Tara -
A platform to connect budding talent to recruiting bodies in the entertainment industry

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***Abstract*— India has been consistently the world's largest film producer. At the same time, in terms of the number of tickets sold, the country is the leading cinema market. The Indian media and entertainment industry for the economy is a thriving sector and is steadily growing. The Indian advertising industry is expected to be following China's second fastest rising advertising market in Asia. Despite of the strength in number and revenue generated of the film and media industry it highly depends on face-to-face networking. Tara provides a convenient and easy solution to the long travel and strenuous searching budding talents have to undergo. Also, the producer or recruiter or casting director's dilemma of whether to keep looking for the perfect talent for their job/role or to settle with the ones that are available and at their disposal. Tara is the perfect solution to all the woes and worries of recruiters and job hunters of the media and entertainment industry. Tara is a real-time entertainment-industry brand aimed at connecting local performing talent, with a special focus on casting, job opportunities, and much more.**

I. Introduction

Cinema is the largest national film industry in terms of the number of films produced and the number of tickets sold, with 3.5 billion tickets sold worldwide annually. Over the past several years, India has been the world's largest film producer, launching more than a thousand films a year. The nation is home of the one of the most important cities in the global movie industry, Mumbai. Previously called Bombaythe term which led directly to the word BollywoodMumbai is the nucleus and birthplace of India's mega-million-dollar film world. In the fiscal year 2019, the Indian film industry was priced at over 180 billion Indian rupees. According to industry experts, by the fiscal year 2024 it was projected to attain up to 260 billion rupees. (Fig 1.1)

Additionally, the Indian media industry has an enormous potential for growth in all segments due to increasing wages and evolving lifestyles. Media is consumed by audiences across populations and avenues such as television, film, out - of-home (OOH), radio, animation and visual effects (VFX), music, gaming, digital advertising, and printing.

The Indian Media and Entertainment (M&E) industry is a sunrise sector for the economy and is making high growth strides. It is is proving its resilience to the world and is backed by rising consumer demand and improved advertising revenues. The M & E industry provides employment to five million people, including both direct and indirect employment as of 2017. Despite of the massive impact of this industry, the job searching and recruiting is highly dependent on networking and connections. This is the problem we want to solve with Tara - which is a platform where Talent can meet talent recruiters or casting directors.

A. Problem at Hand

Talent deficit will become one of recruiters ' biggest hurdles. The primary selection goal must be the pursuit for top quality talent.

1) 42% of employers are worried they wont be able to find the talent they need.
2) Approximately three quarters are struggling to find relevant candidates.
3) 86% of the most qualified candidates for your open positions are already employed and not actively seeking a new job.

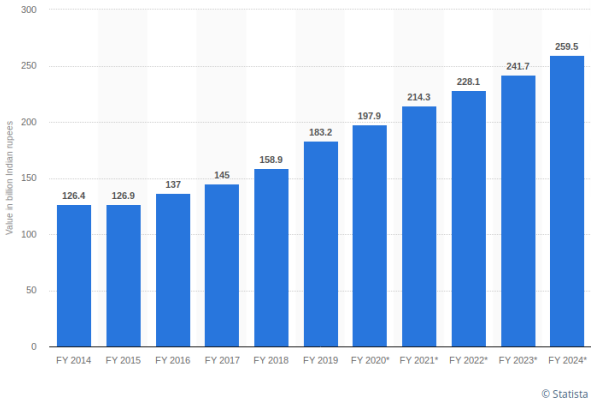

Fig. 1. Figure 1.1: Indian Film Industry

4) 40 percent of employees surveyed said they plan on changing jobs in that year itself.

Across job search, candidates today have much more power and are hopping more than ever before. As a consequence, employee expertise will become quite an important factor during all the selection processes that can make or break the recruitment objectives.

1) 86% of recruiters and 62% of employers feel the labor market is candidate-driven.
2) 20.8% recruiters are finding it difficult to deal with candidate demands.
3) 73% of candidates are passive job seekers.
4) Top candidates stay available for 10 days only before getting hired.

B. Target Personas

1) Talent
   Performing artists and backstage professionals looking for work in film, television, theater, commercials, voice over, radio, gaming and other mediums who seek opportunity to find their next role and manage their careers.
2) Opportunity
   Casting directors and recruiters looking to hire the perfect artistic talent and professional backstage crew for their projects.

C. Our Mission

Bringing together Talent and Opportunity in the Entertainment and Performing Arts industries through a common platform.

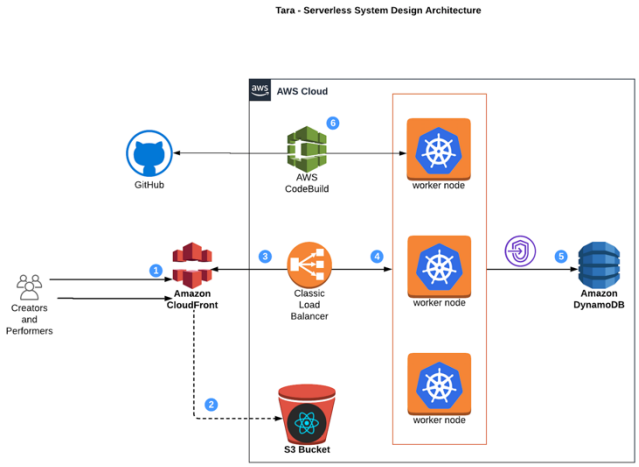

Fig. 2. Figure 2.1: Serverless architecture

II. Technical Details

A. Architecture

(As shown in figure 2.1)

1) Users request the application by accessing a CloudFront distribution.
2) CloudFront serves the ReactJS frontend from an S3 bucket and caches the content.
3) CloudFront forwards the query to AWS Classic Load Balancer, which forward the valid requests to the backend.
4) The application is deployed on a Kubernetes cluster.
5) The data is stored in DynamoDB NoSQL database which is accessed by the application via a VPC Gateway Endpoint.
6) AWS Code build clones the project repository, builds the frontend and backend artifacts and deploys to the Kubernetes cluster.

B. Technology Stack

1) Cloud Native Architecture: The application is designed using cloud native technologies, specifically AWS. The frontend will be served as a static website from an S3 bucket. The authentication and authorization will be via third party social identity providers using AWS Cognito. The stateless NodeJS servers will be running as Docker containers in an AWS ECS cluster. To provide global latency-free access to the application, the website will be served via a CloudFront CDN.

2) Backend Services: We will be using NodeJs APIs to fetch the values from the DynamoDB database. Since our application will render information on run-time, the non-blocking asynchronous nature of NodeJS will help us get good performance.

3) Data Layer: The data will be stored and accessed from a serverless NoSQL database DynamoDB. DynamoDB provides document and key-value oriented storage structure which will assist in storing and querying unstructured data.

4) Client Side: On the client side, we will make a ReactJS application. We are using ReactJS for the frontend as ReactJS is a light-weight library built over JavaScript, which doesn't re-render the entire DOM on change of components on the browser, rather it just re-renders the changed components. Hence ReactJS would improve application performance.

5) CI/CD: AWS CodeBuild is utilized to continuously deploy the application to the AWS cloud. The build project integrates with the GitHub source code repository via webhooks and triggers a build process which compiles the frontend and backend code, deploys the frontend to the S3 bucket, invalidates CloudFront cache, builds the Docker image, pushes the built image to DockerHub, and finally deploys the backend to the Kubernetes cluster

6) Infrastructure Automation: Since Tara has a cloud-native serverless architecture, naturally there are ample amount of cloud resources to be created and managed. To ease this process, Terraform is used to codify the entire architecture with which the stack can deployed, modified or destroyed via code with zero manual intervention. This not only reduces the configuration errors that may arise while dealing with cloud resources, but it also helps to track the changes in the infrastructure over time by utilizing the Terraform state file.

7) Kubernetes: The backend is deployed to a Kubernetes cluster which abstracts away the horizontal scaling, container management, and canary deployments of the application.

8) CloudFront: Applications need to be globally available for maximum outreach. CloudFront helps to maintain cached contents across global edge locations assuring minimum latency to the users

TABLE I
CLASSIFICATION OF MATCH DONE INTO CATEGORIES WITH STATUS

Group	Talent	Recruiter	Match Status
1	1	1	Perfect Match
2	0	1	Recruiter Interested
3	1	0	Talent Interested

9) Swagger API Documentation: Modern web systems rely on REST APIs to communicate within microservices. Swagger helps to codify and document the API contracts between microservices and the client applications.

III. METHODOLOGY

The key step in our application is to match the producer and the talent. To implement that, we have chosen different methodologies in which, one of which is to show all the jobs that are available around the talent and match it with a job that the talent is interested in. In the same way, the producer can choose a talent nearby and can match an opportunity with that profile if the profile suits. In addition, we have planned a new feature that will show only the profiles that are relevant to the recruiter i.e. the algorithm used here is Machine Learning K-means an unsupervised learning which cluster all the data points with similar features, in our case the feature is skill set, we will take the skill set of each talent and then we will group them. Once they are grouped then based on the profile requirements, we will find the distance between these 2 data points and will show the nearest cluster that is, if the job requires a Dancer. We will first cluster the profiles that had Dance as their skill set and then we will find the Euclidian Distance. Here the angle wont be considered, so we can ignore Cosine Similarity. Now, we take the cluster of points and pass that information as a query to retrieve the profiles to the front-end which is the React Framework, vice versa with the talent to see the jobs, And the plan includes to show analytics at the top of the homepage of the talent and the recruiter that shows how many matches were done and the rating of the profile, etc. In this way, it becomes significantly easier to manage the record.

Accordingly, in the Tara Application well be

seeing the corresponding tabs for the above categories. It becomes easy to the user to follow up and see how many responses that he/she has got. We achieved it by storing the match button result in the Dynamo Database along with the profile Id.

TABLE II
PRICING STRATEGY

Subscription Plan	Silver User	Gold User
Monthly	Not Applicable	50 USD
Quarterly	Not Applicable	120 USD
Half yearly	Not Applicable	225 USD
Annual	Not Applicable	400 USD

IV. BUSINESS MODEL

Every business that is launched in the market has a business model, as we know, an effective business model is what makes the application popular and unique in the market. Having said that for TARA, we have a business plan for when we hit the market. The initial goal is to attract the users i.e. both the Talent and the Recruiter by various promotions. We will have different sources (Facebook, Twitter, YouTube, Instagram) and Print and Electronic media. Once we have reached a good number of users, we have to scale the application for obtaining the returns. Our plan is to divide the users into 2 categories. Silver Users, they will use our free subscription, the features that they wont be able to use are first, the location change button and secondly, we lock the details of the jobs when he or she clicks the View Details button on their homepage. Along with that, we wont be showing all of the matches from the Recruiter, only a limited number of matches are shown. This will make the user switch to our subscription and will allow our Gold Plan User access to all of the features listed above. The pricing is shown in Table II.

V. CONCLUSION

For Recruiters and Producers, resources spent on getting the apt and right talent casting for their project is extremely high. In terms of cost, on an average a Production Company is spending nearly 25M USD annually. In terms of time, a Production Company spends around 35 working days to get the perfect talent for their project.
For Talent and Job seekers, they are investing nearly 1600 USD annually for applications, travel, food, portfolio making, etc. In terms of time, they are spending an average of 60 days to get a worthy job or role a project. And despite of this, many a times few are still left without job
Through Tara, we will be saving 60 days and around 3200 USD from Talents and job seekers and 20 working days and around 25 M USD Production Companies spend on hiring the right talent for their projects.
In addition to the resources preserved, we will be saving the mental trouble and struggle job seekers/talent goes through during the hiring process. Tara will avoid problems faced by job seekers/talent due to bad communication, going for impromptu auditions to far off locations and having to reach out to as many people as possible by calling, emailing and talking in social situations. Tara will be the perfect as well as convenient platform to reach out to as many recruiters as possible without the physical hassles.

REFERENCES

[1] India Brand Equity Foundation, September 2019. Indian Media and Entertainment Industry Report.
[2] Statista Research Department, December 2018. Film Industry in India.