SOEN 6841 (SOFTWARE PROJECT MANAGEMENT)

CONCORDIA UNIVERSITY

DEPARTMENT OF COMPUTER SCIENCE AND SOFTWARE ENGINEERING

Health and Wellness Software

Students:

Alireza Amini
Navjot Kamboj
Ritick Gulati
Yatish Chutani

Supervisor:
Prof. Joumana Dargham

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Declaration

We, the members of the team, have read and understood the Fairness Protocol and the Communal Work Protocol, and agree to abide by the policies therein, without any exception, under any circumstances, whatsoever.

Introduction

In today's fast-paced world, the integration of technology, especially through mobile phones, is instrumental in facilitating access to resources and tools that support a healthy lifestyle. Mobile applications have been seamlessly integrated into our daily lives and serve as essential tools for communication, information access and in health management. The accessibility and convenience offered by these apps has revolutionized the way people interact with their health and wellness routines, offering personalized solutions and real-time tracking capabilities.

Our project, led by a dedicated team of four, our project embodies a collaborative effort aimed at using technology to enhance health and wellness management. We decided to assign each member a main role during whole project. Ritik Gulati leads the Teaching Assistant (TA) liaison and ensures seamless coordination and support throughout the project. Alireza Amini acts as the project scheduler and carefully organizes schedules and tasks to optimize project efficiency. Navjot Cambodia takes on the role of meeting moderator, organizing regular discussions, and fostering a collaborative environment. Yatish Chautani is responsible for approving and reviewing the work of each team member, ensuring quality and consistency in all project components.

Contents

Problem Identification

1.1 Introduction

The rise of smartphones and wearable technology has seamlessly integrated into our daily routines, expanding the realm of applications we rely on. One area that has particularly flourished is health and wellness, with a flood of innovative ideas transforming the landscape. These apps are specifically crafted to aid individuals in their fitness regimens and promote healthier habits. From tracking nutrition and fitness to scheduling workouts, the range of health and wellness apps is extensive. However, with so many options at our fingertips, each one presents its own set of challenges and shortcomings. Our primary objective is to uncover these gaps and present practical solutions for them by conducting thorough interviews and conducting market research. Our research will focus on facets of the health and wellness app industry, examining the obstacles and potential advancements that are on the horizon.

1.2 Problems:

In our searches regarding current problems with the health and wellness era, we take two points of view. One is about the problems which persons encounter with their health and fitness plans, on the other hand, we investigate problems and gaps along the current software solutions like mobile applications and we conduct our research about user experiences with current applications. We decided to obtain problems and sort them in terms of importance and feasibility and extract the real user problems to find our best solution for them. We will investigate these problems each by each and explain them. We found out the main problem is that we don't have a super application which can cover nutrition and fitness even though these two subjects have lots of relations to each other. Our software has two main parts and one supportive part which is explained below.

Fitness problems:
After investigating many applications related to fitness, we found out that these applications can just help you with some strict plans or moves and you are not flexible with choosing your customized plan. However, each person's characteristics physical condition and strength are different from others. So, trainees can't have a fully customized plan for their bodies.

Nutrition problems:

1. Adding custom dishes to share with other people: current nutrition-based applications can only provide users some fixed dish recipes and users should follow these recopies, this can cause repetitious dishes and if you have a better recipe, you can't share it with other users. Making changes in existing dishes

2. recommend personalized recipe plans: we found a big problem within nutrition applications

which was recommending the best dishes for individuals using user personal and health conditions. For example, recommended dishes for a lactose intolerant person should be different from other persons.

1.3 Opportunities:

Not only have we taken on the challenge of tackling current concerns within existing applications, but we have also recognized the untapped potential in providing solutions for areas that are currently overlooked. Our project is devoted to fulfilling the various health and fitness needs of individuals, making it crucial for us to not just address existing issues, but also anticipate and meet the unmet needs in their lives related to these topics. This entails taking a comprehensive approach and covering various aspects such as personalized workout regimes, customized nutrition guides, support for mental well-being, and potentially revolutionary features like live health monitoring or virtual coaching sessions. We have identified and incorporated these overlapping elements to create a comprehensive and seamless experience for our users.

Fitness opportunities:
in few past years we witnessed incremental development about fitness science, and we endorsed the presence of personal trainers which helps trainees with their fitness plans and by observing them. This need cause persons trainer to be with that person during workout, but we suggested that we can provide and online communication between trainee and trainer to create a new easy way of observation and training.

Nutrition opportunities:
As we conducted our interviews, we uncovered a common desire among individuals to discover top-quality dining establishments that prioritize both flavour and health. This is especially important for those who are conscientious about their nutrition and seek out eateries that cater to their dietary needs. Whether it's searching for nutritious options for takeout or a charming venue for dining out while staying true to specific nutritional goals, the search for wholesome dining experiences is a prevalent theme.

On the other hand, we have the same gap in online communication with nutritionists. In these busy days, we need to optimize our time to get the best performance. So, we can create a way for a person's nutritionist to observe and suggest the best nutrition plan by taking your records and training plans.

Wellness opportunities:
In the modern hectic lifestyle, we can feel the lack of attention to mental health. Each person's mental state can affect their mood and energy, so it is good to have a method to observe these states and use it for making a better health plan. So, we came up with this idea which is regular mental feedback.

In the modern hectic lifestyle, we can feel the lack of attention to mental health. Each person's mental state can affect their mood and energy, so it is good to have a method to observe these states and use it for making a better health plan. So, we came up with this idea which is regular mental feedback. Also, for female users, we should care about their cycles to adjust their plans to hype their mood and energy.

1.4 Stakeholders:

In the context of software engineering, stakeholders are those who affected by the software project. Whether individuals, groups, or entities. stakeholders are those who has an interest, can influence, or be involved in the software development process. Stakeholders are vital players in the world of software development. Indeed, their impact on the direction and ultimate success of the software should not be neglected. For example it is important that their needs and expectations be thoughtfully addressed and incorporated into all stages of the development process.

In our project, stakeholders are different type of people, entities and groups. List of stakeholders are provided in the list below based on our stakeholder analysis:

- **Normal users:** they are those who want to get a fitness services. Individuals who want to connect to a fitness trainer or a nutritionist. These type of users can be in different fitness levels and have various goals which all should be addressed.

- **Fitness professionals and trainers:** these are people with fitness background that want to use software to create fitness services like workout plans, sport instructions, tutorials, and classes.

- **Nutritionists:** like previous one, they are people with nutrition background that will help making nutrition related services like meal plans, analysis meetings, and nutrition advises.

- **Developers and technical teams:** in most of software projects developers are stakeholders too. In fact they can play an important role as a stakeholder since they are responsible for developing, maintaining, and updating the fitness software.

- **Business owners and Investors:** this software is under development for a company with various investors. They care about the software's financial aspect, market positioning, and RoI. As a result they are part of stakeholders.

- **Marketing and sales teams:** based on project scale, it requires a related marketing and sales team to promote the software and they are involved in software life cycles.

1.5 Solution:

situations in the field of health and nutrition, but can we have a comprehensive solution for all these issues?

After the investigations and the meetings, we had with each other, we were able to cover these issues with software design. As mentioned so far, our project consists of two main sections nutrition and health and a support section of wellness.

In the design we had for this project, we came up with a design for software with two main parts. In this software, the user first enters his detailed information to create a user account, and if the user is connected to this software through peripherals such as a smartwatch. After creating a user account, the software enters the main section where the user can use the two sections of exercise and nutrition. In the fitness section, it will be possible to add your trainer, who will design the desired program according to the person. On the one hand, the personal trainer can monitor all recorded information such as heart rate and calories burned during exercise, and on the other hand, they can communicate with his student through video call or chat.

About the existing solutions for nutrition, we had obvious weaknesses, and to solve them, we created the ability for people to change the existing recipes according to their taste, and the software is personalized according to the ingredients in the food. can adjust the number of calories

and energy of the food. On the other hand, we have the ability that if people want to share their recipes, they can do so in the considered section. On the other hand, the next thing that was chosen for this project was personal food suggestions, which felt empty. For example, a person who is allergic to some foods should be faced with foods that suit his conditions, so our software, considering that it has complete information about the user's sensitivities and interests, can make relevant suggestions using the data collection. On the other hand, we create this possibility for our user so that they can communicate with his nutrition doctor and that doctor can give a meal plan according to the existing conditions and change and update it during the diet period.

In the support section of our software, the user must continuously record his mental feelings as a report in the system and can specify the reason for that feeling. These continuous reports can report a detailed report of the individual. It can give the personal trainer the ability to adjust the weight or lightness of the program. On the other hand, it can let the nutritionist know whether the diet is suitable for the person or not, and finally, the software will be able to perform an analysis using this data and give suggestions such as going to yoga to the user. Give yourself and make your user better with motivational notifications. On the other hand, we have included in this software the ability to advertise various sports events and set online competitions for sports records so that the audience will be attracted to the software and can compete with others in their exercises.

Market Analysis

2.1 Introduction

Our objective to conduct Market analysis before developing our Health and Wellness application is solely based on the motivation to know our primary target audiences, to understand demographics and psychology of the users and to understand our existing competitors in Health and wellness industry. We aim to conduct a thorough analysis of our competitors highlighting their strengths, weaknesses, opportunities, and threats. At the end, we aim to highlight the Business value that can be derived from our application by highlighting our Unique Selling Points which sets us apart from our competitors and by providing solutions that can help bridge the gaps in this industry for our customers.

2.2 Target Audience Identification

1. Why identify the Target audience?
   Identification of target audience is very crucial for several reasons:

   (A) **Customized Features and Content:** While developing the application, we can customize the features and content of an application to match the specific demands of the target audience by taking into account their demographics, preferences, and wants. For example, different age groups may have different opinions related to the functionality, information display, and user interface design.

   (B) **Effective Marketing and Promotion:** We can design focused marketing campaigns and promotional tactics to reach the proper users by having a clear understanding of the target audience. Through the identification of the target audience's preferred communication methods, interests, and demographics, we can optimize our marketing efforts to effectively attract and engage potential users.

   (C) **Improved User Experience:** Creating the program with the intended user base in mind guarantees a seamless and easy-to-use interface. An application that is simple to use and navigate can result in increased user satisfaction and adoption rates. Developers can achieve this by taking into account elements like usability, accessibility, and language preferences of the target audience.

2. Primary target audience :
   We have identified the following groups as our intended target audience:

   (A) **Beginners and Novices:** People who are unfamiliar with fitness and health and who are looking for inspiration, encouragement, and support to begin their journey toward wellbeing. Exercises suitable for beginners, educational materials, and one-on-one coaching could be beneficial to them.

(B) **Fitness Enthusiasts:** People who actively participate in fitness activities like weightlifting, yoga, cycling, or jogging. Our application would allow them to plan, set, and monitor their fitness plans.

(C) **Health-Conscious Users:** People who emphasize their health and well-being and are interested in adopting healthier behaviors, regulating their nutrition, and improving their overall fitness levels would likely to be interested in out application.

(D) **Seniors:** Users in their latter years who are motivated to keep their independence, mobility, and health as they age. Our application will provide specialized exercise plans, fall prevention techniques, and assistance with managing chronic illnesses that would help them stay fit.

(E) **Mental Health and Well-Being:** People looking for methods and resources to help their emotional well-being and are dealing with stress, anxiety, depression, or other mental health issues. Our application, by providing daily feeling report will analyze the user's mental state and suggest the activities based on this report.

3. Demographic and psychographic characteristics of the target audience
Demographic Characteristics: We identified the following quantitative factors that our target audience is based on:

(A) **Age:** Primarily targeting adults aged 25-45 years old, this age group often prioritizes health and wellness as they balance work, family, and personal responsibilities.

(B) **Gender:** Gender-neutral strategy that appeals to both men and women. Realizing that wellbeing and health are issues that affect everyone, regardless of gender.

(C) **Location:** At first, emphasis will be on suburban and urban regions with technology and wellness resources available. On the other hand, users will be able to access the app from a variety of geographical regions.

psychographic Characteristics: We identified the following quantitative factors that our target audience is based on:

(A) **Lifestyle:** Balanced living, consistent exercise, a healthy diet, and stress reduction are priorities for those who are concerned about their health. These users will look for methods of wellness and health care and take into account mental, emotional, and physical wellness.

(B) **Motivations and Objectives:** Driven by a desire for longevity, energy, and general well-being. The users will have particular health objectives, such stress relief, increased fitness, better sleep, or weight control.

(C) **Personality Traits:** Proactive, disciplined, goal-oriented people who are receptive to personal growth and development. They might value features that promote accountability, goal-setting tools, and data-driven insights.

2.3 Competitor Analysis

2.3.1 HealthifyMe

HealthifyMe is a popular nutrition and calorie counter app designed to help users in achieving their fitness goals.

Overall Analysis:

1. HealthifyMe is primarily distributed in over 300 cities with 10 million downloads, approximately 25 million users, and 1,500+ trainers. It offers a food tracker, workout tracker, water, sleep, weight loss and handwash and medicine tracker.

2. It includes no equipment home workout videos for men and women.

3. HealthifyMe Snap is an advanced version which uses the most advanced image-based food recognition system that enables users to just take a picture of the food and it recognizes the dish and then counts the calories present along with the Macro-nutrients.

4. It offers AI powered nutritionist to assist users with personalized health and weight loss suggestions available 24*7. So it uses a combination of artificial intelligence and human trainers to help users stay fit.

iOS users' rating : 4.6
Android users' rating : 4.6 (with around 0.5 million reviews)
Target audience: 12+ years

SWOT Analysis:
Strengths:

1. Nutrition planning and tracking
   The app offers an opportunity to follow up the daily meals, calorie counting and nutrition tracking. Individually customized diet recommendations that include meal plans and are oriented towards personal goals and food preferences.

2. Personalized Health Plans
   HealthifyMe provides personalized workout and diet plans according to the allotted goals like weight loss or muscle growth, ultimately leading to improved fitness levels.

3. Strong community support
   The application incorporates a community aspect that allows users to connect with each other, share their experiences and support each other in their fitness journeys. They can share blogs, recipes, and hacks.

Weaknesses:

1. Focuses more on nutrition.
   HealthifyMe is more of a nutrition and calorie counter application. It does neglect the fitness and wellness aspects of overall health.

2. Cost of premium plans
   HealthifyMe offers premium plans called SMART PLAN, 1 COACH PLAN, 2 COACH PLAN where users can connect with certified nutritionists for personalized guidance, but these plans are quite expensive ranging from 15 dollars/month to 84 dollars/month, so it limits some users.

3. Limited food database accuracy
   Food image recognition system is not very accurate based on our personal usage.

4. Doesn't recommend nearby Healthy outlets and personalized recipe plans.
   HealthifyMe doesn't recommend healthy outlets that may located in nearby areas. Moreover, it has no feature to recommend healthy food recipes based on user dietary restrictions.

Opportunities:

1. Expansion of features
   If HealtifyMe improves its existing features and brings new features in fitness and wellness aspect then it can attract more users.

2. Integration with Smart Devices
   Better connectivity with smart devices, IoT and new health technologies may lead to a more holistic view of individuals' well-being.

Threats:

1. Competition
   The market of health and wellness app is not only large but highly competitive. HealthifyMe faces competition from its rivals like MyFitnessPal , which is another calorie counter application with high user base and good reviews.

2. Changing nutrition trends
   Changing nutrition patterns may alter the preferences of users, failure to adapt might result in a drop in app relevance.

source: https://entrackr.com/2022/08/healthifyme-posts-rs-185-cr-revenue-in-fy22-losses-surge-8x/
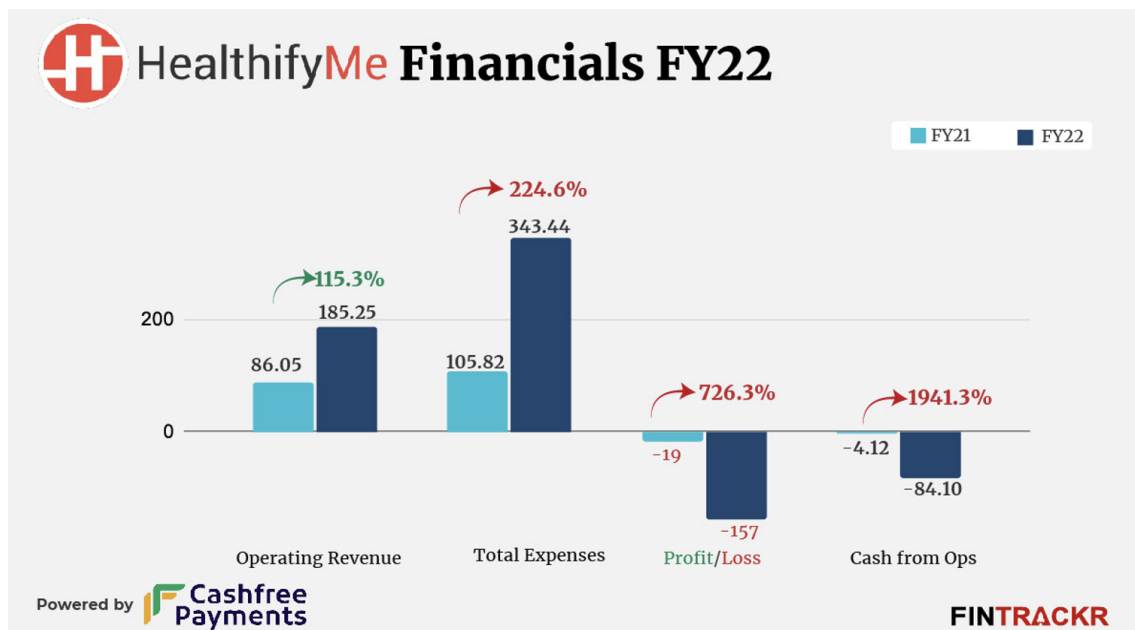
2.3.2 Strava

Strava is a popular fitness tracking and social networking application for athletes. Its motive is to make fitness tracking social.

Overall Analysis:

1. Strava generated $220 million revenue in FY2022, a 31% increase from 2021. It has over 95 million registered users, with two million being added every month.

2. Strava lets its users record any activity they are doing – run, rides, hikes, yoga and over 30 other sport types.

3. It can intelligently recommend popular routes based on user preferences. It allows user to build their own routes they wish to follow.

4. Strava is compatible with a lot of fitness devices like Apple Watch, Fitbit, Garmin etc. allowing for better data collection.

5. Strava has a strong community of athletes, allowing them to take part in fitness challenges, collect badges and stay accountable.

iOS users' rating: 4.8
Android users' rating: 4.5 (with around 0.9 million reviews)
Target audience: 4+ years

SWOT Analysis:
Strengths:

1. Activity tracking and strong analytics
Strava is a leading solution due to its performance in the various activities such as running, cycling, and swimming. Robust analytics equip the users with in-depth information about their performance such as distance, pace, elevation, and heart rate.

2. Social Networking for Athletes
The app builds a social network for athletes where they can connect with friends, sign up in clubs and compete against each other. Other social attributes like comments, kudos socially drives a sense of belongingness and inspiration.

3. Global Community
Strava accumulating a large body of active users provides an international unique forum for all athletes. Users can discover and participate in activities taking place anywhere in the world.

Weaknesses:

1. Misses out on providing holistic approach to fitness.
Strava emphasises on physical fitness but misses the point that overall health and wellbeing depends on nutrition and mental health too. It doesn't ask yours about their feelings after the workout or after they have had a meal.

2. No personalized workout recommendations
Strava can improve by recommending personalized workouts that is suitable for body and fitness goals. For instance, someone who is looking to gain muscle mass must be recommended for weight training.

3. Connect with fitness professionals.
Although Strava has a strong community of athletes, it doesn't connect you to fitness coaches for personalized training.

Opportunities:

1. Expanded Activity Types
Introducing support for additional sports or activities could attract a broader user base interested in diverse fitness pursuits.

2. Connect with fitness coaches. Strava should include AI fitness coaches and human coaches to give personalized workout plans based on body goals.

Threats:

1. Competition:

   The fitness market is highly competitive due to the emergence of new applications and updates in existing ones. Remaining innovative is vital to keeping and developing user numbers.

2. Data Security

   Just as any application that collects personal fitness data, there is a constant requirement to prioritize and improve the level of protection when it comes to protecting against unauthorized access.

source: https://sacra.com/research/the-whole-foods-of-social-networks/
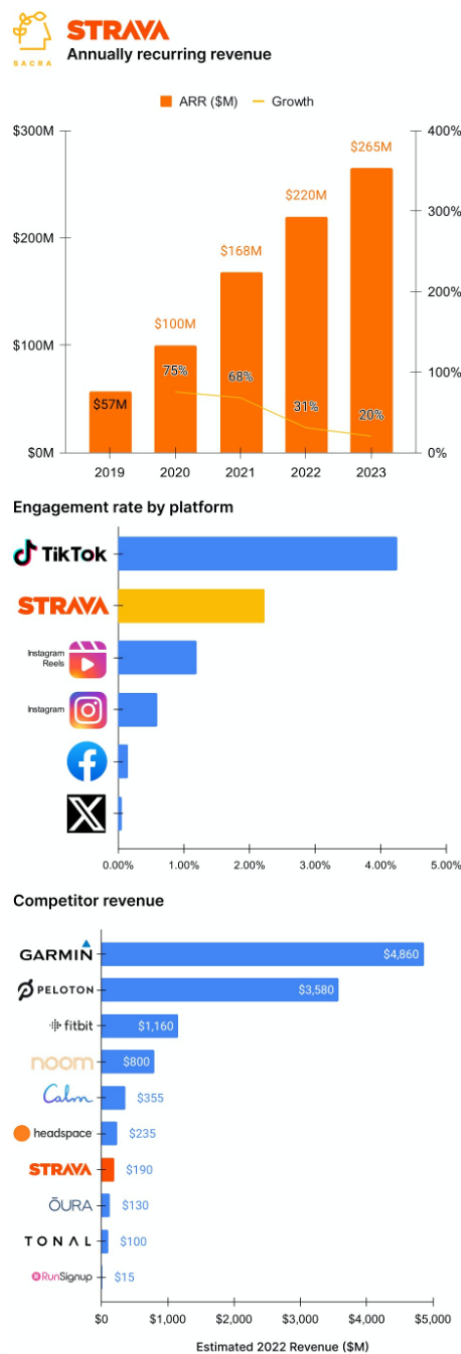
2.3.3 Calm

Calm is a popular sleep, meditation, and relaxation application helping a million of its users to experience better sleep, lower stress, and anxiety with guided meditation, breathing and stretching exercises, and relaxing music.

Overall Analysis:

1. Calm made an estimated $355 million in FY2022, a 7.5% increase on the year prior. It has approximately five million users who have subscribed.

2. It provides premium monthly plans for 12.99$, yearly plans for 69.99$ and lifetime subscription for 399.99$

3. This application is perfect for beginners, but also includes hundreds of programs for intermediate and advanced practitioners. Guided meditation videos are available between the duration of 3-5 minutes, so choose what you like.

4. It has a feature to track progress with daily streaks and mindful minutes.

iOS users' rating: 4.7
Android users' rating: 4.4 (with around 542K reviews)
Target audience: 4+ years

SWOT Analysis:

Strengths:

1. Guided Meditations
   Calm has a wide selection of guided meditations for different purposes like fostering calm, relieving stress, and enhancing concentration. Sessions are taken by seasoned meditation teachers, where users engage in a guided meditative practice.

2. Sleep Stories and Music
   A set of stories that help calm down before bedtime with soothing voices in the app helps lower stress levels and improve sleep quality over time.

3. Personalized Recommendations
   Calm offers customized meditation advice in line with user preferences, goals, and behavior. Whether it is to reduce anxiety, improve mindfulness or help create more restful sleep, tailored programs are designed for specific needs.

4. Mindful Breathing Exercises:
   The app also includes breath training components, which help people focus on their breathing and achieve relaxation through stress reduction.

Weaknesses:

1. Subscription Cost
   Although the app has some free content on offer, it will be a fee to use many of its features and programs. In some cases, the subscription fee may serve as a limitation to user access.

2. Limited Interactivity
   Calm does not have much interactivity because it mainly stores pre-recorded content, unlike calming apps that deliver live meditation sessions or instant responses.

3. Lacks holistic wellness
   Calm is a leader in mental wellness but doesn't include other aspects of well being such as nutrition and physical activity.

Opportunities:

1. Expanding Content Variety
   Building the library constantly with different meditation techniques, themes and trainers could be a better option.

2. Integrating mood tracker
   Application can have features such as asking users how they are generally feeling and recommending them content based on that.

3. Menstrual health tracker
   Wellness applications must have features to track menstrual cycles and send cheerful messages to women based on that.

Threats:

1. Competition:
   The mindfulness and meditation app space is competitive, with the emergence of new apps and updates to existing ones such as HeadSpace.

2. User Engagement:
   Sustaining user engagement over time can be challenging in the competitive app market.
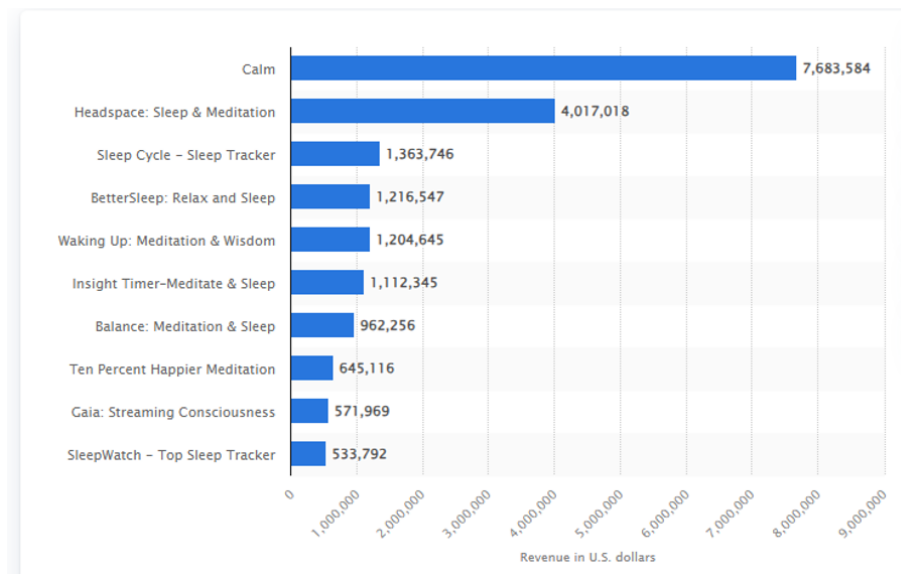
source: https://www.statista.com/statistics/1239670/top-health-and-meditation-apps-by-revenue/

2.4 Business Values

Business values are fundamental beliefs in an organization that tailor the behavior, decision-making, and actions within the organization. These core values are like the foundation for the company's culture and they represent company's identity. As a result, business values plays a vital role in defining the company's purpose beyond just making profits.

In addition, beneficial aspects of business values should not be neglected. To commence, these beliefs forms a cultural identity that affects decision-making process especially in difficult situations. They are often reflected in an organization's brand and can influence brand perception and customer loyalty. Besides, Business values make a long-term view for the company that helps

leaders find a purpose beyond short-term objectives with a sense of direction for the future. It also can serve as a risk mitigation strategy in organizations.

- Definition of the unique selling points that set the proposed solution apart.

- Articulation of the value proposition for potential users.

- How do we establish ourselves in the market ?

- Appstore – ratings and review

- Advertisements

- Influencer marketing

- SEO

Unique Selling Points (USPs):
All-in-one integration of fitness tracking software, nutrition planning service, and mental health support. Recommendations personalized according to the user. Recipes and experiences sharing platform designed for user-generated content.

Value Proposition:
Enable the users to have an overall well-being with a single app. Try to present suggestions that are personalized and intelligent. Encourage a space for sharing experiences and ideas.

To sum up, the developed health and wellness app is conceived to address an essential market problem of providing a holistic solution which combines the core aspects of fitness, nutrition, and mental health. The one-of-a-kind qualities and customized style that it possesses makes it different from its current competitors so it offers valuable and whole wellness plan to users looking for healthy and balanced lifestyle.

REFERENCES

Collaboration Environments

1. **Github :** https://github.com/DarCyStorm/SOEN-6841-Course/tree/main/Project