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HOW ESTABLISHED COMPANIES EXPERIENCE THE LEAN STARTUP: A CASE STUDY BASED ON THE ROLE OF MIDDLE MANAGEMENT IN THE DESIGN OF

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Abstract

Purpose of the study: to understand how Lean Startup experimentation occurs in established companies through the design of experimental spaces and the role of middle management.
Methodology: qualitative methodology, with a single case study in a branch of an established multinational company. The semi-structured interview script focused on creating experimental spaces and the role of middle management, based on the flow of activities, practices and articulated organizational actors.
Originality/relevance: This study advances understanding of how the design of experimental spaces and temporary experimental settings, where actors from the field come together and experiment with alternative models of action, stimulate innovation and help introduce Lean Startup in established companies.
Main results: From the flow of activities, practices and organizational actors articulated by the middle management, the creation of experimental spaces was described as facilitators of the implementation of the model.
Theoretical/methodological contributions: the work contributes to the literature on the topic in a research gap identified in recent works, in which researchers state that there is a growing body of research on agile processes in Startups, but little has focused on understanding how this process is conducted in companies established and used as a tool to support innovation and corporate ventures.

Keywords: Lean startup. Agile processes. Middle management. Experimental spaces. Established organizations. Case study.

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COMO EMPRESAS ESTABELECIDAS EXPERIMENTAM A *STARTUP* ENXUTA: UM ESTUDO DE CASO A PARTIR DO PAPEL DA MÉDIA GERÊNCIA NO DESIGN DE ESPAÇOS EXPERIMENTAIS

Resumo

Objetivo do estudo: compreender como ocorre a experimentação da *Startup* enxuta em empresas estabelecidas por meio do *design* de espaços experimentais e do papel da média gerência.
Metodologia: metodologia qualitativa, com estudo de caso único em uma filial de uma empresa multinacional estabelecida. O roteiro de entrevistas semiestruturado teve por foco a criação de espaços experimentais e o papel da média gerência, a partir do fluxo de atividades, práticas e dos atores organizacionais articulados.
Originalidade/relevância: este estudo avança a compreensão de como o *design* de espaços experimentais e configurações experimentais temporárias, nas quais os atores do campo se reúnem e experimentam modelos alternativos de ação, estimulam a inovação e ajudam na introdução da *Startup* Enxuta em empresas estabelecidas.
Principais resultados: A partir do fluxo de atividades, das práticas e dos atores organizacionais articulados pela média gerência, foi descrita a criação de espaços experimentais como facilitadores da implantação do modelo.
Contribuições teóricas/metodológicas: o trabalho contribui para a literatura sobre o tema em lacuna de pesquisa identificada em trabalhos recentes, nos quais pesquisadores afirmam que existe um crescente corpo de pesquisas sobre processos ágeis em *Startups*, porém pouco se voltaram para o entendimento de como esse processo é conduzido em empresas estabelecidas e utilizado como uma ferramenta para apoiar a inovação e os empreendimentos corporativos.

Palavras-chave: *Lean startup*. Processos ágeis. Média gerência. Espaços experimentais. Organizações estabelecidas. Estudo de caso.

CÓMO VIVEN EL LEAN STARTUP LAS EMPRESAS ESTABLECIDAS: UN ESTUDIO DE CASO BASADO EN EL PAPEL DE LOS MANDOS INTERMEDIOS EN EL DISEÑO DE ESPACIOS EXPERIMENTALES

Resumen

Propósito del estudio: comprender cómo se produce la experimentación Lean Startup en empresas consolidadas a través del diseño de espacios experimentales y el papel de los mandos intermedios.
Metodología: metodología cualitativa, con estudio de caso único en una sucursal de una empresa multinacional establecida. El guión de entrevista semiestructurado se centró en la creación de espacios experimentales y el rol de los mandos medios, a partir del flujo de actividades, prácticas y actores organizacionales articulados.
Originalidad/relevancia: este estudio avanza en la comprensión de cómo el diseño de espacios experimentales y entornos experimentales temporales, donde los actores del campo se reúnen y experimentan con modelos alternativos de acción, estimulan la innovación y ayudan a introducir Lean Startup en empresas establecidas.
Principales resultados: a partir del flujo de actividades, prácticas y actores organizacionales articulados por los mandos medios, se describió la creación de espacios experimentales como facilitadores de la implementación del modelo.
Aportes teóricos/metodológicos: el trabajo contribuye a la literatura sobre el tema en un vacío de investigación identificado en trabajos recientes, en los que los investigadores afirman que existe un creciente cuerpo de investigación sobre procesos ágiles en Startups, pero poco se ha centrado en comprender cómo se lleva a cabo este proceso en las empresas establecidas. y utilizado como herramienta para apoyar la innovación y los emprendimientos corporativos.

Palabras clave: Lean startup. Procesos ágiles. Gerencia intermedia. Espacios experimentales. Organizaciones establecidas. Estudio de caso.

1 INTRODUCTION

In recent decades, innovation has become the main objective of organizations that wish to remain competitive in complex and volatile environments, requiring them to develop new capabilities. In other words, abilities to develop and present new ideas to the market, anticipating trends and consequent competitive advantage and improved profitability, both in the short and long term (Daronco, Silva, Seibel & Cortimiglia, 2023).

With the advancement of technology, availability of information, and consumer empowerment, organizations need to have the ability to adapt to reduce risks and seek solutions connected to the values and purpose of both the company and consumers. That requires organizations to become efficient learners and to be able to adapt to rapidly changing conditions in their environment, generating innovation (Priyono & Hidayat, 2022).

At the same time, innovation and risk reduction have also become an obsession in the entrepreneurship environment. In this environment, a new method aiming to guarantee agility in the innovation process and the possibility of experimentation gained repercussions. In summary, this method advocates that entrepreneurs and innovators adopt an outward-facing learning mindset-e.g., they need to develop hypotheses about the key elements of their Startup (a temporary organization in search of a repeatable and scalable business model), test them, and make adaptations until they find a viable business model (Vasconcelos, Lefrere, Houaiss & Souza, 2023).

This method, called Lean Startup, allows constant adjustments with a flywheel called a feedback loop: Build-Measure-Learn. Through this steering process, it is possible to learn when and if it is time to make a sharp turn called a pivot or to persevere on the current path (Ries, 2011). Once there is an accelerated engine, the Lean Startup offers methods to scale and expand the business with maximum acceleration (Ries, 2011).

With the dissemination of this concept, books such as Eric Ries's (2011)-A Startup Enxuta (A Lean Startup)-gained worldwide repercussion and experimentation gained relevance, as this model is agile, action-oriented, and, often, low-cost, which can help launch ideas quickly. However, this model did not emerge in established companies but in an environment of entrepreneurship and startups with very different characteristics from the established ones, with widespread processes, different work logics, and hierarchy, in contrast with the business environment from where this model initiated.

This topic has aroused interest in the academic world and, according to Hampel, Perkmann & Phillips (2019)-in the article “Beyond the Lean Startup: experimentation in

entrepreneurship and innovation companies"-, the authors reinforce that there is also a growing body of research on agile processes in startups. However, researchers have little focus on understanding how this process is conducted in established companies and used as a tool to support innovation and corporate ventures.

Therefore, this research seeks to observe this contemporary phenomenon and understand how established companies experiment and introduce the Lean Startup methodology to gain agility, greater strategic assertiveness, and the development of new businesses (Hampel, Perkmann, & Phillips, 2019).

The path chosen for the present study took into account that established companies create experimental mechanisms and environments through the promotion of temporary experimental configurations, whose actors in the field come together and experiment with alternative models of action (Bucher & Langley, 2016; Zietsma & Lawrence, 2010). Thus, this study examines the role of small-scale experimental environments, notably "experimental spaces" for Lean Startup experimentation. According to Bucher and Langley (2016), the process of experimentation in a limited environment is called "experimental space"-defined as "limited environments"-where the interactions among the actors happen in different ways.

These experimental spaces play a fundamental role in learning in a controlled environment within the organization, enabling the introduction of new processes. However, the focus of this study is not on the design of the experimental space itself. It focuses on understanding the agents who enable the creation of these spaces and their roles and responsibilities, the middle management in this case. The lens over middle management is due to the ability of this group to direct investments in new skills, affecting organizational performance. According to Mintzberg (1978), middle management individuals are central agents in the organization's strategy formulation and implementation.

Based on the introductory context of this work, the question that guides the research is the following: How do established companies experiment with Lean Startup through the design of experimental spaces and the role of middle management? In other words, this study aims to understand how Lean Startup experimentation occurs in established companies using the design of experimental spaces and the role of middle management.

We've adopted a qualitative methodology in a single case study at Company X. Data collection was carried out with semi-structured interviews, with a script that focused on the creation of experimental spaces and the role of middle management based on the flow of activities, practices, and articulated organizational actors, to observe the experimentation of Lean startup in established companies.

The motivation for carrying out the study was to understand how different areas of the company were using and, or implementing agile processes in the organization with the participation of middle management and their relationship with the use of experimental spaces. In the data collection and analysis process, we sought to shed light on organizational aspects not formalized in procedures or documents. Furthermore, the aim was to investigate the behaviors of the interviewees and their relationship with other resources.

Shepherd and Gruber (2020) report that there are few studies on the topic as it is still a new process. However, it serves as inspiration for advancing knowledge of the startup process in the literature on entrepreneurship. Moreover, "there is also lots to learn about startups and how established companies can take advantage of this knowledge."

Besides this introduction, the article is divided into six chapters. In the second chapter, we presented the theoretical framework. Furthermore, the chapter is divided into four subsections. In the third chapter, we outlined the methodological aspects of the research. In the fourth, we presented the research results and explained the data according to the middle management four functions. The purpose of the fifth chapter was to discuss the results and the research framework proposal. In the sixth chapter, we outlined the final considerations. Finally, we listed the references used in the work and, as an Appendix, the semi-structured interview guide used in the field research.

2 THEORETICAL FRAMEWORK

2.1 Experimentation with new business models

The process of experimentation has, in recent years, become the basis for one of the most influential approaches to launching new ventures. The simple idea of experimenting, testing, correcting, and adapting the business model has gained relevance, especially in the entrepreneurial environment (Hampel, Perkmann & Phillips, 2019).

What drives experimentation is the possibility of launching a model with greater effectiveness, higher success rate, and cost reduction. What has caught the attention of entrepreneurs to experimentation is that they can learn better about markets and opportunities and test before starting a new project (Bucher & Langley, 2016; Zietsma & Lawrence, 2010). This model differs from the traditional ones, such as research and meticulous planning before launching a product used by large organizations worldwide (Zietsma & Lawrence, 2010).

Experimentation, however, is not new in innovation, as Peter Drucker (1985) has pointed out in his book Innovation and Entrepreneurship. He asks managers to act like scientists and to analyze, systematically and impartially, empirical evidence of threats and identify opportunities for new products and services. He also said it was necessary to listen carefully to the customer, to target specific segments, and to implement metrics to measure success.

More recently, the approach of experimentation has gained a new chapter in the process of creating new products, businesses, and methods. According to Ries (2011), this approach's assumptions about a business model are based on hypotheses tested through careful experiments.

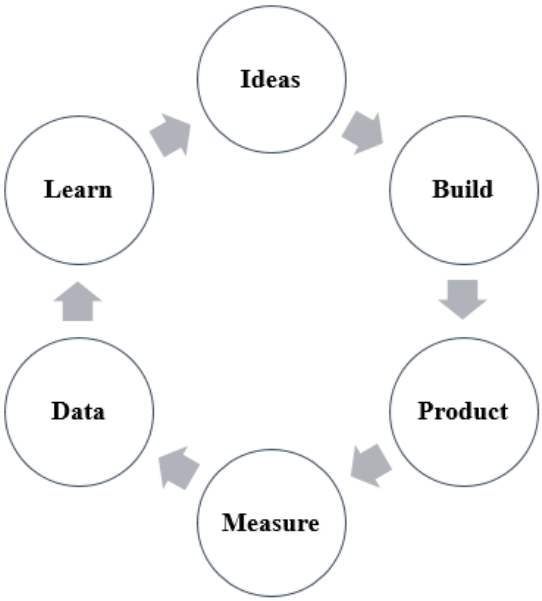
This method has gained repercussions in recent years and was called Lean Startup. To Ries (2012), “In a constantly changing entrepreneurial ecosystem like the current one, with greater risks and uncertainties, traditional management methods are not effective as they are based on predictions, working better in static environments.” Based on the possibility of adapting to uncertain environments and tests, the Lean Startup method has become increasingly popular in the innovation and entrepreneurship environment.

This process focuses on the reduction of time, cost, and resources. It mixes aspects of the Lean Methodology (Toyota) with management, marketing, and technology to build products and companies into a sustainable and lower-risk business. However, the fundamental principle of Lean Startup is experimentation, that is, hypotheses and tests to confirm paths and opportunities. This concept focuses on learning and searching for answers for a scalable and repeatable business (Ries, 2012; Hampel, Perkmann & Phillips, 2019).

To seek confirmation of these hypotheses, Ries (2011) created the concept of MVP, an acronym in English for the expression “Minimum Viable Product” or the simplest version of a product so that it can be tested and adapted before being launched. The objective behind this product is to seek evidence of the assumptions established by the business model and confirm or refute the assumptions. Thus, he pursues trying the product, listening to feedback, and adapting it. This feedback cycle (Figure 1), according to Ries (2011), “configures the central element of the methodology and in a cyclical way and seeks to validate the hypotheses for developing a product or service, and, thus, understand the customer’s desires and aspirations, what he truly needs.”

Figure 1

The feedback cycle



Source: Ries (2011).

What is behind this cycle is the experimentation of the product or business model to conceive or develop them quickly and responsively. Short rounds can validate learning in less time and with greater predictability. According to Ries (2012), this MVP concept is

> "a key element to start the learning process because it should not be seen only as a product delivery with simplified features but as something that represents value to the customer (viable), using fewer costs in a short time (product) so that delivery resembles a product (minimum) and not an elaborate and dense list of functionalities for use."

What we have observed in this process is that experimentation is fundamental because it brings agility and speed and can be tested before being implemented (Vasconcelos, Lefrere, Houaiss & Souza, 2023). This process has attracted attention and has gained space within the world of entrepreneurship. It also has been used in established companies that seek adaptation to new challenges through experimentation.

2.2 Experimental spaces

By comparison, the sense of experimentation in the corporate environment is not new, as organizations need to adapt quickly to scenarios of environmental changes, innovations, or

technological disruptions. Companies often experiment with new business models when facing such scenarios (Berends et al., 2016). They test purposefully replicable models within a controlled environment (Berends et al., 2016).

This process of experimentation in a limiting environment is called "experimental space" (Bucher & Langley, 2016), defined as "limited environments in which interactions between actors are organized in distinct ways (Bucher & Langley, 2016). The formation of an experimental space means that the components of the business model and value creation mechanisms can be prototyped, tested, and adapted by members of the organization (Bucher & Langley, 2016). That is because small-scale environments where individuals from different areas interact around shared activities allow them to temporarily free themselves from existing institutions while collectively experimenting with new ideas and activities (Furnari, 2014). For Cartle et al. (2019), these spaces consist of transitional social configurations where actors in the field experiment with alternative models of action.

Experimental spaces have two fundamental roles. The first is learning. It "occurs when companies learn about environmental changes through experimentation and then adapt their business models" (Berends et al., 2016). The second fundamental role of experimental spaces is symbolic, such as legitimation. According to the authors, that is the stage of collective acceptance, when participatory experimentation leads to easier acceptance of technologies that challenge identity. Symbolic boundaries help to "contain external opposition to models developed within the experimental space, minimizing their ambition" and indicating reversibility (Bucher & Langley, 2016).

A very relevant characteristic of the experimental space is that it allows testing and appraisal of a new process or product before demonstrating or incorporating it into the organization. According to Canales (2016), under this environment, "participants experimenting prototypes fail, learn, and develop effective solutions iteratively."

According to Hardy and Maguire (2010), despite not having characteristics of discursive spaces, the experimental space does not exclude discursive interactions. They are fundamental for the briefing and debriefing actions carried out in the space. Thus, these spaces foster the sharing of experiences and their refinement, making this space a place to encourage the exploration of new action models (Furnari, 2014). Another relevant factor of these spaces is that they are safe environments with a certain degree of secrecy, as they offer conditions for members to engage with alternative models in a way that would not be possible if these activities were publicly visible (Polletta, 1999).

Two other significant factors in creating these spaces are the meaning of existence and the established governance. That is, it is necessary to understand who the agents of transformation are and the roles and responsibilities of each member to ensure that experimentation is not only possible but also able to scale within the organization.

Although the creation of corporate experimental spaces may share resources with practices implemented in startups, there are enough differences between the two types of companies to guarantee separate attention to experimentation in established companies. According to Hampel, Perkmanne, and Phillips (2019), experimentation in startups can be quickly incorporated and implemented in this type of business model. However, it is important to explore how to integrate experimentation in established companies and in a more holistic way in other departments so it does not become something isolated and of low impact.

Creating experimental spaces can enable an established company to experiment with new processes. However, adaptations to the environment are necessary so that learning is effective and becomes a virtuous cycle. Thus, the construct of a lean startup includes adjacent conversations and future directions (Contigiani & Levinthal, 2019). The authors reassure that there is an important element in the experimentation process. If the experiment is considered well-known, the next iteration must be performed on a larger scale than the previous effort.

Other studies also suggest that the Lean Startup process is a process of learning and adaptation. According to Contigiani and Levinthal (2019), experimentation often leads to the need for change in a company, be it in the organizational structure itself, in business models, or even in key members of the organization. Therefore, it is important to observe the phenomenon not only through the design of experimental spaces but also in the role of agents acting inside and outside these environments, in this case, middle management.

What is worth noticing is that, despite the intention of established companies to adopt the Lean Startup methodology, there is a complexity between how to test, how to create experimental environments, how to gain scale with these projects, and also which actors within the organization will be responsible for this movement. Thus, the role of middle management in creating these spaces will also be observed, as individuals from middle management are central agents for the formulation and implementation of strategies (Floyd & Wooldridge, 1997; Mintzberg, 1978; Wooldridge, Schmid & Floyd, 2008). The focus of observation in middle management will be to observe not only the role of the facilitator in creating experimental spaces but also the role within them and how it is possible to incorporate them into the organization's processes.

2.3 Middle management and its role in experimental spaces

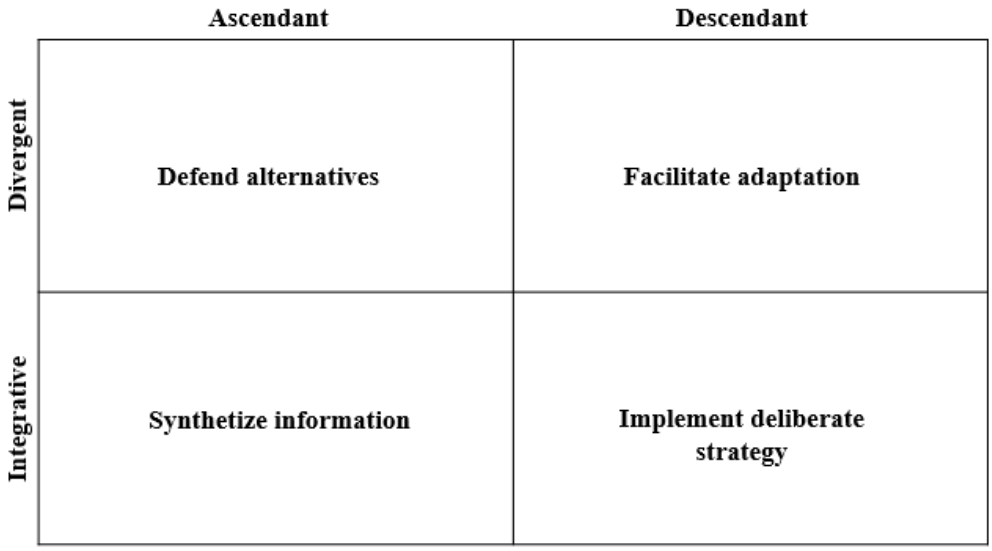
Despite being classified as experimental, these spaces are governed by rules and governance, so the study objectives are achieved. According to Mintzberg (1978), the central agents for the formulation and implementation of strategies in organizations are middle management individuals. Furthermore, they are also capable of directing investments in new skills and impacting the performance of the organization (Floyd & Wooldridge, 1997; Vaz & Bulgacov, 2018). The role of middle management must be an integral part of the board's vision and transmit the objectives and practical vision of the organizational reality, being a fundamental part of the strategy formation process. Middle managers establish connections between the strategic level and the operational level of organizations, as they act as mediators, negotiators, and interpreters, making middle management have a significant influence on organizations (Wooldridge, Schmid & Floyd, 2008; Vaz & Bulgacov, 2018; Cruz, et. al., 2020; Vaz et. al., 2021).

Middle management can also collaborate with interpretations of emerging issues towards senior management besides proposing new actions with the potential to influence the company's strategic direction, playing an important role inside and outside experimental spaces. The board can also act as a change agent, contributing to the implementation of the strategy alongside their subordinates. Nonaka (1988, p. 9) argues that "top management creates a vision or dream, and middle management creates and implements concrete concepts to resolve and transcend the contradictions arising from the gaps between what exists at the moment and what top management hopes to create."

Floyd and Wooldridge (1997) support the idea that middle management can be involved and actively participate in thinking and strategy formation and divide their studies into two dimensions: describing the direction of the manager's influence (up or down) and evaluating the degree to which this influence can alter the organization's strategy. Furthermore, they address four functions of middle management: defending alternatives, synthesizing information, facilitating adaptation, and implementing the strategic plan (Figure 2).

Figure 2

Typology of middle management strategic influence



Source: Adapted from Floyd and Wooldridge (1992, p.154).

By engaging in strategic situations, middle management can assess subjectively and interpret to influence peer perceptions, which can alter strategic objectives. Thus, according to Floyd and Wooldridge (1992), "synthesizing information" refers to the evaluation and interpretation of the information available both internally and externally and then communicating this information to senior management and peers.

One consequence of this synthesis may be the promotion of new ideas and/or defense of strategic alternatives. In practical terms, it can transform this synthesis into a communication about the competitors' activities, evaluation of changes in the external environment, or even information about the feasibility of new programs (Floyd & Wooldridge, 1997). Moreover, according to the authors, this contact of the middle management with the organizations' external environment was named as border mediators.

Furthermore, it can act as a communication and interpretation channel through the tacit knowledge of external members. According to Nonaka (1988), this middle-up-down management stimulates the engagement of the entire organization in the creation of information, especially in constantly changing companies.

An important point to highlight is that, by playing this role, middle management can act as a catalyst for new processes, management, and even the development of new products, bringing for itself a new function of "defending alternatives." That is, it influences the strategic agenda of top management by selecting themes that will reach higher knowledge.

A third role refers to the ability of middle management to implement deliberate strategies, bringing light to the process of executing and monitoring actions to be performed by subordinates (Floyd & Wooldridge, 1997). By playing the "implementation" role, middle management can create meaning about an intended change and negotiate it with external and internal members afterward. In this way, it gives meaning to creation (sensemaking).

Finally, middle management also facilitates adaptation by providing a team for experimental projects, making resources available for process projects, developing strategies for unofficial projects, easing regulations, saving time with empirical projects, and encouraging problem-solving by multidisciplinary teams. Consequently, it goes beyond the vision and expectations of senior management.

For Floyd and Wooldridge (1997), middle management will act to promote and develop projects and experimental activities to adjust deliberate strategies. As a consequence of these adjustments, the organization is flexible, encouraging organizational learning, repertoire expansion, encouraging peers and subordinates to engage in activities to generate new ideas (Wooldridge, Schmid & Floyd, 2008; Vaz & Bulgacov, 2018; Cruz et. al., 2020; Vaz et. al., 2021).

2.4 Challenges faced by Lean Startup in established companies

Given the theoretical framework, we found that the success of this Lean Startup methodology was great. However, due to the nature of its creation in an entrepreneurial environment, it is still a challenge for implementation in established companies. The question is how its introduction, experimentation, and governance should be done since it is not an isolated process within the organization (Bucher & Langley, 2016; Zietsma & Lawrence, 2010).

Hampel, Perkmann, and Phillips (2019) report that, in general, existing work is beginning to explore organizational devices the established companies use to implement experimentation-based lean approaches to corporate innovation. However, there are still a few caveats because, although established companies create specific time-limited programs complementary to corporate innovation, the challenge remains to integrate more holistic experimentation into the core and the organization. One way of doing this process may be related to one widely used in innovation, which is the creation of an experimental space as a form of learning and experimentation. This point has been instigating scholars and, mainly, the corporate world to understand better how large companies can use the Lean Startup

methodology and how to institutionalize it within the companies (Hampel, Perkmann & Phillips, 2019).

According to Leatherbee and Riitta Katila (2019), the Lean Startup process is a mixture of previously identified practical learning methods that enable testing business ideas until they get off the ground and reduce implementation risk. It draws inspiration from approaches, such as discovery-driven planning, which also encourages teams to articulate their underlying assumptions and collect data to iterate them (McGrath & MacMillan, 2009).

In the article The Journey to an Agile Organization, prepared by McKinsey & Company, Brosseau et al. (2019) recognize the transformational benefits of agility. However, according to the authors, changing to an agile operating model is difficult, especially for established companies. In essence, agile organizations are different. While traditional organizations are built around something static with a structural hierarchy, agile organizations look like a network of teams operating in rapid learning cycles and with decentralized decision-making (Brosseau et al., 2019). They also mention that an agile organization can ideally combine speed and adaptability with stability and efficiency. The transformation to an agile operating model requires an enterprise-wide agile change in an iterative process. It must be comprehensive because it involves strategy, structure, people, processes, and technology. And it must be iterative because not everything goes as planned.

Dennis Lyth Frederiksen and Alexander Brem (apud Ries, 2012) also discuss the method's applicability in established companies and its academic foundations. One of the points raised by the authors is that applicability may be related to success in highly innovative contexts.

Given the above in this theoretical framework, this study seeks to understand how lean startup experimentation occurs in established companies through experimental spaces and the role of middle management. The research was done in a large company, the empirical unit of study Company X Brazil, to understand this phenomenon better.

It was observed in this organization the experimental spaces created for greater contact with the Lean Startup method and the role of middle management within and outside them. Floyd and Wooldridge's (1997) framework supports the idea that middle management can be involved and participate actively in the thinking and formation of the strategy as well as in evaluating the degree to which this influence can change the organization's strategy. In this case, four functions of the proposed middle management in the experimental spaces were observed: defend alternatives and synthesize information but mainly facilitate the adaptation and implementation of the model.

To facilitate the visualization of the concepts discussed in the theoretical framework see Table 1 - Synthesis of the main concepts presented in the theoretical framework, below.

Table 1

Summary of the main concepts presented in the Theoretical Framework

Concepts	Description of the concepts	Main authors mentioned
Experimentations in new business models	Conduct experiments and then test, correct, and adapt the business model.	Bucher & Langley, 2016; Hampel, Perkmann & Phillips, 2019; Zietsma & Lawrence, 2010.
Experimental spaces	Boundary environment used for the experimentation process.	Cartle et al., 2019; Berends et al., 2016; Bucher & Langley, 2016
Middle management and its role in experimental spaces	The four main roles of middle management are: to synthesize information, defend alternatives, facilitate adaptation, and implement the strategy.	Floyd & Wooldridge, 1992; Floyd and Wooldridge, 1997; Wooldridge, Schmid & Floyd, 2008.
Lean Startup challenges in established companies	The main challenges are related to introduction, experimentation, and governance so that it is not an isolated process within the organization	Bucher & Langley, 2016; Hampel, Perkmann, and Phillips, 2019; Zietsma & Lawrence, 2010.

Source: Research data.

In Table 1, the main concepts addressed in the theoretical framework were presented, namely: (i) experimentation in new business models, (ii) experimental spaces, (iii) middle management and its role in experimental spaces, and (iv) the challenges of lean startup in established companies.

In the next section, the methodological aspects used in the field research of this study will be presented.

3 METHODOLOGY

The type of research was exploratory and descriptive (Vergara, 2011) with a qualitative approach through a single case study, with data collected cross-sectionally (Yin, 2016). Through the case study, it is possible to compare the theory with empirical reality and find confirmations, established patterns, or refutations. Furthermore, this research model is valuable as it can illustrate pre-established concepts (Hyde, 2000; Yin, 2015). The case study is considered an appropriate method when the objective is to understand a phenomenon in its peculiarities and complexity, holistically and intensively (Eisenhardt, 1989; Eisenhardt & Graebner, 2007).

We studied different areas of the organization to identify patterns, providing a transversal view of the organization examined. According to Hyde (2000), a single case studied in depth and with insight can provide the basis for a theoretical explanation of a general phenomenon.

We carried out the case study in a global consumer goods company doing business in Brazil for over 90 years, with around 12,000 employees and 17 factories in the country. The choice is due to three main factors: an established company, being transformed by innovation, and having access to information. For confidentiality purposes, we did not disclose the company name. We, therefore, use the fictitious name of Company X.

Profitability and responsible growth are the basis of the company's business model. As this approach guides how the company does business, the goal is to meet consumers' growing demand for brands that act responsibly-brands that have purpose, in a world of non-renewable resources.

This business model begins with consumer demands that generate insights for brand innovations, often with partners in your distribution chain, creating products for the market, supported by marketing and advertising across several distribution channels.

In February 2017, the company rejected a purchase proposal. That forced the company to look at internal inefficiencies, accelerate the change process, and create plans to build a more entrepreneurial culture without losing the values and principles that guided the company for many decades. As a result, it accelerated the innovation process, which brought good results.

This work focused on understanding how Lean Startup experimentation occurs in established companies through the design of experimental spaces and the role of middle management. The barriers faced while adopting agile processes, focusing on organizational capabilities, such as processes, people, structure, and culture, were also observed.

3.1 Data Collection and Analysis Strategies

The research aimed to understand how Lean Startup experimentation occurs in established companies through the design of experimental spaces and the role of middle management. Therefore, we discarded high technology and innovation companies such as Google and Facebook and companies born digital with more horizontal models and already established agile processes.

Analyzing multinationals in the fast-moving consumer goods (FMCG) segment, we noted that Company X in Brazil is one step ahead of other industries in the same segment. Thus,

we contacted a company executive to carry out the study on the academy's behalf. At this point, the researchers described the objectives of the research to identify its suitability to the empirical context in question.

To collect data, we carried out semi-structured interviews. According to Yin (2016), in this type of research, the interviewer asks pre-established questions that he considers central, but he is free to go further and develop new questions that make the answers more complete.

Moreover, the study focused on people from middle management and different areas of the company to get greater detail and a better understanding of the use of the Lean Startup methodology in each area of the organization, allowing for a true transversal vision. Therefore, we sampled ten leaders from different departments: Marketing, Supply Chain, R&D, E-commerce, Procurement, Innovation, and Food Service. It is worth noting that these leaders are, for the most part, middle management people, as mentioned. However, to compare the data and provide a holistic view of the implementation of agile processes in the organization, we also interviewed the company's senior management leaders. Collaboration and leadership in innovation and agility processes were the criteria for choosing each interviewee.

The ten individual interviews were online using the Microsoft Teams tool, as 100% of the company's administrative employees were working from home according to the rules determined by the company for tackling the COVID-19 pandemic using a Home Office system.

Based on the objective of the work, we prepared a semi-structured interview guide with 18 questions based on the work of Bucher and Langley (2016), Contigiani & Levinthal (2019), and Hampel, Perkmann, & Phillips (2019). The questions are related to the creation of experimental spaces used for introducing agile processes and the agents responsible for this process. The complete script is available in Appendix A of this work. The length of the interviews varied, on average, from 45 to 60 minutes, with a total of five hours of recording. All interviews were recorded and transcribed for analysis.

As shown below, Table 2 shares information about the positions of the ten respondents, their time at the company, and the duration of the interviews. Codes (INTERVIEW 01, INTERVIEW 02 [...]) were used to identify each respondent.

Quadro 2

Codifcação de entrevistas

Code	Position	Time at the company	Duration of the interview
INTERVIEW 01	Supply Chain Director	20 years	00:34:12
INTERVIEW 02	Procurement Director	16 years	00:40:24
INTERVIEW 03	P&D Director	29 years	01:05:34
INTERVIEW 04	Innovation Manager	3 years	00:37:02
INTERVIEW 05	Marketing Director	17 years	00:49:53
INTERVIEW 06	Transformation Manager	14 years	00:56:21
INTERVIEW 07	Planning Director	20 years	01:04:33
INTERVIEW 08	Food Service Director	26 years	00:47:12
INTERVIEW 09	E-commerce Director	3 years	00:54:12
INTERVIEW 10	Legal Director	18 years	01:11:21

Source: Research data.

As shown in Table 2, the research participants occupy senior management positions, with eight respondents in director positions and two in management positions. The respondents' time at the company ranged from 3 to 29 years, with eight respondents being at the company for over 10 years. The duration of the interviews varied from 34 minutes to 1 hour and 11 minutes.

The interview transcripts totaled 72 pages, an average of 7 pages per interview. Through a detailed reading of the transcriptions and grouping of excerpts using the NVIVO tool, the data was analyzed using the content analysis technique to understand and verify the implementation and adoption of agile processes (Bardin, 1977; 2015).

We used Floyd and Wooldridge's (1992) framework as a reference for a model for identifying the agents and role of middle management in this process, which illustrates the

typology of strategic influence of middle management, i.e., synthesize, defend, facilitate, and implement.

It is important to highlight that the empirical reality is more complex than the organization. So, on many occasions, it was possible to identify more than one typology in the same narrative. Furthermore, we identified important concepts related to agile processes that did not fit into the typology developed by Floyd and Wooldridge (1992). As a result, a second round of coding, but this time inductively, was carried out.

To summarize the methodological choices of the research, shown in Table 3 below, which contains the methodological options (type of research, approach, method, data collection technique, and data analysis technique), a description of the different approaches used in the research and, on the third column, cited authors.

Table 3

Methodological choices of research

Methodological option	Description	Authors cited
Type of research	Exploratory and descriptive	Vergara, 2011
Approach	Qualitative	Yin, 2016
Method	Unique transversal case study	Eisenhardt, 1989; Eisenhardt & Graebner, 2007; Hyde, 2000; Yin, 2015
Data collection technique	Semi-structured interviews	Yin, 2016
Data analisys technique	Content analysis	Bardin, 1977; 2015

Source: Research data.

As shown in Table 3, the research methodological choices were an exploratory and descriptive type of research (Vergara, 2011), a qualitative approach (Yin, 2016), the method of a single case study with cross-sectional data collection (Eisenhardt, 1989; Hyde, 2000; Yin, 2015), semi-structured interview as a technique for data collection (Yin, 2016), and content analysis as the data analysis technique (Bardin, 1977; 2015).

4 PRESENTATION OF THE RESULTS

4.1 The role of middle management

The role of middle management was fundamental for the company studied (Company X) to have a space for learning, testing, and introducing the Lean Startup for new projects. According to Bower (1970), Burgelman (1983), and Mintzberg (1978), middle management individuals are central agents for the formulation and implementation of strategies.

Therefore, it is possible to see that the role of middle management was fundamental in the creation of experimental spaces. Through the four functions of middle management (Floyd and Wooldridge, 1992), synthesizing information, defending alternatives, facilitating adaptation, and implementing the deliberate strategy, it is possible to identify the role in creating experimental spaces as well as the need for them.

4.1.1 Synthesize information

As described in the theoretical framework, whenever involved in strategic situations, middle management can subjectively evaluate and interpret to influence peer perceptions that can change strategic objectives. Thus, according to Floyd and Wooldridge (1992), synthesizing information means the process of evaluating and interpreting the information available in the internal and external environments and then communicating it to senior management and peers.

One of the consequences of this synthesis may be the promotion of new ideas or even strategic defense alternatives. This synthesis may turn into communication about competitor activities, assessment of changes in the external environment, or even information about the viability of new programs (Floyd and Wooldridge, 1997).

By analyzing the interviews, it is possible to identify in some narratives the concern of middle management with the transformation that has been occurring in the world, the need for agility, and the vision of the competitive environment through the following narratives:

> I think that the market has been accelerating over the last ten years. With each passing year, it has been accelerating. The market has become much more dynamic, more competitive, and much faster, with new players, social networks, all this interconnectivity, data, analytics, a little bit of what I'm participating in with Van in training this morning, all of this has, in a way, required, for the sake of survival, that we reinvent the way we do business. That starts with products and brands. It is our showcase,

> but it permeates all of our internal processes, necessary for us to culminate with these more agile, faster products and brands, reinvented in the light of these new developments. (INTERVIEW 01)

Other interviewees highlighted the need for agility to ensure focus on the consumer and quick reaction to changes in the world and the market.

> That would be the second, and I would include a third, perhaps with a consumer focus. If we cannot understand and react quickly, we as consumers know that our thinking will change and that we will adapt and want different things if we have a very slow or very costly process to adapt to this, then screwed. (INTERVIEW 06)

Through these examples, it is clear that one of the roles of middle management is to synthesize information and form a link with senior management. That is the case of agile processes. It takes the concept of changing consumer habits and competition movements to highlight the importance of using this methodology to accelerate innovation.

4.1.2 Defend alternatives

The second typology explored refers to the ability of middle management to act as a catalyst for new processes, management, and even the development of new products, assuming a new role, that of defending alternatives. In other words, it influences the strategic agenda of senior management by selecting topics that will reach superior knowledge.

In the following narrative, it is clear that the interviewee sees value in the agile process and defends its use.

> In the end, the objective we are setting for us is to put energy into things that generate value. In our case, what brings about value is not the consumer. It is the operator. Ultimately, we generate value for our end customer. I hope the end customer, whether the consumer or the operator, will be impacted by higher-value actions. So, in other words, innovation started to be produced faster, more effectively, with better execution. (INTERVIEW 08)

In another narrative, the interviewee defends the use of part of agile processes, in this case through the Lean Startup methodology, which is the construction of an MVP (Minimum Viable Product). According to this methodology, the MVP is the key element to start the Build-Measure-Learn learning process. Gitahy (In Perver, 2018) warns that MVP is closely related to a startup's value proposition. Thus, it should not be seen only as a delivery of the product with

simplified functionalities but rather to balance the concepts of something that represents value for the customer (Viable), using fewer costs in a short space of time (Product), so that the delivery resembles a product (Minimum) and not an elaborate and dense list of features for use.

> (...) of decision-making based on data, of being able to create an MVP based on data and not necessarily launching a national project so that you can be sure that it will work, but you can launch an MVP with great certainty that it will work right because you have a sample of data that shows you that everything is fine, that you can test first before scaling this nationally, so, I think we have already taken a first step. (INTERVIEW 09)

Another piece of evidence is the defense that anyone in Company X can use the methodology to turn a good idea into a benefit for the company, that there is a value behind the entire agile process and returns to Company X.

> I think this is a factor that made disruptive thinking grow much faster. Anyone can have an idea, whatever level that person can have. The company has a system prepared to provide space for these ideas and changes. (INTERVIEW 05)

The examples presented show that the interviewees value the agile process and defend its use with their superiors. Middle management also supports the Lean Startup methodology, which, in this case, refers to building an MPV (Minimum Viable Product). Finally, the interviewees defend the premise that anyone at Company X can use the methodology to transform a good idea into a benefit for the company.

4.1.3 Facilitate adaptation

Middle management also plays the role of facilitating adaptation. That is providing a team for experimental projects, making resources available for ongoing projects, developing strategies for unofficial projects, easing regulations, saving time through experimental projects, and encouraging problem-solving of multidisciplinary teams.

As described in the theoretical framework, experimental spaces have two fundamental roles, the first of which is learning and, according to Berends et al. (2016) and Bojovic et al. (2018), it occurs when companies learn about changes in the environment through experimentation and then adapt their business models. The second fundamental role of experimental spaces is a symbolic one, such as legitimation, which, according to the authors, is

the stage of collective acceptance when participative experimentation leads to an easier acceptance of technologies that challenge identity.

Furthermore, the creation of experimental spaces allows new processes or products to be tested in a limiting environment and then incorporated into the organization. It was observed at Company X that the creation of a space, or several experimental spaces, is essential to the introduction of Lean Startup as a way of responding to the transformations occurring in the world and remaining competitive in the market.

The first step for the company to create experimental spaces is the establishment of transversal governance to ensure that all initiatives of the company in the digital area using agile processes have visibility for the entire organization, avoiding duplication of efforts and enabling the necessary prioritization. Thus, in 2018, the "Digital Council" was created, a Committee formed by representatives of the middle management to accelerate the digitalization of the company with the use of agile processes. This committee is made up of representatives from different areas of the company to discuss and deliberate the creation of experimental spaces, according to this narrative:

> There is an area called Digital Council at Company X, which takes care of X-Innovation, these two projects, and all digitalization projects involving Company X as a whole. And they do all the follow-up on projects in progress, whether those that have received additional funding or those supported by startups. So, there is an area looking at this as an umbrella to understand how these initiatives are progressing.

After the conception of this Committee, the company created some programs to solve its daily problems. As they are multifunctional, many of the needs of a given area or function were shared by others, enabling a broader approach to the solutions found. The big difference with this program is that it is not rooted in the company but somewhat limited to an environment where it is possible to test, make mistakes, learn, and evolve, called experimental spaces.

The first step was leveling knowledge and, to this end, was hired a company to train and explain the concepts of agile processes as described in the excerpt below:

> We brought an outside teacher to explain to the CD directors how are the Agile methodology and the Scrum methodology, Squads, and OKR... then, schedule that we will organize for the other directors. CD. (INTERVIEW 01)

The company has another program that aims to connect with startups to seek solutions to internal problems using agile processes. It is nothing more than a relationship program with startups looking for innovative businesses and willing to overcome challenges. This program also emerged as a way of promoting an experimental space for creating new solutions, as can be seen from the excerpts of the interviews transcribed below.

> The other example that we have is the X-Up. You will hear about it. The X-Up is a little more externally connected. While Digifund is a more internal initiative, X-Up connects with startup environments. Then, the proposal is, initially, to bring great ideas, and then we invite the startup, present the ideas, they postulate themselves, and then do it- if a match between the startup and our problem, our pain, and with the support of an environment, as if it were a Weme that we knew but in the beginning, it was a partnership from São Paulo, this project would mature over six months, if I'm not mistaken. (INTERVIEW 01)

> So, having this risk money, risk money to be able to experiment without getting much return, this works, there is the larval, the support from the leadership is clear, this certainly makes all the difference, and there are people there who have this mindset.

Another example of creating an experimental space is X-Dig, an initiative to encourage intrapreneurship through financial support from the company to enable innovative ideas for the business so they can be piloted and tested. To get off the ground and reach the final product the project goes through all the Lean Startup stages.

> X-Dig is an organization's internal support program for innovative and disruptive ideas. The company provides financial support to anyone who has exciting ideas, a very democratic process open to the entire company. Whoever has an idea and needs money to start from scratch, the company provides 10 thousand euros at the beginning for you to put your idea into practice. X-Dig still exists, and I would even say that it has transformed, in this last edition, even to show the evolution that at the beginning, any different, more innovative, and disruptive idea was a candidate for X-Dig. (INTERVIEW 02)

Besides the initiatives mentioned above, there is the Flex program the company launched globally. This program helps employees push the boundaries of their careers by using an AI-powered platform to identify personalized open opportunities across the company in real-time. In practice, projects launched on Flex form multidisciplinary squads to develop a specific project or solve a problem. By searching for a solution to an existing problem, the program also aims to encourage the employee's professional development, who can dedicate part of their time to a Flex project associated with their need to acquire new skills or even improve the existing

ones on the job. These squads are autonomous teams guided by a common objective to deliver a specific project through the agile lean startup methodology.

> The Flex project is a format, a program to make tangible this experience of people who don't know each other working together. So, here there is a lot of valuing internal talent, of taking advantage, perhaps, of the idleness or purpose of some people, in return for, not necessarily, ending the need to hire a company, radically increase a team. In short, here it has a business objective and, of course, it has a soft study objective.??.. let's say the agile experience. (INTERVIEW 04)

Finally, the company organized a space to strengthen the culture of experimentation and disruption of Company X in Brazil, in addition to stimulating creativity, innovation, and application of processes, which was named X-Innovation.

> (...) but what we saw at X-Inovação, a real example that we have of X-Inovação, of bottom-up, is wonderful too. When these two things meet, it becomes exponential. So, X-Inovação was born without a dedicated team, a budget, or anything else. We found ourselves there, people who liked innovation and wanted to do something different, and we started meeting and doing things, like, in the race, okay, let's do it, the X-Innovation manifesto. (INTERVIEW 04)

In the examples presented, it is clear that middle management acts as a facilitator of the learning processes attributed as a function of experimental spaces, in addition to facilitating the symbolic role of these spaces by promoting legitimation, which refers to the collective acceptance of new technologies that challenge the identity of the company.

4.1.4 Implement the deliberate strategy

Finally, middle management also can implement deliberate strategies, bringing light to the process of executing and monitoring actions to be performed by subordinates (Floyd and Wooldridge, 1992). By taking the implementation role, middle management can create meaning about an intended change and negotiate it with external and internal members.

The implementation role is vital: it takes what has been tested in experimental environments into the organization; in other words, how to introduce it into the company's culture and within a setting no longer limited.

Therefore, we observed that after the testing period in a controlled environment, the Lean Startup model began to be used in the company's daily life in some areas, as described below.

An example found in the narratives was in the e-commerce area, as it was the first to implement the methodology and served as a reference for the other teams in the organization.

> (...) at Compra Agora, it was the first area, at least here in Brazil, that set up the dynamics of (...) which is one of the agile methodologies. So, we set quarterly goals and have weekly conversations about (...) First, we have a ceremony to define the priorities for the next quarter that will guarantee that step by step, throughout the year, it will make me grow and it will make me reach my three or four main goals by the end of the year. (INTERVIEW 09)

Furthermore, it was created a position in this area for a person to be the guardian and multiplier of the methodology:

> We developed the methodology of (...) everything buys, I have a project person in my team who also came from abroad and who is super studious in methodologies, in dynamics, she (...) so, she studied and brought us the methodology. (INTERVIEW 09)

Another practical and concrete example of the use of agile methodology was in the area of innovation, where the launch cycle of a new product was reduced from years to 30~40 days, as described below.

> The innovation flows themselves have been more agile. During the pandemic, we even exercised this during the launch of alcohol gel products, which took place in an unthinkable time two years ago, one year ago, in 30 to 40 days, the product was on the shelf. That had to be combined, in addition to marketing, supply chain, finance, and everyone in that spirit. (INTERVIEW 03)

> An average of 18 months to launch a product; now, the average is 3 to 6 months, with projects that (...) in one month, but the average is between 3 to 6 months. As you have a project that is shortening so much, you can't work in the old way of staying (...) so there is this issue of time and, but, I think we are, above all, starting to discover other benefits of more agile work than not only the issue of time, but also Agile applied in relation technically to a process we call Flex, which also seeks to spend more time focusing on the consumer, focusing on pain, (...) and to make better processes for the consumer and, together with the issue of more agile processes, it is generating a question of how our team is structured to ensure that (...) they are much more customer-centric. (INTERVIEW 03)

Furthermore, the interviewees reported that after implementing the agile methodology, there were two types of benefits: the first is internal learning, and the second is the benefit to

the consumer, who is going to be impacted by faster, more assertive, and innovative innovations, therefore, becoming more relevant, as reported below:

> I think the great value of the MVP is that it can naturally grow, evolve, and become a big deal, but, often, the most value of the MVP is not in the success of that MVP but in the amount of learning that MVP generated for you, that you can then take that and put it in other parts of the business. So, I think finding that balance is valuable. If a company addresses and only focuses on MVP, a company of this size is unlikely to be successful, but if it doesn't, it is unlikely to start exploring. So, I think it's very healthy to find that balance. (INTERVIEW 05)

> Firstly, I think the team's best performance is when we implement agile processes, so we ensure that the team is focused more on what generates results and makes things happen and less time on questioning processes. In the second step, when we implement results and processes more agile, it is when we can probably make our actions reach the consumer faster than our competitors. And in the end, whether we are successful or not, we manage all the time to serve the consumer better. (INTERVIEW 05)

Thus, middle management acted in the process of implementing it by introducing the Lean Startup outside the controlled environment in Company X, and thus the beginning of a new corporate identity with traits of agility and dynamism.

5 DISCUSSION OF RESULTS

This work aimed to understand how Lean Startup experimentation occurs in established companies through the design of experimental spaces and the role of middle management. Thus, from the perspective of the four typologies of middle management (synthesize, defend, facilitate, and implement) by Floyd and Wooldridge (1992), it was observed how this phenomenon occurs in the company Empresa X Brasil.

After completing the interviews and analyzing the results, they raised some relevant aspects. We highlight three of them: 1) the creation of experimental spaces facilitates the introduction of Lean Startup in established companies, 2) middle management is the main actor in creating experimental spaces and introducing Lean Startup, and 3) the importance of the agile mindset is greater than the methodology itself.

Such results are in line with the literature used as a theoretical reference but can also contribute to future works and studies on the topic of agility. Furthermore, based on the results obtained, it was possible to outline a conceptual framework that can be used by other established companies that intend to introduce or improve the agility of their activities.

5.1 The creation of experimental spaces facilitates the introduction of Lean Startup in established companies

From the case study of Company X, we observed that creating some experimental spaces was important so that the employees could, within limited space, contact and test the Lean Startup outside the daily tasks.

Such spaces function as a source of repertoire for new processes and innovation. Through a safe environment in which it is possible to test hypotheses and think differently, the firm created some programs for employees to get in touch and learn in practice, only to be later incorporated into the daily activities of the company (Bucher & Langley, 2016; Canales, 2016).

These spaces are transformative by nature as they stimulate institutional innovation even in companies or areas that are generally not inclined to new things. In this environment, participating members decide when and where they meet and what they do within the space (Bucher & Langley, 2016).

According to Canales (2016) and Mair and Hehenberger (2014), one of the success factors of experimental spaces is that the limits protect members of the space from external pressures to conform to institutionalized scripts and help them abandon their social roles.

Another fundamental characteristic of these spaces is that they encourage learning, especially when it is not part of the company's daily routine. According to Levitt and March (1988), the basis of experiential learning is that past experiences are encoded into routinized actions so that successful actions are retained and failures are abandoned.

In the case of the company studied (Company X), the introduction of Lean Startup occurred through some experimental spaces already described, such as X-Innovation, X-Up, and X-Dig, so that employees could experience the methodology in practice.

Through these initiatives, the employees got in touch with the methodology and worked on real cases, but outside the routine and the pressure of everyday life in a multidisciplinary environment with tolerance for error.

Membership in these spaces grew over the years, and more and more people were able to come into contact with the methodology. Therefore, it was the beginning of the use of agile processes in the areas in which professionals worked. Finally, it can be said that the creation of these spaces is also a way to promote changes in the organization without day-to-day operations losing focus.

5.2 Middle management is the main actor in the creation of experimental spaces and the introduction of the Lean Startup

Agile processes are not deliberated by but by the middle management, as the analysis of the results showed. The role of senior leadership is to define the challenges and establish the objectives. How such challenges and objectives will be achieved is the responsibility of the middle management. Middle management in organizational strategy has the role of facilitating and articulating strategy as a practice.

These findings corroborate the arguments of Floyd and Wooldridge (1997) and Wooldridge, Schmid & Floyd (2008), Vaz & Bulgacov, 2018, Cruz et. al., 2020, and Vaz et. al., 2021, who state that middle management has, among its functions, the role of establishing connections between the strategic and operational levels of organizations, by acting as mediators, negotiators, and interpreters in the implementation of the strategy deliberated by senior management. Its function is to integrate part of the board's vision and transmit the objectives and practical vision of the organizational reality (Mintzberg, 1978; Nonaka, 1988; Wooldridge, Schmid & Floyd, 2008; Vaz & Bulgacov, 2018).

Therefore, in Company X, middle management was responsible for the creation of the experimental spaces and, consequently, contributed to the implementation of the deliberate strategy with their subordinates.

In some reports, it is evident that the strategies are bottom up, starting with few resources and then expanding. In addition, when we analyze the four types of middle management proposed by Floyd and Wooldridge (1997), the introduction of Lean Startup in Company X clearly shows each of the stages ratifying middle management importance: synthesize, defend, facilitate, and implement.

Each step performed by middle management helps in the implementation and advancement of processes within the organization, as they bring the urgency and importance of the theme to the organization (synthesize), show the benefits and defend the use (defense), train and develop experimental programs for employees to have contact with the methodology (facilitate) and, finally, implement projects using it (implementation). These findings meet the arguments presented in the literature on the influence of middle management in the strategic process and research results (Floyd & Wooldridge, 1997; Mintzberg, 1978; Nonaka, 1988; Wooldridge, Schmid & Floyd, 2008; Vaz & Bulgacov, 2018).

It is important to highlight the facilitating role of middle management because it was through the creation of experimental spaces that the organization had better contact and used

the processes of Lean Startup. Furthermore, these space creations were born with defined purposes and aligned with the challenges proposed by senior leadership. Thus, middle management is the layer responsible for finding solutions and proposing new models that can facilitate the introduction of new processes and innovation.

5.3 The Agile mindset is bigger than the methodology itself

By analyzing the interviews, it became evident that the methodology of Lean Startup is used in the organization, but not in its fullness, but extracting the best of it and adapting it to its environment.

Another observation is that the focus of the company is on the results obtained and the competitive advantage obtained through the use of the methodology and not in the process by the process. It uses agile processes as a facilitator, not as a mandatory instrument.

One of the terms most used by respondents is agility, and it is usually detached from a particular tool or methodology. Thus, the process of creating experimental spaces allows the company's people to adapt to the new processes, showing that there is no need to hire new people to implement those agile processes.

In this context, it is evident that the agile mindset is above any methodology and that the objective will be achieved if the company can make people think in an agile way. Finally, the creation of experimental spaces and the introduction of Lean Startup will be considered a success if, at the end of the journey, they offer the organization a competitive advantage, either in innovation, less time to respond to the market, but mainly through the formation of a new agile mindset.

Such findings go against the arguments of McKinsey & Company Brosseau et al. (2019), which make it explicit that an agile organization can ideally combine speed and adaptability with stability and efficiency. In addition, it must be comprehensive, as it involves strategy, structure, people, processes, and technology, and iterative when not everything can be planned.

5.4 Framework

From the study and analysis of the data obtained in the interviews, it was possible to propose a framework for other companies to use this work and introduce agile processes aimed at innovation in established organizations, as shown in Figure 3.

Figure 3

Framework Proposal

Source: Research data.

Firstly, we have the process of introducing Lean Startup in established companies' descriptions. It begins with the strategy deliberation by the top management and the organizational challenges. In other words, a challenge and not necessarily the introduction of the process.

The next step is decoding the message and understanding that the introduction of Lean Startup can be a means to achieve the established challenge. Since then, middle management has played a central role in this process.

Because it is a new process, a safe and limited space is created where employees can learn and use agile processes. This environment is called the experimental space. One of the success factors of experimental spaces is that boundaries protect space members from external pressures to conform to institutionalized scripts and help them abandon their social roles.

The responsible for the creation of these experimental spaces is the middle management, and, therefore, it plays three fundamental roles (Floyd & Wooldridge, 1997) in the learning process: a) Synthesize - because it brings the urgency and importance of the theme to the organization; b) Defend - shows the benefits and advocates the use, and especially c) Facilitate

- because it develops experimental programs for employees to have contact with the methodology. The facilitating part is directly linked to the creation of the experimental spaces through short and medium-term programs so that employees can use and develop new methodologies. The fourth key role, linked to the implementation of the deliberate strategy and legitimation, is to Implement (Floyd & Wooldridge, 1997) - when implementing projects using the methodology.

It is important to emphasize that the experimental space is a limited and safe environment for employees to test, make mistakes, question, and ultimately learn (Bucher & Langley, 2016). However, middle management is the agent of transformation and facilitator of this movement because it absorbs the strategic direction of high leadership and can decode it in transformation actions.

After these steps, there is the legitimation phase, or how this can be incorporated into the day-to-day organization and be part of the market challenges. In this sense, the practice shows not only the creation of these spaces by middle management but all the meaning and defense of the environment carried out by them. Thus, if these environments are successful and make sense for the introduction on a larger scale in the organization middle management assumes the role of legitimator of the process by introducing the project into the institutional routine.

Initiated through an experimental space, once this period has expired, the project is ready to gain scale and introduction into the company culture. As shown in Figure 3, this last phase is called Introduction in the Organization - The End of Experimental Spaces. The case study of Company X, presented in this research, identified these stages and created the framework, presented in Figure 3, from it. Such a conceptual model can be used by other organizations established as a reference for the process of Lean Startup introduction.

It should also be noted that the proposal of the framework, as a result of the reflections of the researchers after the analysis of the data obtained in the field research, aimed to advance the understanding of how the design of experimental spaces and temporary experimental configurations, in which the actors of the field come together and experiment with alternative models of action (Zietsma & Lawrence, 2010), stimulate innovation and help the introduction of Lean Startup in established companies. For Zietsma and Lawrence (2010), the design of experimental spaces relates to their ability to initiate institutional innovation, and it is through it that the phenomenon was studied in an established company.

6 FINAL CONSIDERATIONS

Although experimentation inspired by the Lean Startup (Ries, 2011) has gained repercussions in the environment of entrepreneurs and startups, that is a new phenomenon, and academic understanding of the topic is only incipient, with literature and scientific studies still restricted, especially in the case of the methodology in established companies (Contigiani & Levinthal, 2019). Thus, this study has an innovative character and seeks a better understanding of the adaptability of established companies in the journey of transformation, innovation, and creation of experimental spaces as an instrument of introduction to Lean Startup.

In this sense, this study contributed, in the first place, to a better understanding of the introduction of Lean Startup in an established company, which aimed to foster innovation and competitiveness. To do it, we studied a single case study with the multinational Company X in Brazil through interviews focusing on the company's middle management.

Unlike high-tech companies and startups that are born agile, this study focused on understanding the transformation of a century-old company in search of agility to be more competitive, remain relevant in the market, and be attentive to the movements of world transformation and consumer empowerment. Company X is a reference in the segment where it operates and in the use of agile processes to foster innovation. Furthermore, it made considerable advances in using this methodology, which brought tangible results.

It was clear that the role of middle management is fundamental for this process, whether through the creation of experimental spaces and seeking the learning of the employees until the legitimation phase and the introduction into the routine of the company.

It was also observed that the introduction of agile processes in an established organization is an organizational learning process. The dilemma found in established companies is how to do this in an organized way and without interference in the day-to-day and the company’s results.

Thus, this work rescued the concept of experimental space as a tool for introducing the process through a limited space. In these environments, it is possible to obtain the sharing of experiences and refinement of them, which makes this space a place to favor the exploration of new models of action.

We noticed that the work of the agents who create these spaces is closely linked to the performance and the role of middle management, especially in facilitating the creation of these environments and, later, the dissemination to the rest of the organization. This study brings light to the fact that the creation of experimental spaces, in the case of the introduction of Lean

Startup in established companies, is directly associated with the role of middle management and that middle management is the agent responsible for this transformation in the studied organization.

As practical contributions, this research focused on identifying the construction of experimental spaces in established companies and deepening the understanding of the role of middle to understand the introduction of agile processes in established companies aiming at innovation.

From the research work carried out through interviews, the authors suggested a practical model that can be a reference for implementing agile processes in established companies that want to innovate more effectively. It considers creating experimental spaces as a way of learning the organization and role of middle management from their formation to the legitimation and introduction into the organizational routine.

As for the limitations, the authors took into account the procedural side and did not observe in isolation or in-depth phenomena, such as leadership and culture, for the implementation of processes. As suggestions for future research, it is important to understand the cultural factor, which in the study was classified as mindset, to deepen the theme.

Future research can expand the analytical angle to study the interactions between different experimental spaces and the role of leadership and even delve into how this can generate a cultural transformation in established companies.

Similarly, other studies can also address the issue of organizational identity because the inclusion of new processes and methodology directly affect the identity of the organization, generating new models and ideas since experimentation can be a way to respond to environmental changes or overcome strategic inertia or the filter effect of organizational identity.

Another study path should consider that the lean startup concept was not conceived for brainstorming new ideas but to stimulate iterative experimentation to reduce uncertainty, engage stakeholders, and promote collective learning. Thus, it can be an organizational learning model and deserves further deepening.

It is also important to understand the circumstances in which experimentation can be initiated and successfully carried out in established companies. The present study was conducted in an established company but is essential to analyze and have a greater amplitude because not all experimental spaces can generate the intended institutional effects.

Finally, it is worth remembering that there is a growing interest in business experimentation in literature and management practice. However, there is still little literature

on the scientific approach and a way for a better academic understanding and deepening of the theme joining practice and theory, making this theme increasingly valuable for companies.

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Appendix A - Semi-structured Interview Script

1. Initial Presentation

a) Short presentation of the research;

b) Explanation of confidentiality of information: agreement with Company X, preservation of names, confidentiality of sensitive data.

c) Knowledge about the interviewee: sector in the company, working time, and their involvement with the project.

2. Lean Startup Experimentation and Motivators

a) What was the moment when Company X started experimenting with Lean Startup?

b) What led the company to the introduction of agile processes?

c) Was the idea the search for opportunities or a market scenario?

d) Who were the agents responsible for starting the experiment?

e) What were the main experimental spaces created?

3. Resources: Physical and Personal Structure

a) Was the dedication in these spaces exclusive or partial?

b) What is the autonomy in these environments?

c) Who was responsible for approving the spaces?

d) Were those in charge of middle management or senior management?

4. Tests

a) What were the objectives of each project tested?

b) Has there been validation from external customers or partner companies?

c) Were MVPs performed (Minimum Viable Product)?

d) What were the main learnings?

5. Adaptation/Inclusion

a) How did the expansion of projects outside experimental spaces happen?

b) Are there areas with greater diffusion of these processes?

c) Were there conflicts within the organization (political resistance and/or technical difficulties)?

6. Conclusion

a) What is your final perception about the introduction of Lean Startup? What is its value within the organization?

b) What were the main benefits for the company after the introduction of the Lean Startup methodology?