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**Guten: The power of a marketing team at your WhatsApp**

SÃO PAULO
2025

## Acknowledgments

I dedicate this work to my grandfather, who was my greatest supporter and encourager throughout my entire journey. His constant trust, unconditional support, and unwavering belief in my potential were fundamental in enabling me to reach this point.

I would like to thank my parents, my sister, and my friends for their support, understanding, and encouragement at various moments of my academic journey. The support of each one of them was essential for me to continue with dedication and perseverance.

I also thank the entire Inteli community, as well as my colleagues and professors, who contributed significantly to my academic and personal development. In particular, I would like to thank my advisor for her guidance, supervision, and support throughout the entire development of this work.

# Resumo

O crescimento da presença digital tornou o marketing digital um fator estratégico para a competitividade das Pequenas e Médias Empresas (PMEs), especialmente em setores altamente concorridos, como o de alimentação. No entanto, grande parte desses empreendedores enfrenta dificuldades para manter uma atuação consistente nas redes sociais, em razão da falta de tempo, conhecimento técnico e recursos financeiros para contratar equipes ou agências especializadas. Paralelamente, observa-se a expansão do uso de soluções baseadas em inteligência artificial no marketing, as quais, em sua maioria, são complexas e direcionadas a empresas com maior maturidade digital. Diante desse cenário, este trabalho tem como objetivo desenvolver e validar uma solução de marketing digital baseada em inteligência artificial, acessível por meio do WhatsApp, que permite às PMEs criar, agendar e analisar conteúdos de forma simples e automatizada. A metodologia adotada envolve pesquisa exploratória sobre o contexto das PMEs, análise de mercado e benchmarking competitivo, seguida pelo desenvolvimento de um MVP funcional utilizando agentes de IA integrados a plataformas de mensageria e redes sociais. A solução foi testada com usuários reais, permitindo avaliar sua viabilidade técnica, usabilidade e aderência às necessidades do público-alvo. Os resultados indicam que a proposta reduz barreiras tecnológicas, facilita a adoção do marketing digital e apresenta potencial de escalabilidade econômica. Conclui-se que a solução contribui para a democratização do uso de inteligência artificial no marketing digital, oferecendo impacto prático para pequenos negócios e abrindo oportunidades para evoluções futuras.

**Palavras-Chave**: Pequenas e Médias Empresas; Marketing Digital; Inteligência Artificial; Automação; WhatsApp.

**Abstract**

Vieira, Lucas. **Guten: The power of a marketing team at your WhatsApp**. 2025. nº 58. Final course project (Bachelor) – Course Information Systems, Institute of Technology and Leadership, São Paulo, 2025.

The growth of digital presence has made digital marketing a strategic factor for the competitiveness of Small and Medium-sized Enterprises (SMEs), especially in highly competitive sectors such as food services. However, a large portion of these entrepreneurs face difficulties in maintaining a consistent presence on social media due to a lack of time, technical knowledge, and financial resources to hire specialized teams or agencies. At the same time, there has been an expansion in the use of artificial intelligence–based solutions in marketing, which are mostly complex and aimed at companies with higher levels of digital maturity. In this context, this work aims to develop and validate an artificial intelligence–based digital marketing solution, accessible via WhatsApp, that enables SMEs to create, schedule, and analyze content in a simple and automated manner. The adopted methodology involves exploratory research on the SME context, market analysis, and competitive benchmarking, followed by the development of a functional MVP using AI agents integrated with messaging platforms and social networks. The solution was tested with real users, allowing the evaluation of its technical feasibility, usability, and alignment with the needs of the target audience. The results indicate that the proposed solution reduces technological barriers, facilitates the adoption of digital marketing, and presents potential for economic scalability. It is concluded that the solution contributes to the democratization of artificial intelligence in digital marketing, offering practical impact for small businesses and opening opportunities for future evolution.

**Keywords**: Small and Medium-sized Enterprises; Digital Marketing; Artificial Intelligence; Automation; WhatsApp.

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**List of Abbreviations and Acronyms**

SMEs Small and Medium-sized Enterprises

TAM Total Addressable Market

SAM Serviceable Addressable Market

SOM Serviceable Obtainable Market

BMC Business Model Canvas

# Summary

# 1  Introduction

Digital transformation has profoundly impacted the way companies relate to their customers, making digital marketing a central element of business competitiveness. In Brazil, Small and Medium-sized Enterprises (SMEs) increasingly rely on social media to attract, engage, and retain consumers, especially in highly competitive sectors such as food services. However, despite the strategic importance of these channels, many entrepreneurs face limitations in time, technical knowledge, and financial resources, resulting in an irregular and weakly strategic digital presence.

At the same time, there has been rapid advancement in artificial intelligence technologies capable of automating complex tasks and supporting decision-making processes. In the context of digital marketing, AI-based solutions have been widely adopted by large companies and specialized teams, offering advanced capabilities for content generation, data analysis, and automation. Nevertheless, these tools often involve high levels of complexity and cost, making them largely inaccessible to SMEs and creating a gap between the technological sophistication available in the market and the operational reality of small businesses.

In light of this scenario, this work proposes the development of an artificial intelligence based digital marketing solution, accessible through WhatsApp, with the objective of simplifying and automating the creation, scheduling, and analysis of social media content. The solution aims to transform conversational interactions into strategic marketing actions, reducing technical and operational barriers for entrepreneurs. By integrating technology, usability, and an affordable business model, the project seeks to contribute to the democratization of digital marketing and to strengthen the online presence of Brazilian SMEs.

## 1.1  Context and Motivation

Small and Medium-sized Enterprises (SMEs) play a fundamental role in Brazil's economic and social development, representing more than 90% of businesses in the country and being responsible for a significant share of the Gross Domestic Product (GDP) and job creation [1].

However, digital transformation has proven to be a challenging process for these businesses, which must quickly adapt to new technologies, changes in consumer behavior, and increasing competitiveness in the digital environment [2]. On the other hand, there is also a consensus that the use of digital technologies and marketing strategies can create opportunities to boost sales, reduce costs, build customer loyalty, and expand markets ([3]; [4]).

Therefore, the sections below synthesize the main data and reflections on the digitalization of SMEs, their difficulties, opportunities, and the relevance of digital marketing as a competitiveness factor.

**Digital Transformation Landscape**

The "Digitalization Map of Brazilian Micro and Small Enterprises", developed by the Brazilian Agency for Industrial Development (ABDI) in partnership with Fundação Getulio Vargas (FGV), found that digital transformation practices and strategies are still poorly consolidated among SMEs [1]. According to the study:

- The average digital maturity of Brazilian MSEs is 40.77 points (on a scale from 0 to 100).
- The Services sector achieved a slightly higher score (43.73) compared to Industry (40.49) and Commerce (36.75).

The survey also indicates that 81% of companies use social media, which is recognized as the "entry point" into the digital universe. However, practices that require a higher level of complexity, such as automation and personalized customer service, still have low adoption rates. The report also highlights some core objectives for the SME digitalization process:

- Connect and engage customers: leverage changes in consumer behavior to customize products and experiences.
- Establish new competitive foundations: create new business models and explore new market opportunities.
- Build a data-driven organization: use data for decision-making, with attention to security and privacy.

- Innovate faster and collaboratively: implement digital tools and technologies that accelerate responses to market changes.
- Generate more value for customers: ensure that the business model remains relevant and meets the needs of increasingly connected consumers.

**Main Challenges**

Several studies and surveys have highlighted the most recurring difficulties in the SME digitalization process, namely:

- Limited Financial Resources: SMEs often operate with tight budgets, which makes it difficult to acquire new technologies, hire specialized professionals, and maintain digital solutions [3]. As a result, there is often hesitation to invest in technological tools without guaranteed short-term returns.
- Lack of Technical and Strategic Knowledge: The absence of employees specialized in digital marketing and IT is another critical factor ([3]; [4]). Many entrepreneurs do not know where to start when digitalizing their business, nor how to consistently measure results. This knowledge gap, combined with daily operational overload, hinders the digital transformation process.
- Inefficient Digital Marketing Management: Although most SMEs create profiles on social networks, they often lack a content strategy or action planning aimed at customer engagement and loyalty ([6]; [7]). A social media presence without constant updates or clear target audience definition tends to remain merely passive, resulting in low impact.
- Cultural Resistance and Lack of Time: Many entrepreneurs still perceive digital marketing as "complex and costly" [1]. Additionally, busy daily routines may cause the implementation of digital transformation projects to be postponed.
- Difficulty in Measuring Results: Companies that initiate digital marketing actions without setting clear goals, performance metrics, or result indicators face greater difficulty in understanding return on investment ([3]; [8]). This generates insecurity and leads to sporadic strategies or premature abandonment.

**Importance of Digital Marketing**

1. Social Media and Engagement

   In Brazil, the average internet user spends approximately 3 hours and 37 minutes per day on social media platforms [14], which makes these channels strategic environments for relationships between brands and consumers [6]. For small and medium-sized enterprises (SMEs), digital marketing, when well planned and executed, represents a relevant opportunity to increase visibility and competitiveness in the market.

   Among the main benefits for SMEs are the expansion of the reach of products and services, closer engagement with the audience through more direct and frequent interactions, and low initial costs compared to traditional media, combined with a high potential return on investment.

2. Personalization and Content Strategy

   The personalization of messages and offers, combined with content marketing strategies, significantly contributes to building relationships, credibility, and trust with consumers [5]. Even with limited financial resources, SMEs can strengthen their reputation and create sustainable competitive advantages by producing relevant, segmented content aligned with the customer journey.

3. Artificial Intelligence Tools

   According to a survey conducted by Serasa, approximately 47% of Brazilian SMEs show interest in improving their internal processes and customer service through the adoption of artificial intelligence [9]. This figure highlights a promising scenario for the automation and optimization of marketing routines. However, it is observed that many companies still make limited use of resources such as chatbots, data analytics, and personalization APIs, revealing significant untapped potential.

**Identified Market Opportunity**

Based on the analysis of the Brazilian SME context and the challenges associated with digital transformation, a market opportunity is identified related to the provision of digital marketing solutions that combine operational simplicity, low cost, and

strategic guidance. Although there is growing recognition of the importance of social media and digital marketing, many SMEs still rely on isolated, poorly structured actions with limited capacity to measure results, which restricts the full exploitation of these channels.

In this scenario, a gap is observed between complex tools designed for companies with higher levels of digital maturity and the reality of small entrepreneurs who have limited time, technical knowledge, and financial resources.

Thus, the market opportunity lies in the development of accessible solutions that leverage digital technologies and artificial intelligence to automate and simplify marketing tasks, such as content creation, publication planning, and metrics interpretation, without requiring specialized knowledge from users. By reducing technical and cognitive barriers, this type of solution enables SMEs to strengthen their digital presence in a consistent and strategic manner, more effectively exploring the potential of social media as a channel for engagement, visibility, and business growth.

## 1.2 Problem Definition and Value Proposition

**Problem Definition**

Although they recognize the importance of digital marketing for business visibility and growth, many Small and Medium-sized Enterprises face difficulties in planning, executing, and maintaining digital actions in a consistent manner. Social media management, recurring content creation, and performance metrics tracking require time, technical knowledge, and organization, resources that are often not part of small entrepreneurs' daily routines.

The lack of proficiency in digital tools and the difficulty in interpreting performance indicators lead to the adoption of isolated, poorly structured actions with low impact on results. Furthermore, budget constraints limit access to consultancies and comprehensive platforms, which are often complex and designed for companies with higher levels of digital maturity. As a result, there is a clear lack of accessible and simple solutions capable of supporting SMEs in the strategic execution of digital marketing.

**Value Proposition**
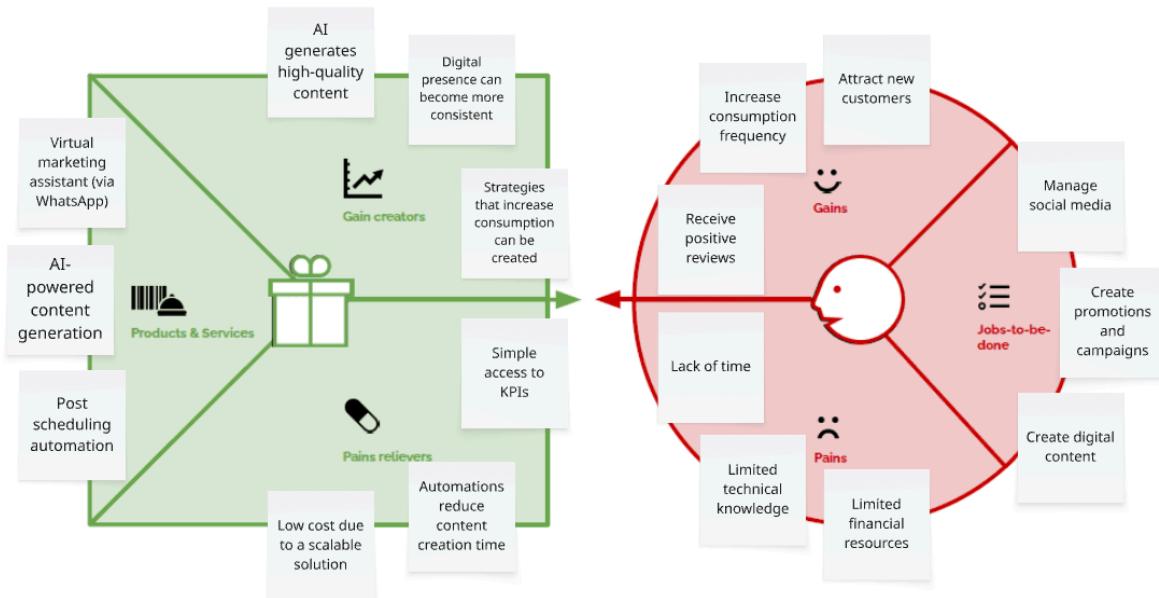


**Figure 1**. Value Proposition. Source: Author's own archive.

Below is the value proposition of GUTEN (Figure 1):

**Customer**

1. Customer Jobs: Small and Medium-sized Enterprises need to maintain an active and consistent digital presence through social media management, the creation of promotional campaigns, and the continuous development of content that attracts, informs, and engages the audience. These activities are essential for strengthening the brand, expanding reach, and sustaining relationships with customers; however, they require planning, consistency, and technical knowledge that are not always available internally.

2. Pains: Among the main obstacles faced by entrepreneurs are the lack of time to plan and execute marketing actions strategically, limited proficiency in digital tools and practices, and budget constraints that often make it unfeasible to hire agencies or specialized professionals. As a result, many SMEs end up adopting isolated and poorly structured actions with limited impact on business results.

3. Gains: Companies seek to increase their visibility, attract new customers, encourage repeat consumption, and strengthen their reputation in the digital

environment, reflected, for example, in positive reviews and higher engagement on social media. These gains are directly associated with sustainable business growth and the ability to compete in an increasingly digitalized market.

**Solution**

1. Products and Services: The proposed solution consists of a digital marketing platform that uses artificial intelligence to automate content creation, social media post scheduling, and performance indicator tracking, centralizing all interaction through WhatsApp. This approach enables entrepreneurs to execute marketing actions in a simple and fast manner, fully integrated into their daily workflow.

2. Pain Relievers: The platform significantly reduces the time and effort required for content production by automating repetitive and complex tasks through AI. In addition, it provides an intuitive experience for monitoring results by translating metrics into clear and understandable information. By adopting an accessible and scalable model, the solution positions itself as a viable alternative to traditional consultancies and complex tools, addressing the financial and technical constraints faced by SMEs.

3. Gain Creators: By enabling the continuous generation of high-quality content aligned with business objectives, the solution contributes to a more frequent, strategic, and results-oriented digital presence. This makes it possible to run more effective promotional campaigns, strengthen brand positioning, and increase audience engagement, thereby enhancing opportunities for customer conversion and retention.

## 1.3 Objectives of the Work

**General Objective**

To develop, implement, and validate a computational solution based on artificial intelligence aimed at supporting Small and Medium-sized Enterprises in the execution of digital marketing strategies, as well as to structure a business plan that assesses the economic, operational, and market feasibility of the proposed solution.

**Specifics Objectives**

1. To build an MVP (Minimum Viable Product) that assists SMEs in the creation, scheduling, and monitoring of social media content in a simple and automated manner.

2. To apply artificial intelligence technologies to reduce the operational and technical effort required from entrepreneurs in executing digital marketing activities.

3. To validate the MVP with potential users by collecting qualitative feedback on usability, usefulness, and perceived value of the solution.

4. To analyze the main results obtained from the use of the solution, considering criteria such as ease of use, time savings, and support for decision-making.

5. To define a sustainable business model that enables the solution to be offered at an affordable cost, aligned with the financial reality of SMEs.

6. To evaluate the feasibility of the proposed revenue model, considering scalability, platform maintenance, and growth potential in the digital market.

## 1.4   Justification and Contributions

The relevance of the proposed solution is expressed through three complementary perspectives: market, technological, and economic. From a market standpoint, GUTEN addresses a clear gap faced by Small and Medium-sized Enterprises, especially in the food sector, which increasingly depend on digital visibility but lack the time, technical knowledge, and financial resources to execute marketing strategies consistently. By simplifying and automating this process, the solution helps democratize access to strategic digital marketing.

From a technological perspective, this work presents a practical application of generative artificial intelligence and multi-agent systems integrated with widely used messaging platforms such as WhatsApp. The proposed architecture demonstrates how advanced technologies can be orchestrated in an accessible manner, prioritizing usability and continuous learning rather than complex interfaces. This approach contributes to the discussion on user-centered AI, particularly in contexts of low digital maturity.

From an economic perspective, the solution proposes a sustainable model based on recurring revenue and scalable operational costs, offering a viable alternative to both marketing agencies and traditional high-cost platforms. By reducing financial and operational barriers, GUTEN generates a positive economic impact for small businesses, enhancing their competitiveness and efficiency. Therefore, this work contributes both to academic advancement and to entrepreneurial practice applied to the Brazilian context.

## 1.5 Work Structure

The development of this work was organized incrementally across Modules 13, 14, 15, and 16, following a progressive approach that integrated exploratory research, solution definition, technical implementation, business modeling, and practical validation. This structure enabled the project to evolve consistently over time, connecting strategic, technical, and market-oriented decisions.

In Module 13, the focus was on understanding the problem and building the initial hypotheses. Exploratory analyses were conducted on the context of Small and Medium-sized Enterprises in Brazil, with emphasis on the food sector, identifying financial, technical, and strategic limitations in the use of digital marketing. In addition, a qualitative interview was carried out with an entrepreneur from the sector, whose insights reinforced the need for a simple, accessible, and practice-oriented solution. Still within this module, market benchmarking and TAM, SAM, and SOM analyses were performed, along with the construction of the Value Proposition Canvas and the initial MVP outline.

Module 14 focused on the conceptual and technical consolidation of the solution. First, the fundamentals of digital marketing applied to SMEs were explored in greater depth, including social media strategies, engagement, and future trends. Next, the solution was formally defined, with the specification of key functionalities such as intelligent onboarding, automated content generation, post scheduling, and performance reports. In parallel, the technical architecture of the MVP was structured, with local implementation using Docker, N8N, WAHA, and PostgreSQL, culminating in product refinement through image generation and initial tests with real users.

In Module 15, the project advanced toward a more strategic and entrepreneurial perspective. The product architecture was restructured into a multi-agent model, with specialized modules for strategy, content generation, publishing, and analytics, all integrated by a central orchestrator. In addition, market and competitive analyses were deepened through the application of SWOT and Porter's Five Forces frameworks. The monetization and pricing model was defined based on cost structure, market projections, and affordability for SMEs, and the Business Model Canvas was developed, consolidating the value proposition, channels, customer segments, and revenue streams. The module concluded with the development and functional validation of the MVP.

Finally, Module 16 aimed to consolidate and communicate the project. Final activities were organized, the go-to-market strategy was refined, and the technical solution was improved with a focus on integration and clarity of use. Presentation materials such as the Pitch Deck and One Pager were also developed, and the complete documentation of the work was finalized, incorporating adjustments based on feedback received. This stage ensured the project's overall coherence and its presentation as a technically viable, strategically positioned, and economically sustainable solution.

## 2  Solution Development

### 2.1  Definition of Market Premises and Hypotheses

### 2.1.1  Problem Hypothesis

It is assumed that Small and Medium-sized Enterprises face significant difficulties in executing digital marketing strategies in a consistent manner. These difficulties are mainly associated with financial constraints, lack of time for planning and executing actions, and limited technical proficiency in digital tools and strategies.

This pain point becomes even more evident in operationally intensive sectors, such as the food industry, where entrepreneurs often accumulate administrative and operational responsibilities. As a result, the digital presence of these businesses tends to be irregular, poorly strategic, and with limited impact on business results, directly affecting their visibility and competitiveness in the market.

### 2.1.2   Solution Hypothesis

The solution hypothesis considers that a computational platform based on artificial intelligence can significantly reduce the barriers faced by SMEs in executing digital marketing activities. By automating tasks such as content creation, post scheduling, and metrics monitoring, the solution is expected to reduce operational effort and dependence on specialized technical knowledge.

In addition, it is assumed that centralizing these functionalities in a channel already familiar to entrepreneurs, such as WhatsApp, contributes to a simpler and more intuitive user experience. This approach increases the likelihood of adoption by integrating the solution into the user's routine and reducing the perceived complexity of traditional digital marketing tools.

### 2.1.3   Value Hypothesis

The value hypothesis assumes that SMEs are willing to invest in digital marketing solutions as long as the cost is compatible with their financial reality. In general, these companies show resistance to complex tools or high-cost consultancies, which reinforces the need for an affordable and transparent pricing model.

It is assumed that a sustainable business model, based on low cost per customer and scalability, is acceptable to this audience if the delivered value is clearly perceived. Benefits such as time savings, greater consistency in digital presence, and improved understanding of results tend to justify payment for the proposed solution.

## 2.2  Market Sizing and Analysis

### 2.2.1   Market Size (TAM, SAM, SOM):

The TAM, SAM, and SOM (Total Addressable Market, Serviceable Addressable Market, and Serviceable Obtainable Market) are metrics used to estimate the total available market, the segment of customers that can realistically be served, and the share of the market that a startup can capture within a given time horizon. Below, we present the analysis based on approximate data on Brazilian SMEs, especially those that invest in or show interest in Artificial Intelligence solutions for digital marketing.

**TAM – Total Addressable Market**

TAM corresponds to the entire potential market that the solution could serve if all SMEs adopted the product.

- According to the Ministry of Development, Industry, Trade and Services (MDIC), there are approximately 21 million active companies in Brazil, nearly 99% of which are classified as SMEs. Of this total, 15.4 million are individual microentrepreneurs (MEIs).
- Considering the average price charged by the analyzed solutions, adjusted to R$120, the TAM can be calculated as follows:

21.000.000 × R$120 = R$2.520.000.000 per month

**SAM – Serviceable Addressable Market**

SAM represents the portion of the TAM that can effectively be served, considering factors such as real interest in AI for marketing and minimum financial capacity to invest.

- Out of the 21 million companies, 6.3 million are delinquent (according to Serasa Experian). Therefore, the universe of SMEs with better financial conditions is approximately: 14.700.000 SMEs.
- A Serasa survey indicates that about 47% of SMEs wish to improve processes and customer service through artificial intelligence solutions. Applying this percentage to the 14.7 million non-indebted SMEs results in: 6.909.000 SMEs.

Multiplying the number of SMEs with both financial capacity and interest in AI by the average ticket of R$120, we obtain the SAM:

6.909.000 × R$120 = R$829.080.000 per month

**SOM – Serviceable Obtainable Market**

SOM represents the share of the market that the startup can realistically capture within a shorter period (e.g., 3 to 5 years), considering geographic and sectoral focus, as well as competition.

- Assuming the company initially operates in the state of São Paulo, specifically in the Food sector, where there are approximately 122,687 establishments.
- If these establishments adopt the product at a price of R$120, the SOM is calculated as follows:

122.687 × R$120 = R$14.722.440 per month

The figures presented illustrate the significant potential of an AI-based digital marketing solution among Brazilian SMEs. The TAM (approximately R$30 billion annually) highlights the total size of the opportunity universe, while the SAM (around R$10 billion annually) reflects the segment that is both financially capable and more willing to invest. Finally, the SOM (approximately R$176 million annually) demonstrates the market share that can be rapidly captured by focusing on a specific geographic and sectoral niche, the state of São Paulo within the Food sector.

### 2.2.2 Customer Segmentation and Profiling

**Target Audience**

The target audience of this project consists of Small and Medium-sized Enterprises that recognize the importance of strengthening their online presence in order to compete in an increasingly digital market, but face barriers such as limited financial resources, lack of technical knowledge, and lack of time to manage digital marketing strategies.

These companies usually have none or only a few people dedicated to the marketing function. Therefore, they seek simple and affordable solutions to boost sales, improve customer service, and enhance brand recognition. In addition, they often do not know where to start: creating online sales channels, optimizing social media profiles, or establishing a content routine are steps that require planning and a minimum level of structure that, for various reasons, most SMEs still lack.

**SMEs in Brazil**

Small and Medium-sized Enterprises (SMEs) play a decisive role in the global economy by representing the majority of businesses, generating a high volume of jobs, and contributing significantly to GDP. In Brazil, for example, they account for

52% of formal private-sector employment [10], in addition to circulating a considerable share of the income of millions of families.

These companies are classified according to their annual revenue and/or number of employees, depending on the regulatory body or reference institution. In general terms, they occupy a position above microenterprises (such as MEIs) and below large corporations [10].

**Market Niche**

General Context:

Bars and restaurants are undergoing a period of accelerated transformation, driven mainly by digitalization and changes in consumer behavior. The pandemic boosted the use of the internet for researching establishments, leading to the fact that "9 out of 10 consumers use local searches to choose a restaurant." This data reinforces the importance of local marketing actions, as well as a strong presence on search engines such as Google. In addition, tools such as WhatsApp and social media have become essential channels for promotions, interactions, and customer service [11].

However, merely being present online is not enough; engagement is required. According to a study by Abrasel, "63% of consumers choose restaurants based on Google reviews," revealing that positive reviews (and responses to them) are decisive in attracting new customers. The research also shows that many bars and restaurants still do not respond to consumer reviews, wasting a valuable opportunity to build trust and differentiate themselves in the market. Thus, the volume of reviews, combined with high ratings, determines positioning in search results and increases the likelihood of an establishment being chosen. In this context, the need to monitor opinions, encourage recommendations, and, above all, interact with the audience in a humanized manner becomes evident [12].

Considering the theme of experience, it is clear that customers are not only looking for meals, but for moments of leisure and entertainment. This means that success on social media goes beyond posting photos of dishes. It is essential to understand what customers want to experience, whether a romantic dinner or a family meal, and communicate this authentically. Therefore, digital content must be engaging and

emotionally appealing, thereby increasing the likelihood of engagement and recommendations [13].

Justification:

The food sector was defined as the main focus (including bars, restaurants, and snack bars). The factors that led to this choice are outlined below:

1. The growth of delivery apps (such as iFood and Rappi) has profoundly changed the way people purchase food and choose where to eat, leading bars and restaurants to rethink their strategies.
2. The food sector is able to assess the impact of its marketing actions almost immediately. Social media posts, flash promotions, or partnerships with influencers can generate noticeable results in a short period of time.
3. When evaluating menus, prices, and reviews before deciding where to eat, consumers prioritize establishments with a consistent digital presence and a strong online reputation. Failures in this aspect tend to direct customers toward competitors that are more digitally visible and better rated.
4. As Brazilians spend many hours online, social media becomes an ideal channel for promoting gastronomic experiences. Photos of dishes, short videos, and testimonials encourage engagement and foster online word-of-mouth promotion.

**Proto-Persona**

To understand the dynamics of bars and restaurants in the current context, it is essential to analyze both the business owner and their customers. For this reason, two proto-personas were developed: Jorge (Proto-Persona A), the entrepreneur responsible for managing the daily operations of a restaurant, and Ana (Proto-Persona B), the consumer who seeks enjoyable gastronomic experiences. Based on these semi-fictional profiles, it becomes possible to identify key aspects such as purchase motivators, specific pain points, and opportunities for improvement in the relationship between the restaurant and the customer.

**Proto-Persona A**

Name: Jorge Macedo

Profession: Entrepreneur – Restaurant Owner

Age: 42 years

Location: São Paulo

Goals:

- Seeks to improve the online reputation of his restaurant
- Intends to strengthen the digital presence of his business
- Aims to retain existing customers and attract new ones

Pains:

- Does not know how to define social media strategies, boost posts, or analyze campaign metrics
- Has a limited budget, which makes it difficult to hire agencies or specialized professionals
- Due to the overload of daily tasks, cannot dedicate sufficient time to marketing
- There are many restaurants and bars in the area, making competition for customers intense

Frustrations:

- Lacking time to study digital marketing as desired and relying on sporadic attempts (unstructured posts or unplanned promotions)
- Feeling outperformed by competitors who invest heavily in advertising and maintain a strong social media presence

Motivators:

- Dreams of expanding the restaurant
- Wants his business to be regionally recognized as a place with good food and excellent service

**Proto-Persona B**

Name: Ana Martins

 Profession: Data Analyst

Age: 29 years

Location: São Paulo

Goals:

- Wants to find restaurants that offer different and unique options
- Values a pleasant atmosphere, good service, and welcoming décor
- Looks for places that allow her to relax and unwind
- Regularly checks the reputation of establishments before visiting or ordering via delivery

Pains:

- Becomes frustrated when she cannot find updated menus, opening hours, or clear price ranges on restaurants' digital channels
- A bad experience (delay, cold food, or poor service) may lead her to stop visiting the place or criticize it publicly on social media

Frustrations:

- Websites and profiles that do not post frequently or contain outdated information cause her to lose trust in the establishment

Motivators:

- When she finds clear information, good reviews, and options for reservations or online ordering, she feels confident choosing the restaurant
- Is attracted by combos, discount coupons, and creative Instagram content (such as dish reels and stories showcasing new items)
- Enjoys "Instagrammable" and comfortable places

## 2.3  Competitive Analysis and Differentials

**Benchmark Analysis of Products**

This benchmark analysis focused on examining the products offered by different market players, with the objective of identifying the main functionalities of each solution and the value they charge for them. National and international companies

offering digital marketing tools were selected, many of them based on artificial intelligence and covering multiple stages of the marketing journey.

1. Writer

Writer is an artificial intelligence–based platform that offers content creation solutions with a focus on efficiency and brand standardization. The company primarily serves the corporate segment, adapting its solutions to the needs of various industries.

What does it offer?

- Automated product-related content: Provides product descriptions and accurate details directly from the client's database across all channels and markets.
- Personalized audience communications: Generates highly personalized communications for multiple segments of a large audience.
- Competitive trend analysis: Extracts insights from websites, financial filings, earnings calls, and analyst research to identify trends.
- Derived content creation: Produces summarized and adapted versions of original content for different formats and channels.

2. Grammarly

Grammarly is globally recognized as one of the leading AI tools for improving writing and correcting grammar, spelling, and style errors. It supports users ranging from students to marketing teams, ensuring clarity and consistency in written communication.

What does it offer?

- Real-time writing assistant: Checks spelling, grammar, tone, and suggests rewrites.
- Content generation: Provides suggestions for creating reports, cover letters, emails, summaries, and more.
- Personalization: Adjusts tone, formality, and style to match the target audience and brand voice.

3. Looka

Looka is a branding and design platform that uses AI to create logos, visual identities, and various marketing materials. The service targets entrepreneurs who want to build a consistent and professional-looking brand.

What does it offer?

- Logo creation: Quickly generates multiple design options customizable in colors, symbols, and fonts.
- Complete brand kit: Provides hundreds of marketing assets such as business cards, email signatures, and social media profiles.

4. Optimizely

Optimizely is a robust marketing optimization and experimentation platform that incorporates generative AI features throughout the customer lifecycle. The tool is well known for its focus on A/B testing and experience personalization.

What does it offer?

- AI assistant: Helps create briefs, generate assets, and define campaign-specific tasks, as well as assist with audience segmentation.
- Brand-aligned content generation: Using style and identity guidelines, the AI ensures consistency in text and image generation for campaigns.

5. Clarice AI

Clarice.ai is a Brazilian startup that offers a writing assistant trained in the nuances of the Portuguese language, with a focus on marketing and content production. Its key differentiator is cultural and linguistic adaptation, ensuring greater accuracy in generated texts.

What does it offer?

- Content generation in Portuguese: Social media posts, sales emails, blog articles, and other formats.

- Conversion and style focus: AI trained to produce high-conversion marketing texts, as well as to review and edit content in real time.
- Idea brainstorming: Suggests new topics and creative approaches for campaigns.

6. Jasper

Jasper provides artificial intelligence solutions focused on content generation and text automation. Its platform uses deep learning algorithms to create high-quality content by understanding context, semantics, and language nuances, producing text that sounds human-written.

What does it offer?

- Marketing Editor: A document editor trained exclusively on marketing best practices.
- Brand Voice: Can be configured so outputs align with the brand's voice, tone, and style.
- Style Guide: Allows definition of rules and formatting for company terminology, grammar, and punctuation.
- Jasper Chat: A marketing-trained assistant that helps move quickly from idea to execution.
- AI Images: Enables editing and transformation of high-quality images at scale within seconds.

In addition, Jasper provides a large library of AI-based marketing applications, with over 90 ready-to-use tools covering tasks such as Instagram caption creation and product descriptions.

**Benchmark Analysis of Business Models**

1. HubSpot

HubSpot operates under an all-in-one platform business model, with products divided into hubs (Marketing, Sales, Customer Service, and Content). Its value proposition lies in the integration and full management of the customer lifecycle, referred to by the company as the "flywheel." Monetization is modular

and based on subscription plans that scale according to the number of users and contacts, which makes it a complex and high-cost solution.

As a result, HubSpot's cost structure is relatively high for Brazilian SMEs. Although it offers a free plan and entry-level tools at low prices (such as the Marketing Hub Starter at US$9 per month), robust marketing automation and management functionalities are concentrated in much more expensive plans. The Professional plan, for example, can reach up to US$900 per month.

In this sense, the platform is designed to address the challenges of companies that already have a marketing department or an established sales funnel. This often requires a specialist to operate the system—something that many Brazilian SMEs cannot afford. Finally, it is worth noting that HubSpot's core value lies in integrating a complete marketing and sales funnel, which is not a primary problem for small business owners. As a result, the platform itself becomes an additional challenge to learn and manage.

2. Jasper

Jasper follows a Software as a Service (SaaS) business model, with a clear focus on AI-powered content generation for marketing professionals, copywriters, and content creators. The main value of the tool is productivity: the ability to generate content at scale and quickly, helping optimize time and reduce production costs. Monetization is based on subscription plans starting at US$59 per month, with an increasing focus on large marketing teams.

For Brazilian SMEs, Jasper presents a misalignment in terms of value proposition and target audience. Its primary users are marketing teams and content creators seeking to scale production, not small entrepreneurs who are solely responsible for all business functions. In this way, Jasper solves a productivity problem for teams, not the absence of a team. The tool itself also requires a certain level of strategic knowledge to be used effectively.

3. Clarice AI

Clarice AI operates under a freemium business model, offering a free version and a low-cost PRO plan (R$22 per month). Its value proposition is limited to

Portuguese text enhancement, including spelling, grammar, style correction, and rewriting suggestions. The business model is based on user volume.

The success of Clarice AI at an extremely low price point for the Brazilian market demonstrates that there is latent demand and strong appetite for simple and accessible AI solutions. However, its main weakness lies in its limited functionality, as it is a writing tool rather than a comprehensive digital marketing platform.

4. RD Station

RD Station is one of the largest SaaS companies in Latin America, offering a platform focused on inbound marketing and sales. Similar to HubSpot, its value proposition is the centralization of marketing and sales activities in a single platform, enabling the automation of repetitive tasks and funnel management.

RD Station's cost structure is divided into plans that scale according to usage and available features. Advanced plans, such as Pro, cost around R$1.121 per month, but more advanced automation features and AI integrations, such as copilot agents and intelligent chatbots, are exclusive to higher-tier plans like Advanced, which are priced upon request. The platform's complexity and its focus on complete marketing and sales funnels make it unsuitable for SME owners who are simply seeking a simplified digital presence.

5. Hootsuite

Hootsuite is a widely known social media management platform, with a business model centered on the centralization of content creation, scheduling, publishing, and monitoring across multiple social networks. Its plans are structured with limits on users and social profiles, and prices can be high for SMEs, with the Standard plan costing US$99 per month (per user). The platform's main weakness is its cost; however, it remains a competitor to monitor closely due to the breadth of services it offers.

6. Local Agencies

The business model of local agencies and consultancies is often based on manual services and labor, charging high monthly fees, as revealed by qualitative research. Their value proposition is the complete management of digital marketing activities combined with strategic consulting.

Although they offer personalized services, lack of scalability and high costs represent their main weaknesses. For small business owners, cost is the primary barrier. In addition, many entrepreneurs feel that agencies do not fully understand their business, which can undermine trust in both the service and the value delivered. In this context, automating agency-like activities in a simple and low-cost manner creates an opportunity to position the solution as a disruptive alternative to the traditional service-based model.

**Definition of the Solution's Competitive Advantage**

The benchmark analysis showed that the main digital marketing solutions available in the market are designed for companies with higher digital maturity, specialized teams, or substantial budgets. Platforms such as HubSpot, Jasper, and RD Station concentrate value on managing complete funnels and scaling content production, which results in high costs and operational complexity. In contrast, more accessible tools such as Clarice AI and Grammarly offer a limited functional scope. This scenario reveals a clear gap for solutions tailored to the real constraints faced by SMEs.

The primary competitive advantage of the proposed solution lies in its direct alignment with the reality of Small and Medium-sized Enterprises, based on the assumption that entrepreneurs have limited time, low technical knowledge, and restricted financial resources. Unlike competitors, the solution does not require prior organizational structure or the learning of complex platforms. Its focus is on automating strategic tasks that currently depend on agencies or specialized professionals. In this way, it addresses not a team productivity problem, but the absence of a team.

Another relevant differentiator is the use of WhatsApp as the central interaction channel, eliminating adoption barriers commonly associated with traditional marketing software. While competing platforms require navigation through

dashboards and multiple modules, the solution integrates into an environment already familiar to entrepreneurs. This choice reduces usage friction, accelerates onboarding, and encourages consistency in digital marketing actions. Thus, the technology adapts to the user's routine, rather than the other way around.

The solution also stands out by automating marketing strategic reasoning, not just operational execution. By integrating intelligent onboarding, an internal knowledge base, external trend monitoring, editorial planning, and multimodal content generation, the platform simulates the work of a marketing agency. This set of functionalities goes beyond simple text generation, providing continuous strategic guidance. As a result, entrepreneurs are able to execute more consistent actions aligned with their business objectives.

Another competitive aspect lies in translating technical metrics into understandable insights, a feature that is underexplored by the analyzed competitors. Qualitative research showed that many business owners receive reports but do not fully understand their meaning. The solution interprets indicators such as reach, engagement, and clicks, linking them to practical business impacts. This strengthens decision-making and increases the perceived value of the tool.

## 2.4  Technological Solution

### 2.4.1  Requirements and Specifications:

**Functional and Non-Functional Requirements**

Below are the functional (Table 1) and non-functional (Table 2) requirements of the system:

| ID | Requirement | Description |
|---|---|---|
| RF01 | WhatsApp Onboarding | The system must perform conversational onboarding of the business through WhatsApp |
| RF02 | Knowledge Base | The system must maintain an internal knowledge base containing the brand profile, content history, and performance data |
| RF03 | Integration with External Sources | The system must use external data sources to identify trends and relevant content |

| RF04 | Content Generation | The system must allow content creation in both guided and automated modes |
|---|---|---|
| RF05 | Editorial Calendar | The system must dynamically generate and adjust an editorial calendar |
| RF06 | Scheduling and Publishing | The system must support manual scheduling, intelligent scheduling, and automatic publishing |
| RF07 | Reports and Insights | The system must generate periodic reports with metric interpretation and actionable recommendations |
| RF08 | Continuous Learning | The AI must learn from results to improve future content and recommendations |

**Table 1**. Functional Requirements.

| ID | Requirement | Description |
|---|---|---|
| RNF01 | Usability | The system must be intuitive and accessible to users with low digital literacy. |
| RNF02 | Primary Channel | WhatsApp must be the primary channel for user interaction. |
| RNF03 | Performance | The system must respond within an acceptable time frame to ensure a good user experience. |
| RNF04 | Scalability | The system must support user growth without significant performance degradation. |
| RNF05 | Security and Privacy | The system must ensure data protection and confidentiality. |
| RNF06 | Modularity | The architecture must allow system evolution and the integration of new features and services. |

**Table 2**. Non-functional requirements

**Main Use Cases**

1. Use Case 1 – Perform Business Onboarding:

   The user initiates interaction with GUTEN via WhatsApp and answers AI-guided questions about their business. The system collects, organizes, and

semantically analyzes the information, creating a personalized strategic brand profile.

2. Use Case 2 – Create Guided Content:

The user requests content creation in guided mode. The AI conducts a strategic interview, suggests ideas, analyzes submitted images or videos, and generates a complete content package including a script, caption, call to action, and hashtags.

3. Use Case 3 – Create Automatic Content:

The user requests the creation of an automatic post. The AI performs a quick diagnosis of the objective and target audience and instantly generates the complete content, allowing adjustments before confirmation.

4. Use Case 4 – Schedule and Publish Content:

After content creation, the user chooses between manual or intelligent scheduling. The system identifies the best time to publish and automatically posts the content on the integrated social media platform.

5. Use Case 5 – Receive Reports and Recommendations:

Periodically, the user receives an interpreted performance report via WhatsApp, including metrics and practical recommendations. The AI explains how the results impact the business and suggests improvements for future content.

### 2.4.2 Architecture and Technology
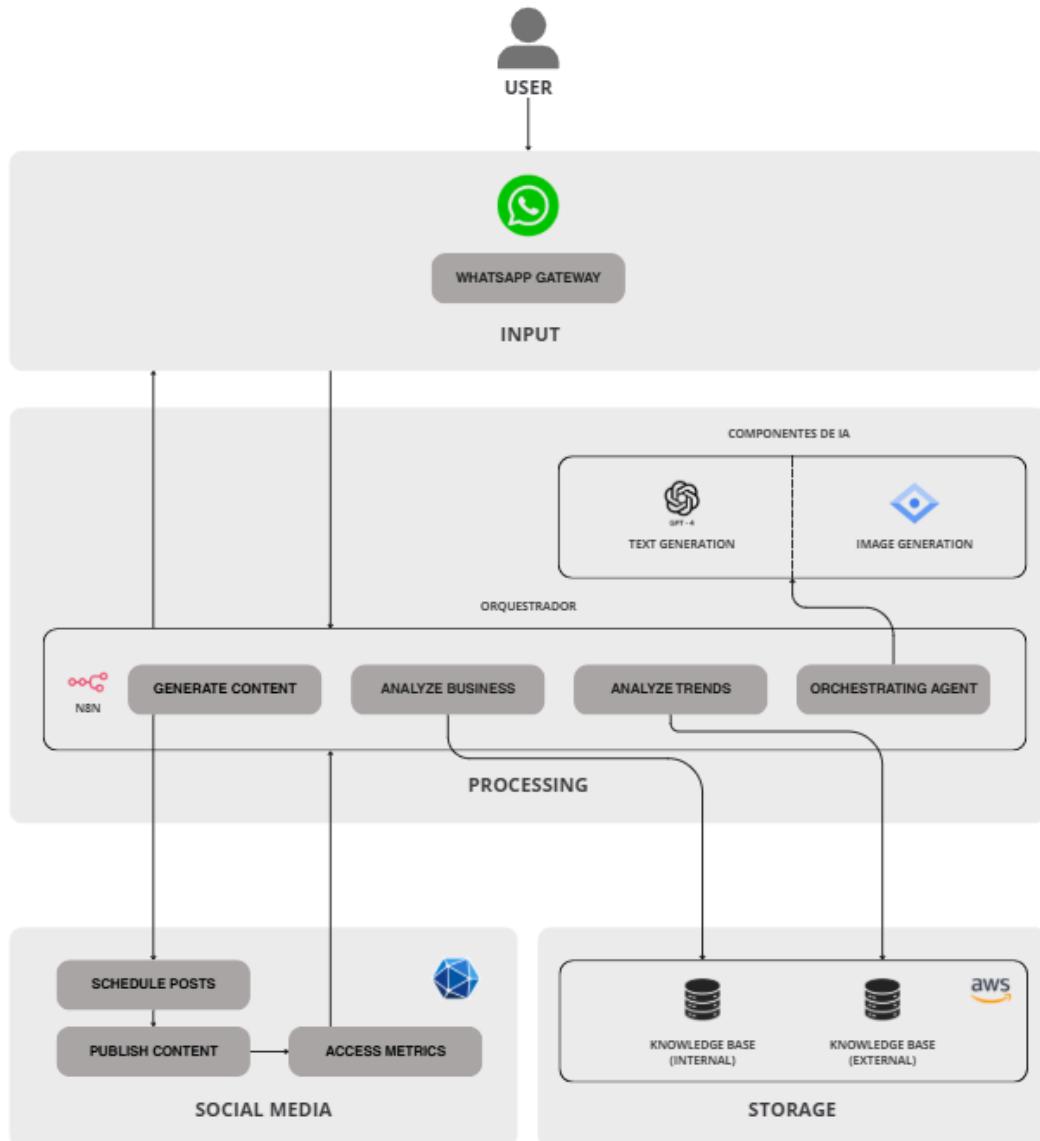
**Figure 2**. Solution Architecture. Source: Author's own archive.

**Input**

The entry point of the application is the WhatsApp Gateway, which acts as the communication channel between the user (entrepreneur) and the system. All interactions, such as starting onboarding, requesting post creation, scheduling a publication, or requesting reports, are performed via WhatsApp messages. The gateway captures these messages and triggers webhooks to the orchestrator, activating the corresponding workflow.

**Processing**

At the core of the architecture is n8n, which is responsible for orchestrating workflows across the different application functionalities. Based on the received messages, n8n routes requests to the appropriate modules:

- Content Generation: Triggers AI services to create captions, copy, and image suggestions.
- Business Analysis: Queries the internal knowledge base to understand the brand profile (mission, products, tone of voice).
- Trend Analysis: Accesses the external knowledge base (via social media APIs) to collect data on hashtags, viral music, and trending topics.
- Agent Orchestration: Ensures that the appropriate AI components are activated according to the specific need.

Communication with AI components is performed via APIs, such as OpenAI's API (for GPT-4) and generative image models (such as Nano Bana), to create visual assets when necessary.

**Storage**

The system uses two knowledge bases to operate in a contextualized and personalized manner:

- Internal Knowledge Base: Stores information collected during onboarding, content history, post performance, and brand preferences. It is continuously updated with data from user interactions.
- External Knowledge Base: Composed of information gathered via public APIs (Instagram, TikTok, Google) and other trend sources, feeding the system with real-time market and digital culture insights.

Both knowledge bases are hosted on AWS.

**Social Media**

After content generation and approval, the system can perform intelligent post scheduling by selecting the best publishing time based on the Instagram profile's engagement history. This function is coordinated through a task queue and a worker that triggers publication via the Instagram Graph API. Additionally, metrics from

published posts, such as views, likes, comments, and other indicators, are collected and interpreted. These metrics are used to generate reports and are cross-referenced with data from the internal knowledge base to continuously improve the recommendations provided by the AI.

### 2.4.3  Development and Implementation (MVP)

**Development Methodology**

The development of the GUTEN MVP followed an iterative and incremental approach, inspired by agile methodologies such as Scrum and Kanban, with a focus on rapid hypothesis validation and continuous learning. Instead of long development cycles, short delivery iterations were adopted, prioritizing essential functionalities that enabled testing the value proposition with the target audience.

Feature prioritization was guided by the pain points identified in qualitative research with SMEs, especially those related to lack of time, technical knowledge, and budget for digital marketing. As a result, the MVP was built with a strong emphasis on simplicity, usability, and fast delivery, allowing frequent adjustments based on real user feedback, one of the core characteristics of agile methodologies applied to digital products.

**MVP Development Phases**

The development of the MVP was organized into phases, each with clearly defined objectives. The first phase focused on structuring the technical architecture, ensuring communication between messaging services, orchestration components, and artificial intelligence services. At this stage, local development environments were configured using Docker, enabling the integrated execution of the required services.

In the second phase, the onboarding workflow was implemented, in which the AI agent collects essential information about the entrepreneur's business, such as business name, type of service, target audience, and objectives. This data is stored to personalize future interactions, ensuring that the generated content aligns with the brand identity.

The third phase focused on automated content generation, allowing entrepreneurs to request post creation directly via WhatsApp. The agent conducts a simple conversation to identify the objective of the publication and then generates a strategic caption, a visual description for images, and optimized hashtags. This phase was essential to validate the core value proposition of the solution: transforming conversations into content ready for publication.

**MVP Modules and Functionalities**

The GUTEN MVP was implemented with a modular architecture, composed of the following main modules:

- WhatsApp Gateway: Responsible for communication between the user and the system, enabling all interactions to occur via messages.
- Workflow Orchestrator: Implemented using n8n, responsible for receiving events, identifying user intent, and triggering the appropriate components.
- AI Agent: Configured with a system prompt, language model, and persistent memory, responsible for interpreting messages, generating content, and responding to the user.
- Storage and Memory: Implemented using PostgreSQL and Redis for persistent storage of business data and conversation context.

The main MVP flow begins with a webhook that captures messages received via WhatsApp. The data is then processed to identify the type of event, triggering the AI agent to generate the appropriate response. Finally, the message is sent back to the user via WhatsApp in a clear and empathetic manner, completing the interaction cycle.

**MVP Technical Implementation**

The MVP was implemented locally using Docker, which enabled integrated and reproducible service orchestration. The services used included n8n, WAHA, Redis, and PostgreSQL, ensuring isolation, scalability, and ease of environment configuration.

WAHA was used as the WhatsApp gateway, enabling direct connection to a real phone number via QR code scanning. n8n was configured as the automation engine, using webhooks as the main trigger to process incoming messages. The developed workflow includes nodes for data extraction, event validation, AI agent execution, and response delivery to the user.

The AI agent was integrated through language model APIs such as Google Gemini and ChatGPT, allowing flexibility in choosing the provider. This simple yet functional structure enabled the creation of a complete conversational agent capable of performing onboarding, generating personalized content, and continuously interacting with the entrepreneur.

### 2.4.4  Testing and Technical Evaluation:

**Adopted Testing Strategy**

The technical evaluation of the GUTEN MVP was conducted through exploratory testing with real users, focusing on validating the complete functional flow of the solution. Unlike traditional approaches based on unit or automated testing, the adopted strategy prioritized observing system behavior in real usage scenarios, considering interaction via WhatsApp, content generation, and the end-user experience. This choice is consistent with the MVP stage, whose primary objective is to validate hypotheses related to value, usability, and technical feasibility.

The tests were carried out with three real users, who used the solution end to end: onboarding, content requests, text generation, image generation, and delivery of results via WhatsApp. This approach made it possible to simultaneously evaluate technical aspects, such as workflow stability and response time, and experiential aspects, such as message clarity, instruction comprehension, and perceived value of the solution.

**Test Results and Technical Robustness Evaluation**

The tests demonstrated that the GUTEN MVP presents sufficient technical robustness to operate in a real environment, even with a relatively simple architecture. In all tested scenarios, the system was able to conduct complete

conversations, store user context, and generate personalized content, including captions, hashtags, and images, without critical execution failures.

Among the positive aspects identified were the naturalness of interaction via WhatsApp, the empathetic tone of the agent, the clarity of instructions, and the low cognitive effort required from users. Participants reported the feeling of conversing with a real person, as well as enthusiasm for the speed at which complete content packages were created, indicating that the system effectively meets the needs of users with low digital maturity.

From a technical standpoint, the tests also revealed important limitations, particularly related to the interpretation of open-ended responses, image generation time, and the method of delivering visual content through external links. These limitations did not prevent use of the solution but affected the smoothness of the experience and highlighted clear opportunities for architectural and conversational flow improvements.

Based on the feedback obtained, technical and usability adjustments were defined, such as the future adoption of clickable buttons to reduce ambiguity, improvements in the quality and style of generated images, direct image delivery within WhatsApp, and refinement of the onboarding process to improve understanding of the business context. These adjustments demonstrate that the MVP fulfilled its role as a learning instrument, validating the core value proposition of the solution and providing concrete inputs for its technical and functional evolution.

## 2.5 The Business Plan

### 2.5.1 Market and Competitor Analysis

**Segmentation and Target Audience**

As previously presented, the analysis is based on a predefined segment of Small and Medium-sized Enterprises in the food sector, with particular emphasis on bars and restaurants that rely heavily on digital visibility to attract and retain customers. This segment is characterized by lean organizational structures, limited budgets for marketing activities, and a low level of digital maturity, which often results in an inconsistent or poorly strategic online presence.

At the same time, these businesses operate in a highly competitive environment in which consumer decisions are strongly influenced by online reviews, social media, and local search engines, making digital marketing a critical factor for both survival and differentiation in the market.

**SWOT Analysis**

Strengths

- The primary strength lies in the simplified interface via WhatsApp. This eliminates technical barriers, allowing SME owners with limited digital marketing knowledge to use the tool intuitively, without the need to learn complex platforms.
- AI-driven automation for content generation (text and images) is not merely a feature but a crucial competitive advantage. It directly addresses SMEs' core pain point of limited time and expertise to create content, offering a complete and automated solution.
- The value proposition of being more affordable than agencies and consultancies (which may cost over R$5,000 per month) while being more comprehensive than traditional scheduling tools (which do not create content).
- The strong focus on SMEs and the elimination of technical jargon in reports make the solution highly suitable for the target audience, enabling users to understand what is being created in each campaign or communication.

Weaknesses

- The solution is directly tied to the WhatsApp ecosystem. Therefore, any changes in API policies or application functionalities may directly affect its operation.
- Although personalization is a key differentiator, the initial process of "teaching" the AI about each client's visual identity and target audience can be challenging at first. If not done properly, it may result in generic content.

Opportunities

- There is a significant opportunity to fill the gap between large companies (which use expensive tools and agencies) and SMEs. As such, the solution has the potential to become the primary marketing tool for SMEs that are currently underserved.

- The growing trend of conversational marketing, in which brands interact directly with customers through messaging apps, represents an ideal opportunity for the solution to gain traction.

- The proposed solution is at the forefront of one of the most significant technological trends: generative AI. This positions the company as a modern and innovative solution.

Threats

- Tools such as HubSpot and Jasper may launch more affordable versions or offerings adapted to the Brazilian market, undermining the cost and simplicity advantage.

- Feature Integration by Competitors: Traditional competitors such as RD Station may integrate AI features, closing the gap that the solution currently exploits.

- There is a natural resistance among small business owners to adopting new technologies. Convincing them to trust an AI-based tool to create their content may represent an initial challenge.

- Other Brazilian startups, such as Clarice AI, may offer even more affordable AI solutions with new functionalities, increasing price competition in the market.

**Porter's Five Forces**

1. Competitive Rivalry

   Rivalry in the digital marketing market is high. There are multiple players, each with a different approach.

   - National and international scheduling tools (such as RD Station and Hootsuite) and AI-based tools (such as Clarice AI and Jasper) compete for the same audience. Although the solution has a clear differentiator, the potential customer base is targeted by all these competitors.

- Local agencies and consultancies are also competitors, offering more expensive and manual services that may be perceived as more "personalized" by some clients.
- Free solutions, such as the free version of Canva, or even manual social media management performed by the business owners themselves, represent alternative ways of "getting the job done" without using the proposed tool.

2. Threat of New Entrants

The threat of new entrants is moderate. Although the market is attractive, there are some entry barriers.

- Developing robust AI technology and integrating with WhatsApp APIs requires significant investment in technology and development.
- Established competitors already have a customer base and strong brand recognition. New entrants must build market trust.
- An AI solution that continuously learns from customer data creates a technological barrier, as a new competitor would need to develop a similar AI from scratch.

3. Bargaining Power of Suppliers

The bargaining power of suppliers is low, resulting in high bargaining power for the company. The main "suppliers" are AI platforms and communication APIs.

- There are many generative AI platforms available in the market (such as GPT-4, Gemini, among others). This reduces dependency on a single supplier and allows for price negotiation or switching partners if necessary.
- The WhatsApp API represents a potential vulnerability; however, the solution can be adapted to other platforms in the future, reducing this dependency. In addition, a proprietary application could be developed.

4. Bargaining Power of Buyers

The bargaining power of buyers SMEs is high.

- The target audience is highly price-sensitive and already resistant to paying high fees for agencies and consultancies. They seek solutions that offer a clear return on investment.

- Switching costs are relatively low for SMEs, as many do not have long-term contracts. If the solution does not deliver perceived value, they can simply stop using it.

- If the product does not meet expectations, customers can easily return to other tools or even to manual management of their social media.

5. Threat of Substitute Products or Services

The threat of substitutes is moderate and should be closely monitored.

- The main substitute is manual management by the business owner or hiring an intern/freelancer at a low cost.

- Free or low-cost tools, such as Canva, can be used to create visual content.

### 2.5.2 Business Model (Business Model Canvas - BMC)



**Figure 3**. Business Model Canvas. Source: Author's own archive.

Below is the description of the Business Model Canvas (Figure 3).

1. Customer Segments:

The initial focus is on Brazilian small and medium-sized local service businesses, especially bars, restaurants, cafés, and snack bars, located in São Paulo and its metropolitan area. These businesses are typically run by overloaded entrepreneurs with limited time, low digital marketing expertise, constrained budgets, and strong dependence on social media to attract customers. Although the solution can later expand to other local service segments, the food sector is strategically chosen due to its fast, measurable, and decisive impact on social media performance, allowing the product to build a strong competitive advantage from the start.

2. Value Proposition:

The solution enables SMEs to maintain a consistent and strategic digital presence without requiring time, technical knowledge, or a dedicated marketing team. Through simple automation via WhatsApp, entrepreneurs can generate complete social media posts (image, caption, and hashtags), schedule publications intelligently, and receive clear performance reports translated into actionable insights. The platform combines an affordable price with AI that learns from both the business and its sector, delivering speed, simplicity, and clarity compared to agencies and complex marketing tools.

3. Channels:

Customer acquisition is driven primarily by Instagram and Facebook ads, supported by educational YouTube content that builds trust and demonstrates ease of use. Onboarding, daily usage, content creation, scheduling, and performance reports are fully handled through WhatsApp, ensuring minimal friction. A complementary web platform supports subscription management, payments, FAQs, and access to the content generation history, while ongoing communication via WhatsApp and YouTube content supports retention and engagement.

4. Customer Relationships:

The relationship model is predominantly self-service, where customers interact directly with the AI via WhatsApp without the need for human support. The tone is consultative and educational, as the system not only delivers content but also explains marketing concepts and best practices through reports and recommendations. Engagement and retention are reinforced through guided onboarding, proactive performance insights, and continuous educational content.

5. Revenue Streams:

The business model is based on a SaaS subscription, starting with a free trial that allows users to test the platform with a limited number of posts. The core offering is a basic subscription priced around R$120 per month, including content generation, scheduling, and simplified reports. Future revenue expansion includes flexible plans with higher limits, a Pro plan with advanced features such as short video generation and deeper analytics, and potential partnerships with delivery platforms under a commission-based model.

6. Key Resources:

Key resources include AI and communication technologies such as language models for text generation, image generation tools, WhatsApp Business API, Instagram Graph API, and cloud infrastructure for data storage. The core team consists of a full-stack developer, an AI architect responsible for model orchestration, and a marketing analyst focused on acquisition and product feedback. Additionally, the internal brand knowledge base and the external sector-focused knowledge base are critical intellectual assets.

7. Key Activities:

Core activities include developing and maintaining integrations with AI providers, WhatsApp, and Instagram APIs, as well as managing cloud infrastructure and the web platform. Continuous improvement is achieved by training the AI with user feedback, updating sector-specific trend data, and

testing new features such as short-form video generation. Customer acquisition and retention efforts involve paid media campaigns, educational content creation, and active monitoring of user engagement and churn.

8. Key Partnerships:

   Key partnerships include AI technology providers for text and image generation, Meta platforms for WhatsApp and Instagram integration, and cloud providers for infrastructure. From a market perspective, partnerships with sector associations support credibility and access to SMEs, while future integrations with delivery platforms may enable joint campaigns and commission-based revenue opportunities.

9. Cost Structure:

   The cost structure is primarily composed of variable technology costs, including AI usage, image generation, WhatsApp messaging, and cloud storage. Fixed and semi-fixed costs include the core team (development, AI architecture, and marketing), as well as operational expenses such as software licenses, hosting, payment processing fees, and general administrative costs. This structure supports scalability while maintaining controlled operational expenses.

## 2.5.3  Marketing and Sales Strategy:

**Go-To-Market Strategy**

GUTEN was born from the following challenge: millions of micro and small entrepreneurs, who make Brazil move forward every day, remain invisible in the digital world. They are people like Joaquim, the owner of a restaurant in the Copan building in São Paulo, who work tirelessly but lack the time, technical knowledge, or resources to manage their social media, establish a digital presence, and attract new customers.

This Go-To-Market (GTM) strategy defines the detailed plan to bring GUTEN to market, from the initial validation phase with a smaller audience to national-scale expansion.

**Positioning and Slogan**

GUTEN positions itself as a complete digital marketing solution for SMEs, accessible directly through WhatsApp. Unlike platforms designed for marketing professionals, GUTEN serves entrepreneurs who need marketing but lack time, a dedicated team, or technical expertise, bringing both strategy and execution into a channel already embedded in their daily routine.

The slogan "The power of a marketing team at your WhatsApp" expresses GUTEN's value proposition by combining professionalism with simplicity. It communicates transformation and strategic structure while reinforcing proximity, ease of use, and the elimination of technological barriers for small entrepreneurs.

**Channels and Acquisition**

Phase 1 – Validation (Q1 – Q2 2025)

1. Channel 1 – Partnership with an Entrepreneur Support Institution

    The first acquisition front for GUTEN will be built in partnership with a national institution dedicated to supporting and training micro and small enterprises, recognized for its credibility and close relationship with the entrepreneurial community. This institution has a well-established infrastructure for education and communication with SMEs across Brazil, making it a strategic channel to validate the product with the initial target audience.

    In parallel, the strategy includes the creation of a Pilot Community, composed of approximately 20 invited entrepreneurs, which will serve as a controlled experimentation environment to observe usage patterns, understanding of AI interactions, and practical application of GUTEN's recommendations.

    The strategy also предусматр100ies the joint launch of a free course titled "How to Position Your Business on Social Media", aimed at small business owners who want to understand and apply basic digital marketing principles in a practical and accessible way. Throughout the course, GUTEN will be presented as a partner tool, responsible for transforming theoretical concepts

into concrete day-to-day actions. In this way, learning goes beyond educational content and extends into hands-on experience with the solution.

This educational approach serves two central objectives in the go-to-market strategy: building trust with an audience that is naturally cautious about new technologies and reducing the barrier to product experimentation. At the end of the course, participants will receive 30 days of free access to GUTEN, along with a promotional discount offer, encouraging continued adoption and the formation of an initial user base with a clear perception of the value delivered by the solution.

2. Channel 2 – WhatsApp Pilot Community

Alongside the partnership with the entrepreneur support institution, a WhatsApp Pilot Community will be created, composed of approximately 20 invited entrepreneurs. This community will act as a live experimentation lab, allowing for in-depth observation of how users interact with the AI, interpret generated messages, and apply GUTEN's recommendations in practice.

The insights gathered during this phase will be critical for refining the conversational flow, the AI's tone of voice, and the onboarding steps, ensuring an intuitive experience even for users with low digital familiarity. Beyond product validation, the community will also serve as a source of authentic storytelling, generating the first real success cases. These testimonials will play a strategic role in future branding and trust-building efforts by demonstrating the solution's tangible impact in real small business contexts. The goal here is to learn deeply from 20 representative users rather than accumulate thousands of superficial sign-ups.

3. Channel 3 – Local Micro-Influencers

Another key component of the acquisition strategy is the use of local micro-influencers, especially those operating in niches such as gastronomy, entrepreneurship, and neighborhood businesses. These content creators possess genuine social authority and a high level of empathy with GUTEN's

target audience, making them more effective than large influencers in driving conversions.

The tactic involves inviting these influencers to demonstrate, in practice, the simplicity and impact of GUTEN by creating short, natural videos showing how a complete post, with image, caption, and hashtags, can be created in under two minutes directly via WhatsApp. The objective is for micro-influencers to humanize the technology and translate GUTEN's value proposition into accessible language aligned with the reality of SMEs.

4. Channel 4 – Corporate Partnerships

One of GUTEN's strategic opportunities lies in leveraging B2B2C distribution channels through partnerships with companies and institutions that already maintain established relationships with the solution's target audience. These organizations act as trusted intermediaries, facilitating GUTEN's access to a qualified base of small and medium-sized businesses in the food sector.

As an example, a national corporate benefits company stands out, maintaining a network of over 500,000 active commercial establishments across Brazil, including restaurants, cafés, bakeries, and snack bars. This base is highly aligned with GUTEN's Ideal Customer Profile (ICP), consisting of businesses that already have an operational and trust-based relationship with the organization. This synergy enables GUTEN to be positioned as an additional digital benefit, reinforcing perceptions of innovation and support for small business digitalization.

The proposal is to offer the solution as a value-added service, adopting a commission-based sales model for partner companies or associations. This establishes a mutually beneficial relationship: GUTEN reduces its customer acquisition costs (CAC), while the partner expands its portfolio with a relevant, affordable, and easy-to-adopt solution for its establishment base.

5. Channel 5 – Meta Ads

During the traction phase, investment in paid campaigns via Meta Ads (Facebook and Instagram) will be the primary scalable acquisition engine for

GUTEN. Among the available formats, the Click-to-Chat model is the best fit for the brand's proposition, as it directs users straight into a WhatsApp conversation, without friction or intermediary forms, exactly where GUTEN operates.

The campaign will be structured around short, direct videos that showcase the real usage flow of the tool: "Tell us what you want and receive a ready-to-post content." This practical demonstration is essential to overcome technological skepticism, as users not only understand what the product does but also see, within seconds, how it can be applied to their own daily routine.

### 2.5.4  Financial Projection and Feasibility:

**Revenue Model and Pricing**

GUTEN's revenue model is based on Software as a Service (SaaS), with recurring monthly subscription billing. The proposal is to offer a simple and affordable plan aligned with the financial capacity of Small and Medium-sized Enterprises, avoiding complex pricing structures or models dependent on a large number of users, features, or advanced integrations. In this way, the solution is positioned as a continuous service, with value perceived through recurring usage and the consistent generation of results.

Pricing was defined around an average monthly ticket of approximately R$120, which is significantly lower than the cost of marketing agencies and full-featured market platforms such as HubSpot and RD Station. This price point aims to balance accessibility for small entrepreneurs with the financial sustainability of the operation, while reinforcing GUTEN's positioning as a viable alternative for businesses with limited budgets.

In addition to the main plan, the model allows for future evolution, such as plans with higher content limits, additional features, or advanced integrations, without compromising the initial simplicity. This strategy ensures flexibility for revenue growth over time while maintaining focus on the audience that is currently underserved by traditional digital marketing solutions.

**Costs, Break-Even Point, and Return on Investment (ROI)**

GUTEN's cost structure is composed mainly of variable costs associated with cloud technologies and artificial intelligence APIs, along with a limited set of fixed operational costs. Among the monthly fixed costs are basic cloud infrastructure, orchestration tools, and databases, estimated at approximately R$2.000 to R$3.000 per month, in addition to administrative and system maintenance expenses.

Variable costs are directly related to the number of active users, primarily driven by the consumption of text generation, image generation, and messaging APIs. Considering a conservative average usage, the variable cost is estimated at approximately R$20 to R$30 per customer per month, a figure that tends to decrease proportionally with usage optimization and economies of scale. This model enables financial predictability and facilitates operational margin control.

With an average monthly ticket of R$120 per customer, the estimated gross margin per user ranges from R$90 to R$100, after deducting variable costs. Considering average fixed costs of R$3.000 per month, the operational break-even point is reached with approximately 30 to 35 active customers, a relatively low number compared to traditional service- or consultancy-based business models.

From a return on investment (ROI) perspective, GUTEN is highly attractive. For customers, ROI is perceived through the replacement of high agency costs (which can exceed R$5.000 per month) with a low-cost automated solution. For the company, the low Customer Acquisition Cost (CAC), enabled by institutional partnerships and B2B2C channels, allows recurring monthly revenue to quickly surpass initial investments, making the model financially sustainable and scalable.

**Required Initial Investment**

GUTEN's initial investment is concentrated on MVP development, product validation, and preparation of the technological infrastructure. The main initial costs involve platform development and integration, cloud infrastructure setup, integration with AI and WhatsApp APIs, and testing with real users. This set of activities is estimated to require an initial investment between R$25.000 and R$40.000, depending on the level of development outsourcing.

In addition to technical development, part of the initial investment is allocated to validation and go-to-market activities, such as the creation of the Pilot Community, educational materials, controlled testing, and usability adjustments. These initial costs are relatively low compared to traditional marketing campaigns, ranging from approximately R$5.000 to R$10000, with a focus on learning rather than immediate scale.

Therefore, the total estimated initial investment for GUTEN's operation ranges between R$30.000 and R$50.000, a value considered modest for a scalable SaaS solution.

## 2.6  Validation and Results

### 2.6.1  Validation Methodology

The validation of the solution was conducted through a qualitative and exploratory approach, appropriate to the MVP stage of the project. The adopted method consisted of tests with real users, in which entrepreneurs interacted directly with GUTEN via WhatsApp, executing the complete solution flow, from onboarding to content generation with both text and images.

Tests were carried out with three users selected for representing profiles aligned with the solution's target audience. During the tests, user behavior was observed, including the clarity of interactions, understanding of AI-generated messages, and perceived value of the product. Feedback was collected directly through the conversations themselves and through spontaneous comments at the end of the interactions, enabling the validation of the project's core hypotheses, such as ease of use, suitability of the chosen channel, and the practical usefulness of the solution.

### 2.6.2  Market Validation Results

The validation results indicated strong alignment between the value proposition and the target audience, particularly regarding the use of WhatsApp as the primary interaction channel. Users highlighted the solution's accessibility, the natural flow of conversation, and the clarity of instructions, reinforcing the hypothesis that the choice of channel significantly reduces technological barriers for SMEs.

Another relevant outcome was the positive perception of speed and practicality in content creation. Users expressed surprise and enthusiasm upon receiving ready-to-publish texts, hashtags, and images within just a few minutes. This validates the hypothesis that digital marketing automation delivers immediate value to entrepreneurs with limited available time.

On the other hand, the tests also revealed areas for improvement, such as limitations in interpreting open-ended responses, delays in image generation, and the need for greater control over visual style and content tone. These findings do not suggest the need to pivot the business model, but rather to persist with the current proposal while implementing incremental adjustments focused on improving usability, strengthening the conversational flow, and enhancing the quality of generated assets.

### 2.6.3 Key Performance Indicators (KPIs):

At the current stage, KPIs are not yet measured through continuous quantitative tracking; however, they have already been defined as strategic metrics for monitoring product evolution. The main indicators include:

- CAC (Customer Acquisition Cost): Estimated to be low, due to a strategy based on institutional partnerships, pilot communities, and B2B2C channels.
- LTV (Lifetime Value): Projected from a recurring monthly revenue model, with a focus on retention and continuous usage of the solution.
- Churn: A critical metric for evaluating user abandonment, especially during the first months of use.
- Activation Rate: Percentage of users who complete onboarding and generate at least one piece of content.
- Engagement with the Solution: Frequency of use and number of contents generated per user.

These indicators will serve as the foundation for future decisions related to product development, pricing, and market expansion.

### 2.6.4 Risks and Mitigation Plan

From a technological perspective, one of the main risks lies in dependency on external APIs, especially WhatsApp and AI providers. Changes in policies, costs, or

technical limitations may impact operations. As mitigation, the architecture was designed in a modular manner, allowing provider substitution and future expansion to other channels.

Regarding financial risks, the primary challenge is ensuring that recurring revenue exceeds variable infrastructure and AI usage costs. Mitigation strategies include strict monitoring of API consumption, optimization of workflows, and clear definition of usage limits per subscription plan.

In the legal and regulatory domain, there are risks related to user data privacy and protection. To mitigate these risks, the solution adopts best practices for secure data storage and access control, as well as continuous compliance with applicable regulations, such as Brazil's LGPD.

Finally, concerning competitive risks, large platforms may adapt their offerings to serve SMEs with more affordable solutions. Mitigation lies in GUTEN's strong focus on simplicity, conversational interaction, and cultural alignment with Brazilian small entrepreneurs, differentiators that are more difficult for global solutions to replicate quickly.

## 3   Conclusion

This work aimed to develop and validate an artificial intelligence–based digital marketing solution targeted at Small and Medium-sized Enterprises, with a focus on businesses in the food sector. Based on the identification of a recurring problem, the difficulty entrepreneurs face in maintaining a strategic digital presence due to lack of time, technical knowledge, and financial resources, GUTEN was proposed as a conversational platform accessible via WhatsApp, capable of transforming simple interactions into structured marketing actions.

Throughout the development process, it was demonstrated that the proposed solution consistently meets the needs of the target audience. Market analysis and competitive benchmarking revealed a gap between complex solutions designed for specialized teams and simplified tools with limited strategic value. In this context, GUTEN positions itself as a suitable alternative by combining automation, strategy,

and ease of use within a single workflow, eliminating common technological and operational barriers faced by SMEs.

The implementation of the MVP confirmed the technical feasibility of the solution, using a modular architecture based on AI agents, workflow orchestration, and integration with messaging platforms. Tests conducted with real users indicated strong acceptance of the proposal, highlighting the naturalness of the interaction, the speed of content generation, and the clarity of the recommendations. The feedback collected also made it possible to identify areas for improvement, reinforcing the role of the MVP as a learning tool and a driver of continuous evolution.

From an economic perspective, the proposed business model proved to be sustainable and scalable, with controlled costs, a low break-even point, and the potential for positive returns starting from a relatively small base of active customers.

As limitations, the study highlights the reduced scope of validation, restricted to a limited number of users and a short testing period. In addition, dependence on external APIs and the need for continuous improvement in the quality of generated content represent technical challenges to be addressed in future versions of the solution.

Finally, this work contributes both academically and practically by demonstrating how artificial intelligence technologies can be applied in an accessible and user-centered manner, generating real impact for small businesses. Future work includes expanding the user base for quantitative validation, enhancing personalization and performance analysis systems, and extending the solution to new channels and market segments, thereby consolidating GUTEN as a strategic digital marketing tool for SMEs.

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