João Moreira Tourinho Marques

Larissa Gouveia de Carvalho

Propositum: Vocational Chatbot for Higher Education: Application of AI-Supported Logotherapy for the Identification of the Meaning of Life

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Final Course Project submitted to the Institute of Technology and Leadership (INTELI), to obtain a bachelor's degree in Information Systems

Advisor: Prof. Natália Kloeckner

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I want to thank Viktor Frankl for his life, who left such a tool to reflect on life and its meaning.

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Resumo

Carvalho, Larissa; Tourinho, João. **Propositum: Chatbot Vocacional para o Ensino Superior**. 2025. nº 55. TCC (Graduação) – Curso Sistema de Informação, Instituto de Tecnologia e Liderança, São Paulo, 2025.

O presente trabalho apresenta o Propositum, uma plataforma tecnológica desenvolvida para auxiliar jovens universitários na identificação de sentido e propósito em suas atividades cotidianas. O projeto surge como resposta ao cenário contemporâneo de crise existencial, caracterizado por elevados índices de ansiedade, depressão e superficialidade, que impactam diretamente a saúde mental e a permanência acadêmica. O objeto de estudo concentra-se no desenvolvimento de um software como produto (SaaS), configurado como um chatbot voltado para o mercado B2B de instituições de ensino superior. A metodologia baseia-se na aplicação da logoterapia — abordagem psicológica focada na busca por sentido — integrada ao Processamento de Linguagem Natural (PLN) para oferecer interações humanizadas, personalizadas e escaláveis. O objetivo central é a entrega de um MVP funcional que, por meio de diálogos provocativos e introspectivos, conduza o estudante ao autoquestionamento e ao fortalecimento de seu eixo interior. Como resultados esperados, a ferramenta visa promover o protagonismo juvenil, resultando em maior felicidade e equilíbrio emocional. Conclui-se que a implementação do Propositum oferece benefícios mútuos: para o aluno, o desenvolvimento de convicções e direção frente aos estímulos externos; para as instituições de ensino, a valorização do corpo discente, a melhoria do desempenho acadêmico e a redução estratégica das taxas de evasão escolar.

Palavras-Chave: logoterapia; saúde mental universitária; chatbot; retenção acadêmica; inteligência artificial.

Abstract

Carvalho, Larissa; Tourinho, João. **Propositum: Chatbot Vocacional para o Ensino Superior**. 2025. nº 55. Final course project (Bachelor) – Course Information Systems, Institute of Technology and Leadership, São Paulo, 2025.

The present work presents Propositum, a technological platform developed to help young university students in identifying meaning and purpose in their daily activities. The project arises as a response to the contemporary scenario of existential crisis, characterized by high levels of anxiety, depression and superficiality, which directly impact mental health and academic permanence. The object of study focuses on the development of a software as a product (SaaS), configured as a chatbot aimed at the B2B market of higher education institutions. The methodology is based on the application of logotherapy — a psychological approach focused on the search for meaning — integrated with Natural Language Processing (NLP) to offer humanized, personalized, and scalable interactions. The central objective is the delivery of a functional MVP that, through provocative and introspective dialogues, leads the student to self-questioning and the strengthening of his inner axis. As expected results, the tool aims to promote youth protagonism, resulting in greater happiness and emotional balance. It is concluded that the implementation of Propositum offers mutual benefits: for the student, the development of convictions and direction in the face of external stimuli; for educational institutions, the valorization of the student body, the improvement of academic performance and the strategic reduction of school dropout rates.

Key words: logotherapy; university mental health; chatbot; academic retention; artificial intelligence.

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List of Abbreviations and Acronyms

BMC Business Model Canvas

TAM Total Addressable Market

SAM Serviceable Addressable Market

SOM Serviceable Obtainable Market

RF Functional Requirements

RNF Non-Functional Requirements

AI Artificial Intelligence

SWOT Strengths, Weaknesses, Opportunities, and Threats

Summary

1 Introduction

Propositum is a platform that helps young university students. Its proposal is to enable these people to identify a deep meaning in their reality, in their daily activities such as studying, working, going out with friends, etc. By giving this perspective, we hope that this young person will be more sure about what his life is about, performing his day-to-day activities better and with more happiness.

In an increasingly superficial and materialistic world, many young people live without clarity about who they are, seeking recognition in appearances, distractions, and empty goals. They lack an inner axis that connects what they do to who they really are, which results in discouragement, anxiety, and lack of purpose.

1.1 Context and Motivation

Propositum is part of the intersection between the areas of **EdTech** (educational technology) and **Digital Mental Health**, focusing on human development and academic permanence through technology. The current context of university youth is marked by a paradox: despite unprecedented access to information and technology, there is an alarming growth in the so-called "existential void". Data from the World Health Organization (WHO, 2022) indicate that the age group from 15 to 24 years old has lower levels of happiness than past generations, with increasing rates of anxiety and depression. In the Brazilian scenario, socioeconomic pressure, exemplified by an unemployment rate of 17.9% among young people in 2023, aggravates the feeling of disorientation and uncertainty about the future.

The motivation for this project lies in the understanding that the suffering of contemporary young people is not only the result of external factors, but of a superficial attitude towards life, often catalyzed by the exhaustive use of social networks and the lack of deep bonds. The central problem that the solution aims to solve is the lack of an "inner axis" that connects their daily activities (studies, work and relationships) to a greater purpose. This lack of meaning is directly reflected in the academic environment, resulting in discouragement, a drop in performance and, ultimately, the abandonment of higher education.

Given this scenario, a **market opportunity** was identified in the B2B sector for Higher Education Institutions (HEIs). While universities offer traditional pedagogical support, there is a gap in scalable tools that promote students' introspection and emotional empowerment in a personalized way. Propositum emerges as a solution to this demand, offering a chatbot based on **Logotherapy** that helps the student in the search for meaning. For institutions, the opportunity lies in the strategic reduction of dropout rates and in the increase of the perceived value of their services, transforming the subjective well-being of the student into an indicator of institutional success and financial stability.

1.2 Problem Definition and Value Proposition

The contemporary young university student lives a paradox: despite having access to an abundance of information and technological resources, many are not willing to seek a deep meaning for their own lives.

But the problem is not just economic or social. The suffering of young people is intensified by their own posture towards life, superficial and materialistic, dependent on social networks and stuck in a culture that dilutes their individuality. Isolation, disinterest, and inner impoverishment are observed (young people read less, maintain fewer deep relationships, and become less connected with themselves).

The result is a generation with an abundance of stimuli but a lack of purpose, with opinions but without conviction, with freedom but without direction. This absence of meaning manifests itself as anxiety, paralysis in the face of the future, and depersonalization. Even in the face of a tragic external reality, young people still have the possibility to change their internal position and act with depth and authenticity.

It is in this context that the opportunity of Propositum arises: a platform designed to lead university students to rediscover a greater meaning that positively influences all areas of their lives. Through introspection, self-questioning and reflection, Propositum does not offer ready-made answers, but provokes questions that connect the young person to their own existence and the deep meaning of their actions. These practices allow him to act internally, finding purpose and true happiness, even when reality remains an economic and social tragedy.

Propositum's value proposition lies in the resignification of the academic journey through a humanized artificial intelligence tool. The solution alleviates the user's pain by offering a chatbot available full-time, which uses Natural Language Processing (NLP) to provoke deep reflections based on logotherapy. Instead of offering ready-made answers, the platform generates gains by leading young people to discover their purpose, transforming their internal perception. For the student, this translates into greater resilience and happiness in everyday life; For the institution, the gain is reflected in the increase in student retention and the strengthening of a more engaged and conscious academic environment.

Aspect	Problem Description (Pain)	Value Proposition (Relief and Gain)
Student Mental Health	High levels of anxiety, depression and a feeling of existential emptiness.	Immediate support via chatbot that promotes introspection and the search for meaning.
Academic Performance	Demotivation and lack of connection between study and personal life.	Resignification of daily activities, generating more focus and protagonism.
School Retention	University dropout caused by disorientation and lack of purpose.	Increase in the student's bond with his or her trajectory, reducing course dropout.
Support Scalability	Limitation of human resources to serve all students individually.	Automated solution via software (SaaS) capable of serving thousands of students simultaneously.

Institutional Culture	Academic environment marked by isolation and superficiality.	Fostering a more aware, authentic and resilient student community.

Table 1: Pains and Value Proposition

1.3 Objectives of the Work

Develop and validate a computational solution based on artificial intelligence and logotherapy, establishing a viable business model for its introduction and scale in the higher education (B2B2C) market.

To achieve the general objective, the work initially comprises the technical development of an interactive chatbot MVP based on Natural Language Processing (NLP), integrating conversational flows that translate the pillars of logotherapy into a humanized dialogue interface. At the same time, it is expected to validate the solution with essential *stakeholders*, including students and managers of Higher Education Institutions (HEIs), in order to refine the perception of value and the usability of the system. In the commercial sphere, efforts are focused on structuring a business model under the SaaS (Software as a Service) format, detailing pricing strategies, revenue models and distribution channels appropriate to the educational market. Finally, the project contemplates the definition of impact metrics to measure the effectiveness of the tool in academic retention, culminating in the elaboration of a *go-to-market plan* that identifies strategic partners and barriers to entry in the EdTech and digital mental health sector.

1.4 Justification and Contributions

The market relevance of Propositum stems from the consistent increase, in higher education, of problems related to dropout, vocational uncertainty and the fragility of student engagement. Institutions are pressured to deliver measurable results in retention, employability, and academic well-being, while facing budget and specialized staffing constraints. In this context, digital solutions that expand service capacity, without replacing human monitoring, start to occupy a strategic place in institutional policies

From a technological point of view, Propositum explores advances in Natural Language Processing to structure dialogues that preserve context and reflexive progression, avoiding merely transactional interactions. The incorporation of principles of logotherapy guides the conversational design towards issues of meaning, responsibility and decision, giving the system a mediating and non-prescriptive character. This approach differentiates the solution from generic mentoring tools, by prioritizing conceptual depth, dialogic coherence, and integration with existing academic environments.

The economic relevance is manifested in the possibility of reducing costs associated with repetitive attendance, dropout, and late interventions, while expanding the reach of student guidance policies. For institutions, the adoption of a scalable and measurable solution favors better resource allocation and evidence-based decision-making. For the project, the combination of institutional validation and recurrent use supports a path of economic viability compatible with the constraints and expectations of the educational sector.

In short, Propositum contributes by proposing a solution aligned with the real demands of the educational market, technically grounded and economically justifiable, preserving ethical limits and recognizing the central role of human accompaniment in university education.

1.5 Work Structure

This work is organized into three main chapters, in addition to the final sections. The first chapter presents the introduction of the project, contextualizing the problem, the motivation, the definition of the value proposition, the objectives and the justification of the research. The second chapter focuses on the development of the solution, addressing the market assumptions and hypotheses, the analysis and sizing of the market, the competitive study, the description of the technological solution, the business plan and the validation processes and results obtained. Finally, the third chapter brings together the conclusions of the work, synthesizing the main findings, contributions and limitations, as well as pointing out perspectives for future work. The

references, appendices and annexes complement the content developed throughout the project.

For the delivery of the project, it was divided into 4 modules.

Consolidated Public Research Report — Modules 13 to 16

Project: Propositum | Scope: Research, Design, Development, and Validation

This consolidated public report summarizes the publicly shareable research, design, development, and validation activities conducted throughout Modules 13 to 16 of the Propositum project. It complements the individual public reports previously delivered, presenting a concise overview of the project's evolution by module and sprint.

Module	Sprint	Focus & Key Deliverables	Status
Module 13 Research, Market, and Business Foundations	**1**	**Foundations:** Project proposal, motivation, objectives, stakeholder interviews, market/competitor analysis.	Completed
	2	**Strategic Analysis:** SWOT and PESTEL analyses; empathy maps; persona definitions.	Completed
	3	**Mapping:** Refined empathy maps; prioritized user stories; user journey maps.	Completed

	4	**Modeling:** Risk matrix with mitigation strategies; Business Model Canvas.	Completed
	5	**Finance:** Expert interviews; financial projections and break-even estimation.	Completed
Module 14 Design and Conceptual Prototyping	**1**	**User Entry:** High-fidelity wireframe for initial entry and session logic.	Completed
	2	**Structure:** Low-fidelity structural wireframe.	Completed
	3	**Value Prop:** Conceptual screen formalizing the logotherapy-based proposition.	Completed
	4	**Product Strategy:** Product structure outline and engagement strategy draft.	Completed
	5	**Prototype:** General revision of artifacts; exploratory frontend code prototype.	Completed

Module 15 MVP Development and Technical Validation	**1**	**Frontend:** Initial HTML/CSS structure and accessibility pre-testing.	Completed
	2	**UX & Testing:** Completion of frontend structure and initial usability testing.	Completed
	3	**Responsiveness:** Global scripts, responsiveness adjustments, and continued testing.	Completed
	4	**Intelligence:** API creation, model training, and unit testing of backend components.	Completed
	5	**Integration:** Full frontend–backend integration and delivery of the functional MVP.	Completed
Module 16 Revision and Final Evaluation	**1**	**User Revision:** Synthesis of user tests; updated persona, journey, and storyboard.	Completed
	2	**Business Revision:** Updated SWOT/BMC; LGPD analysis; shopper/stakeholder ID.	Completed

	3	**Pitch:** Pitch slides, internal training, and external feedback documentation.	Completed
	4	**Evaluation:** Final pitch and academic board evaluation.	Completed
	5	**Closing:** Post-board TCC revision and future research directions.	Completed

Table 2. Consolidated Public Research Report — Modules 13 to 16. Source: Author's own archive

Final Conclusion

This consolidated public research report documents the full lifecycle of the Propositum project, from initial research to MVP delivery and strategic refinement. The sprint-based structure evidences methodological rigor, iterative development, and increasing technical maturity, resulting in a validated MVP supported by empirical user testing and academic evaluation.

2 Solution Development

2.1 Definition of Market Assumptions and Hypotheses

Propositum is based on the premise that Higher Education Institutions face structural limitations in dealing with dropout, vocational disorientation and crises of meaning among students, generating demand for digital solutions that complement existing support services. It is also assumed that students demonstrate openness to the use of technology-mediated guidance tools, especially when institutionally legitimized.

The project adopts as its central thesis that logotherapy offers an adequate conceptual diagnosis for this market, by treating vocational guidance from the search for meaning and responsibility, which differentiates the proposal from approaches based only on profile tests or automatic recommendations.

The project's hypotheses were corroborated by the tests carried out with the prototype, which indicated that young users began to question themselves in a more reflective way throughout the interaction, being instigated to elaborate answers and reconsider their decisions. Engagement in the conversation, even in a controlled test environment, was considered an initial metric of success, suggesting that the proposed dialogic structure is capable of mobilizing reflection and active participation, central elements for the validation of the solution.

2.1.1 Problem Hypothesis

The central hypothesis of this project identifies that contemporary young university students experience a phenomenon of "existential emptiness" that compromises their mental health and personal development. It is identified that this pain manifests itself as a profound disorientation in relation to the future and a disconnection with the meaning of daily activities, making the act of studying or working seem like a burden devoid of purpose. This situation results in subjective stagnation, in which the student loses the ability to act with conviction, becoming vulnerable to anxiety, social isolation, and dependence on superficial validations in digital environments. The problem, therefore, is the loss of identity and protagonism in life.

In this context, it is believed that Higher Education Institutions recognize that the consequences of this state — such as low academic performance, chronic demotivation and the deterioration of the organizational climate — are detrimental to the university's mission. The business hypothesis holds that HEIs are willing to invest in Propositum because they understand that resolving this existential impasse is the key to transforming the academic environment. By helping students to rediscover their inner axis, the institution not only reduces dropout and dropout rates as a natural consequence, but also fulfills its social role of forming resilient, aware and truly engaged individuals with their professional and human trajectory.

2.1.2 Solution Hypothesis

The hypothesis that supports Propositum is that a computational solution based on Artificial Intelligence and Natural Language Processing (NLP) represents the most efficient and scalable means to democratize access to existential self-questioning in the university environment. It is based on the conviction that traditional human support,

although essential, is limited by the availability of schedules and high operating costs, which prevents preventive care for all students. On the other hand, a chatbot based on Logotherapy offers a fully available welcoming interface, allowing the young person to seek support at the exact moment when disorientation or discouragement manifests itself. It is believed that the use of algorithms capable of performing reflective and Socratic questions allows the tool to act not as a substitute for the therapist, but as a tutor of introspection that respects the student's time and privacy.

In addition, the solution hypothesis considers Generation Z's affinity with the digital environment as a determining factor for engagement. For many young people, the initial anonymity provided by a conversation with an artificial intelligence reduces the barriers to judgment, facilitating the expression of feelings and deep doubts that could be omitted in face-to-face interactions. Thus, the implementation of Propositum as an institutional licensing software (SaaS) is seen as the ideal strategy to integrate technology into academic daily life. It is hoped that this approach will not only provide immediate relief for the student's subjective suffering, but also promote their protagonism in a sustainable way, generating consistent positive impacts on the institutional climate and the collective mental health of the university.

2.1.3 Value Hypothesis

Propositum's value hypothesis is based on the premise that Higher Education Institutions perceive the student's emotional health and sense of purpose as assets directly linked to financial sustainability and brand reputation. It is based on the understanding that the monthly licensing model (SaaS) is widely accepted by the educational sector, as it allows a clear budget forecast and does not require large initial investments in its own technological infrastructure. It is believed that the amount charged for the license will be considered attractive when compared to the cost of acquiring new students and, especially, the loss generated by the interruption of academic trajectories. From this perspective, the solution is presented not as an extra cost, but as a revenue protection strategy, where the preservation of the enrollment of a small group of students would already be enough to cover the annual investment in the platform.

In addition to the direct financial aspect, the value hypothesis assumes that institutions seek competitive differentials that position them as centers of integral human formation. The acceptance of the revenue model is also based on offering aggregated data and *insights* about the well-being of the student body, allowing management to make more assertive and preventive decisions. In this way, the value proposition is validated by the perception that investing in a scalable meaning-finding tool is more efficient and cost-effective than dealing with the consequences of chronic demotivation and poor academic performance. It is expected that the ease of integration of the chatbot with the systems already used by universities, combined with the delivery of tangible results in student engagement, will consolidate Propositum as an indispensable service for modern educational management.

2.2 Market Sizing and Analysis

For Propositum's market sizing in Brazil, we will use the most recent data from the Higher Education Census (INEP) and projections for the EdTech and Mental Health sector. The focus is on the B2B model, where the revenue potential is calculated based on the number of students enrolled in the institutions that will contract the licenses.

2.2.1 Market Size (TAM, SAM, SOM)

The analysis of the addressable market for Propositum in Brazil reveals a scenario of vast opportunity, driven by the country's robust higher education structure and the urgency in student support solutions. The **TAM (Total Addressable Market)** is understood by all students enrolled in undergraduate courses in Brazil, covering both the public and private networks. According to the most recent data from the Higher Education Census, published by the National Institute of Educational Studies and Research Anísio Teixeira (**INEP, 2024**), the country has approximately **9.4 million** students enrolled. Considering an estimated average annual ticket per license, this universe represents the maximum global demand ceiling for support tools and student well-being in the national territory.

The **SAM (Serviceable Available Market)** focuses on private Higher Education Institutions (HEIs), which hold about 78% of total enrollments in Brazil, totaling approximately 7.3 million students. This segment is the market available for Propositum's business model, since private institutions have greater budgetary

autonomy for contracting third-party software (SaaS) and face direct and immediate pressure to reduce dropout and default rates.

Finally, the **SOM (Serviceable Obtainable Market)** estimates the market share that the company plans to capture in the first three years of operation, initially focusing on large educational groups and medium-sized HEIs that already have "Student Success" programs. The initial capture goal is 2% of SAM, which represents the attendance of about 146 thousand students, allowing the validation of the scale and financial sustainability of the business in the short term.

2.2.2 Customer Segmentation and Profiling

Propositum's market segmentation focuses primarily on the **Private Higher Education sector in Brazil**. This segment is characterized by institutions that operate in a highly competitive environment, where maintaining the student base is as critical as attracting new entrants. The profile of the target customer comprises educational groups and medium and large colleges that already have psychopedagogical support departments, but that face difficulties in scaling these services. Such institutions seek technologies that offer operational efficiency, data security and, above all, a tangible improvement in student satisfaction and permanence indicators.

To represent the profile of the decision-maker in institutions, we defined the persona **Ricardo**, Director of Student Experience.

- **Profile:** Ricardo is 48 years old and is responsible for the strategic management of retention in a large educational group. Its performance is measured by the reduction in the dropout rate and the increase in the *NPS* (Net Promoter Score) of the institution.
- **Pains and Challenges:** Ricardo deals with lean budgets and overworked service teams. He notes that many students drop out of the course not because of financial problems, but because of a lack of identification with the career or existential demotivation. Their biggest frustration is not being able to identify these cases preventively, acting only when the student has already requested the suspension of enrollment.

- **Expectation:** It seeks a technological solution that acts at the "cutting edge", talking to the student in real time, generating data on the emotional climate of the campus and reducing the workload of course coordinators.

The end user is represented by **Sabrina**, a student who illustrates the challenges of Generation Z in the academic environment.

- **Profile:** Sabrina is 20 years old, in the 3rd semester of Engineering and is the first in her family to enter higher education. She is extremely connected, but feels constantly overwhelmed by the volume of information and social pressures.
- **Pains and Challenges:** Sabrina experiences the "existential emptiness" when she questions whether the effort of the course is really worth it for her future. She feels frequent disorientation and anxiety episodes that make her consider giving up, although she has good grades. She is afraid to seek face-to-face support from the college for fear of judgment or because she thinks her problem "is not serious enough".
- **Expectation:** She wants a safe, private, and accessible space where she can reflect on her choices. Sabrina values Propositum because the chatbot does not give her orders, but asks questions that help her rescue her own values and the meaning of her academic trajectory.

Based on the tests carried out and the records collected, Propositum's persona is the **young university student in the transition phase**, who feels the natural pressures of early adulthood and the uncertainties about his professional future. This student often resorts to common answers and paths to feel integrated, which ends up generating a distancing from their most authentic desires and vocations. Influenced by a strong insecurity regarding the job market, he tends to prioritize stability and material success as his main goals, often leaving aside areas that really motivate him for fear of the lack of financial guarantees. Propositum identifies in this profile not a flaw, but a **latent desire for contribution and meaning** that has not yet been provoked, offering the necessary support for these young people to transform their insecurity into a journey of conscious choices and protagonism.

Attribute	Client (IES)	User (Student)
Main Objective	Financial sustainability and academic reputation.	Self-knowledge and completion of the course with purpose.
Principal Dor	High dropout rate and human support costs.	Existential disorientation and chronic anxiety.
Perceived Value	ROI through retention and strategic data.	24/7 emotional support and privacy.
Interaction Channel	Management dashboard and impact reports.	Chat interface in a web application.

Table 3. Segmentation Profile Summary. Source: Author's own archive

2.3 Competitive Analysis and Differentials

Direct and Indirect Competitors

The competitive landscape for Propositum **has undergone a significant reconfiguration** with the popularization of general-purpose Generative Artificial Intelligences such as ChatGPT, Gemini, and Claude. These tools act as direct and indirect competitors, since many students already use them for venting or advice, depending on the elaboration of specific *prompts* to obtain reflective responses. Added to this panorama are the mental health platforms already consolidated in the B2B and B2C market, which use Cognitive-Behavioral Therapy (CBT) to control symptoms (such as Vitalk).

The detailed analysis demonstrates that while generative AIs are powerful, they operate as "generalists." They respond to what the user asks, but do not have a **structured driving methodology**. Propositum differs in that it is not only an engine of

answers, but a **methodological guide based on Logotherapy**, designed specifically for the journey of the university student.

It is important to emphasize that the face-to-face support services of institutions, such as the Psychopedagogical Support Centers (NAPs), are not considered competitors in this analysis, but rather **strategic allies**. Propositum acts in a complementary way to these services, functioning as a first layer of reception and existential triage that directs cases of greater complexity to the institution's professionals, thus optimizing the flow of human care.

Propositum's competitive advantage over general-purpose AIs and wellness apps rests on four key pillars:

- Unlike a generic AI, which can vary in tone and depth according to the user's prompt, Propositum ensures a dialogical conduct faithful to the pillars of Logotherapy. The tool uses Natural Language Processing to ensure that self-questioning follows curated psychotherapeutic techniques, such as Socratic dialogue, in an ethical and safe way.
- While generative AIs wait for the user's initiative, Propositum acts proactively. The system identifies states of discouragement or disorientation and uses specific conversational triggers to stimulate reflection, without the student having to master prompt engineering techniques to obtain value.
- General-purpose AIs are subject to hallucinations and inappropriate responses in sensitive contexts. Propositum has *security guardrails* designed to identify signs of risk, immediately integrating with the university's human support channels, functionality that does not exist in open tools.
- Unlike the isolated use of external AIs, Propositum generates aggregated indicators and reports for managers. This allows the university to understand the existential demands of its students collectively, transforming the tool into a strategic asset for data-driven decision-making.

Business Benchmark

Propositum's competitive analysis reveals a fragmented market between generalist and clinical solutions, whose pricing structures and functionalities differ significantly from the proposal presented here. On the one hand, there are **general-purpose**

generative Artificial Intelligences, which, although free or accessible via individual subscription, lack a guided methodology and do not offer data return to institutions. On the other hand, **mental health platforms** based on Cognitive-Behavioral Therapy (CBT) and meditation apps focus primarily on symptom relief and relaxation, operating with licensing models that often do not integrate with the specific academic journey. Propositum's strategic differential lies in its specialization in **Logotherapy** and the **B2B SaaS** model, which replaces the purely palliative approach with a meaning-making tool, offering universities not only a chatbot, but a complete system of *dashboards* and sentiment indicators. While competitors have strengths in scale and versatility, their weaknesses lie in the lack of focus on the root cause of student disorientation, a space where Propositum consolidates itself by transforming subjective interactions into strategic intelligence for educational management.

Competitor	**Pricing Model (Estimated)**	**Key features**	**Strengths**	**Weaknesses/ Gaps**
Generative AIs (ChatGPT, Gemini)	Free or Individual Subscription (B2C)	Open conversation, text generation and generic advice.	High availability and versatility of themes.	**Lack of methodology** : Does not follow logotherapy protocols; risk of "hallucinations " and inappropriate responses; does not generate data for the HEI.

Apps de Saúde Mental (Vitalk, Woebot)	B2C (Freemium) or B2B (Enterprise Licenses)	Mood check-in, CBT-based exercises.	User-friendly interface and clinical focus on symptom management (anxiety/stress).	**Palliative Focus**: Acts on the symptom and not on the root cause (sense); clinical view that can drive away the student who does not feel "sick".
Apps de Meditação (Headspace, Calm)	Annual Subscription (B2C or B2B Partnerships)	Guided audios, sounds for focus and relaxation techniques.	Strong brand and excellent user experience (UX).	**Passivity**: There is no interaction or dialogue; it does not resolve identity crises or doubts about one's professional future.
Propositum	**B2B SaaS** (Student Volume Licensing)	Chatbot with Logotherapy, Socratic Dialogue, **Dashboard of Indicators for HEIs**.	**Specialization**: Focused on the search for meaning; proactive; generates analytical intelligence for university management.	Need for initial technical integration with university systems.

Table 4. Matrix of Comparative Analysis between Solutions and Competitors.

Source: Author's own archive

Competitive Advantage and Differentiating Factor

Propositum's main differential lies in the specialization of the search for meaning as an engine of resilience and engagement. Unlike generalist solutions that focus only on relaxation or symptom control, Propositum strengthens the student's identity and their protagonism in life. For the institution, the differential is the delivery of a "scalable humanization": the platform serves as a technological bridge that prepares and motivates the student for their academic journey, optimizing the performance of face-to-face support services by allowing them to focus on interventions of greater complexity. In addition, the solution offers a strategic dashboard of *dashboards* and indicators that allow the university to deeply understand the environment and the feeling of the student body through aggregated data. This analytical intelligence transforms subjective perceptions into actionable insights, enabling management to carry out much more assertive preventive and collective interventions.

2.4 Technological Solution

In order for the solution to deliver on its value promise: to offer scalable and secure sense mentoring, the system has been designed under strict standards of functionality and performance.

2.4.1 Requirements and Specifications:

Functional and Non-Functional System Requirements

Functional requirements describe the actions that the system must be able to perform:

ID	Requirement	Description
RF01	**Conversational Interaction**	The system must conduct dialogues in natural language based on the protocols of Logotherapy (Socratic dialogue).

RF02	**Sentiment Analysis**	The system must process the user's text input to identify patterns of discouragement, apathy, or purpose-seeking.
RF03	**Critical Routing**	The system must identify risk triggers (e.g., ideation) and immediately offer the contact of the institution's NAP or emergency channels.
RF04	**Institutional Dashboard**	The system should provide an interface for managers with aggregated and anonymized data on the "existential climate" of the university.
RF05	**Authentication and Profile**	The system must allow login via institution credentials (SSO) to ensure that the user is an enrolled student.
RF06	**Context Memory**	The chatbot must be able to recall key points from previous conversations to continue the student's evolution.

Table 5. Functional Requirements (RF). Source: Author's own archive

Non-functional requirements define the criteria for software operation and quality:

ID	Requirement	Description
RNF01	**Privacy (LGPD)**	The system must ensure the total anonymization of sensitive data in management reports, complying with the General Data Protection Law.

RNF02	**Availability**	The solution should be available 24/7 with a minimum *uptime* of 99.9%.
RNF03	**Response Time**	The chatbot should process and respond to user messages in an average time of less than 2 seconds.
RNF04	**Scalability**	The cloud architecture (SaaS) must support the simultaneous access of thousands of students without performance degradation.
RNF05	**Usability**	The chat interface should be intuitive, mobile-first, and accessible, following WCAG guidelines.

Table 6. Non-Functional Requirements (RNF). Source: Author's own archive

User Specifications and Use Cases

In order for Propositum to fulfill its role with technology and the depth of human experience, it is essential to transpose the theory of Logotherapy to clear and objective interaction flows. This section details the **user specifications and use cases**, which serve as the logical mapping of how the solution will be operated in everyday academic life.

Use Case 01 - Reflection on Academic Purpose

- **Actor:** Student (User).
- **Context:** The student feels that the course no longer makes sense and thinks about giving up.
- **Main Flow:** The student initiates the chat; Propositum uses "distancing" techniques for the student to observe their situation from the outside; through Socratic questions, the bot helps the student to reconnect the course content with their personal values.

- **Result:** The student identifies a direction to continue and the system registers an increase in the engagement index (anonymized).

Use Case 02 - Risk Warning and Referral

- **Actor:** Student and System.
- **Context:** The student shows signs of acute psychic suffering that is beyond the scope of preventive Logotherapy.
- **Main Flow:** The NLP algorithm detects risky keywords; the bot interrupts the reflective flow and takes on a direct welcoming tone; the system displays the "Talk to NAP Now" buttons and triggers the "Call CVV".
- **Result:** The student is directed to specialized human support in an agile way.

Use Case 03 - Strategic Data Management

- **Actor:** Manager of the HEI (Client).
- **Context:** The Director of Permanence needs to understand why dropout increased in a given course.
- **Main Flow:** The manager accesses the Dashboard; filters by course and period; the system presents a cloud of predominant themes and feelings (e.g., "Lack of professional perspective" or "Overload of tasks").
- **Result:** The manager creates a specific lecture or intervention for that course based on real data.

2.4.2 Architecture and Technology

Propositum's architecture is designed in the client-server model, with a clear separation between user interface, application layer, and external artificial intelligence services. The front-end consists of a lightweight web application developed in HTML5, CSS3 and pure JavaScript, responsible for user interaction. The back-end uses Python with the Flask framework, acting as an intermediary between the client and the language model API, in addition to managing sessions, conversational flows, and business rules.

In the current MVP stage, the system is hosted in a cloud environment through the Render platform, which offers managed infrastructure, automatic HTTPS, and continuous integration with GitHub repositories. The generation of responses occurs

via Groq's API call, chosen because it provides free access to high-performance open-source models, such as LLaMA-3.3-70B-Versatile, suitable for long, coherent and reflective dialogues.

From a technological point of view, the LLaMA model was selected for its ability to sustain open and progressive questions, aligned with the Socratic approach to logotherapy, in addition to allowing future customizations because it is an open-source model. During the initial phase, development and testing took place in a controlled environment (Google Colab), with subsequent migration to an integrated application, connecting front-end and back-end in real time.

For a later implementation focused on a scenario with up to 100 concurrent active users, the architecture foresees essential evolutions in terms of security and scalability. In security, the adoption of basic user authentication, control of server sessions, secure storage of sensitive variables (such as API keys) and compliance with good data protection practices are planned. In scalability, the client-server architecture allows horizontal replication of the backend, the use of simple load balancing, and the future separation of services (e.g., session management and model calls) into independent modules, if the volume of accesses increases.

This architecture keeps the system simple enough for academic and initial validation purposes, while laying consistent technical foundations for controlled growth, operational stability, and small-scale institutional adoption.

2.4.3 Development and Implementation (MVP)

The development of Propositum adopted the agile Scrum methodology, organized in iterative and incremental cycles, with the objective of allowing continuous validation of the project's hypotheses and progressive adjustments to the solution. The structure of the work was divided into four modules, each consisting of five sprints, enabling the systematic monitoring of the technical, conceptual and strategic evolution of the MVP.

The first module focused on business and user research, involving the definition of the problem, market analysis, identification of stakeholders and survey of the main needs and hypotheses that guided the development of the solution. This module established the conceptual and strategic foundations of the project.

The second module was dedicated to design and user experience (UX), focusing on structuring conversational flows, defining the value proposition, designing the interface, and adapting the system's language to the target audience. In this phase, we sought to align the logotherapeutic approach with the usability and clarity of the interaction.

The third module corresponded to the technical development and testing of the MVP. It implemented the back-end, integration with the language model API, the web interface, and the main functional flows of the chatbot, in addition to carrying out tests of operation, stability, and user experience.

Finally, the fourth module focused on reviewing the business and user research, as well as conducting new tests and refining the technical implementation. This stage allowed you to consolidate the MVP, adjust initial hypotheses, correct identified limitations, and align the solution with the objectives defined at the beginning of the project.

This agile approach made it possible to deliver a functional MVP, validated in short cycles, while maintaining flexibility for adaptation and coherence between research, design, and development

2.4.4 Testing and Technical Evaluation

The tests carried out in Propositum were structured in two complementary axes: interface usability tests and tests of the technical behavior of the natural language processing model applied to vocational dialogue. Both were essential to validate the MVP not only from an experiential point of view, but also in terms of the technical robustness and functional stability of the system, especially in the university context.

The usability tests focused on verifying whether university students could understand the operation of the system, identify its main functionalities and conduct the interaction autonomously. These tests were run at different stages of product maturity, from initial prototypes to versions with an integrated interface and backend. The sessions made it possible to identify necessary adjustments in the organization of the interface, in the clarity of the instructions and in the rhythm of the conversational flow, ensuring that the system could be used without external mediation.

In parallel, technical tests of the conversational model were conducted, in which users interacted with Propositum through complete dialogues, with the aim of evaluating

criteria such as context retention, logical consistency, dynamic adaptation of questions, and stability throughout prolonged conversations. These tests also worked as an ongoing process of refining the prompt, dialog structure, and agent behavior, strengthening the predictability and reliability of the responses.

The tests were carried out both in a local environment and in a hosted environment, allowing a direct comparison of technical performance. Running outside the server, the system demonstrated a high degree of stability, maintaining the conversation history, avoiding undue repetitions and conducting the Socratic flow consistently. This result indicated that the logic of the model and the architecture of the dialogue are technically sound. In contrast, in the hosted environment, failures related to session persistence and state management between requests were observed, causing partial loss of context. Such limitations were identified as problems of the infrastructure layer, and not as failures of the language model or the design of the system.

In total, more than forty tests were conducted, including usability tests and full conversational tests. The results show that Propositum has technical robustness compatible with a functional MVP, being able to sustain stable, coherent and meaningful interactions in the university environment. The system demonstrated reliability in the processing of user inputs, consistency in the logical chaining of responses, and the ability to operate safely within the technical limitations expected for an early-stage project.

2.5 The Business Plan

Propositum is a digital solution aimed at higher education, created to meet the growing demand for institutional instruments that help university students deal with crises of meaning, vocation and academic engagement. The product offers a structured space for reflective dialogue, stimulating questioning and clarity of values throughout the academic trajectory.

Its market is composed of higher education institutions that face recurring challenges of dropout, demotivation and limitation of individualized follow-up. The differential of Propositum lies in the adoption of logotherapy as a conceptual foundation, based on the thesis that the main pain of the university student is existential, and not just informational or emotional, which distinguishes it from generic solutions of orientation or well-being.

Economic viability stems from the digital and scalable nature of the solution, with reduced marginal costs per user and commercialization through institutional agreements. Tests carried out with university students indicated engagement, active reflection and perception of value in the use of the system, validating its suitability for the educational market. Propositum is thus positioned as a consistent and sustainable product, occupying a specific space between education, vocational guidance and technology.

2.5.1 Market and Competitor Analysis

Propositum adopts a B2B2C (*Business to Business to Consumer*) market strategy. The paying customer (B2B) is **private Higher Education Institutions (HEIs),** which have an urgency to reduce dropout rates and improve the student experience. The final consumer (B2C) is the university student of Generation Z.

- **Market Segment:** Medium and large private universities and university centers that seek pedagogical innovation and comprehensive student support.
- **Decision Maker (B2B) Persona:** Academic Directors who need real metrics on student well-being to make strategic decisions.
- **User Persona (B2C):** Students between the ages of 18 and 25 who face identity crises, disorientation about the future, and a sense of existential emptiness that impacts their academic performance.

SWOT Analysis - Propositum

SWOT analysis is a strategic tool used to evaluate internal and external scenarios of a business or project. It identifies strengths and weaknesses within the organization, as well as opportunities and threats coming from the external environment. With this analysis, it is possible to develop more effective strategies, enhancing positive points and minimizing risks and vulnerabilities.

The following SWOT refers to the pivoted version of the project, now focused on universities and higher education, where issues such as retention, employability and academic purpose are central to students' development.

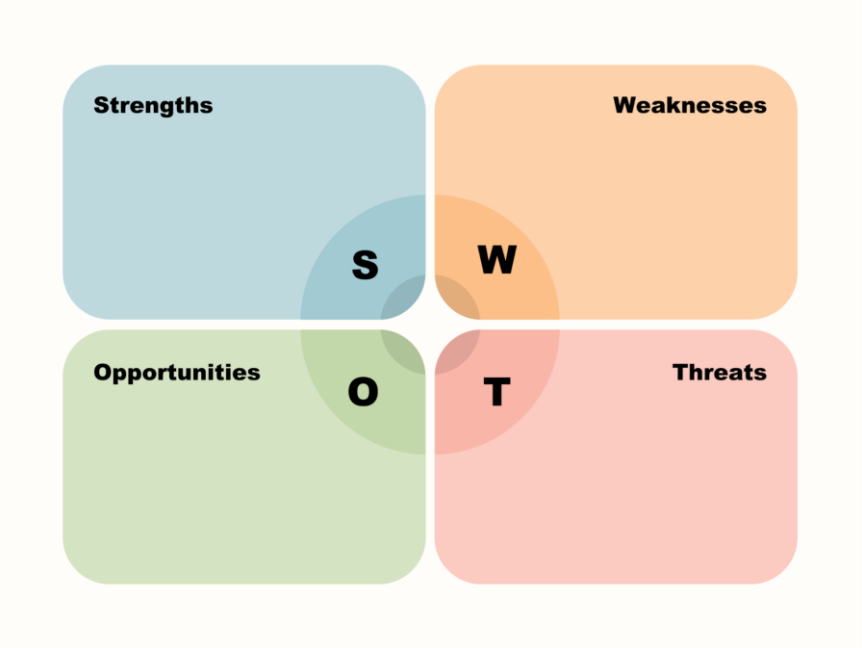

Figure 1. SWOT Analysis. Source: BNI (2023)

Strengths

Meaning-centered approach — Logotherapy offers a differentiated psychological foundation compared to generic career-advice tools, emphasizing purpose, values, and existential direction (MIT Technology Review, 2023).

Alignment with university needs — College students face crises of meaning and academic uncertainty; the tool targets retention and purpose-building that universities are actively trying to address (INEP/MEC, 2024).

Scalability and continuous improvement — The system can evolve with new datasets and user feedback, enabling iterative improvements across cohorts and campuses (McKinsey & Company, 2024).

Personalized guidance by AI — AI enables structured, adaptive questioning inspired by logotherapeutic concepts, increasing relevance for each student (MIT Technology Review, 2023).

Complementarity with existing student services — Designed as a continuous touchpoint that complements career centers and psychological counseling rather than substituting them (Harvard Business Review, 2023).

Weaknesses

Dependence on data quality and psychological design — The chatbot's effectiveness depends on the validity of prompts, assessment constructs, and decision pathways; weak instruments reduce credibility.

Need for strong academic validation — Universities usually request empirical evidence of pedagogical or psychological impact before large-scale adoption (Even3 Academic Symposium, 2025).

Technical integration complexity — Integrating with LMS, SIS and institutional authentication increases development time and costs (Startups.com.br, 2024).

Privacy and compliance demands — Treatment of personal and sensitive data requires strict LGPD alignment and institutional approvals (ANPD, 2023).

Cultural resistance in some departments — Certain academic areas may prefer human-led counseling approaches and exhibit skepticism toward algorithmic mediation (MEC, 2023).

Opportunities

Growing institutional interest in retention and employability — Universities are looking for scalable interventions to reduce dropout and increase career readiness (INEP/MEC, 2024).

Partnership and funding channels — Extension programs, innovation grants and collaboration with career centers can accelerate pilots and adoption (SEBRAE, 2024).

Regulatory clarity on AI — Brazil's movement toward AI regulation opens space for compliant, well-governed solutions to gain institutional trust (Senado Federal, 2024).

Student openness to digital tools — College cohorts demonstrate increasing engagement with AI assistants for study and decision-making, favoring adoption (McKinsey & Company, 2024).

Hybrid models combining AI and human specialists — Automated triage plus human referral pathways increase acceptance and safety in sensitive cases (OECD, 2024).

Threats

Competition from established edtechs and platforms — Larger companies may develop analogous solutions and capture institutional contracts quickly (Forbes, 2024).

Larger platforms can create similar solutions and dominate the market quickly (Source Example, 2024).

Regulatory and compliance costs — AI governance and data protection requirements (ANPD, 2023; Senado Federal, 2024) can increase operational expenses and slow rollouts.

Ethical scrutiny and distrust — Concerns about bias, algorithmic opacity, and clinical adequacy may limit institutional buy-in (The Guardian, 2024).

Dependence on external AI/cloud infrastructure — Vendor lock-in and technological sovereignty issues can create strategic risks (Valor Econômico, 2024).

Budgetary constraints in higher education — Economic pressures and funding cuts could deprioritize investments in new digital services (Folha de S.Paulo, 2023).

Analysis of Competition and Product Differentials

- **Generative AIs (ChatGPT, Gemini, Claude):** They act as indirect competitors with high accessibility. However, its nature is reactive and generalist. Because they don't follow a structured psychological methodology, they can offer superficial or inconsistent answers. In addition, they are isolated tools that do not offer any intelligence or data return to the university.
- **Mental Health and Wellness Platforms (Vitalk, Woebot, Calm):** Focus primarily on symptom relief (anxiety and stress) or relaxation techniques. Although effective in their proposals, they have a palliative approach. The focus is on "feeling better" in the short term, neglecting the ontological question of "why" the student is there, which is the determining factor for academic retention.
- **In-Person Support Services (NAPs):** As discussed, they are not competitors but the gold standard of care. The challenge here is scale: the human

structure is limited and often burdened with demands that could be solved through assisted self-reflection.

Competitive Differentials

Propositum consolidates itself in the market by offering differentials that attack the root of the problem (the existential void) and deliver direct value to the management of the HEI:

- **Specialization in Logotherapy**: Unlike any other solution, Propositum uses Socratic dialogue to help the student find meaning in their trajectory. This strengthens resilience and protagonism, transforming the crisis into an engine of engagement with the course.
- **Institutional Intelligence and Dashboards**: This is the biggest differential for the B2B customer. The university receives a dashboard of indicators that maps, in real time and in an ethical/aggregated way, the sentiment of the student body. This allows the manager to stop being reactive and start acting preventively on the foci of disorientation and evasion.
- **Proactivity and Ethical Safety:** The system is designed with *guardrails* that identify situations of acute psychological risk. In these cases, the AI interrupts the reflection and immediately directs the student to the institution's human support, serving as an intelligent and safe triage.
- **Synergy with Human Support:** Propositum does not replace the psychologist or the coordinator; it **optimizes the performance** of these professionals. By resolving crises of meaning and initial disorientation via the platform, the tool allows human service to focus on cases that really require the depth of face-to-face interaction.

- **Strategic Highlight:** While competitors offer a "cure" for the symptom, Propositum offers an "anchor" of purpose. For the university, this translates into more engaged students, lower dropout rates, and an institutional reputation based on integral human formation.

2.5.2 Business Model (Business Model Canvas - BMC)

Propositum is a B2B SaaS (Software as a Service) product focused on solving the crisis of purpose and mental health in universities, directly impacting retention rates.

Block	Propositum Detail
Customer Segments	**Paying Customers (B2B)**: Private and public Higher Education Institutions (HEIs) in Brazil (Managers and Rectors). **End Users**: University students (Gen Z) struggling with anxiety, apathy, disinterest, and a search for meaning.
Value Propositions	**For HEIs**: Strategic reduction in dropout rates, optimization of mental health staff (via smart triage), and innovative student support. **For Students**: Immediate discovery of life's purpose (Logotherapy), reduction of anxiety, and improved personal agency in an accessible format (Chatbot).
Channels	**Sales**: Consultative Direct Sales to Rectors and Managers (B2B Cycle). **Distribution**: Integration via API/Web for the HEI. **Access**: Chatbot via web platform and/or mobile app ("cozy" UX).
Customer Relationships	**With HEIs**: Account Management, Retention Support Consulting, Aggregated Engagement Reports. **With Students**: Personalized, humanized, and "cozy" interaction (adapting to the user's pace and comfort).
Revenue Streams	**Recurring SaaS Model**: Monthly/Annual licensing based on the number of active students at the HEI (tiered pricing).
Key Resources	**Intellectual**: Proprietary NLP/AI algorithm trained in Logotherapy. **Human**: AI Developers, Psychologists/Logotherapists (Content Curation), and B2B Sales Team.
Key Activities	Continuous Software Development and Maintenance (Chatbot), Therapeutic Content Curation, Monitoring of the Risk Triage System.
Key Partners	**Content/Methodology**: Logotherapy Specialists/Institutions (for methodological validation). **Technology**: Cloud Providers (servers and AI infrastructure).
Cost Structure	High R&D Costs (MVP and NLP Development), Specialized Staff Salaries (AI/Psychology), Variable Operational Costs (AI Server and Cloud), B2B Marketing and Sales.

Figure 2. Business Model Canvas (BMC). Source: Author's own archive

2.5.3 Marketing and Sales Strategy

Propositum's launch strategy is based on a consultative and integrated sales approach, designed to transform the tool into an essential component of the student support infrastructure. The initial launch will focus on carrying out pilot projects in educational institutions that seek to position themselves as references in innovation and student well-being, going beyond the simple prevention of dropout. The initial focus lies in courses and departments where academic pressure and vocational questioning are intense, allowing the solution to validate its effectiveness in strengthening emotional health and engagement. In these pilots, Propositum's analytical intelligence acts in a symbiotic way with the Psychopedagogical Support Centers (NAPs), working as a first layer of reception that helps the student to rediscover his purpose, optimizing the flow for specialized human care when necessary.

Customer acquisition will be driven through *Inside Sales efforts* and presence in educational leadership forums, where the central selling point is not limited to financial return, but focuses on **institutional excellence and academic reputation**. By adopting Propositum, the university demonstrates a real commitment to the integral education of the student, offering a competitive market differential that attracts families and students in search of an environment that values the human being. To consolidate this authority, the company will invest in a *Thought Leadership* strategy, publishing articles and studies on how the search for meaning, based on Logotherapy, directly impacts quality of life and long-term professional success, positioning the tool as an essential asset for human development in higher education.

When it comes to retention and growth of the base, Propositum operates by delivering continuous value to both audiences. For the institution, loyalty is guaranteed through a **strategic panel of dashboards and sentiment indicators**, which allows managers to deeply understand the emotional environment of the campus and the needs of the student body through aggregated and ethical data. This intelligence allows for much more precise and humanized pedagogical interventions. For the student, engagement is maintained through a journey of proactive self-knowledge; The chatbot uses milestones in the academic calendar to invite the student to reflect on their values and personal progress. This safe and constant presence ensures that Propositum is perceived as a companion on the journey, transforming technology into a bridge for the maturation and realization of the student's life project within the institution.

2.5.4 Financial Projection and Feasibility

Propositum's revenue model is based on the institutional contracting of the solution by higher education institutions, with an estimated pricing between R$ 15.00 and R$ 25.00 per student per month, adjusted according to the number of active users and the size of the institution. In a plausible initial scenario, considering a university with 300 to 500 student users, the projected monthly revenue varies between R$ 4,500.00 and R$ 12,500.00, which corresponds to an approximate annual revenue between R$ 54,000.00 and R$ 150,000.00 per institution.

Recurring expenses focus on cloud infrastructure costs, natural language processing services, system monitoring, and ongoing technical maintenance. For an

environment with up to 300 simultaneous active users, a monthly cost of between R$ 1,200.00 and R$ 2,000.00 is estimated, including hosting, API consumption, data storage, and basic operating expenses. Even with safety margins, these costs grow significantly slower than revenue, favoring scalability.

The financial break-even point is reached with a single medium-sized institutional contract, as the monthly revenue fully covers the operating costs. From that point on, the addition of new institutions generates direct operating margin growth. The return on investment is projected to be positive in the first year of operation, especially after the stabilization of the technological base, since the reuse of the system drastically reduces additional costs per new customer.

The initial investment required to make Propositum viable is estimated between R$ 20,000.00 and R$ 30,000.00, intended for the complete development of the MVP, tests in a university environment, architectural adjustments aimed at stability, security and basic scalability, in addition to deployment in a cloud environment with public availability. This level of investment is compatible with applied innovation projects in higher education and presents a controlled risk profile in view of the potential economic and institutional return of the solution.

2.6 Validation and Results

The validation of Propositum in the market was not limited to a theoretical or conceptual analysis, but was conducted through practical tests with users inserted in the university environment, who directly represent the target audience of the solution. Throughout the development of the project, more than twenty tests were carried out with university students, involving both usability evaluations of the interface and complete interactions with the conversational system.

These tests worked, in practice, as small-scale market experiments, allowing us to observe the acceptance of the product, the level of user engagement, and the perception of value generated by the proposal. During the sessions, the students were not only able to use the system without mediation, but they remained engaged in the conversation and were led to reflect on academic choices, personal values, and future goals, which constitutes a central metric of success for Propositum's proposal.

The results indicated that the product responds to a real demand from the university public, especially with regard to the need for structured spaces for vocational reflection. Even in the test environment, users demonstrated a willingness to interact with the system, validate its usefulness, and recognize practical relevance in the experience. These findings confirm that Propositum goes beyond the field of academic simulation and presents concrete adherence to the higher education market, configuring an initial validation of its viability as a product.

2.6.1 Validation Methodology

The validation of Propositum was conducted through direct tests with university users, combining informal interviews, assisted use sessions, and observation of the participants' behavior during the interaction with the MVP. The method adopted aimed to test the central business hypothesis, according to which university students demonstrated acceptance and engagement in front of a digital tool of guidance based on existential reflection.

Participants were invited to use the system in a controlled environment, freely exploring its functionalities and conducting full conversations with the agent. During and after the sessions, qualitative feedback was collected on the clarity of the proposal, perceived usefulness, and willingness to continue using the solution. MVP acceptance was primarily measured by sustained engagement in the conversation, users' ability to understand the purpose of the system, and explicit expression of interest or recognition of value in the experience.

This method allowed to validate, in a practical way, both the hypothesis of adherence to the target audience and the initial feasibility of the product, characterizing the validation as a real market test on a reduced scale, appropriate to the stage of development of the project.

2.6.2 Market Validation Results

The results of Propositum's market validation were obtained from direct observation of MVP usage by college students and the collection of qualitative feedback during and after interactions. The data indicated a high level of engagement, evidenced by users' permanence in the conversation, the spontaneous completion of complete

conversational flows, and the willingness to answer progressive reflective questions. In several tests, users reported that the experience led them to question academic choices, personal priorities, and future goals, which reinforces the appropriateness of the product's value proposition.

The acceptance of the MVP was confirmed by the ease of use of the interface, the clear understanding of the purpose of the system and the perception of practical usefulness in the university context. Even in a test environment, users showed interest in continuing to use the tool, which works as an initial indicator of potential conversion, even if not formalized by quantitative metrics of commercial adherence.

Based on these results, a relevant strategic change was made in the positioning of the product. The project originally conceived for the school environment was reoriented to the university context, after the finding that higher education students had greater reflective maturity, greater adherence to the proposed dialogue and a more evident pain related to vocation, meaning and professional trajectory. This adjustment did not change the conceptual core of Propositum, but it refined its target market and strengthened its viability as a solution applied to higher education.

2.6.3 Key Performance Indicators (KPIs)

At the current stage of Propositum, the performance indicators have not yet been measured in a real commercial environment, since the project is in the validation and MVP phase. Still, it is possible to define and design relevant KPIs based on the proposed business model and qualitative data observed during tests with university users.

Indicators such as customer acquisition cost and customer lifetime value tend to be favorable in the institutional context, since the acquisition occurs through contracts with higher education institutions, reducing individual marketing efforts. The value of the customer life cycle is projected to be high, considering annual or multi-year contracts and the possibility of expanding the number of users within the same institution. The cancellation rate is estimated to be low, as long as the system is integrated with ongoing institutional programs and maintains relevance throughout the academic pathway.

In addition to traditional indicators, Propositum requires specific KPIs, aligned with its value proposition. Metrics such as conversational engagement rate, measured by the

average interaction time and the completion of reflective flows, become central. Another relevant indicator is the level of recurrence of use per student throughout the semester, as well as the voluntary return rate after the first interaction. In the future, institutional metrics may be incorporated, such as correlation between the use of the system and indicators of academic permanence, participation in training activities, or reduction of dropout.

These KPIs allow you to evaluate not only economic performance, but also educational impact and adherence to Propositum's conceptual proposal, offering a solid basis for product refinement and market expansion decisions at later stages.

2.6.4 Risks and Mitigation Plan

Propositum is exposed to risks typical of early-stage digital projects, distributed between financial, technological, legal and competitive dimensions. The early identification of these risks allows for the structuring of mitigation actions from the beginning of the operation.

From a financial perspective, the main risk lies in the reliance on institutional contracts for revenue generation, which can result in long sales cycles and irregular cash inflows. To mitigate this risk, the model provides for a lean cost structure, prioritizing incremental development and the use of scalable infrastructure. In addition, the commercial strategy includes the possibility of paid pilot projects or smaller contracts, reducing the barrier to entry for institutions and accelerating revenue validation.

In the technological sphere, the central risk is related to the reliability of the system, scalability of the infrastructure, and quality of the conversational experience of the chatbot. Technical failures or inadequate responses can compromise the credibility of the product with institutions. Mitigation occurs through continuous testing with real users, performance monitoring, MVP versioning, and adoption of modular architectures, which allow for quick adjustments without compromising the core of the system.

Regarding legal and ethical risks, the need for compliance with data protection legislation, especially the LGPD, is highlighted, considering that the system deals with sensitive information related to the academic trajectory and personal reflections of users. To mitigate this risk, the project adopts principles of data minimization,

anonymization whenever possible, and transparency in the use of information, in addition to providing for clear consent terms and alignment with institutional guidelines. In the competitive environment, the main risk lies in the entry of generic educational AI solutions or corporate platforms with greater financial and marketing power. Mitigation is based on the conceptual positioning of Propositum as a specialized tool in vocational and reflective support, with a clear theoretical basis and institutional focus, which creates a differentiation that is difficult to replicate by generalist solutions. Additionally, the proximity to the end user and institutions allows for quick adjustments and greater adherence to the local educational context.

Overall, Propositum's mitigation strategy prioritizes low fixed cost, continuous validation in a real-world environment, and clear conceptual differentiation, reducing exposure to the main risks associated with its initial phase and increasing the project's viability in the medium term.

3 Conclusion

The development of Propositum has made it possible to address one of the most pressing challenges of contemporary higher education: the existential emptiness and vocational disorientation of young university students. Throughout this work, it has become evident that the crisis faced by this generation is not merely economic or pedagogical, but fundamentally meaningful. Through the integration between artificial intelligence and the pillars of Viktor Frankl's Logotherapy, the project demonstrated that it is possible to use technology not as a tool of alienation, but as a scalable means of promoting deep introspection and student protagonism.

Validating the solution was a critical inflection point. Initially designed for young people, the execution of more than 30 practical tests revealed that the university public suffers from acute existential pains, categorized on two main fronts: **existential superficiality**, manifested in the use of jargon and generic answers about life, and the survival instinct, characterized by a materialism that prioritizes financial security to the detriment of real vocation. These tests not only validated the problem, but also made it possible to adapt Propositum to a more mature and immediate demand.

From a marketing and technological point of view, Propositum has established itself as a strategic **B2B2C** solution for Higher Education Institutions (HEIs). This model allows

the institution to act as a facilitator and investor in the platform, while the student receives personalized and humanized support. Unlike generalist generative AIs, which lack a guided methodology, Propositum offers a competitive advantage based on **structured Socratic dialogues** and **the generation of aggregated data for institutional management**. The SaaS business structure proved to be viable by aligning the reduction of academic dropout (revenue preservation) with the strengthening of students' mental health and well-being.

Limitations and Future Work

Despite the positive results in the MVP and initial validation, the project recognizes limitations regarding the time it takes to follow up with users and the need for deeper technical integrations with academic management systems (LMS). As future perspectives, it is suggested:

- **Test Base Expansion:** Conduct longitudinal testing to measure the direct impact on retention rate over a full academic semester.
- **Algorithm Refinement:** Enhance security *guardrails* and AI's dialogic ability to handle increasingly complex nuances of crises of meaning.
- **Predictive Data Analysis:** Develop dashboards of indicators that allow HEIs to identify early groups of students at risk of dropping out due to existential demotivation.

In short, Propositum fulfills its mission of offering an "inner axis" for the student. It is concluded that the success of education in the twenty-first century will depend on the ability of institutions to unite technical excellence with deep human support, transforming the academic journey into an experience of discovery of purpose and authentic happiness.

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