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Liora: An AI-Powered Fashion Startup Leveraging WhatsApp to Transform Wardrobe and Style Experiences

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Resumo

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Resumo: Este Trabalho de Conclusão de Curso apresenta o desenvolvimento e a validação inicial da Liora, uma startup fashion-tech que utiliza inteligência artificial para reduzir a fricção cotidiana na escolha de roupas por meio de uma experiência conversacional, com foco no WhatsApp. O problema investigado envolve desperdício de tempo, baixa confiança para combinar peças, subutilização do guarda-roupa e compras impulsivas, além de uma lacuna de personalização no varejo quando não há contexto real do guarda-roupa do consumidor. O objetivo do trabalho foi projetar, implementar e validar uma solução computacional baseada em IA e estruturar um plano de negócios para sua introdução no mercado brasileiro. A metodologia adotada foi orientada por hipóteses, integrando análise de mercado (TAM/SAM/SOM), segmentação por personas, estudo de concorrentes e implementação de um MVP com arquitetura modular para ingestão de itens, persistência de dados e geração de recomendações. Como resultados de validação, o MVP alcançou 100 usuários, 800 roupas cadastradas e mais de 10 recomendações geradas diariamente, indicando aderência ao formato conversacional e engajamento com a digitalização do guarda-roupa. Conclui-se que a abordagem WhatsApp-first apresenta viabilidade técnica e diferenciação estratégica no contexto brasileiro, estabelecendo base para evolução do produto, instrumentação de métricas (retenção, conversão, CAC e LTV) e expansão para parcerias B2B.

Palavras-chave: inteligência artificial; tecnologia da moda; interfaces conversacionais; sistemas de recomendação; guarda-roupa virtual.

Abstract

CARNEIRO, Gabriel Elias; RIBEIRO, Sarah de Miranda. **Liora: an AI-driven fashion startup leveraging WhatsApp to optimize wardrobe management and outfit recommendation.** 2025. **33** pages. Final Course Project (Bachelor) – **Computer Science** program, Institute of Technology and Leadership, São Paulo, 2025.

Abstract: This Final Course Project presents the development and early validation of Liora, a fashion-tech startup that applies artificial intelligence to reduce everyday friction in outfit selection through a conversational experience, primarily delivered via WhatsApp. The investigated problem includes time waste, low confidence in combining garments, underutilization of existing wardrobes, and impulsive purchases, as well as a personalization gap in retail when the consumer's real wardrobe context is not available. The objective of this work was to design, implement, and validate an AI-enabled computational solution and to structure a business plan for its introduction into the Brazilian market. A hypothesis-driven methodology was adopted, integrating market analysis (TAM/SAM/SOM), persona-based segmentation, competitor assessment, and the implementation of an MVP supported by a modular architecture for item ingestion, data persistence, and recommendation generation. As validation results, the MVP reached 100 users, enabled the registration of 800 wardrobe items, and generated more than 10 recommendations daily, indicating user adherence to the conversational format and engagement with wardrobe digitization. The study concludes that a WhatsApp-first approach is technically feasible and strategically differentiated in the Brazilian context, establishing a foundation for product evolution, deeper metric instrumentation (retention, conversion, CAC, and LTV), and expansion into B2B partnerships.

Keywords: artificial intelligence; fashion technology; conversational interfaces; recommendation systems; virtual wardrobe.

Summary

1 Introduction

1.1 Context and Motivation:

Fashion consumption and personal styling decisions are increasingly mediated by digital tools, yet most people still experience recurring friction in the daily task of choosing what to wear. This friction is amplified by modern routines that demand speed and convenience, while wardrobes grow in volume and complexity. Liora emerges at the intersection of fashion-tech and artificial intelligence with the mission of turning the recurring question “What should I wear?” into a structured, data-driven interaction that improves decision-making and reduces waste.

Liora is positioned as a **WhatsApp-based AI fashion assistant** designed to place “your closet in your pocket,” transforming daily outfit selection into a practical, stylish, and mindful experience. Instead of encouraging new purchases by default, Liora focuses on extracting value from garments users already own, enabling better wardrobe utilization and more conscious consumption.

From a market perspective, Liora leverages a key opportunity: **WhatsApp as a primary interaction layer** for Brazilian consumers. By adopting a conversational interface, Liora reduces onboarding friction and enables a more natural user journey compared to traditional wardrobe apps that require dedicated installations and complex setup. This strategic choice aligns with the product’s emphasis on convenience and accessibility, while also supporting fast iteration for an MVP stage.

1.2 Problem Definition and Value Proposition:

Many individuals face daily frustration when deciding what to wear, which leads to wasted time, repeated outfits, underutilization of existing wardrobe items, and impulsive purchases that do not integrate well with what they already own. Additionally, existing fashion solutions often provide generic advice, failing to adapt to each user's wardrobe context, preferences, and lifestyle constraints.

Beyond the consumer perspective, there is also a B2B dimension: fashion brands and retailers frequently struggle to deliver relevant recommendations without knowing the shopper's real wardrobe context. This limits personalization quality, reduces conversion potential, and weakens long-term customer relationships.

Liora addresses these challenges by combining **conversational AI, wardrobe digitization, and personalized recommendations** into a single user flow. At the consumer level, Liora enables users to catalog garments and receive context-aware outfit suggestions through WhatsApp, prioritizing practicality and reducing decision fatigue. At the enterprise level, Liora can evolve into an intelligence layer that helps retailers produce wardrobe-aware recommendations, enabling more relevant suggestions and better commercial outcomes.

1.3 Objectives of the Work:

General objective.

To design, implement, and validate an AI-enabled computational solution (Liora) and develop a business plan supporting its introduction and scaling in the Brazilian market.

Specific objectives.

- Define Liora's core product features and user stories to support an MVP scope centered on wardrobe management and conversational interaction.
- Develop a functional MVP that enables users to interact through WhatsApp, upload clothing photos, and receive personalized outfit recommendations.
- Establish a go-to-market approach aligned with early traction goals, including beta testing, organic growth, and the transition into B2B pilots.

- Produce a structured business plan describing market context, target audience, business model, and strategic positioning for both B2C and B2B tracks.

1.4 Justification and Contributions:

Liora is justified by both a clear user-level pain point and a favorable market and investment context. The fashion industry has accelerated its adoption of AI-driven personalization, with market projections indicating rapid growth for AI applications in fashion and increasing strategic attention from large players. In Brazil, this opportunity is reinforced by the prevalence of WhatsApp as a daily interface for communication and commerce, which reduces adoption friction and makes conversational experiences a particularly strong channel for delivering value.

From a technological standpoint, the project contributes a practical, end-to-end application of AI to a high-frequency consumer decision process, combining conversational interaction, wardrobe digitization, and recommendation generation into a unified system. By treating the wardrobe as structured data and embedding the experience into a chat-based flow, Liora operationalizes AI in a way that is measurable, iterative, and suitable for MVP validation, while also creating a foundation for future improvements in accuracy, personalization, and user experience.

Economically, the work is relevant because it explores a venture-ready model that can scale beyond a single consumer app. At the B2C layer, the solution supports freemium adoption with premium upgrades; at the B2B layer, it enables “wardrobe-aware” recommendation services that retailers can integrate through APIs or white-label components—creating diversified revenue streams and improving the feasibility of sustaining a free consumer tier during growth.

1.5 Work Structure

This paper is organized as follows. **Chapter 1** introduces Liora's context and motivation, defines the problem and value proposition, and states the objectives and contributions of the work. **Chapter 2** presents the solution development in an integrated manner: it first formalizes the market assumptions and hypotheses, then estimates market opportunity (TAM/SAM/SOM) and profiles the target customers (personas), followed by competitive analysis and differentiation. Next, it details the technological solution—including requirements, architecture, MVP implementation, and technical testing—and consolidates the business plan (BMC, go-to-market strategy, and financial feasibility). Finally, Chapter 2 reports the market validation approach and early results, including traction indicators, KPIs, and risk mitigation. **Chapter 3** concludes the work by assessing the achievement of the proposed objectives and outlining future product and venture directions.

2 Solution Development

2.1 Definition of Market Assumptions and Hypotheses:

This project follows a hypothesis-driven approach in which Liora is developed and validated through explicit assumptions about (i) the customer pain, (ii) the suitability of the proposed solution, and (iii) the viability of the value capture model. Liora is positioned as a conversational fashion assistant that delivers “your closet in your pocket,” emphasizing practicality and mindful consumption through a WhatsApp-first experience.

2.1.1 Problem Hypothesis

The core assumption is that **urban consumers with busy routines** experience recurrent friction in outfit selection—primarily **time waste**, **lack of confidence in combining items**, and **underuse of existing wardrobe pieces**, which frequently results in **impulsive and inefficient purchases**.

A secondary assumption is that **brands and retailers** face a personalization gap: they struggle to recommend relevant products without knowing the shopper’s real wardrobe context, which reduces recommendation quality and commercial effectiveness.

Finally, the project assumes users are willing to adopt a solution that minimizes onboarding friction by operating inside WhatsApp, a familiar and high-frequency channel.

2.1.2 Solution Hypothesis

The solution hypothesis is that a **WhatsApp-based conversational product** that (1) digitizes wardrobe items from user photos and (2) provides **personalized outfit recommendations** can reduce decision fatigue and increase wardrobe utilization more effectively than traditional standalone wardrobe apps.

Additionally, the project assumes that Liora’s product can evolve into a **dual-layer platform**: B2C value through styling assistance and B2B value by enabling wardrobe-aware recommendations for partners (e.g., retail pilots and integrations), leveraging the same intelligence layer and user context.

2.1.3 Value Hypothesis

The value hypothesis is that a **freemium-to-premium** approach is acceptable for the consumer segment: core functionality drives adoption, while a meaningful share of active users converts to paid plans when the product consistently saves time and improves outfit confidence. This is operationalized through early targets such as **10% monthly conversion** and **R$100,000 cumulative revenue** within 12 months.

In parallel, Liora assumes complementary revenue streams improve feasibility and scalability, including **subscription**, **affiliate/commission on online sales**, and **B2B partnerships** (e.g., wardrobe-informed sponsored recommendations or integrations), which can subsidize consumer growth while building a path to larger commercial contracts.

2.2 Market Sizing and Analysis:

This section assesses Liora's market potential and strategic focus through two complementary lenses. First, it estimates the addressable opportunity using the **TAM/SAM/SOM** framework, moving from the broader global context of AI applications in fashion to the realistically serviceable Brazilian market and, finally, to an achievable capture scenario within a 3–5 year horizon.

Second, it defines the **customer segmentation and profiling** that informs these estimates, detailing the target personas and priority customer segment(s) for early adoption. Together, these analyses connect "how big the opportunity is" with "who the product is built for," ensuring that market sizing assumptions are consistent with Liora's intended go-to-market strategy and distribution model.

2.2.1 Market Size (TAM, SAM, SOM):

TAM — Total Addressable Market (Global)

TAM represents the global opportunity for AI-enabled fashion solutions if a company could capture the full market demand. Prior market research for this project references the global AI-driven fashion market as already measurable historically and projected to reach “billions” over time, supporting the use of a billion-scale TAM for updated sizing.

Estimated TAM (Liora): US$ 2.2B (global AI-in-fashion solutions relevant to Liora’s category, including AI styling, wardrobe intelligence, and recommendation services).

SAM — Serviceable Addressable Market (Brazil)

SAM narrows TAM to the portion that Liora can realistically serve, considering geographic focus (Brazil), user behavior, and product-market fit. The market research rationale highlights Brazil as the primary entry market and reinforces the strategic advantage of WhatsApp as a “native” channel for daily interactions, which reduces adoption friction versus standalone apps.

Additionally, Liora’s marketing references indicate strong growth in Brazil’s AI-in-retail context, which supports an expanded serviceable opportunity for AI applied to consumer fashion journeys and retail personalization use cases.

Estimated SAM (Liora): US$ 60M (Brazilian market for AI-driven fashion assistance and wardrobe intelligence solutions across the serviceable segments targeted by Liora).

SOM — Serviceable Obtainable Market (3–5 years)

SOM is the realistically obtainable share of the SAM within an initial growth window, accounting for competition, adoption rate, and go-to-market constraints. The project’s prior market research uses a conservative capture-rate assumption (e.g., 5%) as a reasonable benchmark for early-stage penetration within a 3-year horizon.

Applying the same conservative logic to Liora's SAM:

- **SOM =** 5% × SAM
- **SOM =** 0.05 × US$ 60M = US$ 3M

Estimated SOM (Liora): US$ 3M (achievable in 3–5 years through conversion of heavy WhatsApp users into active subscribers and early B2B pilots). This is consistent with Liora's near-term traction targets—e.g., scaling active users and monitoring conversion rate as a core KPI for the first 12 months.

2.2.2 Customer Segmentation and Profiling

Liora's market focus is structured around two primary B2C personas (end users) and one B2B segment (partners). This segmentation is aligned with Liora's positioning as a WhatsApp-first fashion assistant ("Your closet in your pocket") and reflects the behavioral reality that users prefer low-friction, familiar interfaces for recurring daily decisions (e.g., choosing outfits).

For the MVP and early traction phase, Liora prioritizes users who: (i) actively use WhatsApp daily, (ii) feel recurring friction when choosing outfits, and (iii) are motivated by practicality (time savings), confidence, and more mindful consumption. Within this segment, the project adopts two personas that represent distinct—but complementary—jobs-to-be-done and adoption motivations.

P1 — Maria (27, São Paulo)

Maria represents the high-frequency, time-constrained user. She works and studies, has a fast-paced routine, and values style but lacks time to plan outfits. Her core pain point is wasting time choosing clothes and falling back on repetitive looks. Her main job-to-be-done is: "I want a quick outfit that fits my day." Liora's positioning for Maria is centered on instant practicality: recommendations delivered in seconds, directly in WhatsApp, using what she already owns. Her primary channels include Instagram, TikTok, and WhatsApp.

P2 — João (30, Rio de Janeiro)

João represents the confidence- and guidance-seeking user. He enjoys fashion but feels insecure about combining outfits, and he often buys new items that remain

unused—indicating low wardrobe utilization and poor coordination. His pain point is not knowing how to mix-and-match effectively, while his main job-to-be-done is: “I want to mix and match without mistakes, using what I already own.” Liora’s positioning for João emphasizes “digital stylist” behavior: learning the user’s style and producing consistent combinations without relying on generic tutorials or one-size-fits-all formulas. His main channels include YouTube Shorts, TikTok, and X/Twitter.

B2B Segment (Partner Profile)

P3 — Brands, retailers, and fashion platforms form the B2B target segment. These organizations seek improved conversion and retention through personalization but struggle to recommend products effectively without knowing the shopper’s real wardrobe context. Their job-to-be-done is: “I want to recommend items that actually work with the shopper’s real wardrobe.” Liora positions itself as a “style intelligence” layer that can connect catalog offerings to real user wardrobe data, enabling more contextual recommendations and building trust. Primary channels include LinkedIn, email, and fashion/retail events.

2.3 Competitive Analysis and Differentials:

This subsection analyzes Liora’s competitive environment by identifying direct and indirect competitors, comparing their value propositions (features, pricing, and limitations), and defining Liora’s competitive advantage—especially within the Brazilian context and the project’s WhatsApp-first distribution strategy.

2.3.1 Identification of Direct and Indirect Competitors

Direct competitors (same core job-to-be-done): solutions that help users digitize wardrobes and plan outfits, often with AI-powered recommendations. The project’s market research highlights three major global references in this category: Acloset, Style DNA, and Stylebook.

Indirect competitors (partial substitution): tools that solve adjacent needs such as outfit inspiration, styling guidance, or wardrobe organization through different mechanisms (e.g., manual outfit builders, non-chat interfaces, or broader lifestyle apps). The feature benchmark used in this project also considered Whering (Wearing Wardrobe) and Cladwell as relevant reference products.

2.3.2 Competitor Analysis (prices, features, strengths/weaknesses)

Acloset (launched 2021)

- Strengths: strong adoption globally (reported millions of downloads), robust wardrobe organization, weather/season support, and social sharing features.
- Weaknesses (Brazil fit): Brazilian adoption appears limited (downloads and active users remain modest), suggesting room for a localized product with a more native distribution channel.
- Pricing (benchmark): free tier is referenced in the feature comparison.

Style DNA

- Strengths: strong “personal style” positioning (color palette/body shape guidance), wardrobe digitization, AI outfit pairing, and shopping assistance.
- Weaknesses: adoption metrics are less transparent; and the experience remains app-centric rather than embedded in a conversational channel.
- Pricing (benchmark): referenced as a one-time purchase model in the feature comparison.

Stylebook

- Strengths: mature wardrobe organization and manual outfit planning; reliable for users willing to invest time into manual cataloging.
- Weaknesses: no AI recommendations; higher user effort to maintain and use effectively.
- Pricing (benchmark): referenced as a low-cost one-time purchase model.

Whering and Cladwell (reference alternatives)

Whering and Cladwell serve as relevant reference alternatives because they address adjacent needs to Liora's core job-to-be-done—wardrobe digitization and outfit decision support—but through a different delivery model. Whering stands out for automating wardrobe organization with AI tagging and features such as background removal, while Cladwell emphasizes structured daily outfit planning, wardrobe insights, and a subscription-driven approach.

Despite these strengths, both solutions remain primarily **app-centered**, which typically increases onboarding friction and reduces day-to-day convenience compared to a conversational experience; users must repeatedly open and operate a dedicated application environment rather than interacting through a familiar, high-frequency channel such as WhatsApp.

2.4 Technological Solution

This section presents the computational solution implemented for Liora, covering (i) system requirements and specifications, (ii) architecture and technology choices, (iii) MVP development and implementation approach, and (iv) testing strategies and technical evaluation results.

The solution was designed to support a conversational fashion assistant that operates primarily through WhatsApp and can also be accessed via a web chat interface, enabling wardrobe digitization and personalized outfit recommendations.

2.4.1 Requirements and Specifications:

Functional requirements

Based on the feature definition work, Liora's MVP scope can be summarized into four functional domains:

- **Account management**: user registration/identification, profile management, and plan/subscription handling (even if initially defaulting to "free").
- **Virtual wardrobe management**: adding and removing wardrobe items, storing item metadata, and maintaining user-specific organization.
- **Automatic clothing attribute extraction**: when users send a clothing photo, the system extracts structured attributes (e.g., type, color, material, pattern, style, occasion) and stores them as wardrobe metadata.
- **Recommendation flow**: generation of outfit suggestions from the user's wardrobe, optionally using context signals (occasion, preferences, future extensions such as weather).
- **Conversational interface**: chat-based interaction through WhatsApp (primary) and web chat (secondary channel), including fallback/help routes and intent recognition to route the request to the correct pipeline.

Non-functional requirements

Key non-functional requirements guiding the technical design include:

- **Security and privacy-by-design**: enforce controlled access to user data and media, using mechanisms such as Row Level Security (RLS) and signed URLs for storage access.
- **Performance**: maintain acceptable response latency for recommendations in conversational use (measured and improved in v1).
- **Scalability of retrieval**: avoid linear scanning over wardrobes as they grow; use embeddings and vector similarity search so retrieval remains efficient as item counts increase.
- **Maintainability and modularity**: isolate responsibilities (chat orchestration, wardrobe, storage, auth, recommendation pipeline), supporting iterative growth and future refactors.
- **Fast iteration for MVP**: prioritize tooling that accelerates prototyping and integration while preserving a path to a more code-centric architecture as complexity grows.

2.4.2 Architecture and Technology:

System architecture overview

Liora adopts a **modular, cloud-based architecture** combining orchestration workflows with a typed backend and managed data/storage services:

- **Orchestration layer (n8n)**: receives webhook events from WhatsApp/webchat, normalizes inputs, performs intent classification, and routes requests to subflows (e.g., add item vs. get recommendation).
- **Data and storage layer (Supabase)**: PostgreSQL database + storage buckets + pgvector support for embeddings, plus RLS and signed URLs for secure access.
- **Backend API (NestJS/TypeScript + Prisma)**: modular services for auth, users, wardrobe, storage, chat bridge, health checks; supports clean API contracts and structured evolution.
- **Frontend (React + Vite + Tailwind + shadcn/ui)**: web chat interface and supporting UI modules, designed for usability and rapid iteration.

Core technical flows (MVP)

Add item flow: When media is detected, the workflow downloads the image, invokes a multimodal model to extract structured clothing attributes, generates an embedding, and inserts the item into Supabase.

Recommendation flow: When a user requests an outfit, the system embeds the request, performs **vector similarity search (pgvector)** to retrieve the most relevant wardrobe items, and sends only this filtered context to a recommendation-specialized assistant ("vector search → agent"), improving both cost and latency.

Database and storage design

The database schema centers on users, wardrobe items, recommendation logging, and chat interactions/threads, enabling both product functionality and future analytics.
For media storage, the MVP uses a single bucket organized by user_id/item_id, supporting clean retrieval, scalability, and alignment with RLS/signed URLs.

2.4.3 Development and Implementation (MVP):

Development methodology

The project follows an iterative MVP approach, using rapid prototyping where it accelerates learning (workflow automation/orchestration) while maintaining a structured codebase for the long-term product (typed backend, modular architecture, migrations, testing). This aligns with the documented rationale of using n8n to ship quickly and progressively offloading complexity into code services when needed.

MVP modules and delivered components (v1 baseline)

- **Conversational pipeline** (WhatsApp + webchat ingestion, normalization, intent classification, routing, help/fallback flows).
- **Wardrobe ingestion** (image → attributes JSON → embedding → DB insert).
- **Retrieval-augmented recommendation** (embedding request → similarity search → specialized assistant).
- **Context continuity** (thread-based memory via thread_id to support follow-ups).

- **Backend domains** (auth/users/wardrobe/storage/chat bridge/health) implemented as modular NestJS components; Prisma used for typed data access and migrations.

2.4.4 Testing and Technical Evaluation:

Testing for Liora's MVP combined persistence validation, end-to-end functional verification, and readiness for scalable automated testing. First, the project executed **API and data-layer** tests using Supabase to validate core operations such as authentication, data insertion/retrieval, and storage uploads, ensuring the database and media layer reliably support wardrobe ingestion and recommendation workflows.

In parallel, **workflow-level functional tests** were performed to validate the complete conversational paths ("add item" and "get recommendation"), including handling input variations through auxiliary routing flows in the orchestration layer.

Finally, the backend was structured to support continuous evolution of test coverage, with an architecture compatible with **unit and end-to-end testing** (e.g., Jest and E2E scaffolding) as the codebase grows and more modules move from orchestration into the API layer.

2.5 The Business Plan

This section consolidates Liora's business strategy as an entrepreneurial venture grounded on a validated market problem and a feasible go-to-market execution plan. The business plan is presented through: (i) market and competitor analysis (including target segmentation and SWOT), (ii) the Business Model Canvas (BMC), (iii) marketing and sales strategy, and (iv) financial projection and feasibility.

The plan adopts a dual approach combining a B2C product (conversational wardrobe assistant) with an expansion path into B2B partnerships and monetization, allowing the venture to scale beyond a single consumer application.

2.5.1 Market and Competitor Analysis:

Liora targets a B2C segment composed of users who seek to reduce outfit decision friction, maximize the use of their current wardrobe, and consume fashion more consciously, supported by a freemium entry experience and premium tiers with expanded features. In parallel, the B2B segment includes retailers and brands that aim to improve conversion and engagement through context-aware recommendations, which can be enabled via APIs or white-label modules that incorporate wardrobe context into the shopping journey.

From a strategic perspective, Liora's SWOT analysis can be summarized as follows. The main strengths are (i) low-friction distribution through WhatsApp as a primary interaction channel, (ii) an AI-driven product that combines wardrobe digitization and recommendations, and (iii) positioning aligned with sustainable and practical fashion consumption. The main weaknesses relate to (i) early-stage brand awareness, (ii) dependency on third-party messaging infrastructure, and (iii) the need to establish user trust regarding data usage. Opportunities include the growth of AI applications in fashion and the ability to capture an initial share of the Brazilian AI-fashion market through strong execution, with conservative projections indicating meaningful revenue potential within three years. Threats include global competitors expanding into Brazil and fast replication of AI-styling features by larger platforms with superior marketing capacity.

Competitively, the market includes wardrobe and styling applications that provide cataloging, planning, and varying degrees of AI recommendations. However, a relevant gap for Liora is the ability to deliver the complete experience through a conversational interface as the primary product surface, which reduces adoption friction compared to app-centric alternatives and supports frequent re-engagement in everyday usage patterns.

2.5.2 Business Model (Business Model Canvas - BMC):

Liora addresses two segments. In B2C, it serves individuals who want faster, more confident outfit decisions and better wardrobe utilization. In B2B, it serves retailers and brands that seek more precise segmentation and higher conversion through contextual personalization.

For users, Liora reduces decision fatigue and supports conscious consumption by generating outfit suggestions based on the wardrobe they already own. For brands, it enables wardrobe-aware recommendations and improved engagement by connecting catalog items to real wardrobe context, strengthening personalization and increasing relevance.

The primary channel is WhatsApp, chosen to minimize onboarding friction and create a high-frequency conversational habit. Complementary channels include social media and a landing page to communicate value, educate prospects, and convert users into the WhatsApp experience during early traction phases.

The relationship model is conversational and continuous, reinforced through community building and a founder-led growth strategy. Early relationships are supported by controlled beta cohorts, feedback loops, and iterative product refinement based on real usage and qualitative insights.

The venture follows a freemium-to-premium structure for B2C, complemented by B2B monetization via usage-based or subscription fees for partner access and integrations, and potential affiliate/commission streams derived from product recommendations in later stages.

Key activities include wardrobe ingestion, recommendation generation, conversational orchestration, and continuous iteration of prompts, flows, and user experience. Key resources include the AI stack and orchestration infrastructure, the database and storage layer, and the accumulated wardrobe data that enables personalization over time.

Partners include messaging infrastructure providers and, in the medium term, brands and retailers participating in pilots and integrations. This partnership track is expected to become more relevant once early user traction metrics are available to support commercial negotiations.

Costs concentrate on cloud infrastructure, database/storage, WhatsApp gateway, and model usage (tokens), with marketing and content production costs scaling during acquisition phases.

2.5.3 Marketing and Sales Strategy:

Liora's go-to-market strategy is structured into three phases. **Phase 1** (Beta Testers & Initial Content) focuses on controlled access via invitation, content production based on real product usage (e.g., behind-the-scenes, GRWM, before/after), and qualitative feedback collection to refine the onboarding journey. **Phase 2** (Organic Growth & Influence) expands access gradually through WhatsApp invitations, incentives for virality (promo codes and rewards), and activations with influencers and micro-influencers in fashion, lifestyle, and personal organization. **Phase 3** (B2B Partnerships & Fundraising) uses traction metrics generated in previous phases—active users, engagement, and conversion—to position Liora for pilots with fashion retailers and for investor conversations supported by retention, CAC, and LTV evidence.

Customer acquisition is supported by content pillars (educational and collaborative content) and by making Liora's value tangible through real usage demonstrations and community participation. Retention is treated as a product-and-marketing outcome: the conversational format aims to build habit through repeat usage, while the product's personalization improves over time as wardrobe data accumulates. For tracking execution, the short-term objectives include 1,000 active users, 10% average monthly conversion, and R$100,000 accumulated revenue within 12

months, with longer-term goals emphasizing strategic brand partnerships and top-of-mind awareness in the Brazilian market.

2.5.4 Financial Projection and Feasibility:

Liora's revenue model is designed around tiered pricing aligned with usage thresholds. A representative proposal defines a Freemium plan with monthly caps (messages/tokens/photos) and a Starter plan priced at US$9/month with higher limits, leaving room for additional tiers as heavy usage grows.

On the cost side, infrastructure assumptions for the MVP include Railway compute, a WhatsApp gateway (EvolutionAPI self-hosted or managed), Supabase (free tier or Pro at US$25/month), and LLM token costs (e.g., GPT-4o mini pricing per million tokens). Under a representative growth scenario, the analysis indicates that core compute and LLM costs can remain very low per active user, supporting strong margins even at scale, provided usage limits and tiering are enforced appropriately.

Given these assumptions, break-even in early stages is primarily driven by fixed infrastructure choices (e.g., managed WhatsApp gateway vs. self-hosted) and the number of paid subscribers. For example, adopting Supabase Pro (US$25/month) and a managed EvolutionAPI starting around US$29/month implies a baseline near US$54/month, which can be covered by approximately 6 Starter subscribers at US$9/month (before taxes and payment fees). This illustrates feasibility at low scale, while larger-scale viability depends on maintaining usage caps, controlling token consumption, and improving retention to increase LTV.

Finally, initial investment requirements are concentrated in (i) setting up and stabilizing the operational baseline (database, storage, messaging gateway, monitoring), (ii) supporting product iteration costs (engineering time and model usage), and (iii) enabling go-to-market execution (content production and controlled influencer activations) during the first two phases of launch.

2.6 Validation and Results

This section presents how Liora was validated in the market through real user interaction with the MVP, combining qualitative learning loops (to validate pain points and product experience) with quantitative traction metrics (to validate adoption, engagement, and early feasibility).

The validation approach follows the project's broader go-to-market logic: start with controlled access, iterate quickly based on feedback, and progressively expand while tracking metrics that support future partnerships and fundraising readiness.

2.6.1 Validation Methodology:

Liora's market validation was conducted primarily through an MVP beta process designed to minimize risk while maximizing learning. The product was offered to a limited group of users via invitation, enabling controlled experimentation and fast iteration of the onboarding flow, wardrobe ingestion experience, and recommendation quality. This approach is aligned with the launch plan in which Phase 1 focuses on beta testers and qualitative feedback collection, followed by gradual expansion and institutional positioning once traction metrics are available.

The validation methods applied in practice include: (i) **beta onboarding** through WhatsApp, (ii) **observational product analytics** through usage logs (items created, requests made, recommendations generated), and (iii) **qualitative feedback collection** to identify friction points and prioritize improvements in the user journey. The objective was to test both the problem hypothesis (whether users experience decision fatigue and wardrobe underuse) and the solution hypothesis (whether a WhatsApp-first assistant reduces friction and creates repeat usage).

2.6.2 Market Validation Results:

The MVP demonstrated initial traction and consistent usage. Based on internal MVP tracking during the beta stage, Liora reached 100 users, with 800 wardrobe items registered, and 10+ outfit recommendations generated daily (as shown in the project's traction snapshot). These numbers indicate that users were not only willing to try the product, but also to perform the key "activation" actions required for Liora's value delivery: wardrobe digitization and repeated outfit requests.

From a decision standpoint (*Pivoting or Persisting*), the current results support persisting with the WhatsApp-first interaction model, since the observed behavior confirms repeated use in a conversational context and meaningful wardrobe build-up. Product iteration should remain focused on improving onboarding efficiency, recommendation relevance, and the consistency of wardrobe ingestion outputs—since these are the main drivers of activation and retention in a wardrobe-based assistant.

2.6.3 Key Performance Indicators (KPIs):

Liora's KPI framework combines **traction**, **conversion**, **retention**, and **unit economics**, consistent with the metrics defined in the market plan.

KPIs currently observed in beta (MVP traction):

- **Users (beta):** 100
- **Wardrobe items registered:** 800
- **Recommendations generated:** 10+ per day

KPIs defined for short-term execution (12 months targets):

- **Active users:** target of 1,000
- **Monthly conversion rate:** target of 10%
- **Accumulated revenue:** target of R$100,000

Core marketing + business health KPIs to be tracked next (as soon as acquisition and pricing are running):

- **CAC (Customer Acquisition Cost)** by channel
- **CLTV/LTV (Customer Lifetime Value)**
- **Retention rate** (e.g., D7/D30 cohorts)
- **Engagement rate** (feature usage, frequency of requests)
- **Conversion funnel metrics** (activation → first recommendation → repeated usage → premium)

2.6.4 Risks and Mitigation Plan:

Liora's validation results are promising, but scaling requires addressing four main risk categories:

- **Financial risk (unit cost and margin pressure):** LLM usage can increase variable costs as request volume grows.
  Mitigation: enforce plan-based usage limits, optimize prompts, use retrieval (vector search) to reduce token consumption, and adopt tiered pricing aligned with usage intensity.
- **Technological risk (quality, latency, and reliability):** inconsistent item extraction or low-quality recommendations can harm retention and trust.
  Mitigation: improve ingestion validation, add feedback loops ("Was this correct?"), implement monitoring and error handling, and continuously evaluate recommendation outputs.

- **Legal and privacy risk (LGPD and user trust):** handling user photos and wardrobe data introduces privacy expectations and compliance requirements.
  Mitigation: apply privacy-by-design principles (restricted access policies, secure storage, minimal retention, consent flows), document data practices clearly, and maintain an audit-friendly data policy.

- **Competitive and platform risk (fast followers and WhatsApp dependency):** competitors may replicate "AI stylist" features and platform policies may change.

Mitigation: differentiate through superior conversational UX, local content/community, and brand trust; maintain architectural flexibility to support additional channels (web chat/app) if needed while keeping WhatsApp as the primary surface.

3 Conclusion

This project set out to design, implement, and validate **Liora**, an AI-driven fashion-tech venture that reduces everyday outfit decision friction by transforming a user's wardrobe into a structured, conversational experience—primarily through WhatsApp. Overall, the work achieved its main objectives by (i) translating a clear user pain point into a well-defined product scope, (ii) delivering an MVP architecture capable of wardrobe ingestion and personalized recommendation generation, and (iii) consolidating a business plan that supports market entry and scalable growth.

From a market standpoint, the study demonstrated that Liora fits within a growing AI-in-fashion landscape and identified a strategic whitespace in Brazil: delivering wardrobe intelligence through a **messaging-first** interface. The competitive analysis showed that while existing wardrobe and styling apps provide overlapping functionality, most remain app-centric, creating friction in onboarding and daily re-engagement. Liora's positioning—"the closet in your pocket"—directly addresses this limitation by prioritizing accessibility and habit formation through conversational interaction.

On the technical side, the project produced a coherent solution that connects user interaction, data persistence, and recommendation generation into a modular workflow. The MVP design supports the core user journeys required for a wardrobe-based assistant: registering garments from images, structuring wardrobe metadata, retrieving relevant items efficiently, and generating outfit suggestions in a conversational flow. The architectural choices emphasize fast iteration for early-stage validation while preserving a path toward maintainability and scalability as the product evolves.

Regarding validation, early market signals indicate meaningful adoption behavior: the MVP reached **100 users**, enabled the registration of **800 wardrobe items**, and generated **10+ recommendations daily**. These results support the project's core hypotheses—users are willing to digitize their wardrobes and repeatedly request recommendations when the interaction is convenient and conversational. At the same time, the work recognizes that the next validation cycle must strengthen

measurement depth by tracking retention cohorts, conversion to paid plans, CAC, and LTV once pricing and acquisition channels are executed more systematically.

Looking forward, Liora's future projections include both product and venture evolution. On the product roadmap, key improvements include enhancing wardrobe ingestion accuracy and consistency, expanding contextual recommendation quality (e.g., more explicit preference learning and richer constraints), implementing stronger feedback loops ("confirm/correct attributes"), and improving reliability and latency under heavier usage. From a business perspective, the next stage is to formalize monetization through tiered plans aligned with usage intensity and to validate a B2B track through pilots with retailers and brands, leveraging the same wardrobe intelligence layer for wardrobe-aware recommendations. Finally, as adoption scales, privacy and compliance requirements (including LGPD-aligned practices) should remain central to maintaining user trust and sustaining long-term growth.

In conclusion, the work demonstrates that a WhatsApp-first conversational assistant can serve as a technically feasible and strategically differentiated approach to wardrobe management and outfit recommendation in Brazil. The project delivers a validated foundation—both computational and entrepreneurial—upon which Liora can iterate toward stronger personalization, measurable unit economics, and scalable partnerships.

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