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"STRATEGIC PLAN AND FINANCIAL COMMUNICATION. THEORETICAL AND EMPIRICAL ANALYSIS"

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Il candidato dichiara che il presente lavoro è originale e non è già stato sottoposto, in tutto o in parte, per il conseguimento di un titolo accademico in altre Università italiane o straniere.
Il candidato dichiara altresì che tutti i materiali utilizzati durante la preparazione dell'elaborato sono stati indicati nel testo e nella sezione "Riferimenti bibliografici" e che le eventuali citazioni testuali sono individuabili attraverso l'esplicito richiamo alla pubblicazione originale.

Firma dello studente

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Summary

Introduction

The evolution of management studies during the 80's took to an important turning point in the view of strategic planning.

Initially planning activities were entrusted to specific departments, the planning process was too intricate, and not enough linked with the daily activities of the company.

Considered the criticism of the theory and, more important, the recurring failures of these processes, companies have reallocated this function letting the Strategic Plan assume his central role in the company management[1].

Using Google Ngram Viewer it is interesting to notice two things:

https://books.google.com/ngrams
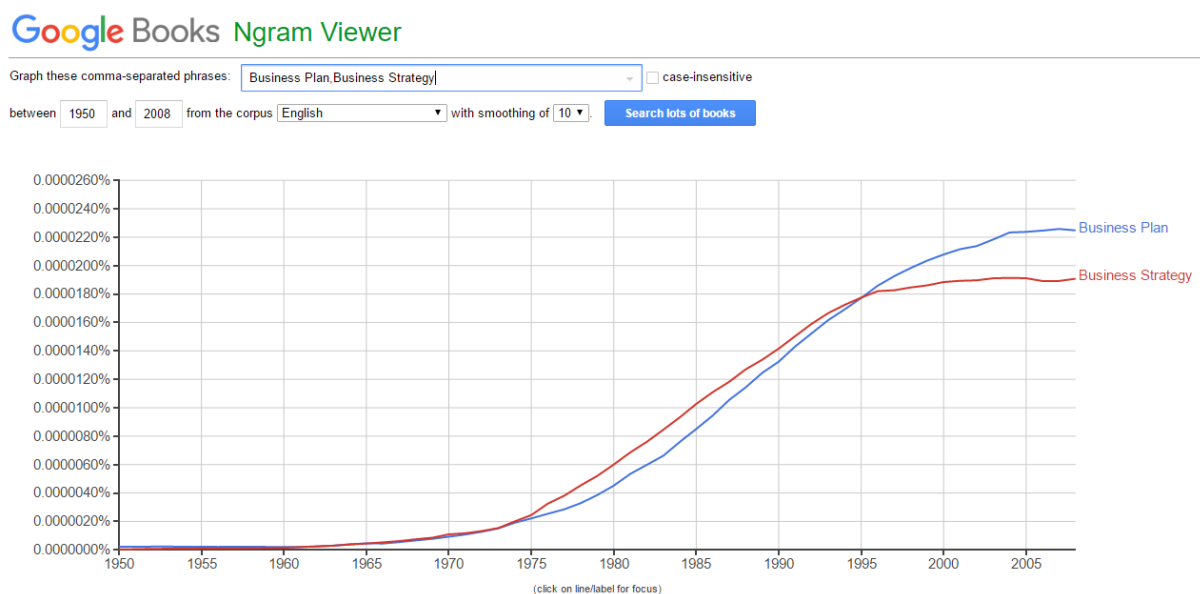
1) Firstly, how the words *Business Plan* experienced a considerable increase in printed sources since 1975

2) Secondly how there is a positive correlation between the presence of the words *Business Plan* and the words *Business Strategy*

In a complex and advanced competitive environment, creating and developing a successful strategy requests a rational approach intended to the analysis of all the variables involved, both

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[1] Mazzola P., 2003. *Il piano industriale, Progettare E comunicare le strategie d'impresa.* Milano: Università Bocconi Editore, p. XI-XII

internal and external, in order to catch and foresee market evolution.

To obtain this result the planning activity reveals itself essential not just from a strategical point of view but also from an operational one.

The only strategic activity, even if fundamental, risks not to communicate concretely the targets and results that a company means to reach both to internal and external stakeholders.

The planning activity needs also to find its concrete dimension: which kind of historical data does it rely on? Where is it possible to find this data? What level of detail is it necessary to consider for plan? Which kind of metrics and indicators are important to build, and using which kind of levers?

Most of the literature examined for this work (Guatri Marinelli, 2001; Borello, 2009; Guzzetti, 2002 etc.) does not answer directly to these questions. It mainly focuses on theory, on the fundamental steps necessary to draft a complete Plan (the majority of the literature is about *Business Plan* and not *Strategic Plan*) and it is largely addressed to entrepreneurs.

On the other hand, papers that are not included in this category such as the Strategic Plan Guide by *Borsa Italiana*[2], very important document for this argument, are more intended as a series of instruction and rules for the draft of a Strategic Plan without facing directly concrete issues.

The aim of this research is to understand how the activity of drafting a Strategic Plan can be carried out tangibly with a technological support suggesting different uses of it. Moreover, it wants to examine how it is possible to link all the qualitative inputs of a forward-looking strategy to the concrete variables of planning using specific and precise indicators. This can permit to:

1. Create approval around the proposed strategy through the presentation of challenging objectives
2. Control the gap between results and declared objectives
3. Verify the consistency between the expected performance improvements, strategic choices and planning levers[3]

The research is divided in two main parts.

The first chapter is a theoretical dissertation about the strategy, as a starting point of every planning activity, and the main elements that a Strategic Plan needs to cover in order to be

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[2] Borsa italiana, 2003. *Strategic Plan Guide, www.borsaitaliana.it.*
[3] Mazzola P., 2003. *Il piano industriale, Progettare E comunicare le strategie d'impresa.* Milano: Università Bocconi Editore, p. 139-140

complete and reliable.

The second chapter is the empirical analysis of an actual Strategic Plan drafted with the use of a Corporate Performance Management Tool in order to face concretely most of the points touched in the first chapter.

This analysis aims to present two aspects of the planning process.

Firstly, the actual process of planning, also from a technical point of view, in order to understand what actually means to use a CPM tool and which are the possibilities, the levers available and the level of detail that can be reached.

Secondly, the output of the process is analysed: management and planners use indicators to achieve strategic objectives and goals. They define driver KPIs and correlate them with outcomes. They know what behaviours drive desired outcomes and set targets accordingly. That is why it is important to build a complete and traceable information that is possible to rely on in order to deploy an effective Strategic Plan.

A research of TDWI[4] issued in September 2008 based on a sample of 678 people (mostly corporate IT professionals or consultants who work at large organizations in the U.S.) shows that almost one-third (31%) of survey respondents whose organizations have fully or partially deployed KPI initiatives say their KPIs have "changed behaviour and improved performance" to a very high or high degree. Almost half (47%) said the impact of the KPIs has been moderate, while 8% said the impact has been low or very low.
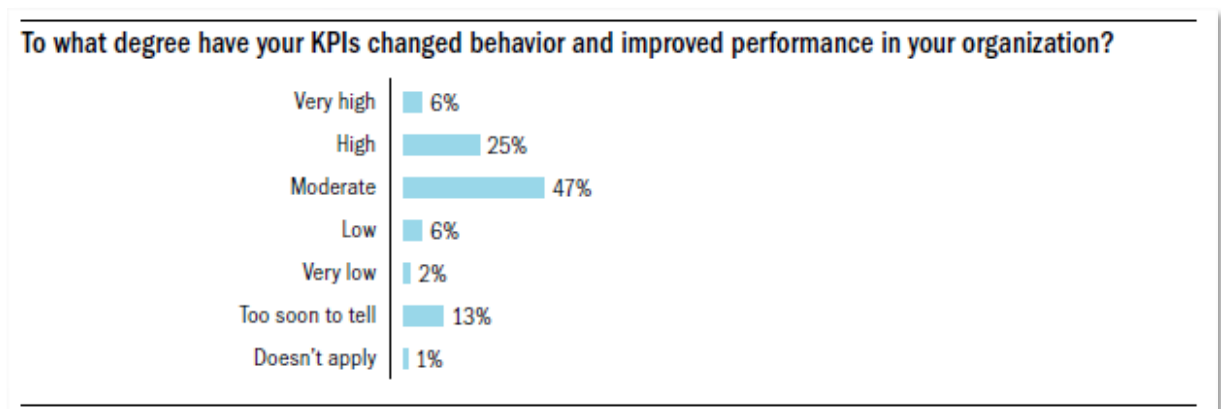
Eckerson W. (2009), PERFORMANCE MANAGEMENT STRATEGIES How to Create and Deploy Effective Metrics, P.18

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4 Eckerson W. (2009), PERFORMANCE MANAGEMENT STRATEGIES How to Create and Deploy Effective Metrics, TDWI. www.tdwi.org

The method used for this part is the Content Analysis based mainly on the procedure illustrated by Krippendorf (1989), White and Marsh (2006) and Weber (1990) .

The indicators developed during the planning process described are evaluated using a codebook based on a coding framework that considers the main quality dimensions of a KPI according to the literature (Marr, 2006; Eckerson, 2009).

Despite the limits and the simplifications, this research aims to approach the topics related to the Strategic Plan from another point of view with respect to most of the current literature, a more practical one.

Starting from the theoretical basis it wants to illustrate a model that is scalable and can reach different level of details according to the needs of the business linking the qualitative dimension of the Strategic Plan to the quantitative one.

Chapter 1: Theoretical analysis

1.1 Business Strategy

The *Business Strategy* is the system of decision and activities that defines the company positioning in the market and the relationships with the economic, social, political and cultural environment.

It is aimed to reach a sustainable and long lasting competitive advantage in the long term.

To guarantee the survival of the company it is necessary to achieve an equilibrium in all the markets involved and to meet the expectations of the stakeholders. Hence, the company needs develop a set of tangible, intangible and human resources shaped to satisfy the needs of a particular target of customers.

More precisely the strategy should define:

- the value proposition that the company intends to deliver
- the target of the offer and how to reach it
- the procurement markets where to find all the necessary resources
- how to cope with competitors[5]

"If you ask managers what they do, they will most like tell you that they plan, organize, coordinate and control. Then watch what they do. Don't be surprised if you can't relate what you see to these words. [...]

The pressures of the job drive the manager to take on too much work, encourage interruption, respond quickly to every stimulus, seek the tangible and avoid the abstract, make decision in small increments and do everything abruptly."[6]

Henry Mintzberg underlines how the strategy cannot be something casual or related with particular or unexpected events but a rational and studied planning process that creates the pattern of every decision took in the daily operations.

In fact, *Plan* and *Pattern* are two of the five P's that determine his definition of strategy[7]:

- **Plan:** it is a set of consciously intended course of action. This gives to the strategy two

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[5] Sciarelli S.,2008. *Elementi di economia e gestione delle imprese*. Padova: CEDAM, p.: 178-185
[6] Mintzberg H.,1990. The Manager's job: Folklore and Fact, Harvard Business Review.
https://hbr.org/1990/03/the-managers-job-folklore-and-fact
[7] Mintzberg H., 1987. *5 Ps of Strategy in the strategy process*. California Management review

important characteristics: it is made in advance of the actions to which it applies and it is developed after proper analysis.

- **Ploy:** it is a scheme addressed at coping with the competitors
- **Pattern:** it is the concrete part of a strategy, the one made by actions. If the plan is the intended strategy, the pattern is the realised one. A pattern makes a strategy consistent in behaviour both in the case of expected situation and in the case of unexpected ones as reaction to contingent situations.
- **Position:** it is not only the position in the marketplace with respect to other players but also the position in the different kind of environments (social, political, etc.) in which the organisation is placed.
- **Perspective:** it is the way in which the company perceives the world. A set of behaviours and beliefs shared by the members of the organization that drive all its activities.

Focusing on the first P, it is intuitive that a *Plan* is chosen among the alternatives because of the expected goals. These goals are the direct result of a particular operation management so to reach an equilibrium is important so that the direct activities are linked with the desired outcome. It is necessary a coherence between all the different decisions undertaken in the company: the segment where to operate, the particular need to satisfy, the channel to reach the customer and the necessary resources to develop the core business. These elements their selves are not sufficient to explain the success of an organisation; they are a real value added only together.

However, it is important not to confuse strategy with operational effectiveness.

It is widespread practice to improve the latter through programs like *Total Quality Management*, *Outsourcing* and *Benchmarking* in order to achieve a best practice and over perform toward the competitors. A constant improvement of operational effectiveness is necessary for the company's growth of profitability but, to reach a long lasting competitive advantage, is not sufficient.

The first reason is that all the practises above are moderately easy to imitate and competitors can soon fill the gap.

The second reason is that following the same programs and the same behaviours, companies tend to look alike more and more; a meaningful example can be having the same supplier of an outsourced activity. This is harmful for the competition because erodes the margin considered the declining prices and the insufficient differentiation of the offer.

Competitive strategy is about being different. It means deliberately choosing a different set of activities to deliver a unique mix of value. [8]

[8]Porter M., 1996. *What is strategy*. Harvard Business Review. p. 3-4

1.2 The Strategic Plan

1.2.1 Strategic Plan: Introduction

Before starting, it is necessary to make a clarification about the difference between the concepts *Business Plan* and *Strategic Plan,* often considered, wrongly, synonyms.

A *Business Plan* is a document written by a team of entrepreneurs, before the Start-up of a company, often to receive the approval of investors or financial institutions. It is characterized by an accurate description of the activities and of forecasted scenarios in which the company means to operate. There is a pronounced focus on the Break-Even Analysis and the Payback Period.

A *Strategic Plan* is instead conceived for companies of bigger dimension, already settled in the market, with a focus mainly based on the strategic intentions and actions to undertake during the planning period. It is drafted every 3 years if the company is listed or when it is facing extraordinary events.

The planning approach is also a discriminating factor: Business Plan has mainly a direct approach: it considers all the variables to calculate the necessary information whereas the Strategic Plan has mainly an indirect approach focusing on the historical data and forecasting changes. This allows simpler decisions.

The first method is surely more complicated because needs a lot of sources so, usually, it is better to apply it only to relevant Key Value Drivers.

1.2.2 Strategic Plan: Definition and functions

The Strategic Plan is the document that illustrates the strategic aims of management relating to the company's competitive strategies, the action which will be carried out for the achievement of the strategic objectives, the evolution of the Key Value Drivers[9] and the expected results[10]. To do this it relies on qualitative elements to describe the main characteristics of the strategic actions and the cause-effect relations with the performance. It resorts instead to quantitative elements to illustrate the possible evolution of the environmental variables, weakly affected by the company strategy, and the financial-economic projections related to plan timeline.

The Strategic Plan performs an essential role with regards to:

- management: it is useful for the portrayal of the business outlook
- member of the Board of Directors: it allows them to perform their role of guiding and supervising the company
- company: to attract all the necessary resources, human and financial, in order to carry out the strategy and to get other companies involved in strategic alliances. It is also very useful to get the market's endorsement.

The objectives to prepare a Strategic Plan are external and internal.
The external ones are obtaining approval and consequently necessary financial resources from investors when the company is facing a turnaround or is about to undertake a particular action (entering a new market, launching a new product etc.). In fact, a Strategic Plan is fundamental for all the financial communications requested for the IPO[11].
However, there are also important internal objectives: the Strategic Plan allows the management to have the direction where to go clear and to stay focus on it to meet the expected goals. Furthermore, it is an important internal channel of communication to spread the vision, the mission and the values of the organization among the stakeholders.

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[9] Indicators which drive the company profitability by increasing the revenues or reducing costs
[10] Borsa italiana, 2003. *Strategic Plan Guide, www.borsaitaliana.it.* p. 4
[11] Borsa italiana, 2003. *Strategic Plan Guide, www.borsaitaliana.it.* p. 2

The Strategic Plan has different functions[12].

Opportunity to reflect for the Management

The preparation of a Strategic Plan encourages a dedicated focus on the future. Time dedicated by management to the evolution of environmental trend, the study of competitors and the evaluation of threats and opportunities is often limited by daily operations.

Secondly, it is a big opportunity to write down ideas that were only in the mind of managers but never examined in depth and enacted.

The development of these ideas gives the possibility to share all the tacit knowledge of the management gained with the experience and to combine it with the information collected by analyst and planning specialists after specific studies.

Moreover, the draft of the Strategic Plan puts together knowledge of different company's functions allowing the advancement of cross-functional synergies and the spread of the company's *know-how*.

Guiding Instrument for the Board of Directors

The strategic Plan is functional to a direct and full involvement of the Board of Directors in the company's strategic activities.

It is not just about the decision of the intended strategy together with the management; the contribution can be more relevant from different points of view. The Board of Directors is essential in the definition of Mission, Vision and company's set of values to give the right direction to the business.

The Mission is the real driver that should lead all the business decision and it should be supported choosing the most aligned strategic solutions among the different proposals of the management.

The heterogeneous composition of the Board of Directors is also an opportunity for the company, which has the possibility to have different perspectives of the environment and to sense important trends not grasped from the internal management. In addition, the experience of the members can help the company to adopt winning solution of other business realities and to cope with crisis situations.

Through its activity, the Board of Directors can significantly influence the characteristics of the

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[12] International Federation of Accountants, Malaysian Institute of Accountants, 2006. *Business Planning Guide: Practical Application for SMEs.* p. 4

organizational context and therefore the development of emergent strategies beyond the realisation of sanctioned ones.

Action Plan and Performance Tool

The Strategic Plan defines the actions that implement the strategy, the timetable and responsibilities for each of them. It enables a greater focus in dealing with issues in an organized, coherent and systematic manner and considers all the necessary resources for the implementation of the strategic objectives.

The Strategic Plan requires setting quantitative and qualitative goals, which can be measured and kept under control with the relative KPIs, to perform decided actions[13]. The same setting process of the KPIs allows a preliminary critical examination by management that can reduce the risks and lead to a more sophisticated planning.

In this way, a constant evaluation of the activities is possible. This allows individuating the erroneous assumptions and the biggest criticalities promoting a continuous learning process.

Furthermore, the financial and competitive objectives linked to the corporate performance are the basis for defining the incentive plan of the employees and the management.

An example of Action Plan for reducing operating costs[14]:

ACTION	TIMETABLE	COSTS REDUCTION
Reduction of production workforce by 40 units	June 2004	1,000
Replacement and reduction of suppliers	March 2004	3,000
Rationalization of logistic flow	October 2004	2,000
Internalization of plant maintenance and employment of specialized staff	June 2004	1,000

Borsa italiana, 2003. Strategic Plan Guide, www.borsaitaliana.it. p. 17

Presentation and promotion tool

The Plan is an instrument to show the business model conceived by the management to stakeholders, firstly to investors but not only. The realisation of the strategy needs qualitative

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[13] "Key performance indicators" means factors by reference to which the development, performance or position of the business of the company can be measured effectively, Guide to Key performance indicators - PWC

[14] Borsa italiana, 2003. *Strategic Plan Guide, www.borsaitaliana.it.* p. 24

resources of professional and entrepreneurial nature and the Strategic Plan should be something attractive for this kind of resources. Moreover, for particular kind of projects it is mandatory the approval of particular control and vigilance institutions.

That is why it should be clear and valiant; it is also a way to be prepared for the comparison with financial market. Its correct structure and the explication of the Key Value Drivers is fundamental for an effective financial communication both at the time of a possible IPO and for the on-going disclosure of a listed company.

The Strategic Plan is an important guideline that should not remain static. It should change in accordance with the variability of external environment and internal situations, always remaining focused on the mission established[15].

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[15] International Federation of Accountants, Malaysian Institute of Accountants, 2006. *Business Planning Guide: Practical Application for SMEs.* p. 5

1.2.3 Requisites of the Strategic Plan

Considered the lack of specific principles generally used, the editing of Strategic Plan is usually based on intuitive and individual considerations of management or consultants.

This is the reason why it is necessary to find at least some cardinal principles that should be complied with to obtain an effective and complete communication with stakeholders[16].

Borsa Italiana established the minimum requisites that must be observed when drafting the strategic plan for the admission to listing. "*It is given primary attention to the presence of serious disequilibria in the issuer's financial structure, a critical competitive position in its main sectors of activity, evidence of serious incongruences in its forecasts and the absence of elements substantiating the assumptions made therein*". [17]

Hence, the three fundamental requisites for a Strategic Plan according to *Borsa Italiana* (Strategic Plan Guide, 2003) are:

1   Financial Sustainability
2   Consistency
2   Reliability

Financial Sustainability

The analysis of the financial sustainability of a company starts with an accurate cash flow analysis. All the cash outflows should be covered with the appropriate source to make reaching the strategic objectives possible.

There must be an equilibrium between inflows generated by operations and outflows caused by investments. The external financial resources should be used to finance activities addressed to the growth of the company, the daily operation cash flows should be sufficient for the working capital and the conservation investments.

For all investments, it is important to pay attention to the value to spend, timing of cash flows and the impact of potential subsidies or financial leasing.

In case of a particular use of the debt capital, it is important to assess the borrowing capacity of the company and the relationships with the financial institutions.

Finally, the due diligence should not neglect the intercompany situation: every possible impact on the financial situation of the company because of financial movements and guarantees

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[16] Tamborrino A., 2003. *Principi di redazione del Business Plan.* Roma: Aristeia. p. 4-9
[17] Borsa italiana, 2003. *Strategic Plan Guide, www.borsaitaliana.it.* p. 6

should be kept into consideration.

Consistency

The consistency of the Strategic Plan should be considered from two different points of view: internal and external.

Internal consistency means that it is necessary a clear connection between the strategic aims and the operations of the Action Plan adopted to realise them. All the actions (investments, financial operations, resource acquisitions etc.) are translated in the forecast data and there must be a correlation between the assumptions and the quantitative results present in the provisional financial statements. Hence, if a substantial revenue growth is predicted, it is necessary to consider consequently a proportional growth in the cost of goods sold. The external market situation should also be taken into consideration and all the macro-economic variables should be considered in the projection of the financial results.

The external consistency is related with actual feasibility of the Strategic Plan.

All the actions planned should be considered in relation with the current and future different kinds of resource: human, financial and technological. The way in which these resources should be obtained must be explained to make the project more reliable.

In addition, the timing of the actions should be realistic and commensurate to their impact; it is not feasible for example to reach significant performances and results in a new geographical market or in a new Strategic Business Unit in the short run.

The *Completeness* principle is strictly related to the consistency one. It entails the inclusion in the Strategic Plan of all the relevant information to a complete and aware understanding of the forecast document. The partial representation of single Business Units without the identification of their reciprocal interaction or a lacking analysis of the company's market would not allow appreciating the quality of the Plan's assumptions and solutions. [18]

Reliability

The reliability of the strategic plan comes from the comparison between dynamic simulations suggested by the plan itself and quantitative confirmation on the single elements shown.

A Strategic Plan is considered reliable when its contents are compatible, coherent and reasonable. The analysis should refer to the competitive arena, the historical trends the visibility

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[18] Tamborrino A., 2003. *Principi di redazione del Business Plan.* Roma: Aristeia. p. 5

of the data and the sensitivity analysis.

The first element of reliability of a Strategic Plan is the comparison of the forecast data with the industry. It is important to take into consideration all the environmental dynamics and the technological and legal context, paying special attention to the barriers and the possible bonds that the company can face. The consideration of competitors is fundamental: for example, every assumption related to the growth (market share, revenue growth, acquisition of new customers) should be made contemplating their reaction.

More generally, the Porter's Five Forces Model[19] is a useful reference point to conduct the proper analysis and give reliability to the Plan.

Historical trends of the company should be the starting point for every additional projection. It is always useful to compare the results of the Strategic Plan's forecast data with the actual one to verify a continuity. The revenue growth rate, the working capital and other financial ratios like ROE are examples of indicators that cannot change excessively from one period to another. Another important factor is the possibility of foreseeing the formation of the estimated data, or the elevated probability that the projections relating to these will really manifest. The more the company bases its assumptions on the actual data (for example the revenue of the first quarter, the order portfolio, good relationships with some customers) the more it will be easy to consider the revenue inflows are probable. Basing all the forecast data only on assumptions could not be so reliable if there is no evidence of what is asserted[20].

To make the projections of the plan more reliable and complete, it is useful to develop a *sensitivity analysis* to show the data under different assumptions and variables capable of exercising an influence on the creation of Value. The different forecast scenarios show all the situations the company can face, from the most pessimistic one to the most optimistic, making the prevision more accurate.

An interesting consideration is related to the concept of trustworthiness and its differences with the one of reliability. The trustworthiness is evaluated considering the process that has led to a particular forecast result whereas the reliability of a plan is evaluated considering the results. This is important because apart from the forecast data it is important to understand how a particular result is achieved and which is the process adopted, in this way the Plan turns out to be easier to interpret and appreciate.

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[19] Porter M. 2008. *The Five Competitive Forces That Shape Strategy,* Harvard Business Review.
[20] Borsa italiana, 2003. *Strategic Plan Guide, www.borsaitaliana.it.* p. 15

1.2.4 The qualitative part

The qualitative part of a Strategic Plan includes the presentation of the intended strategy, the analysis of industry and main competitors and the necessary Critical Success Factors to reach a sustainable competitive advantage.

The introduction of a Strategic Plan[21] should explain the history of the company, its foundation and its legal form. In addition, the economic/financial situation and the most important milestones reached are fundamental to give an all-around overview of the company.

A brief focus on the set of values of the organization is very important as well. The illustration of Vision and Mission helps the understanding of the purposes of the company, specifying the fundamental reasons for its existence, establishing the scope of its business activities and providing the overall direction that it means to follow.

The Strategic Profile

A company works in the market following strategic principles at the base of every action. There is always an entrepreneurial behaviour behind the activities, and all the undertaken decisions, from the strategic ones to the actionable ones, create a sort of "strategic profile" that can be split in:

- **Organizational setting**: the importance of the human resources, the definition of the roles inside the organization and the incentive schemes
- **Administrative philosophy**: all the ideas, attitudes and behaviours which guide the workers' relationships with the internal and external environment
- **Final objectives:** the ambition of the company in terms of qualitative and quantitative performance. The balance between social recognition and economic success.

The illustration of the corporate and SBU strategy

Analysis and planning of competitive strategy are complicated steps because all the Strategic Business Units of the company and their role inside of it should be considered. The management

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[21] Borello A., 2009. *Il business plan,dalla valutazione dell'investimento alla misurazione dell'attività d'impresa*, McGraw-Hill Education. p. 12-35

needs to prepare not just a competitive strategy for each SBU but also an integrated vision of all of them to generate value for the company as a whole[22].

To do this, it is necessary to satisfy the following conditions:

- **Appropriate attractiveness of each individual SBU**: it is not just about profitability, the utility of a SBU can be the ability of enhancing the value of the others and their potential growth.

- **Synergies between the SBUs**: the reduction of the risk cannot be the only reason to undertake a diversification strategy. This strategy, in fact, entails coordination costs that should be balanced by an improvement of the company performance and the achievement of an advantage position not reachable from the competitors.

- **Capability of taking advantage of the synergies**: to realize particular synergies the company needs to have the necessary capabilities and structure. In addition, the attitude of parent company and the incentive scheme of management are fundamental variables for this process.

Hence, the Strategic Plan should show the map of all the Strategic Business Units of the company and explain their consistence with the organizational structure.

A business unit is identified by a combination of Product/Market/Technology: analysing these combinations helps to understand the possible synergies and mergers between the SBUs.

The contribution of each SBU should be disclosed in static and dynamic terms and it is evaluated considering its actual/future profitability and structural growth.

The variables to take into consideration during the evaluation process are:

- The capital employed
- The Return on Assets (ROA)
- The Weighted Average Cost of Capital (WACC)
- The growth rate

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[22] Mazzola P., 2003. *Il piano industriale, Progettare E comunicare le strategie d'impresa.* Milano: Università Bocconi Editore, p. 51

The exhibit shows how it is possible to conduct a SBU analysis considering these four variables.
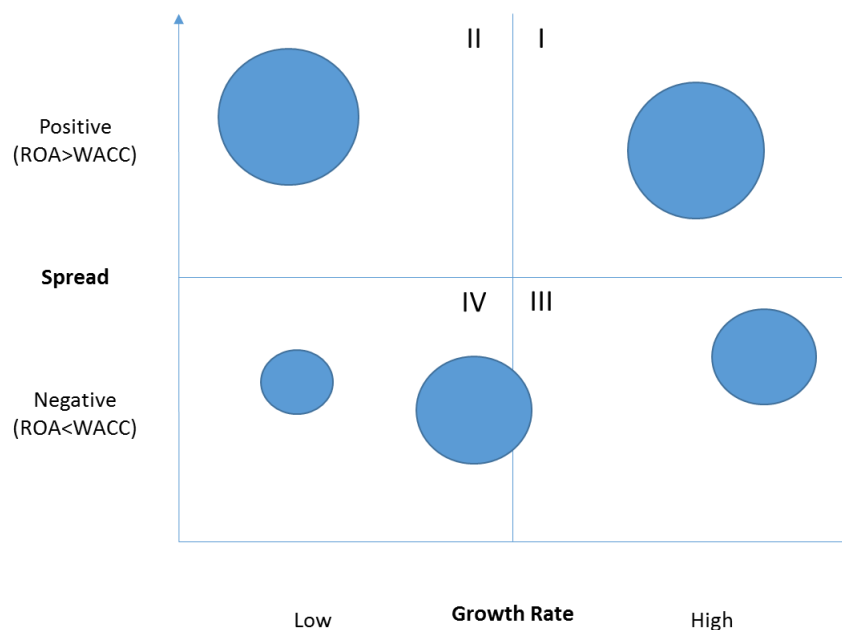
Mazzola P., 2003. Il piano industriale, Progettare E comunicare le strategie d'impresa. Milano: Università Bocconi Editore, p. 65

1) SBUs that create value considered the positive spread and growth rate are in the first quarter

2) SBUs with a positive spread but with low possibilities of growth are in the second quarter

3) SBUs with a positive growth rate but with negative spread are in the third quarter. Here it is important to understand if the growth will lead to positive returns otherwise the presence of these SBUs in the company portfolio are no longer justified.

4) SBUs that don't grow and have a positive spread are in the fourth quarter. The solution is the divestment.

Individual analysis of SBUs is not enough to justify the diversification of a company; the coordination costs would put the company in a disadvantageous situation. The presence of different kinds of SBU leads to an improvement of the company performance if there are adequate synergies. According to Ansoff there are four types of synergy[23]:

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[23] Iversen M.,1997, *Concepts of synergy - Towards a clarification,* Department of Industrial Economics and Strategy Copenhagen Business School, p. 1-4

1) **Sales synergy**: which occurs when different products use common distribution channels, sales administration or warehousing.

2) **Operating synergy**: which includes higher utilization of facilities and personnel, spreading of overhead, advantages of common learning curves, and large-lot purchasing.

3) **Investment synergy**: is the result of joint use of plant, common raw materials, inventories, transfer of R&D from one product to another, common tooling and machinery.

4) **Managerial synergy**: is possible when a new business venture faces strategic, organizational or operating problems that are similar to problems that the management has dealt with in the past.

To get the best out of these synergies it is necessary to consider the conditions of the organizational context and the role of the parent company.

The organizational context should offer structures that allow sharing and conveyance of competences and resources.

The competitive environment

For each SBU the Strategic Plan should specify all the characteristics of competitive environment. The group of companies that run the same kind of business, or more generally satisfy the same kind of need, in a specific geographic location composes this environment.

Environmental analysis is particularly useful to better understand the characteristics of the supply, study the actual and potential competitors and individuate the distribution and provision channels. Furthermore, it is important to assess the company's revenues in relation to the total revenues earned by the industry and the projected growth of the industry itself.

The analysis of the environment should be also extended to all the social, political and technological forces that could affect the business activity in order to be able to react to every kind of situation.

The choice about the competitive position that a company means to have involves the decision about different standards:

- Needs it wants to satisfy
- Vertical integration
- Marketing policies
- Target customers
- Category of products
- Channels used[24]

These standards characterize the competitive scope of the company and hence its main features: a company with a large scope can take advantage from economies of scale, scope and experience; its customer base is larger and its product more adaptable.

A company with more focused scope has instead a tighter customer base but it can satisfy the need of a market niche better than competitors can.

Definition of the competitive environment defines the behaviour of the companies that operates there in relation with these variables. Knowledge of competitors' characteristics is fundamental to understand the disposition of the industry.

Defined the market and environment analysis and the competitive strategy, the Strategic Plan should show an Action Plan that underlines the differences between the path the company means to follow with respect to the one of competitors.

Studying the situation of competitors has an important strategic meaning: the management needs to know both the demand side of the market and the supply side. This gives the possibility to determine not only the efficacy or the inappropriateness of a particular strategy but also the presence of hidden market opportunities.

The first step of competitor analysis is the identification of competitors, their value proposition and the marketing segments where their products or services are in. Each competitor should be analysed considering its market share and all its strengths and weaknesses. The cost structure of each rivals, its culture and management style, organization system and strategies are useful for the business management to know how to cope with them[25].

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[24] Borello A., 2009. *Il business plan,dalla valutazione dell'investimento alla misurazione dell'attività d'impresa*, McGraw-Hill Education. p. 48

[25] International Federation of Accountants, Malaysian Institute of Accountants, 2006. *Business Planning Guide: Practical Application for SMEs.* p. 35

An effective tool to represent the competitive situation in the Strategic Plan is the *Competitive array*. It allows, defining a list of competitors, individuating the Critical Success Factors of the industry and giving them a weight, to rate each competitor obtaining an exhaustive mapping of the market.

Key Industry Success Factors	Wgt	Company A		Company B		Your Company	
		*/10	Weighting	*/10	Weighting	*/10	Weighting
Extensive distribution	.4	6	2.4	3	1.2		
Customer focus	.3	4	1.2	5	1.5		
Economies of scale	.2	3	.6	3	.6		
Product innovation	.1	7	.7	4	.4		
Totals	1.0	20	4.9	18	3.7		

http://themasterdebator.blogspot.it/2006/08/competitive-position-evaluation.html

In this example, four Critical success factors are listed and weighted. The *extensive distribution* is considered the most important CSF of the industry and has a weight of 4. This figure multiplied by a rate for each company (6 and 3) gives the weighted rate of the CSF (2.4, 1.2). Adding up all the weighted rates it is possible to obtain a total rate, useful for an effective comparison among the companies.

Critical Success Factors

D. Ronald Daniel discussed the problem of inadequate management information for setting objectives, shaping strategies, making decisions, and measuring results against goals.

He asserted that strategic planning information should focus on "success factors" which he described as "*key jobs that must be done exceedingly well for a company to be successful*"

Success factors are considered at industry level, and they are shared across organizations within an industry. They are not relevant for any company in a particular industry and could differ from company to company and from manager to manager: this introduces the concepts of managerial-level CSFs and organizationally unique CSFs.

There are different types of operating environments and thus different levels of CSFs: industry, organizational, division, and individual.[26]

CSF have direct relationship with mission and goals of a company: they affect strategy through their impact on the organization's achievement of its goals and their ability to enable the success of the mission.

The exhibit shows the CSF relationship with strategic planning elements.
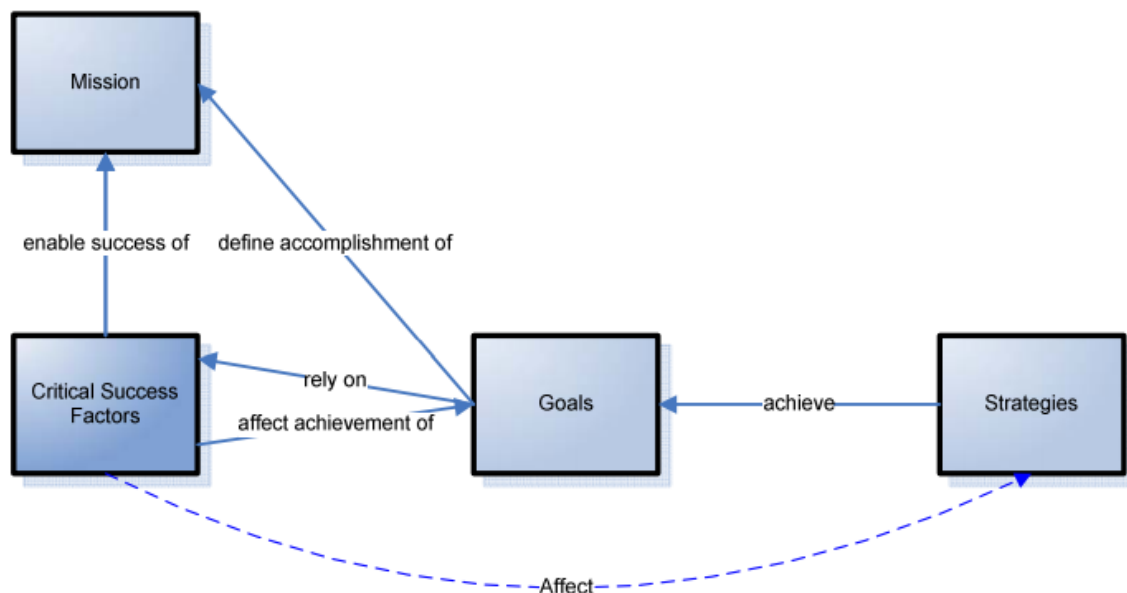
Parker Gates L., 2010. Strategic Planning with Critical Success Factors and Future Scenarios: An Integrated Strategic Planning Framework, Carnegie Mellon University. p. 27

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[26] Parker Gates L., 2010. *Strategic Planning with Critical Success Factors and Future Scenarios: An Integrated Strategic Planning Framework*, Carnegie Mellon University. p. 25

It is important not to confuse CSFs and goals. Goals are broad, high-level aims that support the accomplishment of the mission. They are often derived from performance management exercises rather than strategic planning, and are set considering the feasibility rather than organizational success or contribution to accomplishment of the mission. CSFs refer to ongoing operational activities that must be sustained for the organization to function successfully.

"Goals represent the end points that an organization hopes to reach. Critical success factors, however, are the areas in which good performance is necessary to ensure attainment of those goals"[27]

[27] Rockart j. F., 1979, *Chief Executives Define Their Own Data Needs,* Harvard Business Review.
URL: https://hbr.org/1979/03/chief-executives-define-their-own-data-needs%20Rockart%20-%20Chief%20Executives%20Define%20Their%20Own%20Data%20Needs

1.2.5 The quantitative part

To elaborate a complete Strategic Plan it is important to develop economic and financial prospects related to the realisation of business strategy.

The Plan must include a set of financial, economic and patrimonial statements capable of explaining, in a consistent and reliable way, the future of chosen economic model and giving the right information to calculate the expected performance.

Every kind of quantitative analysis is always conditioned by uncertainty. This could put off the management drafting a quantitative dimension of the Strategic Plan focusing only on the qualitative aspects.

Actually, together with the proper qualitative studies, elaboration of economic and financial prospects gives a fundamental contribution to examine strategic intentions of management and their feasibility in depth. Furthermore, as explained before, it gives to the management itself an important measurement tool useful to improve the learning process.

A way to control the uncertainty of quantitative analysis is to consider different scenarios for the financial prospects using a *what if* approach; in this way it is possible to contemplate all the relevant variables which can affect the final outcomes.

Investment Plan

The aim of Investment Plan is to describe and analyse all the planning activities for the acquisition of long-term investments. This is important in a strategic planning view because it helps to assess the financial requirements of the business's key projects.

Investment Plan should show the main technical features and the duration of each investment. The aspects that should be kept into consideration are the following:

- technical and economic reason of the investment;
- qualification of the investment depending on its function (substitution, strategic, expansion);
- consistency with the whole design of the Strategic Plan;
- description of the technology of the investment in a comparative view with respect to the previously used and to the ones adopted by the competitor: emphasis on the competitive advantage achievable with the innovation;
- qualification of the supplier, in case of external acquisition, or of the necessary resources in case of internal development;

- presence of the technical *know-how* necessary to develop internally the investment or to take the best advantage of it. If this *know-how* is not present in the company it is necessary to show the initiatives aimed to get it (training, acquisition of external human resources);
- consideration of the legal authorisation and relative burdens;
- ecological and work safety aspects;
- degree of flexibility of the investment related to the production volume and market demand;
- scalability of the investment and possibility to reconvert or dismiss it.

Another important perspective to consider in explaining the investment plan is the one related with the financial requirements such as:

- acquisition cost of tangible assets, considering also transportation, installation and test cost;
- cost of intangible assets: both for technical-productive assets like software and for brands, licenses and goodwill
- all the requirements coming from an increase of the working capital.

For each investment it is necessary to determine the useful life of the asset and what is its impact on the income statement during the established period. The depreciation policy should be clarified and justified.

The terms of payment should also be presented together with the consequent outflows, with particular focus on their timing.

The Strategic Plan should lastly contemplate a disposal program for every investment at the end of its useful life calculating the residual earnings.

In presenting this information, the Investment Plan should present the methodology adopted to obtain the cost estimates. This is done considering the historical data and the passed investments. In the case of innovative projects, the presentation of similar initiatives, maybe undertaken by the competitor or in other industries, could be a reliable way. [28]

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[28] Tamborrino A., 2003. *Principi di redazione del Business Plan.* Roma: Aristeia. p. 31-34

Funding

The financial sustainability analysis of a Strategic Plan starts from the correct estimate of the cash outflows and the fitting coverage of them with the appropriate funding sources.

The choice about the necessary financial resources to realize the Strategic Plan can be made in a successful way only taking into consideration all the characteristics of the business, the projects to be realised and the actual capital structure of the company[29].

This choice regards firstly the quantity of financial resources: an underestimated need could undermine the project. On the other hand, if overestimated, the financial resources in excess could reduce the profitability of the investment.

Secondly, it is important to understand the quality of the financial resources necessary to better pursue the objectives of the Plan: debt or equity capital, internal or external resources.

The internal funding sources are often the most important: an increase of capital coming from the shareholders or the retained earnings can help to improve the liquidity of the company and to be more attractive for the external sources, especially new equity investors.

The equity investors can be classified in several categories, each one with different investment goals and peculiarities: Business Angels, Venture Capitalists, Merchant Banks and Hedge Funds.

The first two are involved at the early stage of a company, when the risk and the uncertainty are high. On the other hand, Merchant Banks and Hedge Funds are institutes specialised in providing financial resources to big companies to make them grow as soon as possible and exit the investment after a short period of time.

The equity of the business is the value of all the assets less all liabilities plus the future value that the business will generate (discounted future cash flows). Equity partners are often interested in businesses with high potential for growth so it is important to show meaningful projections[30]. In addition, the management team and the strategies linked with the business idea are very important in their decision. Moreover, the return on capital and the dividend policy of the company should be made clear in the Strategic Plan taking into account the two parts of the earnings of an investor:

- the projection of the net income and its distribution as dividend

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[29] Borello A., 2009. *Il business plan,dalla valutazione dell'investimento alla misurazione dell'attività d'impresa*, McGraw-Hill Education. p. 131

[30] International Federation of Accountants, Malaysian Institute of Accountants, 2006. *Business Planning Guide: Practical Application for SMEs.* p. 48

- the increase of value of the shares of the company

Another way to get the necessary resources is the listing of the company in the stock exchange issuing stocks and/or bonds depending on the kind of capital the company needs to collect. The Strategic Plan is extremely useful for all the financial communications requested for the IPO; its correct structuring, and hence the identification and the clarification of the trend of the Key Value Drivers, is the condition for tackling the preparation of the listing particular and the structuring of the analyst presentation and the roadshow[31].

Debt financing companies are interested in the stability of the cash flows of the company both in the past and in the future. Borrowing from the bankers relies on two variables, the collateral that secures the loan, and the ability to repay the loan based on the historical financial health of the company.

The Strategic Plan should always consider the borrowing capacity of the company in deciding the financial strategy to undertake. The borrowing capacity is based on indicators as the revenues or the monthly cash flows and this is linked with an accurate forecasting of the future performance of the company too. Some useful indicators are for example the *Net Debt to EBITDA Ratio[32]* and the *Interest Coverage Ratio[33]*.

The recourse to the debt is considered a positive element for the potential equity investors because makes it possible to take advantage from the financial leverage.

The preparation of different perspective of the Strategic Plan is important to suit the requirements of each reader. A banker's or financer's interest lies in stability, security and cash flows coverage whereas an Hedge Fund or a venture capitalist is more interested in high leverage resulting in high returns.

Financial Statements

The assessment of economic and financial perspective supposes the elaboration of provisional financial statements: the provisional income statement, balance sheet and cash flow statement. For this purpose, and to better explain the economic logic of the company linked with the impact of the actions of the Strategic Plan, specific reclassification methods can be used. They show flow and stock data of financial statements under different functional or organizational

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[31] Borsa italiana, 2003. *Strategic Plan Guide, www.borsaitaliana.it.* p. 2
[32] Measurement of leverage, calculated as a company's interest-bearing liabilities minus cash divided by its EBITDA. It shows how many years it would take for a company to pay back its debt considering stable earnings.
[33] Debt and profitability ratio. It is calculated by dividing a company EBIT during a given period by the amount of passive interest a company must pay in the same period.

perspectives, allowing a better interpretation of them. A multidimensional approach helps the planning process to be more accurate and to consider different scenarios.

The Income Statement

The Income Statement describes, represents and quantifies all the revenues and expenses that contribute to the creation of the net income during the planning period.

It is fundamental for the financiers, both equity and debt, because for the former it is an important indicator for the possibility of dividend distribution and for the latter the possibility of refunding the debt within the negotiated time. Moreover, the economic performance of the company gives important indications about the cash flows, useful for the financial planning and under a taxation point of view.

The Strategic Plan presents different provisional Income Statements for each fiscal year. It is important to consider the inflation rate in the projection and make clear the exogenous variables. The forecasts, as explained above, need to show a continuity with the historical data considering the elements in common (technological, environmental, organizational, and productive). This information can be strengthened through comparison with competitors used as benchmark or average data of the industry. [34]

To represent accurately the provisional economic performance the Income Statement should[35]:
- underline all the adjustments to the gross revenues (discounts and restitutions). Their trend has an important impact on the company profitability and a warning value too: the discounts are an indicator of the degree of negotiation power of the company and the number of restitution due to delay or product defect measures the production and delivery efficiency;
- classify costs by function (cost center). This is a relevant criterion to quantify the strategic guidelines because it allows recognizing on time the proposed changes in the organizational structure;
- indicate separately non-monetary costs to calculate the EBITDA for the different fiscal year of the Strategic Plan;
- consider the financial income as non-operating income to understand effectively what the profitability of the company without extraordinary income is.

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[34] Tamborrino A., 2003. *Principi di redazione del Business Plan.* Roma: Aristeia. p. 36-37
[35] Mazzola P., 2003. *Il piano industriale, Progettare E comunicare le strategie d'impresa.* Milano: Università Bocconi Editore, p. 166

The Cash Flow Statement

The cash flow statement is the document that explains the funding sources necessary for the realization of the Strategic Plan.

It should be written considering the results and the assumptions of the Investment Plan and the provisional income statement. From the reclassification, under a financial point of view, of the latter it is possible to quantify the cash flows generated from the operating activities inferring the self-financing capacity of the company. If the cash flows are positive they are a financial source, otherwise they are a financial requirement.

The cash flow statement allows to identify the cash flow of the operating activities and therefore to observe the consequences of the pursued strategy and of the Strategic Plan on the financial side of the company.

The most important thing to consider is the timing of the cash outflows to be prepared with a suitable coverage. The lack of an appropriate coverage could give rise to solvency problems even if the economic performance of the company are positive.[36]

Balance Sheet

The provisional Balance Sheet specifies all the assets and liabilities of the company for each fiscal year of the planning period. It also illustrates the amount of the equity and its composition. The actual Balance Sheet before the planning period is an important starting point to underline the improvements that the plan could bring.

Its figures come from the assumptions and the elaboration of the other documents like the Investment Plan, the Income Statement and the cash flow statement. All the interrelations among the different company areas are considered:

- the Investment Plan gives the data about the tangible, intangible and financial assets;
- the Income Statement illustrates important elements for the composition of the Working capital and the depreciations
- the cash flow statement shows the evolution of the liquidity and the liabilities.[37]

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[36] Tamborrino A., 2003. *Principi di redazione del Business Plan.* Roma: Aristeia. p. 42-43

[37] Tamborrino A., 2003. *Principi di redazione del Business Plan.* Roma: Aristeia. p. 46-47

This information is an important element of knowledge for both the equity and the debt investors because it summarizes the effects that the management creates from the assets of the company and the possibility of a future sustainability.

The reclassification of the balance sheet to discern operating and non-operating assets is used not only to have a better understanding of the composition of invested capital but also to formulate more precisely the perspectives linked to the chosen strategy.

The data that show the variations of the figures in the provisional financial documents facilitate the assessment of the company growth allowing the inference of:

- growth rate of the company during the planning period through the revenue growth;
- quality of the company growth. A growth is considered positive if the revenues and the net income grow proportionally. If the revenues increase and the profitability does not it is a pathological growth;
- financial needs as a consequence of the company growth. In particular, it is interesting the link between the revenue growth and the invested capital and if the former goes with an increase or a decrease of latter;
- financial sustainability, which can be measured from the relationship between the increase of invested capital and the increase of equity in the capital structure [38]

Sensitivity analysis

As explained above, a business operates in an uncertain environment and the planning process is based on a series of assumptions. Given the intense competition and the instability of the social, political and technological context, forecasting alone is not sufficient in view of the rapid changes and their unpredictable nature. Therefore it is advisable a sensitivity analysis on the main qualitative and quantitative variables which can substantially affect the creation of value. Considering that the projections contained in the Strategic Plan are linked to the most realistic scenario, the sensitivity analysis should be presented with respect to more optimistic and more pessimistic scenarios, showing the effect on the main financial data

The variables that affect the sensitivity analysis are different depending on the kind of approach adopted by the Strategic Plan. If the underlying logic is *top-down* the analysis is carried out

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[38] Mazzola P., 2003. *Il piano industriale, Progettare E comunicare le strategie d'impresa.* Milano: Università Bocconi Editore, p. 169-174

considering the trend of the market demand and the market share of the company with respect to the competitors. The companies that follow a *bottom-up* approach should focus instead on operating parameters[39].

The sensitivity analysis is a method used to develop flexible long term Strategic Plans. It is a way to prepare the company to manage the risks and opportunities that it could face and to make it as responsive as possible.

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[39] Borsa italiana, 2003. *Strategic Plan Guide, www.borsaitaliana.it.* P. 37

1.3 CPM

1.3.1 The Corporate Performance Management and the Strategic Plan

The Strategic Planning process is, as explained, a complex procedure that involves several areas of the company, different competences and kinds of data.

These studies and analysis should not be disconnected from real-world decisions and corporate actions and it is likewise important not to have a duplication of effort and systems to support these activities.

The role of Corporate Performance Management is to bring together these processes and technologies into an integrated system and unified way of managing the Strategic Planning Process that is more powerful of its individual parts. The scope is to integrate all the areas of the business from a common strategy and vision, through a common business language[40].

To be able to face a rapidly changing, increasingly complex and global business environment, the management needs a flexible technology and a new idea of plan, a changeable and adaptable plan.

There are some sections of the Strategic Plan that are particularly dynamic, and some that remain static[41]. In order for the Plan to be accurate and remain sensible, it is necessary to review it periodically, and this process cannot be slow and intricate. The management must be agile; therefore, CPM is a valuable place to start.
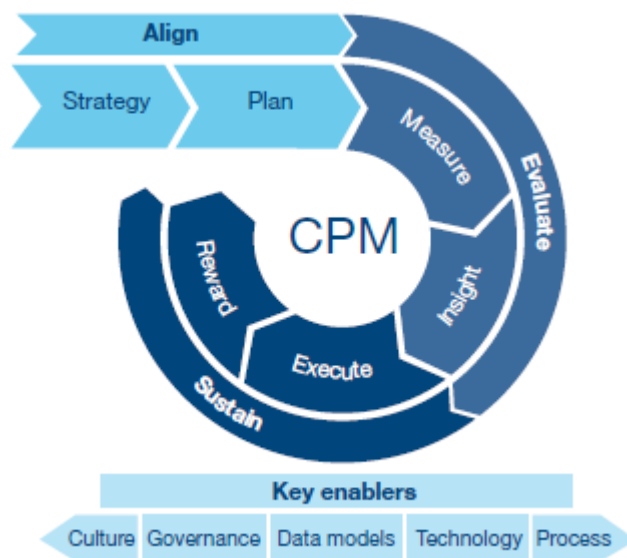
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[40] Price Waterhouse Coopers, 2008. *Corporate Performance Management: Achieving value by effectively anticipating and managing change*.
[41] International Federation of Accountants, Malaysian Institute of Accountants, 2006. *Business Planning Guide: Practical Application for SMEs.* p. 5

Managing a business depends on the processes being aligned to deliver the right mix of standardization and flexibility, it is important to:

1. Believe in the numbers and report with confidence
2. Set accurate expectations and anticipate results
3. Deliver the right visibility to the right people and hold them accountable for results; in this way, it is easier to enlarge the planning process and involve all the people necessary to it
4. Spend less time on non-value-added activities

CPM enables fact-based forecasting and support increased speed and flexibility of planning process.

Price Waterhouse Coopers, 2008. Corporate Performance Management: Achieving value by effectively anticipating and managing change.

The corporate performance management can be approached with an enterprise-wide view, considering finance, operations, HR, IT, Sales and marketing both functionally and at the operating level.

An effective CPM tool can connect the management strategy through planning to sustained execution. It also connects people, process, technology and data with an interrelation between different activities of the company (budgeting, planning and forecasting, consolidation).

Furthermore, it can offer a modern Integrated Business Planning platform that enables the integration of strategic, financial and operational planning, enabling full control of performances across the organization.

Unlike spreadsheets, a multidimensional planning environment is based on a single shared data repository and offers data validation, workflow, enterprise-class security, audit trail and versioning capabilities.

This enhances the controllability and efficiency of the entire planning process, making it fully reliable in terms of results and significantly less onerous in terms of time and resources. Advanced functions of *what-if* analysis are combined with the capability to create and manage scenarios, allowing multidimensional simulations in which the impact of future events is automatically spread to every level of data aggregation, from the broadest outline to the lowest level of detail [42].
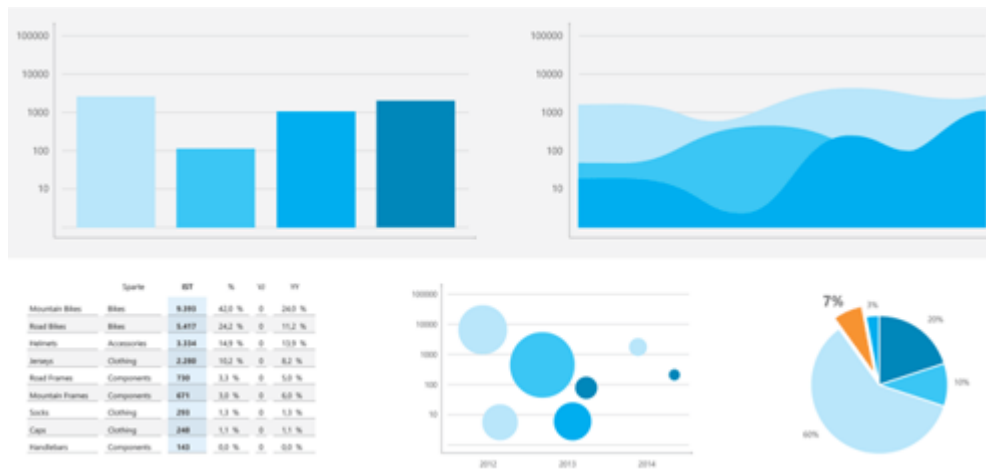
Example of Board Software Planning Dashboard

[42] Introduction to the multidimensional planning databases from: http://www.board.com/

1.3.2 CPM tool approach to the Strategic Plan

Considered the main functions and objectives of the Strategic Plan and the potentialities of a CPM Tool it is important to understand where to focus the attention of the analysis and which metrics to highlight to address the right issues.

The main topics related to the Strategic Plan which should be measured with the appropriate KPIs and KVDs according to *Borsa Italiana*[43] are:

1. **Value creation and growth:** the main aim of a Strategic Plan is to permit management to define in what way the company intends to increase the value created for the shareholders. This is strongly related with the growth of the company and the creation of a sustainable competitive advantage.

2. **CAPEX and OPEX Control:** Strategic Plan should provide indications concerning the levers which management intends to activate to reduce the cost structure: reduction of the degree of vertical integration, changes in technologies, outsourcing policies. Moreover, it is important to consider all the choices which aim at improving the efficiency of the manufacturing processes and therefore a reduction of operative costs

3. **Performance monitoring and improving:** the structuring process of the Strategic Plan becomes a learning instrument which makes it possible to verify the quality of managerial insights. Furthermore, it is an occasion of comparison with the past understanding where the major criticalities are in order to implement corrective solutions for the planning period.

4. **Corporate activities management:** the Strategic Plan represents an instrument which guides the main operating choices and in particular the entry into new markets, the introduction of new products or services and the use of new distribution channels. Furthermore, it helps defining the targets of potential customers, the products/services/ brands portfolio one intends to satisfy consumers' expectations, and the price strategy for the main products, services and/or brands

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[43] Borsa italiana, 2003. *Strategic Plan Guide, www.borsaitaliana.it.* P. 11-12, 35

5. **Financial sustainability and administration:** the Strategic Plan should consider the sustainability of its strategy and the correct management of the financial resources. This means taking into account the quantity and the quality of the sources of funding and the correct estimate of the cash flow hypothesized. Moreover, in case of considerable use of lending, it is important to carefully address the borrowing capacity of the company. The end objective is to verify that the financial dynamics support the achievement of the strategic objectives anticipated by the plan.

Chapter 2: Method and purpose of the research

This research adopts a Content Analysis approach to analyse a sample of Key Performance Indicators developed in the CPM Tool in order to make replicable and valid inferences from data to their context.

As a technique, content analysis involves specialized procedures and allows to provide new insights and increase the researcher's understanding of phenomena[44].

This research method is a systematic, rigorous approach to analyse data obtained or generated during research. Everything that constitutes data that can be used for content analysis studies, the important thing is that the data provide useful evidence for testing hypotheses or answering research questions.

According to Krippendorf (1989)[45], White and Marsh (2006)[46] and Weber (1990)[47], the steps for a study using content analysis can be summarized as follows:

1. Establish hypothesis and research question
2. Determine sampling unit and establish the unit of analysis
3. Establish coding scheme that allows for testing hypothesis
4. Code data
5. Write up results

Establish hypothesis and Research Question

In the light of what explained in the first chapter, the Strategic Plan is not just a form of communication, but also an important performance tool useful to measure the achievements of the company through the main KPIs and an opportunity to reflect for the management.

The importance of a comparison with the actual data was underlined: the historical dimension may highly influence the reliability of the Strategic Plan and the visibility and traceability of

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[44] Krippendorff, K. (1989). Content analysis. In E. Barnouw, G. Gerbner, W. Schramm, T. L. Worth, & L. Gross (Eds.), International encyclopedia of communication (Vol. 1, pp. 403-407). New York, NY: Oxford University Press.

[45] Krippendorff, K. (2004). Content analysis: An introduction to its methodology. SAGE, London

[46] White M. , Marsh E. (2006). Content Analysis: A Flexible Methodology.

[47] Weber, (1990). Basic Content Analysis. SAGE, London. p.22-24

the data too.

For all these reasons, the draft of a Strategic Plan should be done with an instrument that allows dynamic, multi perspective analysis, and a complete integration with all the data available in the company as starting point for future projections.

The purpose of this paper is to analyse how a Corporate Performance Management model with multidimensional structure can foster the development of an integrated planning, the extent to which it covers all the qualitative Critical Success Factors individuated by Management and through which kind of metrics.

The empirical analysis aims to analyse the main outcomes of a Strategic Plan and explain the process necessary to achieve them using a CPM tool.

This will be done in order to answer to the following research question[48]:

Can a planning model designed on a CPM Tool improve the reliability and traceability of output data and establish a link with the main objectives of the company?

In order to answer the question, the research will try to show how each recording unit is linked with a Critical Success Factor and to what extent, and the degree of reliability and traceability of each of them.

An actual planning model of a company will be illustrated considering the quality of input data and methods and drivers to calculate the output.

A consulting firm, specialized in business performance management, analytical applications design and development, created the model in question, and the client company actually uses it for drafting its Strategic Plan figures yearly.

Determine sampling unit and establish the unit of analysis

The process of unitising is the systemic distinguishing of segments of each kind of observables that are of interest to an analysis. Hence, deciding not only what content to code, but how to divide it is an important consideration for Content Analysis.

As Krippendorf (2013) underlines: "*first task in any empirical study is to decide what is to be observed as well as how observations are to be recorded and thereafter be considered data*" and "*recording units are units of description that collectively bear the information that content*

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[48] According to White and Marsh (2006) quantitative content analysis flows from a positivist research tradition and is deductive in its approach. Its objective is to test hypotheses, not to develop them.

analysts process and provide the basis for statistical accounts"[49].

In this research, the objective is to analyse the output of a Strategic Plan drafted with a Corporate Performance Management software: *Board[50]*.

The software, as it is better explained in the next paragraphs, includes in its BI capabilities multi-dimensional analysis, dashboarding and reporting, while from the CPM side it includes budgeting, planning and forecasting. Its main characteristic is the use of multidimensional databases.

There are different kinds of output created from this planning process using *Board*:

- Actual metrics coming from the Enterprise Resource Planning normalized and allocated through new dimensions by the software
- Forecast metrics based on historical data and developed through planner assumptions
- Forecast metrics independent from historical data and based only on the input of the planner
- Performance indicators, based on the combination of different kind of metrics or sometimes coincident with a metric itself

The sample that will be taken into consideration for the analysis will be all the Performance Indicators present in the dashboards of the model after the elaboration of the necessary metric for their calculation.

The sample is not constituted in a statistical way. There is not a prior analysis in order to create in the sample the proportion of the entire population and the degree of representativeness is not tested.

The single recording units selected will be each Performance Indicator, a unit that convey the most focused and significant message to the Strategic Planning reader.

These recording units satisfy the requirement of having meanings independent of one another given that the objects that are considered must be distinct, conceptually or logically. The wholeness of a unit of analysis suggests that it is not further divided in the course of the analysis or at a particular stage of an analysis[51]. Another key factor is that the data should communicate and convey a message from a sender to a receiver[52] and the Performance Indicators, presented

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[49] Dumay J. Cai L. (2015). Using content analysis as a research methodology for investigating intellectual capital disclosure: A critique. Article in Journal of Intellectual Capital · January 2015. p. 6
[50] http://www.board.com/en
[51] Krippendorff, K. (2004). Content analysis: An introduction to its methodology. SAGE, London, p. 97-98
[52] White M. , Marsh E. (2006). Content Analysis: A Flexible Methodology, p. 27

as a result of the planning process, are able to perform this duty.

Establish coding scheme that allows for testing hypothesis

In quantitative content analysis, the coding scheme is determined before coding begins. A coding scheme operationalizes concepts that may in themselves be amorphous. It establishes categories that are relevant and valid, they should allow for testing the hypotheses.[53]

This process aims to create rules detailed in a code book which specifies how and what to code. The code book helps to ensure systematic and replicable coding of the data.

According to Krippendorf[54] to set the codebook it is necessary the setting of a list of dimensions a priori, this set of dimensions is then applied to the sample to be coded. Under each dimension it is necessary to choose different categories. Following these rules, it is hence possible to develop the coding scheme:

- The dimensions should not overlap one another
- The dimensions are clear and unambiguous
- The category alternatives under each dimension are as mutually exclusive as possible, yet exhaustive of the possible ranges of relevant responses

Many content analysis studies do not develop their own coding scheme but rely instead on coding schemes devised by other researchers. Using the same coding scheme across studies allows for easy comparisons among the studies[55]. For this research, the choice of the dimensions to consider is based mainly on the work of Bernard Marr[56] which presents a template to develop a sound and comprehensive understanding of Key Performance Indicators useful to ensure that the data is consistently collected and interpreted.

The dimension selected can be measured in a quantitative way or in a qualitative one using some standard category. Interpretative elements (even if extreme rule guided like in Content Analysis) always bear a subjective element[57].

The next table shows the codebook with the name of the dimension considered, its description and the categories-code to each of them.

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[53] White M. , Marsh E. (2006). Content Analysis: A Flexible Methodology. p. 31
[54] Krippendorff, K. (2004). Content analysis: An introduction to its methodology. SAGE, London, p. 129-130
[55] White M. , Marsh E. (2006). Content Analysis: A Flexible Methodology. p. 32
[56] Marr B. (2006). Strategic Performance Management. Elsevier, Oxford. P 112-119
[57] Mayring P. (2014). Qualitative Content Analysis. University of Klagenfurt. P. 114

Dimension	Description	Categories
Indicator Type	Kind of indicator considered	1 – KPI 2 – KVD 3 – Classic Performance/Ratio
Critical Success Factor	Critical Success Factor the indicator is linked to (CSFs presented in the next paragraph)	1 – Quality of the product 2 – Lean Logistics 3 – Brand Strenght 4 – Diversification 5 – Growth 6 – Profitability 7 - None
Consistency	Consistency with the strategic element being assessed	1 – Directly correlated 2 – Indirectly correlated 3 – Uncorrelated
Unit of measure	Unit of measure used for the indicator	1 – Financial 2 – Not Financial
Measurement Type	Indicates if the indicator is related with the dimension of Efficiency, Effectiveness or Stability	1 – Efficiency 2 – Effectiveness 3 - Sustainability
Purpose	Indicates which particular issue is being observed. This variable is linked with the last paragraph of the first chapter. It explains why is the indicator presented and which of the main topics of the Strategic Plan, the way the literature presents them, the indicator addresses.	1 – Value creation and Growth 2 – CAPEX and OPEX control 3 – Performance monitoring and improving 4 – Corporate Activities Management 5 – Financial sustainability and administration
Confidence Level	Indicates to what extent the indicator enables to assess the given strategic element. It describes how well an indicator is actually measuring a performance based on criteria such as the necessity of other indicators,	1 – High 2 – Medium 3 - Low

	benchmark or dimensions.	
Source of Data	Identifies where the data comes from. It is a way to measure the traceability of the data and their path.	1 – Fully traceable 2 – Partially traceable 3 – Untraceable
Drillability	The number of dimension through with it is possible to "*drill down*" the indicator: At the highest level, it is possible to view graphical representations of the indicators to monitor strategic objectives. If more details are necessary to complete the analysis or understand the impact of the problem, it is possible to drill into detailed data.	1 – More than six dimensions 2 – From Four to Six dimensions 3 – From One to Three dimensions

Data Coding and Results

During the next paragraphs, all the steps necessary for the creation of the main metrics will be presented and all the all the resulting indicators analysed through a specific table using the codebook previously described.

In this way, it will be possible to present the output of these process both in tabular and graphic form[58] to answer the research question.

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[58] White M. , Marsh E. (2006). Content Analysis: A Flexible Methodology. p. 33

Assumptions: The Company

The company considered for this analysis will be called *Alfa* from now on.

Alfa is an industrial company operating in the food and beverage industry. It is mainly focused in the EMEA market even though it is present also in other countries. The firm is undertaking an inorganic growth path diversifying its offer from both the market side and the product side.

To implement a successful strategy *Alfa* individuated the following *Critical Success Factors*:

1. *Quality of the product*: guarantee of the vertical value chain that delivers a premium product
2. *Lean Logistics*: control of the logistics to optimize the cost structure and improve the service
3. *Brand Strength*: awareness of a Brand that allows the possibility to charge a premium price
4. *Diversification*: development of new Business Lines and interaction with new markets
5. Growth: increase of the revenue growth both through acquisition of new companies and pushing the sales in the actual markets
6. *Profitability*: link with the growth and diversification to take advantage of economies of scale and scope and attention to the product unit margin.

These CSFs are the drivers of every data and business analysis, and they will be measured using particular KPIs.

The model that will be shown represents the preparatory works for the draft of the Strategic Plan's quantitative part with a planning horizon of 4 years.

However, the process was designed to be dynamic and subject to different simulations and variations. These characteristics are necessary in order to adapt the model to the uncertainty of business environment and to allow periodic review of the Strategic Plan itself.

The planning process should allow *Alfa* to satisfy the following business needs:

- Manage the economic forecasts for each market
- Calculate the cash flows coming from the different Strategic Business Units
- Confirm the brands value over time
- Meet the auditors requests in terms of traceability and reliability

Assumptions: the multidimensional model

The model is designed to consider a planning period of four years (2016-2019).

Current year (2015) and past years (2013-2014) are considered in the model for the initialization logics and as basis for comparison.

It consists firstly of an economic section characterized by the calculation of revenues, variable costs depending on the perspectives of quantity growth, and fixed costs. Secondly on a financial section based on investment and financial plan developed with an indirect method.

All output figures are simulated in different scenarios controlling the main financial and economic drivers for each section of the Plan.

The model is based on a dimensional structure, which allows analysing data from different points of view looking at the same information.

Considering the example:
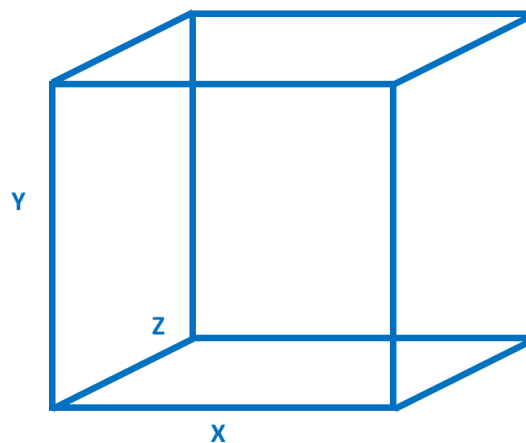
This data cube contains information about the revenues of a company. It has three dimensions of analysis:

X: *Customer*: all the customers involved in a transaction with the company
Y: *Product*: all the products sold during a period
Z: *Month*: the period considered
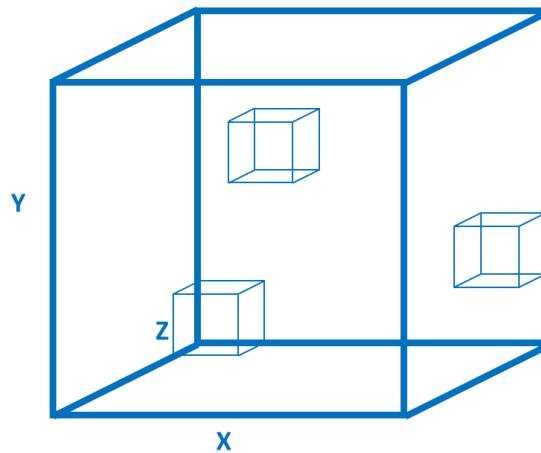
Each cell inside the cube is a transaction characterized by a customer a product and a specific month.
In this way a company can analyse its revenue streams from different perspectives choosing the dimensions it considers more useful.
It is possible to consider just one, two or more than three dimensions for each metric depending on the need of the analysis.
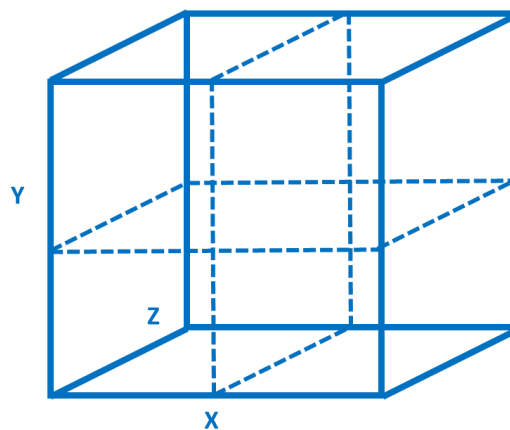
Company *Alfa*'s model considers the following dimensions:

- Trimester: planning for trimester allows to be more precise and consider all the variables that can happen during the year

- Business Unit: In Company Alfa case, the concept of Business Unit is linked with the product dimension and is the main product group/family.

- Market: it is the correspondent dimension of the Business Unit for the customer; the customers are split through a geographical criterion.

- Company: the main company *Alfa* and the subsidiaries

- Financial statement lines: all the data, after a reclassification, flow into the financial statements: Income Statement, Balance Sheet, Cash Flow Statement

These are the main dimension considered in the model and highlighted in the reporting dashboards. Nevertheless there are other secondary dimensions considered to go into detail or to carry out different analysis.

Assumptions: the CPM tool

The software used for designing the model described previously is *BOARD.*
BOARD combines various Business Intelligence and Corporate Performance Management functionalities within a single graphical software environment. Its BI capabilities include multi-dimensional analysis, dashboarding and reporting, while from the CPM side it includes budgeting, planning and forecasting. It is used in an effort to improve productivity and decision making while lowering costs. Its main characteristic is the use of *multidimensional databases*.
A multidimensional database implies the ability to rapidly process the data so that answers can be generated quickly. It uses the idea of a data cube, as explained before, to represent the dimensions of data available to a user. Hence, "revenues" could be viewed in the dimensions of product , customer, time, or some additional dimension. In this case, "revenues" is known as the measure attribute of the data cube and the other dimensions are seen as feature attributes.
A database creator can define hierarchies and levels within a dimension (for example, customer and market levels within a geographical hierarchy), creating *n to 1* relationships between them.
BOARD allows users integrating the company data, coming from the ERP[59], with other inputs to obtain the expected forecasts and planning projections through different algorithms and allocations.

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[59] Enterprise Resource Planning

2.1 Economic section

The economic section of the Strategic Plan is organized as presented in the following exhibit:
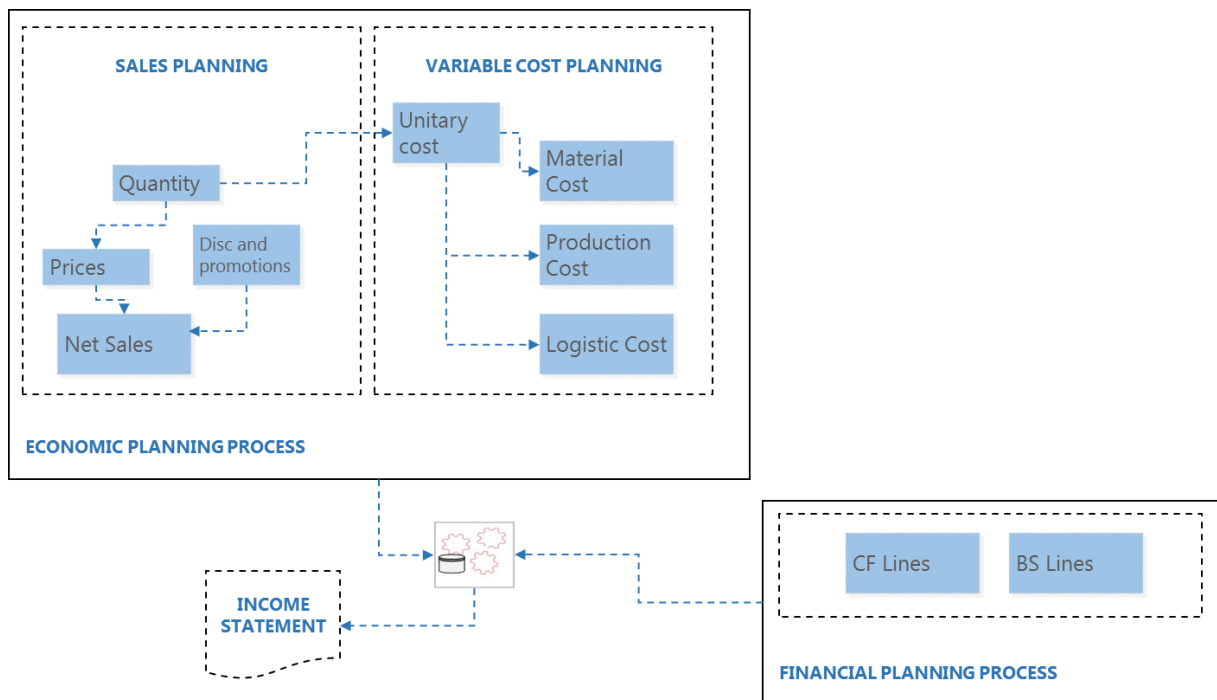
Own Elaboration

All the measures of this section are calculated using a direct approach and following a specific path because of their complementarity.

After a reporting view, the procedure followed to obtain every specific figure will be explained and analysed to better understand the underlying logic for each decision and all the relevant KPIs considered.

2.1.1 Sales Planning

The analysis of the revenues through a CPM tool allows monitoring their trend over time both as a whole and for each single company.

Moreover, the multidimensional model allows considering the different perspectives of this trend examining the development from a market point of view and from a product one. The control of specific KPIs allows an effective Critical Success Factors analysis.

The first step to analyse the revenues is examine the Sales Dashboard, the final report that represents the growth of the Net Net Sales[60] over time and all the product and market analysis. Net Net Sales and EBITDA in this case were chosen as KVD and KPI to measure the actual growth of *Alfa*. They consider both the Sales of existing companies and the Sales of the new acquisitions.

The evaluation of these KPIs requires a deeper analysis and further calculation of other metrics as Discounts, Promotion and Listing for Net Net Sales, and all other necessary costs for the calculation of EBITDA. The simultaneous use of these KPIs allows also understanding if the company growth is healthy and profitable or pathological.

Exhibit 1: Exhibit from BOARD Strategic Plan Model

The first graph (Exhibit 1) of the report shows these KPIs in order to analyse the expected

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[60] Amounts of sales generated by a company after the deduction of discounts and promotion. The calculation of the latter will be discussed in the next paragraphs

performance of *Alfa* in the planning period: the increase of absolute value of Net Net Sales and the growth of EBITDA percentage.

The comparison of forecast data (2016-2019) with the historical (2013-2015) is important to underline the continuity of projections according to the *Reliability* principle of Borsa Italiana. The revenue growth rate is an indicator that cannot change excessively from one period to another, unless justified, and the lacking exposure of this comparison would reduce the utility of the forecast data considered that it would not facilitate the understanding of the company trend over time.

Especially in the first year of plan, the growth of the figures is relatively restrained:

Net Net Sales 2015 vs 2016: 1.078 → 1.196 (+10,9%)

EBITDA 2015 vs 2016: 6,47 → 6,59 (+1,9%)

It is extremely important to understand how the company is structured from an organizational point of view and how the information flow is conveyed to the management.

Through this information the management can measure the performance of a specific significant segment or the one of the company as whole.

IAS 14[61] suggests preferring the *business segment* and *geographical segment* analysis.

The mapping of the organizational structure by Business Unit or Market is the instrument that allows to reach an all-around understanding of the risks and opportunities of a diversified company.

The standard explains how to classify a *business* or *geographical segment* using a list of drivers as following[62]:

Business segment:

- Product characteristics
- Productive process
- Customer cluster
- Sales channel to reach the market

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[61] Deloitte, IAS 14 — Segment Reporting (Superseded), URL: *https://www.iasplus.com/en/standards/ias/ias14*
[62] Angiola N., 2007, *La comunicazione economico-finanziaria dei gruppi italiani quotati. Un'indagine empirica sull'informativa settoriale.* Milano: Franco Angeli. P.: 21-30

Geographical segment:

- Economic and political environment
- Risks of specific geographical areas
- Activities performed in particular areas
- Currency equality

These are the main segments indicated by IAS 14. Anyhow, there are no limits to the selection of other kinds of segment to represent company data.

Company *Alfa,* as explained in the previous paragraph, considers as main segments the Business Unit and the Market: a *business segment* and a *geographical segment.*

The former is based on the similarity of product characteristic. The latter is based on the location of the destination customers that are involved in company transactions.

The second graph of the report is a Bubble Chart and represents the Sales analysis by Business Unit.

As explained in the previous chapter, Management needs to prepare a competitive strategy for each Business Unit together with an integrated vision of all of them to generate an effective value.

The contribution of each BU should be disclosed in static and dynamic terms and it is evaluated considering its actual and future profitability and growth.

This kind of analysis is just another perspective of the previous one and considers the same KPIs (Net Net Sales and EBITDA) but allows to measure and to simulate the impact of the strategy on another Critical Success Factor: *Product diversification*.

The comparison showed in Exhibit 2 and Exhibit 3 is between the current year (2015) and the next year (2016):
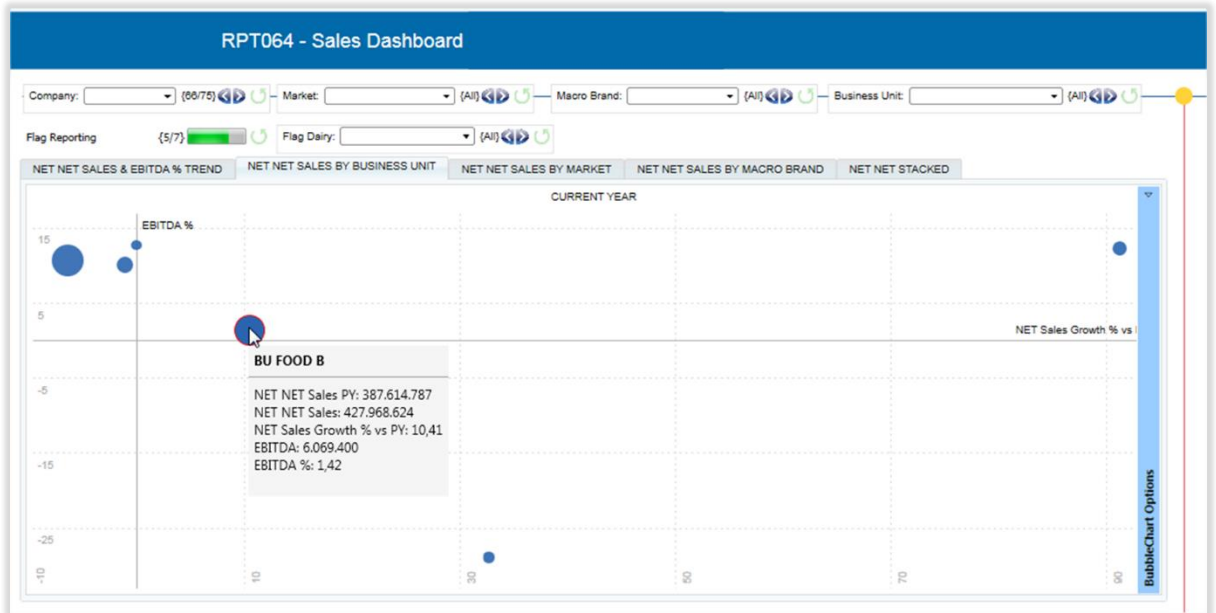

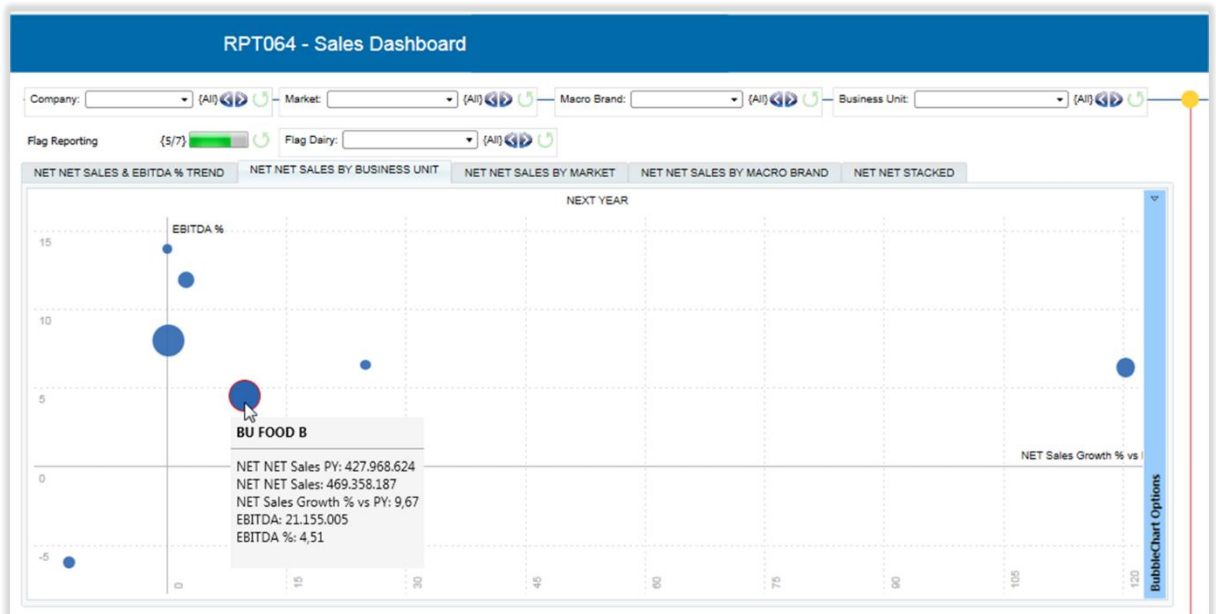*Exhibit 2: Exhibit from BOARD Strategic Plan Model*

Exhibit 3: Exhibit from BOARD Strategic Plan Model

The Bubble Chart maps the different Business Units taking into consideration three variables[63]:

- % of sales growth versus previous year (X axis)
- EBITDA % (Y axis)
- Net Net Sales Value (Bubble Area)

It allows to understand which is the position and weight of each BU inside the company and how it changes over time:

- BUs in the first quarter have positive growth rate and positive EBITDA, they are the best performer of the company
- BUs in the second quarter have negative growth rate and positive EBITDA. It is important to understand if they can grow with the appropriate investment to take advantage from the positive margin
- BUs in the third quarter have negative growth rate and negative EBITDA, the best solution is probably the divestment (in the case of *Alfa* the only BU in this quarter contains residual data not allocated to other Business Units, BU *GENERIC*)
- BUs in the fourth quarter have positive growth rate and negative EBITDA, if the growth will not lead to positive returns the presence of these BUs in the company portfolio are no longer justified.

The following table (Exhibit 4) shows the figures represented in the Bubble Chart during the two periods:

Business Unit	NET NET Sales PY 2015	NET NET Sales 2015	NET Sales Growth % vs PY 2015	EBITDA 2015	EBITDA % 2015	NET NET Sales PY 2016	NET NET Sales 2016	NET Sales Growth % vs PY 2016	EBITDA 2016	EBITDA % 2016
BU BEVERAGES A	499.156.287	467.104.582	-6,42 %	50.397.280	10,79 %	467.104.582	467.635.416	0,11 %	37.548.012	8,03 %
BU FOOD A	100.070.702	98.931.485	-1,14 %	10.075.277	10,18 %	98.931.485	101.245.289	2,34 %	12.052.654	11,90 %
BU FOOD B	387.614.787	427.968.624	10,41 %	6.069.400	1,42 %	427.968.624	469.358.187	9,67 %	21.155.005	4,51 %
BU DIVERSIFICATION	32.214.795	61.588.078	91,18 %	7.659.968	12,44 %	61.588.078	135.652.588	120,26 %	8.562.903	6,31 %
BU BEVERAGES B	4.879.480	4.876.839	-0,05 %	627.195	12,86 %	4.876.839	6.091.523	24,91 %	395.733	6,50 %
BU BIO							229.500		31.816	13,86 %
BU GENERIC	13.280.355	17.618.928	32,67 %	-5.089.660	-28,89 %	17.618.928	15.449.961	-12,31 %	-939.380	-6,08 %
TOTAL	1.037.216.408	1.078.088.537	3,94 %	69.739.460	6,47 %	1.078.088.537	1.195.662.464	10,91 %	78.806.743	6,59 %

Exhibit 4: own elaboration

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[63] X- and Y-axis origin is 0

Considering the example displayed in Exhibit 2 and 3 it is possible to see how the Business Unit "*FOOD B*" grows from 2015 to 2016 and moves in the Bubble Chart from one year to another.

It is the second BU in terms of weight after "*BEVERAGES A*" and it is reaching it due to the steady sales growth rate (10,41% in 2015 and 9,67% in 2016).

Another important indicator to consider is the growth of EBITDA (from 1,42% in 2015 to 4,51% in 2016) which, combined with a high sales growth, make it probably the most interesting BU of the Company and the one on which the management is mostly relying on.

The top seller Business Unit is instead facing decreasing trend both from sales point of view and from EBITDA one.

The first graph, filtered respectively by "*FOOD B*" and "*BEVERAGES A*" shows the expected trends of the two Business Units during the entire planning period:
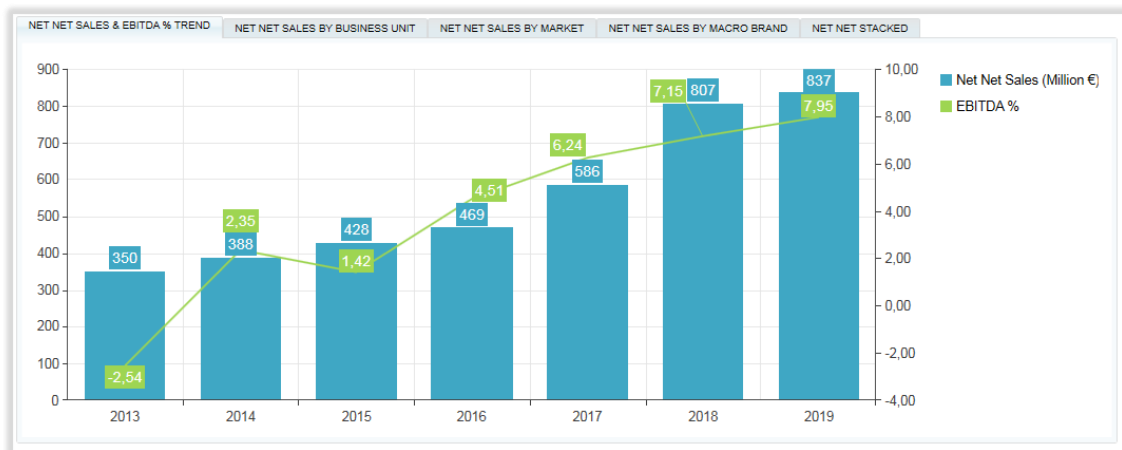

Exhibit 5, BU FOOD B trend: Exhibit from BOARD Strategic Plan Model

Exhibit 5, BU BEVERAGES A trend: Exhibit from BOARD Strategic Plan Model

The long-term trend of the two BUs helps the management understanding on which one focus

resources and activities to maximize the profitability and growth of the company.

Considering the *Product Diversification* Critical Success Factor, the Bubble Chart allows gathering important information about the direction Company Alfa is undertaking.

Firstly, the BU "DIVERSIFICATION", a generic Business Unit which encompass different kind of products not included in the other groups, faced an interesting delta in Sales Growth vs previous year (91,18% in 2015 and 108,26% in 2016) more than doubling its value (61.588 K in 2015 and 135.652 K in 2016).

Secondly, another important indicator deducible from the Chart is the creation and push of a new BU: "BIO". This introduces another element of *Product Diversification* and alignment with the CSF of *Quality* to reach a premium price.

More generally, the product diversification path that Alfa is undertaking is visually clear watching exhibit 2 and 3: in the former Chart, just two Business Units are in the first quarter whereas in the latter six there are six of them.

The first indicator represented in the table is the EBITDA:

	Code	Description
Indicator	100	EBITDA
Indicator Type	3	Classic Performance/Ratio
CSF	6	Profitability
Consistency	1	Directly Correlated
Unit of measure	1	Financial
Measurement Type	2	Effectiveness
Purpose	1	Value creation and Growth
Confidence Level	3	High
Source of Data	2	Partially traceable
Drillability	2	From Four to Six dimensions
Notes		This classic indicator gives the first idea of profitability without considering the different cost lines that erode the margin. It is possible to get this information through other indicators and analysis. The ratio EBITDA/Net Net Sales helps to appreciate its relative value and growth over time. Sales and the majority of the cost lines are initialized by the ERP this gives a good level traceability.

Table 1: Own Elaboration[64]

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[64] Score detail in the appendix

The multidimensional structure allows examining data from another point of view, the geographical one.

This kind of analysis permits to monitor the specific KPIs linked to the *Market Diversification* Critical Success Factor. The Key Performance Indicator chosen is the following ratio:

Sales of Market X / Total Sales

The third graph presents sales data allocated by different markets in which Company *Alfa* operates:
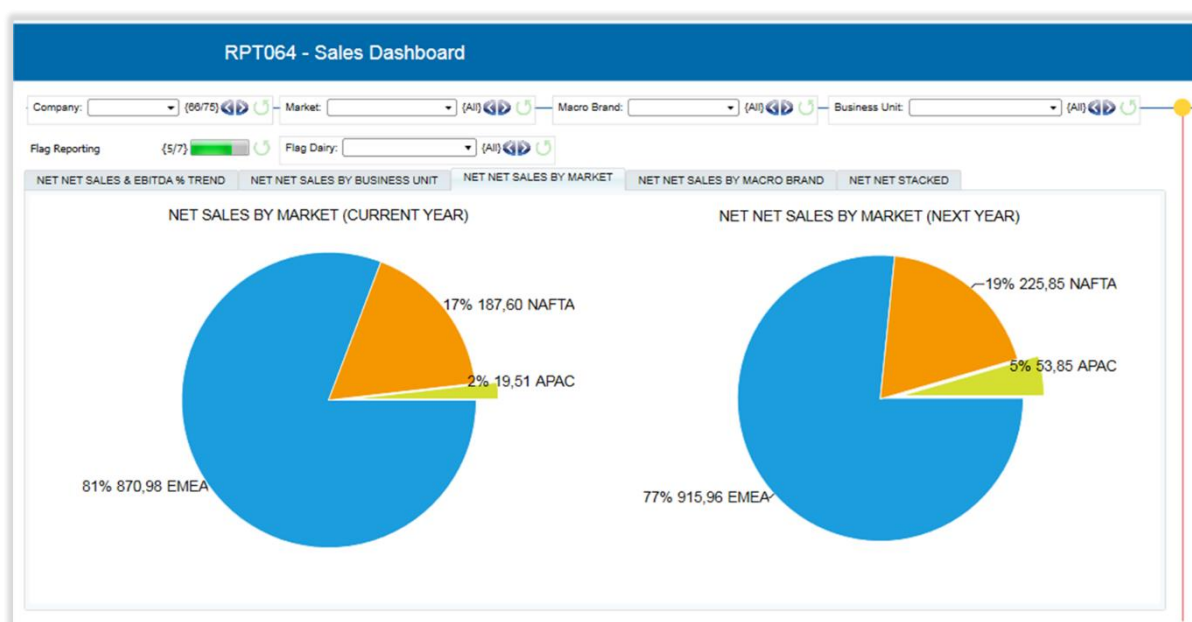
Exhibit 6: Exhibit from BOARD Strategic Plan Model

It is easy to understand how deeper and more significant analysis can be carried out on each division considering the meaning of the drivers (described above) necessary to split the information in different geographical groups.

Several factors can influence management decisions: general environment, conditions of the investments made abroad, incentives, import-export policies and the foreign consumers and workers.

These decisions can reveal themselves successful granting a long lasting competitive advantage for the company or losing pushing it at margins of the market[65].

Pie Charts (Exhibit 6) show the different composition of sales by market, comparing current

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[65] Angiola N., 2007, *La comunicazione economico-finanziaria dei gruppi italiani quotati. Un'indagine empirica sull'informativa settoriale.* Milano: Franco Angeli. P.: 76

year (2015) with next year (2016).

In current year the large majority of sales are in EMEA market (81%) followed by NAFTA (17%) and APAC (2%).

Figures prove the market diversification strategy that the company means to pursue.

Analysing the KPI described above:

	% Total sales 2015	% Total sales 2016	Δ vs previous year
EMEA	81%	77%	-4,9%
NAFTA	17%	19%	+11,8%
APAC	2%	5%	+150%

Even though EMEA sales, in absolute terms, increase from one period to another, the weight of the market over the total decreases (from 81% in 2015 to 77% in 2016).

On the other hand, NAFTA (17% in 2015 → 19% in 2016) and APAC (2% in 2015 → 5% in 2016) increase their weight as a consequence of the diversification strategy.

	Code	Description
Indicator	105	Sales of Market X / Total Sales
Indicator Type	2	KPI
CSF	4	Diversification
Consistency	2	Indirectly correlated
Unit of measure	1	Financial
Measurement Type	2	Effectiveness
Purpose	4	Corporate Activities Management
Confidence Level	3	High
Source of Data	1	Fully traceable
Drillability	2	From Four to Six dimensions
Notes		The indicator for each Market of the company and its evolution over time gives a picture of the direction the company is undertaking. The dimensional set allows deeper kinds of analysis. The indicator could give more precise information showing the different nations and not only the geographical area indicated by the market

Table 2: Exhibit from BOARD Strategic Plan Model [66]

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[66] Score detail in the appendix

Process

All the figures showed in reporting dashboards are the outcome of the model chosen by the Management.

The CPM tool takes into consideration all the assumptions formulated and executes a series of procedures and calculation to arrange accurate and traceable projections.

The reliability of these projections is supported by the fact that the majority of input for data initialization and driver calculation comes directly from the ERP[67] of the Company and it is daily refreshed. This creates a strong integration between actual and forecast data making the Strategic Plan more reliable.

Reporting presented in the previous paragraph shows aggregated data by main dimensions of analysis (Time, Business Unit, Market). Actually, the granularity of the information can be deeper and include other dimensions as explained previously.

This allows planners to be more precise in forecasting measures taking into consideration all the exception and characteristic that each *intersection* can show.

For example, evaluating the case of Company *Alfa,* a *Business Unit* is composed by different *Business Areas,* which are the product families.

If it is necessary to forecast a growth percentage of the Business Unit "*BU FOOD B*" in terms of sales, choosing just one percentage for the entire BU could be inaccurate and not reliable:

BU FOOD B			
	Sales (*t*)	g	Sales (*t+1*)
	100	5%	105

The possibility to plan Business Area by Business Area results in a more accurate planning process that considers the peculiarities of each business and evaluates them in different ways:

BU FOOD B	Sales (*t*)	g	Sales (*t+1*)
FAMILY D	20	2%	20,4
FAMILY E	45	3%	46,35
FAMILY F	6	5%	6,3
FAMILY Q	29	6%	30,74
Total BU FOOD B	100	4%	103,79

---

[67] Enterprise resource planning (ERP) is the business process management software that allows an organization to use a system of integrated applications to manage the business and automate many back-office functions related to technology, services and human resources

Sales Volume

The revenue calculation starts with the *Sales Volume Planning*.

Volume projections multiplied by respective prices leads to Sales Value.

The reliability of the Strategic Plan, should be analyzed with respect to a series of dimensions pertaining especially the historical data[68]. Hence it is important to have a solid basis on which building the planning figures as explained in the previous paragraph.

Considered a planning period of four years, the CPM tool allows a data initialization for the first year of Plan (2016) from either actual data of 2015 or from budget data of 2016.

While actual data come from the ERP, Budget data of 2016 comes from a parallel process developed with another CPM Model and have the same dimensional set. This allows taking advantage of another process avoiding a duplication of effort.

It is useful to bring together processes and technologies into an integrated system and unified way of managing the Strategic Planning Process to make it more powerful than its individual parts.

CE0021 - Sales Volume Planning

Year: [ ] {4/18} ◀▶ ↺ — Company: 477 Company_10 [ ] {1/13} ◀▶ ↺

| 1 - Current and First Year of Plan | 2 - First Year of Plan | 3 - Growth % Definition | 4 - Data Entry Planning Period | Notes |

Tons - LOAD Sales Volume	1°T.15	2°T.15	3°T.15	4°T.15	2015	1°T.16	2°T.16	3°T.16	4°T.16	2016
Market : EMEA										
FAMILY A	1.948	1.962	2.407	1.999	8.316	1.759	1.804	2.431	1.796	7.791
FAMILY B	3.665	3.660	3.870	3.396	14.592	3.716	3.491	3.765	3.576	14.548
FAMILY C	143	158	217	137	655	147	176	210	126	659
FAMILY D	248	252	293	244	1.038	234	245	295	242	1.016
FAMILY E	24	25	30	24	103	28	31	41	34	135
FAMILY F	15	13	15	17	60	18	14	16	18	66
FAMILY G	51	47	58	54	210	37	37	46	38	157
FAMILY H	21	20	27	23	90	36	40	52	37	165
FAMILY M	34	30	38	25	128	33	26	29	19	108
FAMILY N	0	2	1	0	3	0	1	0		1
FAMILY O	1	2	3	3	9	59	70	86	64	279
FAMILY Q	3	4	5	4	16	13	14	19	14	59
FAMILY R	1	1	1	1	4	12	8	11	6	36
FAMILY T	2.050	2.050	2.050	2.050	8.202	2.079	2.086	2.096	2.087	8.348
Total EMEA	8.205	8.227	9.015	7.978	33.426	8.170	8.042	9.097	8.058	33.367
Market : NAFTA	130	156	175	143	604	168	191	234	188	780
Market : APAC	19	29	34	38	121	43	84	99	68	293
Grand Total	8.354	8.413	9.224	8.159	34.151	8.380	8.318	9.429	8.314	34.441

Exhibit 7: Exhibit from BOARD Strategic Plan Model

Exhibit 7 shows the actual data, in terms of sales volume (tons), of 2015 and the forecast data of 2016 initialized by budget 2016.

The first thing worth noticing is the dimensional set of this information, which is presented by

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[68] Borsa italiana, 2003. *Strategic Plan Guide, www.borsaitaliana.it.* p. 40

Trimester, *Market, Business Area* and *Company*[69].

Once decided how to initialize the first year of plan, it is the starting point for the projections of consecutive years:

1 - Current and First Year of Plan	2 - First Year of Plan	3 - Growth % Definition	4 - Data Entry Planning Period	Notes

PLAN Growth % Sales Volume	2017	2018	2019
Market : 10 EMEA			
PT0001 FAMILY A	-12,12%	-3,74%	-1,94%
PT0002 FAMILY B	1,97%	1,00%	1,00%
PT0003 FAMILY C	1,90%	2,00%	2,00%
PT0004 FAMILY D	1,94%	3,00%	3,00%
PT0005 FAMILY E	1,80%	3,00%	3,00%
PT0006 FAMILY F	-0,05%		
PT0007 FAMILY G	-0,06%		
PT0008 FAMILY H	11,33%	9,40%	7,80%
PT0014 FAMILY M	1,61%	2,70%	3,62%
PT0015 FAMILY N	1,79%	3,00%	4,00%
PT0016 FAMILY O	21,91%	22,00%	20,00%
PT0018 FAMILY Q	7,27%	2,76%	5,89%
PT0019 FAMILY R	2,91%	4,00%	5,00%
PT0099 FAMILY T			
Market : 20 NAFTA			
Market : 90 APAC			

Exhibit 8: Exhibit from BOARD Strategic Plan Model

The calculation of the following years projections is based on a percentage growth established by the planner for each intersection *Market/Business Area* and can vary from year to year following a specific expected trend.

Launching a procedure, the calculation obtains the projections of the planning period for each intersection and the planner can edit the resulting figures[70]:

1 - Current and First Year of Plan	2 - First Year of Plan	3 - Growth % Definition	4 - Data Entry Planning Period	Notes

PLAN Sales Volume	2017	2018	2019	TOTAL
Market : EMEA				
FAMILY A	6.847	6.590	6.462	19.899
FAMILY B	12.991	14.984	15.133	43.108
FAMILY C	671	685	699	2.055
FAMILY D	1.036	1.067	1.099	3.202
FAMILY E	137	141	145	424
FAMILY F	66	66	66	198
FAMILY G	157	157	157	472
FAMILY H	183	201	216	600
FAMILY M	109	112	116	338
FAMILY N	1	1	1	4
FAMILY O	340	414	497	1.252
FAMILY Q	64	65	69	198
FAMILY R	38	39	41	118
FAMILY T	8.348	8.348	8.348	25.043
Total EMEA	30.988	32.871	33.051	96.910
Market : NAFTA	815	847	874	2.535
Market : APAC	406	466	620	1.493
Grand Total	32.209	34.183	34.545	100.937

Exhibit 9: Exhibit from BOARD Strategic Plan Model

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[69] Data shown from now on in this section refers to a single company of *Alfa* group: "*Company_10*". As it is possible to see in the second interactive selector at the top of the screen represented in Exhibit 7.

[70] "FAMILY B" for example is not aligned with the calculation using the percentage growth in 2017 because it was edited at a later time.

This granularity of information allows considering different situations and contexts present in the company predicting different trend scenarios for each intersection.

Intersection EMEA/FAMILY A, for example, faces a negative trend in the planning period (from 7.791 in 2016 to 6.462 in 2019, also between 2015 and 2016 it is present a negative growth rate, -6,3%) while EMEA/FAMILY H shows a positive trend coming also from the substantial growth of 2015-2016 (from 90 in 2015 to 216 in 2019).

Average prices and Net Sales

The second step to take is the price calculation necessary to obtain the net sales value starting from the volume.

The price considered is an average price (€/Tons) calculated on the budget data of the first year of plan and compared with the current year to analyse the trend and infer the projections (Exhibit 10).

CE0022 - Average Price and Net Sales Planning

Year: ▼ (4/18) ◀▶ ↻ — Company: 477 Company_10 ▼ (1/13) ◀▶ ↻

| 4 - Data entry Prices (planning period) | 5 - Data entry Net Sales (planning period) | 6 - Summary Volumes/Sales | Notes |
| 1 - Check Prices (Current Year and First Year of Plan) | 2 - Check Prices (First Year of Plan) | 3 - Definition prices growth % | |

	Net Sales 2015	Volume (Tons) 2015	Average Price (€/Ton) 2015	Net Sales 2016	Volume (Tons) 2016	Average Price (€/Ton) 2016
Market : EMEA						
Business area : FAMILY A						
Macrobrand_1	3.800.537	2.976	1.277,27	3.645.018	2.850	1.279,10
Macrobrand_4	6.740.979	5.341	1.262,22	6.150.513	4.941	1.244,77
Total FAMILY A	10.541.515	8.316	1.267,61	9.795.531	7.791	1.257,33
Business area : FAMILY B	13.380.131	14.592	916,96	13.154.431	14.548	904,21
Business area : FAMILY C	2.022.075	655	3.085,34	1.998.096	659	3.032,61
Business area : FAMILY D	6.044.164	1.038	5.821,16	5.762.881	1.016	5.670,96
Business area : FAMILY E	632.384	103	6.151,73	782.772	135	5.812,81
Business area : FAMILY F	406.348	60	6.736,50	479.325	66	7.245,38
Business area : FAMILY G	530.168	210	2.524,40	371.738	157	2.361,53
Business area : FAMILY H						
Macrobrand_4	113.070	19	5.854,43	118.822	18	6.504,82
Macrobrand_5	355.872	70	5.049,09	680.245	146	4.647,10
Total FAMILY H	468.942	90	5.222,30	799.067	165	4.853,20
Business area : FAMILY M	394.580	128	3.071,72	305.279	108	2.835,21
Business area : FAMILY N	10.102	2	2.648,17	4.410	1	2.937,10

Exhibit 10: Exhibit from BOARD Strategic Plan Model

During this process, there is a further change of the dimensional set which now includes another dimension: *Macrobrand.*

The introduction of this new dimension is fundamental to analyse another Critical Success Factor: *Brand Strenght*.

A product belonging to a Business Area can be sold with two different Macrobrands and, as a

consequence, with two different prices. A price analysis by Macrobrand helps the management to be aware of the actual strength of the different brands of the company and to understand in which kind of products the brand value gives a higher possibility to charge a premium price. Understanding all these variables is essential to assign the right value to sales volume and to observe the price effect both in the past and in the future.

Looking at the intersections used previously as example it is possible to see how in EMEA Market, even though "*FAMILY A*" showed a decreasing trend in terms of volume and "*FAMILY H*" an increasing one (Exhibit 9), the average price of the Macrobrands presents different evolutions:

- EMEA / FAMILY A / MACROBRAND_1: 1.277,27 in 2015 → 1.279,10 in 2016 (+0,14%)
- EMEA / FAMILY A / MACROBRAND_4: 1.262,22 in 2015 → 1.244,77 in 2016 (-1,38%)
- EMEA / FAMILY H / MACROBRAND_4: 5.854,43 in 2015 → 6.504,82 in 2016, (+11,11%)
- EMEA / FAMILY H / MACROBRAND_5: 5.049,09 in 2015 → 4647,10 in 2016, (-7,96%)

The trend of average price by Macrobrand is a KPI related to the value creation and corporate activities management and its understanding helps the planners esteeming if the growth of a Business Area is profitable or not and the price trend of each Macrobrand in all its Business Areas.

"*MACROBRAND_4*" for example, faces an increase of average value in the intersection with "*FAMILY H*" and a decrease with "*FAMILY B*".

The Macrobrand analysis can reveal itself very useful also correlated with the market: the strength of a brand can vary from area to area according to the different communication investment made.

	Code	Description
Indicator	115	Average Price
Indicator Type	2	KPI
CSF	3	Brand Strenght
Consistency	1	Directly Correlated
Unit of measure	1	Financial
Measurement Type	2	Effectiveness
Purpose	4	Corporate Activities Management
Confidence Level	2	Medium
Source of Data	1	Fully traceable
Drillability	2	From Four to Six dimensions
Notes		This indicator is very consistent with the related CSF and addresses precisely its issue addressed. Its simple structure makes it reliable and completely traceable because it is calculated by metrics coming directly from ERP/Budget (Sales and Volume). The main criticality is that the indicator does not allow deeper analysis at a product (not Business Area) and Brand level (not MacroBrand) to understand for instance which is the real delta price from two identical products of different brands.

Table 3: Elaboration[71]

Once decided the growth percentage of average price for each intersection during the planning period 2017-2019, and adjusted the outcome with data entry, it is possible to multiply the sales volume previously calculated with the average price.

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[71] Score detail in the appendix

Exhibit 11 shows the summary of volumes and net sales, as a result of the procedure, using a coherent dimensional set:

	Sales Volume 2017	Average Price 2017	Net Sales 2017	Sales Volume 2018	Average Price 2018	Net Sales 2018	Sales Volume 2019	Average Price 2019	Net Sales 2019
Market : EMEA	30.988	1.100,87	34.113.706	32.871	1.049,80	34.507.630	33.051	1.064,94	35.197.287
Market : NAFTA	815	4.774,51	3.889.977	847	4.749,71	4.020.763	874	4.704,66	4.110.313
Market : APAC									
Business area : FAMILY B	211	735,14	154.990	223	738,81	165.110	239	742,51	177.551
Business area : FAMILY C	0	4.193,18	155	0	4.207,85	155	0	4.222,58	156
Business area : FAMILY D									
Macrobrand_1	5	5.886,88	30.097	6	5.898,66	32.564	6	5.910,45	35.282
Macrobrand_4	73	5.379,91	393.470	79	5.390,67	425.723	85	5.401,46	461.255
Total FAMILY D	78	5.413,04	423.567	84	5.423,86	458.287	91	5.434,71	496.537
Business area : FAMILY E	2	7.466,22	13.531	2	7.492,36	15.615	3	7.518,58	18.803
Business area : FAMILY F	0	6.747,10	1.020	0	6.770,72	1.177	0	6.794,41	1.417
Business area : FAMILY H	2	8.169,16	19.287	2	8.197,75	20.323	3	8.226,44	21.413
Business area : FAMILY M	97	1.609,91	155.700	135	1.615,55	218.743	264	1.621,20	428.043
Business area : FAMILY Q	16	5.568,40	89.277	18	5.554,26	98.570	20	5.534,92	112.764
Business area : FAMILY R	0	7.069,65	582	0	7.094,40	584	0	7.119,23	586
Total	406	2.112,16	858.109	466	2.100,03	978.564	620	2.026,81	1.257.271
Grand Total	32.209	1.206,55	38.861.793	34.183	1.155,74	39.506.957	34.545	1.174,27	40.564.872

Exhibit 11: Exhibit from BOARD Strategic Plan Model [72] [73]

The following reworked versions of the same table shows the utility of analysing data from different points of view paying attention to the volume effect and price effect in the delta of Net Sales from 2015 to 2019.

	Sales Volume 2015	Average Price 2015	Net Sales 2015	Sales Volume 2019	Average Price 2019	Net Sales 2019	CAGR Volume	CAGR Average Price	CAGR Net Sales
EMEA	33.426	1.056,70	35.320.720	33.051	1.064,94	35.197.287	-0,28%	0,19%	-0,09%
NAFTA	605	5.010,42	3.029.478	874	4.704,66	4.110.313	9,64%	-1,56%	7,93%
APAC	121	2.659,84	321.390	620	2.026,81	1.257.271	50,53%	-6,57%	40,64%
TOTAL	34.151	1.132,37	38.671.587	34.545	1.174,27	40.564.872	0,29%	0,91%	1,20%

Table by Market, own elaboration

	Sales Volume 2015	Average Price 2015	Net Sales 2015	Sales Volume 2019	Average Price 2019	Net Sales 2019	CAGR Volume	CAGR Average Price	CAGR Net Sales
BU BEVERAGES A	22.985	1.043,71	23.989.983	21.880	1.003,84	21.964.000	-1,22%	-0,97%	-2,18%
BU FOOD A	658	3.066,65	2.018.158	732	3.020,09	2.209.266	2,68%	-0,38%	2,29%
BU FOOD B	1.823	5.695,55	10.384.545	2.216	5.615,64	12.445.524	5,00%	-0,35%	4,63%
BU DIVERSIFICATION	341	3.417,85	1.165.454	989	2.826,97	2.794.522	30,49%	-4,63%	24,44%
BU BEVERAGES B	142	2.921,01	414.357	381	2.006,18	764.596	28,03%	-8,96%	16,55%
BU GENERIC	8.202	85,24	699.090	8.348	46,36	386.963	0,44%	-14,12%	-13,75%
TOTAL	34.151	1.132,37	38.671.587	34.545	1.174,27	40.564.872	0,29%	0,91%	1,20%

Table by Business Unit, own elaboration

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[72] Data about "*Company_10*"
[73] Net Sales calculation considers decimals in Sales Volume

The table by Market, for instance, shows how the compound annual growth rates of *"NAFTA"* and *"APAC"* are the only reasons of the +1,20% in total Net Sales and their growth is pushed by the volume growth (+9,64% NAFTA, + 50,53% APAC) considered that the average price decreases.

From the table by Business Unit, on the other hand, it is easy to notice the decreasing trend of the main BU *"BU BEVERAGES A"* (CAGR Net Sales -2,18%) and the increasing one of *"BU FOOD B"* (CAGR Net Sales +4,63%) and *"BU DIVERSIFICATION"* (CAGR Net Sales +24,44%) mainly due to a volume effect.

All these considerations are aligned with what showed in the main sales dashboard.

Bonus and Promotions

The last step necessary to calculate the Net Net Sales previously showed in the Sales Dashboard is the forecast of Bonus and Promotions.

Company *Alfa* divides this information in three parts:

- Sales Bonus: Bonus based on qualitative or quantitative parameters that *Alfa* recognise to its customer once achieved a particular threshold
- Promotions: special offers of given products or product families for a defined period of time
- Listing: fees charged by supermarket distributors (retailers) in order to have company product placed on their shelves.

The bonus and promotion value is initialized from the actual data of 2015 as a percentage of Net Sales. From this initialization, it is not possible to have the split by the three different types (Bonus, Promotions, Listing) because the dimensional set of this information is not compatible with the one of net sales. Exhibit 12 shows the aggregated value of Bonus and Promotions in absolute terms and as a percentage of the Net Sales:

CE0030 - Bonus and Promotions Planning

Year: ▼ {4/18} ◄▶ ○ — Company: 477 Company_10 ▼ {1/13} ◄▶ ○ — Market: ▼ {All} ◄▶ ○

1 - Bonus and Promotions (Current Year) | 2 - Edit % (Planning Years) | 3 - Check Bonus and Promotions

	Net Sales	Bonus and Promotions	% Bonus and Promotions
Year : 2015			
Business area : FAMILY D			
Macrobrand_1	877.451	154.192	17,57 %
Macrobrand_4	6.891.588	575.393	8,35 %
Macrobrand_5	20.193	424	2,10 %
Total FAMILY D	7.789.232	730.009	28,02 %
Business area : FAMILY E	1.957.633	177.498	17,97 %
Business area : FAMILY F	423.589	62.388	14,52 %
Business area : FAMILY G	530.168	63.856	11,95 %
Business area : FAMILY H	585.583	19	0,00 %
Business area : FAMILY M	414.357	45.965	22,23 %
Business area : FAMILY N	10.477	1.027	9,80 %
Business area : FAMILY O	17.608	6.014	34,15 %
Business area : FAMILY Q	214.091	6.708	15,06 %
Business area : FAMILY R	21.617	18	0,08 %
Business area : FAMILY T	699.090	0	0,00 %
Total	38.671.587	4.453.227	243,96 %
Grand Total	38.671.587	4.453.227	243,96 %

Exhibit 12: Exhibit from BOARD Strategic Plan Model

The percentage obtained as ratio between the absolute value of Bonus and Promotions and Net

Sales are allocated for the three different types using an allocation driver. The CPM Tool allows the creation of an allocation driver that considers the weight of bonus, promotions and listing for each intersection Business Area / Macrobrand splitting the percentages of net Sales in three parts. In doing this, it integrates another source of data to read actual figures of 2015 about Bonus and Promotions. This information is not the same showed in Exhibit 12.

Generally, the same information can come from different relational databases inside the company with different dimensional set even if the significance is the same. This structure is necessary to satisfy various business needs and a CPM tool facilitates the integration and use of this data to improve the planning process and make it more reliable and traceable.

The percentages obtained with this allocation are hence used to initialize data of the planning period.

Once adjusted initialized data for the different years of planning period, it is possible to calculate Bonus and Promotions value, multiplying the respective percentage by the Net Sales Value as presented in Exhibit 13.

1 - Bonus and Promotions (Current Year)	2 - Edit % (Planning Years)	3 - Check Bonus and Promotions						
SELEZIONARE 1 MERCATO	Bonus and Promotions Value 2016	% of Net Sales 2016	Bonus and Promotions Value 2017	% of Net Sales 2017	Bonus and Promotions Value 2018	% of Net Sales 2018	Bonus and Promotions Value 2019	% of Net Sales 2019
⊕ Business area : FAMILY G	46.821		31.315		31.425		31.535	
⊕ Business area : FAMILY H	14		1.387		1.570		1.580	
⊕ Business area : FAMILY M	44.922		34.728		35.860		37.363	
⊕ Business area : FAMILY N	307		575		594		620	
⊕ Business area : FAMILY O	56.304		93.275		116.071		140.678	
⊕ Business area : FAMILY Q	5.971		73.900		75.947		80.060	
⊖ Business area : FAMILY R								
⊖ Macro Brand : Macrobrand_4								
020 - Sales Bonus	14.056	9,07 %	10.677	9,07 %	11.156	9,07 %	11.777	9,07 %
150 - Promo	54	4,52 %	5.954	4,52 %	6.217	4,52 %	6.557	4,52 %
155 - Listing	639	0,87 %	1.284	0,87 %	1.340	0,87 %	1.412	0,87 %
Total Macrobrand_4	14.748		17.914		18.713		19.746	
⊕ Macro Brand : Macrobrand_5								
⊕ Total	14.748		17.914		18.713		19.746	
⊕ Business area : FAMILY T	0		0		0		0	
⊕ Grand Total	4.377.491		4.610.450		4.695.446		4.823.574	

Exhibit 13: Exhibit from BOARD Strategic Plan Model

Net Net Sales Value, as showed in the dashboard at the beginning of the paragraph, is the result of this process; Net sales calculated as product of volume and average price and reduced of Bonus and Promotions.

	Code	Description
Indicator	110	Net Net Sales
Indicator Type	1	KVD
CSF	5	Growth
Consistency	1	Directly Correlated
Unit of measure	1	Financial
Measurement Type	1	Efficiency
Purpose	1	Value creation and Growth
Confidence Level	1	High
Source of Data	1	Fully traceable
Drillability	2	From Four to Six dimensions
Notes		The dimensional set is rich but the indicator does not allow the discount analysis. Very useful indicator to measure the effective growth of the company in terms of sales without considering other factors which could reduce the amount invoiced. All the metrics used for its calculation during the planning period comes from direct elaboration of ERP Data

Table 4, own elaboration[74]

Examining the same dashboard displayed in Exhibit 1 with a filter on Company "*COMPANY_10*" it is possible to see the outcome of the process. The figures are consistent with all the steps previously showed for the calculations.
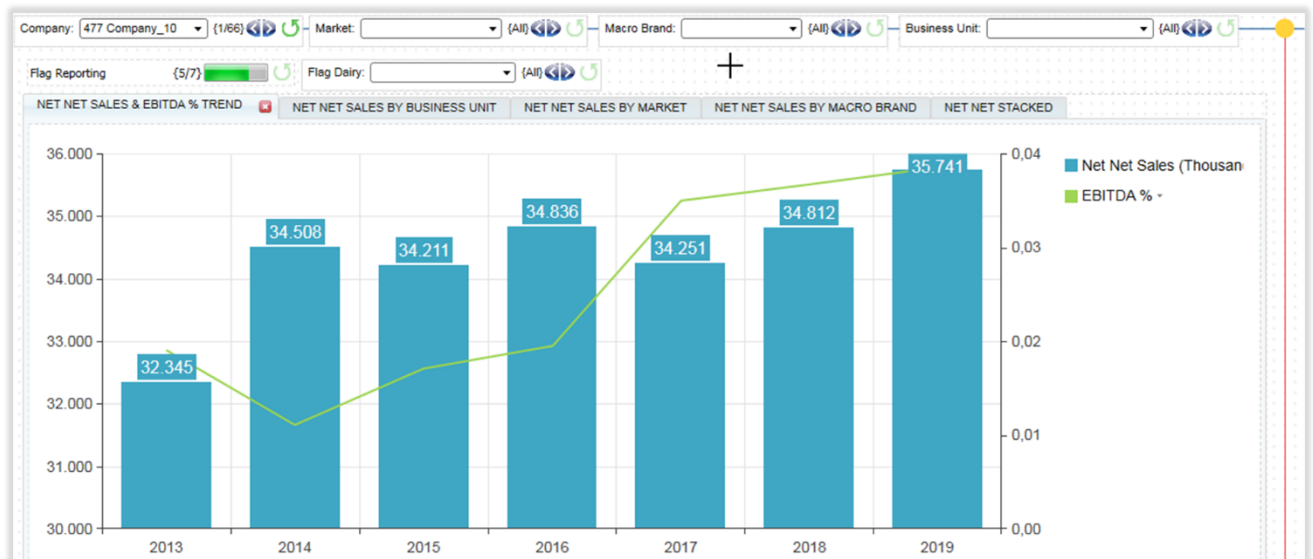
Exhibit from BOARD Strategic Plan Model

The description of this process shows how the use of a CPM tool makes it easy to to comply with the "*Consistency*" principle explained by *Borsa Italiana.*

The model making the Critical Success Factors and the relative KPIs explicit, permits to verify an *internal consistency* of the Plan.

All the figures move according to precise CSFs chosen as value driver in order the company to follow the strategy decided by the management.

The model complies also with the *external consistency,* which makes the data coherent with historical trend and, therefore, makes the Strategic Plan perceived as feasible.

The use of a CPM tool allows also understanding the advantage in terms of traceability of the data. For each figure, it is possible to go back to its calculation considering all the variables and assumptions involved to verify its reliability. This improves also the possibility to catch all the cause-effect relationships linked with specific phenomena or anomalies allowing their correction or study.

2.1.2 COGS and Marginality

Once analysed the Net Net Sales Report considering all the different dimensional perspectives, the second step of the economic section is the consideration of costs in order to examine the various marginalities of the company.

Measurement of the company's marginality is linked with *Profitability* Critical Success Factor and this analysis, developed with a CPM Tool, allows the understanding of main variables affecting it.

BOARD Margin Dashboard shows the evolution of marginality of Company *Alfa* using as Key Value Driver the *Contribution Margin,* as presented in Exhibit 14:
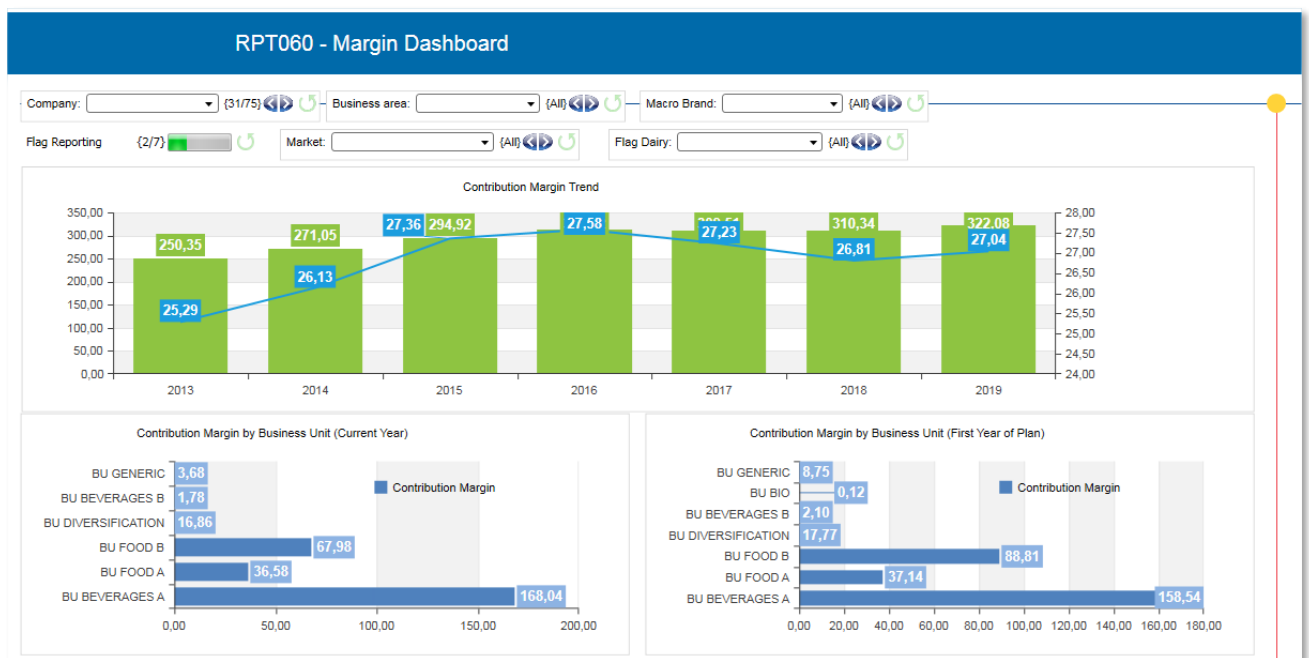
Exhibit 14: Exhibit from BOARD Strategic Plan Model [75]

The two perspectives adopted present the Contribution Margin trend of entire group in absolute value (green columns) and another KPI consisting of the ratio between Contribution Margin itself and Net Net Sales (blue line, as percentage).

In the lower part of the screen, there is a comparison of the same Contribution Margin Value by Business Unit between current year and first year of plan.

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[75] Figures in Million €

The first interesting thing to notice in the upper Chart is the decreasing trend of the margin until 2018.

This first broad information would be lacking without the lower part of the dashboard, which shows the split of the result by Business Unit.

Giving consideration to the "*Diversification*" Critical Success Factor it is possible to see how the biggest BU "*BU BEVERAGES A*" loses almost 10 million of Contribution Margin in absolute value whereas other BUs, "*BU FOOD B*" mainly (from 67,98M € in 2015 to 88,81 M € in 2016), increase their Contribution Margin.

This makes one more time clear the product diversification strategy the Company is undertaking.

The presentation of Company Alfa's Income Statement structure until the Contribution Margin is useful to understand its composition:

P&L
015 - Net Sales (after Discounts)
020 - Sales Bonus
150 - Promo
018 - Net Sales (after Bonus and Promotions)
155 - Listing
025 - Net Net Sales (after Bonus, Promo and Listing)
030 - Raw Material Consumption
031 - Product Consumption
035 - Ingredients
040 - Packaging
016 - Change in inventories
080 - Total Direct Material
085 - Material Profit
045 - Energetic Sources
050 - Porterage
065 - Maintenance
070 - Operative Costs
071 - Other changes
090 - Total Manufacturing Costs
055 - Production personnel
072 - Production Costs
073 - Contribution Margin

Exhibit from BOARD Strategic Plan Model

The structure makes clear the composition of the main KVDs:

1. **Net Net Sales**: as presented in the previous section, individuated as Key Value Driver to measure the growth of the company, very important Critical Success Factor.

It is the result of Gross Sales at the net of Discounts, Sales Bonus, Promo and Listing. Account 018 – *Net Sales (after bonus and Promotions)* can reveal itself a more useful KPI than this KVD in other kinds of analysis, depending, for instance, on the sales channel where the Listing is not considered a relevant variable.

2. **Contribution Margin:** After the Net Net Sales Margin, different cost accounts create the Material Cost (*080 – Total Direct Material)* and the Production Cost *(072 – Production Cost).*

   The first KVD at the net of this cost aggregations gives, as a result, the *Contribution Margin,* the margin that represents the total earnings available to pay for fixed expenses and to generate a profit.

   The concept reveals itself very useful in order to assign a marginality rank to the different units and decide, for instance, which of several products to sell if they use a common bottleneck resource, so that the product with the highest contribution margin is given preference.

   The contribution margin concept can be applied throughout a business, for individual products, Business Areas, markets, companies of the group, distribution channels, and for an entire business.

The different mix of these costs gives the possibility, for the company as a whole or for each single company, to understand which cost account is more relevant and which erodes more company's margin.

The CPM tool allows a deep understanding of all the variables affecting the single cost accounts in order to get at the root cause of the problems and make the proper planning decisions, as will be discussed next.

The following exhibits show a Pie Chart representing the cost distribution of Company *Alfa* in 2015 (Exhibit 15) and in 2019, the last year of plan (Exhibit 16). The choice of the last year of plan for the comparison with the current year has the purpose to underline the changes in the cost structure of the company.
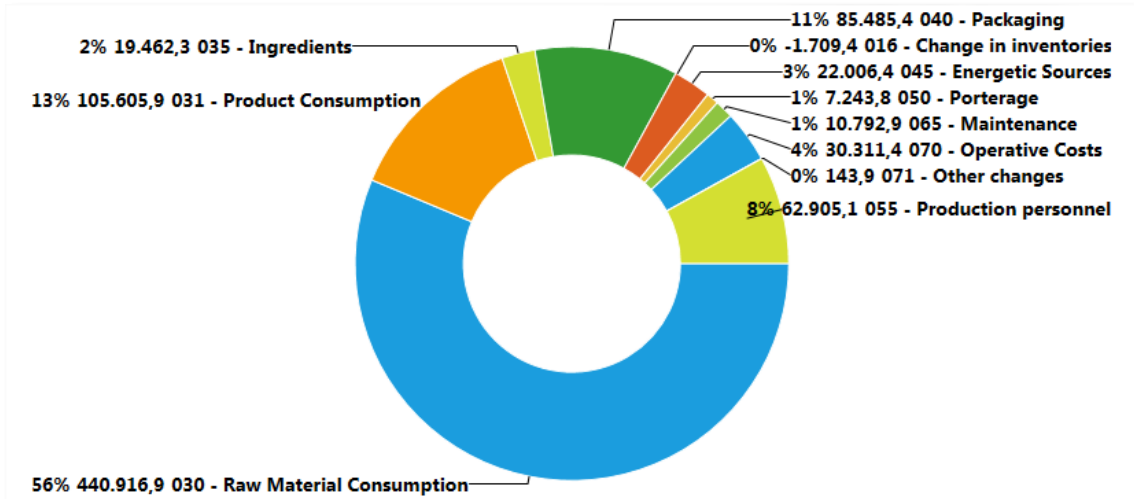
Exhibit 15: Exhibit from BOARD Strategic Plan Model [76]
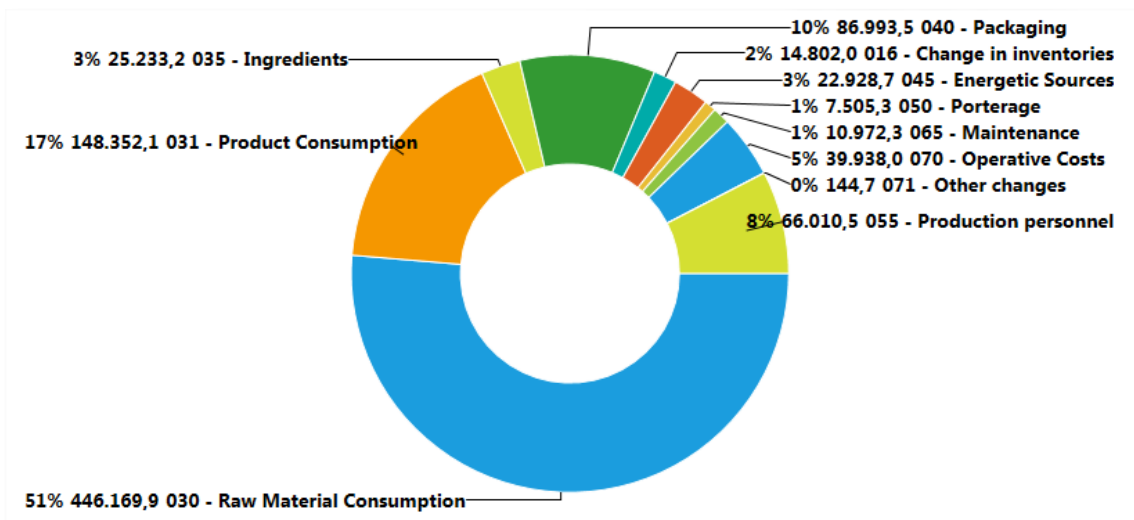
Exhibit 16: Exhibit from BOARD Strategic Plan Model [77]

The exhibits show how, even if the different weights of the cost structure change a little during the planning period, the main cost types of the company remain the same:

- Raw Material Consumption (from 56% to 51%)

- Product Consumption (from 13% to 17%)

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[76] Figures in thousands €
[77] Figures in thousands €

- Production Personnel (8%)

- Packaging (from 11% to 10%)

- Ingredients (from 2% to 3%)

The *Profitability* Critical Success Factor should be used as key to read this data.

The understanding of which kind of cost affects more the cost structure allows the preparation of a specific strategy to take advantage of economies of scale and scope.

Moreover, given that the cost structure is highly influenced by procurement market this analysis permits the simulation of different scenarios to cope, for instance, with an increase of raw material or finished products price.

Dashboard

As explained in the previous paragraph, the analysis of main Key Value Driver related to the marginality passes through the calculation of all the cost accounts linked with it.

In order to proceed with the analysis, Company "*Company_10*" will be taken into consideration. In the following graphs, the marginality situation of the only "*Company_10*" is reported as showed for the entire group:
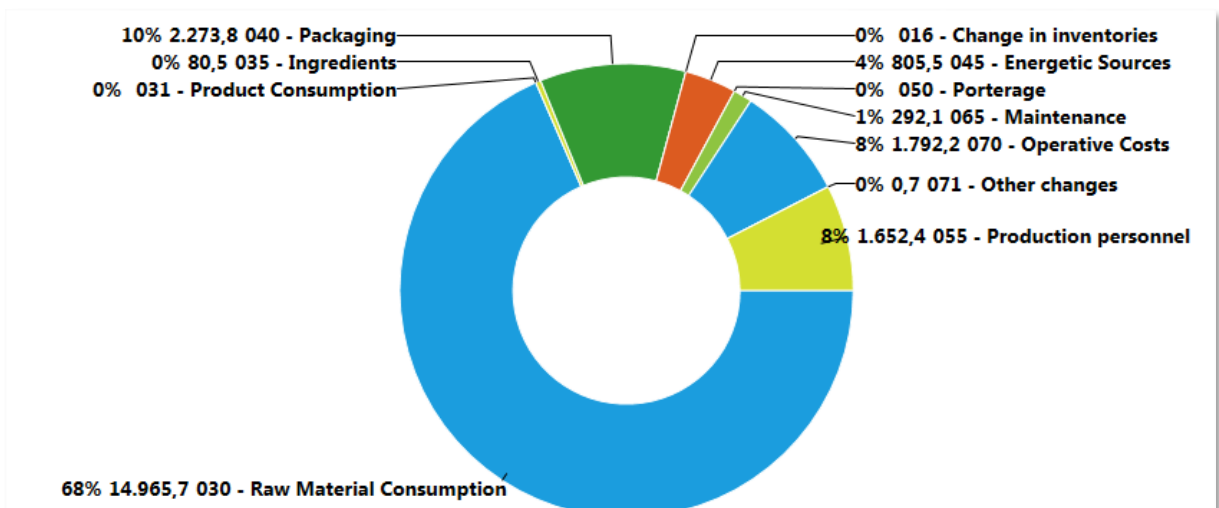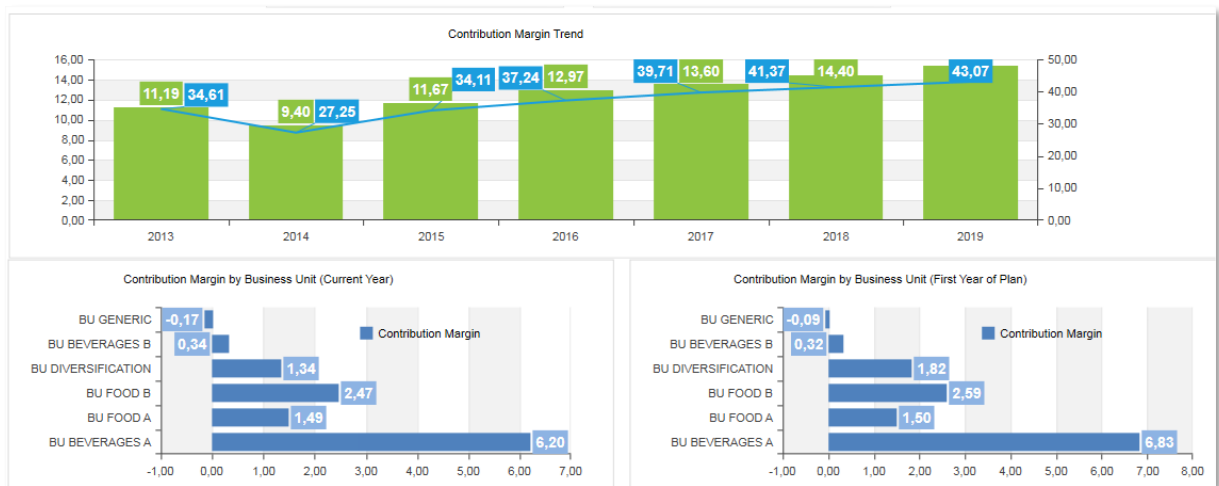
Cost Distribution of Company_10 in 2016: Exhibit from BOARD Strategic Plan Model

"*Company_10*" presents a more regular situation with respect to the entire group:

- Small increase of Contribution Margin both as absolute value and as a percentage of Net Net Sales

- Almost uniform increase at Business Unit level of the Contribution Margin
- The cost structure is simpler than the one at a group level. Raw Material Consumption, Packaging, Production Personnel and Operative Costs accounts for more than the 94% of the total.

Process

As presented above, it is necessary to calculate a sequence of different costs to arrive to the Contribution Margin.

All cost lines of the Income Statement have to be taken into consideration and their composition have to be justified by clear and traceable assumptions as demanded from the *consistency* and *reliability* principles of *Borsa Italiana*.

The CPM tool allows also in this section to start from the first components to get to the final cost calculation.

Purchased Volume and Cost

The first step to take in order to make the right analysis and cost calculation is the consideration of the volume, as in the previous paragraph regarding the sales.

The volume considered in the revenue calculation was the sales volume, obtained as a projection of the Company Sales with a growth percentage. This figure is important and it is the starting point to understand which quantity should be produced and which one should be bought from outside.

Make or buy decisions play a fundamental role considered the increasing pressure to cut expenses and improve the profitability, one of the Critical Success Factor of Company *Alfa*. The dilemma of whether to keep key functions in-house or outsource them has taken center stage. Manufacturing units are identified most often with "make or buy" decisions because third-party suppliers hold out the promise of significant advantages and a company must objectively assess its core competencies and measure them against world-class standards in order to take this kind of decisions.

Hence, Management should lead business units in conducting detailed analysis that thoroughly evaluate the costs, benefits, risks, and rewards of outsourcing and the implications of keeping the activity in-house[78]. This analysis can be supported by the use of proper KPIs both from a "buy" point of view and from a "make" one.

The profitability analysis examined with a CPM Tool allows this type of deep evaluation at different dimensional levels in order to understand which branches of the company are aligned with the objectives of the firm and which ones should be dismissed. Moreover, it permits to recognize the most important profitability variables.

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[78] Schwartzing D., Weissbarth R. , 2011, Three Pillars of sound decision making

This information is also essential at a single company level due to figure out the production trend over time and which path it is undertaking. An interesting KPI to measure the make or buy path of each company is the ratio:

Volume Produced / Volume Sold

The more this KPI tends towards 1 the higher will be the percentage of internally produced products, conversely the more it tends towards 0 the higher will be the percentage of externally bought products.

This KPI, analyzed together with the production/purchase cost of the finished products and raw materials, can give a clear picture of the situation.

This offers the right instruments to understand which purchase/production combinations can maximize the profitability of the company.

Company *Alfa* bases its initialization of the planning period on the KPI previously explained: the actual ratio between volume purchased and volume sold of the current year.

Exhibit 17 shows the figures of this initialization, which considers the following dimensional set:

- Company
- Macro Brand
- Family
- Market

The multidimensional structure of the CPM tool allows understanding the differences between families, companies and brands in terms of make or buy decisions.

	Code	Description
Indicator	120	Volume Produced / Volume Sold
Indicator Type	2	KPI
CSF	1	Quality of the product
Consistency	3	Uncorrelated
Unit of measure	2	Not Financial
Measurement Type	1	Efficiency
Purpose	2	CAPEX and OPEX control
Confidence Level	2	Medium
Source of Data	1	Fully traceable
Drillability	2	From Four to Six dimensions
Notes		Indicator which addresses one of the issues of its area indirectly. Reliable and treaceable considered the easy way to calculate it. As explained it needs other indicators (Production/Purchase costs) to directly address and cover the area it is conceived to analyse.

Table 5: Exhibit from BOARD Strategic Plan Model [79]

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[79] Score detail in the appendix

As explained previously, the use of production KPIs can help management decisions.

One of the most interesting KPIs related to the production expressed in this planning model is the Reject Ratio.

Production processes can produce scrap, which can be measured through a proper KPI that is the ratio between Rejected Pieces / Processed Pieces. Minimizing scrap helps organizations meet profitability goals, hence it is fundamental to trace whether the amount being produced is within tolerable limits.

Exhibit 18 shows the granularity of the calculation of this KPI which changes according to the dimensional intersection.

Tons	Rejected Pieces	Volume Produced	%
Business area : FAMILY A			
Macrobrand_1	623	153.477	0,41%
Macrobrand_4	279	16.974	1,64%
Macrobrand_5	117	9.755	1,19%
Total FAMILY A	1.018	180.206	0,56%
Business area : FAMILY B	7.382	288.331	2,56%
Business area : FAMILY C	1.148	44.809	2,56%
Business area : FAMILY D	731	59.233	1,23%
Business area : FAMILY E	422	11.836	3,57%
Business area : FAMILY F	0	0	1,98%
Business area : FAMILY G	0	0	3,76%
Business area : FAMILY H	23	1.582	1,48%
Business area : FAMILY M	227	5.801	3,92%
Business area : FAMILY N	0	0	3,31%
Business area : FAMILY O	454	16.719	2,71%
Business area : FAMILY Q	219	9.726	2,25%
Business area : FAMILY R	129	4.556	2,83%
Business area : FAMILY T	459	104.981	0,44%
Grand Total	12.213	727.778	1,68%

Exhibit 18: Exhibit from BOARD Strategic Plan Model

Ideally, depending on the production process, a system should produce goods at a particular Reject Ratio. If it is higher than the industry average, efforts should be taken to investigate the causes and to take corrective actions. The main causes for scrap are for instance, quality or consistency issues with the raw material, inappropriate tooling design or procedures and equipment problems. Understanding these issues, monitoring the actual situation and setting the proper goals for the future is a fundamental passage of the Strategic Planning process.

	Code	Description
Indicator	125	Reject Ratio
Indicator Type	2	KPI
CSF	1	Quality of the product
Consistency	1	Directly Correlated
Unit of measure	2	Not Financial
Measurement Type	1	Efficiency
Purpose	3	Performance monitoring and improving
Confidence Level	2	Medium
Source of Data	1	Fully traceable
Drillability	2	From Four to Six dimensions
Notes		The indicator is consistent with the related CSF and issue addressed and fully traceable considered the data coming directly from the ERP. The dimensional set does not consider other important dimensions useful to know where to intervene in a focused way. This analysis by productive plant or equipment as additional dimensions could be more complete.

Table 6: Exhibit from BOARD Strategic Plan Model [80]

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[80] Score detail in the appendix

Analyzing the intersection illustrated in Exhibit 17, Company "*Company_10*" made two completely different choices about making or buying a particular Family of the same Macrobrand "*Macrobrand_1*".

"*FAMILY_B*" in fact was completely purchased during the current year in all the markets whereas "*FAMILY_A*" Volume sold was just in part purchased (4, 91% of the total volume and 34,46% of the Sales Volume vs Third parties) and mainly produced internally.

The same reasoning can be done at a company level: looking at the aggregated information by Company it is possible to see how some companies are productive while other just commercial with a purchase rate of 100% or more.

The table of Exhibit 17 shows an important distinction in the sales volume information: Total Sales Volume (second column) and Sales Volume vs Third Parties (fourth column), the second is included in the first.

This separation introduces the intercompany administration considered in the CPM tool. The model is designed to allow the management of all intercompany transactions between *Alfa*'s companies in order to stick as much as possible to the reality.

From a multidimensional point of view, without going into technical details, this is possible through another dimension that distinguishes if each transaction of the companies is with another company of the group or with third parties.

Through this dimension, the data can be viewed entirely or from a consolidated perspective, removing all the intercompany, which can be useful looking at the financial statements to consider the real results.

The purchase structure of Company *Alfa* is based on a main purchasing company that buys the majority of finished products for the entire group, selling them as intercompany transaction.

The model allows changing the main purchaser in order to analyze which the consequences could be.

This system is firstly used to take advantage of economies of scale: having one main purchaser in the group allows buying larger volumes of products obtaining discounts and promotion from the supplier.

Furthermore, this process takes to the reduction of number of suppliers. The collaboration with a limited number of them makes easier the purchase process coordination, reducing the supply lead-time. Moreover, they can participate actively to the development of a production process tailored on the company. This could have a significate impact on the unitary cost, affecting directly the *"Profitability"* Critical Success Factor.

At last, it is important to consider the cost savings related to the quality control system in the case of a long-lasting collaboration with a restricted number of suppliers.[81]

Once initialized the different percentages of purchased volume by company and the intercompany net of transactions, it is possible to modify it year by year considering all the possible modification that could happen during the planning period.
This includes the choice of a company to change the make or buy decisions, the possibility to start to produce in a particular company or stopping it, to change the main purchaser and take less advantage of economies of scale and so on.
At the end of this process it is possible to have all purchased volume of each company with the dimensional set aforementioned and with the possibility to know if the interaction comes from an intercompany transaction or not.

1 - Main Purchasing Company		2 - Check % Purchased Volume (Current Year)		3 - Check % Purchased Volume (First Year of Plan)	
4 - Change % Purchased Volume (Planning Years)		5 - Check Purchased Volume (Planning Years)		6 - Check Purchased Volume (Current Year and First Year of Plan)	Notes

Purchased Volume (Tons)	2016	2017	2018	2019
⊟ Company : 477 Company_10				
Partner Company_3	2	2	2	2
Partner Company_32	17.815	18.090	18.400	18.837
Total 477 Company_10	17.817	18.092	18.403	18.840
⊞ Company : 495 Company_14	234	241	250	263
⊟ Company : 500 Company_15	1.654	1.708	1.747	1.784
⊞ Company : 502 Company_16	7.648	7.779	7.987	8.228
⊞ Company : 506 Company_19	23.952	24.543	25.025	25.292
⊞ Company : 507 Company_20	245			
⊟ Company : 511 Company_24				
Third Parties	983	1.048	1.117	1.182
Partner Company_14	401	405	403	399
Partner Company_32	1.243	1.304	1.345	1.381
Total 511 Company_24	2.627	2.757	2.865	2.962
⊞ Company : 513 Company_26	2.164	2.241	2.284	2.319
⊞ Company : 517 Company_28	611	652	673	708
⊞ Company : 519 Company_30	2.643	2.642	2.642	2.642
⊞ Grand Total	59.594	60.654	61.877	63.030

Exhibit 19: Exhibit from BOARD Strategic Plan Model

Given the purchased volume initialized and set the yearly average product cost it is possible to obtain the cost of finished product as first income statement line.

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[81] Sciarelli S.,2008. Elementi di economia e gestione delle imprese. Padova: CEDAM, p. 303

Production Cost

The purchased volume, as explained before, are fundamental to calculate, considered also the sales volume, the quantity that the company should produce in order to fulfill the forecast demand.

Hence, the first step to take is to calculate production volume as difference between the first two metrics.

Exhibit 20: Exhibit from BOARD Strategic Plan Model

Once calculated the volume it is necessary to load a single unitary cost for each cost line of the income statement and multiply it for the above-mentioned volume.

With the CPM tool, it is possible loading the actual cost metric of the current year and see it from different perspectives. All the cost lines registered and allocated in the Enterprise Resource Planning create an accurate and traceable allocation driver for the planning figures.

This is important considered that the *Standard*[82] makes the presentation of a segment result mandatory following specific rules. This segment result is clearly influenced by cost allocation. Hence the allocation of the shared cost should be done in a strict and attributable way.[83]

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[82] IAS 14

[83] Angiola N., 2007, *La comunicazione economico-finanziaria dei gruppi italiani quotati. Un'indagine empirica sull'informativa settoriale.* Milano: Franco Angeli. P.: 60-61

The actual cost metric has all the dimensions considered in the model. Hence, it is possible an accurate planning that takes into consideration all the variations in the composition of the total cost for each intersection Business Area/ Market/Company/Brand.

It is up to the planner deciding which dimensional level to use in order to make planning as accurate as possible.

Exhibit 21 shows the production cost metric referring to actual year 2015 and Company "*Company_10*". The ratio between this metric and the volume produced in the same year gives an average total cost.

€/Ton	Production Cost 2015	Actual Produced Volume 2015	Average Cost 2015
FAMILY A	3.625.622	25.532	142,01
FAMILY C		0	
FAMILY D	2.687.594	1.326	2.027,14
FAMILY E	689.024	231	2.987,38
FAMILY F		0	
FAMILY G		0	
FAMILY H		0	
FAMILY M		0	
FAMILY N		0	
FAMILY Q		0	
FAMILY T	15.144	8.202	1,85
TOTAL	7.017.383		

Exhibit 21: Exhibit from BOARD Strategic Plan Model

Drilling down for Business Area "FAMILY A" the composition of the total cost can be seen by cost line[84]:

€/Ton	Production Cost 2015	Vertical	Average Cost 2015
040 - Packaging	1.700.398	46,90%	66,60
045 - Energetic Sources	411.792	11,36%	16,13
055 - Production personnel	694.978	19,17%	27,22
065 - Maintenance	140.188	3,87%	5,49
070 - Operative Costs	678.266	18,71%	26,57
TOTAL	3.625.622	100,00%	142,01

Exhibit 22: Exhibit from BOARD Strategic Plan Model

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[84] Raw material cost are not considered in this planning screen. They are calculated separately.

Figures are the same, they are just seen from another, more detailed, point of view. This perspective allows understanding the deeper composition of the average cost of a Business Area product.

Second column of Exhibit 22 shows the weight of each cost line: the most important of this Business Area is the Packaging with the 46, 9% of weight over the total while the Maintenance is just the 3,87%.

This percentages change from Business Area to Business Area and from Company to Company so it is important to consider all these differences in order to plan more accurately the cost structure and know where to intervene in order to reduce cost, taking advantage, for instance, of economies of scale or scope.

Exhibit 23 shows how the cost structure composition can change analyzing another Business Area, in this case "FAMILY D":

€/Ton	Production Cost 2015	Vertical	Average Cost 2015
035 - Ingredients	47.251	1,76%	35,64
040 - Packaging	664.274	24,72%	501,03
045 - Energetic Sources	424.613	15,80%	320,27
055 - Production personnel	677.403	25,20%	510,94
065 - Maintenance	75.054	2,79%	56,61
070 - Operative Costs	798.999	29,73%	602,65
TOTAL	2.687.594	100,00%	2.027,14

Exhibit 23: Exhibit from BOARD Strategic Plan Model

As can be seen, not only the different weights of the cost lines are different from one Business Area to another but also the average cost of a single cost line differs considerably considering different intersections.

The average cost calculated starting from the actual data is the initialization for the first year of Plan (2016). The CPM tool gives the possibility to manipulate this driver over the planning period considering growth percentage for each intersection Market/Business Area/Cost Line (Exhibit 24).

This process allows a quick understanding of the impact of each cost line on the main KVD, the Contribution Margin, over time.

Each business strategy can be checked analyzing different possibilities using the simulation function of the CPM tool.

1 - Production Volume Calculation	2 - Average Cost	3 - Check Average Cost (First Year of Plan)
4 - Growth % Average Cost	5 - Check Calculated Costs (Planning Years)	6 - Last Check

PLAN Growth Percentage Average Cost	2016	2017	2018	2019
Market : EMEA				
Business area : FAMILY A				
035 - Ingredients				
040 - Packaging				
045 - Energetic Sources		8,17%	2,50%	1,22%
050 - Porterage		8,17%	2,50%	1,22%
055 - Production personnel		8,17%	2,50%	1,22%
065 - Maintenance		8,17%	2,50%	1,22%
070 - Operative Costs		8,17%	2,50%	1,22%
Business area : FAMILY B				
Business area : FAMILY C				
Business area : FAMILY D				
035 - Ingredients				
040 - Packaging				
045 - Energetic Sources		-1,62%	-1,17%	-1,01%
050 - Porterage		-1,62%	-1,17%	-1,01%
055 - Production personnel		-1,62%	-1,17%	-1,01%
065 - Maintenance		-1,62%	-1,17%	-1,01%
070 - Operative Costs		-1,62%	-1,17%	-1,01%

Exhibit 24: Exhibit from BOARD Strategic Plan Model

Also in this way, the Strategic Plan can be an effective instrument which relies on qualitative elements to describe the cause-effect relations with the performance and resorts to quantitative ones to illustrate the possible evolution of the environmental variables and the financial-economic projections related to plan timeline.

The multiplication of the Production Volume by the average cost gives the Production Cost in the planning years by Cost Line:

	Production Cost 2016	Production Cost 2017	Production Cost 2018	Production Cost 2019
VCE : 035 - Ingredients				
FAMILY D	61.261	63.757	65.714	67.532
FAMILY E	19.280	19.554	20.126	20.720
FAMILY T	0	0	0	0
Total 035 - Ingredients	80.541	83.310	85.840	88.253
VCE : 040 - Packaging				
FAMILY A	1.508.771	1.326.084	1.276.533	1.251.776
FAMILY D	694.622	725.951	748.718	770.497
FAMILY E	70.372	70.589	70.310	69.458
FAMILY T	0			
Total 040 - Packaging	2.273.765	2.122.624	2.095.561	2.091.730
VCE : 045 - Energetic Sources	805.468	798.595	801.863	806.749
VCE : 050 - Porterage				
VCE : 055 - Production personnel	1.652.425	1.640.365	1.645.303	1.652.629
VCE : 065 - Maintenance	292.100	286.104	285.578	285.826
VCE : 070 - Operative Costs	1.792.206	1.807.144	1.818.932	1.833.662
Grand Total	6.896.506	6.738.143	6.733.076	6.758.847

Exhibit 25: Exhibit from BOARD Strategic Plan Model

Exhibit 26 shows the evolution of the composition of the Production Cost and the Compound Annual Growth Rate:

	Prod. Cost 2016	Vertical	Prod. Cost 2017	Vertical	Prod. Cost 2018	Vertical	Prod. Cost 2019	Vertical	CAGR
035 - Ingredients	80.541	1,17 %	83.310	1,24 %	85.840	1,27 %	88.253	1,31 %	3,09%
040 - Packaging	2.273.765	32,97 %	2.122.624	31,50 %	2.095.561	31,12 %	2.091.730	30,95 %	-2,74%
045 - Energetic Sources	805.468	11,68 %	798.595	11,85 %	801.863	11,91 %	806.749	11,94 %	0,05%
055 - Production personnel	1.652.425	23,96 %	1.640.365	24,34 %	1.645.303	24,44 %	1.652.629	24,45 %	0,00%
065 - Maintenance	292.100	4,24 %	286.104	4,25 %	285.578	4,24 %	285.826	4,23 %	-0,72%
070 - Operative Costs	1.792.206	25,99 %	1.807.144	26,82 %	1.818.932	27,01 %	1.833.662	27,13 %	0,77%
TOTAL	6.896.506	100,00 %	6.738.143	100,00 %	6.733.076	100,00 %	6.758.847	100,00 %	-0,67%

Exhibit 26, own elaboration

The total production cost for "Company_10" faces a slight decrease during the planning period (CAGR -0,67%). This is due to the trends of the different cost lines. As can be seen they move independently because of the different growth rate mix chosen at a Market/Business area/Macro Brand level and according to the production volume trend.

Cost of Raw Materials

The calculation of the Raw Material Cost, follows the same steps of the other production cost line. However, its weight in the computation of the Contribution Margin (it accounts for the 68% of the total cost of *"Company_10"* as showed at the beginning of paragraph 2.1.4) and the additional necessity to manage the supplier involved in the transactions makes it to be planned separately.
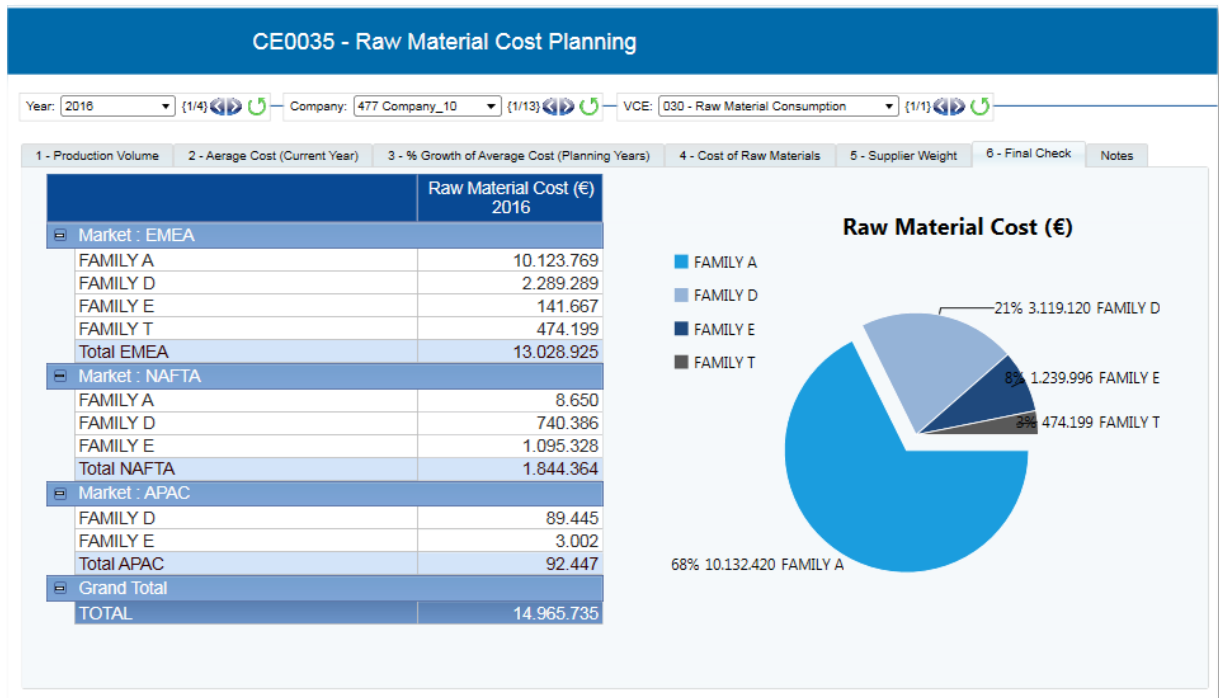

Exhibit 27: Exhibit from BOARD Strategic Plan Model

Hence, after checking and eventually adjusting the production volume (which is the same previously considered for the general production cost) and calculated the average cost, with the information loaded by the ERP, it is possible to calculate the Raw Material Cost with the appropriate level of detail.

At the end of this process of cost calculation, the first KPIs related to the "*Profitability*" Critical Success Factor are obtained:

Thousand €	Income Statement 2016	% Net Sales 2016
025 - Net Net Sales (after Bonus, Promo and Listing)	34.836,3	100,0%
030 - Raw Material Consumption	-14.965,7	-43,0%
031 - Product Consumption		
035 - Ingredients	-80,5	-0,2%
040 - Packaging	-2.273,8	-6,5%
016 - Change in inventories		
080 - Total Direct Material	-17.320,0	-49,7%
085 - Material Profit	17.516,2	50,3%
045 - Energetic Sources	-805,5	-2,3%
050 - Porterage		
065 - Maintenance	-292,1	-0,8%
070 - Operative Costs	-1.792,2	-5,1%
071 - Other changes	-0,7	0,0%
090 - Total Manufacturing Costs	-2.890,5	-8,3%
055 - Production personnel	-1.652,4	-4,7%
072 - Production Costs	-4.542,9	-13,0%
073 - Contribution Margin	12.973,3	37,2%

Exhibit 28: Exhibit from BOARD Strategic Plan Model [85]

Exhibit 28 makes clear the main KPIs involved in the Marginality analysis.

Line *080 – Total direct Material:* shows the sum of the costs related to materials directly used in the production process:

- *030 - Raw Material Consumption* (14.695K, Raw Material Planning, Exhibit 27)
- *035 – Ingredients* (80K, Production Cost Planning, Exhibit 25)
- *040 – Packaging* (2.273K, Production Cost Planning, Exhibit 25)

Line *085 – Material Profit*: Net Net Sales minus the Total Direct Material Costs, it is the first marginality of the company and accounts for the 50,3% of the Net Net Sales

Line *090 – Total Manufacturing Cost:* shows the sum of the costs of the other cost necessary in the production process excluding the Production Personnel:

- *045 – Energetic Sources* (805,5K, Production Cost Planning, Exhibit 25)

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[85] Figures referring to Company 10

- *065 – Maintenance* (292,1K, Production Cost Planning, Exhibit 25)
- *070 – Operative Costs* (1.792,2K, Production Cost Planning, Exhibit 25)

Line *073 – Contribution Margin*: Contribution margin is a product's price minus all associated variable costs (Total Manufacturing Costs and Production Personnel, 1.652,4K, Production Cost Planning, Exhibit 25), resulting in the incremental profit earned for each unit sold. The total contribution margin generated by an entity represents the total earnings available to pay for fixed expenses and to generate a profit.

It accounts for the 37,2% of the Net Net Sales. The different steps of marginality allows the management to understand which kinds of cost erode mainly the earnings.

	Code	Description
Indicator	130	Contribution Margin
Indicator Type	1	KVD
CSF	6	Profitability
Consistency	1	Directly Correlated
Unit of measure	1	Financial
Measurement Type	2	Effectiveness
Purpose	2	CAPEX and OPEX control
Confidence Level	1	High
Source of Data	2	Partially traceable
Drillability	2	From Four to Six dimensions
Notes		Fully consistent and independent indicator considered the analysis of the different cost lines which allows to understand where the margin is eroded. The substantial number of assumptions and the complexity of the calculation makes a solid explanation of the adopted criteria necessary in order to consider it reliable.Its traceability is just partial because some cost lines can be included without a direct link with the ERP

Table 7, own elaboration[86]

2.1.3 Logistics Costs

As explained in the previous chapter, one of the Critical Success Factors of Company *Alfa* is the Lean Logistics.

Through the control of the logistics, it is possible to optimize the cost structure and improve the service.

In order to follow this goal Company *Alfa* controls a company that manages the entire logistics function. It has to offer the required level of service verifying the necessary efficiency to minimize handling and transportation cost.

Exhibit 29 shows the logistics Structure of company *Alfa.*
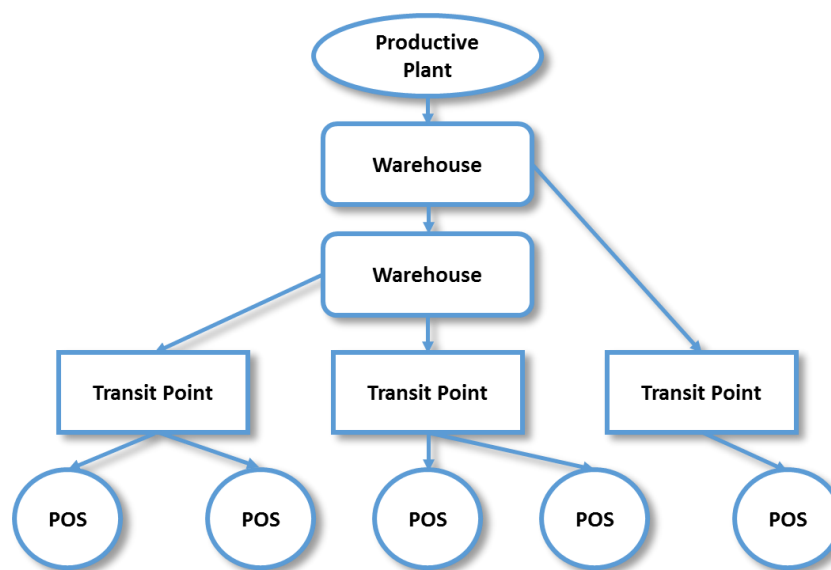
Exhibit 29, own elaboration

The structure is based on three different kinds of flows:

- Primary logistics, all the transports necessary to supply the warehouses and transit points

- Secondary logistics, all the transportations to supply the Point of Sales (POS). In the secondary logistics, it is also important to divide the deliveries with a sales order and the deliveries without because they are treated differently.

- Stock, the volume of goods passed through the warehouses and transit points. It is important to consider the handling and management costs.

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These flows are treated with different logics and prices (€ / Km, € / Ton) and the system allows an integration of the information obtained in the income statement at the end of the process.

Logistics services should be extremely responsive to the commercial forecast updating distribution, mix and trend. In view of commercial changes, it is necessary to verify the impact on the distributive structure, simulating possible changes on the existing one.

It is necessary to adopt a detailed cost allocation process to establish the correct standard cost of the main logistics services. This cost allocation by client and product dimensions is extremely important for the profitability analysis.

As can be seen in Exhibit 30 the model allocates each cost line by Business Area. In this way, it is possible to calculate an average cost to use for the forecast figures.

		Logistic Costs 2015	Shipped Quantities 2015	Average Cost 2015
1 - Check Average Cost Actual Data	2 - Growth % Definition	3 - Logistic Company Definition	4 - Logistic Net Definition	5 - Check logistic costs (Planning Years)	Notes
VCE : 170 - Incentive		40.521.616		
VCE : 175 - Logistic Direct Secondary		23.561.177		
VCE : 180 - Logistic Primary				
FAMILY A		4.826.144	226.965	21,26
FAMILY B		3.499.808	282.313	12,40
FAMILY C		1.797.013	45.652	39,36
FAMILY D		3.044.209	58.900	51,68
FAMILY E		410.039	14.875	27,57
FAMILY F		98.896	3.129	31,60
FAMILY G		175.813	5.077	34,63
FAMILY H		101.383	2.662	38,09
FAMILY M		134.184	2.440	54,99
FAMILY N		3.048	357	8,55
FAMILY O		174.640	6.402	27,28
FAMILY Q		282.234	6.881	41,02
FAMILY R		3.257	4.733	0,69
FAMILY T		15.540	76.206	0,20
Total 180 - Logistic Primary		14.566.208		
VCE : 187 - Autovehicle Costs		6.175.563		

Exhibit 30: Exhibit from BOARD Strategic Plan Model

The prices of these services are transfer prices specified among the different companies of the group. They are based on two different kinds of logic:

- prices based on route (€ / Km)
- prices based on commission (€ / Ton)

The performance management of the Strategic Plan here is very important because the control of the results obtained should be contextual and precise. The comparison between these results

and the predetermined objectives is a crucial point toward the improvement of the entire process.

Companies often concentrate only on financial indicators for the performance management. It is recognized that non-financial indicators can give valuable information as well. Such indicators though are more difficult to measure and compare. Selecting the right indicators for measuring however is rather complicated. A full set of indicators could result in a huge amount of data which would require a lot of efforts and high costs both in acquiring and analyzing.

One of the most important KPI for the Logistics is linked to the on-time shipping and delivery together with reliability, loss and damage rate and freight rates. Delivery performance can be measured by on time delivery. This determines whether a perfect delivery has taken place or not, it thus measures customer service[87].

An example of KPI represented in this planning model is the one which analyzes the on-time deliveries as showed by Exhibit 31:

KPI: On time Deliveries / Total Deliveries

	On time Shipped Quantities 2015	Total Shipped Quantities 2015	% 2015
FAMILY A	218.752	226.965	96,38%
FAMILY B	262.749	282.313	93,07%
FAMILY C	42.300	45.652	92,66%
FAMILY D	53.142	58.900	90,22%
FAMILY E	14.742	14.875	99,11%
FAMILY F	3.109	3.129	99,36%
FAMILY G	4.748	5.077	93,53%
FAMILY H	2.523	2.662	94,78%
FAMILY M	2.308	2.440	94,61%
FAMILY N	337	357	94,45%
FAMILY O	6.097	6.402	95,24%
FAMILY Q	6.406	6.881	93,10%
FAMILY R	4.583	4.733	96,85%
FAMILY T	74.524	76.206	97,79%
TOTAL	696.321	736.592	94,53%

Tabs: 1 - Check Delivery on time | 2 - % Delivery on Time | 3 - Other | Notes

Exhibit 31: Exhibit from BOARD Strategic Plan Model

In this case the system considers all the logistics flows of the period (2015) and compares the receipt confirmed date with the actual delivery date. If the goods were shipped before the receipt confirmed date their transaction will be considered "on-time" otherwise it will not. This simple

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[87] Krauth E., Moonen H. ,Performance Measurement and control in logistics service providing, Rotterdam School of Management, Department of Decision and Information Sciences, p. 242

calculation is possible considered the fact that the Enterprise Resource Planning attach to each transaction different kind of dates; hence this kind of analysis and also, for instance, a due date class analysis is possible in order to keep under control the performance of the Company. The calculated KPI has the dimensional set of the measures used for the computation so it can be examined from different points of view to understand where the major criticalities are.

	Code	Description
Indicator	135	On time Deliveries
Indicator Type	2	KPI
CSF	2	Lean Logistics
Consistency	1	Directly Correlated
Unit of measure	2	Not Financial
Measurement Type	1	Efficiency
Purpose	3	Performance monitoring and improving
Confidence Level	2	Medium
Source of Data	1	Fully traceable
Drillability	2	From Four to Six dimensions
Notes		The dimensional set of the metrics coming directly from the company data sources gives the possibility to calculate a complete indicator to address the reltive issue. It could be more helpful showing a due date class analysis. Indicating the degree of delay and classifying them it could be possible to intervene in the most critical areas.

Table 8, own elaboration[88]

[88] Score detail in the appendix

Considered this premise, the CPM tool improves the planning process allowing different and complementary activities:

- Data loading about shipped quantities and shipping cost from different data sources (ERP, accounting systems)
- Data normalization in order to make them functional for the planning of the considered processes
- Analysis of key information and integration of all the data in only one instrument not only for the function vertical control but also for the cross-functional activities.
- Creation of a model that represents the complex logistics structure. This is necessary to verify the impacts of the logistics chain maintaining the actual situation or simulating new solutions

The new solutions are represented by the model with the possibility to choose the companies involved in the logistics cost allocation and in the design of the network scenarios that allows the goods to leave from the productive plant and arrive to the point of sales following the shortest or smartest route possible.

1 -Check Average Cost Actual Data	2 - Growth % Definition	3 - Logistic Company Definition	4 - Logistic Net Definition	5 - Check logistic costs (Planning Years)	Notes

	170 - Incentive	175 - Logistic Direct Secondary	180 - Logistic Primary	187 - Autovehicle Costs	231 - Distribution Personnel Costs	236 - Operative Distribution Costs	257 - Warehouse and Transit Point Personnel	276 - Warehouse and Transit Point Operative Costs
1459 Company_1	☐	☐	☐	☐	☐	☐	☐	☐
477 Company_10	☐	☐	☐	☐	☐	☐	☐	☐
495 Company_14	☑	☐	☐	☑	☑	☑	☐	☐
500 Company_15	☐	☐	☐	☐	☐	☐	☐	☐
502 Company_16	☐	☐	☐	☐	☐	☐	☐	☐
503 Company_17	☐	☐	☐	☐	☐	☐	☐	☐
506 Company_19	☐	☐	☐	☐	☐	☐	☐	☐
507 Company_20	☐	☐	☐	☐	☐	☐	☐	☐
511 Company_24	☐	☐	☐	☐	☐	☐	☐	☐
513 Company_26	☐	☐	☐	☐	☐	☐	☐	☐
514 Company_27	☐	☑	☑	☐	☐	☐	☑	☑
517 Company_28	☐	☐	☐	☐	☐	☐	☐	☐
519 Company_30	☐	☐	☐	☐	☐	☐	☐	☐

Exhibit 32: Exhibit from BOARD Strategic Plan Model

This means answering to two questions: how to supply each point of sales (with which kind of transport and leaving from which warehouse) and how to supply each warehouse (leaving from which productive plant and passing through which other warehouse).

This kind of approach allows recreating all the logistics flows considering the sales forecast and assure a high precision and flexibility to perform analysis and simulations like the opening or

the closing of a warehouse or the definition of a new route, for instance supplying directly a point of sales without passing through a Transit Point.

This kind of strategic decisions should be taken together with the commercial function of the company, that is why the integrated system is an added value for the planning activities.
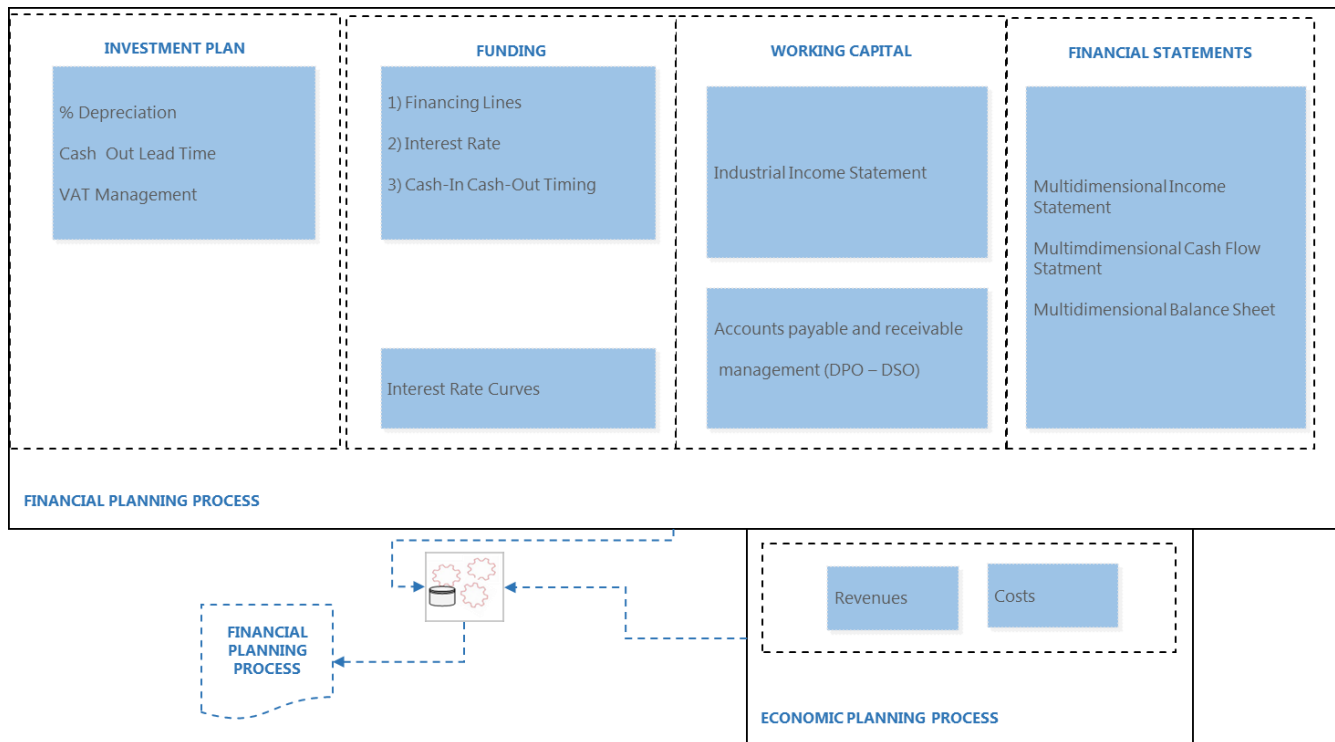
At the end of the process, the network settings and the definition of all the necessary variables (percentage growth of quantities or costs, route of primary or secondary logistics) give the composition of the logistics cost structure with the required dimensional set.

| 1 -Check Average Cost Actual Data | 2 - Growth % Definition | 3 - Logistic Company Definition | 4 - Logistic Net Definition | 5 - Check logistic costs (Planning Years) | Notes |

	Logistic Costs 2016	Logistic Costs 2017	Logistic Costs 2018	Logistic Costs 2019
170 - Incentive	42.543.748	41.936.303	42.177.338	42.617.722
175 - Logistic Direct Secondary	24.410.836	24.907.375	25.944.993	26.780.998
180 - Logistic Primary	15.566.806	15.365.894	15.963.819	16.395.537
187 - Autovehicle Costs	5.653.040	5.520.984	5.527.131	5.558.035
231 - Distribution Personnel Costs	13.222.882	12.885.022	12.887.830	12.949.087
236 - Operative Distribution Costs	301.180	293.539	293.623	295.038
257 - Warehouse and Transit Point...	9.425.938	9.079.453	9.712.196	10.026.918
276 - Warehouse and Transit Point...	26.624.768	25.732.780	27.582.486	28.513.319
TOTAL	137.749.199	135.721.350	140.089.415	143.136.654

Exhibit 33: Exhibit from BOARD Strategic Plan Model

In this way, the logistics planning inserts itself in the Strategic Planning process: the revenues of the logistics company (or companies) become the logistics costs that each company of the group has to consider in its income statement with a direct and clear impact on its marginality.

2.2 Financial section

INVESTMENT PLAN	FUNDING	WORKING CAPITAL	FINANCIAL STATEMENTS
% Depreciation Cash Out Lead Time VAT Management	1) Financing Lines 2) Interest Rate 3) Cash-In Cash-Out Timing Interest Rate Curves	Industrial Income Statement Accounts payable and receivable management (DPO – DSO)	Multidimensional Income Statement Multimdimensional Cash Flow Statment Multidimensional Balance Sheet

FINANCIAL PLANNING PROCESS

FINANCIAL PLANNING PROCESS

Revenues	Costs

ECONOMIC PLANNING PROCESS

Own Elaboration

2.2.1 Investment Plan

The investment plan section analyses all the planning activities for the acquisition of long-term investments.

This is important in a strategic planning view because it helps to assess the financial requirements of the business's key projects.

The CPM tool allows a precise investment plan activity given that it considers all the main quantitative variables:

- Useful life of the investment
- % of depreciation/amortisation
- Lead time of payment
- VAT

These variables are the input to calculate and simulate all the possible investment scenarios both from an economic point of view and from a financial one.

The first step to consider is the actual input of all the investment the company intends to do during the planning period:

Exhibit 34: Exhibit from BOARD Strategic Plan Model

This input of the planner considers a dimensional set that includes Trimester, Company and Fiscal Class.

The aggregation of each Fiscal Class (*Lands*, *Industrial Buildings, Light Buildings*…) in a Fiscal Class Type (*Lands and Properties, Intangible Assets)* is very important because allows to treat each kind of investment with different taxation and depreciation criteria.

Furthermore, the investment plan is already considered in an integrated planning model and this split is important to allocate each investment in the proper Balance Sheet Line for the related analysis.

To use this information for the marginality analysis too and to allocate the depreciation and amortization costs in the multidimensional Income Statement, an allocation of the investment amount is necessary.

Exhibit 35: Exhibit from BOARD Strategic Plan Model

Exhibit 35 shows the result of the allocation by Market and Macrobrand performed by the CPM tool. The granularity of data present in the Enterprise Resource Planning allows the creation of a driver based on the sales by Market and Macrobrand. Through this driver, it is possible to split the investment input of the planners into the new dimensional set.

The investment planning can have different impacts on the whole planning activity hence it is important to consider all the consequences that it could have in order to stick to the Consistency principle of *Borsa Italiana*[89]. To measure the operating performance, it is important to link the fixed assets to the net sales in order to understand how efficiently a company has used these substantial assets to generate revenue for the firm.

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[89] Borsa italiana, 2003. *Strategic Plan Guide, www.borsaitaliana.it.* P. 38

Fixed Asset Turnover Ratio measures how able a company is to generate net sales from Property Plant and Equipment, the higher is this index the better the company is performing:

Fixed Asset Turnover Ratio: Net Sales / Property, Plant and Equipment

Million €	Net Property, Plant and equipment	Net Sales	Fixed-Asset Turnover Ratio
Year : 2016	972,9	1.352,4	2,77
Year : 2017	1.241,8	1.615,3	2,61
Year : 2018	1.834,9	2.113,2	2,30
Year : 2019	1.853,7	2.191,3	2,48

Exhibit from BOARD Strategic Plan Model

Fixed assets vary drastically from one company to another so it is important to measure the KPI considering the average of the industry. There is not an exact number or range that dictates whether a company has been efficient or not using this indicator.

In the case of Company *Alfa* there is a decreasing Ratio during the planning period that, only in the last year, begins to grow. This is due to a higher growth of the Fixed Assets compared to the Net Sales. The casual connection between these two metrics helps the planner to understand if it is appropriate to plan some investments or not.

	Code	Description
Indicator	170	Fixed Asset Turnover Ratio
Indicator Type	3	Classic Performance/Ratio
CSF	5	Growth
Consistency	2	Indirectly correlated
Unit of measure	1	Financial
Measurement Type	1	Efficiency
Purpose	5	Financial sustainability and administration
Confidence Level	2	Medium
Source of Data	1	Fully Traceable
Drillability	2	From Four to Six dimensions
Notes		Complete indicator from a dimensional point of view, not fully indipendent without knowing a term of comparability. Indirectly related with the CSF and issue addressed of the company. Fully traceable because of its components.

Table 10, own elaboration[90]

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[90] Score detail in the appendix

Once initialized and allocated the new investments it is possible to proceed with the depreciation calculation considering all the variables previously listed.

Exhibit 36: Exhibit from BOARD Strategic Plan Model

These depreciation and amortization figures are only related to the new investments. To have the whole picture of the situation at a group level for all the planning period it is necessary to integrate this information calculated with the tool with the information coming from external sources.

Exhibit 37: Exhibit from BOARD Strategic Plan Model

Figures in Exhibit 37 come from different and integrated sources:

- ERP: already operative investments

- Alternative Board Planning Environment[91]: investments not yet active

The CPM tool conducts an important role in the data normalization in order to make the data comparable and integrated with the same dimensional set. This is linked with the income statement and balance sheet analysis explained previously and allows a complete traceability of the data and separation between forecast and actual one.

As it is possible to see from Exhibit 37, the tool loads each different Fiscal Class of each investment and through the related code it is possible to get to each single project with all its master data (starting date, useful life, expected divestment value, qualification of the supplier). The possibility to have this kind of data to complete the model is important from a *visibility* point of view according to *Borsa Italiana.* The visibility refers to the possibility of foreseeing the formation of the estimated data, or the elevated probability that the projections relating to these items will really manifest. It is evident that the matters discussed will heavily affect the reliability of a plan[92].

A limit of this section of the model is the disconnection of the quantitative part with the qualitative one. There is no indication of how each investment is related with the main issue addressed and is no comparison between the make or buy alternatives and comments about the actual *know how* of the company to take the best advantage of the investment. Moreover, the composition of the cost of the investment does not consider the split of the whole cost in acquisition, transportation installation and so on.

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[91] In the complex integrated planning model of Alfa there is a specific planning environment focused on the depreciation and amortization of investment not yet operative. Waiting for their registration in the ERP this tool is fundamental in order to consider their weight in the depreciation cost line adopting different kind of policies (different percentages or useful life of the assets)

[92] Borsa italiana, 2003. *Strategic Plan Guide, www.borsaitaliana.it.* P. 9

2.2.2 Funding

The financial sustainability of a Strategic Plan must be considered in relation to the quality and quantity of the sources of funding which management intends to use in order to deal with the requirements linked to the achievement of the strategy.

The CPM model examines and gives the possibility to plan all the funding activities related to debt and intercompany funding.

Financial Planning

Company: [ ] {13/75} ◀▶ ↻   Line Type: [ ] {All} ◀▶ ↻

6 - Balance Sheet	7 - IC Balance sheet	8 - Income Statement	9 - Detail	10 - IC Income Statement
0 - Master data lines	1 - Lines Management	2 - Beginning period	3 - Rate curves	4 - Summary	5 - Link Company

	Funding Amount	N° of semester	% Fixed Spread	Floating Rate	Line Type	Line Supplier
SDS Swap Bank - Swap	-7.466.666,5000	8,0000	-0,1995	Euribor 6m	Swap Operation	Third Parties
LGF - Swap Credit 36 mln	-7.466.666,5000	8,0000	-0,1990	Euribor 6m	Swap Operation	Third Parties
Da dettaglio Oneri Finanziari				N/A - Fixed	Other	Third Parties
BDF - bank - Bond	50.000.000,0000	12,0000	5,8000	N/A - Fixed	Final "Bullet" Refund	Third Parties
IRI SPA - 36 mln	32.000.000,0000	8,0000	1,8000	Other	Biannual Refund	Third Parties
IC - Company 5	2.600.000,0000	6,5000	3,5000	Other	Quarterly Refund	Company Alfa
Pool B5 30mln	30.000.000,0000	9,0000	3,4000	Other	Biannual Refund	Third Parties
BILATERAL Funding - B0	24.900.000,0000	8,0000	2,1000	Euribor 6m	Biannual Refund	Third Parties
Bilateral Funding - B1	9.000.000,0000	9,0000	1,5000	Other	Biannual Refund	Third Parties
Bilateral Funding - B2	20.000.000,0000	10,0000	1,7000	Euribor 3m UBI	Biannual Refund	Third Parties
Stand- by Cred	12.000.000,0000	3,0000	0,9000	Other	Biannual Refund	Third Parties
IC - Cile		2,0000	3,5000	Euribor 6m	Biannual Refund	Company Alfa
IFD - Swap Cas1 36 mln	-7.466.666,5000	8,0000	-0,1995	Euribor 6m	Swap Operation	Third Parties
IFD - Swap B7	-4.500.000,0000	9,0000	-0,2050	Euribor 6m	Swap Operation	Third Parties
IFD - Swap B6	-18.000.000,0000	9,0000	-0,1950	N/A - Fixed	Swap Operation	Third Parties
IFD - Swap B4	-12.450.000,0000	7,0000	-0,2640	Euribor 6m	Swap Operation	Third Parties
IFD - Swap BS 30 mln	-4.500.000,0000	3,0000	-0,5200	Euribor 6m	Swap Operation	Third Parties
IFD - Swap BANK 30 mln	-4.500.000,0000	3,0000	-0,5200	Euribor 6m	Swap Operation	Third Parties
IFD - Swap BANK2 - 30 Mln	-9.000.000,0000	3,0000	-0,1275	Euribor 6m	Swap Operation	Third Parties
Funding 2017	30.000.000,0000	10,0000	1,8000	Euribor 3m	Biannual Refund	Third Parties

Exhibit 38: Exhibit from BOARD Strategic Plan Model

As it is possible to see from Exhibit 38 for each credit line (first column) it is possible to choose different kind of variables to characterize each funding:

- Funding amount: figures in €
- N° of semesters: duration of the financing period in semesters (in the second tab *2 – Beginning period* it is possible to choose the semester in which the credit line will start)
- Fixed Spread: Fixed percentage over the interest rate
- Floating Rate: Euribor 1m - 3m - 6m or other kind of interest rates
- Line type: the type of credit line adopted which characterizes the payment method
- Line Supplier: distinction between third parties financing activities and intercompany ones

All these variables are available to the planner which can introduce new credit lines or change the conditions of the existing ones, simulating different conditions and impacts on the financial statements.

Through the simulation, it is possible to calculate all the principal and interest payments of the loan and their manifestation over time. Each transaction is related with all the variables and a change of the interest rate or the Line Type influences directly the output.

6 - Balance Sheet		7 - IC Balance sheet		8 - Income Statement		9 - Detail		10 - IC Income Statement	
0 - Master data lines		1 - Lines Management		2 - Beginning period		3 - Rate curves		4 - Summary	5 - Link Company

	Beginning Period	Ending Period	Cash-in	Residual Capital	Rate - Principal Payment	Rate - Interest Payment	Total Rate
Credit Line : BILATERAL Funding - B0							
4°T.15			24.900,0	24.900,0			
1°T.16				24.900,0			
2°T.16				21.787,5	3.112,5	261,4	3.373,9
3°T.16				21.787,5			
4°T.16				18.675,0	3.112,5	228,8	3.341,3
1°T.17				18.675,0			
2°T.17				15.562,5	3.112,5	196,1	3.308,6
3°T.17				15.562,5			
4°T.17				12.450,0	3.112,5	171,2	3.283,7
1°T.18				12.450,0			
2°T.18				9.337,5	3.112,5	143,2	3.255,7
3°T.18				9.337,5			
4°T.18				6.225,0	3.112,5	116,7	3.229,2
1°T.19				6.225,0			
2°T.19				3.112,5	3.112,5	84,0	3.196,5
3°T.19				3.112,5			
4°T.19					3.112,5	45,1	3.157,6
Total BILATERAL Funding - B0	1	1	24.900,0		24.900,0	1.246,6	26.146,6
Grand Total							
TOTAL	1	1	24.900,0		24.900,0	1.246,6	26.146,6

Exhibit 39: Exhibit from BOARD Strategic Plan Model [93]

The Credit Line presented in Exhibit 39, "*BILATERAL Funding – B0*", has a duration of the loan of 8 semesters and the beginning period is the fourth trimester of 2015. The Line Type is *Biannual Refund* and the floating rate considered is *Euribor 6m,* the supplier is a third party: it is not an intercompany funding[94].

The *Cash in* manifests in the 4th trimester of 2015 considered that it is the beginning period and the rate, split in principal and interest payment, occurs each semester given that it is a *Biannual Refund.*

The loan ends at the 4th trimester of 2019, after 8 semesters with the sum of the principal payments that covers all the cash in (24.900 K €) and the sum of the interest payments that correspond with the interest amount due to the financial institute (1.246,6 K €).

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[93] Figures in thousands €
[94] All this information comes from Exhibit 38

The separate calculation of the principal payment and interest payment over time is important for the composition of the financial statements.

As explained before, the CPM Tool gives to possibility to develop an integrated planning linking all the sections both economic and financial. In this case, the taking out of a loan involves both the Balance Sheet, for the cash in cash out of the principal payments, and the Income Statement, for the interest payments.

The designed model, considering some predetermined path decided by the planner, allows to analyze immediately how each financial activity impacts on the specific financial statement lines.

| 0 - Master data lines | 1 - Lines Management | | 2 - Beginning period | | 3 - Rate curves | | 4 - Summary | | 5 - Link Company | | |
| 6 - Balance Sheet | | 7 - IC Balance sheet | | 8 - Income Statement | | 9 - Detail | | 10 - IC Income Statement | | | |

FIN - Balance Sheet	4°T.15	2015	1°T.16	2°T.16	3°T.16	4°T.16	2016	1°T.17	2°T.17	3°T.17	4°
Company : 1459 Company_1											
BS Riclax IAS : B0290 Mid-Long Term Debt											
205 FinPlan - Cash In Mid-Long Term Debt	-24.900	-24.900									
210 FinPlan - Refund Mid-Long Term Debt				3.113		3.113	6.225		3.113		
Total B0290 Mid-Long Term Debt	-24.900	-24.900		3.113		3.113	6.225		3.113		
Total											
Total 1459 Company_1	-24.900	-24.900		3.113		3.113	6.225		3.113		
Grand Total											
TOTAL	-24.900	-24.900		3.113		3.113	6.225		3.113		

Exhibit 40: Exhibit from BOARD Strategic Plan Model [95]

Exhibit 40 shows the cash in and cash out figures presented in exhibit 39 in the specific Balance Sheet lines.

The dimensional set considers not only the Balance sheet lines (*Cash in Mid-Long Term Debt* and *Refund Mid-Long term debt)* and an aggregation of them in a reclassified dimension, but also the timing of the movements by trimester ad the companies involved.

In this example, Company *Company_1* has a cash in of 24,9 M € in the last trimester of 2015 which is registered in the Balance sheet line *205 FinPlan – Cash in Mid-Long Term Debt.* During the next semesters, it will register a movement in the BS line *210 FinPlan – Refund Mid-Long Term Debt* equal to the principal payments as calculated in Exhibit 39.

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[95] Figures in thousands €

In the same way, the interest payments related to the loan in question are directly linked with the multidimensional income statement.

	0 - Master data lines		1 - Lines Management		2 - Beginning period		3 - Rate curves		4 - Summary		5 - Link Company	
	6 - Balance Sheet		7 - IC Balance sheet		8 - Income Statement		9 - Detail		10 - IC Income Statement			

FIN - Income Statement	1°T.16	2°T.16	3°T.16	4°T.16	2016	1°T.17	2°T.17	3°T.17	4°T.17	2017	1°T.1
Company : Company_1											
VCE : 360 - Financial Income and Expenses											
Biannual Refund		261,450		228,769	490,219		196,087		171,188	367,275	
Total 360 - Financial Income and E...		261,450		228,769	490,219		196,087		171,188	367,275	
Total											
Total Company_1		261,450		228,769	490,219		196,087		171,188	367,275	
Grand Total											
TOTAL		261,450		228,769	490,219		196,087		171,188	367,275	

Exhibit 41: Exhibit from BOARD Strategic Plan Model

Exhibit 41 shows how the interest payments presented in exhibit 39 are registered in the Income Statement Line *Biannual Refund* linked to the reclassified dimension *360 – Financial Income and Expenses.*

The main limit of this section is a missing direct relation with the investment plan. All the credit lines are independent and not strictly linked and justified by an investment in OPEX or CAPEX and the use of the money borrowed is not clarified.

Even if there is an indirect link with the other sections of the Strategic Plan it is not made clear. Furthermore, the borrowing capacity of the company is not considered (even if its indicators are calculated in the financial statements chapter) for the feasibility of each financial operation as well as the presence or use of collateral and warranties to better justify the feasibility of an operation and improve the reliability of the plan.

2.2.3 Working Capital Management

Management of the main components of the working capital, accounts payable and receivable, is important in order to have all the metrics necessary for the composition of the financial statements. Their evolution is an important indicator related to the financial sustainability of the company, one of the main requirements of a Strategic Plan, according to *Borsa Italiana.*

The working capital is a measure of the company's financial strength. A high working capital means that a company can easily pay down its short-term liabilities which is a sign of a profitable and efficient business. A declining working capital could be a negative alert which requires further analysis: it could be due to, for instance, decreasing sales and, as a consequence a lower amount of account receivables or a decline in the trustworthiness of the customers and so on. It is also related with the operational efficiency and warehouse management: a high working capital ratio is not always a positive indicator, it could indicate that the company has too much inventory or it is not investing its excess cash.

Furthermore, working capital helps investors to judge company's financial health and prospects and this is important in light of Strategic Plan's external communication purposes.

The management and calculation of these metrics related to the working capital is developed in the CPM model through the leverage of specific KPIs: *Days Sales Outstanding* (DSO) and *Days Payable Outstanding* (DPO).

DSO

*(Accounts receivable / Total Credit Sales) * Number of days*

DSO is a measure of the average number of days that a company takes to collect revenue after a sale has been made. It can be calculated on a daily, monthly or yearly basis. In this case, it is calculated quarterly. The lower is the DSO the fewer are the days necessary to the company to collect its revenues. A high DSO could lead to cash flow and profitability problems because of the long duration between the sale and the payment receipt. If a company's DSO is increasing, it may indicate that customers are taking more time to pay their expenses due to some declining satisfaction or salespeople within the company offering longer terms of payment to drive increased sales or that the company is allowing customers with poor credit to make purchases[96].

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[96] Days Sales Outstanding – DSO - http://www.investopedia.com/terms/d/dso.asp

DPO

*(Accounts payable / cost of sales) * Number of days*

DPO shows an average number of days it takes a company to pay its suppliers and vendors. Also in this case, the period considered in the model is the trimester but it can vary.

A high DPO indicates that the company takes much time to pay its creditor. Hence it has the possibility to have more cash, which is good for working capital and free cash flow. But it is important to consider the tradeoff with this advantage and the possibility to harm the relationships with the suppliers and to obtain important financial discounts.

The DPO, as well as the DSO, is more meaningful compared to the one of the industry and the competitors[97].

The link between the measurement of these KPIs is clear and the purpose of the Strategic Plan to consider the financial sustainability of the company in the long-term run using all the possible leverages.

Even if indirect, there is also a link with the Critical Success Factor of the *Profitability* of Company *Alfa*. A high DSO as a consequence of the long-term credit policy of the company, for example, could generate financial disequilibria even if the economic situation is positive and the sales are increasing. The short-term insolvency of the company could result in the necessity of selling an asset or raising more debt capital through long term debt increasing the interest expenses and lowering the profitability. This could also have impact on the capital structure of the company.

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[97]Days Payable Outstanding – DPO - http://www.investopedia.com/terms/d/dpo.asp

DSO	2016	2017	2018	2019
Company : 1459 Company_1				
EMEA	47	49	51	53
NAFTA	47	49	51	53
APAC	47	49	51	53
Company : 477 Company_10				
Company : 495 Company_14				
Company : 500 Company_15				
Company : 502 Company_16				
EMEA	47	49	51	53
NAFTA	47	49	51	53
APAC	47	49	51	53
Company : 503 Company_17				
Company : 506 Company_19				
Company : 507 Company_20				
Company : 511 Company_24				
Company : 513 Company_26				
Company : 514 Company_27				
Company : 517 Company_28				
Company : 519 Company_30				

Exhibit 42: Exhibit from BOARD Strategic Plan Model

	DPO 2016	DPO 2017	DPO 2018	DPO 2019
Company : 1459 Company_1				
030 - Raw Material Consumption	123	117	110	105
031 - Product Consumption	123	117	110	105
035 - Ingredients	123	117	110	105
040 - Packaging	123	117	110	105
045 - Energetic Sources	123	117	110	105
065 - Maintenance	123	117	110	105
Company : 477 Company_10				
Company : 495 Company_14				
Company : 500 Company_15				
Company : 502 Company_16				
030 - Raw Material Consumption	123	117	110	105
031 - Product Consumption	123	117	110	105
035 - Ingredients	123	117	110	105
040 - Packaging	123	117	110	105
045 - Energetic Sources	123	117	110	105
065 - Maintenance	123	117	110	105
Company : 503 Company_17				
Company : 506 Company_19				
Company : 507 Company_20				

Exhibit 43: Exhibit from BOARD Strategic Plan Model

Exhibits 42 and 43 shows how the KPIS can be used as leverage to forecast the accounts payable and receivable of the planning years considered the formulas presented above.

Considered that in the economic section both the Sales and Cost of Sales are forecasted and given that the period considered is the trimester (so the number of days are 90), it is easy to calculate for each planning year (and each trimester) the amount of accounts payable and accounts receivable to register in the balance sheet and consider for the cash flows calculation. This calculation can be done for each Company of the group in order to consider all the variables that can affect the decision of increasing or decreasing a particular leverage. Moreover, for the

DSO the other dimension considered is the Market and for the DPO it is the kind of cost and supplier involved in the transaction.

In this case both *Company_1* and *Company_16* are considered. They follow the same strategic line: they are increasing the DSO conceding more time to the customer to pay; strategy likely linked with an aggressive sales campaign considered the growth the Company means to reach. On the other hand, the companies tend to decrease the DPO, which could be linked with the purpose of obtaining higher discounts or just to align at the industry average.

Anyhow these choices increase the working capital and they have to be justified and linked with the strategy the company is pursuing in order to make the Strategic Plan more reliable. Even if the assumptions are made explicit, introducing other metrics as the KPI of the industry or of the main competitors, would enrich the power of the information.

	Code	Description
Indicator	140	DSO - DPO
Indicator Type	3	Classic Performance/Ratio
CSF	6	Profitability
Consistency	2	Indirectly correlated
Unit of measure	2	Not Financial
Measurement Type	2	Effectiveness
Purpose	5	Financial sustainability and administration
Confidence Level	2	Medium
Source of Data	2	Partially traceable
Drillability	2	From Four to Six dimensions
Notes		Both these KPIs are used as leverage to forecast payables and receivables in the planning period. They are not directly linked with critical success factor but very useful in light of the issue addressed. The main limit is the absence of comparable indicators at industry or competitore level. Their traceability is linked with the one of the metrics used for their calculation and it is not directly linked with a company data source.

Table 10, own elaboration[98]

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[98] Score detail in the appendix

2.2.4 Financial Statements

Once completed the process it is possible to analyze all the results flowed into the financial statements.

As already explained and shown, each section of the plan, both economic and financial, has a direct link with the accounts of the Income statement and the Balance Sheet. This makes the CPM tool a valid instrument for an integrated Strategic Planning activity and to have a holistic view of the company. The *Consistency* principle of *Borsa Italiana* explains that all the actions (investments, financial operations, resource acquisitions etc.) are translated in the forecast data and there must be a correlation between the assumptions and the quantitative results present in the provisional financial statements. Hence, knowing how each decision or assumption impacts on the economic and financial situation of the group is essential.

The approach used with the CPM Tool is, as specified, a direct approach. Each line of the financial statements is calculated or inserted individually, considering all the variables affecting it in order to have a more accurate planning process. This kind of approach is different and more accurate from the one suggested by a part of the literature, which considers an indirect approach.

According to Koller, Goedarth and Wessels[99] to forecast a financial statement line it is necessary a three-step process[100]:

1. *Decide what economic relationships drive the line item*: most them will be tied directly to the revenues, some other to specific assets

2. *Estimate the forecast ratio*: For each line item, it is necessary to compute historical values for each ratio, followed by estimates for each of the forecast periods

3. *Multiply the forecast ratio by an estimate of its driver*

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[99] Koller T., Goedhart M., Wessels D., 2010. Valuation. Measuring and Managing the value of Companies. Hoboken: JOHN WILEY & SONS, INC.

[100] Koller T., Goedhart M., Wessels D., 2010. Valuation. Measuring and Managing the value of Companies. Hoboken: JOHN WILEY & SONS, INC. P.194-195

A limit of this approach is the fact that, given a limited number of considered drivers, any error in their forecast will be carried out through the entire model. Furthermore, this indirect approach does not take into consideration other important variables to forecast suitably each item line. Furthermore, all the data calculated using this approach are not directly related to specific variables (if not their driver) and this undermine their traceability and reliability.

Income Statement

The first financial statement to analyze in order to examine the economic situation of the company is the Income Statement.

It describes, represents and quantifies all the revenues and expenses that contribute to the creation of the net income during the planning period.

The real advantage of drafting it with a CPM Tool is to have both a full traceability of the data (each section of the model calculates a particular income statement line) and the possibility to manipulate the information in order to have a split by the main dimension of analysis using predetermined drivers.

RPT056 - Income Statement Analysis

Million €	IS 2015	IS 2016	IS 2017	IS 2018	IS 2019
015 - Net Sales (after Discounts)	1.225,9	1.352,4	1.615,3	2.113,2	2.191,3
025 - Net Net Sales (after Bonus, Promo and Listing)	1.078,1	1.195,7	1.455,8	1.949,4	2.022,5
085 - Material Profit	428,3	474,0	594,8	841,3	875,7
072 - Production Costs	-133,4	-144,0	-156,3	-177,2	-182,1
073 - Contribution Margin	294,9	330,0	438,5	664,2	693,5
181 - Total outbound Logistic	-101,7	-107,9	-113,6	-122,6	-124,1
216 - Marketing and Trade Mktg	-13,2	-17,1	-25,7	-43,5	-43,3
291 - Total Operative costs	-25,6	-29,9	-50,0	-101,1	-101,5
286 - Total direct Personnel Cost	-42,2	-49,9	-77,8	-131,2	-132,2
315 - EBITDA	69,7	78,8	103,5	146,5	169,0
355 - EBIT	39,1	45,0	61,2	88,9	94,5
365 - Extraordinary Income and Expenses	-9,6				
368 - EBIT (net extraordinary income and expenses)	29,5	45,0	61,2	88,9	94,5
360 - Financial Income and Expenses	-10,2	-11,5	-17,1	-33,0	-31,1
366 - Severance Pay Expenses	-0,3	-0,3			
370 - EBT	19,0	33,1	44,0	55,9	63,3
375 - Taxes	-1,0	-14,1	-13,9	-5,2	-4,5
380 - Net Income	18,0	19,1	30,1	50,8	58,8

Exhibit 44: Exhibit from BOARD Strategic Plan Model

Exhibit 44 presents the provisional Income Statement of Company *Alfa* in the actual year (2015) and the four planning years (2016-2019). This chart shows only the main accounts and not all the detailed ones, which, by the way, are present in the model.

To represent precisely the provisional economic performance, the income statement provides all the necessary information to consider the issues relevant for the Strategic Planning according to the literature:

- It underlines all the variations and different netting of the revenues; split between line *015 – Net Sales (after Discount)* and *025 – Net Net Sales (After Bonus, Promo and Listing).* In this way, it is possible to follow the trend of this components which have an important impact on the company profitability and helps to assess other info as the degree of negotiation power or the customer satisfaction. The traceability of this information comes from the related part in the economic section (Sales Dashboard of Exhibit 1 shows the same figures of Net Net sales and chapter 2.1.1 shows the calculation to get to this figure)

- It indicates separately non-monetary costs to calculate line *315 – EBITDA* (KVD considered in the Sales Analysis of Exhibit 1 too). The difference between this line and line *355 – EBIT* gives the amount of non-monetary cost such as depreciation and amortization. Moreover, the split of the other cost components allows different marginality analysis (Contribution Margin analysis in Chapter 2.1.2, Exhibits 15-16)

- It considers the financial income as non-operating income to understand effectively what the profitability of the company without extraordinary income is. In fact, after line *355 – EBIT* all the extraordinary and financial income and expenses (lines 365-360-366) are kept separated in order to understand which the operating income is.

Going deeper into the analysis it is possible to see all this data by a multidimensional perspective considering the level at which the figures were calculated or taking advantage of data allocation.

Million €	IS Macrobrand_1	IS Macrobrand_2	IS Macrobrand_3	IS Macrobrand_4	IS Macrobrand_5	IS TOTAL
015 - Net Sales (after Discounts)	719,1	106,6	58,8	287,1	180,8	1.352,4
025 - Net Net Sales (after Bonus, Promo and Listing)	627,2	78,6	42,6	268,5	178,8	1.195,7
085 - Material Profit	270,3	41,2	12,6	105,2	44,7	474,0
072 - Production Costs	-70,3	-10,2	-3,4	-41,5	-18,5	-144,0
073 - Contribution Margin	200,0	31,0	9,2	63,6	26,2	330,0
181 - Total outbound Logistic	-71,4	-5,4	-1,8	-22,1	-7,2	-107,9
216 - Marketing and Trade Mktg	-9,7	-4,0	-1,0	-2,1	-0,4	-17,1
291 - Total Operative costs	-14,1	-2,4	-1,1	-7,3	-4,9	-29,9
286 - Total direct Personnel Cost	-25,6	-4,4	-1,6	-10,9	-7,4	-49,9
315 - EBITDA	51,0	12,0	2,6	11,0	2,3	78,8
355 - EBIT	37,2	7,9	0,4	0,8	-1,3	45,0
365 - Extraordinary Income and Expenses						
368 - EBIT (net extraordinary income and expenses)	37,2	7,9	0,4	0,8	-1,3	45,0
360 - Financial Income and Expenses	-6,2	-0,9	-0,3	-2,9	-1,4	-11,5
366 - Severance Pay Expenses	-0,2	0,0	0,0	-0,1	0,0	-0,3
370 - EBT	30,8	7,0	0,1	-2,1	-2,7	33,1
375 - Taxes	-6,5	-1,5	-0,2	-5,1	-0,8	-14,1
380 - Net Income	24,3	5,5	-0,1	-7,2	-3,5	19,1

Exhibit 45: Exhibit from BOARD Strategic Plan Model[101]

Million €	IS EMEA	IS NAFTA	IS APAC	IS TOTAL
015 - Net Sales (after Discounts)	1.053,8	244,5	54,0	1.352,4
025 - Net Net Sales (after Bonus, Promo and Listing)	916,0	225,9	53,8	1.195,7
085 - Material Profit	389,9	61,7	22,4	474,0
072 - Production Costs	-118,2	-18,5	-7,2	-144,0
073 - Contribution Margin	271,7	43,1	15,2	330,0
181 - Total outbound Logistic	-98,2	-8,1	-1,6	-107,9
216 - Marketing and Trade Mktg	-14,9	-1,3	-0,9	-17,1
291 - Total Operative costs	-19,0	-7,7	-3,2	-29,9
286 - Total direct Personnel Cost	-35,5	-10,2	-4,2	-49,9
315 - EBITDA	64,0	11,5	3,3	78,8
355 - EBIT	37,8	4,9	2,2	45,0
365 - Extraordinary Income and Expenses	0,0		0,0	
368 - EBIT (net extraordinary income and expenses)	37,8	4,9	2,2	45,0
360 - Financial Income and Expenses	-9,5	-1,8	-0,3	-11,5
366 - Severance Pay Expenses	-0,3	0,0	0,0	-0,3
370 - EBT	28,0	3,2	2,0	33,1
375 - Taxes	-12,1	-0,8	-1,1	-14,1
380 - Net Income	15,9	2,3	0,8	19,1

Exhibit 46: Exhibit from BOARD Strategic Plan Model[102]

Through this dimensional split, the Key Performance Indicator analysis becomes more effective.

The Key Value Driver considered in this section are the Return on Sales (ROS) and the Return on Equity (ROE).

The ROS is indicative of the economic performance of the company and explains which is the percentage of sales converted into operating profit. It is fundamental expression of the *Profitability* Critical Success Factor of *Alfa* and helps understanding whether the diversification path is obtaining the expected results or not.

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[101] Same Figures of Exhibit 44, Year 2016, by MacroBrand
[102] Same Figures of Exhibit 44, Year 2016, by Market

Market	EBIT	Net sales	ROS
EMEA	37,8	1.053,8	3,59%
NAFTA	4,9	244,5	2,02%
APAC	2,2	54,0	4,16%
TOTAL	45	1.352,4	3,33%

Exhibit 47, own elaboration

Market	EBIT	Net sales	ROS
Macrobrand_1	37,2	719,1	5,17%
Macrobrand_2	7,9	106,6	7,45%
Macrobrand_3	0,4	58,8	0,60%
Macrobrand_4	0,8	287,1	0,30%
Macrobrand_5	-1,3	180,8	-0,73%
TOTAL	45	1.352,4	3,33%

Exhibit 48, own elaboration

The re-elaborated tables give a multi-perspective representation of the Key Value Driver.

The Total Value of the ROS is 3,33% for the whole company but it is possible to see how markets and microbrand have different kind of operating profitability.

From Exhibit 47 it is possible to infer how the new emerging Market *APAC* has the higher ROS (4,16%) even if its weight is low while the top seller *EMEA* is in the average (3,59%) and NAFTA has the smallest one (2,02%).

Results are more various looking at the Macrobrand situation: apart from *Macrobrand_1* and *Macrobrand_2* which have a relatively high ROS the other three Macrobrands have a very low profitability or even negative (*Macrobrand_5*).

In fact, considering the cost lines following the EBIT in the Income Statement, they reach a negative Net Income. Through the multidimensional model, it could be to understand if these low performances are linked with particular sales channels or Business Areas inside the same Macrobrand in order to intervene to improve the operational effectiveness or dismiss or sell these branches.

	Code	Description
Indicator	145	ROS
Indicator Type	1	KVD
CSF	6	Profitability
Consistency	1	Directly correlated
Unit of measure	1	Financial
Measurement Type	1	Efficiency
Purpose	1	Value creation and Growth
Confidence Level	1	High
Source of Data	1	Fully Traceable
Drillability	1	More than six dimensions
Notes		This KVD is complete from a dimensional point of view hence is appropriate for analysis at different depth level and also for cross-dimensional analysis. Its traceability is directly linked with the calculation of each account of the income statement. For this reason it is necessary a considerable number of assumptions to calculate it and this undermine its reliability. It is strictly linked with its CSF and issue addressed. To improve its usefulness it would be important the comparison with the average level of the industry.

Table 11, own elaboration[103]

The Return on Equity is the amount of net income returned considered the shareholders equity. When disclosing its economic model, the company gains manifold advantages, including the possibility of consistently improving the quality of the analysis of the profitability and the corporate financial trend[104]. ROE is a measure of how well a company uses investments to generate earnings growth and it is the most important Driver linked to the Profitability critical success Factor. Like the other indicators, it reveals itself more useful if compared with the ROE of the industry.

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[103] Score detail in the appendix
[104] Borsa italiana, 2003. *Strategic Plan Guide, www.borsaitaliana.it.* P. 20

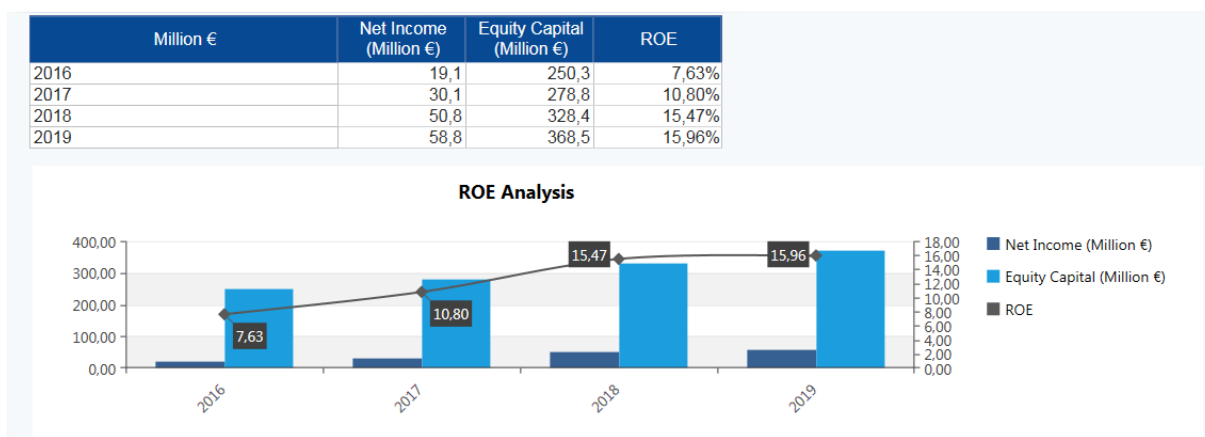| Million €	Net Income (Million €)	Equity Capital (Million €)	ROE
2016	19,1	250,3	7,63%
2017	30,1	278,8	10,80%
2018	50,8	328,4	15,47%
2019	58,8	368,5	15,96%

Exhibit from BOARD Strategic Plan Model

The exhibit shows the growth of ROE of Company *Alfa* during the planning period. Considered the dimensional set it is possible to infer which market or Business Area contributes more to this growth and profitability.

	Code	Description
Indicator	175	ROE
Indicator Type	3	Classic Performance/Ratio
CSF	6	Profitability
Consistency	1	Directly correlated
Unit of measure	1	Financial
Measurement Type	2	Effectiveness
Purpose	1	Value creation and Growth
Confidence Level	1	High
Source of Data	1	Fully Traceable
Drillability	2	From Four to Six dimensions
Notes		Concise and simple but complete and expressive indicator. Perfectly consistent with the issue addressed of the Strategic Plan and the Critical Success Factor it is the more important KVD to express the value created for the equity investors. The full traceability it is due to the metric used for the calculation. The limited dimensional set and the lack of comparability terms makes it less beneficial.

Table 12, own elaboration[105]

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[105] Score detail in the appendix

Cash Flow Statement

The Cash Flow Statement is written considering the results and the assumptions of the Investment Plan and the Provisional Income Statement.

From the reclassification, under a financial point of view, of the latter it is possible to quantify the cash flows generated from the operating activities inferring the self-financing capacity of the company.

RPT058 - Cash Flow Analysis				
Million €	2016	2017	2018	2019
Net Income	19,1	30,1	50,8	58,8
Taxes	14,1	13,9	5,2	4,5
Financial income and expenses	11,9	17,1	33,0	31,1
Depreciation, amortisation and devaluation	33,6	42,2	57,4	74,4
Funds and reservers	0,2	0,2	0,2	0,2
Gross Operating Cash Flow	**78,8**	**103,5**	**146,5**	**169,0**
Changes in Inventories	-13,0	-48,5	-93,0	-8,3
Changes in accounts receivables	-31,1	-67,7	-109,1	-20,5
Changes in accounts payable	12,8	51,4	140,0	3,4
Other Changes in Working Capital	**18,2**	**-8,2**	**7,3**	**-4,3**
Cash Flow from operating activities	**65,7**	**30,5**	**91,8**	**139,1**
Cash Flow from investing activities	**-85,1**	**-186,4**	**-373,2**	**-49,7**
Cash Flow from financial activities	**9,0**	**137,5**	**282,7**	**-100,7**
Net Cash Flow	**-10,4**	**-18,4**	**1,2**	**-11,2**
Free Cash Flow	**-14,3**	**19,3**	**50,5**	**73,0**

Exhibit 49: Exhibit from BOARD Strategic Plan Model

Exhibit 49 shows the multidimensional Cash Flow Statement of Company *Alfa* during the planning years. Starting from the information of the Income Statement it is possible to calculate all the item lines of the Statement. Considered that these calculations are made at the deepest level of detail (Macrobrand, Market, Business Area etc.), also the Cash Flow statement will have this level of detail.

Company *Alfa* presents an increasing Free Cash Flow trend during the planning period: it starts from a negative one in the 2016 (-14.3 M) to a positive one in the next years (+19.3 M, +50.5 M, +73.0 M).

The cash flows generated by operations and those absorbed by investments take on significance for an estimate of the cash flows, with particular regard to the outflows anticipated. The analysis of the financial sustainability of a Strategic Plan begins with the correct estimate of the cash flows hypothesised by the issuer and with the coverage of the latter with secure sources of

funding. The end objective is to verify that, in their entirety, the financial dynamics support the achievement of the strategic objectives anticipated by the plan[106].
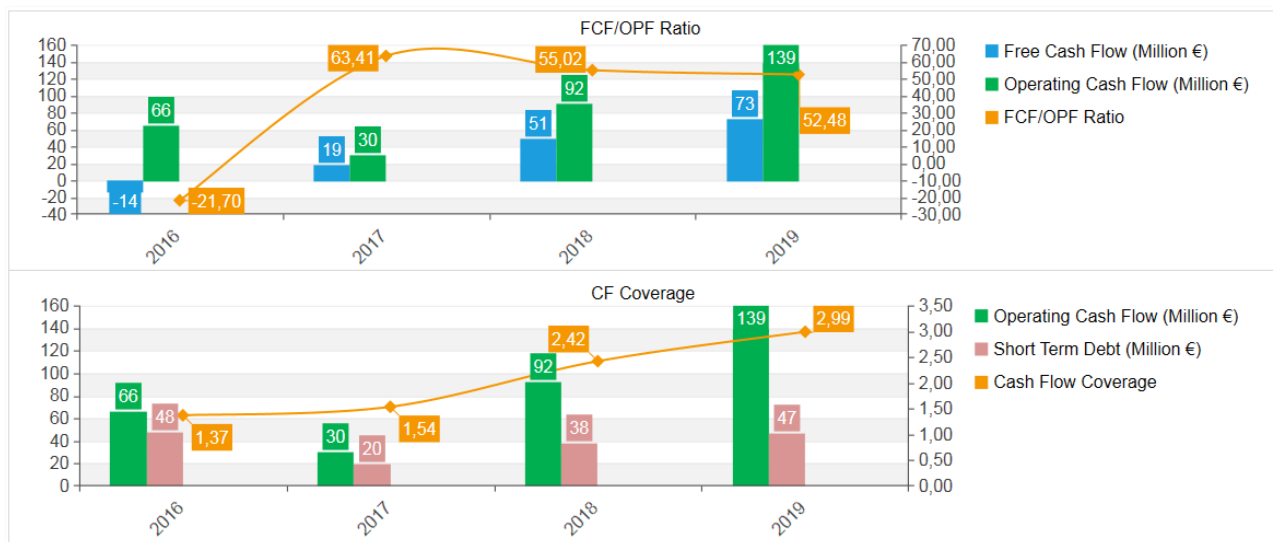

Exhibit 50: Exhibit from BOARD Strategic Plan Model

The Cash Flow Analysis has therefore the function to measure the sustainable growth of the company and its financial situation.

Exhibit 50 presents the two main Key Performance Indicators related to the Cash flow analysis present in the Model of the CPM tool.

The first is the *Free Cash Flow/Operating Cash Flow Ratio*. Free Cash Flows are obtained as Operating Cash Flows plus/minus all the investing and financial activities hence they are available to company for all the expansion and growth objectives or to reinforce the financial stability of the company. In this way, the ratio between these two metrics underlines the financial strength of the company. Without considering the 2016 ratio, which has a negative Free Cash Flow, it is possible to see that the ratio presents a slightly decreasing trend from 2017 to 2019. This is due to the higher growth of the Operating Cash Flows compared to the one of the Free Cash Flows even if the latter are increasing rapidly.

	Code	Description
Indicator	160	FCF/OPF
Indicator Type	2	KPI
CSF	5	Growth
Consistency	3	Uncorrelated
Unit of measure	1	Financial
Measurement Type	3	Sustainability
Purpose	1	Value Creation and Growth
Confidence Level	2	Medium
Source of Data	1	Fully Traceable
Drillability	2	From Four to Six dimensions
Notes		The indicator is easy to calculate and gives a first idea of the financial situation of the company, by the way it is not enough accurate to give a clear picture of the company financial strenght and is not directly related with the issue addressed.

Table 13, own elaboration[107]

On the other hand, the second indicator considered, the *Cash Flow Coverage* grows steadily during the planning period.

This KPI is calculated as ratio between the Operating Cash Flow and the Short-Term Debt of the company. The higher the Cash Flow coverage, the greater the company's ability to meet its obligations. Moreover, this gives the company more cash flow to expand its business.

This is related with the financial sustainability principle of the Strategic Plan and the necessity to assess the borrowing capacity of the Company and its creditworthiness to make more reliable the planning of the funding activities. Also the Balance Sheet metrics provide indicators useful for this purpose.

[107] Score detail in the appendix

	Code	Description
Indicator	165	Cash Flow Coverage
Indicator Type	3	Classic Performance/Ratio
CSF	7	None
Consistency	3	Uncorrelated
Unit of measure	1	Financial
Measurement Type	3	Sustainability
Purpose	5	Financial sustainability and administration
Confidence Level	2	Medium
Source of Data	1	Fully Traceable
Drillability	2	From Four to Six dimensions
Notes		Together with the Net Debt to EBITDA Ratio is an effective sustainability indicator which assess the borrowing capacity of the company. It could be more useful with a monthly detail to really understand when the cash outlflows are. The Dimensional level gives different kinds of perspectives to the analysis.

Table 14, own elaboration[108]

Balance Sheet

The provisional Balance Sheet presents a picture of the business's net worth for each of the planning years. It summarizes all the financial data about the Company specifying the split between each line giving consideration to the different kind of tangible assets (land, properties, machinery) and intangible (goodwill, brand etc.).

Exhibit 51: Exhibit from BOARD Strategic Plan Model

Exhibit 51 shows the evolution of the Balance sheet during the planning years starting from the actual one. Even in this case, for each year, it is possible to have a vision by Brand, Market and Business Area.

The link with the other sections of the plan is unavoidable, according to the literature, and the CPM tool supports it, always in light of the integrated planning approach. The Income Statement, for instance, should be linked with the Balance Sheet through the net income and the Retained Earnings[109].

In fact, by way of example, it is possible to show the lines calculated and presented in the previous chapters which flowed into the Balance sheet:

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[109] Valution Koller T., Goedhart M., Wessels D., 2010. Valuation. Measuring and Managing the value of Companies. Hoboken: JOHN WILEY & SONS, INC. P. 189

Million €	2015	2016	2017	2018	2019
B0040 - Lands and properties	137,4	151,5	201,2	318,8	304,6
B0044 - Plants and machinery	134,4	135,2	143,7	150,6	156,8
B0046 - Other tangible assets	31,6	27,4	28,5	29,5	30,5
B0080 Total Assets	**460,6**	**487,8**	**617,8**	**920,5**	**884,2**
B0120 Accounts Receivable	146,6	177,7	245,4	354,5	375,0
B0125 Accounts Payable	-343,7	-356,6	-414,4	-560,5	-569,8
B0190 Other Assets and Liabilities	**-84,1**	**-79,1**	**-12,5**	**46,8**	**71,3**
B0220 Total Reserves	**-50,8**	**-52,1**	**-57,0**	**-68,4**	**-69,0**
B0230 Net Invested Capital	**325,7**	**356,6**	**548,4**	**898,9**	**886,5**
B0270 Net Income	-18,0	-19,1	-30,1	-50,8	-58,8
B0280 Equity Capital	**-228,2**	**-250,3**	**-278,7**	**-328,4**	**-368,5**
B0350 Net Financial Position	**-97,5**	**-106,4**	**-269,8**	**-570,5**	**-518,0**
B0360 Equity and Liabilities	**-325,7**	**-356,6**	**-548,4**	**-898,9**	**-886,5**

Exhibit 52: Exhibit from BOARD Strategic Plan Model

- Lines *B0040 – Lands and properties, B0044 – Plants and machinery, B0046 – Other tangible assets* are considered in the new investment calculation (Chapter 2.2.1)

- Lines *B0120 - Accounts receivable* and *B0125 – Accounts Payable,* are calculated in the Working capital management through DSO and DPO (Chapter 2.2.3)

- *B0270 – Net income* is calculated in the previous paragraph in the income statement

- All the item lines that compose Line *B0350 – Net Financial Position* are considered in the funding chapter (Chapter 2.2.2)

Through the Patrimonial Dashboard of the CPM Tool it is possible to see the trend of the main figures and KPIs related to the Balance Sheet:
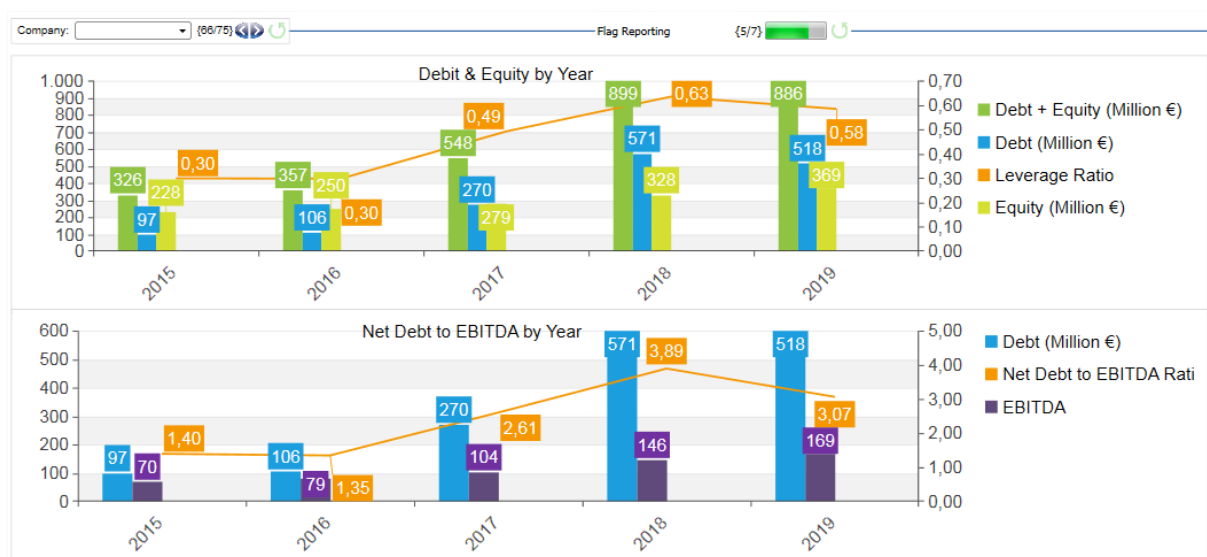

Exhibit 53: Exhibit from BOARD Strategic Plan Model

The Key Performance Indicators considered in this section are the Leverage and Net Debt to EBITDA Ratio.

According to *Borsa Italiana* the financial sustainability of a Strategic Plan should consider the quality of the sources of funding that the company wants to use to deal with the requirements linked to the achievement of the strategic aims[110]. The analysis and monitoring of the capital structure is hence an essential factor to keep into consideration. In designing the capital structure, it is necessary to choose the right balance between debt and equity, in other words what the company's leverage should be. Leverage delivers key benefits in the form of reductions in taxes and avoidance of overinvestment, but it is also associated with cost arising from business erosion and conflicts of interest among investors[111].

The first chart of Exhibit 53 shows the Leverage Trend of Company *Alfa,* showing the detail of Equity and Debt capital. During the planning period the Leverage analysis shows how company *Alfa* means to increase the leverage (from 0,30, actual figure of 2015, to 0,58 of 2019) through an increase of debt capital. Drilling through the Debt information it is possible to infer the quality of the debt forecasted in the planning period (Short or Mid-Long Term debt).
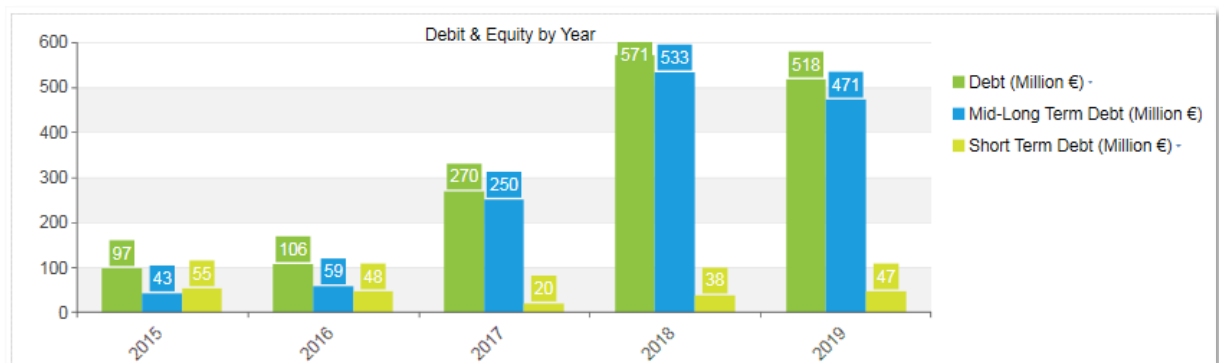

Exhibit 54: Exhibit from BOARD Strategic Plan Model

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[110]Borsa italiana, 2003. *Strategic Plan Guide, www.borsaitaliana.it.* P. 07

[111] Valution Koller T., Goedhart M., Wessels D., 2010. Valuation. Measuring and Managing the value of Companies. Hoboken: JOHN WILEY & SONS, INC. P. 490

	Code	Description
Indicator	150	Leverage
Indicator Type	1	KVD
CSF	7	None
Consistency	3	Uncorrelated
Unit of measure	1	Financial
Measurement Type	3	Sustainability
Purpose	5	Financial sustainability and administration
Confidence Level	1	High
Source of Data	1	Fully Traceable
Drillability	1	More than six dimensions
Notes		Classic indicator necessary to understand the capital structure of the company and its evolution over time. Fully related with the sustainability issue addressed, and fully treaceable thanks to different section related to the Balance sheet. Considered the market value of debt can change fast, Leverage could be a fast-moving indicator, hence less reliable.

Table 15, own elaboration[112]

The second chart of Exhibit 53 shows the Net Debt to EBITDA by Year a measure of the Company coverage.

An important aspect to keep into consideration in the Strategic Plan is the availability of the sources of funding. It is necessary that the choices of funding by means of debt capital are feasible in light of the borrowing capacity and therefore the current borrowing ratio. In fact, if the strategic plan contemplates considerable use of lending from banks, the fact that the company has carefully assessed its borrowing capacity and its creditworthiness will be important[113].

Credit ratings are mainly related to two financial indicators[114]:

1. Size in terms of sales or market capitalization

2. Interest Coverage in terms of EBITDA

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[112] Score detail in the appendix

[113] Borsa italiana, 2003. *Strategic Plan Guide, www.borsaitaliana.it.* P. 07-38

[114] Valution Koller T., Goedhart M., Wessels D., 2010. Valuation. Measuring and Managing the value of

Companies. Hoboken: JOHN WILEY & SONS, INC. P.499

Coverage is more important when setting capital structure targets. Net Debt to EBITDA is used to measure the company's ability to decrease its debt. Ratios higher than 4 or 5 could be critical because this indicates that a company could not be able to handle its debt burden, and is less likely to be able to raise the additional debt required to let the business grow appropriately[115]. Company *Alfa,* increasing its debt very fast during the planning period, register a skyrocketing Net Debt to EBITDA Ratio considered that the EBITDA growth uniformly (from 1,40 in 2015 to 3,07 in 2019).

The simultaneous analysis of leverage and coverage ratios helps the management to find the befitting tradeoff between growth and sustainability considering both patrimonial and economic variables. If not sustained by a suitable EBITDA, the substantial debt increase in the capital structure would not be possible because of the low creditworthiness.

	Code	Description
Indicator	155	Net Debt to EBITDA Ratio
Indicator Type	3	Classic Performance/Ratio
CSF	7	None
Consistency	3	Uncorrelated
Unit of measure	1	Financial
Measurement Type	3	Sustainability
Purpose	5	Financial sustainability and administration
Confidence Level	2	Medium
Source of Data	1	Fully Traceable
Drillability	2	From Four to Six dimensions
Notes		The indicator accomplishes to the purpose of assessing the borrowing capacity of the Company. It is not fully independent because it would be useful to compare it with the average of the market.

Table 16, own elaboration[116]

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[115] Valution Koller T., Goedhart M., Wessels D., 2010. Valuation. Measuring and Managing the value of Companies. Hoboken: JOHN WILEY & SONS, INC. P.500

[116] Score detail in the appendix

Discussion of main results

In this paragraph, a general discussion about the main results obtained after the description of the model and coding process will be realized. This will be done in order to analyze the main characteristics of the indicators considered and to answer to the research question.

During the analysis of the planning model 16 indicators were considered: 8 developed in the Economic Section of the Strategic Plan and 8 in the Financial Section.

Here the list of the indicators considered:

1. EBITDA
2. Sales of Market X / Total Sales
3. Net Net Sales
4. Average Price
5. Volume Produced %
6. Reject Ratio
7. Contribution Margin
8. On time Deliveries
9. DSO/DPO
10. ROS
11. Leverage
12. Net Debt to EBITDA Ratio
13. FCF/OPF
14. CF Coverage
15. Fixed Asset Turnover Ratio
16. ROE

All of them were coded using the codebook illustrated in the *Method* paragraph of the paper considering all the necessary dimensions.

The first results to consider analyzing the indicators are the main characteristics that they present individually: *Indicator Type*, *Unit of measure* and *Measurement type.*
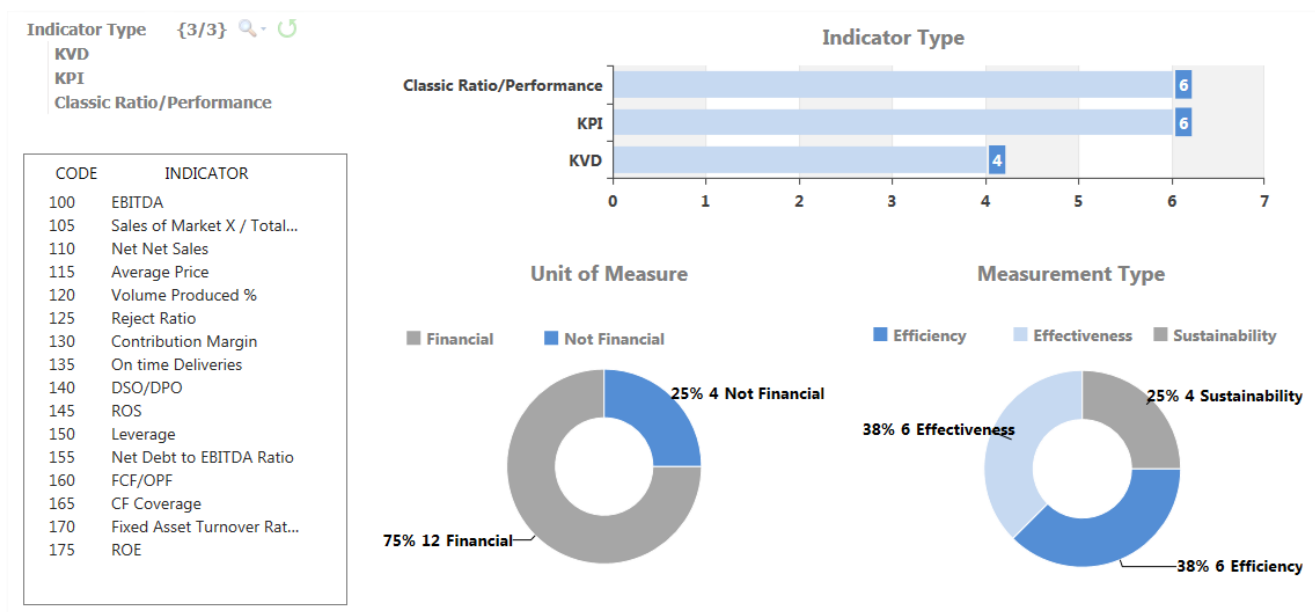
As it is possible to see from Exhibit 55 the 16 indicators are divided in three types with this proportion:

- 4 *Key Value Drivers*
- 6 *Key Performance Indicators*
- 6 *Classic Ratio/Performance*

The main Unit of Measure considered is the financial one:

- 12 *Financial*
- 4 *Not Financial*

The split between the dimensions considered by the measurement type is equally allocated:

- 6 *Effectiveness*
- 6 *Efficiency*
- 4 *Sustainability*

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Focusing on the Key Value Drivers, which are those variables that actually create value in a significant way, it is possible to understand which kind of aspects are considered more important by the Company that is assessing the Strategic Plan and the way it is doing this.
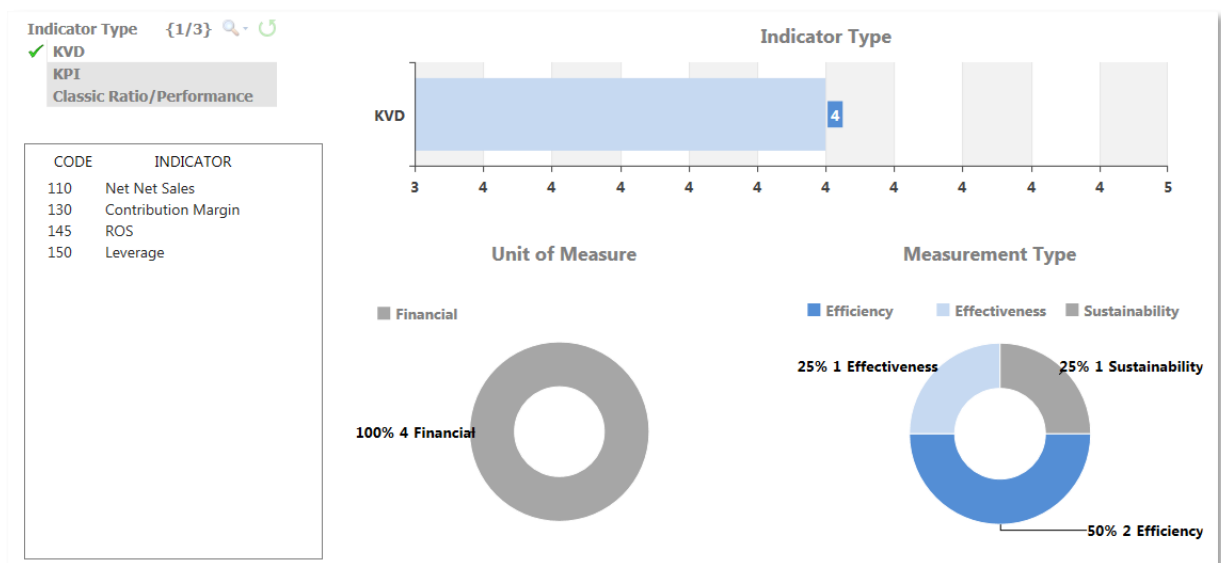
Exhibit 56 shows how all the Key Value Drivers, listed on the bottom left of the screen, have a Financial *Unit of Measure* and are able to cover all the different dimensions considered:

- Net Net Sales → *Efficiency* (Economic Section)
- Contribution Margin → *Effectiveness* (Economic Section)
- ROS → *Efficiency* (Financial Section)
- Leverage → *Sustainability* (Financial Section)

The Research Question asks if the planning model designed with a CPM tool is able to link the output of the process with the main objectives of the company and the Strategic Plan.

In this case it is possible to consider a dual perspective:

1. The link of the indicators considered with the actual targets of the Company, which means to analyze how they are linked with the Critical Success Factors individuated by management

2. The link of the indicators considered with the main functions and objectives of Strategic Plan, as disclosed by the literature, in order to address the right issues.

The first perspective is individuated in the codebook with the dimension *Critical Success Factor* and the second with the dimension *Purpose*.
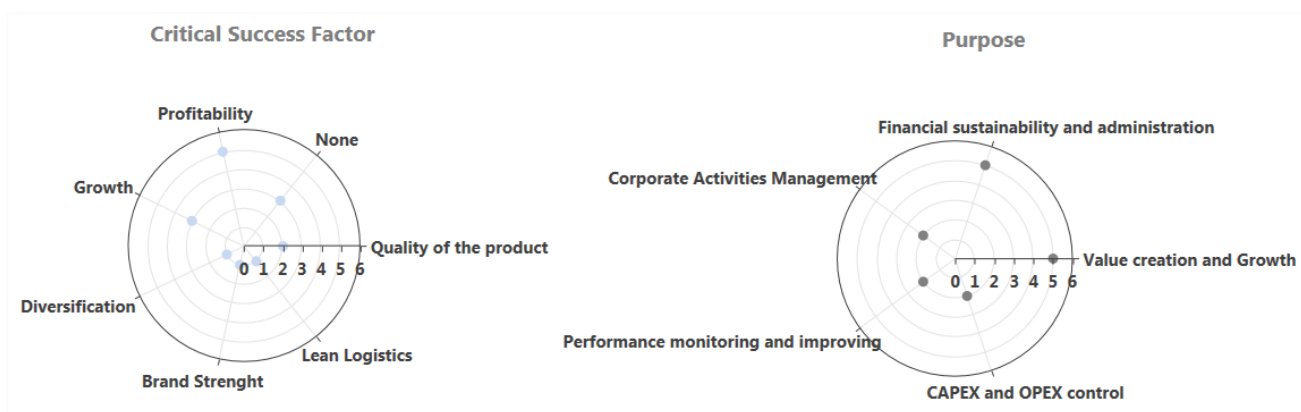

Exhibit 57: Own elaboration with Board Software

Looking at Exhibit 57 it is possible to infer from the radar charts the distribution of the indicators among the different Critical Success Factors and Issues Addressed.

13 indicators over 16 are linked with a Critical Success Factor of the Company and all of them are linked with a Purpose of the Strategic Plan.

This consideration is important in order to answer to the Research Question because each indicator should have a direct or indirect link with the main objectives of the company. In this particular case, the 3 indicators which are not related with any Critical Success Factor are:

150 – Leverage

165 – Net Debt to EBITDA Ratio

165 – CF Coverage

These are financial indicators linked with the F*inancial Sustainability and Administration* Purpose and with the Measurement Type *Sustainability*. This evidence is explicative of how Company *Alfa* does not consider, at least specifically, in its Critical Success Factor any dimension related with the financial sustainability even if 5 over 16 indicators are related with the Purpose F*inancial Sustainability and Administration.*

The other two indicators related with this purpose:

140 – DSO/DPO

170 - Fixed Asset Turnover Ratio

are in fact indirectly linked with the CSF: *Profitability* and *Growth* respectively.

It is also interesting to see how the two dimensions intersect themselves, which is visible in Exhibit 58:

CSF by Row Purpose by Column	Value creation and Growth	CAPEX and OPEX control	Performance monitoring and improving	Corporate Activities Management	Financial sustainability and administration
Quality of the product		1	1		
Lean Logistics			1		
Brand Strenght				1	
Diversification				1	
Growth	2				1
Profitability	3	1			1
None					3

Exhibit 58: Own elaboration with Board Software

To better understand the power of link of the indicators developed in the process with the actual objectives of the company and the issue addressed by the Strategic Plan, it is necessary to involve in the analysis another dimension of the codebook: *Consistency.*

KPIs need to impact performance in the proper direction and should be correlated with desired outcomes. This correlation makes explicit the linkage between driver KPIs and outcome KPIs and gives executives greater confidence in making decisions[117].

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[117] Eckerson W. (2009), PERFORMANCE MANAGEMENT STR ATEGIES How to Create and Deploy Effective Metrics, TDWI. www.tdwi.org
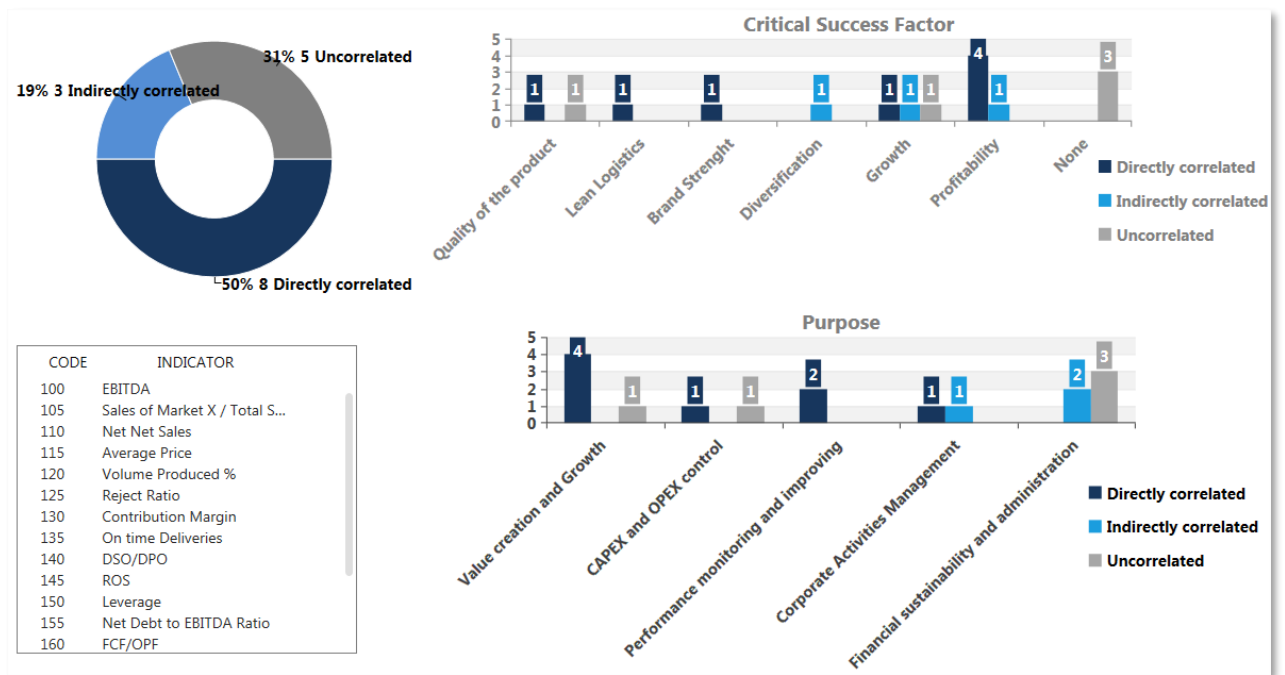
Exhibit 59: Own elaboration with Board Software

From the data coding process emerges that:

- 50% (8/16) of the indicators are directly correlated with their Critical Success Factors

- 19% (3/16) of the indicators are indirectly correlated with their Critical Success Factors

- 31% (5/16) of the indicators are not correlated or weakly correlated with their Critical Success Factors[118]

Analysing the degree of correlation for each Critical Success Factor (top right chart Exhibit 59) it is interesting to notice how each CSF has at least one indicator directly correlated with it, the only exception is the *Diversification* that has just one indicator which is indirectly correlated. *Profitability,* in particular, has 4 over 5 indicators directly correlated which is important for the planning purposes of the management and to let them have a direct control and know the levers to affect this important Critical Success Factor.

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[118] They consider also the Indicators not related to any Critical Success Factor

The last essential consideration to take in account in order to analyse the output of the Strategic Planning process and to answer to the research question is to assess the reliability and traceability of the indicators.

Once assessed their link with the main objectives of the company and their correlation with them, it is important to evaluate the intrinsic quality of the data produced, their completeness and independence. When it comes to the number of KPIs to deploy, most performance management practitioners say less is more; focusing on a few indicators enables planners to understand at a deep level exactly what behaviours the indicator is driving and fine-tune it to deliver better results[119].

To do this assessment the three dimensions considered from the codebook are *Drillability, Confidence Level* and *Source of Data*.
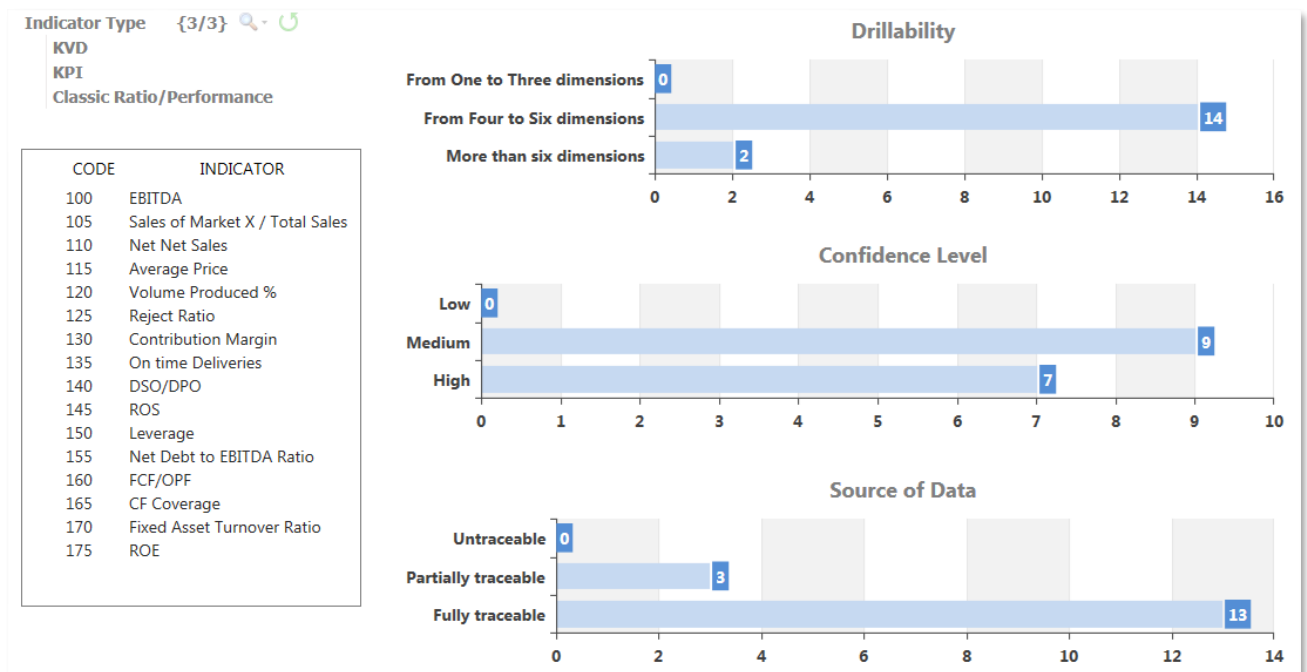

Exhibit 60: Own elaboration with Board Software

The first dimension to consider is the *Drillability*: the capacity to consider an indicator from different, more detailed points of view is at the base of each kind of analysis. At the highest level, planners view graphical representations of the indicators to monitor, strategic objectives and core processes. When they want to go deeper, they can drill down to the next level to analyse a particular situation by slicing summarized dimensional data, typically using a

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[119] Eckerson W. (2009), PERFORMANCE MANAGEMENT STR ATEGIES How to Create and Deploy Effective Metrics, TDWI. www.tdwi.org

ROLAP[120] or MOLAP[121] tool. If they need more detail to complete the analysis or understand the impact of a problem, they can drill into detailed data in operational reports that run against the data warehouse or operational systems[122] [123].

That is why it is important for a set of KPIs to have a complete dimensional set, and, even if the higher the number of dimensions the better, it is possible to say that the number of dimensions present in a metric has a marginal utility. Usually the most important dimensions are related with the Customer, Product and Time.

As it is possible to see from Exhibit 60:

- 14 indicators have a number of dimensions between 4 and 6
- 2 indicators have more than 6 dimensions in its dimensional set.
- 0 indicators have 3 or less dimensions

This implies that the model can reach a good level of drillability and allow different kinds of analysis to the planners.

This is due to direct loading and initialization of metrics from ERP, which has a rich dimensional set, and because of the allocation and normalization of data in order to split some information to a deeper level through specific drivers.

Addressing directly the *Traceability* issue of the Research Question, Exhibit 60 shows that:

- 13 indicators are considered fully traceable
- 3 indicators are considered partially traceable
- 0 indicators are considered untraceable

Source of data identifies where the data comes from. This ensures that the designer of an indicator thinks about the access to data, its reliability and update. If users don't trust the data, they won't use it. The data has to be clean, accurate, and most importantly, perceived as accurate. That is why it is important to provide reference data about them and specify their source.

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[120] Relational online analytical processing
[121] Multidimensional online analytical processing
[122] Eckerson W. (2009), PERFORMANCE MANAGEMENT STR ATEGIES How to Create and Deploy Effective Metrics, TDWI. www.tdwi.org
[123] *Board* Software can adopt both MOLAP and ROLAP structures

The classification of the sample indicators of this research is based on the assumption that an indicator is fully traceable if its figures comes directly or indirectly from a company data source such as the ERP, data warehouse or other planning or reporting tool used for Business Intelligence purposes, even if manipulated with growth percentage or other kind of justified variables in order to make projections.

Indicators which are considered partially traceable are, on the other hand, composed in part by metrics without any kind of initialization, for example a data entry of the planner.

Once the above aspects of an indicator have been addressed, it is time to think about the validity of the indicators, the *Confidence Level*.

To what extent do the indicators enable the planners to assess the given strategic element is an essential point to consider in measuring its utility.

This assessment is subjective but forces anyone who designs an indicator to think about how well it is actually measuring what it was that it set out to measure[124].

The *Confidence Level* was evaluated considering a mix of traceability, number of dimensions, completeness of the indicator and independence from other kind of information.

From this point of view the coding process revealed that over a total of 16 indicators:

- 9 Indicators have a *Medium* Confidence Level
- 7 Indicators have a *High* Confidence Level

The reason at the base of these results, which classify the majority of the indicators as *Medium* confidence level, is linked to the fact that often they are presented as single indicators, not enough integrated in a more holistic view or compared to suitable benchmarks. Moreover, the cases of partial traceability of data or uncomplete dimensional set contribute to this result.

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[124] Marr B. (2006). Strategic Performance Management. Elsevier, Oxford. P. 117

It is interesting to see how percentages of qualitative dimensions changes if the focus is put on the Key Value Drivers:
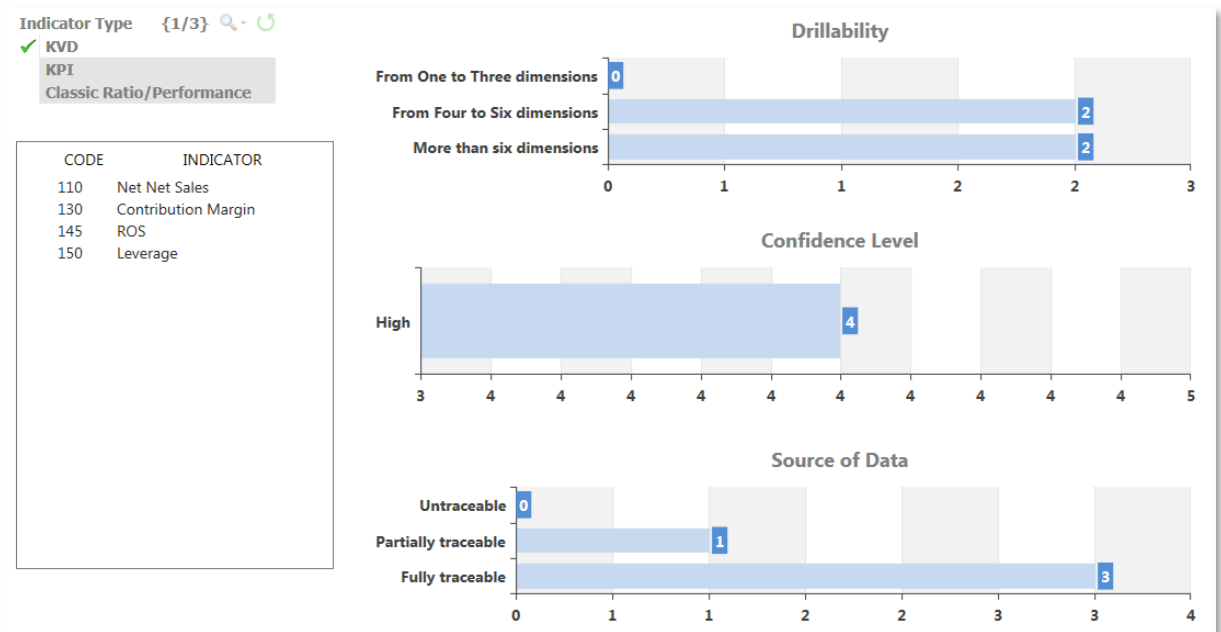

Exhibit 61: Own elaboration with Board Software

Conclusion

This paper meant to analyse the concept of Strategic Plan from a practical and technical point of view in order to show how an instrument of Corporate Performance Management could be determinant in the planning process through the use of algorithms and data to support decisions.

The first step was to examine the literature around the Strategic and Business Plan to understand which are the main levers, the expected results and the reasons why it is an essential instrument for the application of the business strategy and the performance monitoring of a company.

In fact, the drawing up of the Strategic Plan, as part of systematic strategic planning initiatives, contributes towards improving the quality of management's strategic aims and directing the subsequent implementation actions, improving, in conclusion, the corporate performances[125].

The theoretical analysis allowed to understand the direct and unavoidable link between the concept of Strategy and the one Planning as Porter states[126] and how the qualitative dimension and the quantitative one should be developed together to draw up an effective and useful Strategic Plan.

Moreover, another important matter that this paper wants to underline is the dynamic nature of the Plan, which should be an instrument to follow and review periodically, for example when deciding on a particular action to undertake or situation to cope with[127]. This is strictly related with the decision of examining a CPM tool for its draft.

The Business Case considered for the empirical analysis was the one of a manufacturing company which draft its planning figures yearly taking advantage from a CPM Tool.

The empirical analysis had two main objectives.

The first one was to go into the logics of the planner and the CPM tool, intentionally in a technical way, in order to understand really which could be the needs of a user that deals with these activities and to show the potentialities and solutions of the instrument.

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[125] Borsa italiana, 2003. *Strategic Plan Guide, www.borsaitaliana.it.* p. 02
[126] Porter M., 1996. What is strategy. Harvard Business Review.
[127] International Federation of Accountants, Malaysian Institute of Accountants, 2006. Business Planning Guide: Practical Application for SMEs. p. 5

The second one was to examine the output of this Strategic Planning Process in order to answer to the Research Question exposed in the Method paragraph:

Can a planning model designed on a CPM Tool improve the reliability and traceability of output data and establish a link with the main objectives of the company?

The definition of the Research Question was based on the characteristics and issues that the Strategic Plan should address according to the literature, especially *Borsa italiana*[128]: the link between planning and strategy, as underlined before, the data traceability and the data reliability, one of the explicit requisites of the Strategic Planning Guide of *Borsa Italiana*[129].

To answer to the research question, a Content Analysis method was applied considering mainly the guidelines of Krippendorf[130] and the consideration about KPIs and Strategic Performance Management of Marr[131].

The results of the research show that, with the use of a CPM tool, creating a link between the Success Factors that the management considers Critical and some quantitative indicators it is possible to directly address particular issues and understand the main variables that affect it.

The model presented links 13 indicators over 16 with a CSF of the company and 11 over 16 of them are directly (8) or indirectly (3) correlated.

The building of a metric/indicator follows particular steps with specific variables: following a reverse path and knowing the degree of correlation between each metric and CSF the planner can directly intervene using the right levers. Without knowing precisely the process followed and the relation between the strategic elements and the planning ones it would be hard to make reliable projections.

From the point of view of the reliability and completeness of the information the research showed how the multidimensional structure of a CPM tool is important to improve the degree of completeness of the metrics and enhance the power of information presented.

All the indicators illustrated have more than 4 dimensions as presented in the discussion of the results.

This is the outcome of an allocating process driven from the CPM tool that allows a normalization of the data coming from external sources and of a planning workflow that

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[128] Borsa italiana, 2003. *Strategic Plan Guide, www.borsaitaliana.it.*
[129] Borsa italiana, 2003. *Strategic Plan Guide,* www.borsaitaliana.it. P.8
[130] Krippendorff, K. (2004). Content analysis: An introduction to its methodology. SAGE, London
[131] Marr B. (2006). Strategic Performance Management. Elsevier, Oxford.

considers all the important dimensions of analysis for each particular section and can integrate all the steps. This permits different kind of analysis for growth, profitability and cost savings even if this information would not be split in the data loading or in the planning process because of the high level of detail required.

Despite this deep level of detail and integration, the results of the dimension *Confidence Level* (9 *Medium*, 7 *High*) are not particularly positive. This because in the model the different indicators presented as single information are not enough integrated with each other or compared to suitable benchmarks; these are 6 of the 9 *Medium* cases, the remaining 3 are considered not completely useful because of an incomplete level of detail.

At last the research shows positive results from a traceability point of view: 13 over 16 indicators are considered fully traceable, which means that the planner knows exactly the source of data considered in the data initialization. This is allowed from the data integration offered by the CPM tool which reveals itself a useful instrument to collect and normalize different kinds of data sources in order to make the information available for the Strategic Planning purposes.

The model presented in the research is just an example and has different limits.

Firstly, it could be more complete from the perspective of content.

It does not consider important indicators mentioned by literature for the effective measurement of the company performance in a planning context.

The financial indicators not present in the model of the research can be divided in different groups.

There are profitability indicators such as *ROI (Return On Investment)*[132] [133] [134], the classic profitability performance indicator given as ratio between the operating profit and the invested capital, which gives a measure of the capacity to remunerate both the equity and the debt capital; in addition, the R*OA (Return On Asset)*[135] [136] gives an idea about how efficient management is at using its assets to generate profits.

[132] Guatri E., Marinelli C. (2001). Costruire il Business Plan, IPSOA Editore, Milano. P. 25

[133] Borello A., 2009. Il business plan, dalla valutazione dell'investimento alla misurazione dell'attività d'impresa, McGraw-Hill Education. P.339

[134] Guzzetti E. (2002). A monte del Business Plan, Franco Angeli Editore, Milano. P. 49

[135] Guatri E., Marinelli C. (2001). Costruire il Business Plan, IPSOA Editore, Milano. P. 25

[136] International Federation of Accountants, Malaysian Institute of Accountants, 2006. Business Planning Guide: Practical Application for SMEs. P.48

The efficiency indicators not considered are the *Inventory Turnover*[137] [138] [139] which measures a company's efficiency in terms of inventory management and generation of sales, and the *Trading Ratio*[140] that measures if the sales volume is compatible with the equity capital and it is the ratio between these two metrics.

Other important metrics are the liquidity indicators such as the *Current Ratio*[141] [142] [143], ratio between current assets and current liabilities that shows if the company is able to use its current assets to repay its current liabilities, and the *Quick Ratio*[144] [145], an indicator of a company's short-term liquidity that measures a company's ability to meet its short-term obligations with its most liquid assets, for this reason it excludes inventories from current assets.

At last, to measure the indebtment of a company an indicator considered by literature is the *Long-term debt ratio*[146]: it is a measurement representing the percentage of a company's assets financed with loans lasting more than one year, it provides a general measure of the long-term financial position of a company.

From a strategical point of view the model is not considering other operational Key Performance Indicators and Key Value Drivers important to let management assess the value generation of the company considered the industry in which it is operating.

From the point of view of the sell out for example it is not considered any method for the *Forecast Accuracy*[147] calculation and the use of *MAPE*[148] in order to assess over time the quality of the prediction and understand how to fine-tune the metrics analyzed. Other important indicators are the *Expected Sales* and the *Sales Risk* that allow to understand if the coverage of the stores and warehouses is appropriate or if there is a *stock out* risk.

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[137] Guzzetti E. (2002). A monte del Business Plan, Franco Angeli Editore, Milano. P. 42
[138] Guatri E., Marinelli C. (2001). Costruire il Business Plan, IPSOA Editore, Milano. P. 20
[139] Borello A., 2009. Il business plan, dalla valutazione dell'investimento alla misurazione dell'attività d'impresa, McGraw-Hill Education. P.337
[140] Guzzetti E. (2002). A monte del Business Plan, Franco Angeli Editore, Milano. P. 43
[141] Guzzetti E. (2002). A monte del Business Plan, Franco Angeli Editore, Milano. P. 42
[142] Borello A., 2009. Il business plan, dalla valutazione dell'investimento alla misurazione dell'attività d'impresa, McGraw-Hill Education. P.336
[143] International Federation of Accountants, Malaysian Institute of Accountants, 2006. Business Planning Guide: Practical Application for SMEs. P.48
[144] Guzzetti E. (2002). A monte del Business Plan, Franco Angeli Editore, Milano. P. 149
[145] Borello A., 2009. Il business plan, dalla valutazione dell'investimento alla misurazione dell'attività d'impresa, McGraw-Hill Education. P.336

[146] Borello A., 2009. Il business plan, dalla valutazione dell'investimento alla misurazione dell'attività d'impresa, McGraw-Hill Education. P.337
[147] Chen Z. (2004), *Assessing Forecast Accuracy Measures*. Iowa State University, Iowa
[148] The mean absolute percentage error

A Sales and Operational Planning (S&OP) approach has a role of balancing demand and supply plans at an aggregate level. It means considering a process to develop tactical plans that provides management the ability to strategically direct its businesses to achieve competitive advantage on a continuous basis by integrating customer-focused marketing plans for new and existing products with the management of the supply chain[149]. That is why integration is the essential part of a successful planning process. To monitor the performance related to these dimensions, indicators such as *Weeks of Coverage* of the warehouses, based on the forecast week by week, or *Target Stock Level* assume a central role in the logistic management of the supply chain. They allow to really understand which are the needs of each single geographic area in terms of quantity to sell and can be used as effective planning levers. These concepts are also useful in the light of a Netting and Reorder planning in which the *Extra Stock* is an important KPI to consider to net all the purchase reorders from the production, managing in an efficient way the inventory through the geographical areas. The trade-off between Extra Stock and Sales Risk should be evaluated from industry to industry to understand which is the inventory policy that a company means to follow.

In this sense, the model described in this paper does not consider all these planning variables and follow a different path to build the metrics. By the way, this is not a limit of the Software considered, that actually have the tools to develop more complex environments and is fully customizable according to the Business needs.

Another limit, as discussed mainly in the Financial Section, is that the model does not consider in a proper way the qualitative dimension of the Strategic Plan and it is too focused into an internal point of view.

A CPM tool could be a beneficial instrument to develop competitor analysis based on quantitative metrics. Considering external sources of data, it would be possible to load useful metrics to use as benchmark and be continually updated on the market trends. Moreover, the multidimensional structure, as in the case of the CSF case presented, helps to link each quantitative measure to a qualitative variable and in this way, it is possible to close the gap between strategy and planning and create an effective Action Plan monitoring the performance over time.

In conclusion, considered the remarkable potentialities of this kind of instruments and the complete flexibility that this research tried to present, it is advisable a new approach to the

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[149] Wikner J. (2017), *Sales and operations planning in the process industry*. Linköping University, Linköping, Sweden

Strategic Plan, a multidimensional and dynamic approach that can go into level of details and precision hardly achievable without the use of particular softwares.

The aware mix of forward-looking strategy and accurate planning method can help companies to reach reliable projections useful for a sustainable competitive advantage.

KPI Desc	KPI Code	Indicator Type	CSF	Consistency	Unit of measure	Measurement Type	Purpose	Confidence Level	Source of Data	Drillability
Net Net Sales	110	1	5	1	1	1	1	1	1	2
Average Price	115	2	3	1	1	2	4	2	1	2
EBITDA	100	3	6	1	1	2	1	1	2	2
Sales of Market X / Total Sales	105	2	4	2	1	2	4	1	1	2
Volume Produced / Volume Sold	120	2	1	3	2	1	2	2	1	2
Reject Ratio	125	2	1	1	2	1	3	2	1	2
Contribution Margin	130	1	6	1	1	2	2	1	2	2
On time Deliveries	135	2	2	1	2	1	3	2	1	2
DSO - DPO	140	3	6	2	2	2	5	2	2	2
Fixed Asset Turnover Ratio	170	3	5	2	1	1	5	2	1	2
ROS	145	1	6	1	1	1	1	1	1	1
ROE	175	3	6	1	1	2	1	1	1	2
Cash Flow Coverage	165	3	7	3	1	3	5	2	1	2
FCF OPF	160	2	5	3	1	3	1	2	1	2
Leverage	150	1	7	3	1	3	5	1	1	1
Net Debt to EBITDA Ratio	155	3	7	3	1	3	5	2	1	2

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