PRD | Product Requirements Document

Project Name: KRYSTAL Talent Matchmaking Platform

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1. Executive Summary

This document outlines the requirements for the development of **KRYSTAL Talent Matchmaking Platform**, an innovative AI-powered matchmaking platform designed to efficiently connect businesses with talent in the creative industry (models, influencers, actors, digital creators). The primary goal is to democratize access to professional representation opportunities and optimize the talent discovery process, overcoming the limitations of traditional methods and industry fragmentation.

2. Problem

Currently, 95% of creative talent remains completely locked out of professional representation. Geographic, economic, and industry gatekeepers maintain artificial scarcity, limiting access to opportunities. Talent often makes career decisions blindly, without industry expertise or data. On the other hand, traditional talent agencies spend up to 60% of their time on administrative tasks instead of value creation. Talent discovery remains an archaic, relationship-based process, missing massive potential. This $15 billion+ industry operates at a fraction of its potential.

3. Product Vision

KRYSTAL aims to be the ONLY unified talent ecosystem, transforming traditional talent management into an AI-powered extinction event. We envision a platform

where talent has direct access to opportunities and AI-powered career development, and where businesses can discover talent predictively with unprecedented precision.

4. Goals and Objectives

- Democratize access to elite representation for unrepresented talent.
- Reduce administrative time and effort for agencies and companies in the talent discovery process.
- Increase the accuracy and relevance of talent-to-opportunity matches.
- Create an ecosystem where both talent and businesses can operate more efficiently and profitably.
- Establish a competitive advantage through AI for identifying trends and optimizing decisions.

5. Audience / Users

1. Talent: Models, influencers, actors, digital creators, content creators seeking representation, opportunities, and career development.
2. Businesses: Brands, advertising agencies, production studios, casting directors looking for specific talent for their campaigns and projects.

6. Key Features (MVP)

6.1. Talent Functionalities

- Profile Creation & Management: Talent can create detailed profiles including demographic data, skills, interests, preferred rates, and availability.
- Multimedia Portfolio Management: Talent can upload professional photos and videos to their portfolio.
- Social Media Integration: Connect to import key metrics (follower count, engagement rate, etc.) from their public profiles.

6.2. Business Functionalities

- Project/Campaign Creation & Management: Businesses can post detailed briefs for their campaigns, including objectives, budget, target audience,

desired style, and specific talent requirements.

- AI-Powered Talent Suggestions: Once a project is published, the AI system will generate a curated list of talent that best fits the project's needs, with a focus on compatibility and ROI potential.
- Talent Profile Viewing: Businesses can view the complete profiles and portfolios of AI-suggested talent, but talent will not directly see project or business details at this stage.

7. Proposed Technical Solution

The platform will be built using a modern and scalable technology stack, with artificial intelligence as its core for precise matchmaking.

- Frontend (FE):
  - Technology: Next.js (based on React.js)
  - Details: Will be used to build the dynamic and responsive user interface for both talent and businesses, leveraging Server-Side Rendering (SSR) capabilities for optimal performance and SEO.
- Main Backend:
  - Technology: Next.js API Routes (JavaScript/TypeScript)
  - Details: Will act as the orchestration layer, handling business logic, user authentication, and serving as a bridge between the frontend, the database, and the AI microservice.
- Database (DB) & BaaS:
  - Technology: Supabase
  - Details:
    - Database: PostgreSQL, with the `pgvector` extension enabled. This will allow for storing AI-generated vector embeddings directly in the database and performing efficient similarity searches for matchmaking.
    - Authentication: Supabase Auth will be used for secure user registration and login.
    - Storage: Supabase Storage will manage the efficient storage of large multimedia files (photos, videos) from talent portfolios.

- Artificial Intelligence (AI) Microservice:
  - Technology: Python (utilizing FastAPI for API endpoints).
  - Details: This microservice will be dedicated to heavy data processing and the generation of embeddings, exposing endpoints that will be consumed by the Main Next.js Backend.
  - Specific AI Models to be Used:
    - For Image and Text Embeddings (Multimodal): The CLIP (Contrastive Language-Image Pre-training) model (open-source/Hugging Face versions) will be used. This model will generate 512-dimensional vector embeddings that represent both images from talent portfolios and text descriptions from profiles and project briefs in a common semantic space, enabling precise matchmaking between visual talent content and textual project requirements.
    - For Video Processing: FFmpeg will be utilized for extracting keyframes from video portfolios. These keyframes will then be individually processed with CLIP to generate their embeddings, which will subsequently be aggregated to represent the entire video.
    - For Audio Analysis/Transcription (Optional in MVP, for deeper video content understanding): Pre-trained Speech-to-Text (STT) models (e.g., `Wav2Vec2` from Hugging Face) could be used to transcribe audio from videos. The resulting text would then be processed with a text embedding model (such as CLIP or Sentence Transformers like `all-MiniLM-L6-v2` which generates 384-dimensional vectors) to capture the verbal essence of the content.
    - Social Media Metrics: Numerical metrics (followers, engagement) will be stored in Supabase. The weighting and normalization logic for these metrics, in conjunction with AI embeddings, will be implemented in the Main Backend for the final ranking of suggested talent.

8. Success Metrics

- Match Rate: Percentage of projects resulting in at least one initiated contact by a business with an AI-suggested talent.

- Project Conversion Rate: Percentage of published projects that culminate in a confirmed deal with talent found through the platform.
- User Growth: Number of active talent and business profiles on the platform.
- Talent Discovery Time: Reduction in the average time it takes businesses to find suitable talent.