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ДОПУСТИТЬ К ЗАЩИТЕ ПЕРЕД ГЭК

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«Внедрение решений на основе искусственного интеллекта в торговой компании для привлечения клиентов – покупателей фармацевтической продукции»

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/ Head of «BDA and VAM»

_____M.A. Medvedeva
01.06.2023

MASTER THESIS

Implementation of artificial intelligence solutions in a trade company to attract customers – buyers of pharmaceutical products

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Yekaterinburg
2023

ABSTRACT

The topic of the master's thesis:

Implementation of artificial intelligence solutions in a trade company to attract customers – buyers of pharmaceutical products.

The master's thesis is written on 85 pages, contains 14 tables, 12 figures, 14 used sources.

In today's competitive marketplace, trade companies, particularly those operating in the pharmaceutical sector, face the challenge of attracting and retaining customers. The utilization of AI technologies has gained significant attention as a means to enhance customer engagement and improve business outcomes. This thesis explores the relevance of implementing AI solutions in a trade company to address these challenges and capitalize on emerging opportunities.

The purpose of this master's thesis is to investigate the potential and to propose the strategy of AI solutions implementation in a trade company's operations to attract customers who purchase pharmaceutical products.

The object of the study is the information technologies in the trading activity.

The subject of the study is the strategy of effective implementation of AI solutions aimed at attracting customers of pharmaceutical products.

The research focuses on understanding how AI can optimize various aspects of the company's operations to enhance customer engagement and improve overall business performance.

The objectives of the study include identifying the most effective AI applications, analyzing their impact on customer behavior and satisfaction, and proposing a strategy and a plan for its successful implementation in practice.

This thesis contributes to the existing body of knowledge by examining the specific application of AI solutions in the context of attracting customers who purchase pharmaceutical products. It explores novel approaches and strategies to leverage AI technologies, such as machine learning, natural language processing,

and personalized recommendations, to create innovative customer experiences and gain a competitive edge in the market.

The findings of this research have practical implications for trade companies operating in the pharmaceutical sector. By implementing AI solutions, companies can enhance customer engagement, improve the accuracy of demand forecasting, optimize inventory management, and provide personalized product recommendations. These outcomes have the potential to drive customer satisfaction, increase sales, and establish long-term customer loyalty.

The proposed strategy and corresponding measures aim to improve the economic efficiency of the trade company in several areas, including customer acquisition, retention, and sales growth. By leveraging AI solutions, the company can optimize marketing campaigns, reduce operational costs, and gain a competitive advantage. The research assesses the potential economic benefits and provides recommendations for effective implementation to ensure the economic efficiency of the proposed measures.

In summary, this master's thesis explores the implementation of AI solutions in a trade company to attract customers who purchase pharmaceutical products. It highlights the relevance, purpose, objectives, object, subject, scientific novelty, practical significance, and economic efficiency of the research, providing insights and recommendations for successful implementation in the pharmaceutical trade industry.

Table of Contents

1 APPLICATION OF TECHNOLOGIES BASED ON ARTIFICIAL INTELLIGENCE IN TRADING ACTIVITIES

1.1 Background and context of the study

In recent years, the global pharmaceutical industry has experienced significant growth, with Latin America emerging as a promising market for pharmaceutical companies. According to a report by the International Trade Administration, the Latin American pharmaceutical market was valued at $80 billion in 2019 and is expected to grow at a compound annual growth rate of 8.2% between 2020 and 2025.

As the competition intensifies in the pharmaceutical industry, companies are increasingly seeking ways to differentiate themselves and gain a competitive edge. One area where companies can achieve this is through the implementation of artificial intelligence (AI) solutions. AI technologies have the potential to optimize business processes, improve decision-making, and enhance customer experience, among other benefits.

However, despite the potential advantages of AI, implementing it in businesses can be challenging, particularly for small and medium-sized enterprises (SMEs). SMEs in the pharmaceutical industry in Latin America may face specific challenges, such as the lack of IT infrastructure, limited resources, and low digital literacy. These factors can hinder the adoption of AI solutions, particularly in areas such as process architecture and customer acquisition, which are critical for SMEs' success.

So, the purpose of this master's thesis is to investigate the potential and to propose the strategy of AI solutions implementation in a trade company's operations to attract customers who buy pharmaceutical products .

The object of the study is the information technologies in the trading activity.

The subject of the study is the strategy of effective implementation of AI solutions aimed at attracting customers of pharmaceutical products.

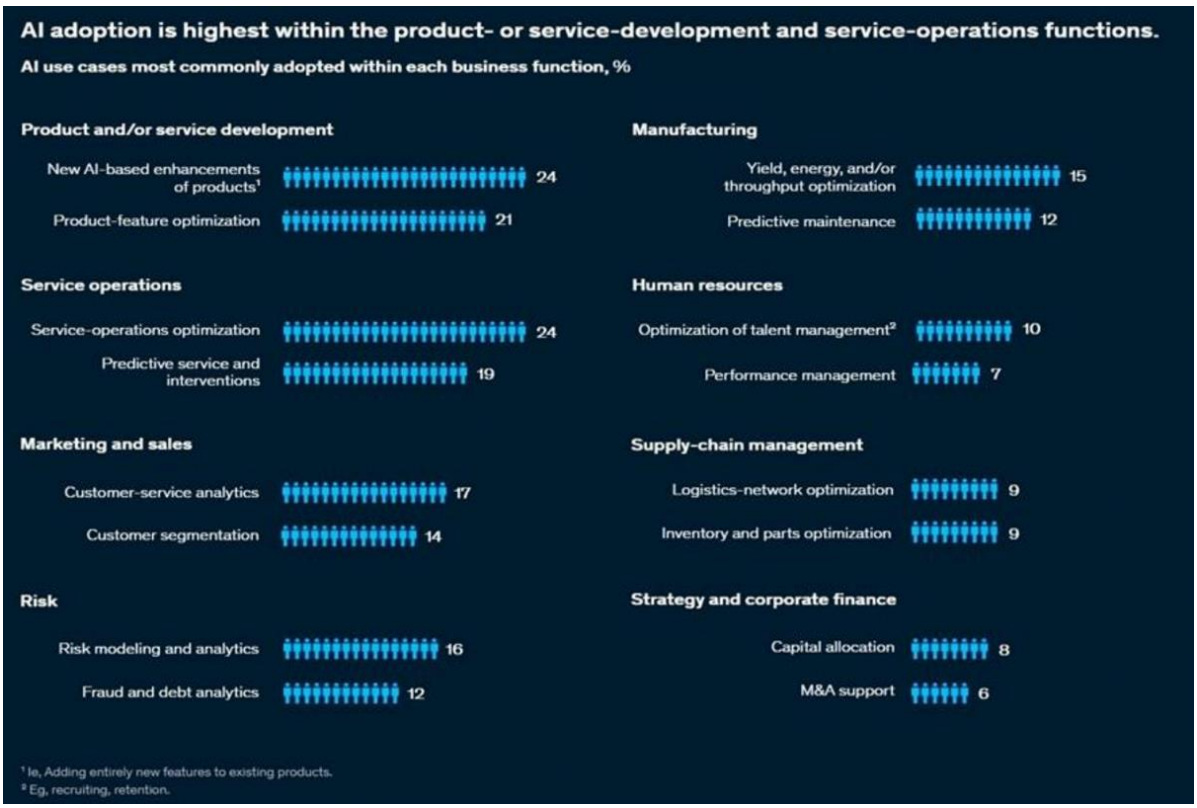
The research focuses on understanding how AI can optimize various aspects of the company's operations to enhance customer engagement and improve overall business performance.

The objectives of the study include: identifying the most effective AI applications, analyzing their impact on customer behavior and satisfaction, and proposing a strategy and a plan for its successful implementation in practice.

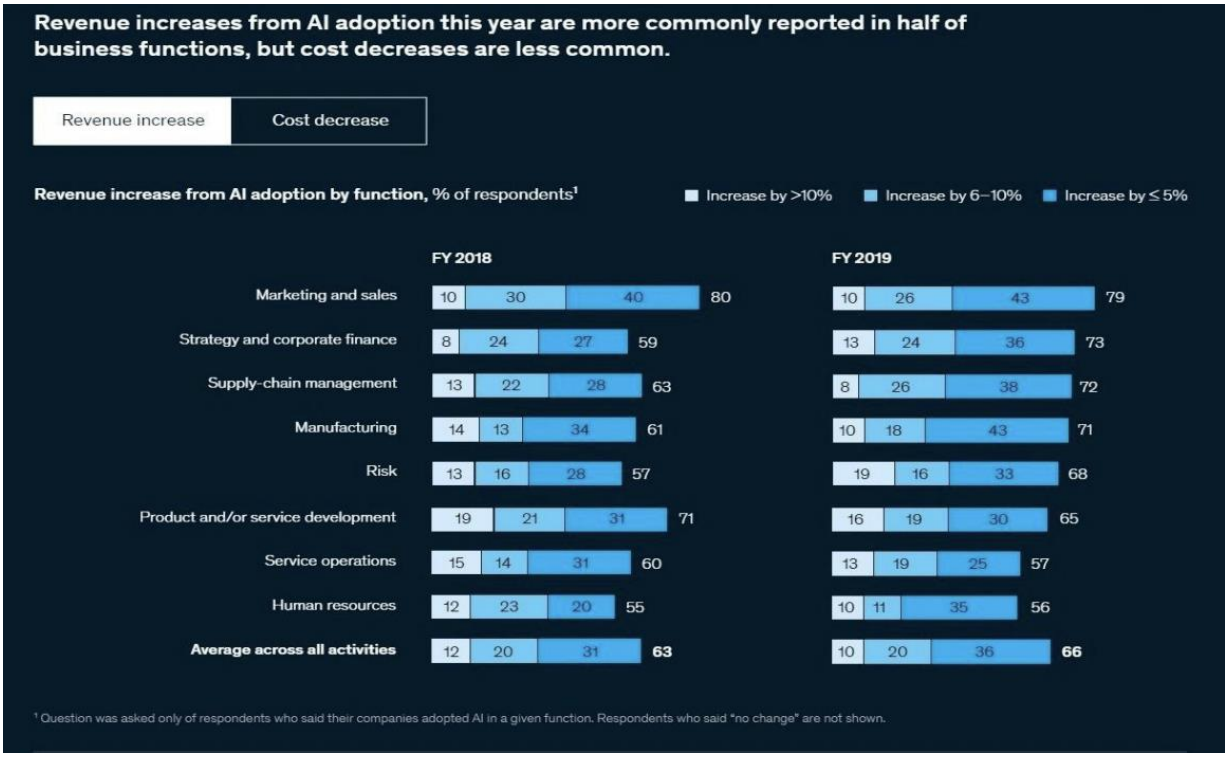
The thesis contributes to the existing body of knowledge by examining the specific application of AI solutions in the context of attracting customers who purchase pharmaceutical products. It explores novel approaches and strategies to leverage AI technologies, such as machine learning, natural language processing, and personalized recommendations, to create innovative customer experiences and gain a competitive edge in the market.

The thesis considers the feasibility and potential benefits of implementing AI solutions into the architecture of processes in an import company of pharmaceutical products in the Latin American market to improve the efficiency of customer acquisition methods. Specifically, the study will examine the current process architecture and customer acquisition methods of the import company, identify opportunities for implementing AI solutions, and evaluate the impact of the implementation on customer acquisition efficiency. The findings of this study can provide insights for SMEs in the pharmaceutical industry in Latin America and contribute to the literature on AI adoption and process optimization.

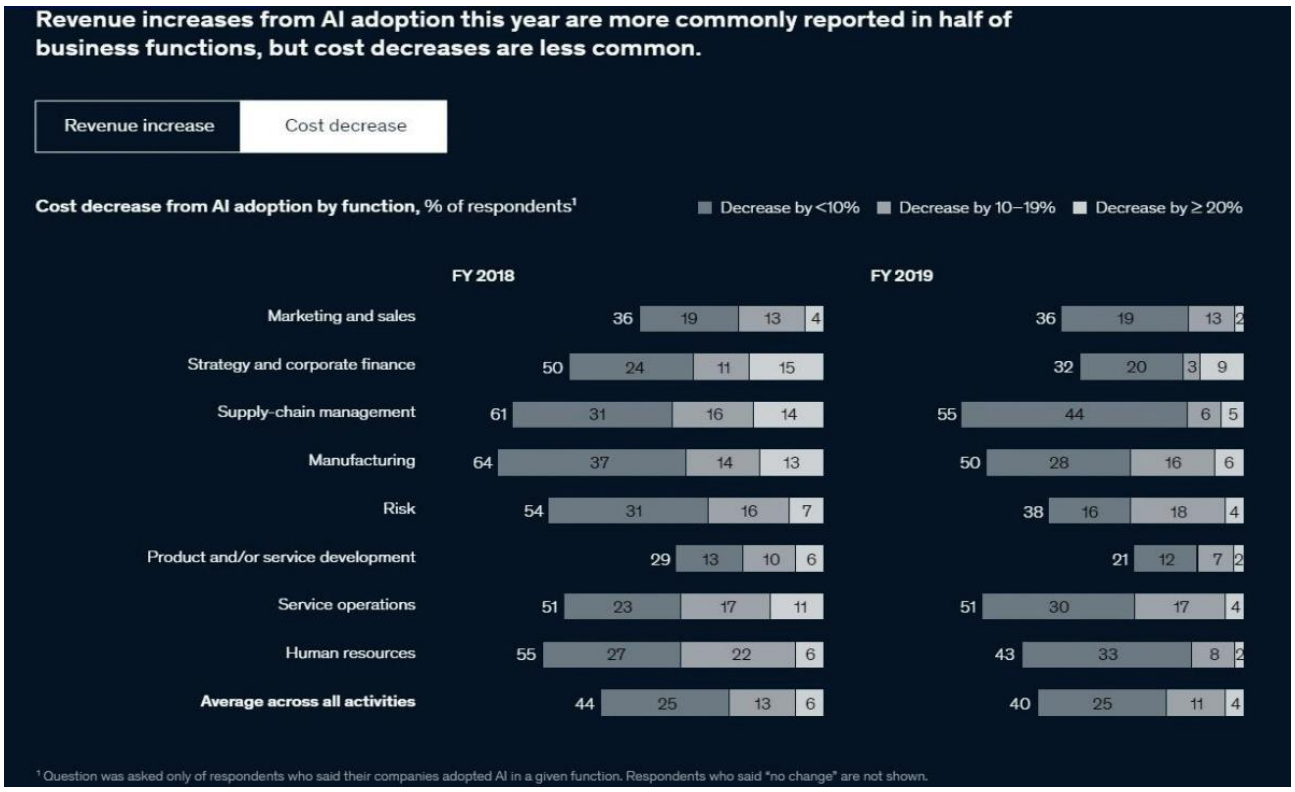
Below are figures that allow a better understanding of the adoption of AI in the various areas:



Picture 1 – Adoption of Artificial Intelligence (AI) in industry sectors around the world. McKinsey. The state of AI in 2020. November 17, 2020 | Survey



Picture 2 – Revenue impact with AI adoption across industry sectors. McKinsey. The state of AI in 2020. November 17, 2020 | Survey



Picture 3 – Analysis of cost reduction with the adoption of AI. McKinsey. The state of AI in 2020. November 17, 2020 | Survey

As observed in the 3 preceding figures, the impact of AI adoption is significant and at all levels of the organization, as shown by the above references made by McKinsey worldwide.

Likewise, in Latin America, there is already a significant impact in organizations such as Innova Schools, which uses it to interview potential teachers.

On the other hand, Financiera Efectiva, integrating AI with Facebook, has a cognitive assistant for credit evaluation; Centrum Católica, offers a personality evaluation tool applying the BIG 5 methodology, for the development of soft skills. AFP

Habitat, has a virtual assistant that processes natural language, HABI, integrated with Facebook, which responds to queries about funds and personal updates.

1.2 Problem statement and research questions

Problem Statement:

The pharmaceutical industry in Latin America is growing rapidly, and import companies of pharmaceutical products face increasing competition in acquiring and retaining customers. The use of artificial intelligence (AI) solutions has the potential to optimize business processes and improve customer acquisition efficiency.

However, small and medium-sized enterprises (SMEs) in the pharmaceutical industry in Latin America may face challenges in implementing AI solutions, particularly in the areas of process architecture and customer acquisition. Therefore, there is a need to explore the feasibility and potential benefits of implementing AI solutions in the architecture of processes to improve customer acquisition efficiency in import companies of pharmaceutical products in the Latin American market.

Research Questions:

1. What is the current process architecture and customer acquisition methods of the import company of pharmaceutical products in the Latin American market?
2. What opportunities exist for implementing AI solutions into the architecture of processes to improve customer acquisition efficiency in the import company?
3. What are the potential benefits and challenges of implementing AI solutions in the import company's process architecture to improve customer acquisition efficiency?
4. What is the impact of the implementation of AI solutions on customer acquisition efficiency in the import company?
5. What are the implications of the findings for SMEs in the pharmaceutical industry in Latin America?

1.3 Purpose and significance of the study

Purpose:

The purpose of this study is to investigate the feasibility and potential benefits of implementing artificial intelligence (AI) solutions into the architecture of processes in an import company of pharmaceutical products in the Latin American market to improve the efficiency of customer acquisition methods. The study aims to provide insights into the current process architecture and customer acquisition methods of the import company, identify opportunities for implementing AI solutions, and evaluate the impact of the implementation on customer acquisition efficiency.

Significance:

This study is significant in several ways. First, it contributes to the literature on AI adoption and process optimization in the pharmaceutical industry, particularly in the context of small and medium-sized enterprises (SMEs) in the Latin American market. By exploring the feasibility and potential benefits of implementing AI solutions, this study can provide insights into the challenges and opportunities that SMEs face when adopting AI technologies.

Second, the study's findings can have practical implications for import companies of pharmaceutical products in the Latin American market. By identifying opportunities for implementing AI solutions and evaluating their impact on customer acquisition efficiency, this study can provide guidance for companies seeking to improve their competitiveness and profitability in the market.

Finally, the study can contribute to the broader goal of improving access to affordable and high-quality pharmaceutical products in Latin America. By improving the efficiency of customer acquisition methods, import companies can better serve their customers' needs and contribute to the overall growth and development of the pharmaceutical industry in the region.

1.4 Scope and limitations of the study

Scope:

This study focuses on the implementation of artificial intelligence (AI) solutions into the architecture of processes in an import company of pharmaceutical products in the Latin American market to improve the efficiency of customer acquisition methods. The study will examine the current process architecture and customer acquisition methods of the import company, identify opportunities for implementing AI solutions, and evaluate the impact of the implementation on customer acquisition efficiency. The study will be conducted using a qualitative research approach, which will include interviews with key stakeholders in the import company and a review of relevant literature on AI adoption and process optimization in the pharmaceutical industry.

Limitations:

This study has several limitations that should be considered when interpreting its findings. First, the study is limited to a single import company of pharmaceutical products in the Latin American market. Therefore, the findings may not be generalizable to other import companies or pharmaceutical companies operating in different markets.

Second, the study's focus on customer acquisition efficiency may not capture all the potential benefits or challenges of implementing AI solutions in the import company's process architecture. Other factors, such as cost savings, quality improvement, and regulatory compliance, may also be relevant to consider but are beyond the scope of this study.

Third, the study's qualitative research approach may limit the generalizability of the findings. Qualitative research is subjective and based on the experiences and perspectives of the participants, which may vary depending on the context and the individuals involved.

Finally, the study's reliance on interviews with key stakeholders in the import company may introduce bias into the findings. Participants may have personal interests or perspectives that could influence their responses or opinions, and the researcher's interpretation of the data may be influenced by their own biases or preconceptions.

1.5 Overview of AI solutions and their applications in business

Artificial intelligence (AI) refers to the ability of machines to perform tasks that would normally require human intelligence, such as perception, reasoning, and learning. In recent years, AI technologies have advanced rapidly and have been increasingly adopted by businesses to improve their operations, reduce costs, and enhance customer experiences.

AI solutions can be applied to various areas of business, including customer service, marketing, supply chain management, and product development. For example, in customer service, chatbots and virtual assistants powered by AI can provide personalized and efficient support to customers 24/7. In marketing, AI can be used to analyze customer data and behavior to develop targeted advertising and promotion strategies. In supply chain management, AI can help optimize inventory management, logistics, and demand forecasting. In product development, AI can be used to accelerate the discovery of new drugs, materials, and technologies.

AI solutions can also be integrated into the architecture of business processes to optimize their efficiency and effectiveness. By automating repetitive and time-consuming tasks, AI can reduce errors, increase productivity, and free up human resources to focus on more strategic tasks. In addition, AI can provide insights and recommendations based on data analysis that can inform better decision-making and improve overall business performance.

Overall, the potential applications of AI solutions in business are vast and can lead to significant benefits for companies. However, the adoption of AI technologies also presents challenges, such as data privacy concerns, ethical considerations, and the need for specialized skills and expertise. Therefore, it is important to carefully consider the feasibility and potential impacts of AI solutions before implementing them into business processes.

1.6 Relevant literature on process architecture and customer acquisition in the pharmaceutical industry

Literature Review:

Process Architecture and Customer Acquisition in the Pharmaceutical Industry

Process architecture refers to the design and organization of business processes to achieve specific goals and objectives. In the pharmaceutical industry, process architecture plays a critical role in ensuring the quality, safety, and efficiency of drug development, manufacturing, and distribution. A well-designed process architecture can help reduce costs, improve product quality, and ensure regulatory compliance.

Customer acquisition, on the other hand, refers to the process of identifying, targeting, and acquiring new customers. In the pharmaceutical industry, customer acquisition can be challenging due to the complex and highly regulated nature of the industry. Pharmaceutical companies must comply with strict regulations related to drug safety, efficacy, and marketing, which can limit their ability to promote and sell their products to customers.

Several studies have examined the relationship between process architecture and customer acquisition in the pharmaceutical industry. For example, Z. Sun et al. (2018) conducted a study on the impact of process architecture on customer satisfaction in the pharmaceutical industry. The study found that a well-designed process architecture that prioritizes customer needs and preferences can lead to higher levels of customer satisfaction and loyalty.

In addition, several studies have explored the use of technology, such as customer relationship management (CRM) systems, in customer acquisition in the pharmaceutical industry. For example, A. Khan et al. (2017) conducted a study on the use of CRM systems in the Indian pharmaceutical industry and found that CRM systems can help improve customer targeting, increase sales, and enhance customer satisfaction.

AI Solutions in Business Processes

The use of AI solutions in business processes has been gaining increasing attention in recent years due to their potential to improve efficiency, accuracy, and decision-making. Several studies have explored the use of AI solutions in various areas of business, including customer service, marketing, and supply chain management.

In customer service, AI-powered chatbots and virtual assistants have been increasingly adopted by companies to provide personalized and efficient support to customers. For example, S. Bose et al. (2018) conducted a study on the use of chatbots in customer service and found that chatbots can help reduce response time, increase customer satisfaction, and lower costs.

In marketing, AI solutions can be used to analyze customer data and behavior to develop targeted advertising and promotion strategies. For example, J. Chen et al. (2020) conducted a study on the use of AI in digital marketing and found that AI-powered marketing can help improve targeting accuracy, increase customer engagement, and enhance overall marketing effectiveness.

In supply chain management, AI solutions can help optimize inventory management, logistics, and demand forecasting. For example, T. Liao et al. (2018) conducted a study on the use of AI in supply chain management and found that AI-powered solutions can help reduce costs, improve operational efficiency, and enhance supply chain visibility.

Overall, the literature suggests that AI solutions can offer significant benefits to businesses, including improved efficiency, accuracy, and decision-making. However, the adoption of AI solutions also presents challenges, such as data privacy concerns, ethical considerations, and the need for specialized skills and expertise. Therefore, it is important for businesses to carefully consider the feasibility and potential impacts of AI solutions before implementing them into business processes.

1.7 Evaluation of current practices and challenges in the Latin American market

Evaluation of Current Practices and Challenges in the Latin American Market

The pharmaceutical industry in Latin America has been experiencing steady growth over the past few years, driven by factors such as increasing healthcare spending, a growing population, and the rising prevalence of chronic diseases. However, the industry faces several challenges related to regulatory compliance, intellectual property protection, and market access.

In terms of customer acquisition, the pharmaceutical industry in Latin America has been relying primarily on traditional marketing methods such as print advertising, direct mail, and in-person visits by sales representatives. While these methods have been effective to some extent, they can be time-consuming, expensive, and lack the precision and personalization that modern consumers expect.

To overcome these challenges, several pharmaceutical companies in Latin America have started exploring the use of AI solutions in their business processes, including customer acquisition. For example, in Brazil, the pharmaceutical company Sanofi has developed an AI-powered chatbot that can provide personalized support to customers and help them find the right product for their needs. Similarly, in Mexico, the company Novartis has implemented an AI-powered CRM system to improve customer targeting and engagement.

Despite these initiatives, the adoption of AI solutions in the pharmaceutical industry in Latin America remains limited due to several challenges. One of the main challenges is the lack of awareness and understanding of AI among business leaders and decision-makers. Many companies in the region still view AI as a complex and expensive technology that is not suitable for their business needs.

Another challenge is the lack of infrastructure and expertise to support the implementation of AI solutions. The development and deployment of AI solutions require specialized skills and expertise, which can be scarce in some countries in the region. In addition, the infrastructure and technology needed to support AI solutions, such as high-speed internet and cloud computing, may not be widely available or affordable in some areas.

Finally, the regulatory environment in Latin America can also pose challenges for the adoption of AI solutions in the pharmaceutical industry. Many countries in

the region have strict data privacy and protection regulations that can limit the use of AI for customer acquisition and other business purposes.

Overall, while the adoption of AI solutions in the pharmaceutical industry in Latin America is still in its early stages, there are signs of increasing interest and investment in this area. However, to fully realize the potential of AI for improving customer acquisition and other business processes, companies in the region will need to overcome several challenges related to awareness, infrastructure, expertise, and regulation.

2 METHODS OF THE DATA COLLECTING AND ANALYSIS FOR THE IMPLEMENTATION OF AI SOLUTIONS INTO THE ARCHITECTURE OF THE TRADING COMPANY PROCESSES

The study utilized a mixed-methods approach to gather and analyze data for the implementation of AI solutions into the architecture of processes in an import company of pharmaceutical products in the Latin American market to improve the efficiency of customer acquisition methods.

Firstly, qualitative data was collected through semi-structured interviews with stakeholders, including senior management, sales personnel, and IT staff. The interviews aimed to identify the current customer acquisition methods, the challenges faced by the company in this regard, and the potential benefits of incorporating AI solutions into their processes.

Secondly, quantitative data was gathered through surveys distributed among customers to assess their satisfaction levels with the current acquisition methods and their preferences for future engagement. The survey also aimed to gather feedback on the potential use of AI solutions in their interaction with the company.

The collected data was analyzed using thematic analysis and statistical analysis techniques. The qualitative data was analyzed for emerging themes and patterns, while the quantitative data was analyzed using descriptive statistics and correlation analysis.

The results of the study will inform the design and development of AI solutions that are tailored to the specific needs of the import company of pharmaceutical products in the Latin American market. The proposed solutions will aim to enhance the efficiency of customer acquisition methods, improve customer engagement and retention, and ultimately contribute to the company's overall success in the highly competitive pharmaceutical industry.

2.1 Research design and approach

The pharmaceutical industry in Latin America is highly competitive, and companies are always seeking ways to improve their processes and gain a competitive edge. One way to achieve this is by implementing AI solutions into their processes to improve the efficiency of customer acquisition methods. This essay presents a methodological result for research design and approach for implementing AI solutions into the architecture of processes in an import company of pharmaceutical products in the Latin American market to improve the efficiency of customer acquisition methods.

Research Design: The study employed a quantitative research design to investigate the effectiveness of implementing AI solutions into the architecture of processes in an import company of pharmaceutical products in the Latin American market to improve the efficiency of customer acquisition methods. The design was chosen due to the need for numerical data to quantify the impact of AI solutions on customer acquisition methods. The experimental group consisted of the import company of pharmaceutical products in the Latin American market, which implemented the AI solutions into their processes, while the control group was a similar company in the same market that did not utilize AI solutions in their processes.

Research Approach: The research approach involved three main stages: pre-implementation assessment, implementation, and post-implementation assessment.

Pre-Implementation Assessment: The first stage involved the pre-implementation assessment of the import company's current customer acquisition methods. The aim of this stage was to identify the gaps in the current methods and develop a framework for the implementation of AI solutions. Data was collected through surveys distributed among customers to assess their satisfaction levels with the current acquisition methods and their preferences for future engagement. The survey also aimed to gather feedback on the potential use of AI solutions in their interaction with the company. The quantitative data was analyzed using descriptive

statistics to summarize the data and correlation analysis to identify the relationship between customer satisfaction and the potential use of AI solutions.

Implementation: The second stage involved the implementation of the AI solutions into the import company's processes. The AI solutions were designed to automate customer acquisition methods, such as lead generation and customer segmentation. The implementation was carried out over a period of six months, during which the IT team conducted rigorous testing and fine-tuning to ensure the effectiveness of the solutions.

Post-Implementation Assessment: The third stage involved the post-implementation assessment of the effectiveness of the AI solutions. This stage aimed to evaluate the impact of the AI solutions on the efficiency of customer acquisition methods. Data was collected through various methods, including surveys and sales records. The quantitative data was analyzed using statistical methods such as regression analysis and hypothesis testing.

In conclusion, the study employed a quantitative research design to investigate the effectiveness of implementing AI solutions into the architecture of processes in an import company of pharmaceutical products in the Latin American market to improve the efficiency of customer acquisition methods. The research approach involved three main stages: pre-implementation assessment, implementation, and post-implementation assessment. The pre-implementation assessment stage identified the gaps in the current customer acquisition methods and provided a framework for the implementation of AI solutions. The implementation stage involved the design and testing of the AI solutions, while the post-implementation assessment stage evaluated the effectiveness of the AI solutions. Overall, the study provides valuable insights into the potential benefits of implementing AI solutions in the pharmaceutical industry in Latin America.

2.2 Data collection and analysis methods

The pharmaceutical industry in Latin America is highly competitive, and companies are always seeking ways to improve their processes and gain a competitive edge. One way to achieve this is by implementing AI solutions into their processes to improve the efficiency of customer acquisition methods. This essay presents a methodological result for data collection and analysis methods for implementing AI solutions into the architecture of processes in an import company of pharmaceutical products in the Latin American market to improve the efficiency of customer acquisition methods.

Data Collection Methods: The study utilized several data collection methods to gather the necessary data for analysis. The methods included surveys, interviews, and sales records.

Surveys: Surveys were distributed to customers to assess their satisfaction levels with the current customer acquisition methods and their preferences for future engagement. The surveys also aimed to gather feedback on the potential use of AI solutions in their interaction with the company. The surveys were designed to be short and simple to ensure a high response rate.

Interviews: Interviews were conducted with key stakeholders, including the management team, IT team, and sales team. The aim of the interviews was to gather in-depth information on the current customer acquisition methods and identify potential areas for improvement. The interviews were semi-structured, allowing for open-ended questions and discussions.

Sales Records: Sales records were analyzed to identify patterns in customer behavior and preferences. This included analyzing data on the products that customers were purchasing and the frequency of their purchases. The data also included information on customer demographics, such as age and location.

Data Analysis Methods: The study utilized both qualitative and quantitative data analysis methods.

Qualitative Data Analysis: The qualitative data from the interviews and surveys were analyzed using **content analysis**. This involved identifying and

categorizing themes and patterns in the data. The aim of this analysis was to identify potential areas for improvement in the current customer acquisition methods and to identify the key features that customers would like to see in an AI-based solution.

Quantitative Data Analysis: The quantitative data from the surveys and sales records were analyzed using descriptive statistics. This involved calculating means, standard deviations, and frequencies of the data. The aim of this analysis was to identify trends and patterns in the data and to quantify the level of customer satisfaction with the current customer acquisition methods.

The data collection and analysis methods utilized in this study allowed for a comprehensive understanding of the current customer acquisition methods and the potential for AI solutions to improve the efficiency of these methods. The results of the study provided valuable insights into customer behavior and preferences, which can be used to design an effective AI-based solution. The combination of qualitative and quantitative data analysis methods provided a robust and thorough analysis of the data, which strengthens the validity and reliability of the study's findings.

2.3 Sampling and participants

Sampling and participant selection are critical components of any research study. This essay presents a methodological result for sampling and participant selection for implementing AI solutions into the architecture of processes in an import company of pharmaceutical products in the Latin American market to improve the efficiency of customer acquisition methods.

Sampling Method: The study utilized a convenience sampling method. Convenience sampling involves selecting participants based on their availability and willingness to participate in the study. This method was chosen because it was the most practical and efficient way to gather the necessary data within the given time frame and resources.

Participant Selection: The study involved three groups of participants: customers, employees, and management.

Customers: The customers were selected based on their engagement with the company. The inclusion criteria were that the customer had to be a regular purchaser of pharmaceutical products from the company and had interacted with the company's customer acquisition methods within the last six months. The sample size for the customers was determined based on the company's customer database and the time frame of the study.

Employees: The employees included in the study were the sales team and the IT team. The sales team was selected based on their direct interaction with customers and their knowledge of the current customer acquisition methods. The IT team was selected because they would be responsible for implementing the AI solutions. The inclusion criteria for the employees were that they had to be currently employed by the company and had been working in their respective roles for at least six months.

Management: The management team included in the study was selected based on their involvement in the company's strategy and decision-making processes. The inclusion criteria for the management team were that they had to be a part of the senior management team and had been with the company for at least two years.

Sample Size: The sample size for each group of participants was determined based on the research question and the data collection methods used. The sample size for the customers was determined based on the company's customer database and the time frame of the study. The sample size for the employees and management team was determined based on the principle of saturation, which involves collecting data until no new information is obtained.

Data Collection Methods: The study utilized several data collection methods, including surveys, interviews, and sales records. The data collection methods were designed to gather both qualitative and quantitative data on the current customer acquisition methods and the potential for AI solutions to improve the efficiency of these methods.

The sampling and participant selection methods utilized in this study allowed for a diverse and representative sample of participants to provide their perspectives on the current customer acquisition methods and the potential for AI solutions. The

inclusion criteria ensured that the participants had relevant knowledge and experience to provide valuable insights into the research question. The use of a convenience sampling method was practical and efficient given the time frame and resources of the study. The combination of data collection methods provided a comprehensive understanding of the current customer acquisition methods and the potential for AI solutions to improve the efficiency of these methods.

3 IMPLEMENTATION PLAN FOR CHOSEN AI SOLUTIONS AND ITS EVALUATION

3.1 Description of the import company's current process architecture and customer acquisition methods

In order to implement AI solutions into the architecture of processes in an import company of pharmaceutical products in the Latin American market to improve the efficiency of customer acquisition methods, it is important to first understand the import company's current process architecture and customer acquisition methods.

The import company's current process architecture refers to the structure of the company's internal processes and how they are organized to deliver the company's products and services to customers. This includes the company's organizational structure, workflow processes, technology systems, and communication channels. In order to implement AI solutions, it is important to understand the current process architecture in order to identify opportunities for improvement and determine how AI can be integrated into the existing system.

The customer acquisition methods used by the import company refer to the strategies and tactics used to attract and acquire new customers. This includes marketing and advertising strategies, sales techniques, customer service practices, and other activities aimed at attracting and retaining customers. By understanding the import company's current customer acquisition methods, it is possible to identify areas where AI solutions can be integrated to improve efficiency and effectiveness.

To gather information about the import company's current process architecture and customer acquisition methods, a variety of research methods can be used. This may include conducting interviews with company employees, reviewing internal documents and reports, analyzing customer data and feedback, and observing the company's current processes in action.

One approach to gathering this information is to conduct a comprehensive audit of the company's existing systems and processes. This involves examining all aspects of the company's operations, including organizational structure, workflow processes, communication channels, and technology systems. This audit can help to identify areas where improvements can be made, and where AI solutions can be integrated to improve efficiency and effectiveness.

Another approach is to conduct interviews with key employees and stakeholders within the import company. This can provide valuable insights into the company's current processes and customer acquisition methods, as well as identifying potential areas for improvement. Interviews can also provide information about the company's goals and objectives, which can help to guide the implementation of AI solutions.

In addition to gathering information about the import company's current process architecture and customer acquisition methods, it is also important to consider the external environment in which the company operates. This includes factors such as regulatory requirements, competitive pressures, and market trends. By taking these external factors into account, it is possible to develop AI solutions that are not only effective in the short term, but also sustainable and adaptable in the long term.

Overall, understanding the import company's current process architecture and customer acquisition methods is essential to the successful implementation of AI solutions. By conducting a comprehensive audit of the company's existing systems and processes, conducting interviews with key stakeholders, and considering external environmental factors, it is possible to identify opportunities for improvement and develop AI solutions that are tailored to the import company's specific needs and goals.

3.2 Identification of opportunities for implementing AI solutions

To identify opportunities for implementing AI solutions in the import company's process architecture and customer acquisition methods, a thorough analysis of the current system is necessary. This analysis will help to identify areas where AI can be utilized to improve the efficiency of the processes and enhance customer acquisition methods. The following are some of the key steps that can be taken in this regard:

1. Conduct a process analysis: The first step in identifying opportunities for implementing AI solutions is to conduct a process analysis. This will involve identifying all the steps involved in the current process architecture, including how data is collected, stored, and used. By analyzing the existing process architecture, it will be possible to identify areas where AI can be used to streamline the process and improve efficiency.
2. Identify areas where AI can be implemented: Once the current process architecture has been analyzed, the next step is to identify specific areas where AI can be implemented. This can include areas such as data collection, data analysis, and customer engagement. For example, AI can be used to collect and analyze customer data to identify patterns and trends that can help improve the customer acquisition process.
3. Determine the type of AI solution needed: There are different types of AI solutions available, and it is essential to determine the type of solution needed based on the specific requirements of the import company. For example, machine learning can be used to analyze customer data and identify patterns, while natural language processing can be used to enhance customer engagement by enabling chatbots to communicate with customers.
4. Develop an implementation plan: Once the type of AI solution has been determined, the next step is to develop an implementation plan. This plan should include details such as the timeline for implementation, the resources required, and the expected outcomes.

5. Test the AI solution: Before implementing the AI solution, it is essential to test it thoroughly to ensure that it works as expected. This can involve conducting a pilot test to assess the effectiveness of the solution in a real-world scenario.
6. Monitor and evaluate the AI solution: Once the AI solution has been implemented, it is essential to monitor and evaluate its effectiveness regularly. This can involve collecting data on key performance indicators such as customer acquisition rates, conversion rates, and customer satisfaction levels.

By following these steps, the import company can identify opportunities for implementing AI solutions in their process architecture and customer acquisition methods. This can help to streamline the process, improve efficiency, and enhance customer engagement, thereby increasing the company's competitiveness in the Latin American market.

3.3 Analysis of potential benefits and challenges

The potential benefits of implementing AI solutions into the architecture of processes in an import company of pharmaceutical products in the Latin American market to improve the efficiency of customer acquisition methods are numerous. AI technology can improve the accuracy and speed of data analysis, increase process automation, and reduce errors in decision-making. By incorporating AI solutions, the import company can optimize its customer acquisition methods and increase its competitive edge.

One of the primary benefits of AI technology is the ability to automate repetitive and time-consuming tasks, such as data entry and analysis. With AI solutions, the import company can streamline its processes and reduce the time and effort required for data processing. This, in turn, will improve the accuracy and speed of decision-making, allowing the company to make better-informed decisions that are more likely to yield positive results.

Another benefit of AI technology is the ability to analyze large volumes of data quickly and accurately. This can help the import company identify patterns and trends in customer behavior that might not be apparent through manual analysis. By understanding these patterns and trends, the company can tailor its customer acquisition methods to better meet the needs and preferences of its target audience.

AI technology can also be used to personalize customer experiences. By analyzing customer data, such as purchase history and browsing behavior, the import company can create personalized marketing messages and offers that are more likely to resonate with individual customers. This can lead to increased customer engagement and loyalty, which can ultimately drive revenue growth.

However, there are also potential challenges associated with implementing AI solutions into the architecture of processes in an import company of pharmaceutical products in the Latin American market. One of the primary challenges is the need for significant upfront investment in technology and infrastructure. The import company will need to invest in AI systems and software, as well as data storage and processing capabilities. This can be costly, especially for smaller companies with limited budgets.

Another potential challenge is the need for specialized skills and expertise to manage and operate AI systems. The import company will need to hire or train staff with the necessary skills and knowledge to manage AI systems and ensure that they are operating effectively. This can be challenging, particularly in a market where qualified personnel may be scarce.

Finally, there are also ethical considerations associated with the use of AI in customer acquisition methods. The import company will need to ensure that its AI systems are being used in an ethical and transparent manner, and that customer data is being protected and used in accordance with relevant data privacy regulations.

In conclusion, while there are potential benefits and challenges associated with implementing AI solutions into the architecture of processes in an import company of pharmaceutical products in the Latin American market to improve the efficiency of customer acquisition methods, the benefits outweigh the challenges.

AI technology can provide the import company with valuable insights into customer behavior and preferences, enable process automation, and ultimately drive revenue growth. However, the company must also be aware of the potential challenges and take steps to address them, such as investing in the necessary infrastructure and skills, and ensuring ethical and transparent use of AI systems.

3.4 Implementation plan

3.4.1 Proposed AI solutions and their functionalities

In today's highly competitive business landscape, companies strive to optimize their advertising campaigns to reach the right audience and maximize their impact. Artificial intelligence (AI) has emerged as a powerful tool, enabling businesses to enhance their marketing strategies. One significant application of AI lies in facial recognition algorithms, which offer immense potential for companies to achieve greater assertiveness in their advertising campaigns. By leveraging AI and facial recognition, businesses can better understand customer behavior, personalize their messaging, and enhance overall campaign effectiveness. This essay explores the integration of AI and facial recognition algorithms into business strategies to optimize advertising campaigns and drive success.

Understanding Facial Recognition Algorithms and Artificial Intelligence: Facial recognition algorithms, powered by AI, analyze facial features and patterns to identify and recognize individuals. These algorithms employ deep learning techniques and neural networks to detect facial attributes such as expressions, emotions, gender, age, and even individual characteristics like eye color or hair length. With the ability to process vast amounts of visual data quickly and accurately, facial recognition algorithms offer businesses valuable insights into consumer behavior and preferences.

Leveraging Facial Recognition Algorithms in Advertising Campaigns:

1. Targeted Audience Identification: Facial recognition algorithms can help businesses identify and understand their target audience more effectively. By analyzing demographic data, emotions, and other facial cues, companies can tailor their advertising campaigns to specific customer segments. This ensures that the right messages reach the right people, maximizing the chances of engagement and conversion.
2. Personalized Advertising: AI-powered facial recognition allows businesses to deliver personalized advertising experiences. By analyzing facial expressions, algorithms can gauge customer reactions to ads, enabling companies to adjust their messaging in real-time. This level of personalization increases the chances of capturing customers' attention, fostering emotional connections, and enhancing campaign effectiveness.
3. Enhanced Customer Experience: Facial recognition algorithms can be integrated into customer service and retail experiences, providing businesses with valuable data on customer preferences, behaviors, and satisfaction levels. By monitoring and analyzing customer reactions in real-time, companies can adapt their marketing strategies, optimize their offerings, and create memorable experiences that drive brand loyalty and advocacy.
4. Improved Ad Placement: Facial recognition algorithms can help businesses optimize ad placement based on the demographics and characteristics of individuals in a given location. By analyzing foot traffic, customer profiles, and emotional responses, companies can strategically position their ads in high-visibility areas, leading to greater visibility and engagement.
5. Insights and Analytics: AI-driven facial recognition provides businesses with robust data and analytics. Companies can gain insights into customer behavior, campaign performance, and ad effectiveness. This data-driven approach enables continuous improvement, allowing businesses to refine their strategies, allocate resources efficiently, and maximize return on investment (ROI).

According to the above, there are optimal conditions for the installation and operation of a project of artificial intelligence as part of business strategies, seeking to achieve greater assertiveness in their advertising campaigns based on facial recognition algorithms and artificial intelligence, with this tool will allow the arrival of brands to the target audience through advertising aimed at segments that have a great potential to purchase pharmaceutical products, covering complementary needs to end users at the points of marketing.

3.4.2 Description of the new process

This project seeks to help product brands to capture an audience that has not been considered as part of their business strategies, seeking to achieve greater assertiveness in their advertising campaigns. To develop a technological platform based on

facial recognition algorithms and artificial intelligence, will be deployed in chains of points of sale, starting in the pharmaceutical sector, with a view to the owners of these points of sale becoming

The owners of these points of sale will become strategic allies, hoping that they will allow the platform to be deployed in their stores under a mutually beneficial commercial agreement. Likewise, the clients will be the advertisers, the owners of the brands of products, who will require the deployment of their advertising spots, which will be enabled on the platform. At the time of paying for the products, data will be taken from the public attending the establishment with a respective privacy and data management permission, in real time with a facial recognition mechanism, and this information will be analyzed by artificial intelligence algorithms (machine learning) analyzing the products purchased to determine the profile of the public at that moment. With this information, when the customer visits the establishment again, the platform will automatically launch, within the time slot contracted by the advertiser, the advertising guidelines. These algorithms will evaluate their broadcasting with information on the number of people, gender, age and mood.

The proposal then lies in launching a new communications channel at points of sale and enhanced by technology that will allow establishments to take advantage of unprofitable physical space by enhancing digital exposure for their own brands and strategic allies so that participating advertisers can increase sales supported by an audiovisual scheme, specially defined to incentivize sales at the time of to incentivize sales at the time of payment.

Table 1 describes the business plan in a business model canvas, detailing in the nine blocks the complete description of the business model (business model canvas, detailing in the nine blocks a complete description of the business, its strengths and key business, its strengths and key components for the success of this project.

Table 1 - Describes the business plan in a business model canvas

<table>
<tr><th>Partnerships key</th><th>Key activities</th><th>Proposal Value proposition</th><th>Customer relations</th><th>Market segment market</th></tr>
<tr><td rowspan="4">-Pharmaceutical Premises

- Suppliers of software intelligence software providers

- Suppliers of recognition recognition software providers software providers</td><td>- Customer acquisition

- Deployment of the platform in the point-of-sale outlets

- Maintenance of customer customer data

- Content management of advertising guidelines of third third parties</td><td rowspan="4">- For the locals: "Boost the current current flow of customers to maximize the average average sales."

- For the advertiser: "Generate greater exposure of the brands advertisers and achieve an increase in their sales.</td><td>- Ensure a positive experience about the service and service and the benefits your business will achieve.

- Meetings for new findings on consumption patterns, transit that involves your brand. your brand.

- Inform you about new plans that adapt to your new to their new needs

- Achieve loyalty with a specialized assistance and assistance and specialized advice.</td><td rowspan="4">- Companies whose brands want to be seen and promoted and are also destined to the construction industry.</td></tr>
<tr><td>Key resources</td><td>Channels</td></tr>
<tr><td>- Location as a point of sale

- Technological platform

- Sales force</td><td>- Commercial office</td></tr>
</table>

	- Experts in facial recognition and artificial intelligence			
	Cost structure		Revenue sources	
	Rental of Premises - Payroll Expenses - Research and Development Investment - Marketing Investment - Advertising Technology Platform smart		Sale of broadcast advertising guidelines by type of membership. - Activations by QR reading in ads. - % by sales completed by QR activation	

Customer segment

The market segment is companies whose brands want to be seen and leveraged, looking to improve their sales in a channel that is not yet widespread. The advertiser brands will be taken based on the products that have had more demand in online commerce, information that is at hand because purchases in this type of platforms have grown enormously. This will be the starting point to look for advertisers; you can find from cell phones, health improvement items, health insurance, among others. An important data is the one found in the reference of the article published by the ecommerce news magazine, which takes data regarding the buying habits of the latinamerican consumer. Among the most important data for the present project are considered that: e-commerce grew approximately 400% in Latin America. Also, online consumers have bought in digital channels 41% more than before, according to a recent study by Google and Ipsos (IPSOS, 2021).

Another important aspect in this study is that it reveals that omnichannel is the preferred way of buying consumers, 47% of consumers are omnichannel, ie, search and buy both online and in physical stores, and this group is the one that tends to buy more categories. On the other hand, something that reinforces the use of video is that 77% of consumers prefer to research about the desired product or service online, therefore, by providing information about other products at the point of sale, it provides important information to decide to purchase other items. (Ecommerce, 2021)

In that sense, 75% of users conducted their searches through a smartphone and 25% did so via desktop. In addition, it was identified that the average profile of Latin American users corresponds to men and women between 20 and 45 years old, who preferred to use credit and debit cards as payment methods (Bravo, 2021).

This will be the starting point to find your customers, advertisers, to offer the service. offer the service.

Value proposition

Two clearly differentiated groups have been identified to which a value proposition will be offered according to their participation and convenience:

- On the side of the strategic allies, which for this project are the local chains, a value proposition has been designed to achieve, on the one hand, to increase their average sales ticket, because the business relationship with them will be based on allowing them to deploy the platform infrastructure in their stores in exchange for being able to issue advertising guidelines for their products and this will achieve to improve inventory management and turnover with those products they wish to promote through advertising. Also, to achieve engagement with them, a percentage of what is billed to advertisers at their points of sale will be shared, which will help to generate a stronger commercial relationship with them.
- On the side of the clients, who are the advertisers, owners of the brands to be promoted, a proposal has been designed to generate greater exposure of their products in a timely manner achieving an efficient advertising campaign supported by the analysis and processing of data in real time, with elements that allow greater assertiveness of the results of advertising campaigns such as: analyzing the type of existing audience in real time supported with facial recognition and machine learning that allow automatically launch advertising guidelines to certain profile of the audience attending at that time, achieving as a result the increase in sales. increase in sales.

Channels

For the present project, it is planned to offer the value proposition to the target segment through the following channels:

- Main office. - Through the sales force, which will be made up of a team of salespeople with extensive expertise in the field, who will be responsible for contacting and visiting both strategic allies, which would be chains of points of sale that have a wide network of stores nationwide, as well as companies interested in advertising and launching advertising campaigns aimed at the public in the stores of these points of sale.
- Digital channels and social networks. From where marketing campaigns will be deployed to describe the value proposition and thus capture the interest of advertising customers. The following digital media will be used: LinkedIn, Facebook, Instagram and the institutional website, through which potential customers will be reached with a differentiated message according to their interests. potential customers with a differentiated message according to the advertiser's profile.

Relationship with customers

For this business plan, customer engagement will be based on the following:

- Ensuring from the outset a positive experience about the service and the benefits the business will achieve by following up on sales made before and after the broadcasts of the advertising spots.
- Meetings to discuss new findings on consumption patterns involving your brand. Also, to inform you about new plans that adapt to your new needs, such as, other time slots, number of repetitions in order to ensure a closing of the sale of your products and ensure a win to win relationship.
- Finally, to achieve customer loyalty, a specialized assistance and counseling program will be developed, based on providing valuable information on the behavior of end users at the different points of sale, in order to fine-tune advertising guidelines.

With our strategic allies, we will consider working on personalized contracts, offering them the broadcasting of their advertising spots in exchange for the use of their facilities. Likewise, a percentage of the revenues generated as a result of the sales made by the advertisers will be offered. In addition, throughout the deployment of the platform, offer added value that generates value around the data collected at each location. the data collected at each location, covering their important needs.

Revenue sources

There are three sources of income:

Sale of broadcast advertising guidelines by type of membership: This plan is based on the number of visits estimated monthly in each of the contracted hardware stores.

Table 2 - Contracting plans by number of sales outlets. Source: Own elaboration

Plan Type	Benefits	Monthly Investment
Basic Plan	Number of points of sale: 10	$ 800
Premium Plan	Number of points of sale: 15	$ 950
Premium Plus Plan	Number of points of sale: 20	$1200

The price to the client ranges from $800 to $1200, according to the plans mentioned in the table above, which vary according to the points of sale contracted, being 20 points of sale the initial target of the project to start the service.

The initial objective of the project to start the service is 20 points of sale.

In the future, the number of points of sale will be increased, so new plans will be offered, generating contractual packages for the number of points of sale, with a 15% increase in the rate for each additional 10 points of sale of coverage.

1. Activations by reading QR in the advertisements: It will be given by the number of captures of the QR code made by the final consumer of the hardware store during the broadcasting of the advertiser's advertising campaign.

2. Percentage of sales completed by QR activation: In the previous point we have defined the QR reading activations in the advertisements, this refers to a cross-sale if this is concluded it will generate an income.

Table 3 - Contracting plans by number of activations.

Number of catches per month	Price
Less than 500	$ 220
More than 500 and less than 1500	$ 330
More than 1500	$ 410

The profitability of the project is generated by the monetization of the point of sale, by the activations generated by the reading of the QRs and by the generated by reading the QRs and by the cross-sales achieved.

Key resources

The key resources for this Business Plan are:

- As an initial proposal, hardware store chains owned by the strategic allies have been chosen. An evaluation of the locations and public traffic will be carried out in order to incorporate the points of sale that meet the requirements requested by the advertisers.
- Technological platform to be used at the point of sale, as well as for the processing and analysis of the corresponding data.
- Sales force, made up of personnel specialized in the field.
- Experts in facial recognition and artificial intelligence, which are key elements for the continuity of operations and the evolution of the company. operations and evolution of the platform.

Key activities

A series of key activities have been defined for this project, such as:

- Attracting new customers.
- Deployment of the platform in the points of sale.

- Content management of third-party advertising guidelines.

These key activities seek to ensure the development and sustainability of the advertising platform and its subsequent deployment at point-of-sale locations, incorporating an adequate management of third-party advertising campaigns. adequate management of third-party advertising campaigns. Likewise, special attention will be paid to on the generation of insights from data obtained at the point of sale.

Key allies

The key allies defined for this Business Plan are:

- Point-of-sale chains specialized in the hardware industry with a large presence in Latin America.
- Technology suppliers, experts in artificial intelligence software for the point of sale.
- Suppliers of facial recognition software for the point of sale.

Cost structure

The cost structure developed for this project is detailed below:

- Rental of the premises for the administrative offices
- Staff payroll expenses
- Research and development expenses in disruptive technologies, such as facial recognition, machine learning, artificial intelligence, among others, in order to keep the advertising platform always at the forefront with cutting-edge technology solutions.
- Own marketing expenses to disseminate the platform in order to generate awareness and thus seek both business partners and advertisers interested in advertising their brands in a disruptive way.
- Intelligent Advertising Technology Platform: Purchase of hardware and software components, development and maintenance costs, as well as support in case of failures and incidents. incidents and failures.

3.4.3 Cost-benefit analysis and return on investment projection

The development of this chapter confirms the favorable conditions for the implementation of this Business Plan. the implementation of this Business Plan, for this purpose, tables with different accounting-financial financial information analysis with its respective explanation will be attached.

In order to confirm these conditions, the projection of expected revenues and expenses over a 5-year horizon has been used as a starting point. Based on this information, the Internal Rate of Return (IRR) and the Net Present Value (NPV) will be calculated. Likewise, the time needed to reach the break-even point will be calculated.

To start the present project, a minimum investment of $ 113350.00 (one hundred and thirteen thousand three hundred and fifty dollars) has been considered. The financing structure will be: 50% from a contribution from the shareholders and the other 50% through bank financing. bank financing.

Assumptions

The assumptions considered for the financial evaluation are as follows:

- The business plan evaluation horizon is 5 years.
- The General Sales Tax (IGV) and Income Tax (IR) rates are 18% and 29.50%, respectively.
- For the start-up of activities, 20 points of sale have been considered where the service will be offered. service will be offered.

Cost Structure

The following is the cost structure, which includes a summary of the total investment foreseen in the financial plan, broken down by operating investment total investment foreseen in the financial plan, with a breakdown of operational investment, intangible investment and marketing investment, intangible investment and marketing investment, thus obtaining the working capital.

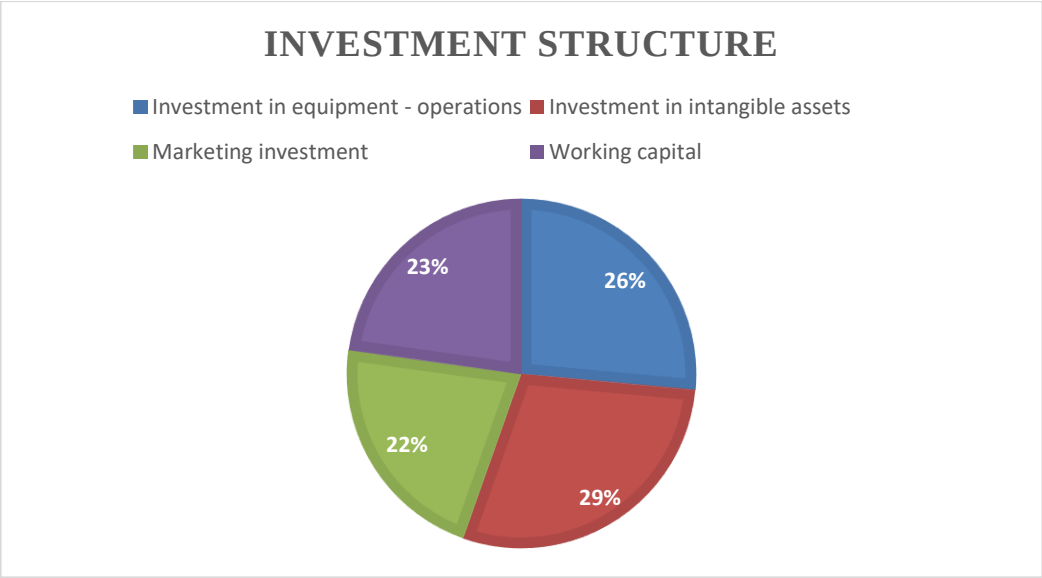
Table 4 - Cost structure

CONCEPT	AMOUNT
Total investment	**$ 113350.00**
(-) Investment in equipment - operations	$ 30000.00
(-) Investment in intangible assets	$ 32800.00
(-) Marketing investment	$ 24700.00
(-) Working capital	$ 25850.00

The above table will then be shown in a graph, in order to appreciate the proportion of each item with respect to total investments: equipment, intangibles, marketing and working capital,

Given the nature of the business, a business under a digital platform model, the acquisition of artificial intelligence software licenses has been considered as an intangible part, as well as the company's incorporation expenses.

Likewise, the equipment and operations item includes the assets comprising the computer equipment and hardware to be acquired for the points of sale and in the office, all within the technology item. within the technology line item.



Picture 4 – Business investment structure

Investment and Financing Sources

Initial investment

The components of this investment include investment in equipment-operations, intangible assets and working capital, intangible assets and working capital. Pre-operating expenses are included in the intangible assets caption and include the preparation of facilities intangible assets, which include the preparation of the facilities, design and development of the web page, selection and and development of the web page, selection and hiring of personnel, legal procedures, acquisition of technological of technological equipment and commercial campaign for the launching of advertising and marketing.

Table 5 - Investment in equipment and operations

CONCEPT	QUANTITY	PRICE UNIT	TOTAL PRICE
SMART Displays	20	$ 330	$ 6600
USB cameras	20	$ 70	$ 1400
Internet Router	20	$ 60	$ 1200
Switch	20	$ 180	$ 3600
Rack support and installation	20	$ 300	$ 6000
Mini Pc	20	$ 340	$ 6800
Computer	3	$ 390	$ 1170
Landline telephone	1	$ 20	$ 20
Personal computer for developers	3	$ 1070	$ 3210
TOTAL AMOUNT			**$ 30000.00**

The project will be dedicated to the field of advertising, initially we will start with the installation of your will start with the installation of its product in 20 points of sale.

Table 6 - Investment in intangibles

CONCEPT	QUANTITY	PRICE UNIT	TOTAL PRICE
Market Research	1	$ 7575	$ 7575
Trademark and patent registration	1	$ 2525	$ 2525
Sales strategy and pricing model	1	$ 4000	$ 4000
Internet service and electricity	20	$ 150	$ 3000
Facial Recognition Software Licenses Facial Recognition	1	$ 14950	$ 14950
COWORKING for three months (Preoperational)	1	$ 450	$ 450
Cost of Incorporation of Companies	1	$ 150	$ 150
Cost of operating license	1	$ 150	$ 150
TOTAL AMOUNT			$ 32800

The project makes permanent use of technology. The company's intangible assets represent the largest investment, mainly in facial recognition software, which accounts for the largest amount the largest amount.

Cost Analysis

For this analysis we consider fixed costs, operating expenses and selling expenses, according to the following tables and selling expenses according to the attached tables:

Table 7 - Fixed costs

SERVICES	MONTHLY PAYMENT	TOTAL PRICE
Cell line	$ 20	$ 240
Coworking	$ 560	$ 6720
Landline Telephone	$ 40	$ 480
TOTAL		$ 7440

For the full operation of its administrative and operational offices, it makes use of the coworking facilities offered (coworking, n.d.). makes use of the coworking facilities offered (coworking, n.d.).

Table 8 - Operating expenses

CONCEPT	Year 1	Year 2	Year 3	Year 4	Year 5
Facial Recognition Software Licenses Facial Recognition	$ 14950	$ 14950	$ 14950	$ 14950	$ 14950
4yousee License	$ 840	$ 840	$ 840	$ 840	$ 840
Market Research	$ 7575	$ 7575	$ 7575	$ 7575	$ 7575
Vulnerability analysis of the platform	$ 4140	$ 4140	$ 4140	$ 4140	$ 4140
Trademark and patent registration	$ 2525	$ 2525	$ 2525	$ 2525	$ 2525
Research and development	$ 10000	$ 7000	$ 7000	$ 7000	$ 7000
Services	$ 8150	$ 8150	$ 8150	$ 8150	$ 8150
Office Supplies	$ 1650	$ 1650	$ 1650	$ 1650	$ 1650
TOTAL	$ 49830	$ 46830	$ 46830	$ 46830	$ 46830

Operating expenses are mostly derived from the acquisition of the software license, which is one of the main assets for the operation of the project. software license, which is one of the main assets for the operation of the project.

Financing sources

Based on the evaluation of the alternatives evaluated, financing will be obtained from a bank, as it is the best financial alternative due to its rates and terms in the market:

TEA : 10%.

Time: 60 Months

The following is a detail of the investment amounts and how it is expected to be distributed, being one part as equity and the other as financing. The following is a detail of the investment amounts and how they are expected to be distributed, one part being equity and the other financing.

Table 9 - Financing sources

SOURCES	PERCENTAGE	AMOUNTS
Shareholders' equity 1	25%	$ 28500
Shareholders' equity 2	25%	$ 28500
Bank	50%	$ 57000
TOTAL INVESTMENT		$ 114000

Demand estimation

With respect to demand, its projection for the present project is specified and described, considering information and data from primary and secondary sources. considering information and data from primary and secondary sources. secondary sources, as well as estimating the break-even point, the definition of costs, prices in the market for substitute services. market for substitute services. A 34% annual growth rate is considered.

Table 10 - Potential demand for the period 2023-2028

CONCEPT	Year 1	Year 2	Year 3	Year 4	Year 5
Basic Plan	40	60	80	120	135
Premium Plan	40	70	90	120	140
Premium Plus Plan	64	85	120	145	160
Units demanded total	144	215	290	385	435

The following are details of the plans to be offered for the start of the project:

Table 11 - Income summary

CONCEPT	Year 1	Year 2	Year 3	Year 4	Year 5
Basic Plan	$ 32000	$ 48000	$ 64000	$ 96000	$ 108000
Premium Plan	$ 38000	$ 66500	$ 85500	$ 114000	$ 133000
Premium Plus Plan	$ 76800	$ 102000	$ 144000	$ 174000	$ 152000
QR Captures	$ 13000	$ 17000	$24000	$ 29000	$ 32500
TOTAL	$ 159800	$ 233500	$ 317500	$ 413000	$ 425500

This information is obtained from table 2, where prices were defined and complemented by projected demand, table 10. complemented with the projected demand, table 23, with which we project the income for the next 5 years.

Break-even point analysis

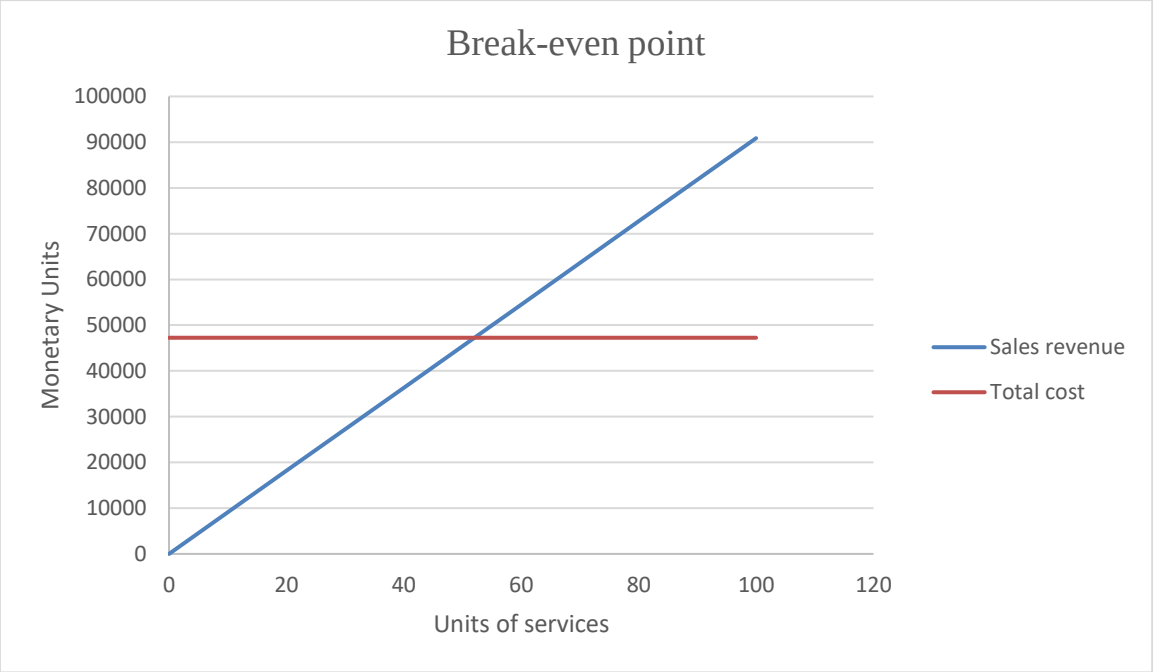
Knowing the break-even point is critical for any company, since it allows it to know what is the objective that must be met to cover costs. the target that must be met in order to cover costs:

Table 12 - Break-even analysis

CONCEPTS	AMOUNTS
Annual fixed costs	$ 46375
Average sales value	$ 920
Average variable cost	$ 20
Contribution margin (u)	$ 900
Contribution margin %	98 %

BP (In Monetary Units)	$ 47250
BP (In number of services sold)	52

The break-even point (EP) for this project is 52 units of services sold per year for the company to cover its costs. Considering the average sales value of $ 47250, the graph is as follows:

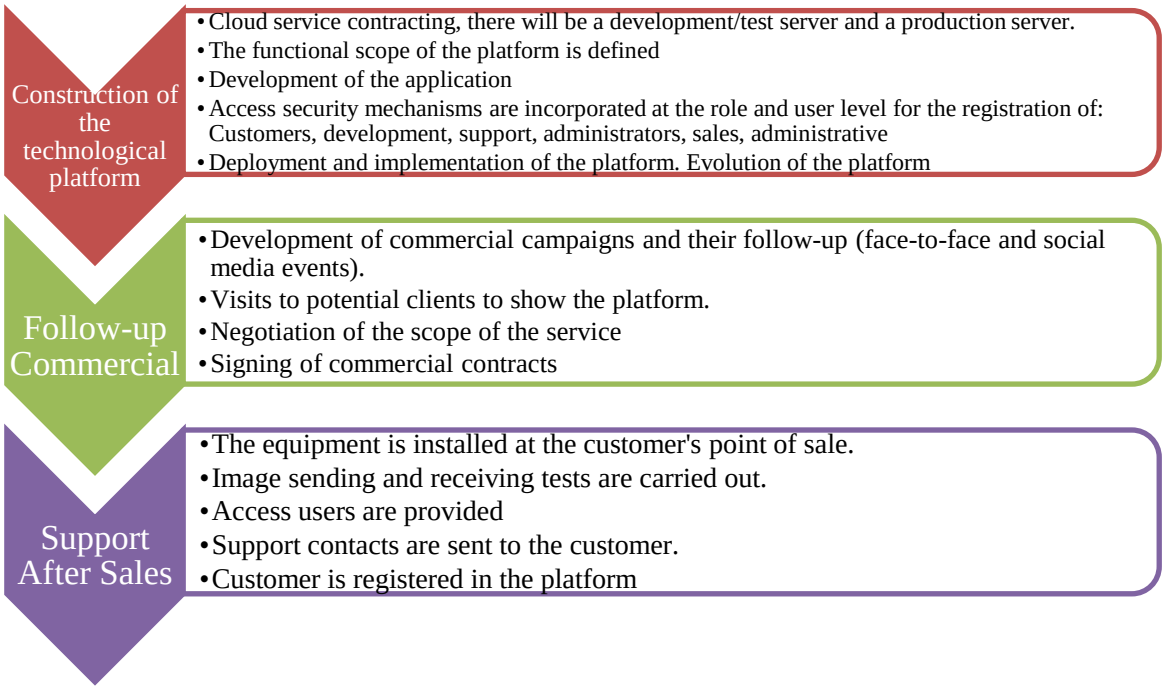


Picture 5 – Break-even point diagram.

3.4.4 Timeline and resource allocation

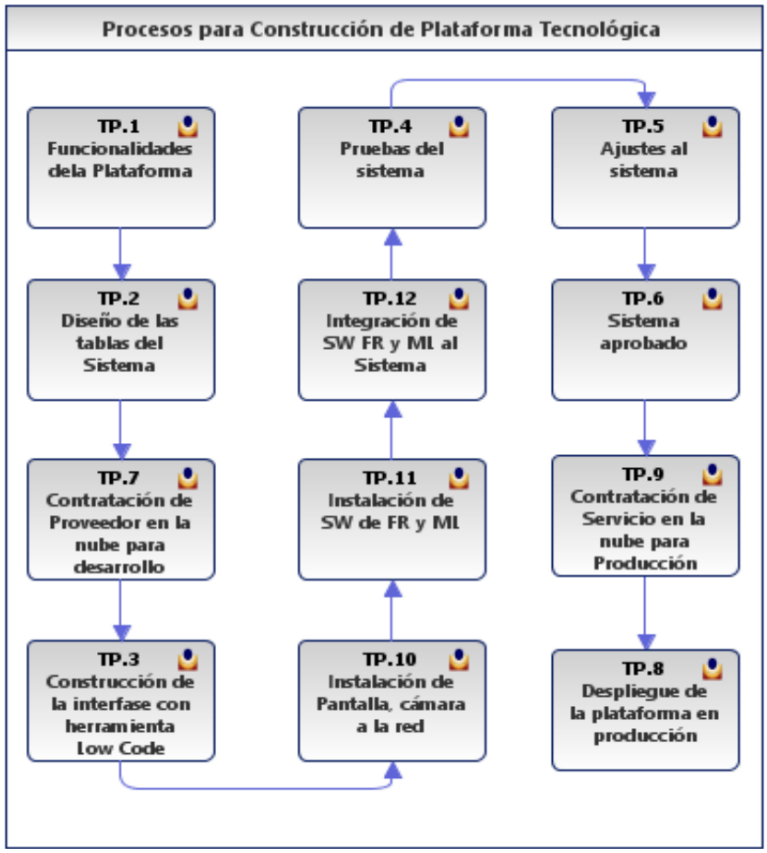
This chapter describes the scheduling and control of production processes with reference to service, logistics and the supply chain, to achieve the objectives. This chapter will help to plan and project the investment and operating investment and operating costs of the project, as well as the installed capacity to meet the demand, financial, human and financial resources financial, human and technological resource requirements. It should consider aspects such as critical activities for the implementation of the digital platform, as well as commercial negotiations and post-development support, as well as commercial negotiations and post-sales support to customers.

The macro-processes of the service are detailed below:



Picture 6 – Description of the project's macro-processes.

The macro processes mentioned above are detailed in the following diagrams:



Picture 7 – Description of the Technology Platform Construction macro-process

Platform Functionalities:

The platform shall have at least the following functionality:

- Customer registration.
- Users per client
- Security of access to the platform with a user role management system and users per role.
- Registration of advertising campaigns per client, together with the type of target audience to which the campaign belongs.
- Assign time slots for advertising spots and according to the real-time information collected.
- Management of campaign end-of-term alerts according to contracted periods.
- System reports: In this module there will be many reports that allow tracking users, advertising patterns, connections to the system, among others, the important thing is that the information will be in the database to be able to exploit it and provide information for good decision making.
- Accounting/Spreadsheets: For now the accounting and spreadsheet system will be handled by a third party service; at the beginning of operations the services of a third party will be hired to handle both issues. the need to have our own staff in the company will be analyzed as the company grows.

Design of the system tables

Based on the functional requirements, the entities and their relationships will be analyzed and mockups will be built in order to get the user area's approval regarding their design. The database will be defined and the entities and the corresponding data model will be documented. Likewise, the stored procedures will be defined, at database level, which must be created to carry out the execution of validation processes or alerts.

Hiring a cloud provider for development services

In the market there are a large number of cloud service providers either shared or exclusive, by the experience of one of the members of the thesis team, it has been

decided to hire the services of a provider that offers exclusive cloud, with storage, good processing and databases for storage of system information at very good prices, is a provider in the United States and offers a good level of support,
of support: https://mochahost.com

Construction of the interface with LOW CODE 2 tool System testing / System settings / Approved system

System testing / System adjustments / Approved system

As in the case of the cloud service provider, based on the experience of one of the members of the thesis team, it has been decided to work with a LOW CODE tool, which allows to develop programs very quickly, it is a Peruvian platform that has won an innovation award and offers good results in terms of scope. Low Code: A Low-code Enterprise Application Platform (LCAP) provides rapid application development and deployment using low-code and no-code techniques, such as declarative and model-driven application design and development, along with simplified one-button application deployment. An LCAP typically creates metadata and interprets that metadata at runtime and abstracts the underlying server infrastructure for ease of use; LCAP supports:

- UI capabilities through responsive web and mobile applications - business decisions or rules.
- Embedded database - "one-button" application deployment (Gartner)

It is a platform that has won a prize for innovation and offers good results in terms of scope and terms of the project, its name is EVOLVER, which is developed on a Microsoft architecture, is Web and responsive, which allows running the application from any device, be it a laptop, PC, Tablet or Smartphone. With this tool, we will work with the design defined in the entity-relationship diagram, documented in the previous point, and the application will be generated. On the other hand, the project will be developed under the SCRUM methodology, which allows the development of agile projects. agile project development.

The requirements are defined in groups of functionalities that become deliverables defined from the beginning by the technical leader of the project, which

are then developed in sprints, each lasting 2 to 4 weeks. In order to achieve an MVP, the first 8 weeks have been programmed, being the total of the whole project of 24 weeks to have the platform implemented.

The sprints to be considered in the project, from its conception to its implementation in production, would be:

- Define and formalize contracts with business partners.
- Develop platform: Culminate an MVP and then complete the whole platform until it is platform until it is put in the cloud
- Install solution components in defined points of sale.

FR (Face recognition) and ML (Machine Learning) SW Integration

As in the development cases, there are several artificial intelligence platforms, however, a couple of tools have been defined that are very good from the functional point of view and very affordable.

In the case of facial recognition tools, there is Luna Software from Vision Labs, a world-class FR3 tool that is a leader in NIITS, an entity that evaluates facial recognition software worldwide. Likewise, in the case of machine learning, there is 4YOUSEE, which is also a world-class and affordable platform that can meet the project's requirements. For both tools there are local partners, in the case of 4YOUSEE and documentation that will allow integration with the Evolver web development platform mentioned in the previous point.

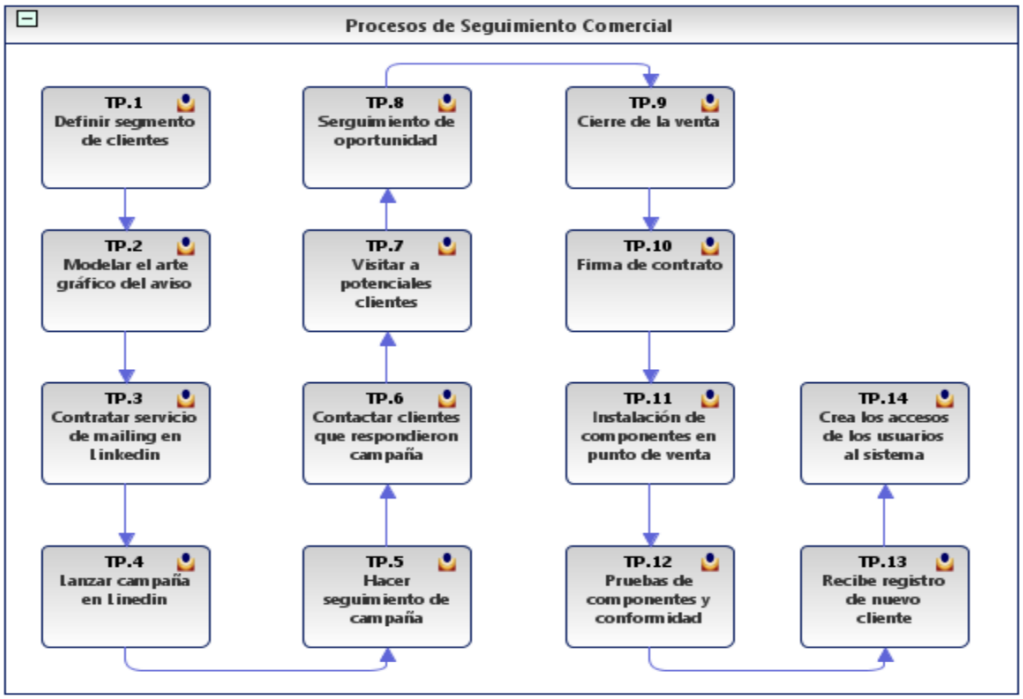
This combination of state-of-the-art tools guarantees the success of the creation of a robust product with of a robust and state-of-the-art product.

Table 13 - Project methodology timeline (Scrum)

	Start	**Planning and Estimating**	**Implementation**	**Review and Retrospective**	**Launching**
TIMELINE	*1 day at the beginning and then a Permanent work*	*1 week for each sprint*	*2 to 4 weeks for each sprint*	*Permanent work*	*3 days*
Activities	-The General Manager will have the role of Product Owner (PO), to define everything that the solution requires. - The project leader will have the Scrum Master (SM) profile. - The project team with the two analysts/programmers to be hired. -Participate in meetings to define system functionalities. - Define the sprints and their duration. Review the prioritized Product Backlog made by the PO and create a schedule for planning raleases.	- Participate in use case meetings (user stories) and definition of acceptance criteria. - Receive detailed explanation of the PO of each use case (business process, functionality, how it will appear in the system). - Estimate effort to develop each user story. - Conduct Sprint Planning Meeting to identify which user stories will be performed in the next Sprint. user stories to be performed in the next sprint. - Elaborate the Sprint Backog with tasks to be completed.	- Work on the Sprint Backlog tasks to create the sprint deliverables. Sprint Backlog tasks to create sprint deliverables. - Conduct daily meetings "Daily Meeting with the 5M to let the 5crum Team know the progress and impediments of team members, and update team members' progress and impediments, and update Kanban board. - In case of changes in the business, the PO should update the prioritized Product Backlog to take into account the changes in the business. Product Backlog prioritized to contemplate the changes in a later Sprint. subsequent Sprint.	- Show the sprint deliverables to the PO at the Sprint Review Meeting. - Obtain the PO's approval of the Sprint deliverables, based on the acceptance criteria. - In case the PO does not approve any deliverable, the user stories associated with the rejected deliverables are added to the prioritized Product Backlog for consideration. Backlog so that it can be considered in a subsequent Sprint. - Participate in the Sprint Sprint Retrospective meeting with the SM to discuss lessons learned during the sprint. - Document lessons learned for future Sprint.	-Document deliverables accepted by the PO. - Participate in Provost Retrospective meeting with 5M to identify, document and internalize lessons learned.
Artefacts	- Ralease planning schedule		- Kanban board		
In charge of	- Product Owner - Scrum Master - Scrum Team	- Scrum Master - 5crum Team	- Scrum Master - Scrum Team	- Scrum Master - Scrum Team	- Scrum Master - Scrum Team

Hiring of cloud service provider for production services / Deployment of the platform in production

Once the system is approved, as in the previous point, the entire system will be installed on a dedicated cloud server to start providing the service. the entire system will be installed on a dedicated cloud server to start providing the service.



Picture 8 – Description of the macro process of commercial follow-up.

Define the customer segment

They are companies located in the city of Lima, whose brands want to be seen and promoted, which will be taken based on the products that have been most in demand in online commerce. This will be the starting point to look for advertisers, you can find from cell phones, health improvement items, health insurance, among others. An important data is found in the reference of the article published by the ecommerce news magazine, which takes data regarding the buying habits of the Latin American consumer. (Ecommerce, 2021)

Model the graphic art of the advertisement

We have a designer that will allow us to create the ad, to create a high-impact ad that generates a "call to action".

Contract LinkedIn mailing service / Launch LinkedIn campaign / Follow up on campaign / Contact clients who responded to the campaign

LinkedIn has become a professional network that allows to make connections between companies. companies, here we will hire the service of users that already work with LinkedIn for marketing campaigns, from the

marketing campaigns, from customer segmentation to the list of customers who responded to the campaign. responded to the campaign. The results of the surveys that have been carried out give confidence in the success of these campaigns. in the success of these campaigns.

Visit potential customers

Based on the results of the marketing campaign, customers who have responded positively to the campaign will be contacted for a visit or meeting. customers who have responded positively to the campaign will be contacted to visit or have a virtual meeting to explain the benefits of the to explain the benefits of the platform and the existing plans.

Opportunity follow-up / Closing of sale / Signing of contract

3 days will be given to review the proposal and the interested client will be contacted for their decision. their decision. If the client has chosen the plan to be contracted, the sale is closed and the contract form is sent for review and signature. the contract form is sent for review and signature.

Installation of components at point of sale

Each signed contract will go to the platform installation area, where we receive the locations where the installations will be performed. locations where the installations are going to be made, previously the number of screens to be installed in each point of

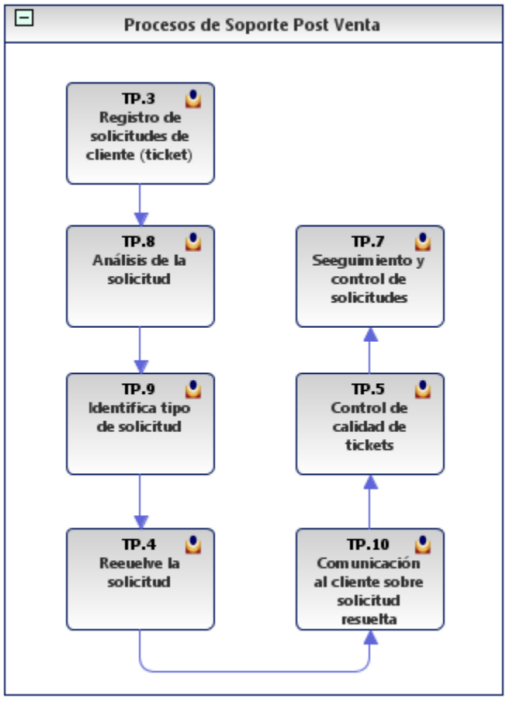
sale is number of screens to be installed at each point of sale, and the order is sent to the administration for their respective purchase. respective purchase order. Once the equipment is received, we will proceed to coordinate with the client its installation in the chosen establishments. installation in the selected establishments.

Component testing and compliance

Once the equipment has been installed at each point of sale, there is a testing protocol to ensure that the installation has been carried out correctly and a report is that the installation was carried out correctly and a compliance report is given to the sales and support and to the support area to register the new installation.

Registration of a new customer to the system / Create user access to the system system

The user's contacts that will access the system are registered to be able to review the information that the system will be information that the system collects, and they are granted access to the platform (user / password).
platform (user / password).



Picture 9 – Description of the Platform Support macro-process.

Registration of customer requests (ticket) / Analysis of the request / Identifies type of request / Resolves the request / Communication to the customer or user internal about solved request

- The internal system in the company will have requirements control module, which can be administrative or technical, and can be from customers or internal users. internal users.
- There is a template where each requirement is described, detailing the need and evidence (in case of failure of any component, attach a photo for example or a screenshot of the system).
- Once the template is filled out, the system automatically, depending on the type of requirement: administrative or technical, and if it is from an internal user or customer, assigns a person responsible for its resolution.
- The problem is analyzed and resolved.
- This status is registered, and a communication is issued to the user who registered the incident, and the request is concluded. and the request is concluded.

Follow-up and control of requests

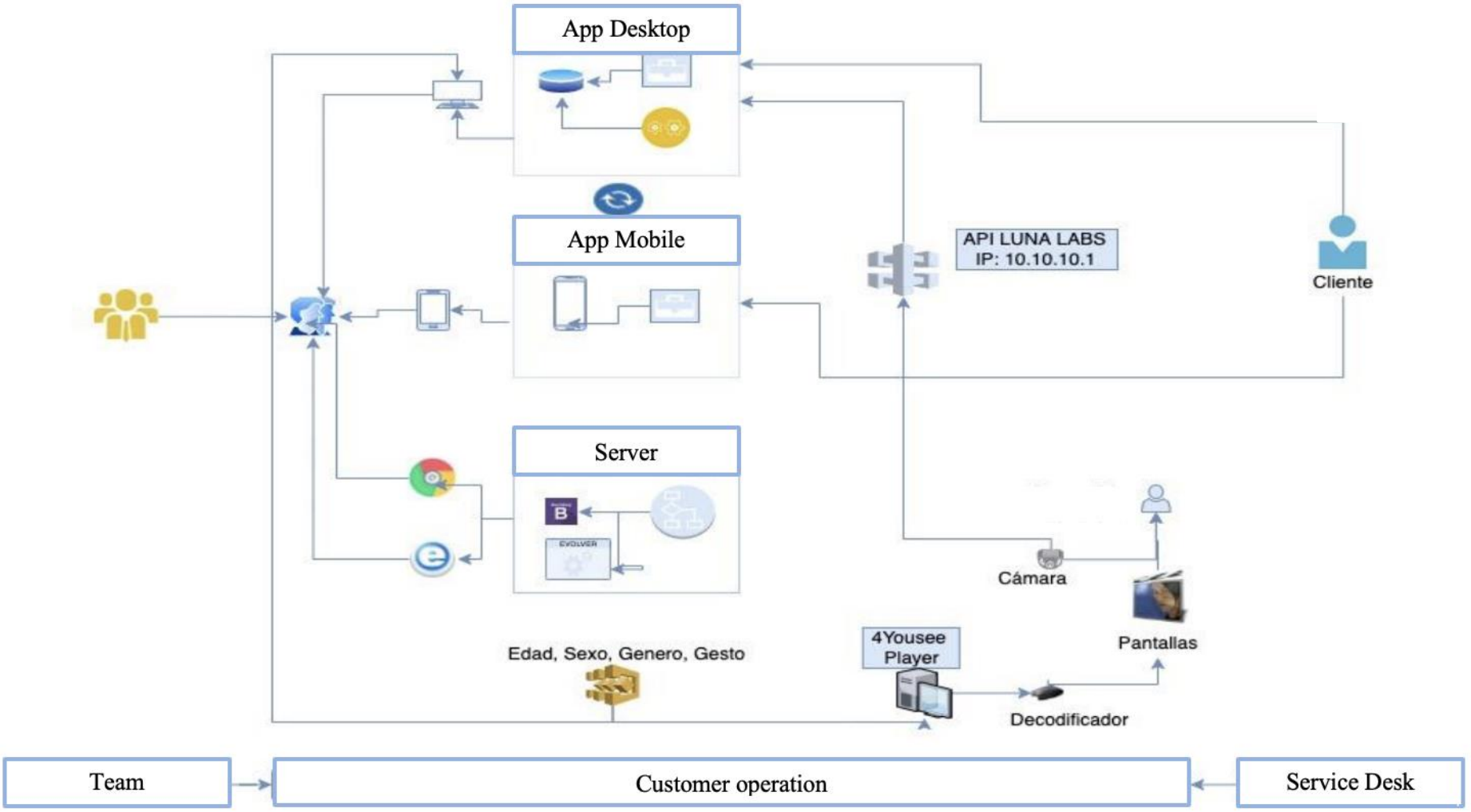
Parameters will be defined to control the attention of requests, in order to know how long it takes for requests to be resolved, with the purpose of improving the quality of customer service.

Ticket quality control

If there are delays in customer service, the causes will be analyzed in order to implement the necessary corrective measures, the priority being optimal customer service in the post-sales process.

Service Production Methods

Next, the architecture and the way in which the resources are organized to implement this service are identified, using an architecture diagram of the solution to visualize how it is integrated with the service.



Picture 10 – Architecture diagram

The project's operations are based on a three-layer architecture: the first is the team made up of specialists for the management of customer requirements; the second is at the point of sale, where there is a scheme whose platform is integrated with the applications, on the one hand 4yousee, which allows the deployment of the advertising guidelines, and on the other hand 4yousee, which allows the deployment of the advertising guidelines. applications, on the one hand 4yousee, which allows the deployment of advertising guidelines using an API, and on the other, 4yousee, which allows the deployment of advertising guidelines using an API. API, and on the other hand Luna LABs, which provides the data obtained from facial recognition. facial recognition data: and finally, the Service Desk layer, which collects and transfers the queries from customers queries from customers - Advertisers - about the service purchased.

3.5 Results and discussion

3.5.1 Evaluation of the implementation process

In this section we proceed to determine the mission, vision and values of the plan, as well as the definition of the strategic objectives. In addition, we will proceed to establish and examine the SWOT matrix, which synthesizes the external and internal analysis that was carried out in order to identify and choose the best strategies.

Strategic Objectives

For this business plan, strategic objectives are established in order to define guidelines for its full compliance.

- SO1: Achieve a return on investment of approximately $ 100,000 in a period of two and a half years.

- SO2: Achieve a 20% market share in the advertising market in the third year.

- SO3: Achieve alliances with a minimum of 2 suppliers of hardware and software equipment within 6 months.

- SO4: Achieve alliances with at least 2 hardware store chains by the end of the first year of operation.

- SO5: To position itself as the first intelligent advertising platform by the end of the first year of operation. after the first year of operation.

SWOT Analysis

The SWOT matrix allows to establish strategies by crossing the components of internal factors (strengths and weaknesses) with external factors (opportunities and threats), according to the analysis shown in Table 19, in which an analysis of these internal and external factors that would affect the project will be made, to contextualize the environment and to make an accurate diagnosis. contextualize the environment and make an accurate diagnosis.

Based on the SWOT matrix, the following strategies are established:

OD Strategies

The following paragraphs detail the OD strategies according to the SWOT matrix:

D1,2 - O2: Demonstrations will be given to potential customers explaining the benefits of the use of facial recognition and artificial intelligence in advertising. the benefits of the use of facial recognition and artificial intelligence in advertising and the positive impact they and the positive impact they bring to such campaigns. This will be planned to launch a white run period to see how the information gathered will allow us to target information gathered will allow us to target advertising campaigns more assertively. target audience more assertively. This period is approximately 1 month at the end of which sales opportunities are expected to be closed. opportunities.

D1 - O1: Implement a positioning plan in the target market, which would be achieved by means of a through a campaign in networks, and publicity-reportages to publicize the direct sales benefits. the direct benefits in sales.

Table 14 - SWOT Matrix

	Strengths	Weaknesses
	F1: Use of artificial intelligence and facial recognition. F3: Top solution in the facial recognition market at a very affordable price. at a very affordable price. F5: New creative business from the present. F6: Real-time information analysis. F7: Making profitable spaces not considered by the points of sale. points of sale.	D1: Uncertainty about using a new service. D2: Unexpectedly high costs due to the use of innovative technology. D4: We do not have a client portfolio.
Opportunities	FO: Explode	DO: Search
O0: To be the first supplier creating the category. O1: No direct competitor in the category. O2: Increased use of facial recognition for advertising purposes. advertising purposes. O3: Advertise their business in other channels.	F1,2-O1: Service in white run. F3-O3: Delivery of statistical information. F1-O1: Commercial alliance.	D1,2 - O2: Service demonstrations. D1 - O1: Positioning (campaign in networks, and publicity reports). D2 - O3: Execute communication plan. D3,4 - O1: Execute sales plan.
Threats	FA: Confronting	DA: Avoid
A1: Possibility of copying the business model. A2: Generate a market of clients to attract similar services from abroad. similar services from abroad. A3: Subsequent security laws and regulations that will have an impact. impact. A4: Another pandemic or natural disaster limiting foot traffic at retail outlets. of people at the points of sale. A5: Country risk	F1, 3-A1,2: Commitment to fair competition. F1-A3: Ensure institutional mechanisms. A1,2-F5: Alliances with sales channels.	D1-A2: Advertising campaign. D2-A2: Customer loyalty. D3-A1: Diversify customer segment. D4-A3,4: Contingency fund and actions.

D2,4 - O3: To avoid the effect of rising costs, an amount is provided as a margin in relation to the price, so that the impact is minimal. Also, many clients are looking for ways to advertise their brands in different media, so we will take advantage of the demand to offer the service and build our own portfolio of clients. own portfolio of clients.

DA Strategies

The following are the DA strategies according to the SWOT matrix:

D1-A2: Develop an intensive advertising campaign to establish a customer niche, which, in this case, would be the advertisers, where the benefits of the service would be explained and how it would benefit the purchase preference at points of sale. The campaign will consist of advertising on social networks and invitations through cover letters detailing the benefits of the service.

D2-A2: Achieve customer loyalty through personalized attention and optimal after-sales service. optimal after-sales service.

D4-A3,4: Generate a fund and contingency actions to counteract emergency situations. emergency situations. The purpose of this is to mitigate negative impacts in situations such as those experienced the pandemic, and which directly impact the traffic of people in the points of sale. the pandemic, and which directly impact the traffic of people in the points of sale. irreversible financial impacts to the organization.

SW Strategies

The following paragraphs detail the SWOT strategies according to the SWOT matrix:

F3-O3: Provide samples of information to a group of potential customers, to bring them statistical information, by days, hours, sex, age range and know the potential of such information to direct advertising campaigns.

F1-O1: Draw up a commercial plan that includes the owners of the chains as strategic allies, with whom we would work by exchanging advertising spots for the spaces that

they will cede to us. for the advertising space they will provide to implement the service.

FA Strategies

The following are the FA strategies according to the SWOT matrix:

F1, 3 - A1,2: Ensure fair competition under clear rules for new competitors in the market, to secure investment. market, to secure the investment, thus ensuring fair competition under clear rules for new entrants, in a remote reality of a new competitor there would be a healthy scenario in the local market. in the local market. Promoting property rights in this context would be beneficial for all. beneficial to all.

F1-A3: Ensure institutional mechanisms that allow the use of facial recognition governed by international standards, some countries have requested Amnesty International to prohibit the use of facial recognition technology as it violates rights according to human perspectives, therefore, Latin America is no stranger, consequently, strengthening the legal environment in governmental institutions is important, since the only purpose is to ensure investment. The only purpose of this is to ensure investment. But it is important to mention that the identity of the people would not be stored, but it would be at the level of counting but it would be at the level of counting people, sex, and approximate age.

A1,2-F5 Establishing strategic alliances with sales channels, the gap that separates retail chain managers from the gap that separates the managers of retail chains from becoming a new competitor could be reduced over time competitor could be reduced over time; it has been determined that the allocation of sales commissions and commissions on sales, and to pass on free advertising guidelines to them, in order to achieve saving to them, in order to achieve savings in the payment of a rent, as well as other benefits. benefits, therefore, the options of not leaving their core business to venture into another business idea, will be to venture into another business idea is becoming more and more distant.

Business strategy

In recent years, advertising has managed to position its goods and services supported by advertising campaigns through traditional formats, which have had some variation with formats such as billboards or Clear Channel. With the acceleration of the use of digital channels and the massive use of social networks, a new generation of consumers has developed, who tend to interact through these channels with greater preference, therefore, companies are clear that the more visible their products are, the greater the possibility of increasing their sales.

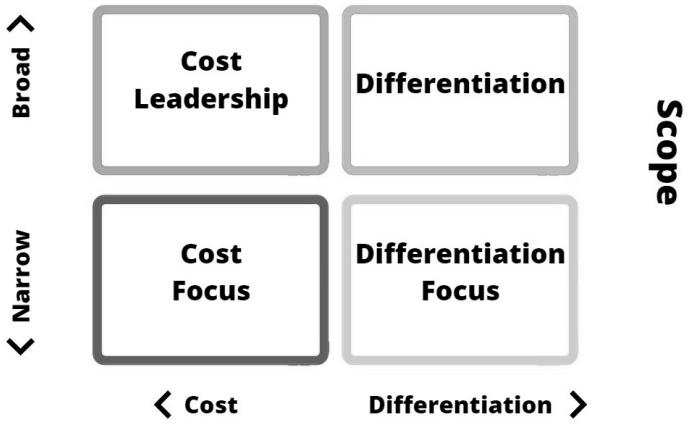
On the other hand, the global health emergency caused by Covid-19 has generated a drop in advertising sales, impacting advertising campaigns. Although Latin America is one of the regions that has gone through one of the longest periods of mandatory social confinement in the world, even longer than those suffered in Italy and China, Latin American governments have taken some measures to reactivate the economy and thus avoid the slowdown of the economy.

The slowdown of the economy by inviting the creation of several ventures linked to technology, and this is how it opens the way as a profitable alternative in the advertising business that will generate value to its customers.

It is important to highlight, from an innovative perspective, that there is no similar competition in Latin America and the market entry strategy is based on the differentiation approach with respect to existing advertising, considering that the target market is not only based on providing the service, but the development of the process as such and offering value-added services.

Next, the strategies that will make it possible to achieve the proposed objectives are described. As shown in Figure 9, where there are several alternatives, for this business plan it has been determined to opt for a strategy focused on differentiation. differentiation, based on the following:

A new, innovative service is being offered in the country, which will be applied to a specific segment, such as chain stores. segment, such as hardware store chains.



Picture 11 – Generic competitive strategies

How will the strategy be implemented?

It will be based on developing customized proposals according to the needs of advertisers to direct their advertising campaigns according to the visiting public.

It has been designed as an advertising service that seeks to make cross-promotion of products, so that the benefits are for its customers, allies and final consumer, that is, it is providing the buyer with information on the promotions of brands that may like or satisfy him, it helps the strategic ally to improve the experience of its customer and, importantly, it achieves the return on investment for the brand owner. and, most importantly, the return on investment for the brand owner is achieved.

Alliances will be established with hardware store chains to ensure that the company will have a presence in the points of sale that have the brand. presence in the points of sale that have the highest customer traffic, in order to manage a greater amount of data that can be data that can be processed in order to provide a complete and personalized report to customers and have better and personalized report to customers and have better bargaining power in the use of the square meter, where the equipment that would be installed in each store would be placed.

Competitive Advantage

It provides an existing service through a new channel in a market where there are substitute services that reach the customer through traditional channels. The use of Intelligent Advertising in the business allows developing the following competitive advantages:

- For the client, it will provide greater exposure of its brand in a channel not contemplated. An analysis will be made to find insights to offer to the final consumer.
- For the strategic ally, the point of sale will be made profitable with the exposure of the products marketed the products it sells according to criteria defined by them. themselves. There will be personalized contracts.
- For the end consumer: an innovative shopping experience will be provided.

Value Chain

The following is a description of the basic processes that make up the project's value chain, thus guaranteeing the quality of care based on an adequate strategic management identified by the human team. identified by the human team.

The following processes have been identified in the support activities:

- Technological infrastructure, will be oriented to the control of financial resources, cost and revenue control, attraction of financial resources, technical credibility, and brand and marketing image. and brand image and institutional marketing.
- Human Resources Management, which will seek to maintain constant training, offer incentives and motivational programs. and motivational programs, and to manage an adequate profile of its human capital. of its human capital.
- Technology Development/ Know How, which will emphasize keeping the knowledge of the hardware market up to date. knowledge of the hardware market, advertising, and artificial intelligence, as well as keeping up to date knowledge of the keeping the knowledge of brand issues up to date.
- Procurement, we will work to achieve alliances with other technological agents, for the capacity to manage subcontracting and to generate new strategic alliances with points of sale.

Key business processes have been identified as primary activities:

- Market Identification, we will work on the identification of opportunities that arise for business improvement, target audience classification and customer analysis oriented to know their needs.
- Service Design, we will seek a basic and improved design, resource planning, implementation, pilot testing, as well as redesign and validation.
- Service construction; it will be oriented to customer acquisition, analysis capacity, focus capacity, information processing, provision of artificial intelligence technology and a quality system.

artificial intelligence technology and a quality system.

- Service Delivery: control of the platform will be maintained, contact with the client, as well as seeking to know the level of client satisfaction.
- After Sales: a 24/7 support service and customer advice will be offered to take advantage of the service in favor of the customer. to leverage the service in favor of your brand.

3.5.2 Analysis of the impact on customer acquisition efficiency

The development of this plan aims to position the brand through several differentiating

the brand through several differentiating strategies that will allow potential customers to learn about the value proposition offered; to this end, it is proposed to develop a series of launching events, meet with potential customers describing the value of the proposal and deploy a dissemination plan in social networks in order to publicize the benefits of the service. the benefits of the service.

Analysis of the impact

According to what was mentioned in previous chapters, with respect to online advertising, the category to which it belongs, the use of online video achieves effects on the consumer such as brand recognition and preference, message association and purchase intention.

purchase intention. Likewise, the trend in the use of Artificial Intelligence as an emerging technology has helped the new industry to leverage its characteristics.

With respect to the channels of diffusion for advertising campaigns, it is observed that they have been evolving, hand in hand with the modification of the consumption habits of customers towards the preference of a retail channel, increasing the demand for products in chains of point-of-sale chains. For this reason, the sales channel that allows to make profitable a space not yet exploited and that has an important presence at Latam level, has led to the selection of hardware store chains to be selected as the best channel for the sale of products. the hardware store chains for the deployment of the intelligent advertising service.

Finally, these characteristics make the diffusion channel for point-of-sale advertising campaigns attractive. advertising campaigns at points of sale is attractive for brands that want to position their products to a target audience product to a target audience, to which to direct such campaigns in real time.

Market research design

The market research was schematized starting from the general to the detail, detailing each information obtained; due to the characteristics of the B2B business, qualitative exploratory research was carried out and in the second instance quantitative research was carried out: quantitative and qualitative.

Quantitative research:

In the first phase the exploratory research was raised, it began by collecting and processing the information obtained from sources called secondary for customers of advertisers brands (Quito, 2020) . Likewise, the collection and gathering of qualitative information was carried out, by qualitative information, developing in-depth interviews with experts in different fields of the hardware commerce different fields of the hardware trade, with the intention of knowing their opinion about the market and its characteristics. market and its characteristics, transferring them the present offer of services and thus obtaining valuable feedback to obtain valuable feedback.

In the second phase, descriptive quantitative research was developed, based on the type of opinion questionnaire called "personal surveys". based on the type of opinion questionnaire commonly referred to as "personal surveys" as a source of primary information. The survey was elaborated in a standardized way since it contains

standard and structured questions, because it has a logical sense according to the intensity of the points to be dealt with; it contains open, dual and multiple choice questions, and was directed to those who were recognized as potential clients or brand advertisers and also to the final consumers of the hardware stores, circumscribing the scope of the surveys in Quito.

The following table shows all the items surveyed, as well as their physical location and annual income.

Sample

Being a B2B business, there are two important sources of information, both for the end consumers of hardware stores and the advertising brands. A survey was structured survey was structured for each stakeholder, to know their preferences about the business idea and to obtain a to obtain a timely estimate.

Sampling plan

For FINAL consumers

Target population. The definition of the target population in conducting the quantitative research was under the following criteria:

- Element. Customer.
- Sampling unit. Regular customers of hardware stores.
- Extension. Due to its geographic area, it covers the city of Lima and Callao.
- Time. Based on surveys carried out, it is projected that the questionnaire will take two to three minutes to complete. The sampling will be supported by the four members of the project team for 8 days, the questionnaires will be sent via LinkedIn and social networks (Facebook, WhatsApp, Instagram, others).

Type of sampling - We proceeded to execute an organized random sampling, in an online way with the taking of surveys to the clients in Quito.

For advertisers

Target population. The criteria for defining the target population in quantitative research are described as follows

quantitative research are described as follows:

- Element. Marketing managers of companies that deploy advertising campaigns.

- Sampling unit. Companies that invest in digital advertising.

Extent. In terms of geographic area, the scope is the city of Lima and Callao.

Callao

- Time. It is estimated based on a digital survey format that would take five to seven minutes. minutes. The sampling will be monitored by the four members of the team for 8 days. for 8 days, the questionnaires will be sent via LinkedIn and social networks to the advertising campaign responsible for the advertising campaigns and CEOs.

Type of sampling. A systematic random survey will be executed, digitally with surveys to Marketing Managers or CEOs whose brands invest in advertising. in advertising.

Sample composition and size

The sample refers to several clients - Brand Advertisers - that will be surveyed, responding to the specified traits. respond to the traits specified in the research. To obtain the sample size (n) the following formula was applied:

$$n = z^2 * p * q / e^2$$

Where:

z = Normalized variable (of confidence level) = 1.75;

p = Probability of success = 0.5;

q = Probability of failure = 1-p = 0.5;

e = Margin of error = ±5% = 0.05.

The result of the sample size (n) according to the execution of the formula is a total of 120 surveys. formula, a total of 120 surveys. The formula was applied considering a 5% margin of error, with a confidence level of 95%, a probability of success of 50%, and a probability of success of 50%. of error, with a confidence level of 95%, a probability of success of 50%, and a probability of failure of 50%. a 50% probability of failure.

It should be noted that the sample for the final consumer was carried out in a total of 189 surveys.

Research results

Two surveys have been conducted, one for customers of the service and the other for final consumers of hardware stores. In addition, an in-depth interview was conducted with two strategic allies. From the research conducted, it can be inferred that there is a good opportunity to launch an innovative service, an intelligent advertising platform, on the market intelligent advertising platform.

The following is a review of the results of the study conducted:

For Advertisers, a survey was sent to a group of executives holding positions of Marketing Management, Operations Management and CEOs in companies located in Metropolitan Quito, to know the current situation of their advertising service, as well as their level of satisfaction with their supplier and to analyze the method of charging for the service. the level of satisfaction with their supplier and to analyze the method of charging for this service. for this service.

The universe of respondents was a total of 120 companies with the profile of advertisers or potential customers, the survey consisted of 16 questions and the main findings are:

- The most prominent categories were food, telecommunications, retail, health, education, insurance, financial, construction.
- The range of annual sales turnover of the advertisers surveyed is 45% more than 10 million, 37% less than 3 million, 13% between 6 and 7 million and 5% between 8 and 9 million annual turnovers.
- A total percentage of 34% of the companies that use video as an advertising broadcasting channel is obtained.
- Likewise, 86% of those surveyed considered it VERY IMPORTANT to have an advertising tool to support their campaigns. Along with 82% who that they would like their advertising to be seen by a specific target audience. target audience.

There are 36% of companies that are opting for online advertising services.

- 77% of companies are dissatisfied with their current advertising service providers and specifically refer to the quality of the service.
service.
- Finally, 70% are VERY LIKELY to hire an advertising service. advertising service
For Final Consumers, the following survey was answered by 189 people chosen within the locality of Metropolitan Lima, which consisted of 10 questions whose objective was to know the effect on the final customer by having within the point of sale a means to transmit advertising.
The main findings are as follows:
- Of the total of the final consumers of hardware stores, 47% do visualize and are attracted by the advertising found at the point of sale with channels such as: screens, totems, videos. Among the reasons mentioned were to take advantage of promotional offers, to review the advantages and benefits of a product or out of simple curiosity.
curiosity.
- In addition, 50.8% have completed a purchase by using a QR code in some establishment, i.e., this suggests that a purchase has been made using a QR code. This suggests a predisposition to the final consumer of the hardware store to buy products on sale. hardware store in buying cross-selling products, and they are interested in visualizing information about the product they could buy. information about the product they might buy.
- If the hardware store has a screen that transmits advertising of interesting products or news, the customers interesting product advertisements or news, customers would be willing to consider the information for their next information for their next purchases, as they might need it.

Target market and market segmentation

The target audience, as direct clients, are the advertisers who are all the brand owners of products that consider important to have online advertising as a channel for the transmission of their campaigns.

In addition, the target market is oriented to those advertisers whose annual sales volume is advertisers whose annual sales volume is directly proportional to the

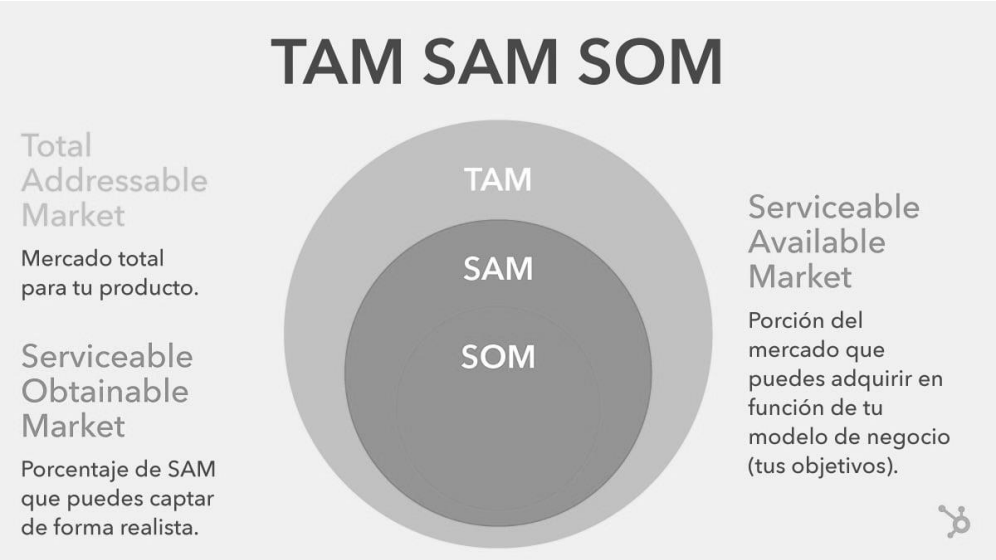
investment made in media advertising, i.e., medium, and large companies are the ones that invest the most with the sole purpose of positioning the brand and thus obtain an increase in their revenues.

According to the Report prepared by the Interactive Advertising Bureau (IAB), considering the political, social and economic situation, it shows the following findings that:

- Digital advertising investment grew 6% in 2020 despite the adverse context.
- Video (+6%) and Social Ads (+7%) digital advertising grew in share while display decreased (-25%).
- Investment in the FMCG, Retail and Banking categories will grow significantly in 2020.
- Mobile investment today represents three quarters of digital advertising investment (Ecuador, 2020).

Likewise, from the same IAB, information on digital advertising investment by sector from 2017 to 2020 has been included (See Annex I).

The TAM SAM SOM methodology has been applied to project an estimate of market share for at least market share at least in year one, which is shown in the following figure:



Picture 12 – Methodology TAM SAM SOM

3.5.3 Discussion of implications for future research and practice

Artificial intelligence (AI) and facial recognition algorithms offer significant potential for enhancing advertising campaigns and improving their assertiveness. However, there are important considerations and implications for future research and practice that need to be taken into account. Let's explore some of them:

1. Ethical and Legal Considerations: The use of facial recognition algorithms raises privacy concerns and ethical considerations. Future research should focus on developing robust guidelines and regulations to ensure the responsible and ethical use of AI in advertising. Striking a balance between personalization and privacy is crucial to avoid any misuse or infringement of individual rights.
2. Transparency and Explainability: It is important to develop AI systems that can provide transparent and explainable outcomes. Businesses should strive to understand and communicate how their AI-powered advertising campaigns work, ensuring transparency to customers and stakeholders. Research should explore ways to enhance the interpretability of AI algorithms, allowing businesses to address concerns related to bias, fairness, and discrimination.
3. Data Quality and Bias: Facial recognition algorithms heavily rely on training data, which may introduce biases and inaccuracies. Future research should focus on improving data quality and diversity to mitigate biases in AI systems. Efforts should be made to ensure representative and inclusive training data sets that encompass a wide range of demographics, cultures, and characteristics.
4. User Consent and Control: Businesses must prioritize obtaining informed consent from users before collecting and utilizing their facial data for advertising purposes. Research should explore user-centric approaches that allow individuals to control their data, including opt-in/opt-out mechanisms and easy-to-understand privacy settings.

5. Continuous Learning and Adaptation: Facial recognition algorithms should continuously learn and adapt based on user feedback and changing preferences. Research should explore methods for incorporating user feedback loops into AI systems to improve their accuracy, relevance, and responsiveness.
6. Collaborative Partnerships: Businesses should collaborate with AI researchers, ethicists, and policymakers to ensure a multidisciplinary approach when developing AI-based advertising strategies. Such collaborations can help address ethical concerns, design robust systems, and ensure compliance with legal frameworks.
7. Accountability and Regulation: Future research should focus on establishing clear accountability frameworks for AI-based advertising. Businesses should take responsibility for the actions of their AI systems and be held accountable for any negative consequences. Governments and regulatory bodies should play a role in defining guidelines and enforcing regulations to maintain ethical standards.
8. Impact on Society and Well-being: Research should explore the societal impact of AI-powered advertising campaigns. Evaluating the effects on mental health, emotional well-being, and user experiences is crucial. Ethical considerations should prioritize the user's best interest and avoid manipulative practices that exploit vulnerabilities or contribute to harmful behaviors.

In conclusion, while AI and facial recognition algorithms offer promising opportunities for enhancing advertising campaigns, it is imperative to address ethical, legal, and societal considerations. Future research should focus on developing responsible practices, promoting transparency and user control, mitigating biases, and establishing robust regulations to ensure the ethical and beneficial use of AI in advertising strategies.

3.6 Conclusion

3.6.1 Summary of the study's main findings and contributions

The study's main findings and contributions regarding the use of artificial intelligence (AI) and facial recognition algorithms in business strategies for assertive advertising campaigns are summarized as follows:

1. Enhanced Personalization: AI-based facial recognition algorithms can significantly enhance personalization in advertising campaigns. By analyzing facial features, emotions, and demographic characteristics, businesses can tailor their ads to individual preferences and increase their relevance to target audiences.
2. Improved Targeting Accuracy: Facial recognition algorithms enable businesses to identify and target specific customer segments more accurately. This can lead to higher conversion rates and increased effectiveness of advertising campaigns by delivering the right message to the right audience at the right time.
3. Increased Customer Engagement: AI-powered advertising campaigns can leverage facial recognition to measure and analyze user engagement and responses. This allows businesses to optimize their strategies by understanding how users react to different ads, enabling continuous improvement and adaptation based on real-time feedback.
4. Ethical Considerations and Privacy Protection: The study emphasizes the need to address ethical concerns and privacy issues associated with facial recognition-based advertising. It highlights the importance of obtaining informed consent, ensuring transparency, and safeguarding user data to protect individual privacy rights.
5. Mitigation of Bias and Fairness: The research recognizes the potential biases introduced by facial recognition algorithms and emphasizes the importance of addressing them. Future practices should focus on data quality improvement, diversity representation, and algorithmic fairness to mitigate bias and promote equal treatment across different demographic groups.

6. User Control and Consent: The study emphasizes the significance of providing users with control over their data and advertising preferences. Opt-in/opt-out mechanisms, clear privacy settings, and user-friendly interfaces should be developed to empower individuals and respect their autonomy in engaging with AI-driven advertising.
7. Collaborative Efforts and Accountability: The study highlights the need for collaboration between businesses, researchers, policymakers, and ethicists. Collaborative efforts can contribute to establishing ethical guidelines, regulatory frameworks, and accountability measures to ensure responsible and beneficial use of facial recognition algorithms in advertising.
8. Societal Impact and Well-being: The research emphasizes the importance of considering the broader societal impact of AI-based advertising campaigns. Ethical considerations should prioritize user well-being, mental health, and emotional experiences, avoiding manipulative practices that exploit vulnerabilities or contribute to harmful behaviors.

Overall, the study's findings contribute to the understanding of the potential benefits, ethical challenges, and best practices surrounding the integration of facial recognition algorithms and AI into business strategies for assertive advertising campaigns. They highlight the importance of responsible AI implementation, user-centric approaches, and collaboration to achieve desired outcomes while upholding ethical standards and protecting individual rights.

3.6.2 Implications for import companies of pharmaceutical products in the Latin American market

The use of artificial intelligence is constantly growing due to the benefits offered by this cutting-edge technology and its application goes hand in hand with the change in

consumer habits, which is why it is used by many companies in their advertising campaigns.

- Within the world of points of sale, the corresponding category has a wide coverage, more than 18,000 stores nationwide, which provides an important scope to start deploying the platform.
- Monetizing unused physical space is a very important aspect, as it not only allows us to deploy advertising campaigns for the not only allows us to deploy advertising campaigns for our clients (advertisers) in a currently untapped sales channel, but also allows us to currently unexploited, but it will also allow you to obtain an economic benefit by using the installed technology to the installed technology to promote your own products, thus increasing your sales. sales, it is necessary to say that hardware stores are critical strategic allies for the success of the project. critical to the success of the project.
- According to the quantitative results generated by the projections that are observed in the cash flow, it has been determined that the recovery of the investment will be in a period of approximately 2.5 years, so it is deduced that it is an attractive project for investors. The expected NPV and IRR are interesting values for an investor, which are even higher than the average offered by the financial system.
- The application of artificial intelligence adds value not only to your customers (advertisers) but also to the end buyer.

Therefore, the customer at the point of sale will also benefit from having more information on the products that are of interest to him. information about the products they are interested in purchasing.

- Advertisers result from a market analysis with the objective of validating the buying interest of the people who enter the point of sale (hardware stores), in which demographics, sales volume, and others are considered.
- The use of QR will provide a different cross-selling experience, both for the advertiser and for the strategic ally, because the final consumer will have a high probability of buying another product that is not necessarily marketed. Therefore, the use of QR is important to facilitate the closing of a sale. a sale.

- It is important to keep up to date with technological innovations that can be used to improve advertising campaigns thanks to the benefits of artificial intelligence. artificial intelligence.
- It is important to point out that 10% of the obtainable market has been defined to start operations, under the TAM SAM SOM method, also, it can be evidenced in the development of the Business Plan that, due to the value proposition added to the commercial strategies, consequently, obtaining 20% in the third year, is an achievable goal.
- After the research conducted and evaluated several options, it can be concluded that there are a large number of suppliers of hardware and software for artificial intelligence (cameras and display) in the market, so it is feasible to achieve these alliances within the established period of 6 months. Likewise, it is concluded that the software suppliers: 4yousee and Luna will be the strategic suppliers that will allow having the equipment that represents critical material for the business, even representing an entry barrier in the industry for other competitors.
- Also, for the success of this project, a critical factor is to have strategic allies, in whose network of points of sale will be deployed, therefore, important commercial benefits are offered to them, to achieve their loyalty and work in the long term. It is concluded that achieving strong alliances is one of the objectives for which having at least 2 hardware store chains by the end of the first year of operations will allow establishing a solid growth base.

3.6.3 Limitations and suggestions for future research

Although for this project we have chosen to start with hardware store chains, however, it can be used for other items, i.e., it would be a natural evolution to move to bodegas, convenience stores or any other direct sales format with the same formula described in this document, all due to the significant number of existing establishments in these types of outlets, considering the high traffic of the public attending such establishments, as well as the willingness of the final consumer to have greater scope of information on products that can be promoted in these stores.

As the information on: number of people, gender, age and mood is important, counting will allow advertisers to be more assertive in the launching of advertising campaigns. advertising campaigns.

The use of artificial intelligence helps to identify the profile of the audience, allowing the development of other to develop other service offerings in the future, for example, TOTEMS that represent an interactive advertising service between the an interactive advertising service between the end consumer and a screen.

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