Tune Tap Business Report

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Plagiarism statement

We hereby declare that we abide by the DCU guidelines and academic integrity.

We declare that this material, which we now submit for assessment, is entirely our own work and has not been taken from the work of others save and to the extent that such work has been cited and acknowledged within the text of our work.

Executive Summary

Our product is an intelligent music creation and detection app that uses Artificial Intelligence and machine learning. It features a wide range of tools for music detection and songwriting and aims to assist musicians with all aspects of songwriting and enhance their creative works.

Our app focuses on two specific target markets and distinct problems. The first target marker is casual music listeners who can remember the tune or beat of a song but not the title or lyrics. Our app will allow these users to tap out the beat of a song and it will use machine learning algorithms to search a database of songs and output the song name and lyrics.

Our app stands out from competitors with similar platforms, such as Shazam. For example, while Shazam allows users to get the name of a song while the song is playing in real time, it doesn't account for users who simply have the rhythm of a song stuck in their head. Our app gives users greater flexibility in terms of how they search for a song and provides them with a greater chance of discovering a song name, as only the beat is required.

Our second target market is professional music artists and songwriters. Plagiarism in the music industry is a huge issue and has only been worsened by the introduction of Artificial Intelligence. Music is used to train AI models, without the artists' consent, and this data is then used to produce artificially generated songs. This makes it very difficult for artists to track where their music is being used. Musicians deserve recognition for their work and with our app, and artificial intelligence is currently being used to reduce this recognition.

With our app, we aim to use artificial intelligence to benefit the music industry. Our app will have a wide range of tools, to reduce plagiarism and help musicians create new music more efficiently. Users will be able to come up with a beat and then check if their beat is already being used in existing songs. Our app will have tools for autocompleting lyrics and beats, and will give the user recommended genres, instruments and backing tracks.

Our app will also allow music artists to create music while on the go. They can record song clips, or just tap out a beat, and these clips will be saved in the app for later. Our app will be able to use intelligent AI algorithms to get recommendations about these saved clips. Smartphones are easily portable and therefore our users will be able to get these recommendations, regardless of where they physically are. No matter where inspiration strikes, users will be able to capture and refine their ideas, streamlining and speeding up the songwriting process.

Through the development of our app, we aim to revolutionise the ways that our users can create new music, recognise unknown songs, reduce plagiarism, and gain recognition for their creative works.

Business Model & Revenue Streams

Competitors

When coming to generating revenue we need to think which business model will suit our application the most. Our app is a software that helps both listeners and creators to both identify and create music making the music scene more easy to navigate and easier to expand.

Other applications in this field are spotify, soundhound and shazam. The ways these businesses create revenue are:

Shazam

Shazam gets a cut of all digital sales it refers to (ex. Apple Music sale)

SoundHound

SoundHound gets a 50% cut of any money using their Houndify API

Spotify

Spotify makes money from Freemium. Their free accounts create revenue through advertising and their paid accounts make money from monthly subscriptions.

Challenges when creating revenue

- Trying to stand out from market leaders
- Gathering enough users to create enough revenue for costs
- Trying to stay out of legal trouble (copyright etc.)

Different Type of Revenue Streams

There are many ways of creating revenue through our app. A few to list are:

Data Selling

Collecting data on what people listen to and categorising it into genres, playtime and more will be an asset we can then sell to advertisers and artists for personalized ads and demands plus we can use this data to enhance our users experience.

Subscriptions

Going with the freemium model we can have several subscription types both with perks and cons:

- **Freemium:** Freemium users will be able to use the app with limited features (song detection etc.) and also have ads creating a small amount of revenue while creating want for the paid subscriptions.
- **Pro:** Pro subscription will give you access to loads of features plus an ad free experience
- **Pro Artist:** Pro artist will give you access to all tools plus tool to help you create and advertise your music

API Implementation

By allowing developers to use our AI software we can then charge them on so many clicks / runs which in return would develop some revenue.

Market Analysis & Sales Strategy

Target audience

The audience we are targeting include daily music listeners, music composers, producers and record labels. Our app is directed towards individuals over the age of 13 and that like to listen to music regularly. In the beginning, we are aiming for the European market, with extension to American in the foreseeable future. Over the age 13 is an optimal age as young individuals and older individuals will be able to navigate around and use the app easily without any technical difficulties.

Market size and growth potential

The estimated size of the market is between 500 million and 1 billion. We have come up with this estimate using the amount of monthly users both Shazam and Soundhound have as reference. Shazam has 300 million monthly users[1] and Soundhound is estimated to be 100 million[2].

Competitor analysis

Our indirect competitors are Shazam and Soundhound. Shazam and Soundhound are available on Android, IOS and wearable devices. They have features such as offline usability and the ability to identify music in the background. The direct competitors are only the Google Hum feature integrated into Google Search and a little-known website. However, their sole feature is to locate a song based on its beat and don't provide a wide range of functionality.

Advantage

Our application distinguishes itself from existing solutions by integrating AI-powered music recognition with advanced songwriting assistance—a combination that no current competitor offers at the same level. Our application provides multiple methods for users to locate a song, even when they only recall a rhythm or melody.
Our application is also tailored to music creators, offering AI-driven tools that assist in detecting plagiarism, generating lyrics, and suggesting musical elements. Unlike generic AI music tools, our system is designed specifically for professional artists and songwriters, providing real-time insights, genre recommendations, and creative assistance.

Market entry barriers

High Startup Cost: The cost to enter the market may be too expensive.

Competition Loyalty: Individuals may remain loyal to competition.

Advertising: It may be hard to get exposure from advertisements due to competition.

Sales Strategy

Paid Advertising

- Run targeted ads on apps like Tiktok, Instagram and X to showcase the app's features and drive downloads.
- Optimize campaigns with audience segmentation for maximum reach.

Influencer Sponsorships

- Partner with mid-tier influencers to create relatable content.
- Provide unique promo codes and giveaways to increase app visibility.

Social Media Engagement

- Create official social media accounts for updates and user interactions.
- Address technical issues and engage with the community in real-time.

Affiliate Program

- Launch an in-app affiliate program for influencers of all sizes.
- Offer commissions on referrals and provide marketing tools to affiliates.

Customer Retention

- Email Marketing for personalized updates and offers
- Loyalty rewards and collect user feedback to improve app experience with consistent software updates
- Gamification with rewards, internal points and characters

Operations & Scalability Plan

Operational Overview

With a diverse team comprising software developers, AI specialists, marketing professionals, and customer support personnel, this business will operate efficiently and effectively. This structure enables adaptability to a rapidly evolving and fluid market. Key operational assets include high-end cloud services (Amazon Web Services, Azure, Google Cloud), AI infrastructure capable of real-time music recognition and plagiarism detection, and data privacy compliance capabilities (GDPR, CCPA).

Resources Required

Personnel

- **Developers** : Responsible for maintenance, updates, and implementing features.
- **AI Engineers** : Responsible for AI model training and integration of advanced AI features.
- **Marketing Specialists** : Overseeing app visibility through SEO, ASO, influencer partnerships and social media engagement.
- **Customer Support Representatives** : Ensuring responsive user assistance and managing customer satisfaction.

Infrastructure

- Cloud Servers
- AI Processing Units
- Data Management and Compliance Tools

Scalability: Plans for Growth (3-5 years)

- **Year 1:**
  - User growth to 100,000 users
  - App optimization
  - Start negotiating API implementation by third-party service providers
  - Reach the payback point
- **Year 2:**
  - Add multilingual support
  - Reach 300,000 active users
  - Reach €500,000 capitalization
  - Team scale
  - Feature enhancements and
- **Year 3:**
  - Reach 350,000 active users
  - Reach €1.2M capitalization

    - Enter a new asian market
    - Actively promote API
    - Market strategy adjustments
- **Year 4:**
    - Reach 400,000 active users
    - Reach €2.2M capitalization
    - Feature Enhancements
    - Improved AI & Servers.
- **Year 5:**
    - Reach 450,000 active users
    - Reach €4M capitalization
    - Investment in own server hardware and AI training
    - Team scale

Potential Risks and Mitigation Strategies

Operational Costs: Continuous optimization of cloud resources

Competition: Ongoing feature differentiation, with regular releases around topicality, accuracy, and UX

Regulatory Compliance: Proactively adjust to international regulations and facilitate continuous monitoring to remain in accordance with ever-evolving copyright and data privacy laws.

With this combination of operational efficiency, tech innovation, and risk management approaches, the app will inevitably be one of the top music technologies.

Financial Plan (Basic Estimates)

Breakdown prices

We will separate this category into 2 parts: fixed costs – initial investment, one-time payment, and ongoing costs – for stability support.

Fixed Costs

These are **one-time expenses** required before launching the app:

● Renting GPU for AI Model Training (€300)

● Data preparation for AI Training (manual labor) (€ 5,000)

● Developing process (€ 72,000)

● Legal expenses (€ 5,000)

● Pre-launch marketing (€15,000)

Total: **€ 97,300**

Ongoing Costs

These are **monthly expenses** to contain stability and improve an app in process:

● Cloud Servers & AI Processing (€ 1,250)

● AI Model Hosting (€ 6,000)

● Cloud Storage (€ 650)

● AI Engineers (€ 7,500)

● Marketing & Social Media (€ 4,500)

● Influencer Marketing (€ 3,500)

● User Support (€ 3,500)

● Unexpected Costs (€ 3,000)

Total: **€36,400 / month**

More information about prices breakdown in Appendix 1.

Cost per acquisition (CAC)

CAC is calculated by formula (Marketing costs / New users), having €8,000 for start and expected minimum 2000 users, we have CAC = €4 at the beginning. After launch, CAC is expected to decrease due to organic growth, word-of-mouth marketing, and improved user acquisition efficiency.

Minimum price of the subscription

To calculate the minimum cost of a subscription, we'll suggest an approximate breakdown between users with different subscriptions:

- **Freemium** (free, generates expenses but small income via advertisements) → 60%
- **Pro** (regular paid users) → 30%
- **Pro Artist** (advanced users with AI analysis) → 10%

API users will not be app users, so API prices will be counted in a separate order. We also do not expect API users right after the start as API is used while building the other product.

Server costs per user (approximate, based on capacity):

- **Freemium** → €0.50/user (net costs)
- **Pro** → €2/user (includes AI Model Hosting)
- **Pro Artist** → €6/user (high load on AI servers)

Subscription is calculated using following formula: ((Total costs / Users with subscriptions) + costs per user)

By that we have minimum prices:

- **Pro** → €7/month
- **Pro Artist** → €20/month

Freemium model will be self-sufficient as the advertisement shown to users will only cover the net expenses. According to average CPM & eCPM in Europe and America regions, we will need to show 1 ad per one search to be able to cover the expenses.

Price estimations

To calculate the best subscription plans to attract the most users possible, we discussed and collected opinions, built the demand curve and analyzed the price elasticity of demand. As a result, we calculated the following subscription prices:

- **Pro** → €10/month
- **Pro Artist** → €25/month

Which gives us optimal margins and the number of users.

Projected revenue for the first year

As we are planning to engage 2000-5000 users each month, we can calculate approximate revenue.

Break-even Analysis

Our financial model indicates that the application is expected to reach its break-even point within:

● **Approximately 5 months in the optimistic scenario**, assuming 3,000 new Pro users and 1,000 new Pro Artist users are acquired monthly, leading to a total of 35,000 Pro users and 10,000 Pro Artist users by the first year after launch.

● **Around 9 months in the pessimistic scenario**, with 1,000 Pro users and 200 Pro Artist users coming each month.

The break-even point is determined by comparing cumulative revenue from subscriptions against initial development and operational costs. Given our subscription pricing (€10 for Pro, €25 for Pro Artist), we project that revenue will gradually overtake expenses, leading to profitability within the first year of operation.

Once self-sufficient, revenue from subscriptions will fully cover operational costs, allowing for reinvestment into feature enhancements, AI improvements, and market expansion.

Note: The stated prices and revenue calculations are **net values, excluding taxes**. Depending on the region and applicable tax regulations, actual revenue may be subject to VAT or corporate tax deductions.

Investment requirements

Given the capital-intensive nature of AI development and cloud infrastructure, we plan to secure funding from investors rather than relying on loans. The investment will primarily be used for product development, user acquisition, and operational stability in the early growth phase.

Potential funding sources include:

● Angel Investors or Venture Capital Firms specializing in AI-powered consumer applications.

● Strategic Partnerships with music industry players or technology companies that could provide both funding and business synergy.

● Grants or Innovation Funds that support AI-driven startups, particularly those with applications in media and entertainment.

By securing the initial €245,000 investment, we can confidently build, launch, and sustain the product until it reaches profitability.

Risk & Challenges

Database size - The app needs a vast and constantly updated music database to recognise songs effectively and compete with similar apps.

Fair use - Different countries have different data protection and copyright laws, there are strict copyright laws in some countries that could limit the app functionality. We must ensure that the app complies with the GDPR and CCPA.

High cost - Developing a high-performance app like this requires a high initial investment as we need skilled developers and infrastructure. Keeping the music database updated and continuously improving algorithms will cause high maintenance costs.

Offline Functionality - Premium users may want to be able to use the app features when offline which would require terabytes of data, significant CPU and memory which may be impractical for a smartwatch or mobile device.

Genre Support - We would have to implement multi language and genre support to recognise a wide variety of tracks. This would require advanced AI and partnerships which would increase the initial investment.

Team Contributions

- **Adetola Ogunbanwo:**
  - Operations & Scalability
  - Document Formatting & References
  - Organized the Sales Strategy
- **Frida Gurn:**
  - Executive summary
  - Helped with editing & formatting document, ensuring flow throughout the report
  - Contributed to yearly scalability plans
- **Tymofii Bezverkhyi:**
  - Financial plan part:
    - Calculations
    - Prices analysis
    - Formula calculations
    - Appendix 1
  - Work plan
  - Document editing & formatting
  - Minor text improvements
  - Contributed to yearly scalability plans
- **David Pedro:**
  - Market Analysis & Sales Strategy
- **Adam Hayden:**
  - Business Model & Revenue Streams
- **Jack Guirke:**
  - Risk & Challenges

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References

[1] Shazam: Number of active users
[2] Soundhound: Number of active users

APPENDIX 1. Financial plan

Table 1. Fixed Costs

Category		Description
Renting GPU for AI Model Training	€ 300	€0.49/hr for renting GPUs for training a model
Data preparation for AI Training (manual labor)	€ 5,000	€15-40 per hour to hire team to sort out the data and write annotations for AI
Developing process	€ 72,000	Payment for team to develop everything from beginning
Legal expenses	€ 5,000	Company registration, copyright compliance, licenses, data protection (GDPR), user agreements and other expenses on legal documentation
Pre-launch marketing	€ 15,000	Includes lending, branding, SMM, PPC-ad, PR and mobile platform optimizations
Total:	**€ 97,300**	

Table 2. Ongoing Costs

Category	Price (monthly)	Description
Cloud Servers & AI Processing	€ 1,250	Basic server costs for cloud infrastructure
AI Model Hosting	€ 6,000	Hosting and processing for AI model, depends on active users
Cloud Storage	€ 650	Cloud storage for user accounts and statistics
Developers (2-3 people, part-time maintenance)	€ 6,500	Developers for ongoing maintenance and updates
AI Engineers (1-2 people for model improvements)	€ 7,500	AI engineers working on model improvements
Marketing & Social Media	€ 4,500	Social media management, targeted ads, and branding
Influencer Marketing	€ 3,500	Collaborations with mid-tier influencers on TikTok, Instagram, YouTube

User Support (Chatbot, Email, Moderation)	€ 3,500	User support through chatbot, email, and community moderation
Unexpected Costs (Bugs, Security, Scaling)	€ 3,000	Unexpected expenses like security issues, bug fixes, and scalability
Total:	**€36,400 / month**	