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## **Team Members**







Muhammad Noman Saeed

Turki Mesfer Alqahtani

Khaled Mohammed Noaman

Supervisor Name - <u>Sadeem algassem</u>



## **Project Summary**

#### Vision

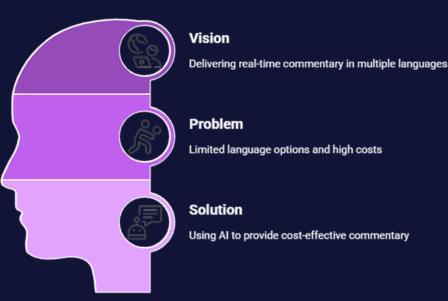
Our Al-driven platform delivers real-time sports commentary in 15+ languages, democratizing access for global fans and expanding reach for broadcasters.

#### Problem

Millions of fans miss live experiences due to limited commentary options in their language. Hiring multilanguage human teams is costly and inefficient.

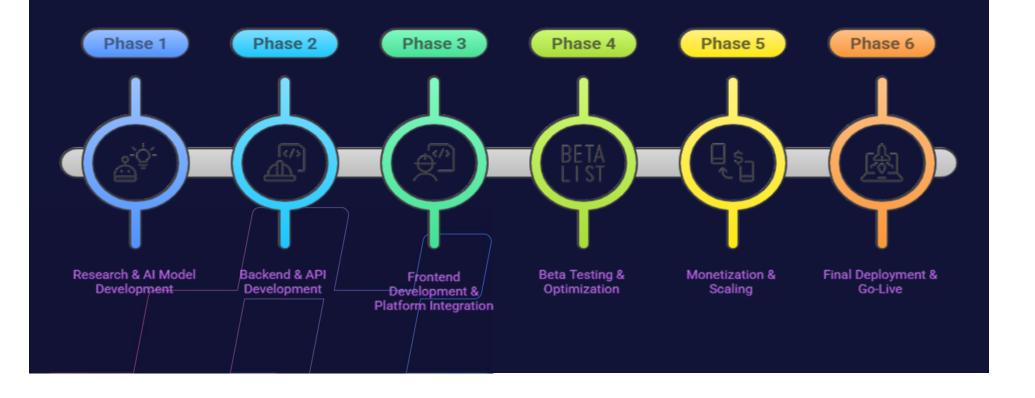
#### Solution

Our system uses STT, NLP, Translation, and TTS to generate live, emotionally resonant commentary that is cost-effective and scalable.



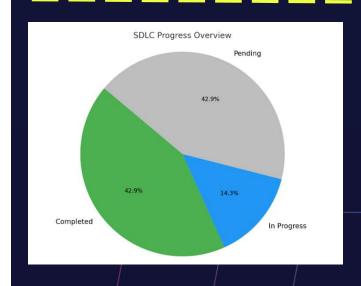


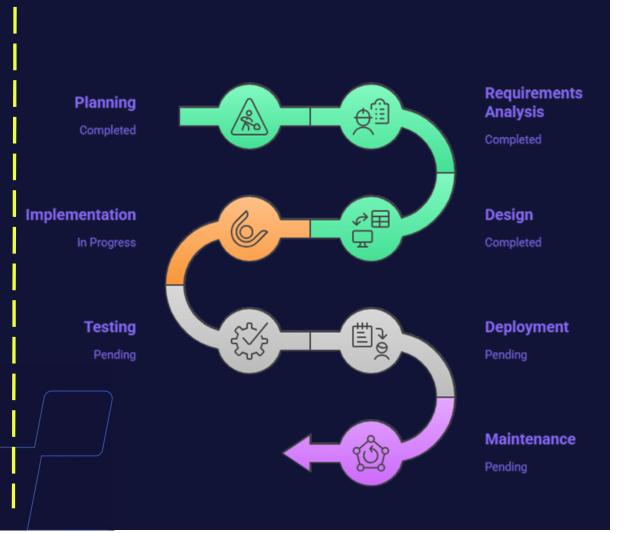
## **Project Phases**





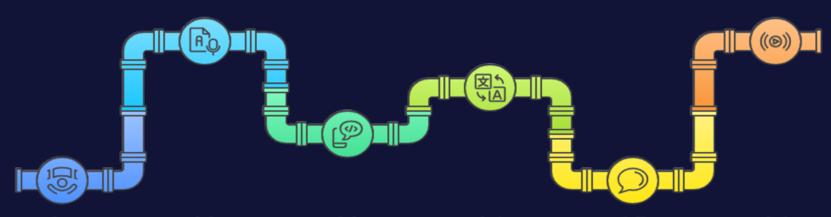
# Project Timeline (SDLC)







## Detailed Flow of AI-Generated Real-Time Sports Commentary in Multiple Languages



Capturing Live Sports Feed

Capture live audio feed from sports events Speech-to-Text Conversion

Convert audio feed into accurate text transcription

U3

Natural Language Processing

Analyze text to extract context and statistics

04

Real-Time Translation

Translate commentary into multiple languages

05

Text-to-Speech Conversion

Convert translated text into naturalsounding speech 06

Delivery to End Users

Stream multilanguage audio to various platforms



Models	Purpose	Best Model	Role
Natural Language Processing (NLP) Models	Understanding match context, extracting key information, and generating accurate and engaging commentary	Hugging Face Transformers (BERT & GPT-2)	Context-aware commentary generation and understanding match dynamics
		sPACy	Named Entity Recognition (NER) to identify players, teams, locations, and events during the match.
Generative Al Models	Real-time generation of engaging, context- aware, and tone-specific commentary.	OpenAl GPT 3.5 / GPT-4	Generates dynamic and personalized commentary with different tones (casual, analyst, fan-favorite).
		T5 (Text-to-Text Transfer Transformer)	Suitable for paraphrasing and summarizing complex match events quickly.
Real-Time Translation Models	Translate commentary into multiple languages with native-level fluency and cultural relevance.	MarianMT (Hugging Face)	Supports 40+ languages with high accuracy and low latency
		Google Translate API (Free Tier)	Provides broad language support and real- time API access.
Text-to-Speech (TTS) Models	Convert text-based commentary into natural, human-like speech.	Google Text-to-Speech API	Provides real-time, human-like voice synthesis.
		Amazon Polly	Converts commentary into speech with emotional inflection and multiple voice options.
Speech-to-Text (STT) Models	Transcribe live game feeds to text for real- time analysis and commentary generation	Google Speech-to-Text API	Converts live audio feeds into text with high accuracy.
		DeepSpeech (Mozilla)	Open-source STT with high accuracy for sports-specific terms.
Emotion and Sentiment Analysis Models	Adjust tone and excitement levels based on crowd reactions and match events	BERT (Emotion Detection Fine-Tuned)	Detects sentiments and emotional cues in fan reactions and adjusts commentary tone accordingly.
		Affectiva (Emotion AI)	Analyzes facial expressions and vocal tones from live audience feeds to gauge excitement



## **Monetization Channels**





#### **Broadcaster Licensing**

Licensing rights for OTT and TV



#### **API SaaS Subscriptions**

Usage-based subscriptions for API services



#### Personalized Commentary Packs

Customized voice and style commentary



#### In-Commentary Advertising

Programmatic advertising within commentary



#### **Fan Feedback Analytics**

B2B sales insights from fan feedback



## Ethical Framework for Data Privacy and AI Governance





### GDPR Compliance

Ensures data processing adheres to GDPR, including user consent for voice usage and regional preferences.



#### **Al Transparency**

Focuses on training models with diverse datasets and reviewing for bias in translation.

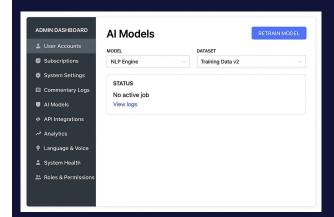


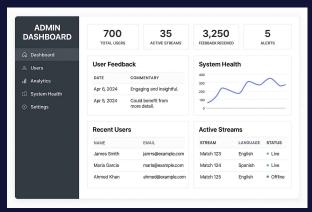
#### **Voice Cloning Ethics**

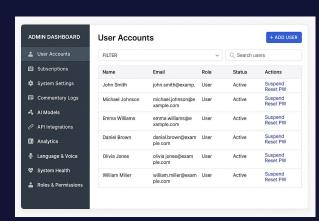
Ensures TTS voice models are licensed or consent-based to prevent misuse.

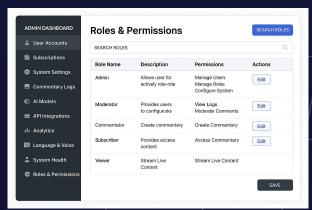


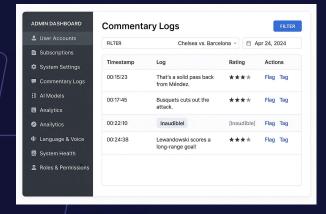
## Admin User Interface

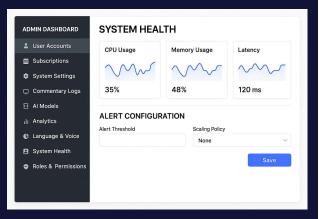






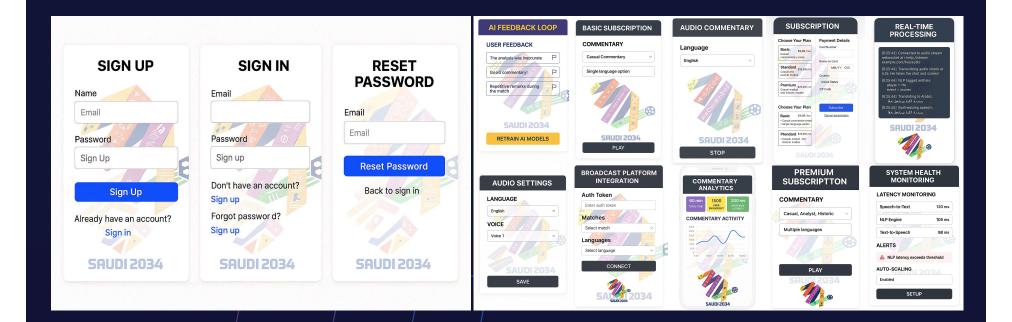








## Client App Interface





## Financial Outlook

### **Monetization Channels**



Broadcaster API licensing Mobile SDK and OTT plugins Audio ad integrations Custom commentary packs



## **Market Opportunity**

\$68B global sports broadcast TAM Top growth regions: India, LATAM, MENA OTT & mobile-first market segments



## 5-Year Financial Outlook

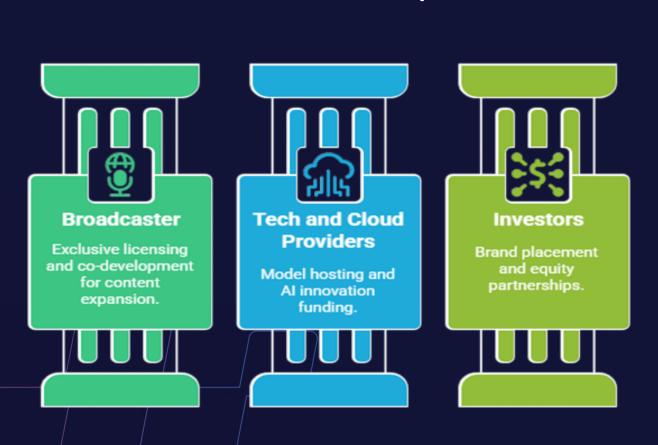
Year 1: Pilot - \$0.2M rev

Year 3: Growth - \$5M rev

Year 5: Maturity - \$22M+ rev

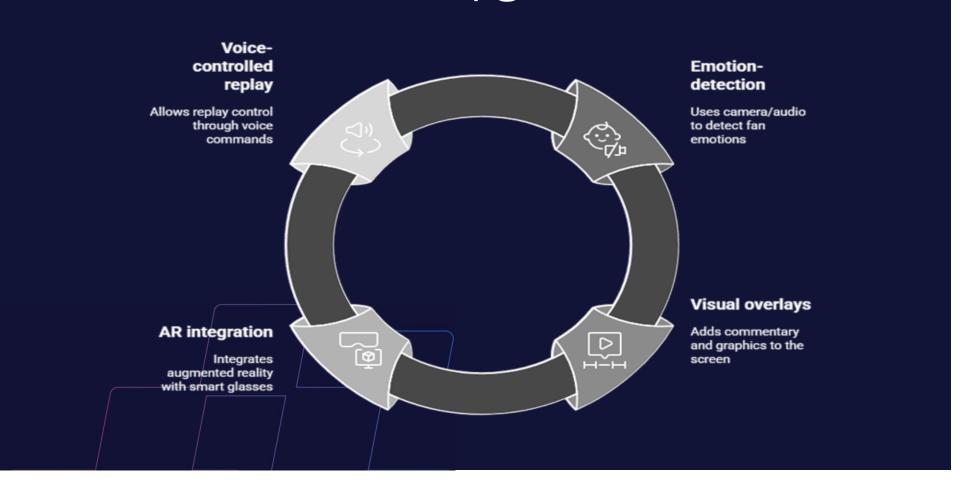


## Partnership





## Future Upgrades





## Thank You