto	%	-1%	-96%	10%	95%	-11%
gg dilazione clienti	gg	108	48	110	6030%	-2
gg dilazione fornitori	gg	79	0	104	7895%	-25
gg giacenza mag.	gg	105	52	131	5294%	-25
Indice nuovi investimenti	u	-1,17	-5,91	-1,16	-80%	0%
Dividendi o Apporti	€	0	1.073.478	3.300	-100%	-100%
% dividendi vs Patrimonio Netto	%	0,00%	2516,10%	0%	-2516%	0%
PN		1.066.378	42.664	1.073.478		
Leva Finanziaria (PFN/PN)	u	0,33	-1,00	0,42	-133%	-21%
Capitale Fisso Netto Operativo vs Ricavi	%	8,14%	0%	10%	8%	-2%
Capitale Circolante Lordo vs Ricavi	%	52,64%	0%	57%	53%	-4%
Capitale Circolante Netto vs Ricavi	%	21,24%	0%	20%	21%	1%
KPIs Income Statement						
Tasso di sviluppo dei Ricavi	%	21,88%	23,18%	13,18%	-1%	9%
Rendimento del Cap. Inv. Netto Op. (ROI)	%	0,53%	n.s.	8,80%	n.s.	-8%
Risultato Op. Lordo vs Ricavi (ROS)	%	0,11%	0,39%	1,76%	0%	-2%
Tasso di Rotazione del Cap. Inv. Netto Op. (NAT)	u	3,40	n.s.	3,30	n.s.	3%
Margine Op. Lordo vs Ricavi (EBITDA %)	%	1,87%	2,09%	3,67%	0%	-2%
Valore Aggiunto vs Costo del Lavoro	u	1,18	1,20	1,34	-2%	-12%
Punto di Pareggio Economico Norm. (Bepn)	%	99,37%	97,86%	91,63%	2%	8%
Totale Acquisti Esterni Operativi	€	(€13.570.743)	(€13.667.360)	(€11.004.840)	-1%	23%
Leva Operativa Volumi	u	159	47	12	112	147
Leva Operativa Prezzi	u	885	257	57	628	828
Pressione fiscale	%	11,02%	-66,23%	-138,43%	77%	149%
Rendimento Economico del Patrimonio Netto	%	699,86%	182,27%	18,87%	518%	681%
Costo del Capitale degli Azionisti	%	5,00%	5,00%	5,00%	0%	0%
Profitto Economico	€	(€204.235)	€38.676	(€40.257)	-628%	407%
Avviamento	€	(€1.227.626)	€232.475	(€241.977)	-628%	407%
Creazione di Valore Corrente	€	(€142.854)	€27.052	(€28.158)	-628%	407%
Creazione di Valore Strategica	€	(€985.649)	€474.452	€185.079	-308%	-633%
Valutazione Strategica						
KPIs Cash-Flow Statement						
Flussi Cassa Op. Netti vs Ricavi	%	-4,83%	24,56%	-5,57%	-29%	1%
Flussi Cassa Correnti Lordi vs Ricavi	%	-1,41%	20,04%	-4,42%	-21%	3%
Flussi Cassa Op. Netti vs CINO	%	-16,45%	n.s.	-18,39%	n.s.	2%
Flussi Cassa Correnti Lordi vs CINO	%	-4,81%	n.s.	-14,58%	n.s.	10%

Fig 2.10. List of KPIs implemented.

Thanks to the representation of different KPIs in one Excel sheet, the management team can evaluate the company performance from different points of view by benchmarking the KPIs values with the ones from previous years and with their relative budgeted value.

The KPIs values are displayed in the column “Actual” in the year to date form. The cell is coloured depending on the KPI’s value:

- *Green*: if the value of the KPI shows a positive situation;
- *Yellow*: if the value of the KPI shows a static situation;
- *Red*: if the value of the KPI shows a negative situation.

Next to the “Actual” column, four more values are shown: KPI budget value, previous year value, “ACT VS Target” and “ACT VS PY”. The last columns show the relative percentage change in two situations: between the actual value and the budget value and between the actual value and the one of the previous year. In addition, it is possible to compare the current performance of the company with the end year projection and the past years performances. Both the section can be showed or hidden by using the respective buttons “Show/Hide Projection” and “Show/Hide Past”.

2.8.1 KPIs for the Balance Sheet

A total of 16 KPIs have been created to evaluate the company performance from the Balance Sheet (Fig 2.11). Some of the most important are:

- *Capital employed*: the total amount of capital used for the acquisition of profits by a firm. It is the value of all the assets employed in a business (or business unit) and can be calculated by adding fixed assets to working capital or by subtracting current liabilities from total assets. Capital employed gives a snapshot of how money are invested by the company;
- *Net working capital (NWC)*: the difference between a company’s current assets (e.g. cash, accounts receivables and inventories of raw materials etc.) and its current liabilities (e.g. accounts payable). The net working capital is a measure of a company’s liquidity, operational efficiency and its short-term financial health. If a company has substantial working capital, then it should have the potential to invest and grow. If a company’s current assets do not exceed its current liabilities, then it may have trouble growing or paying back creditors, or even go bankrupt;

- *Elasticity of the capital employed*: the ratio between the net working capital and the capital employed;
- *Leverage ratio*: shows how much capital comes in the form of debt (loans) and assesses the ability of a company to meet its financial obligations. The leverage ratio category is important because companies rely on a mixture of equity and debt to finance their operations and knowing the amount of debt held by a company is useful in evaluating whether it can pay its debts off as they come due;
- *Days receivables/payables*: the average number of days before paying suppliers or being paid by customers.

KPI	unit	Year to Date				
		Actual	Target	Previous Year	Act VS Target	Act VS PY
KPIs Balance Sheet						
<i>Elasticità del Cap. Inv. Netto Op.</i>	%	72%	n.s.	66%	n.s.	6%
<i>Tasso di sviluppo Cap. Inv. Netto Op.</i>	%	18%	-100%	29%	118%	-10%
<i>Tasso di sviluppo del Cap. Circ. Netto Op.</i>	%	29%	-100%	54%	129%	-25%
<i>Tasso di sviluppo Pos. Fin. Netta</i>	%	26%	-102%	38%	128%	-12%
<i>Tasso di sviluppo del Patrimonio Netto</i>	%	-1%	-96%	10%	95%	-11%
<i>gg dilazione clienti</i>	gg	108	48	110	6030%	-2
<i>gg dilazione fornitori</i>	gg	79	0	104	7895%	-25
<i>gg giacenza mag.</i>	gg	105	52	131	5294%	-25
<i>Indice nuovi investimenti</i>	u	-1,17	-5,91	-1,16	-80%	0%
<i>Dividendi o Apporti</i>	€	0	1.073.478	3.300	-100%	-100%
<i>% dividendi vs Patrimonio Netto</i>	%	0,00%	2516,10%	0%	-2516%	0%
<i>PN</i>		1.066.378	42.664	1.073.478		
<i>Leva Finanziaria (PFN/PN)</i>	u	0,33	-1,00	0,42	-133%	-21%
<i>Capitale Fisso Netto Operativo vs Ricavi</i>	%	8,14%	0%	10%	8%	-2%
<i>Capitale Circolante Lordo vs Ricavi</i>	%	52,64%	0%	57%	53%	-4%
<i>Capitale Circolante Netto vs Ricavi</i>	%	21,24%	0%	20%	21%	1%

Figure 2.11. KPIs for the Balance Sheet.

2.8.2 KPIs for the Income Statement

A total of 18 KPIs have been created in order to evaluate the company performance from the Income Statement (Fig. 2.12). Some of the most important are:

- *Return on investment (ROI)*: a financial KPI that shows the profitability of a company. It is used to calculate the benefits an investor will receive in relation to the cost of the investment;
- *Return on sales (ROS)*: a ratio used to evaluate a company's operational efficiency. It provides insight about how much profit is being produced per dollar of sales. An increasing ROS indicates that a company is growing more efficiently, while a decreasing ROS could signal impending financial troubles;

- *Earnings before interest, taxes, depreciation and amortisation (EBITDA) vs revenues*: a measure for a company's overall financial performance and it is used as an alternative to simple earnings or net income. It is a particularly precise measure of corporate performance since it is able to show earnings before the influence of accounting and financial deductions. Here it is expressed as a percentage of the total revenues;
- *Revenues growth rate*: indicates the percentage increase or decrease of revenues compared to the ones from the previous year.

KPI	unit	Year to Date				
		Actual	Target	Previous Year	Act VS Target	Act VS PY
KPIs Income Statement						
Tasso di sviluppo dei Ricavi	%	21,88%	23,18%	13,18%	-1%	9%
Rendimento del Cap.Inv.Netto Op. (ROI)	%	0,53%	n.s.	8,80%	n.s.	-8%
Risultato Op. Lordo vs Ricavi (ROS)	%	0,11%	0,39%	1,76%	0%	-2%
Tasso di Rotazione del Cap.Inv.Netto Op. (NAT)	u	3,40	n.s.	3,30	n.s.	3%
Margine Op. Lordo vs Ricavi (EBITDA %)	%	1,87%	2,09%	3,67%	0%	-2%
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Totale Acquisti Esterni Operativi	€	(€13.570.743)	(€13.667.360)	(€11.004.840)	-1%	23%
Leva Operativa Volumi	u	159	47	12	112	147
Leva Operativa Prezzi	u	885	257	57	628	828
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Creazione di Valore Strategica	€	(€985.649)	€474.452	€185.079	-308%	-633%
Valutazione Strategica						
		Cecità				

Figure 2.12. KPIs for the Income Statement.

2.8.3 KPIs for the Cash Flow Statement

A total of 4 KPIs have been used in order to evaluate the company performance from the Cash Flow Statement (Fig. 2.13). Some of the most important are:

- *Cash flow*: the net amount of cash and cash-equivalents being transferred into and out of a business. At the most fundamental level, a company's ability to create value for shareholders is determined by its ability to generate positive cash flows;
- *Operating cash flow*: a measure of the amount of cash generated by a company's normal business operations. Operating cash flow indicates whether a company can generate sufficient positive cash flow to maintain and grow its operations, or it may require external financing for capital expansion;

- *Operating cash flow vs revenues*: a ratio that compares the operating cash flows of a company with its revenues. This ratio gives the analysts and investors indications about the ability of a company to generate cash from sales. In other terms, it shows the ability of a company to turn its sales into cash. It is expressed as a percentage and the higher this ratio, the better for the company.

		Year to Date				
KPI	unit	Actual	Target	Previous Year	Act VS Target	Act VS PY
KPIs Cash-Flow Statement						
<i>Flussi Cassa Op. Netti vs Ricavi</i>	%	-4,83%	24,56%	-5,57%	-29%	1%
<i>Flussi Cassa Correnti Lordi vs Ricavi</i>	%	-1,41%	20,04%	-4,42%	-21%	3%
<i>Flussi Cassa Op. Netti vs CINO</i>	%	-16,45%	n.s.	-18,39%	n.s.	2%
<i>Flussi Cassa Correnti Lordi vs CINO</i>	%	-4,81%	n.s.	-14,58%	n.s.	10%

Figure 2.13. KPIs for the Cash-Flow Statement.

2.9 Management dashboard

The management dashboard has been created in order to show a snapshot of the company performance in a determined time period. It is characterised by a complete set of metrics which can help the management to identify the most appropriate strategic decision. The dashboard is divided in two parts: one comparing the company actual and previous year performance and the other one comparing actual and budgeted performance. Each part is characterised by the same set of metrics which is composed by:

- A set of KPIs to monitor the ability of the company to generate value both in the short and medium-long term;
- The strategic positioning and sequencing map;
- The analysis of the determinants of the net income.

The economic framework used as backbone for the evaluation of the company performance is the *Integrated Value Creation model* (from now on referred as IVC) which relies on the economic methodology of the Value Based Management (Modigliani & Miller, 1958, 1963).

The IVC model is based on the combination of two different components in one single measure. The two metrics considered are:

- The economic profit generated by the company in each period;
- The economic results related to the expectations of future performances.

Both results are direct consequence of the management quality and its ability to simultaneously optimise the present performance while investing in the future. In particular, the *Current Value Creation (CVC)* provides information on the ability of the company to generate short-term value from its operational activity, while the *Strategic Value Creation (SVC)* indicates the ability of strategically thinking and investing in the medium-long term performance.

By assessing the different combinations of these two metrics it is possible to identify and evaluate the strategy pursued by the company with a particular emphasis on its double nature. On one hand, the first evaluation refers to the company strategic positioning in each year of the period analysis (the strategic positioning); on the other hand, the second assessment concerns the successions of different strategic positions over time (the strategic sequencing).

2.9.1 Current value creation

The current value creation is a measure of the value generated by the company in the short-term through its operational activity. It is an indicator of the quality of the operational management during the year. The CVC is considered a “partial” outcome measure because it is entirely dependent on events that have characterised the business in the short-term outlook and does not take into account the intensity and quality of efforts the company is orienting its own future results.

It is possible to evaluate the current value creation of a company only after having explicitly considered the *opportunity cost of capital*, which is the expected/pretended minimum return by an investor for the risk over a period of time. For an all-equity firm, it takes the name of *cost of equity (CoE)*. The Capital Asset Pricing Model (CAPM) offers the following formula to calculate the cost of equity:

$$CoE = r_f + MPR \times \beta_e$$

In addition, to assess the CVC of an enterprise, the capital invested to be remunerated needs to be considered not in terms of amount of capital employed in the company, but in terms of current economic value. For an all-equity firm, the current economic value is represented by the economic value of shareholder's equity. Indeed, only by referring to this value an investor can judge whether the performance of the company achieved in a certain period can be satisfactory.

Taking into account the two previous considerations, it is possible to evaluate the current value creation of the company by deducting from the net income the capital charge generated by the product between the cost of equity and the current value of equity. The latter value is defined as an arithmetic average between beginning and final values.

The CVC formula is the following:

$$CVC = NI - CoE \times [(E_{V0} + E_{V1}) / 2]$$

The CVC achieved through this formula is a more reliable measure of performance than net income as it incorporates two additional components: the current economic value of shareholders' capital and the degree of risk to which the same capital is subject because invested in a specific firm. Since it is a measure extremely focused on the short-term performance, in order to achieve a complete economic results of the operational business activities, the intensity and quality of efforts with whom the company is supporting its competitive future will be analysed by the SVC in the next section.

2.9.2 Strategic value creation

The strategic value creation is a measure of the ability of the company to generate profit by a strategic governance of the business in a medium-long term perspective. It is completely dependent on the planned and expected performance for the future and takes into account the efforts of the company to invest in its competitive future. Consequently, the SVC represents the part of the economic result connected to the strategic governance of the business in a medium-long term perspective.

It is possible to evaluate the strategic value creation of a company only after having explicitly considered the value of its *Goodwill (or Badwill)*. The determination of the

goodwill has been largely covered by the academic and professional literature. But in this case, it is remarkable to note that the Goodwill will not be considered as an entity to be defined only in exceptional situations (as typically happens in the purchase or sale of business) but as an entity to be defined and monitored periodically in a systematic way.

The Goodwill is by definition equal to the sum of the extra net incomes (Eni) expected during the competitive advantage period appropriately discounted at the cost of equity. Therefore, over a certain N competitive advantage period, the Goodwill value is equal to the sum of the i -th expected extra net incomes discounted at the i -th cost of equity. In other terms, the Goodwill is the net present value of future extra net incomes.

$$G = \sum_{i=1}^N \frac{Eni_i}{(1 + CoE_i)^i}$$

As the Goodwill is driven by expectations regarding future performance, which are influenced by the strategic governance of the business, it follows that the SVC is defined by the change, between two consecutive periods, of the Goodwill value.

The SVC formula is the following:

$$SVC = G_1 - G_0$$

Where:

- G_1 is the Goodwill value at time 1;
- G_0 is the Goodwill value at time 0.

2.9.3 Integrated value creation

As already mentioned, the two components of the value creation are “partial” outcome measurements as each of them focuses only on a singular horizon of the company performance (CVC focuses on the short-term while SVC focuses on the medium-long term). The Integrated Value Creation is defined by the sum of the CVC and the SVC and, on one hand, in terms of short-term performance records the events actually occurred during the year (net income, costs, investments, revenues etc.) while, on the other hand, synthesizes the expectations of future results in a medium-long term perspective.

The IVC formula is the following:

$$IVC = CVC + SVC$$

The IVC is a true economic complete measure because includes a fair return on capital as a function of the company risk. But most importantly, the IVC highlights the quality of the managerial work which should consist in accomplishing two professional duties in contrast: on one hand, the need to assure a good profitability in the short-term in order to enable to operate autonomously in conditions of economic and financial equilibrium and, on the other hand, the competitive duty to invest part of the resources generated today in order to sustain the company competitive advantage in the medium-long term.

2.9.4 Current and strategic economic shareholder return

The utilisation of the integrated value creation methods as a backbone for the analysis of the performance of a company enables to measure the true economic performance of the shareholder (*ESR*, *Economic Shareholder Return*) by emphasising both the strategic (*ESR_S*) and the current (*ESR_C*) contributions. The ESR ratio is given by the relationship between the IVC and the economic value of shareholder's equity ($V_E = E + G$).

The ESR formula is the following:

$$ESR = \frac{IVC}{V_E}$$

In the same way *ESR_S* and *ESR_C* are respectively defined as:

$$ESR_S = \frac{SVC}{V_E}$$

$$ESR_C = \frac{CVC}{V_E}$$

These three metrics are considered to be some of the most important to deal with when to evaluate the company performance from a broader and complete perspective. Therefore, they have been included in the management dashboard and have been placed at the top of the page as first KPIs (Fig. 2.14).

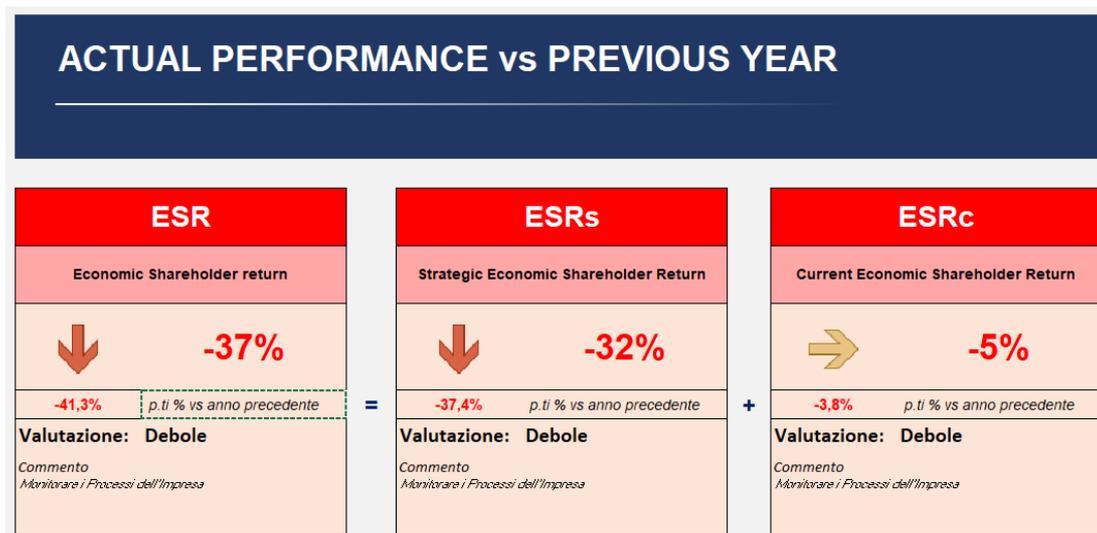


Figure 2.14. Economic shareholder return.

2.9.5 The strategic positioning and sequencing map

Strategy maps are a valuable tool to analyse the strategic positioning of a company and to assess the quality of the business performance. The strategic positioning map used in the management dashboard is based on the matrix approach: it uses a simple two-dimensional Cartesian system defined by an ordered pair of perpendicular lines, a single unit of length for both axes and an orientation for each axis. The two perpendicular lines divide the plane into four regions, called quadrants, each of which bounded by two half-axes. These are normally numbered from 1st to 4th where the signs of the two coordinates are I (+,+), II (-,+), III (-,-), IV (+,-).

Guelfi (2013) defines the scope of the strategic positioning and sequencing map as follow:

“The strategic mapping wants to provide, through a simple graphical representation of immediate understanding, a “snapshot” of the current strategic positioning of the company (the so-called “as is”) to allow management to quickly interiorize the strategic priorities to be pursued, the more coherent resources, the pitfalls to be avoided, the fastest route and / or less risky (the so-called “to do”) to get to the strategic position that the company wants to achieve (the so-called “to be”).

When the analysis of strategic positioning is conducted for several periods the result is a strategic sequence, i.e. not just a snapshot but a path through several periods related to the evolution of the performance achieved by the company: this multi-period sequencing of the strategic positioning is an analysis consistent with the multi-year breath of the strategy and allows you to make an interesting quality assessment of the strategy itself.” (Guelfi, 2013)

The strategic positioning map’s goal is to identify, in a given year, the strategic positioning of the company while, the strategic sequencing map’s goal is to show how the above strategic positioning of the company changed over time. In the management dashboard, the maps have been combined, resulting in one matrix which shows both the current and the past strategic positioning of the company.

The strategic positioning and sequencing map is characterised by two axes variables (Appendix 1):

- The current value creation on the Y-axis is an economic measure of the company’s ability to create value in the present;
- The strategic value creation on the X-axis is an economic measure of the company’s ability to make strategic investments and to prepare its own competitive future.

The combination of the CVC and SVC values shows if and how the company is collecting results in the present and, at the same time, assesses its ability to make investments for the future. Therefore, it is possible to identify four quadrants, each of which defines the strategic positioning of the company in a given year (Fig. 2.15):

- In the 1st quadrant there are the “forward looking companies” which are able to collect results in the short-term while having a strong vision projected into the future. This is the best strategic positioning and shows a lasting value creation attitude;
- In the 2nd quadrant, companies are in a phase of “myopia” where they are able to generate value in the short-term, but they are not investing in their competitive future, destroying value at the strategic level. If the company falls in this quadrant before coming back to the foresight, then it can be evaluated as a temporary state of

relaxation. On the contrary, if the company persists for some years in this quadrant, probably it is as result of a short-term exploitation strategy which involves a high probability to slip in the III quadrant;

- In the 3rd quadrant there are the “blind companies” unable, at the same time, to invest into the future and to collect results in the present. The main risk for these companies is to be involved in a vicious circle of value destruction. This quadrant represents the worst strategic position and it shows a systematic value destruction attitude;
- In the 4th quadrant there are the companies that are unable to create value in the short-term, but they are creating strategic value by making investments in the medium-long term. Usually, the 4th and the 2nd quadrants constitute a transition phase as companies cannot afford to relax or changing their strategies (business model) for a long time.

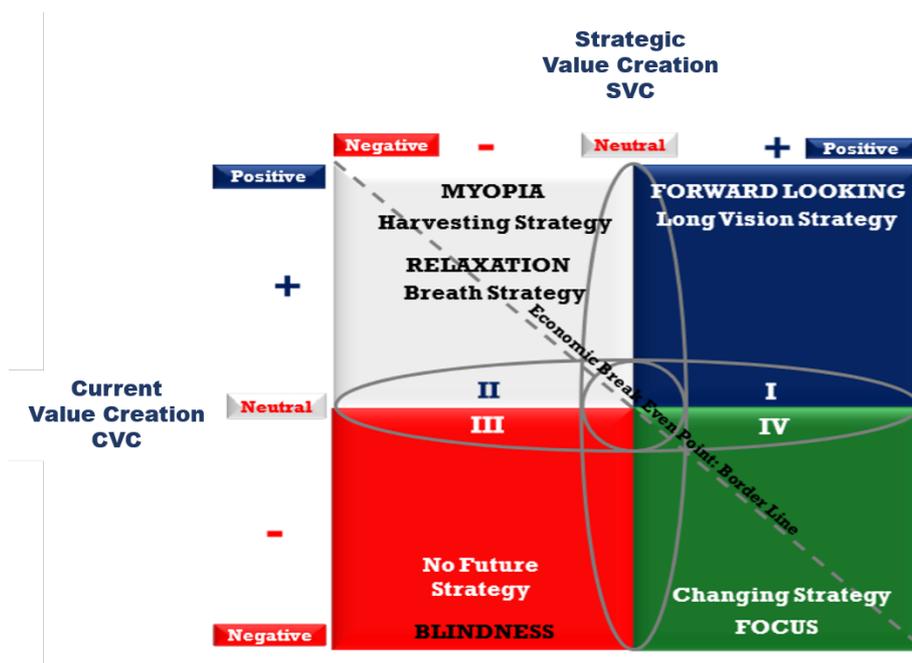


Fig 2.15. Strategic positioning map.

2.9.6 The analysis of the determinants for the Net Income

The analysis of the determinants of the Net Income is a methodology used to analyse the main factors that have influenced the change in the Net Income from one year to another. The first variable on the graph is the current Net Income, while the last one is the Net

Income of the previous year. In the middle, the graph provides an analysis of the deviations of the main costs that have impacted the change in the Net Income (Fig. 2.16).

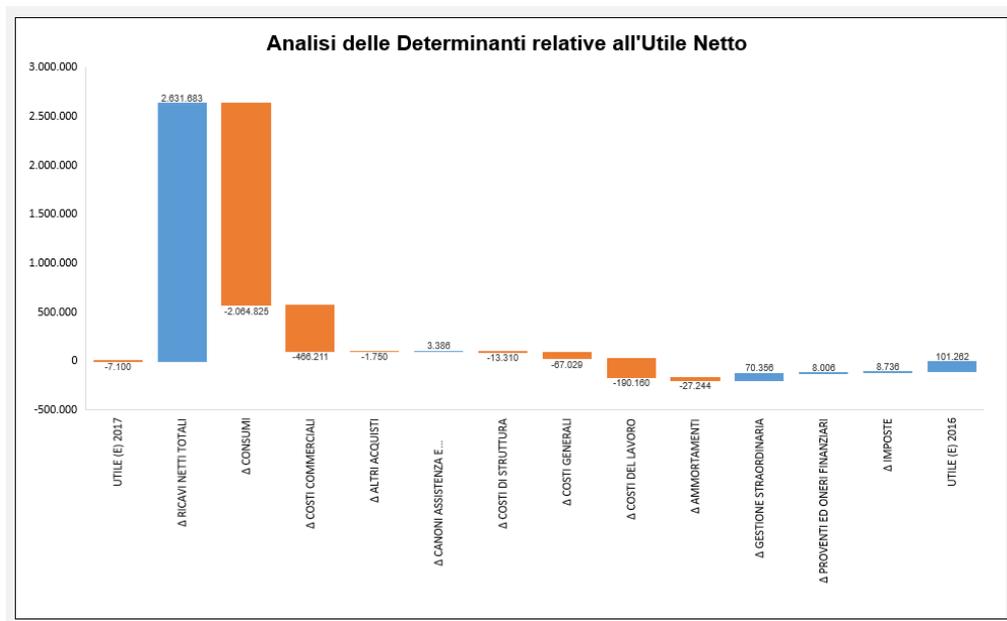


Fig 2.16. Analysis of the determinants for the Net Income.

2.9.7 Other KPIs

Beside the IVC model, some other KPIs have been included in the dashboard to monitor the main contributors to the value creation process of the company (Fig 2.17). These KPIs are:

- *Enterprise value*: a measure of a company's total value, often used as a more comprehensive alternative to equity market capitalization. It includes in its calculation the equity of a company but also short-term and long-term debt as well as any cash on the company's balance sheet. Enterprise value is a popular metric used to value a company for a potential takeover. It is defined as the sum of the net capital employed and the company's economic value;
- *Shareholder value*: the sum of the company's equity value and economic value;
- *Capital employed*: the total amount of capital used for the acquisition of profits by a firm. It is the value of all the assets employed in a business (or business unit) and can be calculated by adding fixed assets to working capital or by subtracting current liabilities from total assets. Capital employed can give a snapshot of how a company is investing its money;

- *Economic value*: a measure of the equity economic value of a company related to the extra profit it is able to generate, to its relative expected growth rate and to the expected competitive advantage lifetime;
- *Equity value*: the value of a company available to owners or shareholders. It is the enterprise value plus all cash and cash equivalents, short and long-term investments, and less all short-term debt, long-term debt and minority interests.

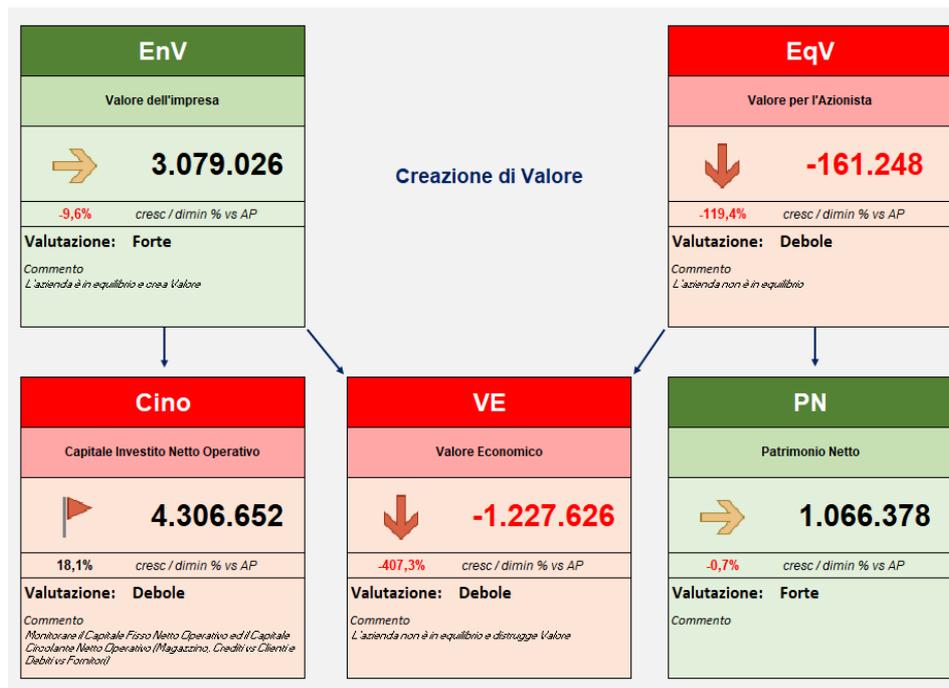


Fig 2.17. Value creation KPIs and their correlation.

2.10 Questionnaire development

The questionnaire has been developed after the completion of the financial PMS with the goal of enhancing the statistical relevance of the research. In fact, as stated in the research methods definition, from the results gained by implementation of the financial PMS in a SME it is not possible to produce a strong argument on the research question. This is because the data collected with the first method are related only to one specific company and, therefore, extending them to the overall industry would lead to a position with very low statistical relevance.

The questionnaire is composed by 7 questions and have been delivered to the management teams of 30 SMEs operating in the Italian IAM Wholesale Spare Part Distributors sector.

Any of the companies that participated to the survey has been using similar PMS systems for at least 1 year. The questionnaire has been structured aiming to understand if the introduction of the PMS improved the overall company performance and how the PMS helped to improve company performance.

Below are the questions selected for the survey.

1. How many employees does the company have?
2. How long have the company been using the PMS?
3. How often does the management team use the PMS?
4. Have the PMS helped the management team to improve the company performance?

If yes:

5. How did the PMS help to improve the company performance?
6. Which are the business areas that benefit the most from the usage of the PMS?
7. How long after the PMS introduction did you see the first positive results?

If no:

5. Why the PMS was not effective for the company?

The first three questions have been developed to determine the company's size, for how long the company has been using the PMS and how frequently. Afterward, Question 4 has been conceived for a better understanding of the management's opinion about the PMS and its impacts on the company performance. By answering the fourth question two different paths are opened:

- In case of positive answer, three more questions have been designed to understand why the PMS was effective, on which business units it has had the highest impact and the amount of time needed to produce the first positive results.
- In case of negative answer, one direct but at the same time general question has been thought to highlight the reasons why the PMS was not effective in the company.

A great contribution for the development and the distribution of the questionnaire has been given by the Research Centre "Competitive Risk and Enterprise Value" of the Polytechnic of Turin which helped the research by dispensing it to over 30 SMEs operating in the

Italian IAM Wholesale Spare Part Distributors sector. The companies received the questionnaire in January 2019, and it has taken almost two months to gather the results.

Questionnaire results are analysed in the following chapter and, most importantly, they are compared with results arising from the first research method. The comparison of results between two different research methods has been fundamental to increase the statistical relevance of the study and to develop a strong argument on the research question.

3. Research results

3.1 PMS implementation results

To evaluate the impact of the PMS implementation in the SME, the company Income Statement in 2018 has been compared with the one from the previous year. The PMS has been introduced in the company on July 2018, therefore the results which are going to be analysed refer to only six months of activity. Nonetheless, it is possible to notice that six months have been enough for the PMS to produce positive effects on the company performance.

The company Income Statements 2018 and 2017 are displayed in the table below. It shows the value of each account, the impact of that account on the revenues (in percentage) and the difference between the value in 2018 and in 2017 (Fig 3.1).

Conto Economico	2018	%	2017	%	Delta 2018 vs 2017
Ricavi ricambi - resi	17.082.800	102,25%	15.141.461	103,27%	1.941.339
Premi a clienti	-293.700	-1,76%	-256.372	-1,75%	-37.328
Sconti a Clienti	-81.728	-0,49%	-223.347	-1,52%	141.619
RICAVI NETTI TOTALI	16.707.372	100,00%	14.661.742	100,00%	2.045.630
VALORE DELLA PRODUZIONE	16.707.372	100,00%	14.661.742	100,00%	2.045.630
Acquisto Merci	-12.791.578	-76,56%	-10.887.637	-74,26%	-1.903.941
Premi da Fornitori	559.536	3,35%	529.053	3,61%	30.484
Sconto da Fornitori	23.431	0,14%	35.371	0,24%	-11.940
Variazione Magazzino Prodotti Finiti	530.134	3,17%	-21.955	-0,15%	552.089
CONSUMI	-11.678.477	-69,90%	-10.345.169	-70,56%	-1.333.308
MARGINE COMMERCIALE LORDO	5.028.895	30,10%	4.316.573	29,44%	712.322
Ricavi Diversi	56.407	0,34%	44.657	0,30%	11.750
Costi Logistica IN e OUT	-585.921	-3,51%	-504.304	-3,44%	-81.617
Costi Autocarri	-22.999	-0,14%	-19.679	-0,13%	-3.320
Costi Autovetture	-103.715	-0,62%	-87.945	-0,60%	-15.770
Costi Commerciali BCS e AUTOCREV	-19.710	-0,12%	48.037	0,33%	-67.747
Altri Costi Commerciali	-91.139	-0,55%	-149.250	-1,02%	58.111
Costi Formazione	44.436	0,27%	44.254	0,30%	182
Costi Programmi Informatici	-2.433	-0,01%	-3.063	-0,02%	630
Costi Pubblicitari	-39.753	-0,24%	-27.206	-0,19%	-12.547
Provvigioni	-1.093.530	-6,55%	-1.027.775	-7,01%	-65.755
COSTI COMMERCIALI	-1.858.358	-11,12%	-1.682.274	-11,47%	-176.083
COSTI VARIABILI ESTERNI	-13.536.835	-81,02%	-12.027.443	-82,03%	-1.509.392
MARGINE COMMERCIALE NETTO	3.170.538	18,98%	2.634.299	17,97%	536.239
MARGINE DI CONTRIBUZIONE	2.956.225	17,69%	2.449.737	16,71%	506.488

ALTRI ACQUISTI	-41.933	-0,25%	-38.885	-0,27%	-3.048
Canone e assistenza	-71.002	-0,42%	-51.672	-0,35%	-19.330
Altre manutenzioni	-31.252	-0,19%	-45.531	-0,31%	14.279
CANONI ASSISTENZA E MANUTENZI	-102.254	-0,61%	-97.203	-0,66%	-5.050
Utenze	-108.285	-0,65%	-106.817	-0,73%	-1.468
Noleggi	-142.061	-0,85%	-132.092	-0,90%	-9.969
Affitto	-21.123	-0,13%	-21.123	-0,14%	0
Altri costi di struttura	-74.009	-0,44%	-63.210	-0,43%	-10.799
COSTI DI STRUTTURA	-345.478	-2,07%	-323.242	-2,20%	-22.236
Consulenze	-69.248	-0,41%	-43.468	-0,30%	-25.780
Compensi amministratori	-220.402	-1,32%	-278.086	-1,90%	57.684
Emolumenti sindaci	-19.455	-0,12%	-19.583	-0,13%	128
Imposte ed altro	-62.326	-0,37%	-65.359	-0,45%	3.034
COSTI GENERALI	-371.431	-2,22%	-406.496	-2,77%	35.066
COSTI FISSI ESTERNI	-861.096	-5,15%	-865.827	-5,91%	4.732
VALORE AGGIUNTO	2.309.442	13,82%	1.768.472	12,06%	540.970
Costo del personale	-1.692.047	-10,13%	-1.401.404	-9,56%	-290.643
Accantonamento TFR	-100.295	-0,60%	-85.518	-0,58%	-14.776
Altri costi del personale	-12.801	-0,08%	-9.803	-0,07%	-2.998
COSTO DEL LAVORO	-1.805.143	-10,80%	-1.496.725	-10,21%	-308.418
MARGINE OPERATIVO LORDO (EBIT)	504.299	3,02%	271.746	1,85%	232.553
MARGINE OPERATIVO LORDO Adj. (I)	659.981	3,95%	381.700	2,60%	278.280
Ammortamenti	-252.814	-1,51%	-257.127	-1,75%	4.313
AMMORTAMENTI	-252.814	-1,51%	-257.127	-1,75%	4.313
RISULTATO OPERATIVO LORDO (EB)	251.485	1,51%	14.619	0,10%	236.866
Oneri Straordinari	-4.458	-0,03%	5.306	0,04%	-9.764
Proventi Straordinari	49.018	0,29%	90.378	0,62%	-41.360
GESTIONE STRAORDINARIA	44.560	0,27%	95.684	0,65%	-51.125
Proventi Finanziari	61.854	0,37%	55.217	0,38%	6.637
Oneri Finanziari	-108.971	-0,65%	-108.206	-0,74%	-765
PROVENTI ED ONERI FINANZIARI	-47.117	-0,28%	-52.989	-0,36%	5.871
RISULTATO EXTRA OPERATIVO	-2.557	-0,02%	42.696	0,29%	-45.253
RISULTATO ANTE IMPOSTE (EBT)	248.928	1,49%	57.315	0,39%	191.613
IMPOSTE	-135.341	-0,81%	-64.415	-0,44%	-70.926
UTILE (E)	113.587	0,68%	-7.100	-0,05%	120.687

Figure 3.1. Company's Income Statements 2017 and 2018.

The first and most important observation that needs to be made by looking at the Income Statements is that the company shifted from being unprofitable in 2017 to being profitable in 2018. On one hand, it is reasonable to claim that the profitability of a company is influenced by a series of controllable and uncontrollable components (market, competitors, suppliers, clients etc.). On the other hand, by focusing on some specific metrics of the Income Statements, it is possible to notice that part of this outstanding result can be attributed to the utilisation of the PMS.

By looking at the first rows of the Income Statement, it is possible to notice that the company increased its revenues by more than 2 million in 2018 mostly thanks to a remarkable increase in sales. However, part of this result has been achieved thanks to an important decrease on clients' discounts of about 141.619€ compared to the previous year. This result gains even more relevance if considering the specific industry in which the company is operating. In fact, in the Italian IAM Wholesale Spare Part Distributors sector giving discounts and incentives to clients is a frequent strategy to increase sales. Nonetheless, these incentives may negatively affect revenues if they are not carefully managed. The PMS has helped the company achieving this result by providing the management team an effective monitoring system and several KPIs on sales. In addition, thanks to the PMS monthly report, the management has been able to spot inefficiencies in the clients' discount process and to take effective actions which ultimately increased revenues.

A second important achievement accomplished with the use of the PMS is the increase of the gross commercial margin. The gross commercial margin is one of the main indicators used by wholesale distributors to evaluate the profitability of a product or a series of product. It does not take into account variable costs and it is obtained by subtracting the cost of goods sold to the revenues. The gross commercial margin in 2018 has increased by 0,66 percentage points compared with the previous year, recoding a value of more than 5 million. Part of this result has been achieved by reducing the impact of cost of goods sold on revenues from 70,56% to 69,90%. The increase in the supply of goods ("Aqusto Merci"), together with the reduction of the cost of goods sold ("Consumi"), suggests that the company has been able to improve its supply process. Specifically, by reducing costs of supply which increased the gross commercial margin.

Other effects produced by the PMS can be identified by looking at the company external variable costs. In fact, in 2018 the company reduced the impact of external variable costs on revenues by one percentage point, recording an impact of 81,02% (external variable cost impact on revenues was 82,03% in 2017). Part of this achievement is due the reduction of other commercial costs by 58.111€. The decrease of external variable costs impacted positively the performance of the company which increased the net commercial margin of more than 500.000€.

It can be observed how the PMS had another positive impact on the company performance by looking at the company fixed expenses. In 2018, the company saved 57.684€ on fees to administrators and reduced by more than 35k€ the general costs. Thanks to the reporting system focused on different KPIs and costs metrics, the management team easily have access to up-to-date data on costs trends. This has helped the company to increase the added value by 540.970€, 1,8% more than in 2017.

After having analysed the positive effects that the PMS produced on the company performance, it is possible to confirm that the PMS helped the company becoming profitable in 2018. A further confirmation can be obtained by comparing the main performance indicators of the company performance before and after the introduction of the PMS (Table 3.1).

Table 3.1. Main indicators of the company's performance 2018 vs 2017.

	2018	2017	% Increase / Decrease
EBITDA	504.299 €	271.746 €	86%
EBIT	251.485 €	14.619 €	1620%
PROFIT	113.587 € -	7.100 €	1500%

Among the several business areas that are positively influenced by the use of the PMS, the most important one was certainly the cost management. In fact, thanks to the different set of KPIs and metrics provided by the PMS, the management team has achieved a remarkable costs reduction in 2018 which lead the company to reverse the negative profitability trend of 2017. In particular, the company recorded a significant decrease of both fixed and variable external costs, which, together with the reduction of the cost of goods sold, decreased the company general costs.

This analysis confirms that the PMS effects on the SME's performance are definitely beneficial. Nonetheless, due to the little statistical relevance of the methodology used, it is not possible to use only these results to build a strong position on the research question. In

order to understand if these results can be extended to the whole industry and, consequently, to build a stronger position on the research question, these results will be compared with the results of the second research method. In case of congruence, relevant conclusions and business recommendation can be defined. If significant inconsistencies between the two results will be highlighted, new research directions will be opened in order to understand whether the limitations lay in the PMS, in the SMEs characteristics or in the industry.

3.2 Questionnaire results

The questionnaire is composed by 7 questions and have been delivered to 30 management teams of SMEs operating in the Italian IAM Wholesale Spare Part Distributors sector. Any of the companies that participated to the survey has been using similar PMS for at least 1 year.

The results of the questionnaire clearly identify a common opinion on the impact of PMS on SMEs performance. The main insight gathered from the questionnaire is that 90% of the respondents recognise that PMS have positive impact on the companies' performance while the other 10% do not recognise any particular benefit.

According to the respondents, the time needed to see the first positive results is between 6 months and 1 year after the implementation of the system. However, all the respondents agree that after the 1st year, it is clearly possible to see some improvements. The business area impacted the most by the system is the cost management. In particular, the management teams recognised that the PMS help them effectively manage costs especially regarding:

- *Sales*: the PMS helps to keep control of incentives and conditions given to the clients during the year. In case of negative performance, it allows the management to immediately react by taking corrective actions in the short term. Since the company is operating in the Italian IAM Wholesale Spare Part Distributors sector, giving discounts and incentives to clients represents an effective strategy to increase sales. Nonetheless, if these incentives are not carefully managed, they may negatively affect revenues.

- *Supply*: the PMS is considerably useful to keep track of purchasing costs over the year. In this way, the management team can evaluate if the company is purchasing material or products in the same way, better or worse than in the past. In case of negative performance, corrective actions can be immediately taken in order to improve the terms and conditions of supply and reduce costs.
- *Production and operations*: the PMS allows the management to keep control of the operations and production costs and to understand if the company is producing more or less efficiently than the past. Nonetheless, the timeliness of reaction in this business area is way slower than in the others because of its complexity.

The main benefits that respondents recognised to gain by the utilisation of the PMS are:

1. *Timing of information*: the PMS allows to receive the right information at the right time. By checking regularly the reporting system, the management team constantly keeps track of the company performance. In case of negative performance, it is possible to quickly take specific actions to solve the problem in the most efficient way. The PMS metrics are consulted monthly from sales and supply departments and quarterly from the finance department.
2. *Homogeneity over the evaluation of financial performance*: the PMS offers a standard of communication of financial performance which reduces significantly the communication difficulties between the members of the management team. By using a common set of metrics and KPIs, it is easier to communicate and avoid misunderstanding within the team.

The 10% of respondents that did not recognise any improvement from the implementation of the PMS were not able to provide significant reasons behind this statement. Some of the reasons for the PMS failure are:

- Difficulties in understanding the PMS metrics and KPIs
- Difficulties in integrating the PMS within the company

3.3 Comparison of results

It appears clear that the two methodologies show high consistency of results. The first insights obtained by performing quantitative analyses on the company Income Statement find perfect match with the results of the questionnaire. In particular:

- The analysis of the Income Statements shows that the company has been able to reduce both fixed and variable external costs, especially concerning the reduction of clients' incentives and discounts and the reduction of commissions to the administrators. This result is in line with the result from the questionnaire where respondents stated that one of the business areas where the PMS has the highest impact is sales.
- The analysis of the Income Statement shows that the company has been able to produce more, while efficiently improve the process of supply (less costly). In fact, after only six months from the PMS implementation, the company increased the gross commercial margin by 0,66 percentage points. Again, this result is perfectly in line with the results from the questionnaire where respondents stated that PMS strongly impacts supply processes.
- The fact that after only six months from the PMS implementation it is possible to see several positive results confirms that timing of information is one of its most important benefits. In fact, thanks to the speed and quality of the information given by the reporting system, the management team has been able to take specific action in 2018 and to invert the negative profitability trend of 2017.

The consistency between the results from different methodologies serve as a basis for the constitution of a strong argument on the research question. In fact, through the analyses that have been carried out in this thesis, it is possible to claim that the implementation and utilisation of PMS in SMEs improves company performance. Because of the timing of information, several positive results can be seen only six months after the implementation of the system in the company. The main benefits of the utilisation of the PMS are costs management (which leads to costs reduction), timing of information and homogeneity over the evaluation of company financial performance (which leads to the reduction of communication inefficiencies).

4. Conclusion, limitations and further developments

The objective of this dissertation is to investigate whether the introduction of financial PMS in Italian IAM SMEs operating in the Wholesale Spare Part Distributors sector leads to significant improvements in their financial performance. In order to corroborate this hypothesis with high quality and diversified data, two research methods were selected: a research trial involving the development and implementation of a PMS in a SME operating in the Italian IAM; and a quantitative study among 30 companies that operate in the market. Both methods have produced valuable insights and, thanks to the critical comparison of results, it has been possible to answer the research question with a solid argument.

Both methodologies have shown high consistency of results. Statistical analysis of the Income Statement of the company taking part in the trial (before and after the implementation of the PMS) shows that the company has been able to reduce both fixed and variable costs while producing more efficiently. This is corroborated by findings from the quantitative study. As such, this dissertation successfully proves that the implementation of PMS in SMEs operating in the Italian IAM Wholesale Spare Part Distributors sector has a positive impact on company performance.

Starting from this result and focusing the analysis on more specific indicators, it was also possible to identify factors that are most positively impacted by the introduction of PMS in SMEs. Besides the overall improvement in performance, results show that PMS mainly impact cost management and responsiveness. In particular, the system helps to reduce costs associated with sales and to improve the supply chain efficiency. Company responsiveness improves thanks to the enhanced timeliness of information. In fact, by providing senior management with the right information at the right time, the system speeds up the process of problem identification and resolution. In addition, the system creates a standard of communication of the company's financial performance which helps to reduce misunderstandings when evaluating financial metrics.

The combination of qualitative and quantitative research methodologies allowed to produce sound research results that build a solid argument in favour of the research

hypothesis. However, it is important to highlight that the methodology bears some limitations that further research could overcome. The two main limitations that have characterised this project are:

1. The PMS was implemented in a single company and for a period of only six months. This means that, on one hand, it is not possible to extend the results achieved on a company to all the companies in the sector; and on the other hand, that the short period of time in which the PMS was used might be not sufficient to deduce its real impact;
2. The number of respondents to the questionnaire was limited to 30, therefore the statistical significance of the results decreases.

Overall, this dissertation produced truly valuable results and enabled to understand the actual impact of PMS on SMEs operating in the Italian IAM Wholesale Spare Part Distributors sector. Nonetheless, by using this research as a starting point, further research could and should be conducted. On one hand, it would be interesting to understand if the results achieved in the Wholesale Spare Part Distributors sector can be replicated in the industry as a whole (Italian IAM). On the other hand, it would be stimulating to develop an improved version of the PMS which overcomes other limitations highlighted by the literature of Busi, Alfnes and Fauske in 2015. In the case these two studies are carried out, it will be possible to understand to which extent a good PMS can impact the performance of a SME and if SMEs in the Italian IAM can equally benefit from the use of performance management systems.

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Appendix

Appendix 1. Strategic positioning and sequencing map.

