Project Deliverable G:
Mealtime Food Tracker
Business Model and Economics Report
“Mealtime”

GNG 2101D
Team D1
Due Date: Mar 21, 2021
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List of Acronyms

ADD	Attention Deficit Disorder
BOM	Bill of Materials
IDE	Integrated Development Environment
iOS	iPhone Operating System
MIT	Massachusetts Institute of Technology
NPV	Net Present Value
OS	Operating System
UI	User Interface
WiFi	Wireless Fidelity

Abstract

In this deliverable, a business model was rendered and a cost analysis of the product was constructed in order to determine the specific costs linked to the development and commercialization of our product. The chosen business model was that of a freemium one because we wanted the app to be initially free-of-charge with additional costs incurred for in-app features. After that a list of assumptions were made as to how this business model would be operated and whether it would be feasible or not. Next was the development of our business' three-year income statement that included sales revenue, costs of units, etc. From this income statement, an NPV analysis was conducted which allowed for the determination of the break-even point. For breaking-even in three years, 48,334 downloads of the app must have been made in one year to reach that point. Then a list of assumptions were made for this economical data which entailed the app's pricing, various types of expenses that were used to grow our business, and much more. Finally a snapshot link for the updated Wrike project plan was attached that when clicked, takes one to see the specific plans for each of the future deliverables to come. All in all, our team has developed a thorough and detailed project plan which will allow us to create a final prototype that will be presented on Design Day.

1. Introduction

The primary goal of this deliverable is to identify a potential business model that would be best applicable to commercialize the team's final product and develop a business model canvas. Based on the chosen model, a forecasted three-year income statement for the team's company will also be developed and analyzed for further usage. Alongside this will be a NPV analysis which will be used to determine the break-even point for our product, and also the list of assumptions made for this economics report. Finally, a snapshot link for the Wrike project plan will be attached that will illustrate the specific plans and subsequent tasks to be completed for the final prototype evaluation which will be showcased on Design Day to all attendees, as well as others deliverables to come.

2. Chosen Business Model

The business model that our team has chosen for our final product is the Freemium model. The reason that this model was chosen is because the initial purchase of the product is completely free although there will be extra charge for any additional in-app features. For that reason any and all upgrades to the initial app will ensue with additional charges. This ensures the user is capable of utilizing the initial service to the fullest of its extent and only has to pay for any additional premium features. This model best fits our product because we provide a health orientated service to our customers, and we feel it is immoral to charge our users for a service which they use because of their compromised health and to help alleviate some of their worry. The assumption being made that this product will be used and orientated towards individuals which make it a goal to track their estimated carbohydrate consumption. This group of individuals ranges from diabetics to carbohydrate intolerant individuals to those suffering from epilepsy and other neurological diseases to users who simply would like to track carbs for weight loss.

<table>
<tr>
<td rowspan="2">Key Partners

Google Play Store (Android)
Hospitals
Dieticians
Nutritionists</td>
<td>Key Activities

Calculating logging and tracking of different carbohydrates within foods.</td>
<td rowspan="2">Value Proposition
We will allow the user to track and monitor the periods when they consume various types of carbohydrates, in a simple, intuitive way with minimal, simple inputs. The user will be allowed to use the app offline since there is a Bluetooth feature making the product Wi-Fi independent.</td>
<td>Customer Relationships
The customer relationship was developed with meetings regarding the app’s development.
A trustful relationship was created with our users.</td>
<td rowspan="2">Customer Segments
We are developing this app as a means to an end with other overly complicated apps which require too many inputs in order to log and track carbohydrates. We are aiming our app towards all age demographics but more specifically focusing on those who want to reduce or track carbs.</td>
</tr>
<tr>
<td>Key Resources
Software and project time allocated
Software engineers
Paid software applications (higher-developed programming languages for coding)
Office space for employees (work infrastructure)</td>
<td>Channels
The app will be downloadable only through the Google Play Store.</td>
</tr>
<tr>
<td colspan="4"></td>
<td>This includes diabetics, athletes, epileptics and even those aiming at reducing the amount of carbs in their diets.</td>
</tr>
</table>

Table 1: Freemium Business Model Canvas

Cost Structure Fixed costs will be held for employees, rent, advertising, licensing and equipment. These costs will remain the same regardless of the number of sales. The variable costs will contain data storage which will be adjustable depending on the number of users	**Revenue Stream** Profit is generated by the user purchase of the premium upgrade priced at 20$. Since other apps are predicated on a subscription-based business model, it is difficult to benchmark prices, so our price is fair for the service being provided.

List of Assumptions and Feasibility Study

- Our App is orientated to users who are health orientated.
- We assume our users are looking for a simple and easy to use app.
- The users are easily distracted and annoyed by numerous entries.
- The apps users trust our product to provide accurate calculations.
- Larger costs will occur if we bring it to the market.
- We assume a portion of the users will purchase the premium version at a price of 20$ and that they think it to be a fair price.
- We assume marketing will provide larger reach to new users and expand the number of new users each year.
- We assume users will have an Android phone and not iOS.

Theoretically this is extremely feasible, but without any of the marketing required to get this app into the hands of the users, it's useless. Marketing would become an expense which would in turn produce greater profits. This is ideal when it proves to be the only expense, so if we were to scale it larger, we would require infrastructure, employees, licensing, increased data storage amongst many more operating expenses.

3. Economics Report

Cost	Variable/Fixed	Direct/Indirect	Amount	Reasoning
Maintenance	Variable	Direct	70,000$	Median salary for software engineer, needed for code fixes and updates
Advertising (Marketing)	Fixed	Indirect	12000$/year	Web ads using a professional ad agency will provide

				the most outreach to the potential users
Customer Support	fixed	Direct	36,000$/year	One employee at 36,000$ salary, this may change depending on how many users there are
Licensing	Fixed	Indirect	16,000$	Licensing for devices and app publishing
Data storage	Variable	Direct	10,000$	Depending on the number of users, data must be kept from app and company
Equipment and hardware	Fixed	Direct	20,000$	Equipment used, computers, monitors, office furniture, etc.
Rent and utilities	Fixed	Indirect	3500$/month 42,000$/year	Commercial space rent and utilities,

Table 2: List of Costs With Respect To Their Amounts

3-Year Income Statement

Assuming the app does well in its first three years on the market, there should be an estimated 10,000 new downloads in the first year with an annual growth of 100%. There will be 20,000 the following year and 40,000 the third year. After the first four years the annual growth will lower to 30%. This emulates the plateauing of the number of new downloads. This totals 70,000 downloads after three years and assuming 20% of the users opt to upgrade their service to premium for a one time fee of 20$, this will generate 340,000$ of income in the first three years. The premium upgrade will provide the user the ability to personalize the app interface, prioritize different values and set unlimited reminders within the app.

Revenue		
Sales	$280,000	$280,000
Cost of Goods Sold		
Labour	$318,000	
Equipment	$20,000	
		($338,000)
Gross Margin		**-$58,000**
Operating Expenses		
Marketing	$36,000	
Rent	$126,000	
Data storage	$10,000	
Licensing	$16,000	($188,000)
Operating Income		**($246,000)**
Net Income		**(-$246,000)**

Table 3: 3-Year Income Statement

NPV Analysis

The formula used to calculate the present value is as follows:

$PV = FV \div (1 + iN)$ **INSTRUCTED NOT TO USE INTEREST**

First year expenses: 206,000$
Years preceding expenses: 190,000$
PV= 206,000 + 190,000 + 190,000 = 586,000$ after 3 years assuming no interest being calculated from the bank.

Break Even Point

586,000$ = 20$ * N

N= 29,300 purchases at an estimated 20% of each user purchasing the upgrade. This means that there has to be 146,500 downloads of the app to break even in three years, which implies each year there has to be at least 48,334 downloads of the app.

Assumptions

- The app will be sold on the Google Play Store for Android phones free of charge.
- There will be at least 10,000 downloads per year and its unique concept will allow it to grow each year.
    - Number of new users will decrease after a few years
- The premium version of the app will be available for purchase for 20$
    - This allows users to use the app for free if they want and only pay extra if they feel they want the premium features.
- Assuming only 20% of users will upgrade to the premium version
    - It will take more than 3 years to break even.
- Costs on marketing and equipment and licensing will be highest in the first few years due to rapid increase in users and will diminish as new users become lesser.
- The app is aimed towards chronic diabetics as much as healthy people.
    - This app can help users to track all carbohydrates, and can be useful for everyone looking to know exactly how many carbs they are consuming.

4. Project Plan Update

A snapshot link of the Wrike project plan is attached below. This is our complete project plan with all changes made until today's date (March 21st 2021).

https://www.wrike.com/frontend/ganttchart/index.html?snapshotId=R2d8tvqv4qpXtShAS7D1UGwV5mU139iO%7CIE2DGNBYGQ3DELSTGE3A

5. Conclusion

To summarize this deliverable, we were able to produce a viable business model for the commercialization of our product. The freemium model provides users with free use of the app's basic functions and charges only for premium features. This business model best fits our culture of access to free necessary health services. We were able to determine how our business would perform in the next three years. We've determined costs and expenses and estimated the growth and profitability of the product. Core assumptions were derived in order to set specific guidelines to our business model. These assumptions enable our team to make the best possible predictions of the near financial future. Nevertheless, even with these assumptions our business would still

be in negative income. In order to break even within the first three years, as many as 146,500 downloads must be made.