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ENTERPRISE: THE TRANSFORMATIONAL ACTION OF THE BUSINESS MODEL IN BRAZILIAN DIAGNOSTIC MEDICINE

ENTERPRISE: A AÇÃO TRANSFORMACIONAL DO MODELO DE NEGÓCIOS NA MEDICINA DIAGNÓSTICA BRASILEIRA

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ABSTRACT

The present case demonstrates the Pardini Group's business model transformation process, a national reference in diagnostic medicine. With the operation in full expansion, the number of exams carried out grew at an average rate of 15% per year, driven mainly by the performance in the Lab-to-Lab (L2L) modality. The management team, primarily physicians, infectious disease specialists, and biochemists, focused on the search for new knowledge to implement a new business and management model. Thus, the Enterprise project was born, a worldwide unprecedented laboratory automation project. The project aims to increase production capacity, speed of processing exams, and reduce costs, maintaining high levels of accuracy and reliability. In addition, we describe the reformulation of the logistics system and significant investments in integrations and digital transformations, ranging from the creation of software and hardware, thus promoting the emergence of the MyPardini digital platform. The case brings together practical evidence of the Pardini Group's innovative culture, its leaders' role, and the ability to deliver with agility in the L2L market. These are some findings that promote the materialization of the Enterprise, a fact that boosted the last negotiations of the acquisition process by Fleury.

Keywords: business model, innovation, leadership, strategy, digital integration

RESUMO

O presente caso demonstra o processo de transformação do modelo de negócio do Grupo Pardini, referência nacional em medicina diagnóstica. Com a operação em ampla expansão, a quantidade de exames realizados cresceu a uma taxa média de 15% ao ano, puxada principalmente pela atuação na modalidade *Lab-to-Lab* (L2L). A equipe gestora, em sua maioria médicos, infectologistas e bioquímicos se debruçaram na busca de novos conhecimentos para implementar um novo modelo de negócios e de gestão. Surge, assim, o projeto Enterprise. Um projeto de automação laboratorial inédito no mundo. O projeto visa o aumento da capacidade produtiva, da velocidade de processamento de exames e a redução de custos, mantendo os níveis de acurácia e confiabilidade elevados. Além disso, o caso descreve a reformulação do sistema logístico e os investimentos em integrações e transformações digitais, desde a criação de *softwares* e *hardwares*. Promovendo, assim, o surgimento da plataforma digital *MyPardini*. O caso reúne evidências práticas da cultura inovadora do Grupo Pardini, o papel de suas lideranças e a capacidade de entrega com agilidade no mercado L2L. Esses são alguns dos achados que promovem a materialização do Enterprise. Fato que impulsionou as últimas negociações do processo de aquisição pelo Fleury.

Palavras-chaves: Modelos de Negócios, Inovação, Liderança, Estratégia e Integração Digital

1.1 - Introduction

Imagine a company that, close to completing 60 years, decides to carry out a disruptive change in its production process. That's what Grupo Pardini did, relying on an organizational culture based on process and innovation - cultivated by its founder, Dr. Hermes - and responding to the challenge from its CEO, Roberto Santoro.

The provocation made by Santoro came in 2016 during a growth period for the group. The CEO wanted to build the capabilities that would enable Pardini to grow exponentially, thus consolidating its position as one of the leaders in the domestic market, particularly in the Lab-to-Lab (L2L) segment. That would allow the company to fulfill its purpose of bringing health technology to those who need it wherever they are.

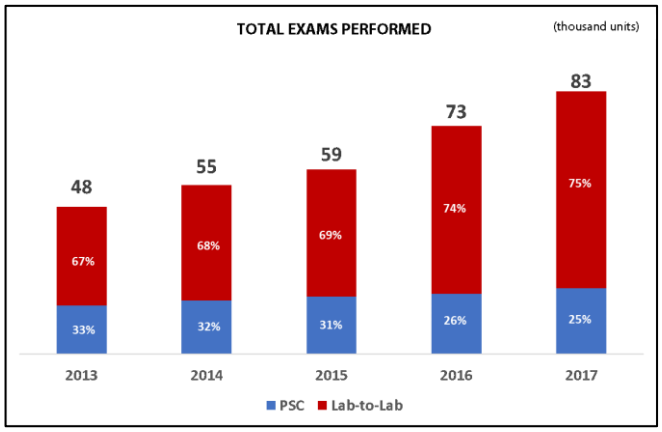
Created in 1959 as a local clinical analysis laboratory in Belo Horizonte, between 2012 and 2022, after a partnership with Gávea Investimentos, and subsequent IPO, Grupo Pardini intensified its inorganic expansion strategy with a series of acquisitions[1].

Guilherme Collares, the group's pathologist and Executive Director of Operations, tells how this performance in B2B was born.

> *"Dr. Hermes used to bring the latest tests to Brazil and often generously made them available to other laboratories. In the 1990s, he realized the potential of that as a business opportunity. Then, he established a sales department and a medical advisory team to provide training on the exams and set up the necessary logistical structure."*

[1] The acquisitions that took place between 2012 and 2022 included the following laboratories: Digimagem (SP), Progenética (RJ), Biocod (BH), Padrão (GO), Diagnóstika (SP), Centro de Medicina Nuclear da Guanabara (RJ), Ecoar e Laboratório Humberto Abrão (MG), DLE (RJ), Pyschmedics (SP), Labfar (MG), IACS (SP), Laboratório Solução (SC), Laboratório Paulo C. Azevedo (PA), Clínica Dra. Odivânia Moscogliato (SP), Laboratório APC (PR), Laboratório CSV (ES) and Laboratório Hugo Silviano Brandão (MG).

In 2016, the laboratory's operation expanded significantly (Figure 1). The number of tests conducted was increasing at an average rate of 15% per year, driven mainly by the Lab-to-Lab (L2L) services, as shown in the graph below.



The laboratory has two forms of operation basically:

- - PSC (Patient Service Center) performed in its stores, with direct service to patients (B2C);
- - Lab-to-Lab (L2L), in which Hermes Pardini performs specialized tests for other Brazilian laboratories (B2B).

Figure 1*: Yearly Growth Rate of Medical Exam Production for Lab-to-Lab Services*
Source: Raphael V. Foureaux Paulino

The team already had the first stand-alone laboratory automation experience in 2010, when the Technical Operational Center was created, 10 minutes away from the Confins airport, in a pioneering project in Brazil. The implementation of the first automation project generated a lot of learning, recalls Collares. The implemented process had not been previously tested. So, when it was automated, relevant problems were identified and amplified by automation. When faced with the challenges, the suppliers were not able to solve the issues. The executive says that, from then on, there was a fundamental change in the understanding of the role of Pardini's internal team.

> *"We were doctors, biomedical and biochemists trying to do it the best way, but we were much more focused on the question of how to do the test than how to do 2 million tests in the shortest time, with the lowest cost and the highest safety."*

Then, the entire team was invited to return to the classroom and learn the fundamental concepts of Production Engineering. "Including me," the executive laughs. "At that time, there was a lot of resistance. People said: 'This is not a factory; it is a laboratory! I said: let's see it as a factory! From then on, Collares says that the process was being improved. A consulting company specialized in Lean Manufacturing was hired, and the numbers improved significantly.

1.2 – The Enterprise Project

In 2016, due to the fast growth of the Group, it was perceived the need for a new leap. An unprecedented automation project, named **Enterprise**, was born with an internal and an external look, directly influenced by the lessons learned and capabilities that have been developed, especially since 2010. According to the VP, Alessandro Ferreira, Pardini, historically, is a technicist company.

> *"This meant that we developed our products and processes and then put them on the market for someone to buy. Enterprise has gone backward and forward. We learned for a long time from the old model what the purchase criteria, critical success factors, and key pains were. We understood the customer needed processing speed first."*

The first step was to gather the internal group of specialists to build together what would be the Pardini Group's vision of the future for its complete automation process.

Figure 2: *Logo of the Enterprise Project - The future of the diagnostic lab.*

As no supplier could fully meet the specifications made by the Laboratory, it was necessary to structure a co-creation process involving different players, Santoro says. "We brought together for the first time antagonistic suppliers in Brazil, with contradictory commercial policies, to build a procedural solution for Grupo Pardini."

Figure 3: *Factory of Laboratório Hermes Pardini before the Enterprise*
Source: Raphael V. Foureaux Paulino

The technical team created and presented an RFI (Request For Information) to the four worldwide reference automation suppliers (Abbott, Roche, Siemens, and Beckman) to evaluate their ability to fulfill the specifications established by the technical team.

With the answers to the RFI, Pardini's proposal was adjusted and presented in person to the suppliers. "We took advantage of the trip to make benchmarking visits and get to know what

worked and what didn't work in the already implemented laboratory automation in countries such as Spain, the Netherlands, and the USA", says Collares.

Upon returning to Brazil, formal meetings were held to design four projects, each project for each one of the potential main suppliers. The projects included not only equipment, software, and integration requirements but detailed proposals for change and implementation as well, complete with timelines. Collares recalls that great care was taken to avoid sharing information between suppliers and to ensure adherence to confidentiality agreements (NDA - Non-Disclosure Agreement). The meetings set off a co-creation procedure, generating a range of innovations and new developments for both Pardini and the suppliers. "We gained a wealth of knowledge from this experience. I believe the suppliers did as well," reflects the executive.

With the design of the four projects in hand, quotations were requested, and an internal work of scenario design began. "We designed 22 scenarios mixing the projects and trying to incorporate the best of what each one had from the compatibility assessment between the solutions presented by each vendor. Automation from one with hematology from another and so on."

The twenty-two scenarios were evaluated based on a scoring system that considered benefits, direct expenses, and the costs associated with complexity and implementation duration. From those, two scenarios were selected, and the contractual negotiations began. The entire negotiation was minuted so it could be reflected in the contract.

In the implementation course, the suppliers examined the existing infrastructure (electricity, air-conditioning, hydraulics, etc.) and determined the needs the Pardini Group must meet to render the implementation viable. Infrastructure costs were also taken into account in the total cost.

The magnitude of this transformation was vast, and the shift was unsettling not only to the Mineiro Laboratory. The ambition was to build **the largest laboratory automation plant in the world**.

Another decision of the group that increased the project's challenge was to carry out the implementation at the same site and concurrently with the operation. The famous "hit the ground running" happened at Enterprise, unlike what happened in the most audacious project of the sector implemented so far by Quest Laboratory in the USA, which had chosen another site to implement the new plant. The site chosen by the Pardini Group was the Technical Operations Center itself.

The first step of the implementation foresaw the removal of the automation belt in operation. "It was necessary to make room to move the equipment. So, it was necessary to increase the number of operators who started to perform the work previously done by the conveyor."

In his favor, Santoro had an innovative organizational culture.

> *"Innovation is in the DNA of the company, not only innovation of new tests, which is what we have always done, but we have also always innovated the business model, the production model."*

Despite the help provided by an innovative culture, the project still encountered human challenges. According to Collares, "there was significant resistance to change, particularly from the operators who feared losing their jobs." The Siemens Change Management team, the Corporate Education team from the Pardini Group, and the communication agency Árvore were called in to help address this resistance. The teams conducted interventions to show how the

project would elevate the operators' work. Besides, they produced regular newsletters to keep the teams informed about the project, and prizes were given to those who completed each step of the implementation process.

The execution of the Enterprise project was started in 2018 and completed in November 2019, followed by a stabilization period that lasted until mid-2021. Collares explains that besides the implementation of the equipment, its customization, and the software integration, it was necessary to make significant infrastructure interventions in the sewage, water, and electrical systems, and the plant's layout. All this work involved some "serious breakage" in a space that could not be contaminated by dust.

Lower-volume exams were the first to be implemented. The analysis equipment for the various exams was installed, validated, and then went into production mode. The conveyors were installed after implementing the equipment dedicated to the higher volume exams. "There were 31 carts with over 300 meters of conveyor belts, which were unloaded in a single day," says Raphael Paulino, one of the project's implementation leaders engineer. He also remembers that even after being implemented, if there was even the slightest movement of the analyzing equipment, it was necessary to go through the entire validation process again. That included statistical tests and the participation of medical specialists.

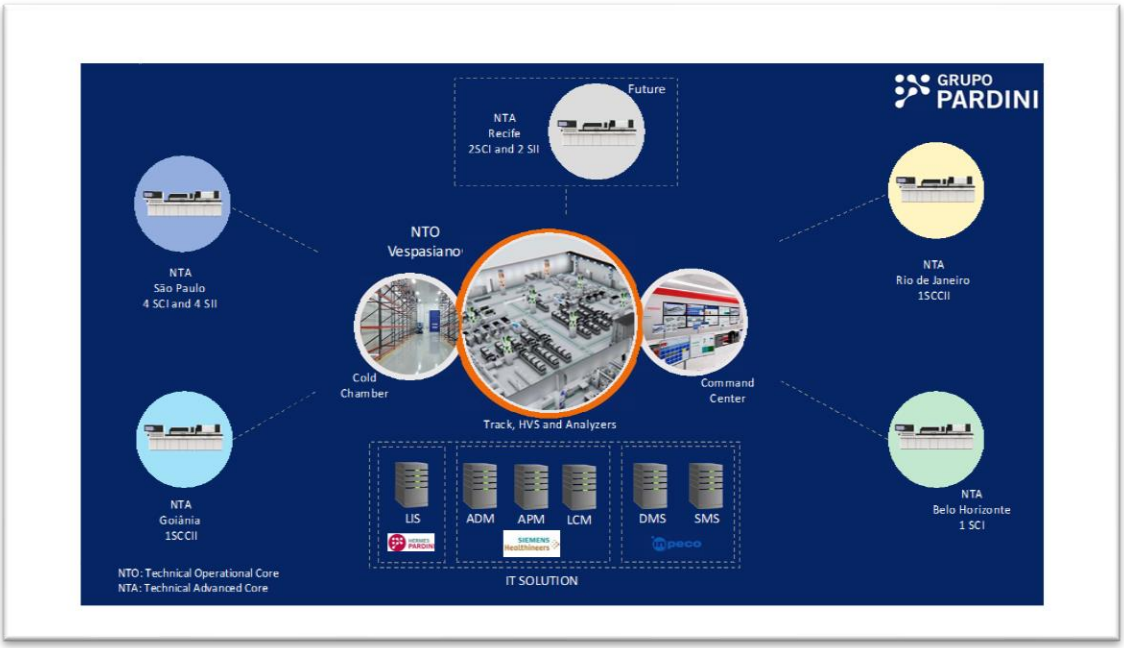


Figure 4: *Comparison of the technical and operational of the Enterprise Project*
Source: Raphael V. Foureaux Paulino

And the implementation was not only made of advances. There were also setbacks and moments of uncertainty. At that moment, the most critical points of implementation were thought to have already been overcome. However, the Laboratory faced a period of instability soon after errors appeared. The response time increased, and the customers complained about the delays. Doctors and patients were insecure with the changes in the reference values of the tests because of the use of different techniques.

During the implementation, an additional team of operators was hired because of occurrences in the project itself: construction works, equipment movement, and training in new platforms,

so that, with the change in the operation, there would be no impact on the final customer. The goal was to ensure that the alterations in the operations did not affect the end customer. That is evidence of the price one pays when a project is considered pioneering within both the company and the sector it operates.

1.3 – A curva de aprendizagem no tempo

After the go-live[2] moment, there came a long period of regular meetings with the main suppliers to implement improvements until it was possible to reach today's speed. Currently, the 95 percentile of the *turn around time* (TAT), the time measured between the insertion of the sample in the automation platform and release of the result, is about 5 hours for non-specialized exams, 80% inferior to the 2017 average before the implementation of the Enterprise. "Nowadays, the conveyor belt is so fast that I need to faster in the pre-analysis", explains Collares.

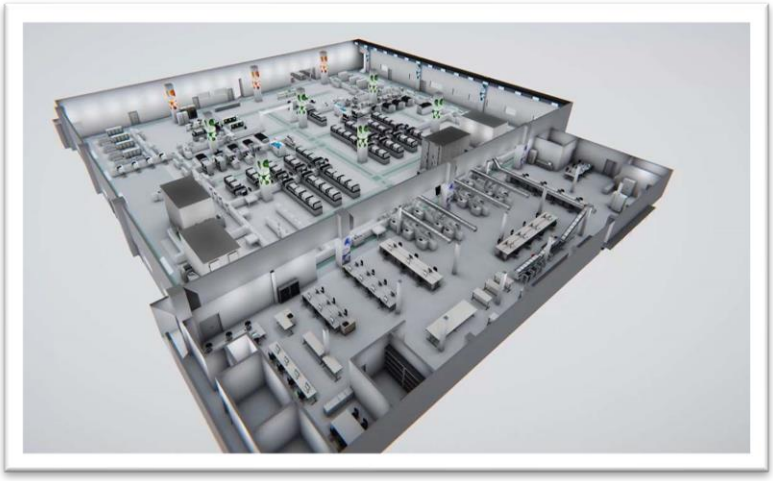


Figura 5: *Projeto Enterprise*
Source: Raphael V. Foureaux Paulino

Collares explains it was also part of the Enterprise Project, implementing the analogous production model in the so-called Advanced Technical Centers (ATC) of the Pardini Group. The ATCs in Belo Horizonte, São Paulo, Rio de Janeiro, Goiânia, etc., total seven productive areas. They have the same equipment, service level, and the same reference value, and soon the intention is to unify even the control room. According to Collares:

> *"The idea is that the NTO control room will also manage the ATCs, giving an integrated view of the whole production system and allowing the treatment of eventual problems intelligently. If a problem happens at the ATC in São Paulo, I can send the samples on the next flight to Belo Horizonte, just like what happens at Cia. Aérea Azul. When I met Azul's command room, I thought I wanted one of these in the laboratory."*

[2] Go-Live: Expression used to indicate the beginning of a project, after the conclusion of the installation stage and Try-out (commissioning of the machines).

In the table below, we can observe the typology used by the technical team at Pardini to categorize the stages of the laboratory examination process processed within the activities of the Enterprise.

Pre-analytical	Analytical	Post-analytical
Ordering the test, preparing the patient, taking the sample, preparing it, and transporting it to the analyzer.	Performing the analysis.	Release of the result, comparison with other tests, personal communication with the physician in cases of critical results, and analytical quality controls.

Table 1: *Nomenclatures of the stages of the exams process - Enterprise Project*
Source: Raphael V. Foureaux Paulino

1.4 – The results

The results obtained with the project are in line with the expectations placed from the beginning, and they fall into three main axes: (1) increased production capacity, (2) processing speed, and (3) cost reduction while maintaining the levels of accuracy of the exams.

These benefits end up being directly reflected in the experience of the clients' laboratories, materializing the L2L (Lab-to-Lab) strategy. Thus, Enterprise was conceived and became effective as a central project to support Grupo Pardini's growth strategy.

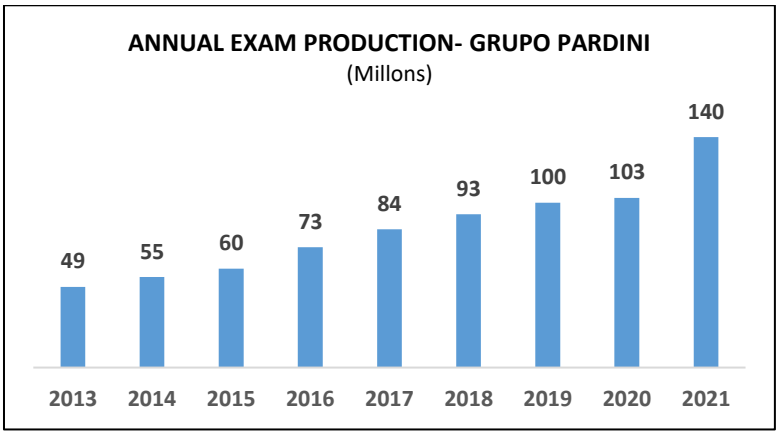


Figure 6: *Annual Exam Production - Pardini Group*
Source: Raphael V. Foureaux Paulino

At the end of 2016, when the challenge was launched, the Pardini Group had performed 73 million exams. In 2021, after the stabilization of the process, 140 million exams were performed. " In other words, Pardini's production capacity doubled in 5 years," celebrates Collares. He also explains that the results delivery time is one of the most determining points for the client's choice of laboratories. The shorter the delivery time, through a safe and quality process, the more attractive the laboratory brand becomes. In diagnostic medicine, the time variable is fundamental for the assertiveness of the patient's clinical evaluation and health promotion. In the figure below, we observe the annual production of tests of the Pardini Group and how representative the impact of the Enterprise Project is after its implementation in the Pardini Group.

According to the Brazilian Association of Diagnostic Medicine (ABRAMED), the laboratory is one of the pillars of medical diagnosis: laboratory tests assist in over 70% of medical

decisions. That makes the need to produce test results with efficiency and speed that match the expectations of value and benefits for Pardini Group's customers.

Concerning costs, the negotiation process itself with the suppliers brought other benefits. Collares says that since Enterprise was an innovative project, there was interest on the suppliers' side in having their new equipment deployed on a reference site. That increased the bargaining power of Grupo Pardini and enabled the reduction of implementation costs. It also reduced costs related to supporting maintenance and the use of inputs. One of the outstanding examples was the negotiation of a new payment strategy for using reagents, no longer for the use of the product, but for the release of reports.

By changing the cost-generating event, Pardini could get the supplier to commit to the process efficiency. According to Collares: "Today, there is a team from the supplier inside Pardini helping us to improve the process to optimize the use of a critical input. Furthermore, it was possible to grow a lot in volume without a staff increase." The figure below shows the correlation between the number of exams versus headcount.

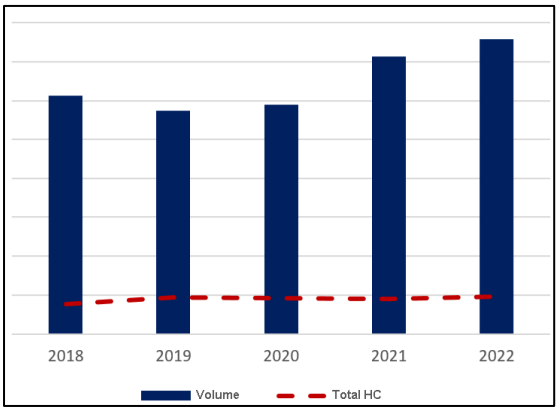


Figure 7: *Annual Production versus Head Count*
Source: Raphael V. Foureaux Paulino

From the point of view of process safety, there has been a significant reduction in sample accidents and misplacements. Traceability is complete. “When you automate, you eliminate human error. Various algorithms ensure compliance with clinical protocols - uncapping, centrifuging, dilution factors, etc.” That has ensured greater process security, especially in the pre and post-analytics.

Another advantage brought by the project was the possibility of collecting fewer sample tubes to perform the same number of tests. Besides improving the customer experience during the collection, this result also reduces the logistics costs and the waste generated by the production process.

Also, according to the VP, Alessandro Ferreira, healthcare companies need to understand that we can no longer compete with the customers' time, be it Lab-to-Lab or PSC (Patient Service Center), and the Enterprise plays a key role in this.

> *“By implementing this solution, various factors, such as processing times, integration times, and the number of tubes collected, can be reduced. However, there are other factors beyond the Enterprise Project's control. Nevertheless, time is a resource that cannot be purchased, transferred, or donated to the client. Thus, the faster the client's exams can be completed and*

> *released (e.g., within 1 day instead of 3 days, or within 6 hours instead of 1 day), the less time they will spend worrying about their exams and the better their experience will be."*

These results have been converted into comparative advantages and better margins. "Today, Pardini operates at higher price levels when compared to its competitors because of the level of services provided," celebrates Collares.

> *"Today, Pardini has the production process that its competitors will have tomorrow. The large laboratories in Brazil operate today with production models equivalent to the model we implemented in 2010, and the small laboratories with even fewer technological processes."*

The gains with the new production process were surprising. However, Grupo Pardini considers them one leg of the Lab-to-Lab (L2L) growth strategy. Guilherme Collares says the strategy is based on a tripod composed of innovations in the production process brought by the Enterprise Project, logistics development, and the digital integration with the client laboratories, with the so-called "easy in, impossible out."

In logistics development, Pardini implemented the Just-In-Time system and the so-called Jet Lab with the increase of chartered flights, and now they are preparing for a new leap, as Collares explains.

> *"We also want to optimize our entire network made of 6,000 client labs in 2,000 cities and 11 production areas. The next step is to optimize processing choices, choosing the optimal place in terms of speed and cost for each exam to be performed, looking at all times to the comparative time advantages over local competitors."*

To fulfill its strategy of digital integration, the Pardini Group developed MyPardini, an exclusive digital platform for Lab-to-Lab partner laboratories. On this platform, it is possible to solve demands in an environment that unifies all processes of each client laboratory, such as request and monitoring of tests with visual traceability in real time on the so-called Onboarding, sample management, issuance of duplicate slips, requisition of supplies, access to detailed information about the process of sample collection, storage, temperature, price and deadline, and also information for patient orientation.

On this platform, the Pardini's laboratory client can request in real-time, for example, the inclusion of a new exam in a sample that is already being processed on the automation conveyors or a sample that has been processed up to 5 days ago, without the need for a new collection. Commands given in MyPardini are integrated directly with Enterprise. Client laboratories also have a dedicated call center with more than 100 specialized professionals available 24/7, ready to assist teams with pre and post-analytical procedures. To Collares:

"Our goal is to make our solutions so intuitive and integrated into the customer's workflow that they become an indispensable part of their operations. We aim to create a seamless user experience that fosters long-term loyalty and makes it difficult for the customer to imagine using other solutions."

1.5 – The future

According to Collares, predicting the future is challenging due to the uncertainty around new technologies. He cites an example of how the rapid pace of innovation over the past decade has surpassed expectations. Collares highlights that current experiments, such as drone-based sample transportation and a blood-collecting robot in California, demonstrate the continuous evolution of technology.

And he pointed out that this performance allows people living in the interior of the Amazon region to have the same exam as another patient in São Paulo. "There are places where people arrive by boat to get the sample," Collares adds.

However, Collares recognizes that future possibilities may even change the concept and way laboratory medicine works.

Once the production process has been standardized, a strategic approach to its location is essential. "Where to produce faster and at the lowest cost?" asks Collares. A strategy that involves not only the technical and production areas but also logistics, commercial, and analytics must be considered many variables. According to him, "there is a dilemma between a fully centralized production or a more decentralized production. In the first case, production would have the lowest cost but would have the shortest response time in some regions. In the second case, production has a higher fixed cost but would have more production areas."

The solution to this dilemma is related to the expansion of the digital Lab-to-Lab initiative with a traceable and transparent system of the production process for the customer. He should know at what point in the automation his demand is. According to Collares, that is important to increase the perception of the gains of the process.

So, plans involve cost and speed but also the perception of the Lab-to-Lab customer. Collares asks himself, "I'm faster, I'm safer, my cost is better, but what is the customer seeing from all this? Do you know about getting on the plane and knowing they closed the door on time? When we're late, the customer notices, but when we do it faster, often he's not noticing, or we're not showing it to him?"

The idea is to have something playfully that allows you to see the tube going through the treadmill, knowing where it has already been, where it is going, and if it was necessary to ask for repetition, allowing transparency and security for the client and facilitating communication. The customer will have access to all these functionalities within a single platform, accessed from anywhere to request any type of interaction. Therefore, the digital Enterprise aims to show the client that, besides more security, he can count on greater speed and transparency about the path of the laboratory patient's sample.

In Brazil, there is no system with this level of traceability. According to Collares, the most we have is something like: "I sent it, he received it, and the result came back."

For Roberto Santoro, besides traceability and transparency, all of this represents a new relationship with the client and the operators, allowing the participation of strategies in the healthcare value chain in a more connected way. In the words of Pardini's CEO:

> *"Pardini is preparing for necessary interoperability in the healthcare value chain. This technology enables this. Interoperability is precisely this connection. Today, there is a problem of trust between these actors, the operator, and the provider, so we are being more technological, transparent, and open to these new connections. This interoperability is the future, one of the solutions to connect. I would say that Pardini is one of the companies that is getting ready for this from the point of view of infrastructure, medicine, and diagnostics."*

The performance started from the entrepreneurial and innovative spirit of the founder, Dr. Hermes, allied to the development of production capacity and logistics of world reference, aimed at achieving the largest market share and the best margins in the segment. According to Santoro, "Pardini can deliver scale while maintaining the levels of safety and quality, non-negotiable for the industry".

1.6 –The union of white coats

Recently, the merger between Fleury and Hermes Pardini has gained strength in negotiations, rekindling the acquisition operations in the diagnostic medicine market. The merger between the giants of the sector was announced at the end of June 2022.

At the time, the companies said that combining the operations represented an "excellent value creation opportunity" that could result in significant earnings for their shareholders. Fleury's **stock rose over 15 percent after the announcement**.

According to the document published in August 2022, Fleury will incorporate the shares of Hermes Pardini through two payments, one in cash, of R$2.15 for each share of the competitor, and the other in shares, offering 1.21 of FLRY3. The deal values the Pardini laboratory at approximately R$2.5 billion.

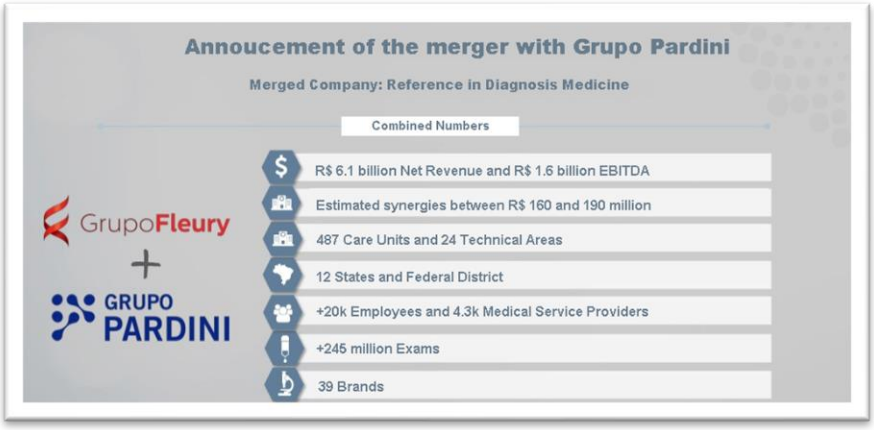


Figure 8: *Announcement of the Fleury and Pardini Business Merger*
Source: Fleury Group, 2022

To make the transaction official, the companies depend on the approval of the Administrative Council for Economic Defense (CADE), expected for the first quarter of 2023. According to the information disclosed in the financial market, Pardini's strategy focused on the L2L (Lab-to-Lab) market aims to decentralize the production model and get a more competitive exam processing time. This expansion initiative is one more effort to enhance the laboratory's service to hospitals and clinics.

Also, according to the information released by the media, Fleury Group will add great value with its brand to the Hermes Pardini business by serving a premium public: classes A and B. On the other hand, Pardini Group will deliver knowledge, expertise, scale, and speed to provide hospitals and laboratories. That confirms Santoro's words when he says that Pardini has been preparing itself to establish more agile and secure connections in serving the public with which it relates.

This merger also seeks a differential in technology, speed, and accuracy in the L2L service modality.

In this sense, the Enterprise Project becomes the central axis of the new Enterprise Group's strategy as a value lever for growth with two identified vectors. First, gain in scale, speed, and service to diverse audiences. Second, the improvement of efficient management in the results' delivery for the target audiences of L2L channels and final consumers.

According to the information released by Fleury, this result will also result in significant gains for shareholders through increased competitiveness in the changing environment of the healthcare and diagnostic medicine sector. Geographic complementarity and national presence combined with a robust capital structure, support from its reference shareholders, and an appropriate organizational structure will further boost the Group's organic and inorganic growth.

What is expected in early 2023 is CADE's final report on the merger announced in June 2022.

Given the above-discussed scenario, one can say that a new business model is to come beside an organizational structure and a mutual learning curve. In this sense, the leadership will face the challenge of managing distinct corporate cultures, as it already happens in the entire merger process.

2 Summary of Teaching Notes

2.1 Overview

This case study shows the transformation of the business model at Grupo Pardini, a national reference in diagnostic medicine. With the operation in broad expansion, with the number of tests performed growing at an average rate of 15% per year, driven mainly by the Lab-to-Lab (L2L) operation, the management team is seeking new knowledge to implement a new business and management model. Thus, Enterprise was born, an unprecedented laboratory automation project that aims to increase production capacity, processing speed, and cost reduction while maintaining the levels of accuracy of the exams, besides a reformulation of the logistics system and large investments in digital integrations and transformations. The case also points out how the innovative culture present in Grupo Pardini was crucial for the realization of this bold project, as well as the role of its leaders, besides overcoming physical, human, and time constraints.

2.2 Educational objectives

The target audience for the case includes students of Business Administration, Economics, Entrepreneurship, and Management, as well as entrepreneurs and CEOs.

The overall objective is to foster discussion about the relationship between business model change, innovation, organizational culture, strategic planning, and leadership. From the case, it is intended to:

- Analyze the trajectory and planning of the Business Model change process;
- Knowing the institutional challenges for implementing an innovative process;
- Identify the gaps and opportunities developed by the company in the execution of its planning;
- Analyze the challenges of organizational change that leaders must drive;
- Observe the practical implementation of an institutional project in each of its phases.

2.3 Source of Information

For the creation and editing of this document, qualitative in-depth interviews were conducted with the president (CEO) and directors of the Pardini Group. Interviews were also conducted with the staff of the company Árvore, the communication laboratory that serves the Pardini Group.

The collection and transcription of the data took place between June and September 2022 by the professors and researchers who authored this case.

After transcribing all the interviews, the authors proposed a data analysis and a structure that would order the historical data, emphasizing the relevant aspects of competitive strategy, organizational culture, business model, innovation, production processes, and digital transformation of the business.

Consultations were made of primary and secondary data, such as institutional materials provided by the Pardini Group and publications in the media, as well as online news platforms (Money Times, Investing, Seu Dinheiro, and Exame) on the Enterprise Project and the recent merger process between the Fleury and Pardini business groups.

2.4 Pedagogical use

The case is suitable for teaching subjects exploring issues related to business models, organizational transformation, innovation, leadership, strategic planning, and production processes with automation and digitalization. This case also contributes to broadening the students' vision with a practical example of concepts learned in Business Administration, Management, Economics, and Automation of industrial processes. It is a concrete example of the union between strategic goal and execution when an organization proposes to apply the knowledge acquired after the research that unfolds in an innovation in the business model. In other words, it is a project that contemplates phases of planning, economic feasibility study, purchasing, assembly engineering, implementation, and productive layout. It is a study that emphasizes the ability to execute your business model to create value for you and your stakeholders.
To enrich theoretical teaching and stimulate students' critical thinking, we recommend the use of the case in the classroom in the following topics:

a) **Business Models**: identify the values and purposes that govern the organization, as well as the best business model based on the product/service offered by the organization.
b) **Innovation**: institutional innovation processes, process steps, resources and strategies, resource allocation, collaborative innovation, co-Design, and Design Thinking.
c) **Leadership**: the role of leadership in institutional change, planning, project execution, and organizational change arising from conflict and team management.
d) **Digital Integration**: what is it? What are the gains for the company and the client? How to develop digital integration projects?

2.5 Questions for Discussion

Question #1 - *Innovation and Business Model*

- Based on Salum and Coleta (2019), Christensen (2012), and Saebi (2019), what is the importance of business model redesign? And what is the innovation identified in the case for increasing production capacity and reducing costs without loss in the service quality offered, creating value for stakeholders?

Question #2 - *Processes, Strategy, and Digital Transformation*

- What is the differential for organizations that aligned their processes to the defined organizational strategy? How can digital transformation be incorporated into this process to meet strategic objectives?

2.5.1 – Question #1

Business models can be defined as the configuration of existing activities that interrelate in the internal and external context, appropriating the organization's resources. By principle, the activities correlate to creating, delivering, and capturing value for stakeholders. However, when comparing the business models of nascent companies (startups) and established companies (mature ones) using a free and unpretentious typology, it is possible to identify different and worth exploring characteristics.

Changes in the business model can have an external origin when they arise because of interaction with different players, including consumers, suppliers, and regulatory/supervisory bodies. But they can also be generated internally when the organization rethinks its market positioning, redefines its list of products and services, and offers a new value by improving its performance against its competitors. Or to improve its efficiency, reduce costs, and increase the potential value appropriated by the organization's "box". Adaptation, evolution, and/or innovation of business models imply knowing how to read internal and external environment trends, make choices, and manage the consequences of losing focus on creating and capturing value for stakeholders.

According to Tadeu and Salum (2012), innovation is considered a strategic option. One should seek to create a favorable environment for the involvement of the largest number of employees and partners possible in creating culture, structure, and processes and establishing metrics that not only allow monitoring but also encourage and develop the company's innovative capacity.

The need for innovation has become a consensus among all actors involved: companies, strategic partners, government, customers, and universities. Innovative behavior has become one of the main differentials of economies, impacting their level of development, growth rates, and dynamism. It stands out as one of the major responsible for the competitiveness gains of countries and companies. Besides technological development, innovation begins to mean also products, processes, management, and business models.

The main reason for business model innovation is to shape markets or industries by creating disruptive innovations. The innovation process often affects several components of the business model. It occurs together and generates reconfiguration and/or creation of new activities in critical processes in the business model. Business model innovation can provide an effective way for organizations to stay ahead of their competitors and rewrite the rules of the game by introducing an innovative way or logic of operating, creating, delivering, and capturing value. In this way, exploratory learning processes became a key process for business model innovation.

2.5.2 – Question #2

In the competitive environment, any organization that wants to be a leader in its market and be ahead of its competitors must direct all its efforts to the clients/consumers of its products or services. On the other hand, this task is not easy at all, not only because international competition, resulting from a globalized environment, is increasingly present, but also because products, services, and processes are increasingly similar to each other, which in turn requires proportionally differentiated measures and offers.

That market scenario induces organizations to lead, with increasing skill, customers to make choices among the various existing options for acquisition, provided that this choice, preferably, is of products or services conceived within the production chain in which the organization takes part. The hyper-competition mentioned by D'Aveni (1995) shows that it is becoming increasingly difficult to maintain static competitive advantages in organizations, as they tend to be more and more quickly neutralized by the competition, which, in turn, requires organizations to create, renew and expand their competitive advantages.

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The search for efficient and effective results in meeting the needs and desires of customers requires the alignment of the organization's strategy (objectives), processes, and people. Bartlett

and Ghoshal (2000) believe that this management model can respond to the current challenges that organizations are facing. The key challenge of a strategy based on robust and consolidated processes is to lead the business to the peak of each market environment.

With so many factors against the development and implementation of strategy in companies will depend on strong commitment and leadership from management because, according to Porter (1996), leaders agree that making choices is essential to business. The leader must know that choosing what not to do is as important as determining what to do and that decisions regarding a new positioning for the company in the market should be guided by the search for new trade-offs and by the development of a process of systematization and combination of activities that provide sustainable competitive advantages.

Regarding the digital transformation in the processes and strategies of organizations, Rogers (2017) points out that companies need to adapt continuously in including value, observing the possibilities and potentialities arising from new technologies. According to the author, this new digital era increasingly requires organizations to support disruptive capabilities in a scenario where new products gain strength and speed in the market with offers in which a traditional company cannot compete. Thus, it is necessary to incorporate new strategies in the digital realm into the business.

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