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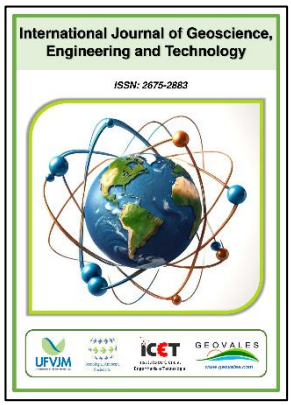

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Analysis and assessment of innovation in a large pharmacy network

Hugo Sindeaux Peixoto[1], Lucelindo Dias Ferreira Junior Reis[1], Joanderson de Almeida Reis Ferreira[3]

[1] Federal University of Ceara (UFC), Russas, Brazil.
[2] Federal Institute of Ceara (IFCE), Fortaleza, Brazil.

Email address
hugosindeaux097@gmail.com (Hugo S. Peixoto)
lucelindo.ferreira@ufc.br (Lucelindo D. F. Jr. Reis)
sier.jonferreira@gmail.com (Joanderson A. R. Ferreira) – Corresponding author.

Abstract

Innovation has played a central and strategic role in global business operations, recognized as an essential component for fostering competitive differentiation in the market. This demand for distinction through innovation has driven research into the true concept of innovation and the development of strategies based on this principle. Any process of change that generates improvements in processes or products, whether goods or services, can be considered innovation, distinguishing itself from invention by being applicable to a real need, feasible for production, and capable of being transferred to the economy. To enhance the level of innovation in a company, it is crucial to understand its innovation strategy and its level of maturity in innovating. This study adopts a single case study methodology, utilizing a qualitative and descriptive approach through the application of questionnaires and interviews with managers. One way to understand the degree of innovation is by applying the Innovation Radar method, a framework composed of 12 dimensions. The objective of this study is to apply the Innovation Radar to analyze and assess the level of innovation in a sector within a large pharmaceutical network. As a result, the Innovation Radar identified that there are innovative proposals and initiatives, especially in the "offering" and "presence" dimensions, but with difficulties in "platform", "networking", and "supply chain" aspects. The sector was classified as an occasional innovator, as shown in the overall results of the twelve dimensions.

Keywords: Innovation, Innovation radar, Dimensions of innovation, Innovation management.

1. Introduction

In the current global scenario, innovation has established itself as a category of fundamental importance for the development and competitiveness of organizations (Godin, 2008). Based on all the challenges to remain competitive in the current market, which is characterized by a constant search for scientific and technical development (Herrera-Vallejera and Gorbea-Portal, 2020), large companies worldwide have begun to base their projections and business plans on innovation. According to Carvalho et al. (2011), competitiveness brings both challenges and opportunities, with innovation emerging as a decisive element for this market transformation. However, it is essential to understand that innovation is a semantically fluid concept, often interpreted as the successful introduction of novelty into the economic or social sphere (Brandão, 2021; Taylor, 2017).

This paper studies innovation as a process that goes beyond the mere creation of new knowledge, distinguishing itself from invention by its practical application and economic impact (Taylor, 2017; Von Hippel, 1988). According to Jungend and Silva (2013), it is interesting to understand how innovation differs from science, which also aims to produce new knowledge, but without immediate application in products, services, and processes. In this context, innovations can emerge from various sources, including the proactive role of users and the identification of "opportunity vacuums" in the market (Von Hippel, 1988; Planing, 2017). Thus, it

can be understood that innovation is not only about new markets, products, or services but about any change that directly impacts the organization's performance.

In the pharmaceutical sector, this process is particularly challenging. Despite high investments in Research and Development (R&D), the launch of truly new drugs (new molecular entities) has faced periods of stagnation, demanding more open and collaborative innovation models (Munos, 2009; Yeung et al., 2021). Furthermore, the planning of health services in community pharmacies now requires the integration of multiple stakeholders to ensure clinical and commercial effectiveness (Franco-Trigo et al., 2018). Christensen (2011) categorized the innovation process into two primary segments: sustaining innovation, which focuses on enhancing existing products and processes to meet the demands of current customers; and disruptive innovation, which creates new markets or value networks by introducing simpler, more accessible solutions that eventually displace established competitors.

Innovation impacts various areas of the company. However, an understanding of the maturity level in innovation, considering its strengths and weaknesses, is essential for defining a strategy based on innovation. There are some tools that can assist in identifying the innovation level of each area of the company, increasing detail and providing managers with greater guidance on where to act. Some examples of tools were listed and categorized by Semler and Schenatto (2017). This study aims to identify and evaluate the innovation level of a pharmaceutical services sector in a large pharmacy network, through the application of Sawhney, Wolcott and Arroniz's (2006) Innovation Radar, where 12 dimensions are evaluated. After the application, each dimension was individually evaluated with the appropriate considerations and points for improvement. Finally, the innovation radar was presented, justifying the overall innovation level of the sector.

2. Innovation

With the high density of the market and the rapid speed and access to information, companies need to seek competitive advantages and reinvent themselves to survive. According to Christensen et al. (2019), in the book “The Innovator's DNA”, innovation is a strategic priority for the vast majority of CEOs worldwide, historically being one of the main drivers of wealth generation in the global economy, as seen in examples such as the Apple iPod, the customer experience at Starbucks, and the urban private transportation revolution by Uber, among various others.

But how is innovation characterized? Beyond its literal meaning of introducing something new, innovation has evolved from a social and political concept into a dominant economic and strategic category (Godin, 2008). In the business context, Burgelman et al. (2012) define the innovation process as the combined activities leading to marketable products or services or processes that add value or enable the offering, considered successful if it can generate value for the customer. Thus, different concepts are used to define innovation, but in the business context, there are some common factors: feasibility, commercial viability, and value generation for the company or consumer.

Building on the aforementioned concepts, it is important to highlight that innovation goes beyond new products or completely different models in the market. As defined by Sawhney, Wolcott and Arroniz (2006), innovation is the creation of new value for the customer or company from some substantial change in one or more dimensions. In other words, innovation can be any simple alteration, in any part of the company, developed with the intention of generating value; the significant difference lies in the type and impact of the innovation.

2.1 Types of Innovation

There are numerous studies available regarding the types of innovation, utilizing a variety of concepts and nomenclatures. Consequently, this study adopts the Oslo Manual 4th edition (OECD, 2018) as its primary reference. According to current international guidelines, the previous four-type classification was simplified into two main categories: product innovation and business process innovation.

Product innovation is characterized by significant changes in the goods or services offered by a company, involving the addition of new features or combinations of existing ones. This type of innovation is typically perceived directly by consumers, such as the implementation of touch screen displays on notebooks. On the other hand, business process innovation encompasses significant changes in a firm's internal operations.

This category now integrates what were previously defined as process, marketing, and organizational innovations, covering production methods, distribution, marketing practices, and organizational structure. Typical examples of business process innovation include the automation of automotive production lines to reduce costs and changes in software for service delivery.

In the pharmaceutical context analyzed in this study, the use of software to automatically generate pharmacist schedules based on flow averages represents a business process innovation, as it improves the organizational management and distribution of responsibilities to comply with legal regulations. Furthermore, marketing-related process innovations, such as new packaging or market positioning, aim to better meet customer needs and enhance value delivery.

In addition to these types, it is essential to define the strategic innovation approach, which refers to the organization's business model and risk profile. Christensen (2011) categorizes these strategic movements into two primary segments: sustaining innovation and disruptive innovation. Sustaining innovation focuses on exploring and enhancing existing technologies and offerings through incremental improvements and reconfigurations to meet the demands of current customers. This approach is characterized by small advances over short periods, such as the periodic release of new smartphone models.

Conversely, disruptive innovation (often associated with radical changes) involves the creation of new markets or value networks by introducing solutions that are initially simpler or more accessible, eventually displacing established competitors and making previous products obsolete. A classic example of this impact is the urban private transportation revolution led by platforms like Uber. While these approaches have distinct concepts, neither is inherently superior; the best option depends on the strategy and resources of each organization. While sustaining approaches are often more suitable for firms seeking to minimize risks and capital allocation, disruptive strategies are typically pursued by organizations with an aggressive investment profile aiming for accelerated growth. Therefore, as innovation must be aligned with the company's strategy, it is crucial to evaluate its current maturity level to provide objective support for managerial decision-making.

In this sense, the Innovation Radar emerges as a comprehensive framework that operationalizes these theoretical perspectives. While the Oslo Manual (2018) provides a foundational classification of innovation types and Christensen (2011) defines the strategic intent, the Radar allows for a multi-dimensional assessment of how these innovations manifest across the business. By examining twelve distinct dimensions, such as offerings, processes, and presence, the Radar provides a granular view of an organization's innovative maturity, identifying where sustaining improvements are concentrated and where opportunities for disruptive growth may lie.

3. Evaluation and assessment of innovation

3.1 Selection of assessment tool

The chosen tool for assessing the level of innovation was Sawhney, Wolcott and Arroniz's (2006) Innovation Radar, as presented in the work “The 12 Different Ways for Companies to Innovate”. Among the various tools, this is the one that best fits the research objective, as it is a methodology developed to be applied in any environment, allowing the adaptation of each dimension's concepts to the reality of the analyzed organization.

Starting from the idea of innovating strategically and adding value to the offering, Sawhney, Wolcott and Arroniz (2006) conceived a model that went beyond what he referred to as the “narrow” view of innovation, which merely involved introducing new products, services, and traditional research and development. Consequently, many companies within the same sector obtained similar types of innovation, leading to little differentiation in competition and maintaining market behavior for years. Therefore, expanding the vision means changing the way innovation is approached, extending the idea that innovation, in any part of the system, can bring significant impacts. This systemic approach is particularly relevant as it allows for a detailed analysis of business process innovations that are often grouped in broader categories by standard guidelines (OECD, 2018).

Thus, Sawhney, Wolcott and Arroniz (2006) developed a systematic approach based on 12 dimensions of innovation, divided into the main areas where innovation should occur within an organization. This model was called the Innovation

Radar, anchored by four key dimensions: offerings (what), customers (who), processes (how), and presence (where); along with eight additional complementary dimensions that serve as strategic guidelines: platform, solutions, customer experience, value capture, organization, supply chain, networking, and brand. Each dimension should be individually evaluated from 1 to 5 and justified with elements obtained from the application of a questionnaire that investigates the company's reality.

The first key dimension, named offerings, deals with the creation and launch of new products or services, generating value for the customer. The second, customers, is characterized by the ability to gather sales information and understand the potential customer journeys and buying profiles to create new markets and/or identify untapped segments. The third, processes, concerns the activities necessary for the company's operation that result in greater efficiency, quality, and shorter cycle times. Finally, the fourth key dimension, presence, refers to distribution channels, location, and how the product is presented to the customer, involving understanding the target audience and being strategically positioned to serve them.

Regarding the complementary dimensions mentioned in Sawhney, Wolcott and Arroniz's model (2006), the platform dimension consists of the company's ability and capacity to produce or perform different types of products or services using the same resources, whether human resources or equipment, to deploy new offerings with less time or lower cost. Similarity is widely used in the automotive industry, where various car models can be built on the same platform. The solutions dimension can be defined as the combination of offerings, in terms of products or services, to meet customer needs, solving customer problems throughout the entire interaction cycle with a company.

The customer experience dimension deals with the entire customer experience with the company, from the first contact, and may even extend to after-sales services. Thus, any action that delivers value to the customer in these interactions is a form of innovation. The value capture dimension represents the organization's ability to create new revenue streams beyond the organization's ultimate goal. An example of innovation in this area is the sale of customer purchasing profile information by major online marketplaces focused on product sales.

The organization dimension is related to seeking changes in the hierarchical structure of the company, roles, assignment of functions, capable of bringing operational benefits, streamlining processes, and strategically allocating employees considering their expertise. The supply chain dimension indicates whether the company innovates in the way materials, services, and information flow to enable the business to function, from supplier to end customer, or even reverse logistics, in order to reduce costs and delivery times, for example.

The networking dimension indicates whether the company innovates in how it connects with customers and partners, aiming to gain a competitive advantage by establishing advantageous networks connecting the offer to a target audience. The eighth complementary dimension, finally, the brand dimension, deals with innovations that develop new forms of communication with the target audience, referring to brand perception in the market. They involve activities such as participating in consumer-friendly actions, for example.

Focusing on the 4 anchors of the radar and identifying integrated opportunities for changes in the 12 dimensions indicate that the company aims to innovate in a more global manner, exploring ways to gain market advantage, either independently or integrated with other companies and partners. Figure 1 shows Sawhaney's (2006) radar model. Describing a company's innovation actions according to this radar allows for a comprehensive visualization of its innovation positioning across the twelve dimensions, informing about its strengths and weaknesses, indicative of innovation opportunities.

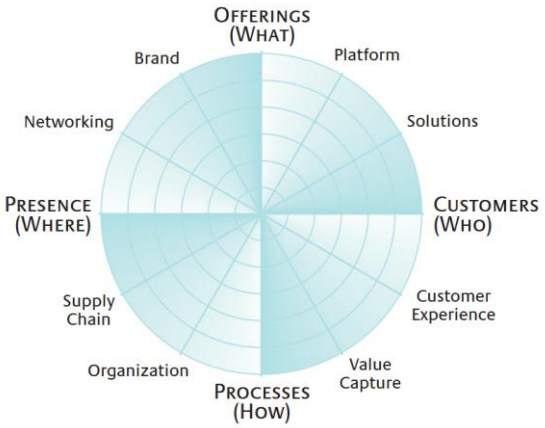

Figure 1 – Innovation Radar Model (Sawhney, Wolcott and Arroniz, 2006).

The radar indicates the innovation level score for each dimension, following the layers of the graph ranging from 1 to 5. Ultimately, an arithmetic mean of the sum of all dimensions, divided by 12, will yield the overall result of the innovation level for the analyzed company or segment. Each score will be classified according to the concept provided by Bachmann and Destefani (2008), as shown in Table (1).

Table 1 – Classification and definition of each level of innovation (adapted from Bachmann and Destefani, 2008).

Level	Innovation Level Classification	Definition
0>1	Not Innovative	Did not innovate effectively
1>3	Slightly Innovative	Innovated once in the last 3 years
3>4	Occasional Innovator	Innovated at least once a year, but there are no systemic actions
4>5	Systemic Innovator	Innovates systemically

4. Methodology

The study was conducted in nine methodological stages. Initially, a comprehensive literature review was carried out on innovation and innovation management. Subsequently, a more in-depth literature review was conducted to examine specific tools for analyzing innovation maturity and sizing. Based on this, the tool that best suited the intended company's reality and the study's objectives was selected.

Next, the sector was defined and the company was characterized, opting for the pharmaceutical services sector due to its strategic importance for organizational innovation. An adapted questionnaire was then developed, based on the value innovation proposal by Sawhney, Wolcott and Arroniz (2006), supplemented by questions suggested by Bachmann and Destefani (2008). This quantitative-qualitative approach was designed to capture both the systemic nature of innovations and the subjective insights of the strategic team.

A detailed protocol was established for the questionnaire's application, including the script, selection of interviewees, scheduling of application, data collection method, and data treatment. Interviews were conducted individually with the strategic team, ensuring privacy so that each member could provide relevant answers and justifications, using a question script.

After data collection, an analysis was conducted to define the level of innovation in each dimension. Quantitative information was organized into averages, while qualitative information was grouped by dimension, allowing for the identification of patterns. Finally, using the Innovation Radar, quantitative data were synthesized into a radar chart, while qualitative data served to support or justify assessment scores, providing a global view of the level of innovation in the sector and allowing for the identification of root causes and suggestions for improvements.

5. Results

5.1 Characterization of the Company

The study was conducted in the pharmaceutical services sector of a major Brazilian pharmacy chain, the second largest in the country, with 1126 stores located in all states of Brazil. In 2022, an additional 600 stores were integrated into the group following the acquisition of another major chain. A publicly traded company since 2020, the chain aims to revolutionize the pharmaceutical retail industry through innovation. One of these innovations is the complete integration between e-commerce and physical stores, representing a multi-channel operational model, a concept known as omnichannel. Figure (2) illustrates the model used in the company.

Another innovative initiative by the company was the creation and structuring of the Health Hub, a pioneer in this concept in Brazil. The model was developed with the aim of

providing customer assistance throughout the journeys designed from all customer-company contact flows, as shown in Figure (3).

Currently, the pharmaceutical services sector is the company's major focus for the future, known as the cornerstone of the hub. The project began in 2015 with the aim of providing health monitoring for chronic patients, such as diabetics and hypertensive individuals. However, seven years later, there are already 850 consulting rooms divided into three groups: primary, intermediate, and premium. Table (2) illustrates the portfolio differences between the groups.

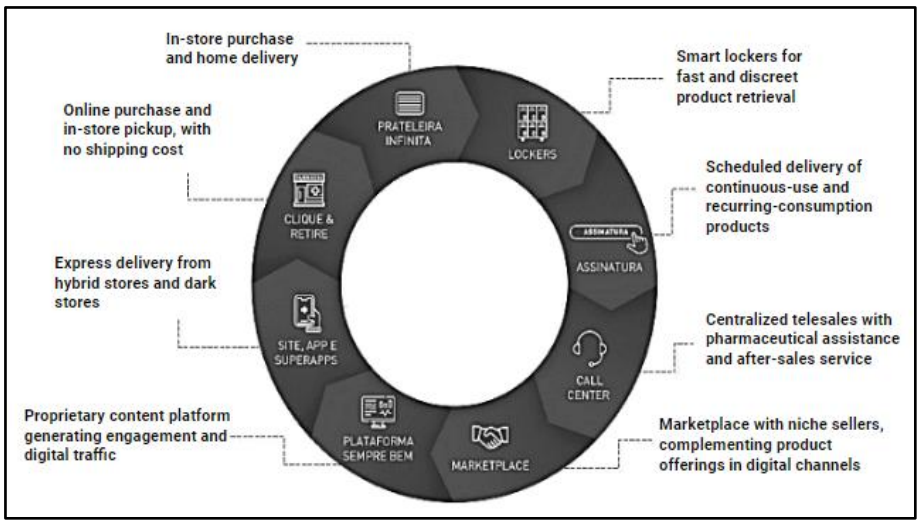

Figure 2 – Omnichannel Model of the Studied Company.

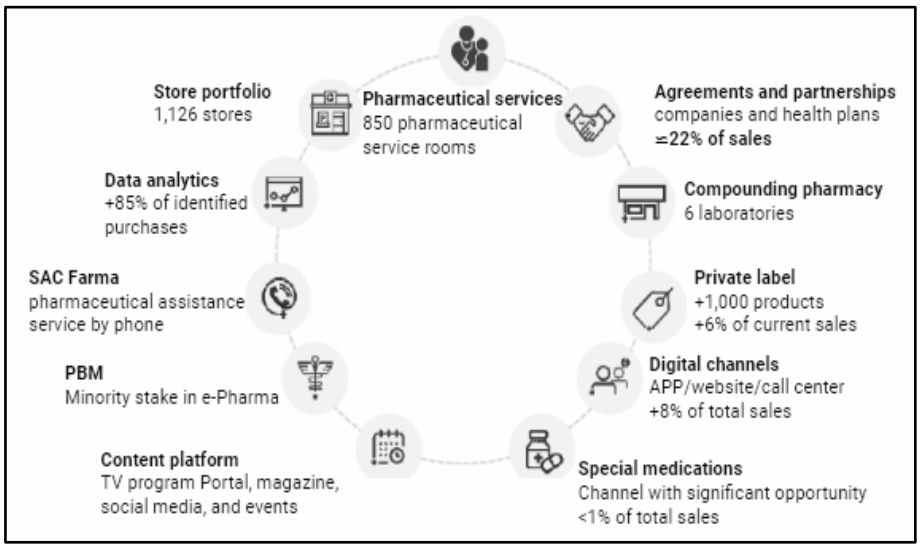

Figure 3 – Schematic Design of the Health Hub Model.

Table 2 – Types of Service Portfolios.

	Portfolio Types		
Service Type	**Primary**	**Intermediate**	**Premium**
Blood Pressure Measurement	✓	✓	✓
Bioimpedance Analysis	✓	✓	✓
Blood Oxygen Level Monitoring	✓	✓	✓
Body Temperature Check	✓	✓	✓
Treatment Follow-up	✓	✓	✓
Blood Glucose Test	✓	✓	✓
Ear Piercing	✓	✓	✓
Remote Laboratory Tests (RLT)		✓	✓
COVID-19 Testing		✓	✓
Administration of Injectable Medications		✓	✓
Toxicology Tests		✓	✓
Assisted Telemedicine			✓
Vaccination			✓

In addition to expanding the number of consulting rooms, the pharmaceutical services sector also intends to be present in all of its over 1000 stores and serve as a reference as a primary healthcare center. To achieve this, in 2023, it initiated a pilot project of assisted telemedicine, where clients can be attended to by a physician online and accompanied in person by a healthcare professional equipped with the necessary resources for medical history-taking. With the widespread presence of stores, this will serve as an alternative to hospital emergencies, often crowded and time-consuming.

All initiatives in the sector are focused on generating incremental value and sustaining the company's competitive advantage. According to information provided by the sector, a customer who frequents the pharmaceutical services clinic spends an average of 60% more annually and returns 10 times more per year compared to customers who only purchase products. In 2021, there were 2.4 million appointments in the clinics and over 170 million in revenue.

The sector relies on a small strategic team, consisting of 12 employees: an Executive Manager, responsible for leading the team according to the company's objectives; an Operations Coordinator, responsible for leading the operations team working in-store; two Product Owners of new services, who handle all aspects of capturing and executing new services and projects; two Support Pharmacists, who are responsible for monitoring the execution and goals of the portfolio's service groups; an Administrative Analyst, responsible for managing all procedures related to invoicing, inventory, purchase monitoring, among others; a Data Analyst, responsible for providing information and creating market opportunities; and four Interns, responsible for supporting the team. The sector's hierarchy is quite flexible, allowing employees to float to other functions as needed. Therefore, considering the innovative potential and strategic importance of the pharmaceutical services sector for the company, it was chosen for the analysis and sizing of innovation using Sawhney, Wolcott and Arroniz's (2006) Innovation Radar.

5.2 Implementation of the study

For the development of the Innovation Radar for the focused sector, information was collected using the questionnaire presented in Table (3), based on the concept of value innovation of Sawhney, Wolcott and Arroniz (2006) and the questions based on Bachmann and Destefani (2008). The questions aimed to stimulate reflection and guide the respondents to a clear understanding of the scoring system, minimizing issues in assigning each score. The qualitative justifications gathered during the interviews were essential to distinguish between purely incremental changes and more systemic business process innovations.

At the end of each group of questions, by dimension, the final evaluation was conducted with the following question: “On a scale from 1 to 5, where does the sector fit in terms of innovation level in the following dimension?” In total, 7 employees from the pharmaceutical services sector were interviewed. The innovation level value for each dimension was calculated as the average of the scores given by each interviewee.

The results of the questionnaire application for each dimension are presented in the following subsections.

Table 3 – Application Questionnaire.

Dimension	Questionnaire
Offerings	Does the sector have a culture of seeking out new services?
	Was any new service launched in the last year?
	Was any new service successfully launched in the last year?
	Do you consider the sector to be bold/disruptive regarding new product launches?
Platform	In the service delivery structure, do pharmacists use the same methodologies and/or similar equipment for different product families?
	Does the sector consider similarity when creating new offerings?
	Has the sector adopted any changes such as new service delivery methods, inputs/products for more generic use across different product families?
Solutions	Does the sector have a systematic/habit of identifying complementary needs of its customers?

	If yes, has the sector taken measures or adapted to better serve its customers?
	Has the sector combined existing offerings to meet a customer need? If yes, was it effective?
	Has any radical solution been taken based on an identified need?
Brand	Does the sector have a culture of investing in actions that strengthen its brand?
	Has any impactful action been taken to increase the sector's brand perception?
	Has the sector changed its brand positioning to better communicate with the target audience?
	Do you think it's relevant/important to have an "independent" brand perception apart from the company's brand?
Customers	Does the sector have the habit of studying/understanding its customer's behavior?
	If yes, does the sector use any platform or methodology to understand customer behavior and needs?
	Has any new market segment been identified based on customer behavior?
	Does the sector make decisions heavily considering the needs of the target audience?
	Has the sector undergone any radical changes to better adapt to customer needs?
Customer Experience	Does the sector have a defined customer service methodology?
	Does the sector train employees for better customer service?
	Has any change been made to improve the customer experience?
	Does the sector have any follow-up and/or after-sales methodology?
	Does the sector conduct any satisfaction questionnaire and/or survey?
	If yes, does the sector consider these opinions for implementing improvements?
Value capture	Does the sector have a systematic/cultural approach to adopting new revenue sources based on already practiced services?
	Has there been any change in the sales method/way of offering that adds or captures value to the service?
	If yes, was there any successful case of change?
Processes	Does the sector use any management software/system to optimize processes?
	Has the sector adopted any agile methodology tools in the last year?
	Has any change been made to optimize any type of process in the last year?
	If yes, does it occur occasionally or systematically?
Supply chain	Does the sector have a defined distribution flow?
	Does the sector have a systematic approach to seeking distribution improvements?
	Has there been any change in the distribution flow aiming for greater process efficiency?
	Does the sector plan its distribution to happen as efficiently as possible in terms of time and cost?
Presence	Is the sector available on any channel other than its initial proposal?
	Does the sector have a systematic/cultural approach to operating in omnichannel?
	Is the sector present on any marketplace channel related to the business?
	Has the sector entered any new sales channels in the last year?
Networking	Has the sector used any type of partnership connection to gain commercial advantage?
	Has the sector taken any measures or developed any platforms that strengthen connections with its network (customers or partners)?
	Does the sector have any successful partnership or communication case with a customer network?
Organization	Was there any strategic organizational change (positions, hierarchies, responsibilities) in the last year?
	Are roles and responsibilities well defined?
	Is the sector flexible to strategic organizational adaptations?

5.3 Offerings

This dimension received an innovation score of 4.1, indicating a systemic level of innovation. Upon analyzing the responses obtained during the questionnaire administration, it was observed that a common factor among the interviewees was the pioneering spirit demonstrated by the company. On several occasions, the company has been at the forefront of the market in launching new services. For example, in 2020, it was the first to offer the Covid-19 Test in pharmacies. In January 2022, during the new wave of Covid along with influenza, it was again a pioneer in launching the Covid and influenza Test in a single collection. Now, in May 2022, the company is about to launch the Strap-A, a test that identifies the presence of bacteria in the throat and interprets the need for antibiotics, a service conceived with the perspective of assisting doctors during assisted telemedicine.

In addition to pioneering, the culture of researching new trends and possibilities was also emphasized. However, despite these positive aspects, some of the interviewees did not attribute the maximum level of innovation, expressing concerns related to scalability and service execution. One interviewee commented: "*We always innovate, but we have scalability problems*", while another highlighted that, "*despite being ahead, we have problems in continuing with the services, lack marketing strategy, and often a better job in-store*".

Therefore, due to the novelty of these services and the difficulties in execution in conjunction with the marketing team, the additional challenge arises of ensuring that professionals are properly trained to perform them safely, which is one of the main limiting factors in the dimension of supply. A suggested solution would be to coordinate with the marketing and operations teams of the network in an integrated manner, developing joint action plans to provide more effective support for launches.

5.4 Platform

The platform dimension was assessed with an innovation level of 3.9. All services are provided in the same office, by the same on-duty professional, and the vast majority with the same technical level. This is the main highlight mentioned as a positive point. As a limiting factor, different regulations have been indicated, which vary according to states, and even cities, often hindering standardization of office layouts and the provision of a wider range of services.

Indications justifying this, from the interviews, are found in the excerpts: "*Many services use the same resources, but we cannot always perform different types of tests due to legal constraints*"; "*...with the standardization of room layouts, several stores were prevented from providing some services, leaving some equipment unused.*"

Therefore, despite the concern for operating in similarity, there are limiting factors, mainly related to legal regulations. The solution would be to create standards according to portfolio groups, in locations with stricter regulations, to work only with the primary portfolio standard, and in more flexible regulations, with the intermediate or premium standard.

5.5 Solutions

With an evaluation of the innovation level reaching 3.4 points, this dimension was classified as occasionally innovative. It was consensual among the respondents that there are actions such as: a combo offer of buy 6, pay for 5 for chronic patients, home care for patients with mobility difficulties for test application, combos, and discounts created for seasonal diseases such as dengue and Chikungunya during the rainy season, free Oximetry for those who tested positive for Covid, among other initiatives.

However, on the other hand, there is a delay in starting the operation, often due to internal procedures, not only within the sector but also within the company, such as approval of actions by superiors, requests for price reductions, creation of codes for combos, and even lack of supplies. As mentioned by one of the respondents: "*it works, strategies are defined, but it needs improvement in execution*". Possible improvement projects would include: for seasonal demand solutions, an annual campaign schedule, and for non-seasonal solutions, a more direct communication, such as through SMS, focusing on the benefited customer niche.

5.6 Brand

With the second worst evaluation regarding the innovation level, the brand perception was rated at 2.6. Few initiatives have been taken to highlight

the pharmaceutical services brand, despite all the strategic emphasis regarding the company. Although presented as an innovative model, this idea is not effectively conveyed to customers, many of whom do not even know what that "room" at the back of the store is for, as mentioned: "*there are customers who think it's the manager's room, or a rest room…*". In 2020, with the increase in the pandemic, the flow of customers in the consulting rooms increased by up to 500% in some months; however, even with this high turnover due to safety measures, little was done in terms of brand exposure.

Some measures are being adopted, such as: B2B models, carrying out service actions in companies, and content marketing in the network's health magazine, but it is still early to assess the impact. As improvement points, in addition to the support of the marketing team to develop campaigns that strengthen the brand, simple actions such as: including the logo of pharmaceutical services on the storefront; better signaling inside the store, indicating the way to the room and which service would be performed, as already happens in some competitors; finally, greater visibility on digital channels, such as the website and the application, to better expose pharmaceutical services.

5.7 Customers

This dimension received a score of 2.6, which could be characterized as not very innovative. It relates to how the sector understands its customers' needs in order to create new journeys, as mentioned by many of the interviewees: "*There is a lack of a tool*", "*It has potential, it has a database, but it is not fully utilized".* The use of data, such as customer journeys, purchase profiles, basket analysis, among other relevant information to truly understand the customer, is still in its infancy.

Just over a year ago, there was no data support specifically dedicated to the sector. As mentioned earlier, in a justification provided by one of the interviewees, there is information available, but it is still not specifically directed at the services sector. There is a lack of tools and time prioritization by the team for these data to be processed and presented in a managerial manner to support decisions. One possible solution would be to prioritize the pharmaceutical services sector within the demands of CRM (Customer Relationship Management), the sector responsible for managing customer relationships and journeys throughout the company. This is already a practice in other sectors.

5.8 Customer experience

In the customer experience dimension, the innovation level was 3.0, classified as occasional innovative. There was a training program to improve customer service, most rooms provide support for customers to wait when necessary, and a website scheduling channel was created to reduce wait times. The main limitation to innovate in this area is the large number of stores, which makes monitoring difficult due to the low number of responses to the PNS[1] (Level of Satisfaction Survey) survey.

Other negative issues include seasonal demands, such as Covid waves, which crowd the office and prevent ideal customer service. As a proposed improvement, it would be interesting to review the customer service training program, integrating the store team as well; establish a target for PNS responses per service as an indicator, aiming to increase survey accuracy; finally, increase the number of visits by supporters and mystery shoppers in stores, allowing a sample understanding of the real customer experience on a daily basis.

5.9 Value capture

The value capture dimension achieved an innovation level of 3.9, being considered as occasionally innovative. The company has been innovating in this dimension in recent years with: esthetic services, chiropractic, acupuncture in pharmacies; assisted telemedicine, allowing customers to have medical assistance with online professional support; electrocardiogram and blood count in the pharmacy office. All of these are services that can already be found in some offices and add value to the main source of revenue, which would otherwise be only pharmaceutical services, and in the future, as a goal, they would become healthcare services.

Despite the different examples of innovation in this dimension, the projects are still in the pilot phase, as justified by the interviewees: "*We're innovating, but still in pilot mode*", "*Expansion of*

[1] Acronym referring to the Portuguese term "Pesquisa de Nível de Satisfação".

telemedicine, electrocardiogram, but still with a focus on structure and not scalability", "*We have a big project to not only aggregate but transform the business, but everything is still very green".* It is evident that the sector is innovating in this aspect, but with difficulties in scaling. As a suggestion, it would be interesting to implement a prioritization tool, such as the RICE or GUT matrix, with the aim of focusing on a few projects, but with the purpose of effectively completing them with quality.

5.10 Processes

In the dimension of processes, the level of innovation was 3.6. In this dimension, the sector was considered occasionally innovative. The sector innovated with the introduction of the service platform, which was previously carried out on paper, manually, and now features a robust system that stores all appointment information in a database. Another major process innovation was the inventory system, which was previously managed through an online form and now has a specific system, making it easier to input inventory data in the clinics and handle and control information in the sector.

Limitations to innovation in this dimension were attributed to the dynamic nature of the work routine, with various projects underway and all focus on operations: "*...we have mapped processes, but we do not always have resources, mainly in terms of time and personnel*" and "*Still in the optimization process, prioritization is necessary...*". Significant changes have already been implemented, but especially for a small management team. As an improvement point, it may be interesting for the sector to prioritize the development of already mapped processes and apply the PDCA cycle to future processes, which, according to Slack et al. (2023), is the sequence of activities that cyclically enhance activities.

5.11 Supply chain

With an innovation level of 2.3, this dimension was evaluated as being minimally innovative. Thus, the supply chain dimension had the worst assessment among the dimensions. As referred to by some interviewees: "*We don't have a defined process*" and "*Controls are still very manual*". The lack of a defined inventory control flow, expiry monitoring, and even distribution were the main points addressed. In 2021, there was a significant loss due to test expiration, with some practically nullifying the annual profit, impacted by poor distribution across stores, some with excessive stock and others with low stock levels.

A proposed improvement point is integrating the sector's supply chain with the network's supply chain, as the latter has 5 distribution centers and serves as a reference for market store replenishment, representing significant potential that could also benefit the pharmaceutical services sector.

5.12 Presence

The dimension of presence was evaluated at 3.7, defined as occasionally innovative. In this area, especially with the innovation idea of the Health Hub, sector services are not only present across various channels but also managed in an omnichannel manner, connected to other company journeys. Websites, applications, marketplaces, insurance plans, and partnerships, physical stores, are several channels that are innovative for the sector, especially concerning service sales.

However, according to interviewees, besides being present across various channels, there must be results: "*We are multichannel, but still with few results*"; "*We are progressing well, but still with many pilots*". It is still early to assess how the new sector presence channels will perform, but it is important to closely monitor, especially the types of customers who accessed the pilots the most, potentially readapting communications for a new persona.

5.13 Networking

With the highest average among all others, the innovation level of the Networking dimension was evaluated at 4.4, classifying the sector as systemic innovator. The network model, especially in partnership connections, is one of the most successful in the sector, innovating mainly in the offer enablement model and connection to other customer networks. An example of this was the creation of a platform, where companies hire the service, and after paying a fixed monthly fee, their customers will have access to the platform, which offers 24-hour telemedicine for emergencies and scheduled specialties, as well as discounts on services that can be performed in clinics, requiring only that the benefiting customer schedule and pay

online, presenting the receipt, a model similar to health plans, but all integrated by a web system.

In addition to customer network innovation, the sector also stands out in operational partnerships. An example of this is vaccination, where it would be unfeasible to purchase refrigerators and stock for the addition of a service that still had no prominence in pharmacies. Thus, the sector enables vaccination through a platform that functions as a marketplace, where the customer schedules an appointment on the website, the partner receives the date and location of the appointment, and then goes to the clinic on the scheduled day to administer the vaccine.

5.14 Organization

Evaluated with an innovation level of 4.1, in this dimension the sector was classified as systemic innovator. Regarding organization, the sector is very flexible, as evidenced by the replacement of an executive manager, substituting a specialist in initiating and structuring projects, with one specialized in scaling, fully adapting to the sector's new objective.

As limitations, two important issues were cited: legislation, with a greater impact on the operations team in the clinics; and personnel shortage, mainly in the strategic team, which is considered small considering the large number of clinics and projects. Evidence regarding the organization dimension, identified in the interviews, were: "*...flexible to the extent possible, we are still very limited by legal issues*", "*quite flexible to changes, we made good changes recently, but personnel is still lacking*".

As a proposal, it would be interesting to apply an agile methodology, such as Scrum, with the aim of better organizing backlogs and defining daily activity priorities. This way, it would be clear to top management that there is a real personnel limitation, allowing for an assessment of reinforcing the team's size.

5.15 Development of the Innovation Radar

According to the averages of the responses given by all interviewees, an innovation radar was developed based on the model by Sawhney, Wolcott and Arroniz (2006). Figure 4 visually indicates the performance in relation to the level of innovation of each dimension according to the contributors.

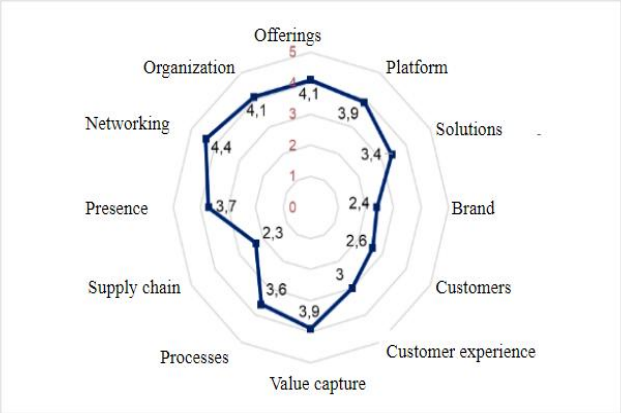

Figure 4 – Innovation Radar for the pharmaceutical services sector.

Analyzing the innovation landscape within the sector and averaging all the dimensions mentioned above, it is evident that the pharmaceutical services sector demonstrates an innovation level of 3.5, categorizing it as an Occasional Innovator. While dimensions like Networking (4.4) and Organization (4.1) show a systemic level of innovation, others such as Supply Chain (2.3) and Brand (2.6) indicate significant gaps.

Despite each dimension having its own specificity, repeated response patterns were identified across various research areas, such as: "*Due to the extensive network of clinics, communication becomes challenging*", "*...often, operational difficulties arise due to the sheer number of rooms, which becomes a limiting factor*", "*Sometimes, we lose time in action due to the delay in commencing operations across all stores*" .
These quotations, voiced by different collaborators during interviews, highlight the challenges of managing a large number of outlets, especially following rapid expansion, which were crucial factors in evaluating each level.

Difficulties regarding marketing actions were also frequently noted across different evaluations: "*We undertake significant initiatives, but do not always effectively promote them*", "*...there is commendable work in customer loyalty, but once the customer enters the clinic, there is a lack of substantial support to encourage spontaneous visits to our clinic*", and "*...we are constantly engaged in various quite different projects, particularly concerning pharmaceutical clinics within pharmacies, but there is a lack of marketing support; in Brazil, there is still not much culture surrounding the provision of many of our services within pharmacies".*

The results suggest that while the sector excels at creating collaborative networks and flexible structures, aligning with open innovation models (Yeung et al., 2021), it faces a bottleneck in scaling these initiatives. Repeated response patterns identified challenges in managing a large number of outlets and a lack of integrated marketing support. Therefore, the sector's current profile is predominantly one of sustaining innovation, where improvements are made to enhance the current model, but scalability issues prevent these from reaching a truly disruptive impact across the entire network.

Therefore, despite numerous innovative initiatives in processes, new services, omnichannel strategies, and an open environment for innovation, there remains a challenge in scaling projects due to the often simultaneous nature of numerous actions for a reduced team and the difficulty in exploring new markets or tools with limited support from other areas of the company, particularly marketing, logistics, and CRM. Given the support the sector receives from an extensive support network, which includes specialists in various fields, a proposed enhancement involves implementing a project in which fundamental operations, such as logistics, supplies, marketing, among others, are integrated into the company's overall operations. Consequently, these specialists would assume responsibility for each demand within their specific competence, contributing to process optimization and creating room for the sector to effectively focus on development, expansion, and innovation.

6. Conclusions

The study demonstrated the breadth of innovation concepts and their importance for the company's prominence in the market. It was observed that innovation goes beyond the development of new products, encompassing business process innovations (OECD, 2018) that are critical for service-oriented sectors. A crucial point highlighted was the need to assess and understand the organization's reality through a multi-dimensional lens. Despite the variety of concepts, there is no universal rule about which model is the best, but rather the one that best suits the company's strategy, whether focusing on sustaining or disruptive growth.

After the application of the selected tool, it was found that, despite the peculiarities of each area, there are some common limitations across different dimensions. Even in a sector with innovative proposals, difficulties related to project scalability and operational standardization represent significant limiting factors. In this sense, the adoption of cause and effect diagrams (Falconi, 2014) is suggested for their effectiveness in increasing the quality and control of various processes, aiming to solve different root causes. This suggestion aims to mitigate limitations and enable the implementation of innovation projects in the sector.

The impact of accelerated growth was also highlighted. During the pandemic, in response to high demand for Covid tests, the number of rooms increased by 40% between May and December 2020, according to information provided by the sector. This growth brought operational and process control challenges, overburdening the team and requiring a more dynamic response to meet the sector's needs on an expanded scale.

The applied tool was developed to cover different areas of the company, resulting in a more targeted analysis that enables the definition of clear and objective strategies. In the present study, response patterns were identified, highlighting root causes that limited innovation in different dimensions, both individually and interrelated. As a challenge, there is a limitation in the understanding of innovation dimensions by interviewees and the sector, which may hinder the definition of a clear vision of innovation-related goals. For the tool's application, it is essential that each interviewee receives the same level of instruction, and justifications should be evaluated to identify patterns. Furthermore, despite the scores being based on quantitative data, they are determined from qualitative concepts, allowing room for subjectivity in evaluation.

In conclusion, the research emphasizes the importance of prior structuring, organization of processes and resources, growth planning, and preparation of the organizational environment to enable effective and systemic innovation-based management. As a suggestion for future work, there is a need for a study focused on operational and innovation challenges in companies operating on a large scale of stores, highlighting the challenges and the importance of measuring and controlling processes for continuous improvement.

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