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**Control systems in SMEs and their
relationship with internal and
external events: the Alifax S.r.l.
case.**

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Introduction

This thesis addresses the importance of management control in general and, especially, in cases of contextual complexity, such as in M&As situations (intrinsic source of complexity), or during times of crises (extrinsic source of complexity). Both these factors are seemingly pushing organizations towards more compelling demands of management control.

It is well known that firms growing in complexity by means of mergers and acquisition face consistent needs of control and of integrated management control systems. Regarding Information Systems, after an expansion of the company, an integration process has to be started, but this does not automatically imply a single structure imposed at all levels. Organizational integration refers to the ability to efficiently exchange information and data across the various business areas, optimizing time and resources (Giacomazzi et al., 1997). From a more human point of view, the new control systems must also be based on a cultural analysis of the two merging companies. We will see how these analyses need to be started much earlier than is usually expected, i.e., during the preliminary agreement phases, to be then completed during the post-merger settlement. In this regard, we will introduce the important concept of "human due diligence" (Cicellin & Consiglio, 2012).

Moreover, exogenous crisis poses a growing need for control. The well-known year 2020 has created many situations of change and has put a strain on the organizational structures of companies. Never before so much attention had been paid to management control. In times of crisis, in fact, regardless of the intensity with which companies are affected, strong external events lead people to re-evaluate their strategies, to ensure their adequacy and pursue continuous improvement.

A central role is therefore played by management control and costing control systems. In accordance with Hansen et al., "A cost management system is primarily concerned with producing outputs for internal information users, using inputs and processes needed to satisfy management objectives". It is, therefore, an instrument that is not imposed from the outside, but which is adopted independently by the organizations, which establish the criteria. The advantage of a clear and well-structured cost and

control system lies in the information power towards the ordinary management, the planning and control area, and the decision making responsible (Hansen et al., 2007).

This paper focuses on the case of Alifax S.r.l., an Italian company that grew both through a major merger and by the most recent Covid 19 push. Supposedly, according to theory, this should be a case in which the need of well-functioning management control systems is highest and represents the key to success. The thesis will therefore investigate if this is the case, to what extent, and what explains the company's success.

The occasion to conduct this case study arose from an internship opportunity at the Italian company Alifax S.r.l., with registered office in Polverara, Padua. This company operates in the field of laboratory diagnostics, in particular in the areas of haematology, microbiology, serology and autoimmunity, producing machinery specialized in chemical analysis in the medical field. We can therefore imagine the important challenges faced by Alifax during the year 2020. In this year, due to the Covid-19 virus, many companies could not avoid bankruptcy, while others, as we will see, have encountered opportunities for growth. One of the main locations of Alifax is represented by the industrial plant in Nimis (Udine), where the diagnostic tools, the object of the business, are produced. Two different realities coexist in this operational headquarters: one linked to the production of machinery and one linked to intense Research and Development projects.

The history of this plant will be deepened in Chapter 1, as it is the result of a partnership that began in the nineties between Alifax and a company that at the time was called Sire Analytics Systems. Sire was acquired by Alifax and, finally, a merger took place, so that today there is only one company reality. The plant is a cost centre, whose data are counted together with those of the entire company in the final balance sheet. However, production and R&D are subject to further internal control that monitors factors such as the use of machinery, dedicated personnel, and performance indicators. By staying in this facility for a few days and conducting a series of semi - structured interviews, I was able to delve into these systems and personally see how they work. The main purpose of this paper lies in the study of a real business case, which brings with it all the problems related to a small North- East Italian reality that is facing times of great changes. The main difficulty is represented by the fact that Alifax was born as a family business, but

which in recent years (and thanks also to the strong push brought by the recent pandemic) has acquired the characteristics of an increasingly structured and international company. An example of this is the current transition project to a new IT management system, that is the well-known SAP. This topic will be appointed frequently, due to the strong impact it will have on future management control.

The work will be organized as follows: The first two chapters will be dedicated to the background to the study. The first chapter will review the literature on the theme of Mergers and Acquisition and how such important events influence the practices and behaviours of those who are subject to it (at all levels) as well as its implications in terms of control. This section will rely heavily on theory, but attempts will be made to adapt it to the story of Alifax. The second background chapter will be dedicated to the recent contributions that addressed the topic of Covid, or similar crises, and its relation to control systems.

The third chapter will introduce the case study, focusing on Alifax as a company and contextualizing the economic environment. We will focus on financial performance, trading methods, customers and the role that the global pandemic has played in the results achieved in 2020.

The fourth chapter will be entirely dedicated to the description of the control systems currently in use by Alifax. They were seen personally during my internship and their explanation will include both information of a formal nature and many opinions collected from the managers that dedicated time to explain the various processes to me.

Finally, the fifth chapter will aim to understand the control needs that are currently missing, in order to align the information exchanged with the desired objectives. The key factors that led Alifax to this success will also be investigated.

Throughout the whole analysis, attention will be paid to insert within a theoretical framework what has been learned in the company. In some cases, there will be adherence, in other cases the limits of literature will be evident in this practical application, precisely because the theory study serves as a guide, but it's not sufficient, as a critical eye is needed to grasp the real needs of each organization.

A discussion of the results obtained will be drawn in the final conclusions.

Chapter 1 - Theoretical background: M&As, culture and control

1.1 Few words about M&A

The Mergers and Acquisition theme is extensive and complicated. In this first background chapter, the focus will be on the concepts of "Acquisition" and of "Merger by acquisition", as the Alifax case starts from these two types of operations. Then we will analyse the process of integration of different organizational cultures that occurs following an acquisition. To do this, mainly existing literature on this subject will be used.

Merger and acquisition strategies are widely used in Italy and have been growing continuously in recent years. In 2019, approximately 740 transactions were concluded in the first nine months of the year (+ 18.4% compared to the same period in 2018) (KPMG report, 2019). The KPMG report relating to this period highlights how, in Italy, the evident acceleration in the trend of M&A is due to the use of these operations as a growth lever by Small Medium Enterprises, as evidenced by the significant increase in terms of number of operations, even if small in size. Unfortunately, the advent of the pandemic crisis imposed a general halt to M&A processes in the first half of 2020. Despite this, starting from the second half, there was a record resumption of operations at a global and Italian level, so that 2020 closed with a total invested volume of approximately € 48 billion, in line with 2019 (EY, February 2021).

Max Fiani, KPMG Partner and coordinator of the M&A Report, states that "Italian entrepreneurs are realizing that size is a strategic variable for competitiveness and that M&A accelerates growth and internationalization paths"¹ and declares himself confident in this regard, especially from a defensive point of view with respect to the interference of large foreign multinationals (KPMG, 2019).

Anyway, according to the PWC report, the growth prospects for 2021 appear moderate, as there are uncertainties linked to the various waves and variants of Covid-19, the consequent lockdowns, the increase in unemployment and the tensions in international relations (Pwc Italia, 2021).

¹ Autonomous translation from Italian to English.

In Italy, the regulation of M&A follows a double source: the European Directive 2017/1132, which lays the foundations for a common legislation between the Member States, and the Article 2501 and following of the Italian Civil Code, which explores this issue from a national point of view.

The concept of acquisition is very intuitive, it happens when “one company purchases most or all of another company's shares to gain control of that company” (Kenton, 2020). The acquisition is of a technical nature when the assets of interest are part of a specific department and are related to a particular product or production phase. It is, instead, financial when the object of interest consists of stock or shares owned by the target company (Giacomazzi et al., 1997).

Regarding the Merger by acquisition, the European regulation, in the article 89 of the directive, defines it as “the operation whereby one or more companies are wound up without going into liquidation and transfer to another all their assets and liabilities in exchange for the issue to the shareholders of the company or companies being acquired of shares in the acquiring company and a cash payment (..)” (Normative 2017/1132/EU, article 89)². In this type of operation, the acquired company becomes part of the holding, without the constitution of a specific new company (as it happens for "mergers by the formation of a new company"). Therefore, in the specific case of this study, the company Sire Analytics Systems is the acquired party, which legally ceases to exist with the acquisition, as it was incorporated into an extended version of Alifax S.r.l.

Sire Analytics Systems (hereinafter only Sire) operated in the same business as Alifax, i.e., in the production of diagnostic systems, in the Udine area. The main difference between the two, was that Sire was involved in the design and construction of diagnostic products, while Alifax was of a commercial nature, therefore dedicated to the purchase and sale of material. When, in 1998, Alifax acquired this company, a "horizontal merger" took place, that is merger that happens between two or more parties operating in the same business. The main reason that usually characterizes this type of choice relies on the desire for dimensional growth of a company. In fact, with the acquisition of Sire, Alifax becomes a leader in the production of tools and consumables for the ESR line,

² Autonomous translation from Italian to English.

achieving a double result: the reduction of competitive pressure and the expansion of its presence on the market.

Such a complicate operation brings with itself pros and cons, in every form an acquisition is made. Talking about horizontal ones, among the advantages we can find, for example, the cost advantage deriving from the purchase of a structure already set up compared to the creation of a new plant, the expansion of market share and of visibility, fiscal benefits and, above all, the opportunity of creating a synergy, that allows companies to share common resources, technologies and know-how, all distinctive skills acquired only through the experience in a particular business (Pegoraro, 2009).

On the other side, more than disadvantages, we should use the term “difficulties”, as there are some obstacles to face but that can be solved if well managed. The main risk is the one related to the harmonization of two different corporate structures, as both are experiencing an intense and confusing moment. Particular attention must be paid to the corporate culture, in order to reach a point of dialogue between two structures which, before their merger, were used to thinking and acting in compliance with their own values and objectives (Pegoraro, 2009).

1.2 Cultural aspects and theories

It is rather intuitive how much the cultural factor can be decisive for the success of a corporate merger, especially during the post-merger integration process. The clash between two different cultures is a controversial phenomenon, which on the one hand can determine the failure of the entire operation, while on the other it can be an opportunity for value creation.

M&A operations can be carried out within the same country or can be cross-border. Clearly, when two nationalities have to find a way to coexist, the integration processes are more complicated, as factors such as personal values, communication habits and closure / openness to the “different” are included. Working with different nationalities means dealing with some variables which, sometimes, can be completely discordant, such as those proposed by Hofstede in his "Dimension of cultural values". In his study, Hofstede analyses the impact of some cultural characteristics on working behaviour, trying to draw up numerical rankings for the various states (now reaching 72). These

variables are: Power distance acceptance; Individualism / collectivism; Long / short term orientation. Masculinity / femininity; Uncertainty avoidance. Even within the same country these orientations can be different, but generally the gap is more evident between different nationalities (Nardon & Steers, 2009).

Since this paper has as its protagonist a company that has carried out an intranational merger, the topic of clash between different national cultures will not be explored further, but it is always good to keep in mind the existence of these variables, also because Alifax is no stranger to internalization, as it has many foreign branches. Although international mergers present greater problems, they have an indirect advantage, which is the attention and care that is given to the “integration issue”. In these cases, in fact, as the clash is evident, it does not risk being underestimated, and specific procedures and dedicated personnel are established.

Conversely, mergers operating in the same country, while still presenting a high degree of differences and contrasts, often do not receive the attention they deserve. We already know that the Alifax expansion project has been successful, but such a result is not to be taken for granted. Statistically, M&A operations already fail at the agreement stage in a percentage ranging from 50% to 80%. In addition, acquisitions often fall into crisis during the post-merger integration phase, even if the deal was well concluded. Focusing on this second phase, according to a 2016 Pwc report, the main causes behind a failure are: “lack of preparation, the absence of a detailed integration plan, insufficient staff and funds dedicated to integration, too little attention from senior executives and cultural incompatibility” (PWC Corporate Governance, 2016).

When we talk about integration, we are referring to two possible dimensions: task and human integration (Birkinshaw et al., 2000). Tasks integration allow the coexistence of two different financial and control systems in a single organizational reality. As for the human aspect, this is clearly more complex and unpredictable to handle, as it relates to issues such as stable working relationships, employee’s satisfaction and harmonization of different cultures.

1.2.1 The family business

Another very interesting aspect of this type of operation is the organizational structure of the companies involved. A multinational, for example, will follow very different processes from those implemented by a public company or a family business. Following this, it's clear that in the case of M&A the crucial variables for the conclusion of the agreement will be very different among the various types of company. Given the family nature of the company examined in this paper, we will focus on this typology.

When it comes to family business Mergers and Acquisitions, there is a key word: trust. This value is the basis of all relevant decisions and must be taken into consideration for the behavioural responses of employees. Indeed, as family businesses have a highly trust-based environment, organizational trust is critical to the success of the operation (Lind & Lattuch, 2020). In an M&A context, the feeling of vulnerability and loss of control is inevitable, which is why employee trust in the organization is seen as a valuable asset. In fact, especially in relations with the consumer, family businesses are perceived as more loyal, not only towards the customer, but also towards themselves first and foremost. The factors that contribute to the creation of trust within family realities derive from the fact that, traditionally, the family is seen as the bearer of values such as: honesty, fair treatment and respect for promises (Azizi et al., 2017).

Specifically, each phase of Merger has its characteristics related to trust. In the pre-Merger phase, when the dynamics of the future company are established, an excellent starting point would be represented by a good interpersonal relationship between the two senior managers. In the merger phase, unfortunately, the salient information about integration planning is often not shared with employees. This is dictated by a need for confidentiality, but it is very harmful for the social acceptance of the event, because it is in this phase that the consent of the staff towards the change is collected. Lately, in the post-merger phase, all the previously studied integration processes are finally applied. This is the moment in which the trust of the employees is put to the most severe test, because those who made the decisions must demonstrate that these were directed towards the interest of all. Generally, the biggest trust issues occur in the acquired company. According to Azizi et al., when this concerned a familiar environment

"employees find it easier to accept a situation of vulnerability in times of uncertainty, if they trust the leadership and / or the owner" (Azizi et al., 2017).

People trust family businesses because there is a belief that, in addition to the important strategic reasons behind an M&A, this type of company takes very seriously corporate values such as long-term orientation and employee care. When a family company is looking for a partner, the financial offer will be only part of the decisive variables, as the sharing of common values will also be taken into great consideration. Along with this, there is also the "owner-to-owner relationship" issue. In family businesses, the "owner" assumes great importance, who is the main representative of the entire company. Through this person (even if accompanied by other managers) the most relevant decisions are made and usually they are personally involved in negotiations and operations. In a company acquisition, a good relationship between owners lays the right foundation for a transfer of trust of employees to the new managerial line.

Azizi et al. in their conclusions arrive at the creation of a framework to improve trust in family firms during M&A, which is represented in Image 1.

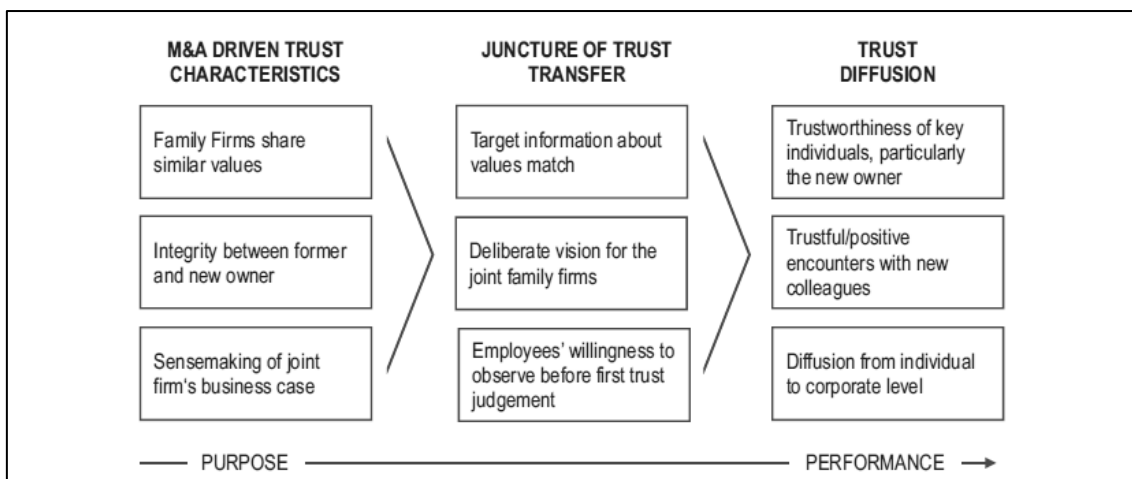


Image 1 – A strategic framework to enhance trust during M&A in family firms, (Azizi et al., 2017).

The first column contains the fundamental variables for a "passage" of trust from an acquired company to the new emerging company, they are: the sharing of values between the companies, a good owner-owner relationship and the commitment of management to create a general sense of belonging to the new reality. By aligning these

three aspects, the right foundation is created for the next steps. The second step is the “juncture of trust transfer”, in which the protagonists are the employees. Here they can verify that the points of the previous phase have been carried out correctly and in the interest of the whole company and proceed with an alignment of their objectives with those of the new emerging organization. If these steps are carried out with due care, we finally reach the "trust diffusion", or rather the creation of an environment in which there is collaboration and trust in the new reality. Fundamental importance for employee participation is placed on the reliability of the key people involved in the project.

In conclusion, each M&A operation has its particularities, but in the context of family businesses there seems to be a general pattern that unites them all and it is closely linked to the level of trust and communication that can be established. To improve the trust processes of these companies, leaders must respect some simple but fundamental aspects: the congruence of values between the purchasing company and the target company, the relationship integrity between the two owners, the willingness to listen to employees (especially if belonging to the target company) and the active involvement of the staff on both sides.

1.2.2 The human due diligence

Before starting an M&A process it is necessary to carry out careful evaluations. Usually, the first factor analysed is the one related to financial and economic convenience, while the problem of managing the human resources involved is often underestimated. This lack of interest is detrimental especially in the planning phase, because here the resources are dedicated only to financial and strategic assessments, as it is a common belief that organizational differences and the integration of human resources should eventually be addressed and resolved only in the post-M&A phase. This erroneous belief bears its consequences, as a survey conducted in 1987 by the executive search firm Egon Zehender International indicated those related to "people problems" among the most common causes of failure in this type of operation (Cicellin & Consiglio, 2012).

M&A have a very strong power over the structures, processes, policies and cultures of a company and can lead to feelings of frustration and uncertainty in the staff, especially

the operational one. Managing all of these psychological processes is essential to fight resistance to change and decline in productivity. In this regard, Marks and Mirvis (1985 and 1986) talk about a "merger syndrome" that spreads to every organizational level, also reaching managers and executives, who are not exempt from the change of communication system and from the inevitable loss of autonomy. In fact, in the stages following the legal announcement of the combination, there is a high turnover rate, as the managers and executives themselves are subjected to a period of strong self-assessments and a "talent flight" is now considered a natural part of the process, especially in the acquired company (Cartwright e Cooper, 1996).

What is needed in these cases is to pay more attention to human processes, bearing in mind that, when two different working realities meet, most of the workers' worries are related to the risk of losing their job. Usually, in fact, the preparatory dynamics of these changes only concern aspects of a "hard" nature, even when it comes to Human Resources, such as, for example, the methods of remuneration between companies, the types of contracts, the calculation of severance pay, etc. However, certain types of problems cannot be evaluated in exclusively quantitative terms. There are also "soft" aspects of human resources that concern values, attitudes, knowledge and responsibilities that are often considered irrelevant by managers. Not having a complete assessment of the human resource already in the agreement phase, would mean tackling the problem of integration in an incomplete and inefficient way, as an optimal start is essential in order not to frustrate the organizational efforts of the subsequent phases. (Cicellin & Consiglio, 2012).

To solve this, we need to introduce a new concept, the "soft due diligence" (Cicellin & Consiglio, 2012). It is a tool for reducing information asymmetries in M&A contexts and it is a real analysis process, which collects business data that are useful for the evaluation of critical elements. It is characterized by being a multifaceted tool, suitable for assuming different characteristics according to specific economic needs.

To make the most of this concept, it needs to be extended to the "soft due diligence", which is made up of "human" due diligence and "cultural" due diligence. Human due diligence consists of a database of the target company, which collects demographic and socio-economic information in order to identify the strengths and weaknesses of the

various employees, finding a meeting points, useful to understand their needs. It also considers the characteristics of the managers involved, in order to create the best goals (Cicellin & Consiglio, 2012).

Cultural due diligence, as you can guess, was born with the aim of "offering the corporate culture the same relevance and the same objective evaluation given to the quantitative assets of a company" (Schein, 2001). Mergers and acquisitions, in fact, create real cultural shocks, often due to the imposition of one corporate culture on the other (usually the predominant one is that of the acquiring company). A cultural fit analysis allows us to face the challenges of the pre-M & A phase that can ruin the deal. The greatest intuition of this approach is to anticipate the integration and its problems already at the negotiation stage, with a preventive perspective.

The best way to start is studying the profile of the acquired company through the aspects that employees care most about (activities, rules, values, etc.), using the so-called "cultural network". This step is important for the compatibility analysis between the two companies, which can determine the convenience or not of the project. Another qualitative tool for understanding the health of an organization is the "climate survey", which involves direct action, by interviewing people (individually or in groups) about their fears and expectations regarding upcoming changes. Similar to this, but more articulated, is the Cultural Health Indicator. It also conducts opinion polls among employees, and it has four objectives: to evaluate and measure the critical elements of a particular organizational culture, to measure the psychological response of employees to the hypothesis of an M&A, to analyse the relationships between employees and their values and objectives and, finally, identify the resources on which to focus. Although the effectiveness of this type of evaluation practices is now well known, it must however be remembered that they present some difficulties of application, which can partially invalidate them (Cicellin & Consiglio, 2012).

In particular, there are three problems. The first concerns the secrecy and confidentiality component that characterizes the entire pre-M & A negotiation phase. In this period the discretion in the disclosure of information is essential to avoid the interference of competitors in the negotiations, and this leads to an inevitable information asymmetry. The second is a time issue. This type of practice, precisely because it is based on people

and not on facts and numbers, requires a lot of time and accuracy, scarce resources during the conclusion of the operation, partly as explained in the previous point. Finally, there is the multiplicity of motivations behind an M&A. They contribute to the ambiguity and sense of uncertainty of this organizational change, especially since the main motivations generally concern market convenience and not the acquisition of specific human assets that could result from it (Cicellin & Consiglio, 2012).

These pre-M&A tools do not aim to resolve all the existing cultural contrasts but want to use them to achieve a situation of dialogue, so that the groups involved feel heard and the foundations can be laid for an efficient communication system, which is essential for a company in general, but also for facing problems that will inevitably arise in the future.

1.2.3 The three stages of the process

Keeping in mind that each M&A operation has its history, its geographical area and its positioning on the market, there are usually three macro phases that are pursued: analysis and preparation phase, transition phase, evaluation, and reorganization phase (Meckl, 2004).

In the first step, the type of operation to be completed is decided and the best strategy is chosen, based on the risks and benefits of the operation. The decision must be taken from a long-term perspective, both from an economic and a human point of view. A vision and mission compatibility analysis must also be carried out with the company with which the transaction is being considered, verifying that the new emerging company will have common and non-conflicting objectives. Although this step may seem trivial, we have already seen previously how much the setting of a solid initial foundation is important for the success of an M&A. To minimize the problems emerging at this stage, a useful tool to introduce is the “playbook”. It is used to outline the path, foreseeing times, costs and possible criticalities that could emerge during the entire transition phase. This allows to have a guideline that is always present, even in emergencies. Generally, the playbook is divided into themes (management, ICT, offices, HR, logistics), so that there is always a trace of the progress made in a certain area and a report of what still needs to be done before reaching a certain deadline. This procedure allows

the creation of phases. Once the essential elements of the preparatory phase have been defined, the focus moves on to the actual M&A operation (Augusta et al., 2016).

In the transition phase, companies set themselves the goal of following the playbook forecasts, to manage the operation consistently as scheduled. To reach the set target, some transition elements are crucial. The first is the creation of an integration mechanism between companies that takes into account both characteristics, to avoid causing an immediate contrast between two different realities that have to collaborate with new interaction dynamics. The transition must be gradual and controlled. The second step is to create a management team to manage the transition. A dedicated team highlights the care that must be reserved for these operations in order to enforce the playbook as much as possible, but above all to make the change perceived at all levels. The team's goal is to create a climate of belonging, conveying the values (previously established) that are the basis of the new company reality. To avoid creating a situation of prevalence of one of the two companies over the other, it is always preferable that the team includes managers of both companies involved. This is because, during M&A operations, people reach high levels of stress, due to fear of change and the sense of inadequacy towards something that breaks the patterns everyone was used to. These feelings of distrust are common on both sides this is the reason why the same care and attention that is paid to external variables (such as the approval of customers and stakeholders) must also be reserved for the human processes that take place internally. From a practical point of view, cooperation could be encouraged through a performance analysis system, which would be useful for understanding which are the essential Human Resources for the emerging reality and that it also allows to assign benefits to those who demonstrate that they are pursuing the integration with proactive and "group" oriented actions. To do this, it is necessary to undertake a clear and linear communication system, so that there is a standard procedure that is the same for everyone, even at the operational level. Of fundamental importance, as we will see later, is the use of the same IT system by all users. In these times it has become increasingly essential to integrate everything related to ICT, as the surplus value generated by a functioning information system that connects the parts of the same process (or even different but related parts), easily exceeds the resources used

to achieve this goal. In all of this, management must engage in these proceedings indirectly, that is, through the management team. At this point we can move on to the last phase, that is the one that will consolidate the results obtained so far and determines the final outcome (Augusta et al., 2016).

The final phase, which deals with evaluation and reorganization, is closely linked to the work done before this moment, as it will go on smoothly and spontaneously only if the necessary attention has been paid to the previous phases. In this phase, the transition that leads to having a single company from the aggregation of two entities is formally closed. To ensure that the operation was carried out correctly, not only the economic / statistical results should be verified, but above all it is necessary to ensure that everyone has assimilated the new working dynamics and the new objectives. It is therefore recommended to continue using measurement tools, so that weekly or monthly the management team can make briefings and verify the progress of the operation, by summarizing the results obtained, the critical issues faced, those resolved and those still to be closed. It is essential that everyone perceives as the ultimate goal the creation of a single company, that operates in a clear and defined way, with a mission and a vision felt by all, in order to achieve a common result (Augusta et al., 2016).

We have therefore seen how a M&A process should be approached according to the main literature, that is, by basing important decisions on precise cultural analysis, made before the actual merger, not after the conclusion of everything. Below, we will see the most known theories regarding the importance and the coordination of management control systems with the new dynamics brought by an M&A transaction. Past studies have indeed shown how, once two companies have been merged, "post deal value creation hinges on the firm's ability to effectively combine operations of the two previously separate firms" (Weber et al., 2011).

1.3 M&A and management control

A change in management control can always be difficult for employees who are affected by it, especially when the new model is more formal than the previous one. According to Adler and Borys (1996), the key to the success of this operation lies in the attitude that management has towards subordinates and in the message that transpires from this decision. There are two possible perceptions by the staff of the new MC model. The first is "enabling" and the second is "coercive". Clearly, only the first has a positive nature. When a new process is presented as a tool to grow the employee personally and professionally, this will be benevolent towards him, as the novelty introduced will not be seen as a threat / punishment, but as an opportunity for improvement. On the contrary, when workers are not adequately informed about the reasons that lead to a decision, a more formal control can be seen as "coercive", therefore as a simple tool imposed from above which has the sole purpose of controlling employees more and force them into a system of rules. And if this type of change of control occurs following an M&A operation, the management of the issue is even more delicate.

An interesting framework for promoting "enabling" perception is proposed by Väisänen et al., (2021). In their work, they analyse a complex reality, namely the integration processes between two very different companies, following an acquisition. In this case, the two companies also belong to two different countries (Canada and Finland), so the different cultural context must also be considered. By cross analysing their results with those resulting from other studies, the authors deduced that "enabling perceptions should be viewed as the result of a process influenced by managerial intentions, the development process, and the daily use of MCs" (Väisänen et al., 2021).

Table 1 summarizes their findings, for which the implementation process of the new control systems takes place on three levels: managerial intentions, development process, daily use. When the new control is the result of management's mistrust of employees, they perceive the change as punitive. The opposite occurs when management's intentions are explicitly declared as based on trust, and not on lack of it. This is the starting point for a good integration of processes: the transparency of intentions, which should be linked to the good of the company and the growth of employees, or to external factors to be addressed (M&A, compliance with IFRS, etc).

PHASES OF MC IMPLEMENTATION	CONCEPTUAL DEVELOPMENT
MANAGERIAL INTENTIONS	<p data-bbox="555 367 1326 434"><i>To allow for enabling perception, managerial intentions must be based on trust.</i></p> <ul data-bbox="571 479 1315 618" style="list-style-type: none"> <li data-bbox="571 479 1315 546">• Implementing control to help employees improve in their tasks. <li data-bbox="571 551 1315 618">• Implementing controls to comply with exogenous circumstances (ex. M&A).
DEVELOPMENT PROCESS	<p data-bbox="603 680 1273 714"><i>Trust must also be fostered in the development process.</i></p> <ul data-bbox="571 770 1342 1050" style="list-style-type: none"> <li data-bbox="571 770 1342 837">• To promote employee trust: experimentation, explaining managerial intentions <li data-bbox="571 842 1342 976">• To demonstrate managerial trust in employees: get them to participate in the process, consider their experience and knowledge as a value, importing old procedures to the new organization. <li data-bbox="571 981 1342 1050">• To demonstrate Manager’s trustworthiness: specific trust-building activities
DAILY USE	<p data-bbox="571 1088 1302 1122"><i>Usable controls activities support daily enabling perceptions.</i></p> <ul data-bbox="571 1178 1353 1317" style="list-style-type: none"> <li data-bbox="571 1178 1353 1317">• Usability is enhanced by design features: allow employees to repair controls themselves, provide them with flexibility to accomplish a task, manage them with internal and global transparency.

Table 1 – Framework of factors that foster enabling perceptions during changes in MCSs, Väisänen et al., 2021.

In addition to this, during the development process it is essential to establish a climate of trust, which can be promoted in three ways. The first way acts directly on the involvement of employees, for example through experimentation, so that the new model adopted is the result of the best of the alternatives tested. It is then necessary to make them perceive the trust that management has in them, by listening to their proposals, enhancing their experience, and maintaining the old procedures that are still efficient. In the last way, it is the management that must prove itself worthy of the trust of the employees and this can be done through specific activities built for this purpose. Even if trust needs to be consolidated over the years, through the consistency of

behaviour, showing attention to this detail right from the start is an excellent starting point. Finally, in order to maintain the enabling perceptions built up to this point, it is necessary to study a pattern of control activities that can be used every day. The design of such actions has as main characteristics: the autonomy given to employees to arrange the control themselves, the flexibility given to carry out a task, and the provision of internal transparency (Väisänen et al., 2021).

Another study conducted in 2012, analysed the post-acquisition phase of 67 Finnish SMEs, with the aim of understanding the role of newly created MCSs in the company performance (Lämsiluoto et al., 2015). The researchers conducted a statistical analysis, collecting web-based surveys preceded by short telephone interviews. To measure MCS development after M&A, they were asked to indicate via a Likert-type scale to what extent some techniques had changed after the acquisition. There were six techniques listed: Quality management, Product profitability analysis, Customer profitability analysis, Activity-based costing, Budgeting and Balanced scorecard. From the empirical data it emerged that "MCS development has a positive relationship with M&A success among small companies"(Lämsiluoto et al., 2015). A precise control system is helpful during the conduct of an M&A, because it allows to bring out any organizational problems and help the success of the operation. Furthermore, in contrast to the contingency theory (for which MCS has little importance in smaller companies), the study showed that even small companies benefit from MCS during M&A, despite reduced resources, because a good control plan helps to defeat the uncertainty typical of this operation.

Finally, another study completes the picture of control systems during a moment of M&A, focusing on the importance, in this context, of the evaluation of "softer issues" in the alignment of management accounting and MCSs (Moilanen S., 2016). Each organizational reality has its own specific needs following an acquisition / merger, and in this context two types of integration are necessary. The first is linked to the MCS, in order to correctly guide the new group of people formed, the second concerns financial control, which in the case of acquisition only can be limited to financial reporting. A system integration process may seem like something purely technical, but as has now been highlighted in this thesis, the interpretation of the new control systems by the

employees and the psychological response they implement are also of great importance. The case examined concerns an acquisition made by a Finnish high-tech firm into a German firm in the mid-2000s. Through a system of interviews, the opinion of the people most involved in the acquisition was collected in both companies, in order to have a perspective both before and after the operation. The questions asked concerned the role of these people on the acquisition and the changes that occurred during the integration phase. The various responses were compared and a difference in interpreting the change emerged. In the buying company, employees focused more on rational aspects to create sensemaking, such as accounting issues. In the acquired company, however, people expressed more personal opinions, such as the missing of lost colleagues or hopes for professional growth. This demonstrates how interpretative frameworks can change from person to person, and the difficulty that therefore emerges when it comes to harmonizing different perceptions and expectations. To improve the integration process, it is necessary to recognize the role that emotions and all soft issues play in developing new control systems. The author concludes that "in effectively aligning accounting and control systems, the accountants in the acquiring firm need to avoid the" rationalist trap "mentioned by Maitlis et al. (2013) of ignoring the important role of emotions possibly evoked by changes in one's own work, not only in the content of accounting or the formal structures of controls " (Moilanen S., 2016).

1.4 The process of Sire acquisition by Alifax S.r.l.

After many theoretical discussions, a real case of acquisition (and subsequent merger) which took place in Northeast Italy will be presented below. Alifax acquisition of Sire followed a rather peculiar process. Sire was originally a small electronics company founded by Mr. Breda and two other partners in the city of Udine. Alifax, instead, was a company already well established in the territory, but it was only of a commercial nature, therefore aimed at the purchase and sale of diagnostic materials. Over time, Alifax began to become more and more interested in Sire and the meeting between Mr. Enzo Breda and Mr. P. Galiano led to a fruitful partnership lasted for years. An opportunity for synergy was seen by the two entrepreneurs, who combined their skills and created a situation in which, de facto, Alifax was Sire's only customer. Over the years, Alifax has begun to commission new product lines from Sire, always investing in

new projects and collaborating solely with the manufacturing company. In 1998 Alifax acquired Sire. The investment required a lot of organizational resources, but it was immediately clear that it would be a winning investment, as the two companies were two different sides of the same coin. In 2012 a new production plant was inaugurated in Nimis, in the province of Udine, to replace the old one and in 2015 the official merger between the two companies took place. This led Alifax and Sire to be a single company, able to produce and trade their own products. A control integration process was immediately necessary. The two realities, in fact, were very different and Alifax needed to monitor the progress of the plant, also considering the great limit imposed by the geographical distance (about 180 kilometres).

At this point, however, it was also necessary to address the problem typical of all technology-related companies, a problem that has not yet found a solution. Alifax sells very young and internally created products, which are often not perfect on the first try. Especially during the launch of a new product, it is absolutely normal that, after being put on the market, it experiences complications or malfunctions, which require the replacement of some components. Monitoring was (and it is) difficult, because between different years there are different materials used and prices paid to suppliers. Although the problem tends to diminish with experience and the stabilization of processes, there always remains a variable of uncertainty when it comes to new and technological products, subject to market preferences and the risk of obsolescence.

A first overall reporting structure took place in 2006, after the acquisition but before the merger. It combined the commercial / administrative functions of Alifax with the production ones of Sire. The work was quite complex, as it was the first time that Alifax faced a productive organization, having always been devoted only to trade. After the merger, anyway, the reporting model implemented in 2006 was no longer usable for systemic reasons, as it considered all aspects, but of two different organizations. A new model is currently in development.

We talked a lot in the previous paragraphs about corporate culture as a risky aspect during M&A. It is therefore interesting to see how the dynamics unfolded in this case. As for the cultural aspects, it can be said that, in this case, the merger of the two companies had a very positive and natural response. Clearly, it must be considered that

many factors have been favourable. In fact, we are talking about two Italian companies (which therefore do not have to face the obstacles deriving from the presence of two different nationalities), which are both operating in the same sector and that are part of a market that has always grown steadily and that shows signs of financial security.

In general, there were no major cultural clashes, mainly because, at the organizational level, the reality of Sire at the time of the acquisition was not very far from the ones of Alifax, that is, an Italian, small, family-run economic company. Usually, the main disagreements that arise during a merger concern two main factors, that are the imposition of the values of the acquiring company and the layoffs suffered by employees, especially in the target company. In this case, the geographical distance and the different nature of the two offices have allowed the Udine plant to maintain a certain degree of "identity", at least internally, and a very important factor for this was that the original employees of the plant were all kept, integrated in the new reality and joined by new staff, following the expansion of the processes. Having avoided these two types of clashes allowed a peaceful start to collaboration.

It is clear that changes of this intensity always bring some inconvenience to adaptation, but in general it can be said that the Udine workers were wise in seeing the new company as an opportunity for growth rather than a threat, also because this merger gave them the resources to improve their work, while respecting the values and culture they were used to.

Clearly many things have changed from an MCS point of view. Alifax current controller was already present in the company at the time of the merger. When he arrived in the company, a few years before the merger, he had to do a lot of organizational work, because at that time there were no accounting system for cost centres and a system had to be formed, without any basis. Since the merger was easily predictable, the controller started developing a structure right from the start that could fit two types of cost centres, both manufacturing and commercial. When the merger actually took place, this system was extended gradually and it count today an astonishing number of costs centre subcategories, that are currently over 560. This system is still in use today and has become very fragmented over the years, in order to ensure the correctness of the information entered. In fact, it works through a complex system of references between

sheets of the Excel software, which link the data entered in the various cost centres to the related documents (for example invoices). The system has expanded more and more because so did the company. To give an example of how the cost allocation process can be articulated, just think of the maintenance service offered by Alifax and guaranteed by contract to the customer. Prior to the merger, Alifax did not deal with the operation of the product and did not have a pre-set model for understanding the costs. Each maintenance technician issues an invoice relating to an article code, which is linked to a product, which is in turn linked to a product line (ESR or MIC). To allocate costs to a specific product line, it is therefore necessary to create more sub-categories for each product. The same principle applies to all other business areas and so the allocation system has become more and more complicated over time. Sire's workers, therefore, after the expansion of their production reality, had to start entering costs and the various data very precisely. This is linked to a very important aspect of this thesis, that is the enormous importance that the personal contribution of an employee can bring to a company, if everyone within it works for the same purposes. Once the objectives are known, it is always possible to create something new and useful, as in the case of creating a complex system of cost allocation, which allows everyone to analyse production data and draw conclusions, in order to link operations and administration together for a common purpose. To do this, however, it is necessary that all colleagues record their activities and data correctly, so that these ones have a true informative value. The first change after the merger was therefore related to the sense of responsibility given to employees in providing timely and correct information.

The second aspect of the new post-merger control systems is linked to the concept of autonomy of decision. Alifax, as anticipated, had never managed production processes before the merger with Sire. So, as regards reporting, the management left high discretion to Sire's employees to create it, because they were used to production reporting and had the right skills to understand the best system to adopt. Instead of imposing a new framework from above, Alifax tried to make Sire understand the opportunity brought by the expansion they were facing, namely the one of improving processes, investing in research and implementing a new, increasingly accurate control system. The plant workers well used the opportunity, and many changes were made in

the years following the merger, such as more accurate bill of materials, more organized warehouse inventory, and a new reporting system tailor-made for each area.

This led to the enthusiasm of Sire 's managers, who received the autonomy to build personalized reports and the possibility, thanks to new resources, to expand and get better. One of the most important aspects to take into consideration, in fact, is that when a merger occurs, most of the adverse reactions of employees occur due to a perception of loss of autonomy (Weber et al., 2011). It can be said that Alifax in this case used a winning strategy by giving new entrants a task of responsibility. However, if on the one hand the freedom given has led to a profitable start of collaboration, on the other hand it has led to the current fragmented situation of information, or rather to the non-integrated reporting system which will be explored in the following chapters.

Chapter 2 – Theoretical background: Covid-19 and control

2.1 Relationship between internal control and external crisis factors

Internal control activities are used to ensure the correct implementation of a company's strategies and plans, or to determine their change if necessary (Merchant & Van der Stede, 2007). It is clear, therefore, that in the event of a crisis these processes increase in terms of attention and importance. A crisis is an event that is perceived by managers as violent, unexpected and disruptive, and represents a threat to internal objectives and the balance with stakeholders (Bundy et al., 2017). Given the importance of these phenomena, more and more studies have been made on crisis management, in order to understand not only how to deal with the crisis once it occurs, but also how to behave to prevent it.

The first interesting study to mention is the one of Janke et al. (2014), who studied the relationship between an interactive use of management control and the perception of the negative effects of an external crisis. The crisis considered in this study is the economic one of 2008 - 2010, and the two hypotheses to be verified are that "Perception of negative external crisis effects influences the interactive use of MCS" and "Interactive use of MCS influences the perception of negative external crisis effects". By interactive management we mean a highly inclusive and transparent process towards workers, which bypasses the traditional concepts of hierarchy and therefore allows a greater flow of information. This type of management is used to stimulate dialogue and mutual learning and to encourage the creation of new ideas (Simons, 1995).

Through a statistical system, the results show how both hypotheses are proved. When a company perceives the threat of an external crisis, it will do everything it can to maximize processes and spread efficiency at all levels. For this reason, an intensification of the use of interactive MCS has been observed in conjunction with the first signs of a crisis. Likewise, it has been shown that when these interactive systems are present in the company before the advent of a crisis, the negative perceptions arising from the emergency tend to delay. This happens because, through the involvement of all

company areas, the managers are always aware of the general trend of the organization, so that the sense of uncertainty, that triggers negative emotions and perceptions during a crisis, is limited. This study is therefore useful to understand how a well-constructed control system that provides for the participation of all company components is connected to a more controlled and positive response to an external crisis (Janke et al., 2014).

Regarding the topic of dealing with a crisis efficiently, Bundy et al. (2017) developed a framework that incorporates two important perspectives typical of the crisis management literature, one internal and one external to the organization. The internal aspects focus on business dynamics for risk management and technology adoption, while the external ones concern the relationship with stakeholders. Since typically these two perspectives have developed separately, the task of this framework, apart from having the purpose of synthesis, is to integrate them into a single context. In Image 1, this scheme is represented graphically and there are three macro time phases to consider: Precrisis Prevention, Crisis Management, Postcrisis Outcomes.

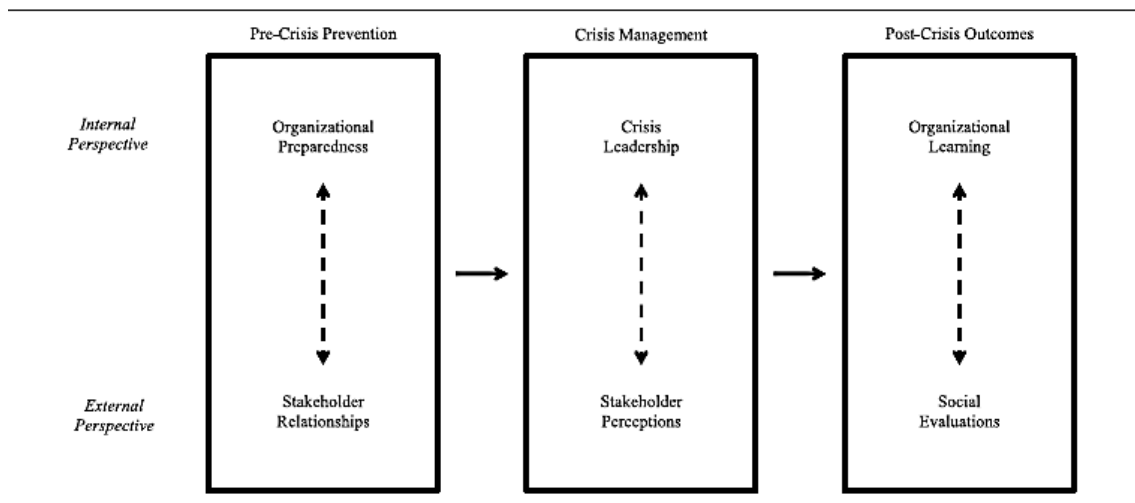


Image 1 - Internal and External perspective of the crisis process, Bundy et al., 2017.

2.1.1 Precrisis Prevention

For the first phase, the internal perspective concerns Organizational Preparedness. Due to the complexity of today's organizational systems, running into a crisis seems inevitable sooner or later, and it is therefore good to be prepared for any sudden event. In this regard, there are two aspects to consider, as they can be decisive for the onset of a state of crisis. The first is "Organizing for reliability", because building a high-reliability organization means having more chances to deal with a crisis correctly. The second is "Organizational culture and structure", since the acceptance or not by a company of a misconduct, often deriving from managerial aspirations or power conflicts, is of fundamental importance in the prevention of crises. In short, for the internal part of the preventive phase, the determining elements for an organizational preparedness consist of high reliability of the structure and cultural and organizational factors that discourage illicit and opportunistic behaviours (Bundy et al., 2017).

Turning to the external perspective, it was said that this concerns the relationship with the stakeholders. When there is a good relationship between company and stakeholders, the likelihood of a crisis becomes more distant, as flexibility, complicity and clear communication allow the stakeholders to be introduced into the preventive process. On the other hand, when the relationship with outsiders is negative, for example when stakeholders set expectations that are too difficult to reach, it can be created tensions that favour the crisis. It is important to remember that the commitment to good collaboration must come from both sides and the organization must be transparent and sincere, while the stakeholders must moderate expectations towards stimulating but achievable goals (Bundy et al., 2017).

2.1.2 Crisis Management

In the second stage, the heart of this topic is explored, that is the real Crisis Management. Most of the literature is found here and the first factor that has been noticed is that all the precautions useful in the previous phase to prevent a crisis are also useful in the actual crisis phase, when there are such disruptive events that they cannot be avoided. Again, it is necessary to divide the processes into internal and external. The key word for understanding the internal perspective is "Crisis Leadership". In particular, the theory emphasized the relationship between crisis perceptions and leadership, as

leaders who face crises as threats usually react more emotionally and are therefore more limited in their efforts, while leaders who accept crises as growth opportunities are more open and flexible. The personal characteristics of the leader can also influence the management of the emergency, as the ability of a head to keep the group cohesive and collaborative is a fundamental requirement. Moreover, leadership efforts would have significantly diminished if the high - reliability structure previously mentioned had been built in advance. Then there are several conditional factors that affect leadership and that can determine the failure or not of facing a crisis. They are, for example, a good board of directors, a CEO who knows how to make decisions quickly, strategic flexibility and good internal communication with subordinates (Bundy et al., 2017).

In the external perception, instead, the key word is "Stakeholder Perceptions", that is how they react to crises and how organizations can influence these perceptions. There are multiple elements to consider in this regard: Crisis response strategies, Crisis type, Endowed positive evaluations, Stakeholder identification, Powerful stakeholders and the media, Crisis spillover (Bundy et al., 2017).

In the context of Crisis response strategies, the literature focuses a lot on attribution theory, whereby people, when an unforeseen negative event occurs, are naturally in charge of searching for the triggering causes (Weiner, 1986). This habit can lead to negative emotions when managing an emergency, as stakeholders might use too much time to verify the organization's accountability in the matter, adding pressure in an already critical situation. It is therefore necessary to clarify in advance the various areas of responsibility and, above all, in the event of a negative event, the search for the "culprits" should be postponed until after the resolution of the crisis. In any case, it is very important how an organization confronts liability charges. Scholars have identified two main types, one defensive and one accommodating, among which there are obviously many middle grounds. The more defensive strategy generally has less acceptance of responsibility in unleashing a crisis, through the use of denial and scapegoating. The more accommodating strategy, on the other hand, assumes a more responsible role in engaging in a crisis, through excuses, proactive attitudes and promises of improvement. In between these two extremes there are clearly many different shades of mixed strategies, for example, by recognizing some responsibility of

the organization, but to a limited extent. Another strategy for responding to the crisis lies in the correct weighting of the times. It is empirically demonstrated that when the organization itself releases information on the crisis or even when preventive responses are provided, the negative perceptions on the part of stakeholders are lower. Finally, even at the level of public image there can be response strategies, such as transparent communication and symbolic gestures of stance. However, it is always necessary to consider the entire social and psychological context of the parties concerned, as each situation presents different habits, problem solving strategies and emotions involved (Bundy et al., 2017).

Then there is the variable of the type of crisis faced. People, to understand and accept big events, tend to group them into categories, in order to have a perception of greater control and understanding over them (Bundy and Pfarrer, 2015). As with the response strategies described above, there are numerous situational characteristics of a crisis, including, for example, severity, intentionality, or controllability. A classification proposal usually used by stakeholders includes three groups, based on responsibility and which follow a growing pattern. The first is "victim crises", when the organization is overwhelmed by external events that cannot be avoided. The second is "accidental crises", which does not acknowledge the company's full blame, but for which it could have put more effort into preventing or addressing the crisis (negligence problem). The third is "preventable crises", for which the structure involved has a strong responsibility towards the crisis that has emerged (Coombs & Holladay, 2004).

The next item is Endowed positive evaluations. In the event of a crisis, one factor that can have a cushion effect on the organization's negative evaluation is a system of positive evaluations received over time. They materialize, for example, in social status, reputation and reliability and, unless during a crisis one of them is specifically violated, they can help to make the company perceive as less guilty. Many studies have focused on this aspect. For example, Pfarrer et al. (2010) have shown that companies with higher reputations have suffered less from market losses during a crisis. Anyway, this is not a rule, as sometimes a high reputation can create too high expectations and constitute a burden. The effectiveness of positive evaluations depends on factors such as the size

and type of crisis, the organization's response strategy, its history and the diversity of stakeholders.

The fourth variable concerns the Stakeholder identification. Generally, when they feel particularly involved in processes, they are less likely to blame or grieve an organization if an emergency occurs. Conversely, a low identification perception, will lead them to feel like external subjects, who, in a crisis situation, will give great importance to the identification of causes and culprits. It is good to remember, however, that the benefit of this identification tends to diminish with the intensification of the crisis, as high levels of stress lead people to think more individually.

The next point concerns the relationship of the organization with the Powerful stakeholders and the media. During a time of crisis, not all stakeholders are the same, because some have more social influence than others. In fact, they could take actions, such as boycotts or protests, in order to use their power to influence general opinion. The media, on the other hand, are all potentially dangerous in conveying news, as they are very prone to a sense of scandal when a state of crisis begins to emerge. It is therefore necessary to carefully observe and manage relations with these two types of subjects.

Finally, there is the Crisis spillover. Much literature has focused on the repercussions of crises on subjects who should not be involved but who have some characteristics, such as belonging to the same sector, which do not allow them to stay out of it. For example, if a company becomes responsible for a serious polluting accident that brings to light illegal waste management, business partners will also be overwhelmed by the bad image. This negative effect can be mitigated by defensive actions, the presence of strong governance and self-regulatory institutions.

Both perspectives emphasize common elements such as emotional reactions or the difficulty of communicating during a crisis, although the authors explain how the main difference lies in the fact that "the internal view focuses on managers' sensemaking efforts to resolve the crisis, and the external view focuses on stakeholders' sensemaking and perceptions " (Bundy et al., 2017).

2.1.3 Postcrisis Outcomes

The last phase of this process is the post crisis outcomes analysis. Again, the starting point is the Internal Perspective, which is based on Organizational Learning, that is the positive use of what was understood in dealing with a crisis, both good deeds and mistakes. In this context, there are several aspects to consider. The first is "The learning process", for which having faced a crisis helps in the awareness that prediction of causes and solutions are necessary to manage emergencies, although it can happen that in the event of excessive shock, learning skills are clouded by negative emotions. The second aspect concerns "Conditions on the learning process", as there is evidence that learning is conditioned by factors such as the extent of a crisis, the clarity of the causes and the impact on the public corporate image. Finally, there is "Vicarious learning", that is a type of learning that takes place not only through personal experience, but also through the observation of how peers react to a crisis, like a group of companies belonging to the same geographic market. It would be interesting to note, for example, if, following a crisis, learning increases due to collaborative behaviour between the various companies, or if this decreases, because peers detach themselves to keep a low profile and avoid negative associations. From an internal point of view, it is than possible to learn a lot from a crisis, always keeping in mind the existence of specific variables that can influence the type and intensity of the lessons (Bundy et al., 2017).

From an external point of view, however, the most important aspect is the Social Evaluations, that is how the company managed to emerge from a crisis at a reputational level. Much influence is placed on the response strategy of the organization. For example, when stakeholders perceive the company as highly responsible for the crisis, adopting a defensive and negative strategy would not be efficient, because it would only create conflict. In this case, an accommodating and proactive strategy would be better. The extent of the crisis also has its importance. When the trust placed in a company is damaged because of incompetence, an accommodating strategy is recommended, while more defensive strategies are more effective after integrity-based breaches. The role of emotions must always be considered, as crises that have had a great impact will make the process of repairing the relationship between company and stakeholders very complicated. From this research of the post-crisis social results, it emerges how important the response strategy implemented by the organization during the

emergency period is for the restoration of relations once the crisis has passed. Furthermore, the research shows how, inevitably, in the face of great responsibility on the part of the company, the social damage is more serious (Bundy et al., 2017).

The purpose of this framework is to highlight the possibility of the integration between internal and external perspectives and how all the elements of the three phases (before, during and after the crisis), usually considered separately, are actually linked together and they are all part of the same process. Like Bundy et al. (2017) say in their work "a model that simultaneously considers the influence of a crisis on learning, social evaluations, and performance would be valuable."

2.2 The impact of Covid-19 pandemic crisis on MCS

On 11 March 2020, the General Director of the World Health Organization declared for the first time the state of Pandemic due to the new coronavirus SARS-CoV-2, which had started circulating in China already at the end of 2019 and had quickly spread all over the world. This type of infection attacks the respiratory system and is characterized by a high contagiousness and a high mortality rate, so, among the measures adopted by states during this emergency, the most widely used was social distancing and, in many cases, quarantine (Senato della repubblica italiana, 2020). The impact this virus had on society and on the economy has been enormous. For example, from a business point of view, many companies have adopted the strategy of smart working, that is a system of connections that allows many employees to work directly from home. Work from home had already existed for a few years, but it was only with Covid - 19 that this exploded, becoming a new subject of business studies. The difference between the pre-existing smart working and the one imposed by the pandemic, is that in the second case the event took place in a sudden and overwhelming way, without the possibility of a job design study at the basis of this change. The various jobs that can be done from home should be analysed and appropriately organized. With Covid-19, instead, there was a massive need for smart working, which required a great effort in defining, allocating and supervising activities (Alam M., 2020). Working from home creates mixed feelings in employees and supervisors. For example, on the one hand there is the convenience of not having to commute, but on the other hand there is the sense of isolation that can

arise after some time, especially when a worker has just been hired at the time of abandonment of the office. Similarly, if virtual meetings through platforms such as "Zoom" or "Microsoft Team" are faster to organize and allow many distant people to connect, it is also true that in case of technical problems (such as slow internet, disturbed sound, etc.) frustration rises. The control activities during the smart working period have changed and it can be of different types. The most common mistake supervisors can make is to base evaluations on input measurements, such as the amount of work done, or the number of reports processed. This method pushes employees to focus on tangible results alone, lacking flexibility and understanding for the new situation. In addition, because the changes brought about by the pandemic are neither gradual nor incremental, managers usually tend to use existing rules and procedures to evaluate performance, constituting a brake on the possibility of innovation. It is clear that work organization is changing, and some of the changes that have occurred in recent years will remain even when the health emergency will be over, as evidenced by the demands for mixed-mode (in-person and remote) work, even after the strong Covid-19 period. Specifically, it's interesting to think about how job design and monitoring systems will change. Not all roles are suited to smart working, and job redesign should be based on organizational goals and the ability to make connections. Within this scope, there are four categories of work (Alam M., 2020). The first concerns well-defined tasks that involve a high degree of individuality, which can be easily performed from home and were already in use before the pandemic. These tasks include all activities belonging to a routine, such as data entry or information processing. The second category includes those jobs that involve collaboration with colleagues, but at the same time they are very well defined, such as projects or marketing on specific products. In this case, it is necessary for people to communicate with each other and share information, but not every day, so that meetings can happen when colleagues are physically present in the office, while the remaining days can be worked remotely (mixed mode). In this context, however, the procedures are only effective if the managers involved are able to manage the distance through regular feedback, review of progress, etc. In the third category there are jobs that require constant interaction between employees, because even if the problem is well defined, solutions need to be compared frequently. This complex situation involves an interactive exchange of views, which occurs through personal

contact, as in the case of regular planning and decision-making. Once the Covid-19 emergency will be over, these tasks will return to the office. Finally, there is a type of work for which the nature of the activities is integrated, but it still has sequentiality in its phases, which are part of the same project and can be assigned to specific individuals. As they are able to be independent in their activities, they can be performed in separate locations, while maintaining active communication. The future of job design consists of the study of these four categories, but not only. Added to these are technological innovation, social change, and any contingent variables that may emerge in the coming years (Alam M., 2020).

Another interesting aspect is the response of SMEs to the Covid-19 crisis and the role that digital transformation (DT) has played in this scenario. Regarding this, Klein & Todesco (2021) conducted a global research through a literature review. The pandemic faced has brought many disruptions, but also many new opportunities, especially in digital, so much that Butt (2020) highlights how companies are now regretting not having invested in digital transformation before the advent of the crisis. Among the various findings, a very interesting one is the formulation of a SWOT model for SMEs, made to understand how they dealt with the advent of pandemic and the subsequent DT. Image 2 shows graphically the Klein & Todesco analysis.

Starting with the weaknesses, the most obvious of these is the difficulty for a small company to possess financial resources. Then there is the problem that they lack the right knowledge to fully exploit the potential of DTs, partly linked to the previous point. For SMEs, in fact, it is difficult to request the intervention of an external consultant and internally there is little awareness of how to apply digital solutions to business processes. Another element is the lack of some managerial skills, which hinder the adoption of adequate infrastructures, tools and techniques. Then there is a very interesting aspect of small companies, and it is the tacit knowledge of employees that creates over the years. This resource is very important to the company but, being non-transmissible, the loss of key workers that can occur during the pandemic represents a significant vulnerability. Furthermore, there is a kind of "Liability of smallness", in the sense that when the organization is small, external events have greater repercussions on it.

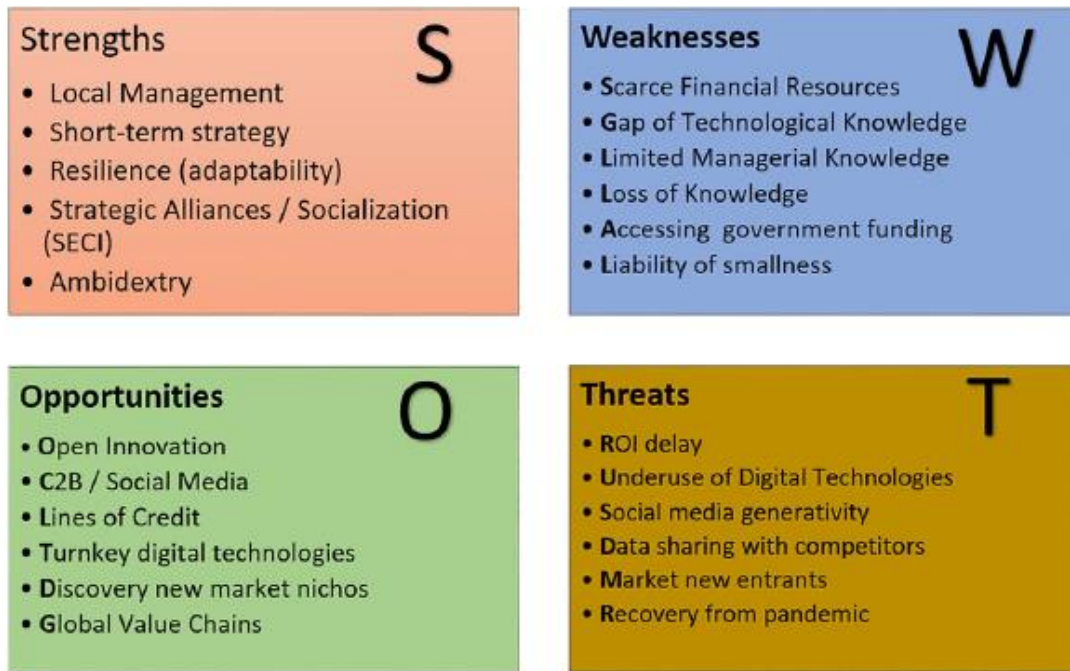


Image 2 - SWOT analysis for SMEs to face digital transformation and COVID-19 pandemic, Klein & Todesco, 2021.

Turning instead to the strengths of SMEs, the first concerns the centralized management of activities. When there are few intermediaries between the parties involved (managers, employees, customers, etc.), gathering information and making arrangements can be easier. Furthermore, the small size allows the use of less formal channels and direct contact with the local market. This more personal management system attributes a certain speed in adapting to changes, such as those brought about by digital innovation. This relates to the concept of Resilience and Flexibility. Small companies are made up of flexible and generalist people, instead of a rigid and highly specialized staff, especially those with a strategic orientation. They are also used to short-term projects, which can help them respond quickly to new opportunities. Finally, small companies have the quality of Ambidexterity, that is, they can implement changes that are both incremental and revolutionary, in order to maintain success in the market following major changes. Thus, ambidextrous organizations manage to harmonize the experimentation of new organizational processes with the exploitation of their current intellectual capital. In this case, the key word is dynamism, as companies must be quick

and shrewd in identifying new threats, seizing opportunities and optimizing the resources available at that time. A very important feature of SMEs is the ability to forge strategic alliances with partners or competitors. Partnerships solve the problem of scarcity of resources and increase knowledge sharing. Linked to this, there is the opportunity for socialization. When an organization is small it is easier to establish personal relationships, for example through informal chats during the day, both between colleagues, but also between different hierarchical components.

As we have seen, knowing how to seize the opportunities brought by changes is a fundamental requirement for an SME to survive. Thanks to their flexibility and low job specialization, SMEs have Dynamic Capabilities, that is the ability to reconfigure both internal and external skills to deal with rapidly changing situations. In fact, general professionals can be easily reallocated to new positions, and this fosters innovation and the exchange of ideas. Furthermore, SMEs have great potential for Communities of Practice (CoPs), which are groups of people created on the basis of common passions or on a specific topic and come together to be able to share their knowledge and experiences informally. If well managed, CoPs are a source of both innovation and collaboration networks and can be considered a real competitive advantage. Other opportunities for small companies can be the direct use of social media with the target market and the greater possibility of discovering market niches thanks to personal relationships and proximity to small markets.

Ultimately, however, there are always threats to deal with. Among these, the Underuse of Digital Technologies should be mentioned. It is true that SMEs have more access to digital tools, which represent an advantage on all fronts (financial, human resources, relational etc.), but it is also true that these represent a challenge, because they must be managed in the right way. The three main obstacles can be: the incorrect assessment of IT needs by companies, the excessive complexity of the integrated system (which highlights the differences in skills) and any external hindering factors. In any case, the important thing is never to underestimate the potential of IT skills and resources. There is also the issue of the Social Media Generativity. It is well known that social connections are indispensable for a business activity, as they promote visibility, contacts and constructive criticism. It has always to be kept in mind, however, that social networks are

a double-edged sword, as it is also easy to fall victim to defamatory comments (especially in the context of C2B) or incorrect information about the company. Other threats include ROI delay, the risk of sharing information with competitors, new entrants to the market, and the difficulties a small firm may have in recovering from the impact of the pandemic on the economy.

It was observed how SMEs reacted to the pandemic crisis through the SWOT analysis. In order to make the most of the opportunities brought by digital technologies, it is essential for them to pay attention to knowledge management and organizational resilience, remembering that knowledge creation begins at the individual level and then expands to all levels. In their study, Klein & Todesco (2021) also propose two very important advices to help smaller companies to face the digital transformation of the business, now based on data. First of all, SMEs must understand the new social reality and the new market needs brought about by Covid-19 (big data, information services, 3D printers, etc.). Second, companies can create new value streams based on acquired knowledge, for example through new types of communication with consumers or other parts of the business that foster mutual interaction. Organizational resilience is needed to create this "knowledge strategy", which is the ability of a company to adapt during external changes, without being overwhelmed by them but rather using them to create new advantage and strategic plans for the future (Hollnagel E., 2010). To be resilient, a company must have four characteristics. It must be able to respond to events that occur, monitor critical issues, anticipate what is foreseeable and learn from what has happened.

From this premise comes the thinking of Nonaka et al. (2000) regarding how SMEs can develop their knowledge strategy to optimize the digital transformation opportunity. Strategic knowledge is created by three key elements. The first is the SECI (socialization, externalization combination, internalization) process, the second is the settling of a common environment (different from CoPs) to form new knowledge, and finally the obtaining of the right knowledge resources. The processes of the first element will be explored. Two types of knowledge are recognized by Nonaka et al. in the SECI process, one explicit and one tacit. In Image 3 there is a graphic representation of the dialectical process between them.

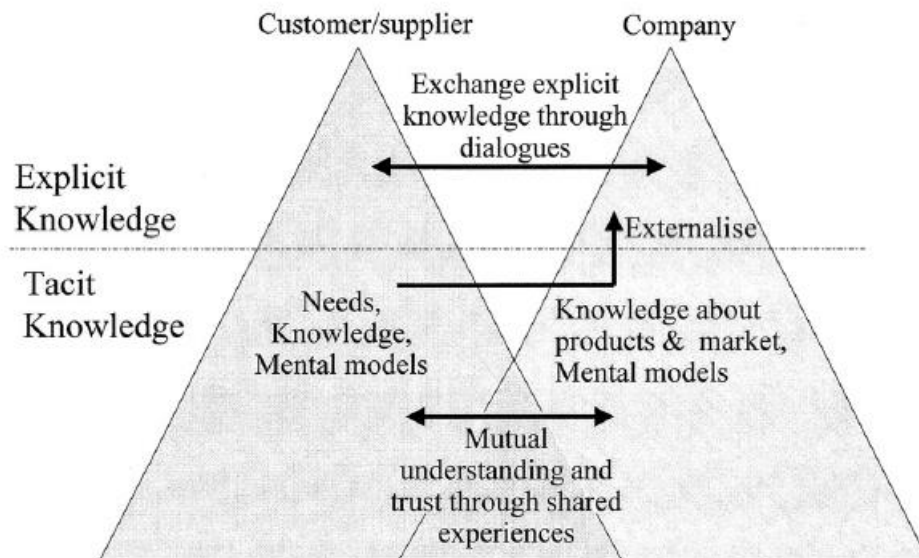


Image 3 - The dialectical creation of knowledge and its interaction processes, Reprinted from Nonaka et al., 2000.

The first component of the SECI process is the Socialization and it has four phases: Accumulation of tacit knowledge (created by managers through market study and dialogue with customers), the Extra-firm moment (in which innovative solutions are sought in collaboration with external stakeholders), Intra-firm moment (in which new market opportunities are internalized in the company) and the Transfer of tacit knowledge (in which all workers are involved in the implementation of new strategies and practices - mindset change). This circular process begins and ends tacitly.

The second component of SECI is Externalization, which instead begins tacitly and ends explicitly. In this phase it is essential the job of business team, since the main objective is to transform the inner knowledge of the company in innovative products and services wanted from the evolving market, explicating therefore how much learned in the operation precedence.

Then there is the Combination phase, by which an all-explicit process takes place. There are two steps: Acquisition and integration (in which managers combine internal

information with external market information, especially through digital tools) and Synthesis and dissemination (in which explicit tools such as manuals, databases, etc. are created to disseminate explicit knowledge).

Finally, there is Internalization, which operates from the explicit to the tacit form. Here, managers spread what they have learned from the outside among their colleagues, primarily through the “learning by doing” strategy, personal experiences and simulations, so that all the workers can absorb the new organizational knowledge, created after so much effort. Through these steps, a strategy based on knowledge management is formulated.

The main purpose of the analysis by Klein & Todesco (2021) is to highlight the importance of flexibility and open mind necessary for small companies to keep up with technological changes and not be overwhelmed by disruptive events such as those of Covid-19. As the authors themselves say “DT's instrumentals are the ability to manage knowledge to unlock digital technologies' full potential, the leadership and business expertise to generate new business models and culture and acquiring knowledge about customers' new demands, to be continually internalized, socialized, externalized, and combined to create new knowledge” (Klein & Todesco, 2021).

At this point, one might wonder how companies are actually reacting to the changes brought about by Covid-19. In this regard, Robles (2020) conducted a study on 21 Mexican organizations, of which 5, through the pandemic, have implemented a radical organizational change. Mexico is an interesting economic context to analyse, both for the difficulties in receiving financing (high loan rates), and for the lack of government aid to small local entities during the emergency. It was the companies themselves, therefore, who put their resources into play to cope with changing project, which demonstrate how companies are realizing that the pre-Covid-19 models are now not very adaptable to the new reality created. The data collected are very heterogeneous, as they include different industries, different company sizes and both public and private sources. In addition, more than 60 interviews were conducted with the managers of the companies involved.

After analysing the data and the five companies that had started a radical process of change, the author came to considerations common to all of them. The first is that senior

managers must be fully convinced of the need for organizational change when starting it. It should not be faced as any other routine aspect, but as a real restructuring project, to be undertaken only if fully aware and willing to dedicate the necessary energy. The second consideration concerns the need of integrating specific management control programs to promote an environment of change. For example, when a company is in an innovative phase, tight or budget-constrained control strategies could hinder the formation and exchange of new ideas. The third aspect noted is that companies going through a radical change tend to rely on external consultants, who become a key resource, especially for those new processes that the company would not have experienced. Linked to this, the fourth point emphasizes the convenience of outsourcing some activities, in order to take advantage of the experience of others without wasting time and internal resources. Finally, once a transformation process has begun, it is important that it is not hindered by cost reduction strategies, as innovation always requires investment. This is why this type of path should only be undertaken when all the internal components agree and are motivated in maintaining the commitment made (Robles, 2020).

A final study may be useful to understand the impact that the Covid-19 pandemic has had on management control and to conclude this theoretical chapter. Geographically, the focus is now shifted to where it all began, namely in China. Taking small businesses into consideration, Alves et al. (2020) developed a pandemic crisis framework that encompasses the various phases of the crisis, stakeholder engagement and the challenges faced during this period. The material was collected through a series of semi-structured interviews with the leaders of six Macao companies and refers to the first months of the health emergency. The questions asked concerned the presentation of the company, the impact of Covid-19 on business performance and how the crisis was addressed. The aim of this study is to formulate an integrated system for dealing with the pandemic crisis by SMEs. The companies involved are heterogeneous and belong to the following sectors: Wholesale and retail, Private education, Hotel, Real estate agency, Law firm, Cafeteria.

The empirical results of this study refer to the three phases of a crisis management that were detailed in the previous paragraph (with the difference that here the last two are

considered together). In the first step, that of pre-crisis prevention, the main challenge is that of sense-making, which includes awareness of certain variables such as preparation for the crisis event, the perceived duration of it and economic losses. When the pandemic began, the perception was that it would have been a short-lived disruptive event. This impression changed quickly, as managers realized that this was not a crisis comparable to the previous ones and that the consequences would drag on for a long time. The most prepared companies were those that had a long history, many employees and experience in dealing with a crisis, or that already had a model for facing the novelty. Instead, the companies that suffered most from the closures were those that did not notice the initial signs of crisis and did not have an action plan for emergencies. In the second step, which is Crisis management, there are many challenges. They include making decisions, making meaning, terminating processes and organizational learning. As for the first challenge, the real problem is not making decisions, but making the right ones for the specific business in which the company operates. Generally, when it comes to important measures, SMEs rely on external advice. Even in the Alves et al. study, among the six companies interviewed, only one did not rely on external stakeholders for strategic decisions. In choosing market strategies, however, many of the companies interviewed expressed the desire to diversify their products, in order to find ways of interacting with customers other than the purely in person way, which is one of the market variables most affected by Covid-19. Another winning decision in times like these is focusing heavily on communication and digital relationships, also through social media. Moreover, some companies have implemented price discount policies to attract customers, while others are evaluating the possibility of changing the business model to make more use of the potential of e-commerce. The second challenge, on the other hand, consists in making public opinion aware of the reasons and the adequacy of the decisions taken. Each reality has its own dynamics and peculiarities, which are not always easily understandable from the outside. To facilitate communication, various tools can be used, such as videoconferencing platforms (especially for internal communication) and social media (for the more external one). Since these IT tools represent the future of relationships, the investments made in this area will not be wasted and will continue to be of value even after the pandemic emergency has passed. The challenge of terminating concerns

the period following the crisis, when the company will need to restore public trust. To do this it will be necessary both a public intervention of help and the collaboration of the company towards smaller commercial activities. Finally, a great challenge for companies is that of, once the emergency phase has passed, learn as much as possible from experience and reformulate the internal organization so that it is more prepared for future crises. For example, all six companies surveyed reported that they will invest in technology and IT tools.

From a practical point of view, this study showed how small businesses in Macao reacted similarly to each other in the face of a crisis. They all tend to include internal and external stakeholders in important decision-making processes, they have learned the importance of the presence of a specific plan for crisis management and all of them are interested in exploring new markets and new types of business (Alves et al., 2020).

This second theoretical chapter wants to focus on a very current aspect, that is the response of companies, especially small ones, to a sudden and overwhelming event, as Covid-19 was (and still is). From the study of the literature, it emerged that companies could take advantage in anticipating periods of crisis through specific plans, because the resources used in prevention are always rewarded by better performance in the event of an emergency. Only with the study and anticipation of processes it will be possible for small companies not only to survive, but also to exploit the opportunities that great changes always bring with them. For example, many companies underestimated the importance of digital structures and communication, but they changed their mind during the period of social distance, when they became indispensable. The key to successfully dealing with a crisis, therefore, lies first of all in prevention investments, which cannot be all-encompassing, but which is already an excellent starting point for limiting future damage. It is then essential that the company adapts to the times faced, both externally, by studying new business possibilities, and internally, through control systems that have evolved around the new communication needs. A company that recognizes the right importance to management control and that is willing to question the processes used in the past in the face of changing times, is a healthy reality, which lays the right foundation to face the unpredictability of the market.

Chapter 3- The case study

3.1 Methodology

This whole paper comes from a curricular internship possibility at the Alifax S.r.l. company. When the internship period, which lasted one month, was confirmed, the company made itself available for my thesis project. Alifax is not a very large company, but it is experiencing expansion in these years and the sector in which it operates, that is the production of diagnostic instruments for hospitals and laboratories, is particularly interesting. Various thesis hypotheses were born having as an object this company. For example, in July 2021 it registered for the first time its consolidated financial statements, including all the foreign branches (a starting point for an accounting topic), while the SAP software project will be implemented in the coming months, starting from October 2021 (for a more technical topic). Finally, it was decided to choose a management area linked to control systems. On a cultural and organizational level, it offers various food for thought: The actual structure is the result of a merger with another company, it has two branches that are detached from each other and that deal with very different areas (productive and commercial), it is imbued with a strong family culture, but it is currently studying and updating its internal processes in order to improve them and not get trapped in traditions.

The subject of this investigation is Alifax current reporting model, how this will change in the near future and what can be improved about it. We will also try to understand what the strengths of the company are, and how they could stay very successful by having control systems that are not integrated at the organizational level but only locally, in spite of all the indications provided by the literature.

Speaking of pure methodology, the main source of data has been people. Both in Nimis and in Polverara I was able to talk personally with the most relevant figures in this business and I carried out semi-structured interviews with them. A semi-structured interview is a data collection tool that "employs a blend of closed- and open-ended questions, often accompanied by follow-up why or how questions. The dialogue can meander around the topics on the agenda and may delve into totally unforeseen issues" (Adams W.C., 2015). In the field of research, there are two other types of interviews, the

structured and the unstructured interview, which they stand at the extremes. The first conforms to a standardized list of questions, including follow-up questions, which are answered in a precise order and whose answers are systematically analysed (Segal et al., 2006). The unstructured, on the other hand, does not include predetermined questions and answers, but is based on the social interaction between the two interlocutors (Minichiello et al., 1992). Compared to these two, the semi-structured falls in the middle, representing an excellent starting point for following a certain path but without undergoing the constraints of formality, so that the interviewee feels at ease, without the fear of saying something "wrong".

These talks were held with six main people. For the Polverara office they are the CFO, the controller and the ICT manager. In the Nimis production building, on the other hand, I spoke to the diagnostic machinery manager, the reagents manager and an R&D manager who also takes care of quality control. The interviews lasted about an hour each, but for the CFO and the controller there were more than one. Each person interviewed made himself available to share with me documents and material useful for the development of the thesis, which will be shown and studied during the thesis. Conversation topics varied according to the person interviewed. The CFO mainly discussed the current organizational structure, the business features and the main financial aspects. The controller, on the other hand, was invaluable for me to understand all the processes that took place during the merger of Alifax with Sire (as he himself had experienced it) and to understand the current reporting systems and those planned for the future. With the ICT manager I mainly talked about the SAP project, how it is developing and what consequences it will bring. For the two production managers in Nimis, the arguments were quite similar. They produce two different but complementary goods, namely the machinery and reagents to make them work. Both interviews started with a visit to the working environments with an explanation of the processes in the meantime and then we talked about reporting: how it works, how it is disclosed and the changes they would bring. Finally, with the project manager we talked about two types of reporting: the quarterly management review, which concerns the presentation of the results in the quality area, and the report on the use of JPM, a software for projects that will be exposed later. Here too we talked about what could

be improved and future projects already started. Even the ways of meeting have varied a lot according to the interlocutor. The interviews conducted with the two production managers took place mainly in the middle of operations, walking among the workers so that it was possible to physically see the processes. For the other meetings, more formal settings typical of the administration were used, i.e., offices and meeting rooms. Anyway, especially in Polverara where I spent most of the time, a lot of information was collected in more relaxed contexts, such as coffee breaks or car trips. The person I talked to the most was the CFO, who, in bureaucratic terms for my internship, was also my company tutor. I had several virtual meetings with him before the start of the experience, in which we built an action plan for both the internship and the development of the thesis.

After signing a confidentiality agreement, I was able to collect all the necessary material. In the next chapter the various documents received will be shown, which mainly concern the types of internal reporting. They are very different from each other, because since there is no integrated system, each area has adapted the reporting to its own characteristics and needs, making the totality of the collected material even more interesting.

During the research, no particular obstacles arose. There were some disturbing elements, such as the geographical distance from Nimis or the limitations imposed by the Covid-19 virus, but no specific event hindered my path, also because all the Alifax staff proved to be very helpful and collaborative to me.

3.2 Alifax S.r.l. case

Alifax S.r.l. (hereinafter only Alifax) is an Italian company specialized in the sale of products for in vitro diagnostics and, in general, in the laboratory diagnostics. Founded in 1988, over the years it has become an important distributor of diagnostic tools, thanks also to partnerships created throughout Europe. In 1998, Alifax became a leader in the production of instruments and consumables for the ESR line following the acquisition of the company Sire Analytics Systems, which operated in the province of Udine. Currently, Alifax has around 150 employees in total. They are allocated as follows: about twenty people are dedicated to the production in Nimis, about sixty are in Polverara in the

administration area and the remaining seventy people are employed in research, chemistry and sales.

As for research and development, Alifax has always been very active in this regard, so that it often actively participated in Sire's new projects even before the acquisition. With the acquisition, the R&D sector had the opportunity to enlarge as much as possible, allowing the company to expand the range of products created internally. A common thought could be that innovation is something only for big companies. Indeed, recent studies shown that large companies can often get lost in bureaucracy and organizational routines, while smaller companies are more suitable for carrying out innovation (D'Angelo & Baroncelli, 2020).

Today the group structure, in Italy, is divided as follows: Alifax is subject to the management and coordination of Alifax Holding Spa, and it is present in the Italian territory in two offices, a headquarters located in Polverara (PD) and a production plant located in Nimis (UD). Then there is Alifax R&D S.r.l., a research and development company from Trieste, controlled by Alifax Holding and having Alifax S.r.l. as its only customer.

Alifax Holding Spa also coordinates some purely commercial branches present abroad, in particular in Russia, Spain, China, Brazil, Germany and USA. Despite all these realities, the main structures considered below will be the headquarter in Polverara and the production plant in Udine.

3.2.1 Financial aspects

As we will see, the year 2020 represented a significant turning point for Alifax business but, as it was caused by an extraordinary event brought by an external cause, in this paper we will consider the year 2019 as representative of the data related to the financial statements, to evaluate the true performance of the company.

Net sales revenues in 2019 amounted to approximately € 35 million and they were made up for about 35% in Italy. Compared to the previous year, sales grew by 6.46% overall. Focusing on the Italian market, it grew by 12.21% while the foreign market by 3.02%. The activity is carried out both by associated companies and with the help of third-party

commercial companies. An examination of the core business shows a clearly positive operating result (5 million and a half), that is in line with the previous year.

In the Table 1 are summarized some economic indicators.

<i>Year 2019</i>	<i>In €</i>
<i>Total production value</i>	40.045.488
<i>Net sales</i>	35.840.164
<i>EBITDA (MOL)</i>	9.971.400
<i>EBIT</i>	5.659.376
<i>Net income</i>	5.295.234

Table 1 – Economic indicators of Alifax S.r.l.; Italian statutory financial statements 2019; Chamber of Commerce.

Turning to the financial aspects, it is necessary to make a premise. According to the data of Veneto Sviluppo Spa, in Italy 83% of corporate financing come from banks and only 15% derive from equity. In the United States, however, the situation is the opposite, as equity represents 55% of the corporate financial structure, while bank loans only 30%. These data derive from the fact that Italian companies are for the most part characterized by a modest size and a family business style. For banks, therefore, is preferable to lend reasonable sums of money to many small companies rather than lending large amounts to multinationals, usually characterized by large size and high financial needs. These are just two different strategies, which carries with them pros and cons. However, the riskiest aspect of reliance on banks is that liquidity dwindles in times of crisis and companies may find themselves short of funding if they don't have an alternative.

Following this reasoning, Alifax represents a real exception to the rule. In fact, Alifax registers € 10 million in share capital, while only a few thousand are attributed to bank debt. Over the years, all profits have not been distributed and only a part has been

reinvested, leading to this result. All financial indices, therefore, are quite compromised by this value and will not be covered much in this paper.

Some indices relating to the financing of medium / long-term loans and the composition of the sources of financing will be briefly exposed in the Table 2. In particular, the structure margin, the treasury margin, the debt rate and the coverage rate of fixed assets will be analysed.

Year 2019	
<i>Structure margin</i>	17.105.227 €
<i>Treasury margin</i>	13.807.554 €
<i>Debt rate</i>	0,17
<i>Coverage rate of fixed assets</i>	1,6

Table 2 – Economic indicators of Alifax S.r.l.; Italian statutory financial statements 2019; Chamber of Commerce.

The first index is given "by the difference between shareholders' equity and fixed assets"³. This value indicates the adequacy of own means of the company with respect to lasting financial requirements. In the presence of a high capitalization, as in the case of Alifax, a positive margin is easily obtained (Sostero et al., 2018).

The treasury margin, on the other hand, is obtained from the difference between current assets (without inventories) and current liabilities. This margin aims to verify the ability of the company to meet short-term sources of financing with the sole help of the more liquid components of current assets. When the treasury margin is positive, there is a condition of short-term financial equilibrium (Sostero et al., 2018). Even in this case Alifax has a highly positive value.

The debt ratio, as we can imagine, is quite low. It is given by the ratio between the net financial position and shareholders' equity, and it represents the incidence of payables to third parties on the entire shareholders' equity (Sostero et al., 2018).

³ Autonomous translation from Italian to English.

Finally, the index of coverage of fixed assets relates the internal sources of financing with the fixed assets (Sostero et al., 2018). When this value is greater than 1 (as in the case of Alifax), it means that fixed investments are fully covered by equity.

The net financial position in 2019 is equal to € 8.163.745.

As in previous years, in 2019 the company carried out Research and Development activities, by means of internal staff and third-party operators. The areas of implementation are those of the characteristic activity of the company. The aim of these works is to obtain new patentable technologies as Alifax is always very attentive to the R&D sector. In 2019 the company incurred Research and Development costs for a total value of € 2.204.940. A tax credit is available on this figure.

The financial statements analysed so far are representative of the Italian branch of the Alifax group only. Up to now, in fact, a consolidated financial statement with all the foreign branches has never been drawn up. In July 2021, however, the first consolidated financial statements of Alifax were registered, as the group has passed the limits set by law for keeping the financial statements separate. With this operation, the company will join the IFRS standards. When reaching a certain economic dimension, drawing up a consolidated report is important, because it “inform readers on how well the group as a whole is performing in order to make sound financial decisions” (Gallimberti, 2013).

Currently, relations with foreign branches are made of a purely commercial nature. Almost all of Italian Alifax foreign turnover derives from the sale of products to subordinates, which, in turn, sell in their territory. The transfer price is made up of the normal sale price on the market.

In recent years, however, the performance of the group as a whole has been taken into account internally. In the Table 3 are summarized the main turnover figures for the years 2019 and 2020. At a consolidated level, in 2019 Alifax totalled € 38 Mio sales, while in 2020 they increased to € 61 Mio (+ 59.7%). Considering 2019 (for the reasons set out above), it can be seen that the total turnover of Alifax Italia was € 35 Mio, but the € 5 Mio in inter-company sales must be removed from these when it comes to consolidated results. The remaining € 30 Mio, if added to the € 8 Mio generated by the sales of the branches, leads to the total result of € 38 Mio.

<i>Alifax Group</i>		December 2020	% Incr- Decr PY	December 2019
Consolidated	<i>Total</i>	61.240.388	59,7%	38.336.161
	<i>Total Domestic Sales</i>	35.777.294	153,0%	14.142.903
	<i>Total Export Sales</i>	25.463.094	5,2%	24.193.258
Ax Italia	<i>Domestic Sales</i>	35.777.294	153,0%	14.142.903
	<i>Export Sales</i>	16.051.255	-4,3%	16.776.158
	<i>Intercompany Sales</i>	4.888.729	-0,3%	4.901.515
	<i>Total</i>	56.717.278	58,3%	35.820.576
	<i>Total - Intercompany Sales</i>	51.828.549	68%	30.919.061
Ax Russia	<i>Export Sales</i>	2.587.812	1,4%	2.551.884
Ax Spain	<i>Export Sales</i>	4.008.505	166,1%	1.506.237
Ax China	<i>Export Sales</i>	1.755.627	-44,7%	3.173.915
Ax Basile	<i>Export Sales</i>	1.059.895	472,7%	185.063
Total Subsidiary	<i>Total</i>	9.411.839	26,9%	7.417.100

Table 3 - Consolidated turnover; Alifax internal documents, 2021.

The domestic sales made by the foreign branches are recorded as "Export sales". This decision was born because the parent company Alifax is Italian and from its point of view those are sales "outside the territory".

3.2.2 Products

In Italy, Alifax commercialize instruments and reagents for laboratory diagnostics in multiple ways: with its own brand, produced internally in the Nimis (UD) plant, produced by third parties on behalf of Alifax or with third party brands. Alifax offer, both for its own and third-party products, includes about 3.000 items and it is mainly divided into diagnostic tools, reagents and software.

The former are machines capable of carrying out laboratory analyses and supporting laboratory personnel in the drafting of a medical analysis report. Most of the tools require the use of specific reagents to process an analysis. These reagents can have different functions: calibration of the instrument, control and comparison with a sample or reaction with an organic sample (ex. blood).

Reagents are substances, generally liquid, necessary for the execution of analysis and / or for the calibration of instruments. These substances are contained in vials or bottles

and are always packaged and sold in kits, which can be single-component (all the kit vials contain the same reagent), multi-component (the kit consists of vials and / or bottles of different reagents, which can be used in different phases of the test or mixed to perform a test correctly) or accessory reagents (present in auxiliary kits that are used to activate the actual reagents). Some kits impose restrictions on production as they have organic components that need to be stored at a controlled temperature or components classified as dangerous, which require the use of specialized tools and handling.

As for the last component, Alifax also provides specific software that allows the operation and communication between the instruments. In some cases, the software may need to be activated online on the dedicated Alifax platforms.

The use of some Alifax tools is bound to the use of reagents. The combination of instrument and compatible reagents is defined as a system, which can be “open” (the instrument allows the use of different types of alternative reagents, even from different manufacturers) or “closed” (the instrument allows the use only reagents compatible with it). The Alifax catalogue includes both open and closed instruments, but almost all of Alifax in-house instruments are closed.

In fact, for some instruments (where the imposition of a specific reagent is difficult) the use of the machinery is bound to the possession of a "pre-loaded" card. This card is equipped with a microchip that stores the residual credits and must be inserted in the suitably configured instrument. Each card sold by Alifax is personalized for the customer and, as we will see, the cards are an important gain margin for the company. The cards are managed by Alifax as a particular type of reagent because: they are necessary for the use of the instruments, they allow a predefined number of tests, each card is identified by a lot and a serial number, and each card is subject to a date of deadline.

An auxiliary but very interesting tool for laboratory analysis is the Alibox device, produced “internally” by Sefero S.r.l., a company that in April 2021 was bought 100% by Alifax. It is a refrigerated container for the transport of samples or organs, equipped with special instrumentation that allows remote temperature and position control, through a cloud monitoring system, managed by Alifax as a fee-based service. Alibox is a substantially closed tool that, even if it does not require reagents or cards to function, it requires access to an Alifax cloud service in order to be controllable even remotely.

As far as production is concerned, Alifax adopts a particular system, which will be explored further on. In general, it consists of two phases. The first is based on the Make-to-stock concept, as semi-finished products are placed in the warehouse even without an order being placed. The second step has more the characteristics of a Make to order strategy, as, after receiving the order, the necessary product is picked up and completed with any required changes.

3.2.3 Clients

Focusing on Alifax Italy, the clientele is divided into two strands, the Italian one and the foreign one. As for home sales, supply contracts are determined by state-run tenders for public health entities, while on a few occasions there is direct sales to private laboratories. For foreign sales, on the other hand, the customer is not the final consumer (such as the hospital that uses the instrument), but instead the Alifax distributors scattered all over the world, who in turn sell to the final customer in their territory (with the exception of Spain where the tender system is used as in Italy).

Most of Alifax turnover in the Italian market derives from tenders launched by public authority. With the term "tender", Alifax essentially designates the sales process to the public administration. The process includes the participation in a public tender, the award by a resolution of the public authority and the company's commitment to a continuous supply of products and services for a predetermined period, which it can be extended if necessary.

When a tender is won, there are three types of contracts: full - risk rental, in service, by determination (medical report). In all three cases, the instrument remains in the property of Alifax, but only in the first case there is a rental fee for the instrument which is compared with an amortization. In the other two cases there is no revenue originating from the instrument, as it is delivered "on loan for use" but the recovery of the depreciation of the Instrument must be identified from part of the supply price of the reagent kit or from part of the price on the report issued. In all the three cases, the contract may provide that the Service for installation of instruments or for after-sales technical assistance is not charged in a separate form, based on a specific assistance contract, but which is included in one of the other factors of earnings, for example in

the rental fee of the Instrument, in the charge for the supply of the reagent kits or in the total value invoiced on the issued report.

Therefore, in the case of rental, we are faced with a simple case of transfer of the asset (machinery, reagent and technical assistance) in exchange for a monthly fee. Each item is displayed and accounted for and, to see the recovery of the investment, the depreciation rates are compared with those of the rental.

In the other two cases, the machinery it is rented out, but following a contractual form called loan for use. The loan for use agreement, according to Italian law (art. 1803 civil code), is a "real" contract, for which the agreement of the two parties is not sufficient to complete the contract, because the physical delivery of the goods is also necessary. The code provides that "one party delivers a certain thing to the other so that it can be used for a specific use, with the obligation to return the same thing received"⁴ (Galgano, 2017). It is a contract for which there is no monetary compensation.

In the "in service" case, the real margin is created by the reagent component. In the foreseen cases, there is also the addition of the pre-loaded cards mentioned above, which count the number of tests carried out which, in this type, represent the real gain on the product. The machine is then given free of charge, while the reagents are sold in batches and paid for being delivered, simply because each reagent can potentially create a medical report.

In the last type of tender, the transaction is more complicated. The instruments are also here given on loan, but there is no predefined payment for each reagent kit, as the company receives a standard fee for each useful report issued by the machine. This produces many problems, because a machine that deals with important topics, such as confirming or not the health state of a person, can't afford mistakes. It is therefore necessary to continuously subject the machines to running-in tests, in order to verify its performance. This kind of tests are not paid to Alifax. It is also difficult to verify that customers care and make good use of the instruments, especially the reagents, which are subject to expiration, as it would require a lot of monitoring resources. Given the

⁴ Autonomous translation from Italian to English.

issues and the supplier having to bear the brunt of failed or wasted tests, few of these tenders are run.

Towards foreign customers Alifax interfaces with large customers, such as pharmaceutical multinationals (Abbott, Siemens, etc.) and with foreign distributors and branches. To protect the company, there are various internal documents aimed at monitoring foreign customers. There is a real rating system to especially assess the creditworthiness of the partners. This process is the result of many personal elaborations by the Chief Financial Officer. An example that was shown to me, reported different criteria for evaluating a customer, namely Standars & Poor and Medio Credito Centrale. The first focuses mainly on profitability and cash flow, while the second on equity. The joint use of multiple assessments allows a broader view possible on future customers / distributors. This process is in fact carried out when is about to forge a new commercial partnership or, occasionally, when the current partners pursue suspicious behaviours that raise the hypothesis of financial difficulty. When available, qualitative information are also added to the assessment, such as satisfactory relationships with customers or the existence of any legal disputes of directors.

3.2.4 The exception of the year 2020

The year 2019 ended positively for Alifax, with a turnover of € 35 million and a profit of € 2.5 million, 35% of which deriving from Italy. As for all companies, the year 2020 was an exceptional year but, in this case, we are talking about a positive turning point. As we all know, 2020 was marked by the Covid 19 virus, which profoundly influenced the uses and habits of the population but also the economy, pushing the demand towards health services and materials. Alifax does not directly produce the so-called "swabs", that are the tools necessary to receive traces of the virus in the people who perform the test, in order to track them. Anyway, it still operates in the same sector, having a lot of available complementary medical material and many commercial contacts. During the pandemic year, Alifax played a central role in the supply of diagnostic material to hospitals and laboratories, achieving a double result: the provision of a service to the country that was extremely needed at the moment and a considerable increase in turnover.

In fact, 2020 records an increase in revenues of € 20 million compared to the previous year, reaching a total value of € 56 million. This is the result of a trading action of non-Alifax products that were bought abroad (especially from China) and resold in Italy. Alifax has therefore become an intermediary in this chain, focusing and implementing its commercial area, while maintaining constant levels of production of internal products. Given the uncertain implications of this pandemic, the new measures introduced in 2020 are not definitive, because they were mainly an attempt to respond to an emergency situation. The estimates for the future, therefore, are not simple and for the year 2021 it was decided to estimate a growth of 50% compared to the previous year, thus adopting a principle of prudence and assuming the pandemic year as an economic peak due to exceptional causes. Therefore, if in 2019 the turnover had been € 35 million and had increased to € 56 million in 2020 ($\Delta +21$ million), for the year 2021 it is estimated to reach approximately € 45 million ($\Delta +10$ million).

Chapter 4 – Findings: MCSs at Alifax S.r.l.

In this chapter, the results obtained from the actual stay in the Alifax company will be shown. The experience began with a few days in the production plant in Nimis (UD), which is equipped with modern accommodations dedicated to employees who need to stay temporarily. In those days a lot of material was collected, both from a formal point of view (graphs and tables that will be illustrated below), but also from a personal point of view, as it was possible for me to see directly the two main production sites and to carry out interviews with the various managers. In particular, the following manager were interviewed in Nimis: the one of machinery production, the one of reagent production and the one of project management, that is also in charge of quality control. The conversations underlying the data collection fall into the category of the semi - structured interview, which is particularly suitable for gathering opinions in complex environments, where alongside the official information it is useful to have the contextualization of this, in order to understand why certain decisions have been made.

The rest of the internship was carried out in the administrative headquarters of Polverara. Here it was possible to meet and interview the CFO and the Alifax Controller, two fundamental figures in terms of control and who have been really useful in carrying out this thesis. Another person who contributed to the collection of data in Polverara was the ICT manager. He was very important to understand the processes behind the implementation of SAP, the new management software.

The structure and management of the two production areas (diagnostic machinery and reagents), the quality control and R&D will be presented in the next paragraphs.

4.1 The actual structure

The Nimis plant is located in a very quiet area of Friuli - Venezia Giulia region, surrounded by green spaces and close to the Austrian Alps. Inside the plant there is not the typical noise that one might expect from a production site. The creation of the machinery, which takes place near the entrance, in fact, follows a manual assembly process, without the aid of automation. Conversely, some machines are present on the upper floor, where the reagents are created, but the overall working environment is quiet. Three

main areas were examined during the stay: diagnostic machinery production, reagent production, Research and Development, quality control. The interviews were carried out with three people, as only one person answered for R&D and quality together. The processes observed and the various reporting characteristics will be described below, with the aim of highlighting the particularity of a concrete business case compared to what is usually reported in theoretical models.

To better understand the control methods described below, it is necessary to introduce a topic of fundamental importance in the MCS literature, which will be mentioned often in the paper. Three main types of control are generally recognized: People, Action and Results control. Each of these modalities has its own characteristics and can contribute to achieving the objectives of a firm, depending on the features of it. Usually, it is recommended to start from people control, especially if the organizational reality considered has moderate dimensions. The term "people control" encompasses two aspects, Personnel and Cultural control. Personnel control is "build on employees' natural tendencies to control and / or motivated themselves" (Merchant & Van der Stede, 2007) and follow three purposes, that are: to clarify the company's expectations towards the worker, to verify the correct allocation of skills and to stimulate self-monitoring. Self-monitoring is very important, as it represents the willingness of each employee to do their job correctly, in order to be recognized as a valuable resource by the company. Fostering a climate of self-monitoring helps employees to be more motivated and to feel satisfaction when company goals are achieved. Over time, experts have associated this phenomenon with other psychological elements, which are self-control, intrinsic motivation, ethics and morality, trust, and loyalty (Merchant & Van der Stede, 2007).

The other branch of People control is Cultural control. Intuitively it acts at the cultural level, in order to stimulate mutual control and indirectly create social pressure towards those who are not acting in conformity with the group. A common culture is established through the sharing of traditions, norms and attitudes and has multiple avenues to be disseminated: a code of conduct (containing the basic principles), group rewards (to strengthen cohesion), intra-organizational transfers (to improve identification with the organization), physical and social arrangements (for example a dress code) and tone at

the top (alignment of top management with the professed culture). People control is taken as a starting point precisely because it is adaptable in any context. However, it is not sufficient to guarantee complete control and it is better to combine it with the other two types (Merchant & Van der Stede, 2007).

The Action control makes sure that "employees perform (do not perform) certain actions known to be beneficial (harmful) to the organization" (Merchant & Van der Stede, 2007). Action control usually has a preventive purpose, it is a very direct control and has four basic forms: behavioural constraints, pre-action reviews, action accountability, and redundancy. Behavioural constraint consists in limiting the employee's ability to act incorrectly and it is effective in solving problems related to motivation. Often, people do not even pay attention to this control, because it is used daily in measures considered normal, such as limiting access to certain places only to authorized persons or using passwords to access sensitive data in the ERP system. These are examples of physical constraints, but there are also the administrative ones. They have the same purpose as the physical constraints but are more formalized. An example is the establishment of bands of authority regarding company expenses, so that only certain people can authorize expenses above a certain threshold. Moving on to the second form, preventive reviews are simply the study in advance of employee action plans, which often occurs during the planning and budgeting processes. Here the strategies to be adopted are discussed and decided and there is the verification that the skills of the employees are adequate for the required tasks. Action accountability, on the other hand, refers to the practice of holding employees accountable for their own actions. This requires that the desired actions are identified and correctly communicated to the employees, through channels that can be administrative (rules and procedures) or social (face to face communication). Finally, redundancy includes the use of more personnel than required by a task or the establishment of a shift structure, so that there is always a possible substitute for dealing with unexpected events. It is a technique that ensures the carrying out of tasks but turns out to be very expensive in economic and organizational terms.

Action control is widely used, but it needs two basic requirements to function: the company's identification in advance of desirable or undesirable actions and the

organization's ability to make (or not) those actions. This control mode favours the documentation of processes and coordination between different tasks, as it makes actions more predictable, limiting the time wasted on internal communications. However, it is not free from some defects, such as the limitation of its use to operational areas only (it is not suitable for creative environments), the discouragement of innovation and the costs necessary to implement it.

Finally, there is results control, which "involves rewarding employees for generating good results" (Merchant & Van der Stede, 2007). In this case, there are no restrictions on the actions and behaviours of the employees, but they are made responsible for their own results. This is a context based on meritocracy, as an organizational structure is created whereby all employees are connected (and therefore traceable) to their achievements, but also to their failures. In this system a psychological process is stimulated, so that people pay attention to their actions, because they are free to choose them, but they will have to face the consequences, whatever the degree of final achievement. Employees therefore face a trade-off between greater acquired power and greater concern about the results produced. As for the other types of control, there are some key elements to respect for its functioning, that are: the establishment of a target dimension, an effective measurement method, performance targets and a rewards system. Defining the performance dimension is fundamental because, as in all contexts, objectives cannot be achieved if they are not clear (for example, aiming for profitability is very different from aiming for customer satisfaction). Performance can be measured on the basis of market factors (e.g., stock price), accounting (e.g., return on asset), non-financial factors (e.g., customer satisfaction) or subjective factors (e.g., good management of relations with the subordinates). Performance targets have to be set, in order to improve motivation and make employees aware of their progress. Ultimately, a reward system is a fundamental element of result control. Usually a dual system is used: rewards for achieving goals and punishment for failure. The employee's reward manifests itself in an extrinsic form when there is a perceptible benefit, such as monetary rewards, or even in a non-monetary form when it concerns factors such as social prestige or the recognition of greater authority. The intrinsic form, on the other hand, is more personal and concerns the sense of gratification that comes from doing a

job well done. There are three conditions necessary for the correct use of result control: the determination of the desired results, the possibility of tracing precisely to the employee responsible for the results and an efficient measurement model. The first point is necessary to make the company's objectives congruent with the measurement methods. Usually, everyone knows that the primary interest of a company is to create value for the shareholders or for the owner (excluding the case of non-profits). The real challenge lies in determining the objectives of the smaller working units, which have very different needs. The second condition establishes the importance that the people undergoing control have an effective influence on the results obtained. This "principle of controllability" often cannot be perfect, because in all organizations there are some uncontrollable elements that lead to unclear results. Finally, another important aspect to make results control efficient is the ability of the company to carry out correct and relevant measurement of the results. The adequacy of the system adopted is verified through the existence or not of right and desired behaviours. To achieve this, the measurements should be precise (to avoid incorrect performance detection), objective (to evaluate everyone equally), timely (to motivate employees in meet deadlines and to resolve problems promptly) and understandable (useful for the self-analysis of workers). If even one of these characteristics is not respected, the measurement system loses credibility. Results control has two main advantages: it is useful when the desired actions are not known and it allows to maintain a high degree of control while leaving the workers a lot of autonomy of action, thus supporting the innovative process (Merchant & Van der Stede, 2007).

This theoretical premise was necessary to fully understand the observation framework adopted in this company analysis. As we will see in the next paragraphs, the various company areas built different and non-integrated control systems, mainly for internal purposes and each with a method tailored to the needs and particularities of the type of work taken into consideration.

4.1.1 Production of diagnostic tools and its controls

The diagnostic tools production area consists of a large work room and a warehouse. The workers assemble the product on long tables and, as anticipated, do not resort to the use of automation. There are about ten assembly workers, then there are a few other people in the warehouse and in the pre-assembly phase. The assembly line proceeds by order, following a document in which workers find the item to be assembled and the pieces to be used, with a personalized barcode. In the "work order", in addition to the other data, there are also the hours that workers should employ for that specific order and it can refer to a single piece or a batch of pieces. Raw materials are arranged in the warehouse, which in this case consist of materials that have been pre-processed by suppliers. There is also a specific area for some pre-assemblies, which are prepared and then stored as raw materials, so that in production they do not have to dedicate time to specific procedures such as tin plating or welding, which require space and special tools. Some of these pre-assembly groups are dedicated to spare parts. In this context, the specific know-how of the workers represents a fundamental element of quality.

Two main lines of instruments are produced: ESR (Erythrocyte Sedimentation Rate) and MIC (Minimal Inhibitory Concentration). The first concerns the equipment for blood tests, the second concerns urinalysis. The diagnostic instrumentation is supplied in pairs with reagents that feed any bacteria present in the sample through the use of specific organic cultures. For the MIC, there are different degrees of complexity of the machine. They pass from the simplest (and older) ones in which, for example, the urine and the reagent are mixed manually by the laboratory staff, to the more elaborate ones (which have much larger dimensions) in which the mixing takes place automatically. The more complex ones can perform a series of activities, such as mixing the two components, selecting only the samples that have shown positive reaction and placing them on small containers, with another type of reagent, which indicates the type of bacterium detected based on the emerged mold. Valuable item in a machine is the smallest possible size, as space is important in medical laboratories. As for the timing, it depends on the type of product. Usually for the assembly of smaller machines it takes about 10 hours of work, while for the larger and more complex ones it takes up to 250 hours.

Focusing on control methods, the first aspect to clarify is that these are not integrated at the company level but are established locally, following the discretion of the production manager. As a first impression it can be noted that in this production section the control is quite precise, although not excessively. People control and Action control are the two most developed modes, while results control are considered indirectly as an internal organizational tool. In fact, the department is not asked for any timely and precise reports and the existing ones are made by the production manager to always be aware about the trend of times and materials of his area.

The first worker monitoring tool is the software in which they have to report to while assembling a specific order. To attribute the hours spent in production to each employee, an on-board machine is used, and it records: the identification number of the order they are working on, the time spent on, and the type of work performed. When an order is taken over, the counting of the useful assembly time start on the software, which is interrupted by the onset of other activities, which must be specified and usually concern rest breaks or the resolution of a problem. When a problem occurs, even if it is a job-related activity, it falls outside the assembly time and is therefore posted separately. By adding only the useful times, they can obtain the measure of how long it took a worker to produce a single machine.

This control mode is part of action control, as the assembly actions can be easily predetermined and both the materials and the times to be used are known and monitored. Access to the production site and the warehouse are authorized only through a specific badge (example of behavioural constraint) and the workers are accountable for their actions which are recorded on the software and clearly traceable to them. Personal control is more informal. Since the workers are in very limited numbers and gathered in the same area, there is a general supervision of the production manager over his employees. On a social level, the dashboards that will be explained and illustrated below can be considered as a behavioural control tool, even if indirectly. They are constantly displayed in the production area and provide a lot of general information. This decision was born with the aim of making managers understand the daily production trend with a single glance, and it works. Anyway, when it comes to data of individual workers, they are subject to legal protection. The Regulation (EU) 2016/679

of the European Parliament, contains the general dispositions on data protection and therefore does not allow these to be publicly affixed in the name of a specific worker. In order not to violate this provision nor lack information value, in cases where the data refer to a single person, an ID code is used instead of the name and surname, so that the data displayed is anonymous and can be traced back to the single employee only by authorized personnel. However, social implications are not lacking, as will be seen. In addition, making the workers aware of the general production trend (beyond the single performance) helps them to understand the decisions made by the managers.

Here are some examples of dashboards observed during the stay in Nimis.

<h1 style="text-align: center;">GAME OF TIMES</h1> <p style="text-align: center;">La percentuale GOT di "CODICE ID OPERAIO" è : 64%</p>						
GIUDIZIO	MeseAnnoTerminato	Data Comnessa	Comnessa	Articolo	Tempo Medio Standard	Tempo Rilevato
Entro TM	01.2021	11/01/2021	2021-2/37	195.2XXWM-H-04	467,78	419,00
	02.2021	20/01/2021	2021-2/403	195.2XXWM-H-04	467,78	413,00
		26/02/2021	2021-2/1448	195.2XXWM-H-04	467,78	448,40
	04.2021	11/03/2021	2021-2/1753	195.2XXWM-H-04	467,78	445,60
		25/03/2021	2021-2/2123	195.2XXWM-H-04	467,78	425,60
		01/04/2021	2021-2/2296	195.2XXWM-H-04	467,78	442,40
		13/04/2021	2021-2/2561	195.2XXWM-H-04	467,78	405,60
		23/04/2021	2021-2/2902	195.2XXWM-H-04	467,78	421,80
	05.2021	29/04/2021	2021-2/3074	195.2XXWM-H-04	467,78	416,60
		27/01/2021	2021-2/647	195.2XXWM-H-04	467,78	510,20
Fuori TM	03.2021	22/02/2021	2021-2/1319	195.2XXWM-H-04	467,78	468,60
		26/02/2021	2021-2/1449	195.2XXWM-H-04	467,78	472,40
		01.2021	22/12/2020	2020-2/9316	195.2XXWM-H-04	467,78
	02.2021	27/01/2021	2021-2/648	195.2XXWM-H-04	467,78	473,80

Image 1 - Example of an employee's personal timing evaluation, Alifax S.r.l., 2021.

In Image 1 it can be seen the simplest of the control methods displayed in the room. It was jokingly called "Game of times", it covers the time span of a few months and is printed on paper and then hung on a bulletin board. There is a sheet for each employee, in which all the orders taken over by that person are collected. The orders are divided between those completed within the pre-established times (which are standard times based on historical data) and those that instead exceed these times. For example, the one shown here is the report of a person who, between January and May, completed 9 orders in the right time and 5 over the standard time. The actual and average times of the worker are also indicated. As anticipated, in cases like this it is not possible to identify

the specific worker, as only the production manager is authorized to do so. In any case, a psychological-social mechanism is created whereby, knowing their personal time, each employee can independently compare himself with the times of colleagues, in order to recognize his own potential for improvement.

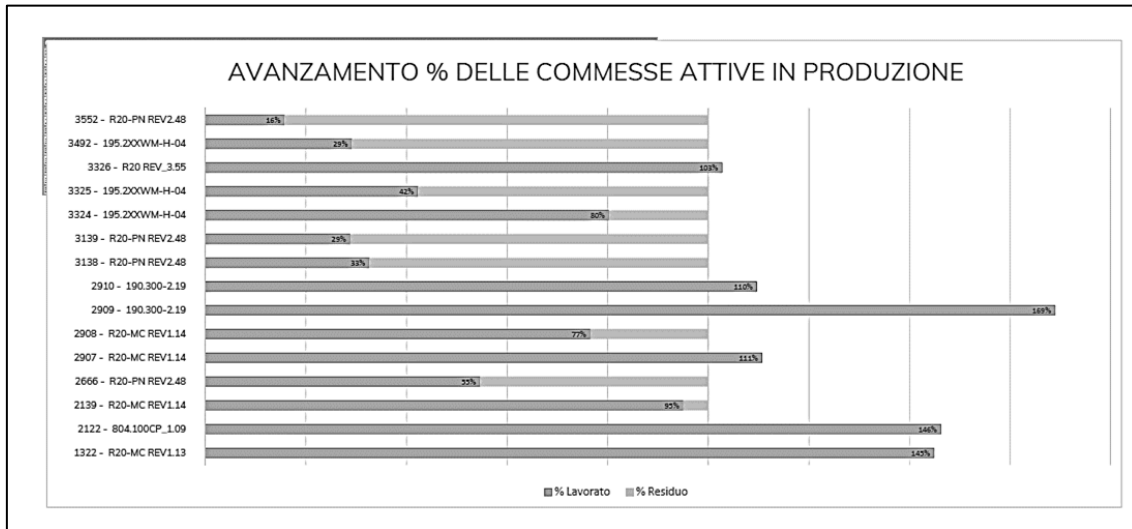


Image 2 – Progress % scheme of orders in production, Alifax S.r.l., 2021.

In image 2 there is a graph that represents the progress of the orders currently started. Different orders have different times, but on the graph, they are shown uniform because, in this case, time is considered in percentage and not in absolute terms. For each article, the standard average time for its production is indicated and represents 100% of the time needed to complete the job. Twice a day the dashboard updates and shows the percentage of progress of each order. Visually, it is very intuitive, and it immediately shows if the production of a particular machine is slowing down. This scheme draws on the data entered in the software previously described and it excludes pauses and the onset of problems from the count. The production speed is calculated on a standard time, based on the different production phases of a specific tool and which is updated once a year. The main utility of this kind of report is that it shows when an employee is experiencing difficulties within the time spent on assembly. For example, at the time this data was collected, a job order was taking almost twice the predetermined average time to complete (169%). This depended on the fact that this employee was still learning and needed to be followed a little more.



Indice di Efficienza OEE Istantaneo*

lunedì 14 giugno 2021

Ore: **16:54**



* AGGIORNAMENTO OGNI 1 MINUTO

Image 3 - Instant OEE Index, Alifax S.r.l., 2021.

The third panel displayed in the room is very important, because it refers to the main efficiency indicator used by Alifax. OEE stands for Overall Equipment Effectiveness, and it is a Key Performance Indicator (KPI) that "takes the most common and important sources of manufacturing productivity loss, places them into three primary categories and distils them into metrics that provide an excellent gauge for measuring where you are and how you can improve " (Vorne Industries Inc., 2002 - 2008). To calculate it, it is necessary to start from the Plant Operating Time, that is the time available for employees to work on a product (if working at maximum speed). From this, the Planned Shut Down must be subtracted. They include all normal interruptions not related to the efficiency of product processing, such as lunch breaks or scheduled maintenance. From this subtraction it's possible to obtain the Planned Production Time, which is the remaining time to complete an operation. If all this time was used only for productive activities, the efficiency would be highly achieved. However, it is impossible to avoid all unforeseen events and there are three categories of inefficiencies, which are Down Time Loss, Speed Loss and Quality Loss. Down Time Losses include all events that interrupt production, such as a delay in the supply of raw materials. Whether these unexpected events take a long time or just a few minutes, it is important to count them. By subtracting the Down Time Loss from the Planned Production Time, the Operating Time (attributable to the concept of availability) is got. Subtracting from it the Speed Loss,

which includes everything that wastes precious time, the Net Operating Time (attributable to the concept of performance) is obtained. Finally, taking the Quality Loss, which includes all products below the quality standard which must be reprocessed, and excluding them from the Net Operating Time, the result achieved is the Fully Productive Time (attributable to the concept of quality). In short, OEE is the product of these three factors: availability, performance and quality. These three are calculated through specific processes that are currently not detailed. OEE is expressed as a percentage (Vorne Industries Inc., 2002 - 2008).

The dashboard in Image 3 is updated every minute and includes all users contributing to the production. Each activity is indicated in real time (e.g., production, packaging, problem solving). Considering the various percentages recorded by all users, the graph indicates the efficiency index of current production. At the time of data collection, this index had a good value of 83.3%. As with the other dashboards, the exposure has a motivational value for workers. The data are considered in aggregate form and, again, the personal timing of workers is not shown for privacy reasons. In case of inefficiency there is a visual signal in red. Visual impact is a strategy widely used in production, as it can be seen from the coloured speedometer on the right of the dashboard, that indicates the level of efficiency (between low, medium and high). The display of clear and quick-to-interpret data is an excellent method to make everyone participate, even for employees who are not directly involved in the assembly phase. This index is very significant, even if it is monitored only by the production manager for an organizational purpose. Work inefficiencies and their causes are instead analysed by the quality manager, which we will discuss later.

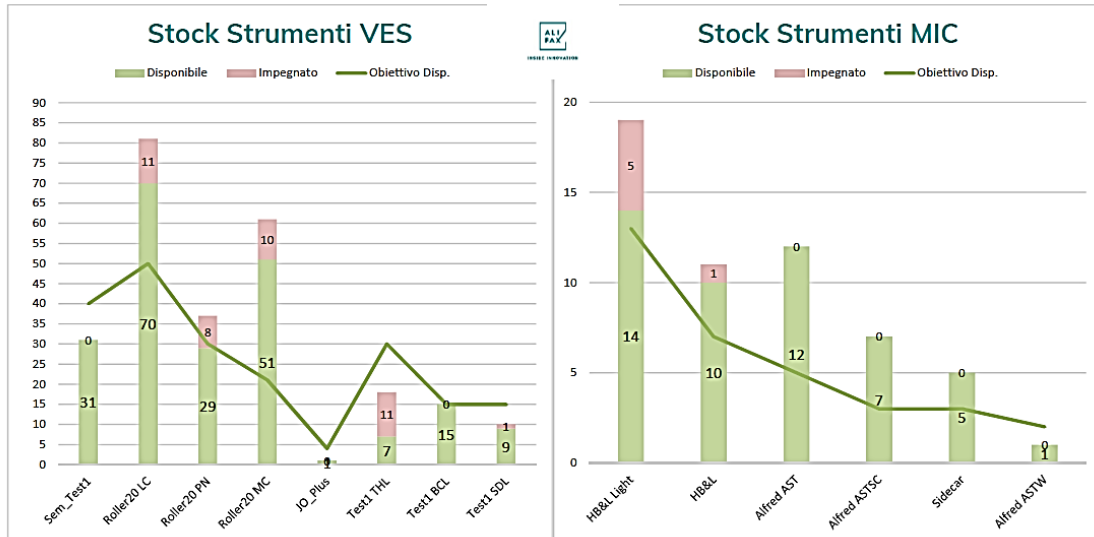


Image 4 - Warehouse Tracking, Alifax S.r.l., 2021.

The last dashboard concerns the stock of finished products. It consists of two simple graphs that indicate the stock level of the pieces (i.e., working diagnostic tools). As explained above, there are two main product lines, the ESR (VES in Italian), which concerns the blood tests, and the MIC, which concerns the urinalysis. The two types are represented in different graphs both for greater clarity but also because there are very different storage numbers. The ESR has in fact much higher production numbers than the MIC and by representing them together the data would have been inaccurate. The graph shows bars corresponding to each finished product, which represent the number of pieces available in green and those committed in red. The green line is a numerical stock availability target. By availability, it's meant the stock that is not committed by a delivery order. The strategy of this production section is to have a number of pieces available that is greater than the target number, as can also be seen in Image 4. This is to avoid any problem deriving from the forecast inaccuracy, which is quite approximate and is mainly used as a basis of departure. Sooner or later, in fact, the delivery order is issued and Alifax can afford a consistent storage in the warehouse, because a machine is not a product that expires quickly. Sometimes, producing more helps to manage the unpredictability with which some orders are placed. For example, the forecast may ask employees to produce 100 pieces in two months, equally divided. If it's pursued the logic of producing 50 pieces per month without a stock in the warehouse and then the actual distribution of orders is for 80 pieces in the first month and only 20 in the second month,

the first order will be processed late. If, on the other hand, some help comes from the warehouse, where there are tools stored in excess, the problem can be contained. It's not possible to expect the precise order to start the assembly, because this is a long and manual process which cannot be done at the moment. The main strategy is therefore the Make to Stock one, with any final software customizations.

These are the main control methods currently adopted in the production area of Alifax instruments. As it has been noticed, it is a precise and transversal control, developed internally to constantly monitor the production trend. The interesting aspect is that this reporting is not exploited in corporate macro-analysis, in the sense that no punctual copy of the results is required. Following the interview, the production manager declared that he was satisfied with the reports created as they are very useful, but they are probably not suitable for analysis that go beyond the production environment. As far as performance is concerned, there is no real goal, other than efficiency and compliance with delivery times. Since in all these years the production has been able to fulfil the requested orders, a form of control dedicated only to the improvement of processes has not yet been introduced. In fact, according to the controller, the real objective of the workers currently lies in flexibility, that is the ability to manage the various production needs that are continuously variable throughout the year. Another aspect to consider is the strange role that diagnostic tools play within the Alifax business. Without them, chemical analysis, which is the purpose of the machine purchase, would not be possible. Nevertheless, in most transactions they are given on loan for use and do not provide any "real" income. This factor tends to highlight the little importance given to the improvement of production processes, as the only interest given to these is the ability to supply a machine in the required time, no matter if it took an extra hour to be produced. The real economic margin is produced, in fact, through the reagents, the production process of which will be seen in the next paragraph.

4.1.2 Production of reagents and its controls

The reagent production department is located on the first floor of the plant. Here there is a very different environment than the one previously described, as in this area there is an automation part that creates the typical noises of a production site. The space is divided into three areas: there is a first part where the reagents are created, then there is a central area where the compound is placed inside the special vials, decontaminated and controlled, and finally there is the storage of the finished product. The warehouse is in turn divided in storage of semi-finished products and consumable raw materials, packaging and shipping site. Together with the vials are also sent the electronic cards that allow a certain number of tests. Even in this case the production is divided between MIC and ESR. In this area the use of machinery is very present, even if there is only one case of pure automation, which is represented by the machinery that constantly inserts the reagent into the vials. It is dedicated to a single type of reagent, the most requested, which is subject to continuous production. For the other reagents, instead, there are machines that have the possibility of containing multi-formats of reagents, taken only when required. The production process follows these steps: the production manager and a colleague take care of the process of creating the compounds, then the automatic arm fills the vials (with a small magnet inside so that the mixture is always stirring) that are decontaminated in an autoclave for 15 minutes. The last step before packing is the visual quality control, which is done manually, through visual recognition by four employees. Make To Stock is not pursued in this department and production follows a lean strategy because the finished product has a close deadline. Approximately 3 million vials are produced each year.

According to the manager, the people in charge of visual inspections are efficient, as there has never been a complaint about their work. However, on this topic a problem that has become very common in recent years arises. Namely, entrepreneurs have to face the clash between the reasonableness of introducing more and more automation and ethics, for which it is wrong to leave people without work. Four salaries are a cost to the company, a cost that would be quickly resolved by a mechanical optical viewer, one of the projects that Alifax hopes to implement in the near future. An interesting aspect to consider is that the choice of automation is one of the first option that

literature suggest when facing a control problem (Merchant & Van der Stede, 2007). Machines, in fact, can be interfaced and arranged at the will of man, which is not possible when dealing with another human being. From a control point of view, automation solves some problems, however it must be taken into account that it is linked to some limits, which mainly are the loss of human capital taken as creative thinking and the heavy initial costs, justifiable only if recovered in terms of efficiency. To complete this parenthesis, it is good to remember that the other modalities of control avoidance are activity elimination, centralization and risk sharing (Merchant & Van der Stede, 2007). The spread of automation is therefore a phenomenon that now affects every productive reality, and more and more companies are going in that direction. Especially from Alifax, whose slogan is "Inside innovation", it's expected the implementation of a project of this nature, which, in addition to optimizing the processes, could be the starting point for an information problem that afflicts the reagents department. In fact, if in the production of machinery, the whole environment was covered with control panels of the activities, in the production of reagents this aspect is completely missing. The workers are few and no software is used to monitor their activities, it is the reagent manager that is responsible for checking the speed and correctness of the operations. The problem that has been mentioned concerns the communication between man and machine. All used machinery, including the automatic arm, is working without returning immediate feedback, which, anyway, it is not required. Clearly there is a way to extrapolate the production data, but this requires special work on the internal dashboards of the machines. What is missing is an effective and immediate communication system between the machines and the CRM, which is one of the main elements of Industry 4.0. The hope of the production manager is that with the innovation of some processes, the foundations will be laid for an improvement in man-machine communications, so that it will always be possible to know how much they are producing and to calculate the various KPIs, such as the OEE, currently not monitored. There are therefore no monitoring panels in this production site. This, in addition to making performance evaluation difficult, spread also a certain negative effect on the motivation of employees, who process vials without seeing the actual daily results. Production is in fact based on historical data, which were collected by the reagent manager and transformed into an approximate forecast, divided by product

type. Currently, communication with the commercial area is not such as to allow a precise forecast, so production rates follow historical trends and if a particularly large order arrives, it is put on hold. The lead time is fast enough to allow for a slight overload of orders, as usually a week is enough to return to normality. Exactly the opposite of the production of machinery, reagents cannot be stored in large quantities, so it is preferable to wait for an order rather than making good material perish.

	TOTAL YEAR 2019	Monthly average 2019	TOTAL YEAR 2020	Monthly average 2020	Δ Monthly average 19 - 20
Article 1	6.825	568,8	6.893	574,41	1,00%
Article 2	316	26,3	336	28	6,33%
Article 3	831	69,3	845	70,4	1,66%
Article 4	10.351	862,6	11.797	983,1	13,97%
Article 5	22.200	1850,0	24.293	2024,41	9,43%
Article 6	2.163	180,3	2.315	192,91	7,02%
Article 7	1.649	137,4	1.751	145,92	6,19%
Total kit sold	39.916	-	44.335	-	-

Table 1 - Historical summary of reagent sales expressed in number of kits, Alifax S.r.l., 2021.

In Table 1 there is an example of historical sales of reagents, divided by years (to be synthetic there are only the last two years). It is divided by product type and expressed in Number of kits sold. The various types of reagents are packed in different numbers inside the kits, with a range that goes from a number of 6 to a number of 360 in a single box. The total number at the base of the table therefore indicates the number of kits sold. If the individual articles were multiplied by their corresponding number of vials, that would result in those three million vials per year mentioned above. Next to the kits sold in a year, the monthly average is also indicated, useful for understanding the effort required per month. Finally, the year-over-year percentage growth of individual products is tracked. In recent years, all products have increased their production and sales. These are very simple monitoring methods, and managers are already working to develop something more structured.

Compared to the situation described in the previous paragraph, here the control methods look completely different. Actually, what changes is only the internal monitoring, because they are two very different environments. In the first case, there are many more employees, zero automation and a software that records every single activity performed. In the second case the workers are few, there is the help of machinery, and the actions are observed in an informal way. These differences favour the constant monitoring that takes place in machine production, while in reagent production there are not the right conditions for this. However, a very important aspect is common to both situations, namely the lack of a request for timely and precise reports. Both areas produce with the aim of fulfilling orders on time, without creating delays, but they lack a concrete objective. These problems are not surprising if we consider that Alifax is experiencing a great expansion never seen before. When things change in a short time, it is normal to manifest some inefficiencies, which in this case are represented by an example of "lack of direction", which is the situation where employees do not know what the company expects of them (Merchant & Van der Stede, 2007). This concept will be deepened and contextualized in the next chapter, but it can be said that the company is aware of these issues and is working on some projects, first of all the implementation of SAP, which should improve the communication of objectives to the specific areas. The reason why these known shortcomings have not been taken as an emergency lies in the fact that, given the high margin produced by the instruments sold, the profit generated remains high even if the production is not completely optimized but is limited to delivering the goods on time.

Moving on to concrete control systems, it is now clear that there are no internal reports that are always visible to everyone. The action control is quite poor, as the various activities are attributable to the workers, but not in a statistical and precise way and, as long as the tasks are carried out correctly, they are quite free in managing the work. The main reference to Action Control is that access to the reagent production area is allowed only to authorized people who have a pass, just like in machine production. The intimate environment with few people better favours a People Control style. Precisely because the individual actions are hardly attributable to the various employees and the results are verified only by respecting delivery times, people tend to manifest mutual control

over their actions, also favoured by the physical proximity of the workstations. The production manager always keeps a watchful eye on his subordinates, without however creating an oppressive climate. Anyway, it is good to specify that in the period in which this data was collected, the staff was made up of competent and experienced people, so there were no particular situations of insertion of new staff or trial period. As anticipated, the results are considered only in terms of production times. Anyway, there are also traces of Results Control, as workers are free to manage their actions in order to achieve a certain result, even if this is not precise and well defined. However, it must be considered that, for workers, never receiving feedback is detrimental to their motivation. Here, that sense of responsibility towards one's own personal results is lacking, as the results are evaluated only at the group level. Of course, it must be considered that most likely the future for this department is that of automation. Yet, as long as there are still people, a good way to make them responsible would be the creation of personal reports, because, even if they would be made anonymous for the privacy reasons mentioned above, it would stimulate that sense of positive competition that motivate people and drives them to improve.

In conclusion, all the production processes described are, overall, efficient. What is currently missing are more transparent objectives towards employees and more formal reporting of results asked by the management. This is important because, if the future of this department is automation, understanding in detail the costs saved using more machinery and the new production capacities is crucial to maximize profits or even to lower the price (a very important variable when participating in tenders). Alifax did not need all this attention when it was a small company, but now that it is experiencing this flourishing period, action must be taken. Anyway, it is encouraging to see that from Alifax there is the interest for improving control systems, especially on the part of managers. Much of the trust is placed in the implementation of SAP, which, in addition to concretely improving inter-company communication, requires the previous study of all the processes to be launched. These analyses will give visibility to the current inefficiencies and will be very useful for the improvement of the new control systems.

4.1.3 R&D and quality control

The management control of the R&D and the quality control of Alifax have been grouped in a single paragraph, as the material was collected through a single person and the two reports present a similar structure between them and that, in advance, we can describe as very accurate and detailed.

Let's start with Quality. In this area there is a manager and three employees and here it is verified that the final product corresponds to the desired technical specifications and that the necessary regulatory procedures are respected. The main reporting document of this area is the management review input, presented quarterly. The management review is a process where performance is assessed on objectives relating to all company areas, not just the production ones. Once the data for a given period have been analysed, the implementation of actions for continuous improvement is planned. It will be taken here into consideration the document of the first quarter of 2020. It was made available for this thesis through the presentation shown to the management in the dedicated meeting. A first important consideration is that, with respect to the production sphere, the situation is completely the opposite. The reports related both to projects and quality follow well-defined deadlines and characteristics and are of a formal nature, in the sense that they are intended for general management and not for internal use only.

The first feature that catches the eye is the accuracy of the information. The presentation consists of 63 slides, with an initial index to highlight the agenda, which in this case resided in 21 points: Quality Policy, Context Analysis (ISQA009) and Process Risk Analysis (ISQA008), Quality objectives, Progress of the actions established in previous Reviews, Feedback from Customers, Complaint, Reports to Regulatory Authorities, Audit results and internal audit planning / updating, Process performance: process indicators and non-conformities, Product non-conformities, Corrective and preventive actions, Master Validation Plan (processes and SW), Changes that could affect the Quality Management System, Recommendations for improvement, New and / or revised regulatory requirements, Implementation requests, System procedures update status Quality, Training plan, Supplier evaluation, Any specific requests, ICT: Objectives for information security.

3. Obiettivi per la Qualità	Polverara	Scadenza	Note	
STS: Garantire ai Clienti una pronta risposta dei reclami ≤ 2gg	C. Derioni	31/12/2021	32 Complaint nel periodo, 22 chiusi , prima risposta al cliente in 0,44 giorni.	
STS: tempistica di attivazione dei cambi prodotto comunicati dai fornitori ≤ 8gg	C. Derioni	31/12/2021	7 comunicazioni ricevute nel periodo, 4 trasmesse il medesimo giorno e 3 comunicate entro 5 gg lavorativi.	

Image 5 - Extract from the Management review 1 quarter 2021, Alifax S.r.l., 2021.

Clearly, the topics covered are many. In most cases these are updates of individual categories and in Image 5 it's possible to see how the level of progress is represented by a symbolic traffic light with the classic colours of green, yellow and red for, respectively, completed, in development and uncompleted actions. The various topics are divided by objectives, which each report the reference manager and the expiry date for the fulfilment of that objective. This type of reporting has developed gradually, starting from a few slides' presentation in the first years, up to this complex structure. According to the person interviewed, this reporting has a strong informative value, but it should be improved in some features. First of all, a new structure should be found, so that the necessary data is communicated, but in a more concise form. In fact, such a complex work has the consequences that, when the meeting takes place, they are very long and, furthermore, the creation of the document requires a lot of resources, especially in terms of time. For the systems currently used, it takes about 40 hours to build the Management Review. Another problem is related to the difficulty of finding some data. What would be needed is greater automation of data entry, which should happen in the future thanks to the use of SAP. In fact, SAP will automatically provide some information that previously would have been processed manually and, once the new system has been settled, it will guarantee more precision in the data entry by the employees. A useful tool to streamline the creation process and also the final result, would be a data analytics platform called Qlik sense. It is a system that works on data without these being processed by hand and it is already used by a few authorized people for other corporate purposes. So far, Qlik Sense has had positive feedback and the company appears to be moving towards adopting it more frequently, in order to save time and resources in analysing data. The reason why this software has not yet been used for review is that it

requires certain licenses that are currently not available to everyone and, once obtained, a training period is still required for its use.

These are therefore the tools used by Alifax for monitoring the set objectives and quality. There is little to analyse here from a social and behavioural point of view, as it is mainly the processing of data coming from all areas and enclosed in a single report. The situation is different for project management in the R&D area.

In the Project Management, a software called JPM is used to monitor all employee activities. The structure of this tool is similar to the ones used in the production of diagnostic machinery, with the big difference that in this case there are no standard and predictable actions, since developing projects means pursuing innovation and trying to do something that has never been done. However, workers try to code their actions so that they are understandable in an informative report, using macro categories of actions. The main method for declare the progress achieved is a Monthly User Accounts Report in JPM. Being the report monthly, there is no physical presentation as for the Management Review, but a summary is sent timely to the managers as a formal document, another difference from the production area. JPM is therefore a program created to manage project plans. It tries to schedule the actions, hours and resources to be used in order to accomplish a goal. This software has not been used for a long time, as the insertion in the company started in September and took place in groups, until everyone learned how to use it. JPM is another great example of Action control. In fact, the actions carried out and the time taken by each employee are continuously registered in the software, so that everyone is always responsible for their own results. Here the information dynamics are different and since there is a high monthly monitoring, there are no panels always exposed. The individual performance of the designers remains anonymous in the reports, but they are still monitored internally and in case of problems experience it is easy to understand who was involved thanks to the accuracy of the software. The monthly report mainly proceeds by projects. The report opens with Image 6, which shows in a very intuitive way the hours that employees have dedicated to carrying out projects.

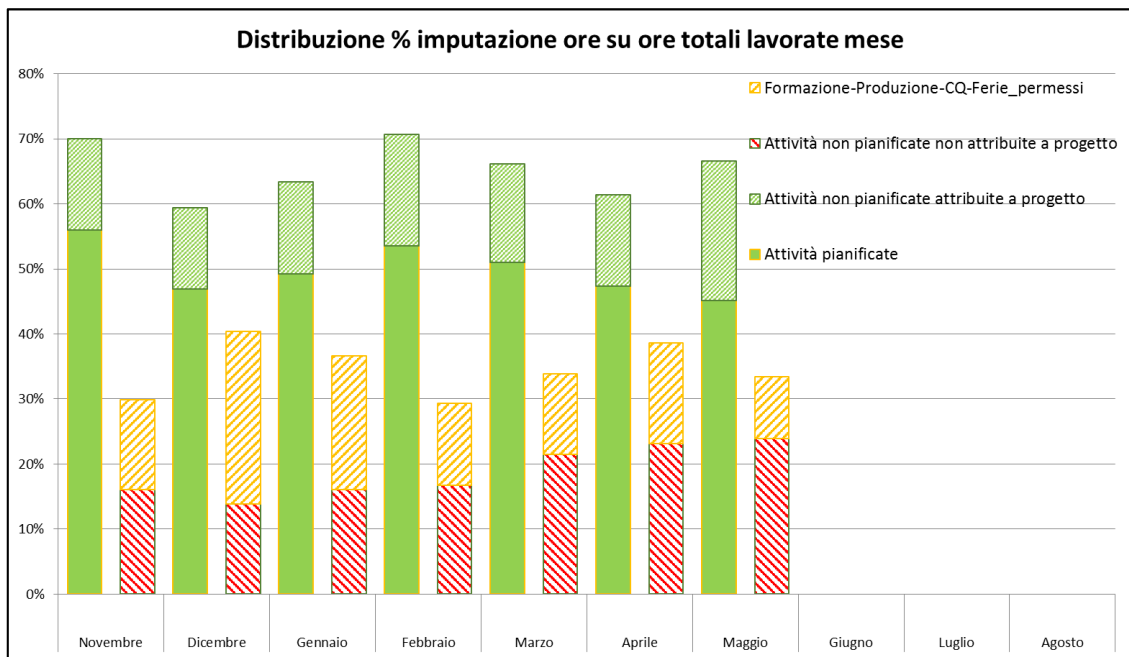


Image 6 – Example of reporting linked to project time (JPM), Alifax S.r.l., 2021.

Whenever Project members impute their specific actions in the software, they fall into the macro categories that can be seen in the image. The green column shows the hours correctly dedicated to a project. The zebra green, instead, indicates the time attributed to a project, but not in an optimal way, in the sense that resources have been used correctly, but for complementary activities, for example in the search for information necessary for the continuation of the work but which have not been easily available. In yellow are simply indicated the permits and other justified lost hours, while in red there are the activities outside the project that were not useful for the completion of the work, not even for the complementary activities. They are called "disturbance hours", such as those dedicated to long phone calls or meetings, and usually when planning the timing for a project, longer times are estimated than the ones technically possible, because these elements of inefficiency are known and accepted as part of normal work.

The rest of the report concerns the individual projects or lines of project, for which are still indicated the resources used correctly, those dedicated to support activities and those not useful for the project. There are also other types of project groupings, for example by department, in order to see the data from more than one perspective. So,

thanks to JPM we can see all the open projects and the completion of their tasks, from the design of the prototype to the release of the new product (or the modification of an existing one). The only thing the manager said about the program itself is that it would be useful to implement another feature. In fact, currently it shows how many hours have been dedicated to a project overall, but it does not show how much time it is still needed for its conclusion, which is important to understand the progress of operations.

From a behavioural point of view, in the adoption of this software there are two very interesting aspects to underline. The first is related to some people who, with their actions, would seem to manifest a behaviour that is usually defined "aversion to change". Actually, this is strange since Alifax is a company that has always pursued innovation and it's nothing new that employees need to learn new methods. Dent & Goldberg (1999) say about it that, it is not a matter of not accepting the change, but "Employees may resist the unknown, being dictated to, or management ideas that do not seem feasible from the employees' standpoint". In this case, continuously recording daily's actions requires some effort from employees, especially considering the fragmented and unpredictable operations they pursue (ex. two hours spent on prototype verification, half an hour on non-compliance management, fifteen minutes to help a colleague, etc.). Established this, however, when JPM is used correctly it has a great informative value. For this reason, people who currently resist its use in a behavioural way do not actually understand how many resources are wasted. For example, there are still people who, instead of recording daily activities in a timely manner, prefer to write them down in a paper notebook and then put everything together in the software at the end of the month. This is an inefficiency that brings benefits to no one, as those employees wastes time making a double registration (on paper and on the computer), while colleagues and other people who consult JPM cannot understand in real time the progress of the various project phases, creating an information asymmetry. Eliminating these inefficient behaviours takes time and communication effort, even if they are a natural part of a changing process. It must be remembered that there are also many other workers who use the program correctly and it's fair that they can receive the information they care to insert consistently. This is why

a measure will be taken shortly, which provides for the daily inclusion of the activities in the specific software as a formal obligation of those involved in the projects.

The second problem concerns the precision of insertion of the actions. We have already recognized that for certain types of work it is difficult to accurately record one's daily actions, but sometimes management finds unacceptable reports included in the software, clearly minimized in order to save time. For example, employees often record the generic "meeting" item to cover more hours of a working day, without indicating with whom and on what the meeting was held and what results it produced. Exposed in this way, this information says nothing. These kinds of behaviours occur because the employees probably do not understand the final purpose of this step, which is to create a network of information useful to everyone, even outside their department. In this case, the need for a corporate culture that is widespread at all levels is even more evident. If it were possible to make employees understand that all the people inside the company are part of the same cultural environment, with the same values and objectives, they would make decisions naturally oriented towards collective well-being.

These two problems just described are not particularly harmful, but it is important to face them immediately in order not to waste the opportunity for growth that will be brought by the investment in new IT tools. The human being sometimes takes time to accept the news, but through a work of communication it is possible to overcome the barriers between those who make the decisions and those who are involved in them. In this regard, Lawrence (1954) suggests five useful actions that management can take and that can help Alifax in this transition period. They involve: to listen to the ideas of the staff, explain themselves in clear terms when necessary, do not generalize the behaviour of workers, insert new job definitions and, by managers, to put themselves as equal to employees when communicating with them, without strictly adhering to hierarchical conventions (Lawrence P. R., 1954). These tips are undoubtedly useful and must be kept in mind for the healthy development of the company. Alifax, however, is already on the right track to solve the problems of adapting to changes, having demonstrated so far that it understands the reasons for such behaviours, but remaining steady on the need for the correct use of JPM. In fact, the introduction to JPM did not happen overnight, as it followed a very specific process. Proceeding by groups, the first two weeks were

dedicated to training, in which the project manager made himself available for the clarification of any doubts. This period ended with a final meeting for the resolution of problems encountered. From here on, the organization expects people to be able to properly record their actions and they begin to be accountable for the use of the software. Employees were therefore well supported in the acquisition of technical skills. A little more work should be done on the concept of interconnection, whereby the actions of individuals affect everyone, both in the case of positive and negative actions, such in the case of non-compliance information.

In this chapter, the control systems currently used by Alifax in four fundamental areas have been addressed: production of diagnostic Machinery, production of Reagents, Quality and Regulatory and Project Management. These areas are all very important for the business covered by Alifax and, as we have seen, the control systems present profound differences from each other. In the production of machinery there are precise and accurate reports for each employee, but they are considered only internally. In the production of reagents, the reports are very poor, as the processes there are simpler and more automated. The quality and project reports are both precise, timely and for external purposes, with the difference that the first is a compendium of all company areas carried out by a single person through a lot of work, while the second is generated more quickly by a software and it takes into account the individual actions of those involved in the projects. Overall, this management system works. It has been created over time around the specific needs of Alifax, changing with the company and becoming something unique. In the next chapter, some elements that could further improve corporate control will be suggested and we will investigate the success factors that are leading Alifax to grow more and more.

Chapter 5 - Discussion

5.1 The actual need of control

According to theory, management control processes follow a linear path. It starts from the strategic moment, in which objectives are established, then it moves on to the planning phase, in which the formalization of these objectives takes place, and finally a controlling plan is established, in order to monitor progress and make the necessary changes plans (Merchant & Van der Stede, 2007).

This is what the MCS-related literature usually reports, but as is well known, the theory is not always applicable to everyone. This model is well suited to stable environments, and highly structured organizations. Moving to Italy, where this thesis has been developed, the situation faced is an economic reality mainly composed of small and medium-sized family businesses, just like Alifax is. In this type of context, a standardized theoretical model is difficult to apply, as we saw in this paper.

It is also necessary to consider the environmental context that has developed in recent years. These are times of continuous evolution, especially when talking about technology, business models and consumer needs. To make a truthful analysis, each organizational reality should therefore be considered within its own context, in order to focus on the truly important variables. So, the aim of this paper is to develop an analysis inspired by the theory of MCS, but which tries to adapt it to the specific characteristics of Alifax S.r.l. company to create something more realistic.

In the previous chapter, some examples of reporting carried out by Alifax have been seen, especially in the production area. As already mentioned, the fragmented structure of the various reports derives from the freedom left to individual managers to build customized evaluation methods for each area, without a top-down model. It is also necessary to consider how Alifax has gradually grown over time and how difficult it is, once reached a certain size, to change a reporting structure that is now rooted and that was started when the organization was still small. However, as the company has always pursued innovation, executives have realized that a more uniform and integrated system is now required to optimize the circulation of information. According to the CFO, a lot of changes are on the way and more emphasis will be placed soon on internal

monitoring. Furthermore, a big technical change will take place in the next months, that is the introduction of the SAP management system. It will push the performance of the processes, including control systems, but to be efficient it must receive preparatory analysis work, as it is a management tool whose characteristics can be adapted to every business need, if well set.

Since the control needs must be known to be solved, those ones found in this thesis will be briefly explained below, in order to make the most of the potential of the upcoming managerial projects. First of all, it lacks some results control, especially in production, while action control is well planned, making each worker accountable for his/her actions. Currently, the company is not taking advantage of the numerous operational data recorded in production and this is a wasted opportunity, because, from the existing bases, precise and timely documents could be created to be delivered to management. In the production of machineries, for example, reports on results are currently created, but without these ever leaving the work rooms, in the sense that they are used internally to evaluate the work and encourage employees to improve, but do not receive a formal evaluation. This monitoring method is not wrong and still produces useful data, but it risks being reductive, both in terms of information for the management and for the employees, who, without a precise deadline within which to present their results, could lose motivation and feel like just simple performer. In fact, the results control "are a necessary element in the employee empowerment approach to management" (Merchant & Van der Stede, 2007) and since one of Alifax strengths is precisely having loyal and internally grown employees, making them responsible for their results obtained would be a good strategy. The other two types of control, instead, are sufficient and well structured. As it was seen, there are improvements to be made in the action control of the R&D area, even if the current problems are due to the difficult standardization of actions and the recent inclusion of a new software. In this regard, the company is showing an important behaviour, which is the one of taking the interest in these problems and monitoring them carefully, up to their resolution. Personnel control also seems to work, as a certain group orientation towards results has been created, partly favoured by the low numbers of employees, partly by the absence of evident cultural conflicts. In fact, the workplace is very homogeneous, dedicated to mutual

control and interpersonal relations. Despite the good starting conditions, achieving this result required effort and attention.

Remaining on the production area, the second need for control that is currently somewhat lacking is the presence of clear and achievable objectives. Knowing the goals that the company wants to achieve is a critical variable for a MCS system. Clearly, beyond the general purpose of a profit company, which is to maximize profit, different areas may have different objectives. We have seen how in production the workers are committed to being able to deliver the product on time, pursuing a principle of flexibility that allows them to cope with different times. However, this is an implicit goal, in the sense that delivering goods on time is clearly something that all companies want, not something specific to Alifax processes. What would be perfect for this company is that employees are given goals for growth, for *improvement*. They are now underway with the processes, they are composed of competent people who, in the event of a newcomer, are able to give him/her the right training without wasting time. Since the production has reached a good level of coordination and timing, it would be stimulating for workers to keep track of current results and try to set targets to be reached, in terms of timing and efficiency in the use of resources. In this regard, it is necessary to set stimulating but achievable goals, in order to increase commitment without damaging motivation. Now that Alifax is expanding and refining its processes, not resorting to a clear and structured system of objectives could lead to a situation that in Management Control is called "lack of direction". In the literature, there are three types of control-related issues that need to be paid close attention. They are lack of direction, motivational problems, and personal limitations (Merchant & Van der Stede, 2007). Starting from the last, a situation of personal limitations occurs when the employee knows what the company expects and is well motivated in the work, but the objectives are not reached (or are not reached in time) because of actual limitations of the person. It is usually linked to a lack of adequate skills or information. Motivation problems, on the other hand, arise when the company's objectives are well known to everyone, but do not coincide with those of the employees, who therefore do not perform well. If this type of problem is not resolved, highly self-interested behaviours can occur, such as too long pauses or abuse of sick leave. These two problems do not seem to exist in Alifax, as

the job designs are adapted to the skills of the employees and managers always try to keep the level of motivation high. The lack of direction, more than a current problem, is a possible consequence of the inactivity pursued in front of too little stimulating objectives. At the moment, asking employees to respect delivery times as a goal is reasonable, but limited in relation to future possibilities, because the processes are growing and the requests will increase more and more, while the available times will decrease. So, what is needed now is to use the analysis of current results to devise a system of objectives to optimize the time and resources used. Fortunately, the most important step has been taken, that is, Alifax has realized this limit and is settling future projects about cleaner objectives, in order to improve the quality of work and also the economic performance.

Finally, the company's last need concerns cost centres. With the implementation of SAP, many things will change, including the allocation of costs. The current management of the centres is not optimal, because, in addition to being very large in number, they are all dependent on the skills of the controller, without anyone else being able to decipher the system that is at their base. A cost centre is "a department or function within an organization that does not directly add to profit but still costs the organization money to operate" (Tuovila, 2020). They are an important tool for allocating costs to the right areas and the current cost centres are managed on Excel sheets, connected to the various data sources, all built over time by the Alifax controller, the only one to know its functioning. A good way to streamline processes and share the information responsibility would be the support of the controller with one or more people willing to learn this kind of specificities of the company. This could both help improving the performance and the sharing of information. Furthermore, the processes should be formalized, that is, inserted in an integrated system to which only trained people have access.

The needs listed above are personal considerations and are not of an urgent nature, but rather of improvement one. As it will see in the next paragraph, Alifax is very performing and what was meant to highlight with these observations is that the company could be even better with some adjustments at the MCS level.

5.2 Future projects – SAP

To manage a company, reliable data relating to events that have occurred are required, which are usually demonstrated with documents. In particular, for the management control it is important to know how the company's resources are moving. Since managing this manually is (nowadays) a waste of time, a computer information system is required. It is a tool that link the various business results with the processes that create them, so that the information is properly managed without the need to resort to various documents. These systems act as a facility, without the operator being replaced. Each information has its own chain of life, which passes through various documents, for example, a purchase request for a raw material must be approved, ordered from the supplier, sent, the bill must be registered, the warehouse updated, etc. An information system helps build this cycle without having to physically search for each document, by transferring the data and linking them.

The one that currently Alifax has is called IMPRESA and it is a management software that covers the needs of a medium-sized company, managing standard processes. Due to this, Alifax has integrated this management software over time with its own customized programs to manage those processes not provided for by the system. This has created a problem of interpretation of some data, which are read in different ways depending on whether it's used the basic form of IMPRESA or the one integrated by other programs. This could lead to the unreliability of some information. Two years ago, the management realized the insufficiency of this information system and started a replacement project. In fact, the main constraint of IMPRESA is the fact that it does not have an international nature, while Alifax has now reached an important number of foreign branches. After an analysis of the processes at all levels, it was concluded that the only model that can reconcile the peculiarities of Alifax with its need for internalization is the SAP software.

The SAP Company (Systems, Applications, and Products in Data Processing) can be defined as a vendor of ERP systems offering solutions designed for specific processes, that is, combinations of predefined applications. It is known all over the world and is one of the largest companies in this sector (Al-Sabri et al., 2018). Since the pandemic started in 2020, there has been a noticeable drop in SAP installations. The projects already

started have continued and the completed ones have been consolidated, but the new installations have suffered a brake due to the economic difficulties encountered by many companies (Costin, 2020). Alifax is one of the few companies that have not suffered losses due to the Coronavirus, but rather have had an opportunity to expand and improve their processes. The company had started planning the SAP implementation already in 2019 and is now in the microanalysis phase, that is, an action plan is being studied to match the current organizational structure with the future ERP system. The actual implementation will begin in October 2021 and, hopefully, the first version will be released in the Italian offices in October 2022. From here on, the foreign branches will be dealt with one at a time, and six months in six months they will be connected to the system. Presumably, the project is expected to be completed in the year 2024. SAP is a closed, rigid system, so that it can be customized, but it is not simple. For this reason, not all the specific facilities made by the company alongside IMPRESA will be kept, but only the ones really necessary, thus making a streamlining of superfluous processes (such as those that were made to facilitate a single office).

According to the ICT manager, the expected benefits from this project are three. The first advantage is probably the most important and relates to the reliability of the information. With the SAP system, all data will be checked and there will be a reduction in the time lost to find and correct the wrong ones. Currently, any anomaly that is found must be resolved with a manual check of the entire data flow and this will no longer happen with SAP. The second advantage relates to data analysis. Today the data of the company management software are used, but they are reclassified with external programs operating at night and they are made available for analysis, in particular for management control. The controller then collects the results via Excel, trying to cross them and find answers. This unguided manual search is not an efficient way of working. SAP will instead be able to organize the information in an optimal way so that every single piece of information is always linked to its entire history. Finally, once the system is implemented, a data warehouse will be installed alongside it. It is a platform that collects data both from SAP but also from other sources (for example Excel or JPM) and translates them into an independent standard information model. It will offer very powerful analysis tools, linking data that are far apart. Alongside these improvements,

there are also other possibilities proposed by SAP that have emerged during the various interviews. The program should improve communication between the various business areas, for example between sales and production, so that there could be more precise forecasts to follow, and workers could be more prepared in case of exceptional orders. Furthermore, at the management level, a "rolling budget" system that is currently not applicable could be implemented. It is a budget that, like the standard ones, has a time horizon of one year, but it is updated every quarter, cancelling the previous three months and adding new ones each time (Ca' Foscari University of Venice, 2016). To do this, it's needed a precise and reliable management system, such as SAP.

These are just a few examples of the potential of a well-structured control system. Another management change is the one that will take place for the reclassification of the income statement. Alongside the classic statutory income statement set at costs, revenues and inventories or at cost of sales (according to the principles and schemes envisaged by the legislation in force in the Italian state), a standard and variance income statement will be implemented. This highlights the figurative revenues and allows the development of economic accounts according to different perspectives: by Business Unit, by product / service type, by type of sale, other dimensions related to the customer, other dimensions related to the material.

In Image 7 it can be seen the comparison between the two schemes. In the standard value scheme, there are three more items in the calculation of revenues, and they concern the particular relationship that binds the two components of the business, namely the machines and the reagents. Recall that in most transactions it is the reagent that is a real source of profit, while the machines are given on loan for use. The "figurative instrument rental" indicates the portion of the reagent price that must be attributed to the rental of the machine. This means that, numerically, the price is attributed only to the reagent, but, in reality, when the price was decided, it was taken into account that a part of it should have covered the costs of the machinery produced. The "figurative reagent sales", instead, tries to understand the sales price of the reagents in the type of tender in which Alifax is paid based on the number of reports made. To do this, it is necessary to find a value in the report, which can only be verified in the final balance. The price, in advance, cannot be too high, because to participate in

a tender, the price is an important variable to win. "Figurative service performance", instead, indicates the portion of the reagent price dedicated to assistance, that is guaranteed by Alifax following the purchase.

CIVILISTICO (riclassificato)		GESTIONALE a STD e Varianze	
<i>A costi / ricavi e rimanenze</i>			
Voce	Criterio di valutazione	Voce	Criterio di valutazione
VENDITE STRUMENTI	EFF	VENDITE STRUMENTI	EFF
NOLEGGIO STRUMENTI	EFF	NOLEGGIO STRUMENTI	EFF
		Noleggio strumenti figurativo	EFF
VENDITE REAGENTI	EFF	VENDITE REAGENTI	EFF
		Vendite reagenti figurativo	EFF
PRESTAZIONI SERVICE	EFF	PRESTAZIONI SERVICE	EFF
		Prestazioni service figurativo	EFF
ADDEBITO REFERTI	EFF		
ADDEBITI VARI	EFF	ADDEBITI VARI	EFF
RICAVI		RICAVI	
COSTI PER PRODUZ. INTERNA	EFF	Costo del venduto STD	STD
COSTI PER PRODUZ. ESTERNE	EFF	AMMORTAMENTO STRUMENTI	EFF
ACQUISTI	EFF	MARGINE INDUSTRIALE STANDARD	
VARIAZIONE MAGAZZINO	EFF		
AMMORTAMENTO STRUMENTI	EFF	Varianze di produzione	STD->EFF
COSTO DEL VENDUTO		Altre varianze	STD->EFF
MARGINE INDUSTRIALE		MARGINE INDUSTRIALE	

Image 7 - Comparison between reclassified statutory scheme and management scheme, Alifax S.r.l., 2021.

Proceeding with the analysis, it arrives to the calculation of a standard cost of sales. From here the various variances can be calculated according to the precise formulas.

As we can see, the possibilities offered by this project are many, but there are also many problems that can arise. According to the ICT manager, the main obstacles that will be encountered once SAP will be put in place regard the response of employees and the transition of data from the old software to the new one. According to Gargeya & Brady (2005), in the past, when a new ERP system was implemented, the staff element and employee training in its use were naively neglected. This has led in recent years to a greater focus on the human factor, also because it has been noted that ignoring it leads to additional costs in the long run. There are two steps to take at the human level when

introducing this kind of change. The first concerns the training of personnel, who must be able to deal with the new features introduced, in order to carry out daily activities. The second concerns managers, who must fully understand the implications of the new system and agree among themselves for the changes that will take place. If the managers disagree, there could be a climate of rejection on the part of the employees, because the connotation of insecurity of the new project would be evident. The sense of belonging to a team is critical at this stage, as employees need to support each other in changes and actively collaborate to achieve common goals (Gargeya & Brady, 2005). The employee training process will not be easy at Alifax. SAP is recognized as a complex system to learn, and it will take a lot of patience in the first months of use. It is also necessary to consider the difficulties deriving from the fact that all the Alifax branches will implement the software at different times, and this will lead to having many levels of training and different types of management at the same time. In fact, it's good to recall that the first SAP version will be launched in Italy in 2022 and it is expected that all Alifax companies will have implemented it by 2024, with therefore two years of transition to manage. Finally, at the management level there will be organizational problems similar to those encountered after the merger between Alifax and Sire. The information will be present in the old ERP until a certain date, after which they will be recorded on SAP, which has completely different rules and information analysis processes. Unlike the merger, however, there will be the previously mentioned data warehouse, which will deal with this inconsistency, creating a higher classification layer in which it will be possible to reclassify the data and to present them as a standard. The data will then be collected from different sources (new and old ERP, Excel etc.) and a uniform analysis of the past, present and future will be possible.

Once the installation will be finished, there will be a coexistence of SAP with other supporting software, such as JPM or Qlik sense.

5.3 Few considerations about Alifax success

As has already been illustrated, Alifax finds itself in a very performing situation. Anyway, it is surprising to see how the ignorance of theoretical models have not affected the economic rise that Alifax is experiencing, especially considering that this led to real

inefficiencies inside the organization. In this last paragraph, this paradox will try to be investigated, looking for the causes of Alifax success, which are apparently so relevant as to cover the present shortcomings. The following considerations are based on personal opinions gained during the internship at Alifax.

The first factor of success surely lies in the presence of the company in a prosperous market. According to the 2019 report drawn up by Confindustria, the medical devices sector in Italy is worth 16.5 billion euros between exports and the domestic market. It is a very heterogeneous, highly innovative industrial environment, where small companies are able to coexist with large groups, without being overwhelmed by them. Even before the boost received by Covid-19, the medical devices sector was considered profitable and with good future prospects. In a 2018 report by KPMG, this market was defined as prone to growth stability, with a global annual sales forecast estimated to rise by 5% a year and reach nearly 800 billion US dollars by 2030, as illustrated in Image 8.

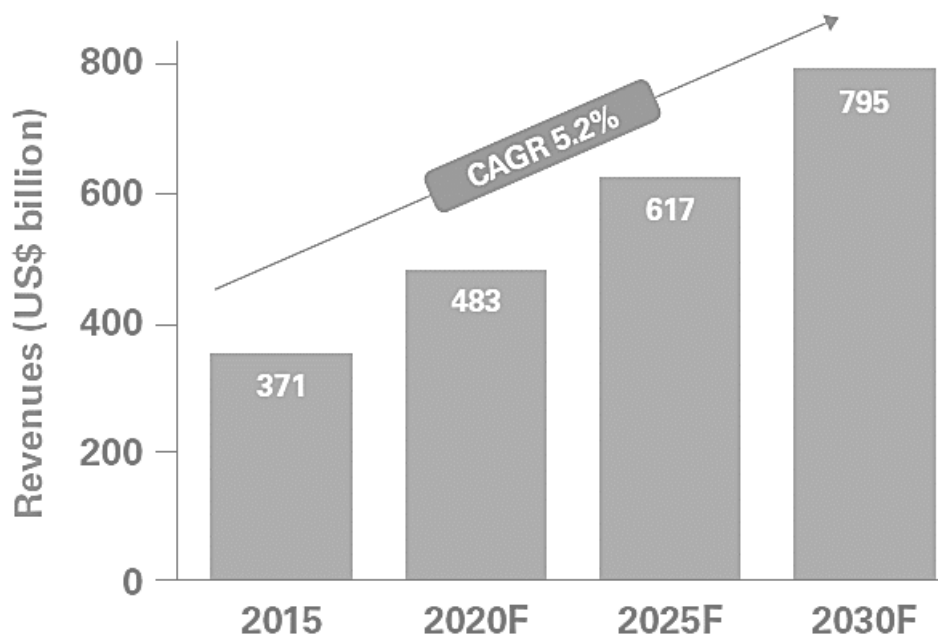


Image 8 - Global medical device sales forecast to 2030, KPMG report, 2018.

These estimates derive from the growing attention paid by people to their health, which leads to an increasing demand for innovative services and products for personal care. This leads the Alifax products being considered as a necessity and the sector to receive considerable interest from investors.

A stable and growing market is therefore the first factor in Alifax success. It is precisely the profitable margin that the company manages to obtain from the sale of its products that allows the business to remain thriving, despite the lack of growth objectives. It is good to remember that Alifax prices are in line with market ones, as most of the product supplies are reserved for national tenders, in which several companies participate, and the price represents an important variable. The safety given by a high margin, therefore, is the first factor that in recent years has allowed the development of Alifax despite some of its organizational inefficiencies. In the face of a sure return on the goods sold, any waste of time and materials deriving from non-optimized production lose value. As already anticipated, however, it is in Alifax interest to remedy this by introducing more specific growth objectives with future projects, thus surpassing the current strategy based on simply respecting product delivery times.

Alongside this particular market, there is the incredible force with which the pandemic has influenced the social and economic processes of recent years. From the first months of 2020, companies based on social interactions or that were already experiencing some economic difficulties have had to close their activities. Other companies, on the other hand, have been able to take advantage of this event, for example by converting their processes and using materials that were previously dedicated to the production of an ordinary good, to use them instead in the construction of health devices, such as surgical masks, protective visors or sterile gowns. This type of change requires investment and sacrifice and is not applicable to all economic activities. Alifax luck during this pandemic was that it was already included in the healthcare sector, both in terms of product commercialized and in terms of business contacts, i.e., suppliers and customers, with whom it had already collaborate for years. The growing need for diagnostic tools has therefore considerably increased the demand for Alifax work, which also had a winning intuition, namely that of intensifying its commercial area, starting a business of buying and selling from abroad the molecular swabs needed to trace the virus. The changes that took place in Alifax during this health emergency were successful thanks to the hard work of the employees and managers, but also from the fact that the company was already well integrated in the healthcare context. During a crisis, entering a new market is not easy, especially because the timing is not the right one for capital loans or

investments. On the other hand, when a company is already in a performing sector, processes and operations can be successfully expanded, if the opportunities are well seized, as Alifax did.

Belonging to an expanding good market is not enough to be successful. In fact, entrepreneurial skills and winning intuitions are also necessary. For example, one of the best decisions Alifax made was to acquire and then merge with Sire. As logical as it may seem the decision to become one between two complementary companies (one produces and the other trades the same type of good), it has been seen in chapter one how complex this type of operations can be. To achieve a good result, it is necessary to work on many factors: adequate investments, skills in managing the acquired human capital and sincere interpersonal relationships (such as the one that existed between Mr. Galiano and Mr. Breda).

Finally, there is another element that allows Alifax to be such a performing reality, and it is based on people. This company was born with a management structure made up of the Galiano family and some operational employees, without the existence of any manager, as the initial dimensions of Alifax were modest. Over time, the business has started up, expanding itself, and some operatives have become responsible, without them being hired from outside. This implies an internal growth of employees, a very important aspect for the development of specific skills. In fact, many of the Alifax employees have been working there for many years. Some figures were lately taken from the outside, such as the CFO, but the roles most connected with company operations, such as production managers, remained internal. Alifax, therefore, during years, have been able to implement a decentralization program, relying however on loyal employees already included in the sector. A good level of decentralization is important when a company grows. It can be positive in many ways. First, low-level managers are much more informed and updated on day-to-day operations, such as changes in demand, processes, needs, etc. When small daily decisions are delegated to trusted people, the top management can concentrate on more strategic issues. Furthermore, through decentralization, a sense of trust is transmitted to employees and a positive psychological effect is created whereby lower-level managers feel more motivated and get trained from this empowerment (Merchant & Van der Stede, 2007).

Alifax decision to invest in people and their training, therefore, has led today to have trained and loyal staff, with many years of experience in the medical device sector and in Alifax specific operations.

According to a study by Ibrahim & Goodwin in 1986, small businesses owe their success to four fundamental factors. The first is the Entrepreneurial Values, which sees business intuition, interpersonal skills, risk taking, creativity and flexibility among the indispensable characteristics of an owner. The second factor is managerial skills, which includes elements such as a niche market strategy, effective management of cash flow, an efficient budgetary system and a simple organization structure. Interpersonal skills are also needed, in order to be able to forge all kinds of relationships, both internal with colleagues, and external with customers or banking institutions. Finally, there are some environmental and political characteristics that can help, such as accessibility to loans, the tax system, and government assistance (Ibrahim & Goodwin, 1986). Although the study is quite dated, it is interesting to note how certain things remain constant. All these characteristics that in 1986 were considered fundamental for the success of a small business, are perfectly reflected in those that Alifax manifests today.

These considerations lead to food for thought. Alifax has managed over the years to develop and improve itself, based on the entrepreneurial tradition typical of the Veneto region, on intuitions and interpersonal relationships. What seems to be missing is the adherence to some theoretical reference model. In fact, most of the Alifax processes are based more on experience than on the in-depth study of MCSs. Yet, this strategy has yielded excellent results, creating a paradox in which years and years of studies and research in the business environment would seem superfluous for companies such as Alifax. The question that arises is therefore: how much are theoretical models necessary for the good functioning of a company if in this case it is clear that they have not had any dominant role in achieving success? Actually, some considerations in this regard are the following. All the people I had the opportunity to talk with during the internship, both among managers and employees, agree on a very important fact, namely that Alifax is undoubtedly facing a period of success, but it is not making the most of its potential, as it could still be better. The fact that a specific model is not followed to organize and manage the business does not imply the failure of the company, but its

loss of an opportunity for excellence. If until now the small size of the company has allowed an empirical management, this will not be possible in the long term in which it is expected to continue to grow. Alifax has realized this, and that is why it is studying new processes, such as an integrated reporting system at all levels. A studied and verified MCS framework is therefore essential not only for large organizations that want to maintain internal order, but also for medium-small businesses that want to improve and seize opportunities for growth. In fact, the main purpose of well-designed control systems is to push the behaviour of all business participants to collaborate and act in the desired way by the company, that is towards the achievement of common objectives. (Merchant & Van der Stede, 2007). This does not mean that without these systems a company cannot still operate well, but that they can be a valid tool for being a more challenging and competitive organization.

Conclusions

The purpose of this thesis was to approach a real business case starting from a theoretical framework, and demonstrate the necessity of knowing deeply the specificities of an organization before being able to improve its processes. At the centre of this study was the Alifax S.r.l. company, whose control systems were analysed and commented on. Alifax is a very fascinating subject, because it represents very well the type of company present on the Italian territory, especially in the North-East, that is a family business reality that has grown over time thanks to human relationships and entrepreneurial skills. It was born as a small business and, over time, it has expanded, reaching a dominant position in the world of diagnostic equipment. Not having been created with the intention of achieving these results, Alifax current organizational processes are fragmented, because they are the result of an evolution that started from the very beginning, when the management was very simple and the staff few. This process is not over yet, because the company seeks continuous improvement and try to keep up with the times. The starting point of this thesis is based on theoretical concepts, those commonly taught in university courses, in which Alifax was tried to be inserted. In some cases, consistency was found between the literature and the actions of the company, such as the attention given to the human factor during the acquisition of Sire, or the importance still given to the motivation of employees, to make them feel involved at all levels. On other aspects, however, there is not much consistency between theory and practice. In some cases, this is just part of business practice, as this kind of realities are much more complex than the ones explained in the theoretical models. In other cases, however, departing from concepts recognized as important by the literature can lead to organizational inefficiencies. This is the case, for example, of Alifax lack of clear and precise growth objectives, one of the fundamental aspects of MCS. This comes from a failure in updating priorities, as the ones that the company had at the beginning of its experience didn't change during years, and they still are the ones of a small family-based business. At the time Alifax started its operations, having approximate goals was fine, as the company was trying to build its own identity, but today it turns out to be a reductive strategy, for all the reasons explained in this paper. The same goes for reporting. An integrated system is a necessary tool to connect and communicate different areas of the

same structure, its lack is a symptom of inefficiency that Alifax needs to fix. By studying the recommendations that the literature makes regarding MCS, it has been noted that, where these were ignored, slowdowns were created. Briefly, those found in this analysis are the lack of precise objectives for employees, a fragmented and non-integrated reporting system, the lack of demand for accurate and timely production results and the centralization of many skills and knowledge in the figure of the controller. The current business is so strong that it is not really threatened by the underestimation of these inefficiencies. It is however significant to consider how all the people inside the organization agreed that if these problems were solved, Alifax could make a significant leap in quality and become truly competitive. The premise for a healthy and balanced development of the company exists, and is based on objective factors, such as the optimal choice of the sector, but also on very human factors, such as the interpersonal relationships developed over the years and the precious know-how possessed by the producers, which allow the excellence of Italian work to be known all over the world. The aspects on which action should be taken are more linked to the organizational field, as more clarity should be established on production performance and data collection should be harmonized at a company level. To do this, an effort on the part of management is necessary, which must study a homogeneous system of performance evaluation, both to motivate the staff and to be able to correctly compensate the people who add value to the company. One of the most important changes that will take place in the near future is the implementation of a new IT management, which will be the well-known SAP. All people interviewed are all very confident in this decision, which will allow Alifax to be fully international and to fix many technical slowdowns. Undertaking a project of this type is not easy, as it takes years and a lot of resources from when it starts to when it ends. While this decision is an excellent starting point for exploiting the hidden potential of Alifax, it is important to remember that focusing only on a more powerful technical tool is not enough. SAP alone is not an absolute remedy. At the base of its implementation, a tailor-made organizational structure is needed, which requires time and resources to be concluded. The main advice that Alifax can draw from this thesis, is taking into greater consideration the theoretical models concerning the management control systems, not to apply them literally, because it was seen how it would not be possible nor profitable, but to get inspiration, in order to optimize

processes and resources and to better evaluate the effectiveness of the strategies currently implemented. It is also of fundamental importance that the integrity of the group is perceived at all levels, from top management to simple workers. When employees operate with the perception that the whole company will benefit from their work, a positive motivational effect and a better performance are created, because even minor activities, such as the correct and complete insertion of information in the management systems, will be considered as valuable.

In conclusion, Alifax is a company that has a lot to tell. It is dynamic, human and it shows a continuous interest in improvement. It was a pleasure to have it as the subject of this thesis, both for the interesting topics dealt with and for the availability that the people met have shown towards this paper. The hope is that this analysis will be useful for the company to make the most of all its potential, in order to match a better organizational management with the very precious human capital it is provided with.

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