

# Vendor Management System (VMS) + Job Portal Hybrid Platform

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### Complete Software Requirements Specification (SRS)

#### Executive Summary

This document defines a **hybrid recruitment platform** that combines the features of [Naukri.com](#) (job aggregation portal) with **Vendor Management System (VMS)** capabilities. The platform acts as a **digital mediator between Companies (Clients), Recruiting Agencies (Vendors), and Candidates** to solve urgent hiring needs efficiently.

#### Problem Statement

Organizations face critical challenges during urgent hiring scenarios:

- **Manual recruitment coordination** is time-consuming
- **Multiple vendor relationships** are difficult to manage
- **Lack of transparency** in candidate sourcing
- **No unified platform** for real-time collaboration between clients and agencies
- **Delayed feedback loops** between parties

## Solution

A centralized, multi-vendor recruitment platform that enables:

1. **Companies** to post requirements anonymously and receive candidate submissions
2. **Recruiting Agencies** to discover job opportunities and submit qualified candidates
3. **Transparent tracking** of entire recruitment lifecycle
4. **Secure messaging** and real-time notifications
5. **Analytics-driven insights** for both clients and vendors

### 1. Product Overview

#### 1.1 Platform Concept

**Name:** VendorHire (or CustomName) - Hybrid Recruitment Marketplace

**Core Value Proposition:**

- **For Companies:** Rapid access to pre-vetted recruiting agencies + instant candidate sourcing
- **For Agencies:** Consistent flow of job opportunities + transparent performance metrics
- **For Admins:** Complete platform governance, compliance, and monetization control

#### 1.2 Key Differentiators from Naukri.com

Feature	Traditional Job Portal ( <a href="#">Naukri.com</a> )	VMS Hybrid Platform
<b>Candidate Source</b>	Passive job board	Active agency network + job board
<b>Urgency Handling</b>	Limited	Optimized for urgent placements
<b>Agency Collaboration</b>	None	Integrated vendor management
<b>Anonymity</b>	Limited	Full company anonymity option
<b>Commission Model</b>	Placement-based	Hybrid (subscription + commission)
<b>Real-time Matching</b>	Basic filters	AI + manual agency assignment
<b>Vendor Onboarding</b>	N/A	Automated + verification workflows
<b>Feedback Loops</b>	One-way	Multi-directional (secure channels)

#### 1.3 Target Users

**Primary Stakeholders:**

1. **Hiring Managers/HR Professionals** (Companies)
2. **Recruiting Agencies & Staffing Firms**
3. **Admin & Compliance Teams** (Platform)
4. **Job Candidates** (Secondary - portfolio visibility)

## 2. System Architecture & Technology Stack

### 2.1 MERN Stack Architecture

#### Frontend:

- React.js (with TypeScript)
- Redux or Zustand (state management)
- Material-UI or Tailwind CSS (responsive design)
- Socket.io-client (real-time messaging)

#### Backend:

- Node.js + Express.js
- RESTful API architecture
- JWT for authentication
- Middleware for RBAC

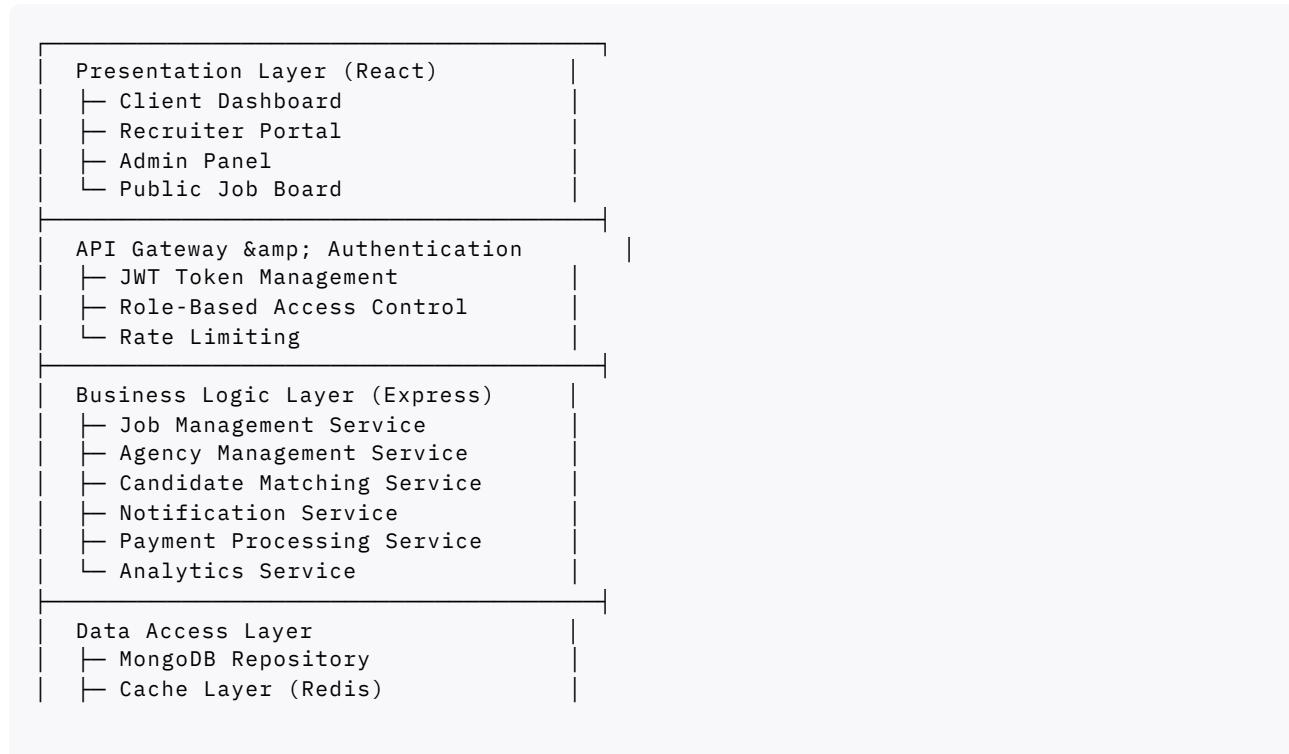
#### Database:

- MongoDB (primary data store)
- Redis (caching, sessions)
- Elasticsearch (advanced job search)

#### Infrastructure:

- AWS (EC2, RDS, S3)
- Docker for containerization
- GitHub for version control
- CI/CD pipelines (GitHub Actions)

### 2.2 High-Level Architecture Layers



### 3. Functional Requirements

#### 3.1 Company/Client Functions

##### 3.1.1 Job Posting

- **FR-1.1:** Post vacancy with role, skills, experience, salary range
- **FR-1.2:** Option for anonymous posting (hide company identity)
- **FR-1.3:** Set posting duration, urgency level, target agencies
- **FR-1.4:** Categorize by industry, location, employment type
- **FR-1.5:** Attach job description, required documents
- **FR-1.6:** Set screening questions for candidates
- **FR-1.7:** View real-time posting status and visibility

##### 3.1.2 Candidate Management

- **FR-2.1:** View all candidates submitted against job posting
- **FR-2.2:** Compare candidates side-by-side with scoring
- **FR-2.3:** Download candidate resumes and documents
- **FR-2.4:** Rate candidates (1-5 stars with feedback)
- **FR-2.5:** Move candidates through pipeline stages (Applied → Shortlisted → Interviewed → Selected)
- **FR-2.6:** Schedule interviews and send calendar invites
- **FR-2.7:** Accept or reject candidates with feedback to agencies

##### 3.1.3 Agency Collaboration

- **FR-3.1:** View assigned agencies for each job posting
- **FR-3.2:** Real-time chat with agencies for queries
- **FR-3.3:** Track agency submission timelines
- **FR-3.4:** Rate agency performance (quality, speed, reliability)
- **FR-3.5:** View agency metrics and history

##### 3.1.4 Dashboard & Analytics

- **FR-4.1:** View all active job postings with status
- **FR-4.2:** Track number of submissions per job
- **FR-4.3:** Time-to-fill metrics
- **FR-4.4:** Cost per hire analysis
- **FR-4.5:** Historical hiring data and trends

## **3.2 Recruiting Agency Functions**

### **3.2.1 Agency Registration & Onboarding**

- **FR-5.1:** Register with company details, certifications, industry focus
- **FR-5.2:** Submit KYC documents (GST, PAN, registration proof)
- **FR-5.3:** Waiting period for admin approval
- **FR-5.4:** Receive approval/rejection notification
- **FR-5.5:** Set up agency profile (logo, description, services offered)

### **3.2.2 Job Discovery**

- **FR-6.1:** View all available job postings (as per agency profile)
- **FR-6.2:** Filter by location, skills, urgency, industry
- **FR-6.3:** Smart recommendations based on historical performance
- **FR-6.4:** Notifications for new matching opportunities
- **FR-6.5:** Accept or bid for job assignments

### **3.2.3 Candidate Sourcing & Submission**

- **FR-7.1:** Upload candidate profiles (resume, contact, skills)
- **FR-7.2:** Submit multiple candidates per job posting
- **FR-7.3:** Add remarks and qualification summary per submission
- **FR-7.4:** Track submission status (Pending → Under Review → Accepted → Rejected)
- **FR-7.5:** Receive feedback from client for rejected candidates

### **3.2.4 Performance Tracking**

- **FR-8.1:** View all submitted candidates and outcomes
- **FR-8.2:** Track success rate and placement history
- **FR-8.3:** View ratings and feedback from clients
- **FR-8.4:** Monitor response time and submission quality scores

## **3.3 Admin/Platform Functions**

### **3.3.1 User Management**

- **FR-9.1:** Manage company registrations (approve/reject/suspend)
- **FR-9.2:** Manage agency registrations and KYC verification
- **FR-9.3:** View all user accounts with roles and permissions
- **FR-9.4:** Suspend/deactivate problematic users

### **3.3.2 Platform Monitoring**

- **FR-10.1:** Dashboard with real-time platform metrics
- **FR-10.2:** Monitor active jobs, agencies, candidates
- **FR-10.3:** Track system health and API performance
- **FR-10.4:** View error logs and alerts

### **3.3.3 Quality Assurance**

- **FR-11.1:** Review user complaints and disputes
- **FR-11.2:** Investigate fraudulent activity
- **FR-11.3:** Issue penalties or warnings to bad actors
- **FR-11.4:** Maintain audit trail of all transactions

### **3.3.4 Financial Management**

- **FR-12.1:** Configure pricing plans and subscription tiers
- **FR-12.2:** Manage commission structure (% for successful placements)
- **FR-12.3:** Track payments and outstanding balances
- **FR-12.4:** Generate financial reports

## **3.4 Cross-Functional Features**

### **3.4.1 Messaging & Notifications**

- **FR-13.1:** Real-time messaging between company and agencies
- **FR-13.2:** Secure file sharing in chat threads
- **FR-13.3:** Email notifications for job updates, submissions, rejections
- **FR-13.4:** SMS alerts for urgent updates (optional)
- **FR-13.5:** In-app notification center with unread counts

### **3.4.2 Search & Filtering**

- **FR-14.1:** Advanced job search with multiple filters
- **FR-14.2:** Candidate profile search (by skills, experience, location)
- **FR-14.3:** Agency search and comparison
- **FR-14.4:** Save searches and custom filters

### **3.4.3 Ratings & Reviews**

- **FR-15.1:** Client reviews for agencies
- **FR-15.2:** Agency feedback on client interactions
- **FR-15.3:** Candidate feedback on application experience
- **FR-15.4:** Public reputation scores

## **4. Non-Functional Requirements**

### **4.1 Performance**

- **NFR-1:** API response time < 500ms (95th percentile)
- **NFR-2:** Page load time < 3 seconds
- **NFR-3:** Support 10,000+ concurrent users
- **NFR-4:** 99.9% uptime SLA

## 4.2 Security

- **NFR-5:** End-to-end encryption for sensitive data
- **NFR-6:** SSL/TLS for all data in transit
- **NFR-7:** Role-based access control (RBAC) with granular permissions
- **NFR-8:** Two-factor authentication (2FA) for sensitive operations
- **NFR-9:** PCI DSS compliance for payment processing
- **NFR-10:** GDPR compliance for user data storage

## 4.3 Scalability

- **NFR-11:** Horizontal scaling with load balancing
- **NFR-12:** Database sharding for high traffic
- **NFR-13:** CDN for static asset delivery
- **NFR-14:** Microservices architecture for independent scaling

## 4.4 Usability

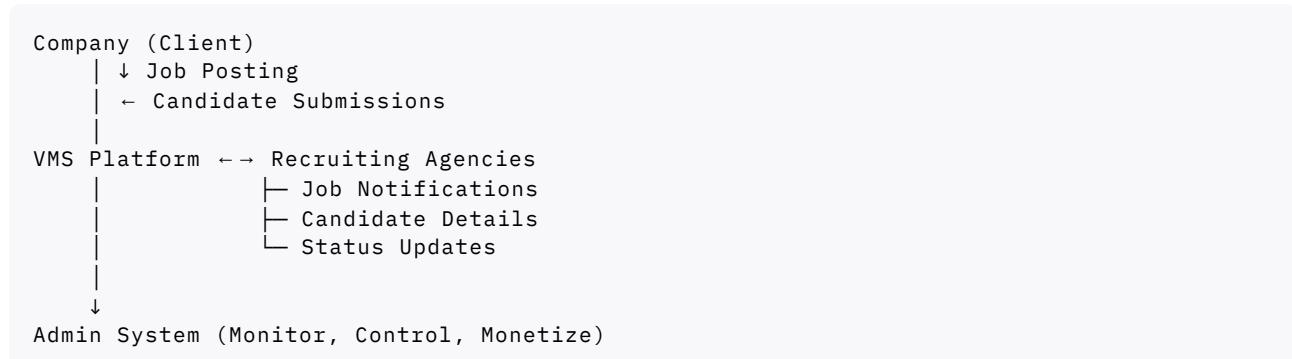
- **NFR-15:** Mobile-responsive design (iOS, Android)
- **NFR-16:** Accessibility compliance (WCAG 2.1 AA)
- **NFR-17:** Multi-language support (English, Hindi, local languages)
- **NFR-18:** Intuitive UI with minimal onboarding

## 4.5 Reliability

- **NFR-19:** Automated backups every 6 hours
- **NFR-20:** Disaster recovery plan with RTO < 4 hours
- **NFR-21:** Error monitoring and alerting (Sentry)
- **NFR-22:** Graceful degradation during failures

## 5. Data Flow Diagram (Level 0 & Level 1)

### 5.1 Context Diagram (Level 0)



## 5.2 Detailed Level 1 DFD

### Major Data Processes:

1. **Job Posting Process:** Company submits requirement → Platform validates → Routes to relevant agencies
2. **Candidate Submission Process:** Agency submits candidate → Platform validates → Notifies company
3. **Feedback Loop:** Company rates candidate/agency → Platform updates agency metrics
4. **Payment Processing:** Successful placement → Auto-calculate commission → Invoice agencies
5. **Analytics:** Collect metrics → Generate reports for all stakeholders

## 6. Database Schema (ER Diagram)

### 6.1 Primary Entities & Relationships

#### Users Table:

- user\_id (PK), email, phone, password\_hash, role, status, created\_at

#### Companies Table:

- company\_id (PK), user\_id (FK), name, industry, size, location, anonymity\_preference

#### Agencies Table:

- agency\_id (PK), user\_id (FK), name, gst\_number, kyc\_status, approval\_date, specializations

#### Vacancies Table:

- vacancy\_id (PK), company\_id (FK), title, description, skills\_required, salary\_range, urgency\_level, anonymous\_flag, created\_at, deadline

#### Candidates Table:

- candidate\_id (PK), name, email, phone, resume\_url, skills, experience, location, candidate\_source

#### Submissions Table:

- submission\_id (PK), vacancy\_id (FK), agency\_id (FK), candidate\_id (FK), status (Submitted/Under Review/Accepted/Rejected), submitted\_at, remarks

#### Ratings Table:

- rating\_id (PK), rater\_id (FK), ratee\_id (FK), score, feedback, created\_at

#### Payments Table:

- payment\_id (PK), agency\_id (FK), submission\_id (FK), amount, commission\_percentage, status, transaction\_date

#### Messages Table:

- message\_id (PK), sender\_id (FK), recipient\_id (FK), content, attachment\_url, created\_at, is\_read

## 7. User Interface Flows

## 7.1 Company User Flow

```
Login/Register
↓
Dashboard (View Active Jobs & Submissions)
  └─ Create New Job Posting
    └─ Fill Job Details
    └─ Choose Urgency Level
    └─ Select Target Agencies
    └─ Publish

  └─ View Submissions
    └─ Compare Candidates
    └─ Rate Candidates
    └─ Move through Pipeline
    └─ Send Feedback

  └─ Communicate with Agencies
    └─ Real-time Chat

  └─ View Analytics
    └─ Time-to-Fill Metrics
    └─ Cost per Hire
    └─ Historical Data
```

## 7.2 Agency User Flow

```
Login/Register
↓
KYC Verification (First Time)
  └─ Submit Documents
  └─ Wait for Approval
  └─ Receive Approval Notification
↓
Agency Dashboard
  └─ Browse Available Jobs
    └─ View Job Details
    └─ Check Client Requirements
    └─ Accept Job Assignment

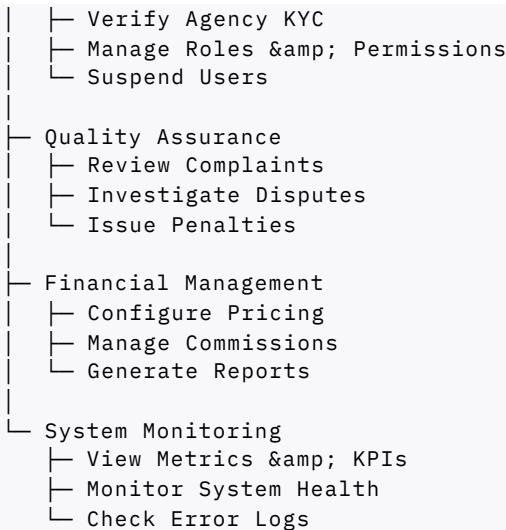
  └─ Submit Candidates
    └─ Upload Candidate Profile
    └─ Add Remarks
    └─ Submit

  └─ Track Performance
    └─ View Submission Status
    └─ Receive Feedback
    └─ Check Ratings
    └─ View Success Metrics

  └─ Communicate with Clients
    └─ Real-time Chat
```

## 7.3 Admin User Flow

```
Login (Admin Panel)
↓
Dashboard (Platform Overview)
  └─ User Management
    └─ Approve/Reject Companies
```



## 8. Key Features & Workflows

### 8.1 Urgent Hiring Workflow

**Scenario:** Company needs 5 software developers ASAP

1. **Step 1:** Company posts vacancy with **URGENT** flag
2. **Step 2:** Platform immediately notifies top-rated agencies in tech sector
3. **Step 3:** Agencies receive notifications and browse job details
4. **Step 4:** Matched agencies start sourcing from their network
5. **Step 5:** Candidates submitted within 24-48 hours
6. **Step 6:** Company reviews and ranks submissions
7. **Step 7:** First-round interviews scheduled immediately
8. **Step 8:** Successful candidates confirmed, commission processed

#### Key Success Factors:

- Pre-vetted agency network
- Urgency-based intelligent routing
- Real-time notifications
- Streamlined feedback loops

### 8.2 Anonymous Company Posting

**Benefit:** Prevents competitor knowledge of hiring plans

#### Process:

1. Company enables "Anonymous Posting" flag during job creation
2. Company name, logo, and location hidden from agencies
3. Agencies see only: Role, Skills, Experience, Salary Range, Industry
4. After placement, company identity can be revealed (optional)

## 8.3 Commission & Payment Model

### Successful Placement Commission:

- Standard Commission: 10-15% of candidate's first-year salary
- Premium Agency Discount: 8-12% for consistently high-performing agencies
- Emergency Placement Bonus: 2-3% additional for urgent roles filled

### Monthly Subscription (Optional):

- **Starter:** \$99/month - 3 job postings/month, basic analytics
- **Professional:** \$299/month - Unlimited postings, advanced analytics, priority support
- **Enterprise:** Custom pricing - Dedicated account manager, API access, custom integrations

## 9. Security & Compliance

### 9.1 Data Privacy

- Company information encrypted at rest
- Personal data (resumes, contact info) with access controls
- GDPR-compliant data retention policies
- Right to deletion implemented

### 9.2 Fraud Prevention

- KYC verification for all agencies
- Document verification (GST, PAN, registration)
- Duplicate account detection
- Transaction anomaly detection

### 9.3 Content Moderation

- Job posting review before publishing
- Candidate profile validation
- Complaint handling mechanism
- Suspicious activity flagging

## 10. Monetization Strategy

Revenue Stream	Allocation	Price Point
<b>Featured Job Listings</b>	25%	\$50-\$300 per listing
<b>Subscription Plans</b>	30%	\$99-\$999/month
<b>Commission on Placements</b>	35%	10-15% of salary
<b>Premium Services</b> (Resume Database, Ad Placements)	10%	CPM/CPC model

## **11. Success Metrics (KPIs)**

### **For Company Users:**

- Time-to-fill reduction: Target 40% faster than traditional methods
- Cost per hire: Reduced by 20-30%
- Candidate quality score: Average 4.5/5.0

### **For Agencies:**

- Placement success rate: >30%
- Average response time: <24 hours
- Client satisfaction: >4.3/5.0

### **Platform Metrics:**

- Monthly Active Users: 50,000+ by Year 1
- Total Placements: 10,000+ per month
- User retention: 75%+ month-over-month
- Platform uptime: 99.9%+

## **12. Development Roadmap**

### **Phase 1 (Months 1-2): MVP**

- Core features: Job posting, Agency onboarding, Candidate submission
- Basic messaging
- Admin panel (user management)

### **Phase 2 (Months 3-4): Enhancement**

- Advanced search & filtering
- Rating & review system
- Analytics dashboard
- Payment gateway integration

### **Phase 3 (Months 5-6): Scaling**

- AI-based candidate matching
- Mobile app (iOS/Android)
- Multi-language support
- API for third-party integrations

### **Phase 4 (Months 7+): Optimization**

- Machine learning recommendations
- Advanced compliance automation
- Video interview integration
- Blockchain for credential verification

## 13. Risk & Mitigation

Risk	Probability	Impact	Mitigation
Poor agency quality	High	High	Strict KYC, performance monitoring
Data breach	Medium	Critical	Encryption, regular security audits
User adoption	Medium	High	Freemium model, marketing campaign
Payment disputes	High	Medium	Clear T&Cs, escrow system
Competition	High	Medium	Unique features, strong network effects

## 14. Testing Strategy

**Unit Testing:** 80%+ code coverage (Jest, Mocha)

**Integration Testing:** API endpoint testing (Postman)

**E2E Testing:** User workflow testing (Cypress, Selenium)

**Performance Testing:** Load testing (JMeter, Artillery)

**Security Testing:** Penetration testing, OWASP compliance

## 15. Deployment & DevOps

- **Version Control:** GitHub with branch protection
- **CI/CD:** GitHub Actions for automated builds and tests
- **Container:** Docker for consistent environments
- **Orchestration:** Kubernetes for production scaling
- **Monitoring:** Datadog/New Relic for performance tracking
- **Logging:** ELK stack for centralized log management

## Conclusion

This hybrid platform combines the **scalability and transparency of modern job portals** with **vendor management efficiency** to create a unique solution for urgent talent acquisition. By leveraging a **pre-vetted agency network** with **real-time collaboration features**, VendorHire enables companies to hire faster while giving agencies consistent business opportunities.

## Next Steps:

1. Finalize technical design document
2. Set up development environment
3. Begin Phase 1 MVP development
4. Establish agency partnerships
5. Plan beta launch campaign

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