

Problem Statement for *HealthTrack*

1. Background and Context

In order to get the most out of exercising, consistency and discipline are essential. That's where technology can help. The COVID-19 pandemic led to nationwide lockdowns and social distancing norms, which triggered a transition from gyms to virtual fitness. This led to increased downloads and use of mobile fitness apps. Even now that COVID-19 restrictions have dramatically decreased, consumer demand for mobile fitness apps is as strong as ever. According to Business Wire, the mobile fitness app market is expected to grow to \$23.98 billion in 2026 at a compound annual growth rate of 23.8%.

There is a gap in the market for fitness apps that have home workout videos, provide daily calorie intake calculations and tracking, and exercise goals. The top players in the mobile app fitness app market today either focus on providing in-app workout videos or calorie tracking and meal planning— but not both. So, users have to use multiple apps in order to get access to these different features. This is where HealthTrack comes in. HealthTrack was designed to be a one-stop destination for all of these features, including: calorie intake planning and tracking, calorie burn tracking, in-app workout videos led by exercise experts, and more. It is a subscription-based mobile fitness app, priced at \$9.99 USD a month. The HealthTrack app was designed to maximize a user's productivity towards their training and weight loss goals.

There is also a gap in the market for mobile fitness apps that have community features. Working out virtually at home rather than a gym in their community can be isolating and users do not have access to the same community-based motivation as they would in a gym. That's why HealthTrack also has community features, such as global challenges and forums, in order to motivate users and keep them active and engaged. With HealthTrack, users will be able to achieve their goals faster than ever and be part of a fitness community that supports and encourages them.

2. Scope

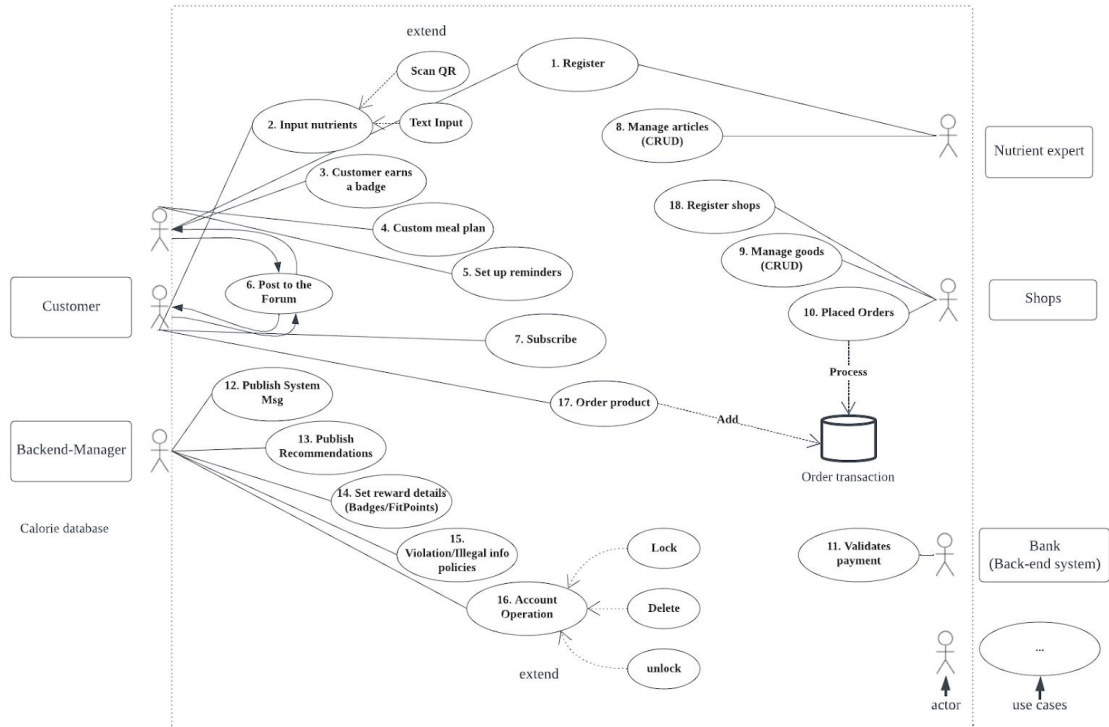
Users (actors) of the app:

- Customers: Users who download and use HealthTrack
- Backend managers: Develop and maintain HealthTrack's databases.
- Bank partner: HealthTrack will integrate a financial institution's core banking platform to enable in-app purchases.
- Store partner: HealthTrack will partner with an athletic retail company to give users ability to win items with FitPoints (credits earned in-app) or purchase items using their money
- Nutrition experts: On-staff experts who write educational articles for our app.

Objectives/activities of users (actors) of HealthTrack:

- **Customers should be able to:**
 - Create an account and securely log in
 - Securely pay for HealthTrack's monthly subscription plan
 - Purchase items in-app from integrated shop partner
 - Submit all necessary personal data (height, weight, age, gender, weight goal) and receive daily calorie intake goal
 - Submit daily calorie burn goal and earn badges when goal is achieved
 - Log daily calorie intake either manually or search for food items stored in app database
 - Watch in-app workout videos
 - Post and comment on in-app user forum
 - Read in-app articles
- **Backend managers:**
 - User account management
 - Protecting data by developing data security and restoration policies, procedures, and controls
 - Creating, maintaining, testing, and debugging backend

- **Shop partner:**
 - Upload their items for sale
 - Manage placed orders
- **Bank partner:**
 - Payment validation
- **Nutrition expert:**
 - Write and upload articles



3. Function

Our solution is a home workout program and Health Track. It tracks users' progress towards their nutrition, fitness, and weight loss goals.

Key features:

- The app will calculate the maximum amount of calories users can consume daily to safely reach their weight goal as fast as possible.
- Users will log what they eat and the app will track the calories.
- App provides workout videos led by experienced trainers in a variety of workout categories (ex: treadmill, weights, yoga, etc.).
- Each workout video has an estimated amount of calories that will be burned. The app tracks the amount of calories burned based on which workout videos were watched.
- Users can manually input an estimate of how many calories they burned in the day if they exercised **without using the app's videos**. (all the possible exercise ways)
- Users are awarded badges for goals they complete.
- Challenges are posted regularly. Leaders in each challenge earn FitPoints that can be used to buy items in the in-app shop.
- Forum for users to interact with each other, ask questions, post recipes, and more.
- Transformation page, where users can share their body transformations with the app community or keep them private.
- Education by on-staff nutritional experts will be posted regularly.
- Users will get notification reminders to exercise and input their food calories for the day.

Users are expected to input:

- Their weight loss goal
- How many pounds they want to lose per week
- Weight
- Age
- Height
- Gender

Based on this data, the app will calculate the maximum amount of calories users can consume daily to safely reach their weight goal as fast as possible. They can also

use the food log feature, which tracks the food they eat and how many calories they contain. Users can watch the in-app home workout videos, which automatically contribute to the calories burned tracker. Or, if they exercise without using in-app videos, they can add an estimate of how many calories they burned manually. There are community features for users to feel connected and motivated as well. Challenges will be posted regularly, and users on top of the leaderboard will earn FitPoints, which can be used to buy items in the in-app shop. There will be a forum for users to post questions, share advice or recipes, and more. There will be a Transformation Story page where users can also share pictures of their transformations with the app community if they choose to. They can also keep their pictures private.

Non-functional Requirements:

- Performance, efficiency, scalability: The load time for each screen should take no longer than 4 seconds.
- Performance, scalability: The load time for each screen should take no longer than 4 seconds when the total number of simultaneous users is greater than 50,000
- Capacity: System must be able to handle 100,000 users while maintaining performance objectives and without any degradation in performance.
- **Security:**
- System grants access to accounts when users enter the correct username and password.
- Passwords must be hashed.
- After 3 login attempts, the security system locks the account to protect the user's information. To unlock an account, users must do a password reset.
- The system must be resilient to any kind of attacks.
- Transactions: Users should be able to make quick and secure transactions.
- Availability: The system must be available to users at all times.
- Maintenance: The system must be easy to maintain and update.
- Usability: The system must be as easy to use and understand as possible.
- Compliance: The system must comply with all applicable laws and regulations.
- Durability: Uploaded data and photos should not get lost.
- Latency: Photos should be fetched with minimal latency.

4. Form

The hardware, software, and customer environment in which the system will operate, including constraints such as tools and languages used for implementation, cloud platforms, APIs, network infrastructure, etc.

Below are some key considerations and constraints to keep in mind during the development process:

Hardware:

- The app will need to run on both iOS and Android devices, so it will need to be compatible with the hardware and operating systems of these platforms. (Web)
- The app should be optimized to run on a range of device sizes and types, from smartphones to tablets to wearable devices like smartwatches and fitness trackers.

Software:

- The app will need to be developed using a programming language that is suitable for mobile app development, such as Java, Swift, or Kotlin.
- The app will require the use of third-party software libraries or APIs to provide additional functionality, such as GPS tracking or integration with fitness devices.
- The app will use a Financial API, such as Plaid, to ensure safe transactions for in-app purchases.
- The app will need to be designed with a user-friendly interface and intuitive navigation to ensure a positive user experience.

Customer Environment:

- The app should be designed with the needs and preferences of the target customer in mind, such as the types of fitness activities they engage in and the features they expect from a fitness app.
- The app may need to integrate with other fitness-related apps or services that the customer uses, such as nutrition tracking or social fitness networks.
- The app should be compatible with a range of network environments, including 4G/5G networks and Wi-Fi.

Constraints:

- The app will need to comply with data privacy regulations, such as GDPR or CCPA, which may impact the storage and use of user data.
- The app will need to be developed using efficient coding practices to ensure optimal performance and minimize battery drain.
- The app will need to be hosted on a cloud platform, such as Amazon Web Services or Google Cloud Platform, which may have its own constraints and limitations.

5. Economy

Our app will provide value to customers by helping them achieve their fitness goals, and to the development organization by generating revenue through subscriptions, advertisements, and in-app purchases.

Expected Cost to Customers:

1. Subscription Fees: Our fitness app charges users a monthly subscription fee of \$9.99 to access premium features, such as personalized workout plans, nutrition advice, and coaching.

Expected Value to Organization:

1. Revenue: Our fitness app will generate revenue through subscription fees, in-app purchases, and advertisements. With a growing user base, the revenue potential for our app is significant.
2. Competitive Advantage: Fitness apps that offer unique features, such as personalized workout plans or innovative social features, can gain a competitive advantage in the market.
3. Customer Data: Fitness apps can collect valuable customer data, such as workout habits, preferences, and demographic information, which can be used to improve the app and target advertising.

Expected Cost to Development Organization:

1. Development Costs: From the agile story estimation we conducted, we estimated that the total number of hours necessary to develop the app is 339

hours. The estimated duration of development is 9 weeks, and we will hire 7 software developers paid a rate of \$60/hour. So in total, we currently estimate a development cost of \$142380.

2. Marketing Costs: According to Business of Apps [1]:

- App market research: \$5,000-\$15,000
- App marketing agency pricing: up to \$25,000
- Influencer marketing: \$10,000-\$18,000
- Average Cost Per Install (CPI) – \$1.75/install

So, based on these figures, we will start with a budget of \$40,000. Once our app launches and we start generating revenue, we will adjust our budget based on how much revenue is being generated. According to HubSpot, the average marketing budget for startups should be 11.2% of overall revenue [2].

Infrastructure Costs:

3. Hosting an app on the Cloud can cost up to \$5,000 per month, depending on the data it uses, the predicted number of users, and overall scalability. We predict our cost will be that expensive because we will be hosting videos and aim for over one million users.

Raising Funds: In order to fund the development and maintenance of HealthTrack, we will use these funding strategies:

Crowdfunding: We will utilize platforms like KickStarter or Indiegogo, which are great ways to get startups funded. This funding model can not only be used to get initial funding but can be used for subsequent fundraising for future services.

Angel Investors: We are interested in finding angel investors, who are investors that fund startups at the earliest stages of development in return for a share in the business or a convertible bond. We are especially interested in this option because they sometimes even contribute their business expertise to help the companies they invest in, which would be very valuable. They are also more flexible than private investors, because they are using their own money to fund the company.

Variable Pricing Strategies:

1. Freemium Model: Our fitness app offers a basic version of the app for free, but charges for premium features such as personalized workout plans or coaching.
2. Subscription Model: Our fitness app will charge users a monthly or annual subscription fee to access premium features.

Resource Constraints:

1. Development Team: Fitness apps require a skilled development team to build and maintain the app.
2. Infrastructure: Fitness apps require reliable infrastructure to support a large user base.
3. Marketing: Fitness apps require marketing to attract and retain users. Marketing costs can be a significant resource constraint for development organizations.

6. Time

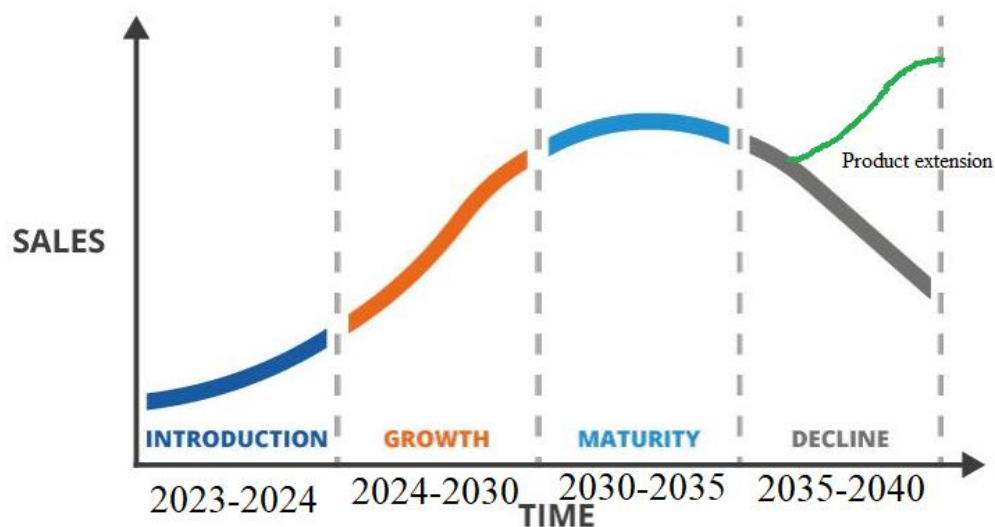
The HealthTrack app is a revolutionary way to exercise and track your wellness no matter where you are. In the past, customers went to the traditional gym environment to work out and attend instructor-led classes. These gyms do not provide personal training or nutrition experts or community forums at a low price rate. Now, with HealthTrack, customers can work out in the privacy and comfort of their own homes and still be instructed by expert trainers, in whatever exercise category they want.

Presently, there are some other exercise and health apps on the market. However, they do not provide exercise videos, calorie tracking, customization, and community features like HealthTrack does. These apps either offer just calorie tracking or just exercise videos. They do not provide a holistic approach to wellness like HealthTrack, which is a one-stop-destination for all of those needs. So, HealthTrack is a replacement for these kinds of apps. Some examples of apps like this include MyFitnessPal and Apple Fitness+. Also, HealthTrack is super-powered by data analytics and offers customers a personalized experience that other apps do not offer.

The future is bright for HealthTrack. As stated earlier, there is an expected compound annual growth rate of 23.8%. We will continue to integrate new features, such as integration with wearable technology. The rise of machine learning, artificial intelligence, and other technologies will allow us to improve our personalized fitness plans in the future.

This is the perfect market window to launch this app. There is a strong transition to at-home fitness since the COVID-19 pandemic and more people are investing in home gyms. According to Grandview Research, “Health and fitness apps show the highest retention rates across all categories”, so the demand and retention for our app will potentially be very high. Since competitors do not currently offer the level of customization and holistic wellness features that we do, we will be ahead in the market.

Proposed lifecycle of the product:



We will always be looking for ways to improve and differentiate our product from competitors that have entered the market to extend its lifecycle.

7. Organization Constraints

Outlines the teams and people who will develop the solution, including constraints such as geographic location, skill sets, internal/external reporting structures, etc.

1. Time: The solution should be implementable within the timeframe specified by the organization:

Legal working limit: 40h/week

Estimated working time: 339h(113 story points * 3h/story point)

Estimated duration: 9 weeks

2. Budget: The proposed solution should be financially feasible and align with the organization's available resources:

Team members: 7

Average salary: \$60/hour [According to the U.S. Bureau of Labor Statistics (BLS), the mean hourly wage for software developers was \$55.75 as of May 2020]

Salary for all: $339 * 60 * 7 = 20340 * 7 = 142380$

Estimated budget: \$160,000

3. Resources: The proposed solution should consider the available resources such as personnel, technology, and infrastructure:

personnel: we have experienced members on project management, software development, and data analysis, ect. But we lack Finance and budget related professionals and law background staffs.

technology: not all the developers or designers are familiar with the tools we currently use, like Figma. But we have the atmosphere to help each other with what you know and specialized about.

geographic location: Another possible constraint could be that all our team members are not supported to provide overseas support or deployment, so the geographic constraint will be: the activities are mostly conducted in the USA.

Policies and regulations: The solution should comply with the relevant policies and regulations that govern the organization:

- **Data Privacy:** The fitness app will likely collect personal information from users, such as their name, age, and fitness goals. The developer will need to comply with relevant data privacy laws, such as the General Data Protection Regulation (GDPR) in the European Union and the California Consumer Privacy Act (CCPA) in the United States.
- **Health Information:** If the fitness app collects health information from users, such as their heart rate or workout history, the developer will need to comply with relevant regulations such as the Health Insurance Portability and Accountability Act (HIPAA) in the United States.
- **Advertising and Endorsements:** If the fitness app displays ads or endorsements, the developer will need to comply with relevant advertising regulations such as the Federal Trade Commission's (FTC) Endorsement Guidelines.
- **Payment Processing:** If the fitness app offers paid subscriptions or in-app purchases, the developer will need to comply with relevant regulations such as the Payment Card Industry Data Security Standard (PCI DSS).
- **Accessibility:** The fitness app should be designed to be accessible to users with disabilities, in compliance with relevant regulations such as the Americans with Disabilities Act (ADA) in the United States.
- **App Store Guidelines:** The fitness app will need to comply with the guidelines and policies of the app stores where it is listed, such as Apple's App Store and Google Play.

8. Summary of Primary Success Criteria

A bullet list of the 3-5 key indicators of success, e.g., prioritized metrics for criteria such as speed to market, market dominance, number of users, partnerships, quality, reusability, etc.

The metrics we will be tracking to measure our success are:

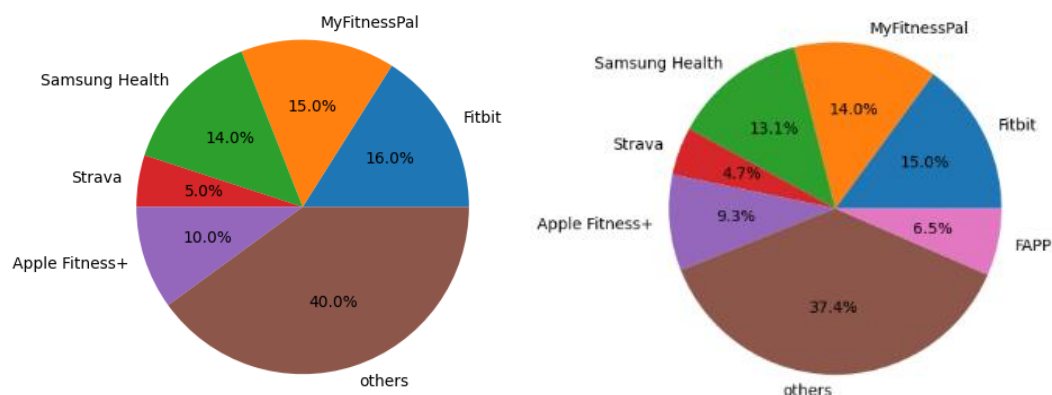
- **Number of Active Users:** While we considered using the number of downloads as an indicator of success, not everyone who downloads an app will be an active user. So, we also want to track the number of active users, who frequently open and engage with our app. This will allow us to track the level of interest our users have in our app. It will show us how useful our app is to users.
- **User Base Growth Rate:** We will also judge how successful our app is based on how many new users we are able to attract over time. If we are not gaining as many new users as we would like, we will know that the effectiveness of our marketing campaigns and channels are not high.
- **Session Intervals:** We want to track a user's average app session length to learn how much time they spend interacting with our app. This is another way to measure how engaged and active our users are, and how useful our app is to them. If the average user session is quite long, we can see that our app is successfully engaging the user. If the average session length is short, we will know to try new ways to get users to interact with our app. Maybe we would try launching new updates or features in order to encourage higher engagement.
- **User Retention:** We will track user retention to see how many users return to our app after a set period of time. If users do not choose to continue to use our app, we will know that our app is not successful in its goals. However, if user retention rates are high, we will know that our app is successfully providing value and satisfying users.
- **Subscriptions:** We will track the number of subscription signups. If users are not subscribing to access our app's premium features, we will know that there is an issue with our paid features model. Maybe the features are not attractive enough, maybe they do not provide value, maybe the subscription is too expensive, etc.
- **Revenue:** We will also track how much revenue the app is generating through in-app purchases and subscriptions. Revenue is a key indicator of market demand and user willingness to pay for the app.

- **Market Share:** It is important to know what portion of the mobile fitness app market our app is capturing. By measuring market share KPI, we will know how well our product is performing compared to our top competitors.

Top competitors

- Fitbit: According to Statista, in 2021, Fitbit had a market share of around 16% among fitness app users in the United States.
- MyFitnessPal: MyFitnessPal had a market share of around 15% among fitness app users in the United States, according to Statista in 2021.
- Samsung Health: According to eMarketer, Samsung Health had a market share of around 14% among fitness app users in the United States in 2020.
- Apple Fitness+: Apple Fitness+ launched in 2020 and has quickly gained popularity. Its market share among fitness app users in the United States is not yet available. (assume 10%)
- Strava: According to eMarketer, Strava had a market share of around 5% among fitness app users in the United States in 2020.

It's worth noting that the market share of fitness apps can vary depending on the source of data and the time period being analyzed. However, based on the available data, Fitbit and MyFitnessPal appear to be two of the most dominant fitness apps in the United States, with around 16% and 15% market share, respectively.



Works Cited:

- [1] *App Marketing costs*. Business of Apps. (2023, January 16). Retrieved March 21, 2023, from <https://www.businessofapps.com/marketplace/app-marketing/research/app-marketing-cost/#2>
- [2] Carmicheal, K. (2022, December 23). *Startup Marketing Budget: How to write an incredible budget for 2023*. HubSpot Blog. Retrieved March 21, 2023, from https://blog.hubspot.com/marketing/startup-marketing-budget?hubs_content=blog.hubspot.com%2Fmarketing%2Fstartup-marketing-budget&hubs_content-cta=Marketing+Costs+for+a+Startup

