

# Innovative Recruitment Solutions: Integrating AI and Digital Communication to Improve Job Matching

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**Abstract.** *Connecting job seekers with recruiters remains a complex and costly challenge for companies, often leading to significant financial investments in recruitment and training. This study investigates the application of the JobLinkr platform to streamline the hiring process, ensuring a better match between candidates and companies, while also accelerating the process and reducing associated costs.*

*We surveyed employers and job seekers to gather insights into their experiences and preferences. Our research identifies key pain points in the current job market such as misaligned expectations, lack of job information, and delays in feedback. On the basis of this information, we conducted an investigation into various business strategies, examining different business models, branding approaches, and the personal experiences of users to develop a platform that addresses the diverse needs of both parties.*

*This case study proposes an AI-powered platform designed to analyse user profiles, including CVs, and provide recruiters with tailored insights based on their preferences. The platform aims to include various communication tools, such as 'day in the life' videos showcasing company culture, to enable deeper alignment assessments and enhance matchmaking accuracy.*

*JobLinkr's plans include enhancing applicant summaries, providing career advice, gamifying user experiences and developing new features. Additionally, exploring strategic partnerships and acquisitions could broaden the product's reach and capabilities and make it even more distinct.*

**Keywords.** Artificial Intelligence, platform economy, labour market, data analytics, matchmaking, AI in Recruitment, Candidate-Company Matching, Recruitment Optimization, Job Market Challenges, HR Technology Innovation,

Employment Branding, Recruitment Cost Reduction, AI-Driven Recruitment, Applicant Experience Enhancement, Hiring Process Efficiency, Data-Driven Recruitment

## 1. Introduction

The modern job market is characterized by rapid technological advancements, evolving skill requirements, and a dynamic economic landscape. In this fast-paced environment, both job seekers and employers face significant challenges in connecting with suitable opportunities [1] [2]. Traditional recruitment methods often fall short in addressing these complexities, resulting in inefficient hiring processes, misaligned expectations, and substantial financial investments [3]. As companies strive to stay competitive, there is an urgent need for innovative solutions that streamline recruitment, enhance job matching accuracy, and reduce associated costs.

The current recruitment landscape is marked by several inefficiencies [4]. Job seekers face a challenging, time-consuming process with vague descriptions, poor culture insight, and lengthy applications. Employers deal with high recruitment costs, extensive candidate screening, and difficulty matching candidates to roles, leading to high turnover and extended vacancies, negatively impacting performance and morale.

Technological advancements have introduced new possibilities for addressing these challenges, yet many recruitment platforms still rely on outdated models that fail to leverage the full potential of AI and machine learning [5]. There is a growing demand for advanced tools that provide deeper insights into candidate suitability, streamline the application process, and facilitate better job matches. The integration of multimedia elements, such as

video previews, can play a crucial role in setting realistic expectations and enhancing candidate engagement.

In this context, the JobLinkr platform emerges as a timely and necessary innovation. By using the power of AI, JobLinkr aims to revolutionize the job-matching process, offering precise candidate recommendations based on detailed profile analyses [6]. Its unique features provide a more comprehensive understanding of job roles, helping candidates make informed decisions. This approach not only improves the accuracy of job matches but also accelerates the hiring process.

To further explore the impact and potential of JobLinkr, this paper is structured as follows: Section 2 provides a comprehensive description of the platform and its relevance in the current job market. Section 3 details the methodology employed in our research, including the approaches used to gather and analyse data. Section 4 presents the results and offers a critical discussion of the findings. Finally, Section 5 concludes the paper by summarizing key insights and suggesting directions for future research.

## 2. Case Description

JobLinkr is an innovative concept for an AI-powered job matching platform designed to address the inefficiencies and challenges of traditional recruitment methods. The idea is to create a platform that leverages advanced technologies to streamline the hiring process, ensuring precise matches between job seekers and employers while reducing associated costs. By automating the analysis of user profiles, including CVs, JobLinkr aims to provide recruiters with highly tailored candidate insights, significantly reducing the manual effort required in candidate screening and thus accelerating the recruitment timeline [7].

A key feature of the JobLinkr concept is the inclusion of “day in the life” videos, offering job seekers realistic previews of potential job roles and company cultures. These videos, along with tailored upfront details are intended to help candidates set accurate expectations and make more informed decisions. This multimedia approach is designed to bridge the gap between candidate expectations and job realities, fostering better alignment and satisfaction.

This paper outlines the conceptualization and proposed development of the JobLinkr platform. It begins with a comprehensive overview of the research conducted to understand the current job

market's pain points. These insights have been pivotal in shaping the features and functionalities of JobLinkr, including enhanced applicant summaries. The study also details the intended user acquisition and retention strategies, and how JobLinkr is planned to engage users.

Furthermore, the study discusses the business development strategy for JobLinkr, including potential revenue streams from ads, premium subscriptions, and employer branding services.

Concluding by outlining future enhancements for JobLinkr, the paper aims to demonstrate JobLinkr's potential as a transformative solution in the digital recruitment landscape.

## 3. Methodology

We adopted a constructive research approach guided by the Case Study Development Model from the DEMO project<sup>1</sup>. We complemented this with a literature review, drawing insights from academic literature and practical case analysis.

Our objective was to understand the digital platform's architecture and its impact on HR practices and job seekers. This dual approach aimed to provide a comprehensive perspective on the subject matter.

### 3.1 Data Collection

Our data collection process was multifaceted, involving various essential activities: To comprehensively understand the perspectives and needs of end-users and to gain insights into industry best practices and challenges faced by HR departments, we actively solicited feedback and engaged in conversations. This approach included:

- User Feedback - We solicited feedback from individuals who look for a workplace or are in the workplace. This feedback was instrumental in shaping our research direction and understanding the real-world needs and concerns of employees.
- Collaboration with HR Professional - We collaborated with HR, conducting structured interviews with experts. These interviews provided us with deep insights into industry best practices and the challenges faced by HR departments. Our interactions with these experts shed light on their key pain points of matchmaking process.

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<sup>1</sup> <https://demo.cryptocube.ro>

### 3.2 Interview results

Our interviews revealed distinct priorities for job seekers and recruiters. For job seekers, the primary concern is straightforwardness and clear communication: they value clear salary ranges and timely feedback above all else. On the other hand, recruiters emphasized on the importance of candidates whose values align with the company and whose personalities mesh well with the existing team dynamics. These insights underscore the critical areas for enhancing the JobLinkr platform to better meet the needs of both parties.

## 4. Results and discussion

In this section of the paper, we embark on a comprehensive exploration of JobLinkr, an AI-powered platform, designed to revolutionize the modern hiring practices. We delve into the most important aspects of JobLinkr, starting with the introduction of the Business model, which entails its core features, the value propositions, and the business strategy. After that follows the Process View, where we dive deeper into the logical functionalities of the platform's AI. Finally, we give a short overview of the technical and strategic implementation and future challenges.

### 4.1 Business Model

**JobLinkr** tackles significant challenges faced by both job seekers and employers with an innovative, user-friendly platform. Employers often struggle with high turnover due to candidate misconceptions about roles and insufficient quality and quantity of applicants [4]. Conversely, job seekers face issues such as ghosting from employers, low quality job listings and intransparent representation of company values [8] [9].

To address these challenges, JobLinkr engages in several key activities. Regular maintenance ensures the platform remains updated and provides technical support. User acquisition and retention strategies are employed to attract and retain both job seekers and employers. Business development expands partnerships and market reach, while monetization and revenue management develop streams such as subscriptions and ads. Data analysis and optimization leverage data to enhance user experience and platform efficiency. Ensuring regulatory compliance and security maintains data privacy and adherence to regulations, and robust customer support assists users.

JobLinkr's unique value proposition caters to both job seekers and employers. For job seekers, the platform offers improved matchmaking for better job fit, a user-friendly interface, comprehensive career resources, transparent job information including salary ranges, and direct communication with recruiters. Employers benefit from enhanced employer branding services, an efficient recruitment process with AI filtering, access to a large pool of qualified candidates, data-driven insights for better hiring decisions, and video introductions to showcase company culture.

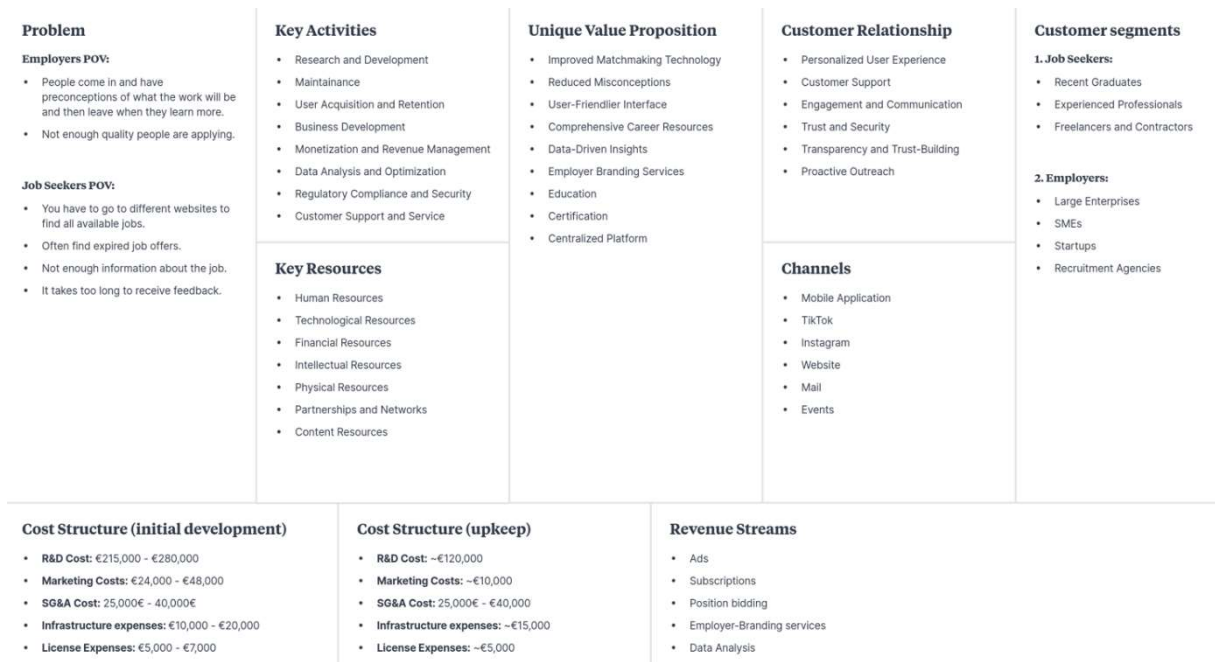
Customer relationships are built on personalized user experiences with tailored job recommendations, continuous engagement and communication, trust-building through data security, and proactive outreach to both job seekers and employers.

The customer segments targeted by JobLinkr include job seekers (recent graduates, experienced professionals, freelancers, and contractors) and employers (large enterprises, SMEs, startups, and recruitment agencies).

Key resources for JobLinkr encompass human resources (a talented team for R&D, support, and operations), technological resources (advanced AI, robust IT infrastructure), financial resources (funding for development, marketing, and operations), intellectual resources (proprietary technology, brand, and industry expertise), physical resources (offices and data centers), partnerships and networks (collaborations with educational institutions and industry organizations), and content resources (comprehensive job listings and career resources).

Revenue streams could be generated through advertisements, subscriptions (premium plans for job seekers and employers), position bidding (employers paying to prioritize job postings), employer-branding services (paid services for enhancing company profiles) and selling insights and analytics to employers.

JobLinkr's value proposition would include competitive pricing, enhanced insights and analytics, effective employer branding, career advancement opportunities, personalized experiences, high-frequency relevant job postings, and future AI applications. The platform would address the needs and wants of its users by offering relevant job listings, fair pay and transparency, access to qualified candidates, an efficient recruitment process, an engaging hiring process, a user-friendly interface, support and guidance, career growth opportunities, and high visibility for job postings. It would alleviate fears and pain points such as high volume of and



**Figure 1: Business Model Canvas**

low-quality applications, time-consuming screening, data privacy and security concerns, and negative employer brand perception by providing streamlined recruitment processes, enhanced employer branding, affordable pricing, comprehensive support and resources, a positive and engaging user experience, and efficient filtering with analytics.

In summary, JobLinkr leverages advanced technology to streamline and enhance the job search and hiring process. By providing a centralized platform with improved matchmaking, comprehensive resources, and transparent communication, JobLinkr addresses the key problems faced by job seekers and employers. This model ensures an engaging, efficient, and effective job market experience, driving value through innovative solutions and robust customer relationships.

## 4.2 AI-Implementation

JobLinkr's strategy for implementing AI technologies involves several phases to enhance platform capabilities, user experience, and operational efficiency. Initially, the platform will conduct thorough research and feasibility analysis to understand AI's potential applications within its ecosystem. This includes assessing needs, benchmarking competitors, consulting AI experts, and defining specific use cases with measurable goals.

Next, JobLinkr will focus on data collection and preparation. This involves auditing existing data sources, cleaning data, developing a robust data

governance framework, and integrating additional data sources to enrich the dataset. Building a scalable and secure AI infrastructure is crucial, which includes selecting appropriate AI tools and platforms, establishing a cloud-based infrastructure, developing APIs for integration, and implementing robust security protocols to protect sensitive data.

Developing core AI capabilities is the following phase. JobLinkr will create machine learning models for improved job-candidate matching, implement AI-driven personalized job recommendations, deploy AI chatbots for customer support and initial candidate screening, use natural language processing (NLP) to parse resumes, and develop AI models to detect fraudulent job postings and applications. Rigorous testing and validation ensure the accuracy, reliability, and alignment of AI models with business goals. This involves testing with historical data, A/B testing, validating models in controlled environments, and continuously monitoring and retraining models as needed.

The deployment and integration phase involves the incremental rollout of AI models, integrating them into the user interface, training JobLinkr staff, and communicating AI-driven enhancements to users. Monitoring and continuous improvement are critical for ongoing optimization. JobLinkr will establish a monitoring system, collect user feedback, regularly update AI algorithms based on new data and

technological advancements, and stay informed about emerging AI trends and technologies.

Key considerations include ethical AI use, ensuring transparency, fairness, and accountability, preventing bias, adhering to data privacy regulations, ensuring scalability, and fostering collaboration between data scientists, developers, and business stakeholders.

Expected outcomes of AI implementation at JobLinkr include improved matchmaking accuracy, personalized user experiences, increased user engagement and retention, automated processes like resume parsing and initial screening, reduced workload for human recruiters, and enhanced data-driven insights into hiring trends and candidate behavior.

By strategically implementing AI technologies, JobLinkr aims to significantly enhance its platform's capabilities, offering superior value to users and maintaining a competitive edge in the recruitment industry.

### 4.3 Overview of the JobLinkr platform

Figures 2 and 3 depict the JobLinkr system in the form of a UML Use Case diagram, displaying how people and other applications can interact with it.

A job seeker uses the application to enhance their job search experience. The user can create an account and provide relevant personal information to build their profile. They can browse through company profiles and swipe to express interest or disinterest. If there is a mutual match between the job seeker and a company, the user gains access to additional details about the company. They can further update their profile with more information and engage in conversations with recruiters and team members from the matched company.

A recruiter uses the application to streamline their hiring process. They can create an account and post job listings. The recruiter can also view a personalized feed that presents summary information tailored to their preferences. If there is a mutual match between the recruiter and a job seeker, the recruiter gains access to similar features as the job seeker. This includes viewing additional information about the job seeker and engaging in conversations with them to facilitate the recruitment process.

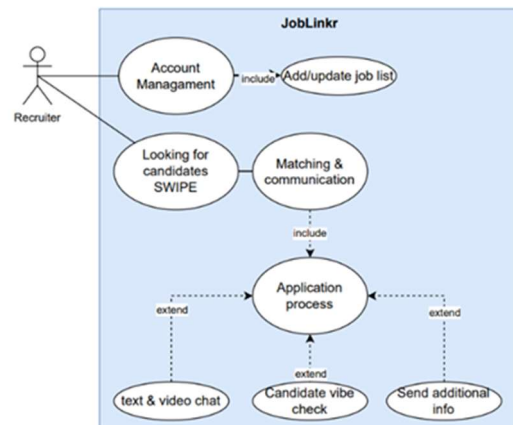


Figure 2: Use Case Diagram for Recruiter

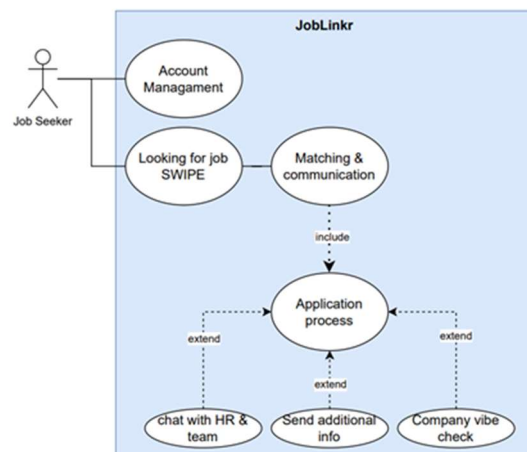


Figure 3: Use Case diagram for Job Seekers

#### 4.4 Future challenges and discussion

JobLinkr will face several significant challenges as it looks to the future. One major challenge is keeping pace with technological advancements in AI and machine learning, ensuring continuous updates and seamless integration without disrupting the platform's stability [10]. Data privacy and security are also critical, requiring adherence to regulations such as GDPR and CCPA to protect sensitive user information [11].

Another key challenge is ensuring ethical AI use. AI algorithms must be unbiased and fair, avoiding discrimination based on gender, age, race, or other attributes. Continuous monitoring and auditing are necessary to maintain ethical standards [12]. Market competition is fierce, and JobLinkr must differentiate itself with innovative features, superior user experience, and effective marketing strategies [13].

#### 5. Conclusion

In conclusion, the modern job market presents a complex array of challenges, particularly in the areas of matching candidates with suitable roles and streamlining recruitment processes. Traditional methods often lead to inefficiencies and mismatches, creating a need for more innovative solutions. JobLinkr addresses these challenges by leveraging AI technologies to enhance the accuracy and efficiency of job matching. The platform's multifaceted AI implementation strategy, which includes machine learning models for job-candidate matching, personalized recommendations, and AI-driven support tools, provides a robust solution to the inefficiencies plaguing the recruitment industry. Additionally, by emphasizing ethical AI use, transparency, and collaboration among stakeholders, JobLinkr ensures that its technological advancements are both effective and responsible.

Throughout the paper, we have developed and presented various artifacts that contribute to this solution, including detailed data collection and integration processes, the establishment of a scalable AI infrastructure, and the creation of AI-driven tools for personalized recommendations and support. The deployment phase, with its focus on incremental rollout, staff training, and continuous improvement, would further solidify JobLinkr's position in the market. However, the platform must remain vigilant in addressing future challenges, such as keeping pace with technological advancements, ensuring data privacy, and maintaining user trust. By staying committed to innovation and user satisfaction, JobLinkr is well-positioned to continue evolving

alongside the dynamic job market, offering a valuable and sustainable solution for both job seekers and employers.

#### 6. Acknowledgement

**Acknowledgments** This research was made possible through the support of the DEMO project, which has received funding from the European Union's ERASMUS+ Program under grant agreement number 2021-1-RO01-KA220-HED000027576. The project is titled "Digital Platform Enterprise" (Acronym: DEMO).

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