

Deliverable G – Business Model and Economics Report



Group Z8

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Introduction

The task for Deliverable F was to create a business model and economic report. These models are based on MovementBuddy as a company. The goal of the business model is to understand how to market the product and make a profit from selling it to customers. The key concepts are knowing the target customers, understanding the customers' needs and subsequently satisfying their needs to make a profit. The economic report details the costs associated with running the business, the revenue, and the profit as well as other aspects such as a three-year income statement. All assumptions made to create the reports were justified. Both reports help analyze how MovementBuddy would function as a company.

Business Report

MovementBuddy Business Model

Our product's business model will be the combination of the advertising business model and subscription business model. The main purpose of our product is to help the customers who mobility issues or hypermobile joints to keep doing daily exercises. The subscription-based model will be the primary focus for the business model as well as the economics report. The advertisement model is a consideration that would be phased in at a later stage if necessary. Advertisements can annoy users and detract from the overall experience. Since the app is in its initial stage it does not make sense to deter possible users when the app needs greater exposure. Additionally, it will be difficult to find relevant companies to advertise in the app when the app is still unknown. Ergo the focus will be placed on the subscription-based model. This is reflected in the economics report where only the subscription-based service was considered as a source of revenue. The subscription will allow the users access to premium features that the users using the free version of the app will not have access to. When advertisements are implemented, premium users will not be exposed to any ads. In summary, the focus is on the subscription-based model which was used in the economics report however an advertisement business model will also eventually be put into place.

Business Model Canvas

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Business Model Canvas. What's Your Business: Movement Reminder Application

<p>Key Partners </p> <p>Advertiser (related to the treatment of ADHD, the medicine for reducing the pain)</p> <p>Thunkable Sevice Providers</p> <p>Google & Apple (for publish the app)</p>	<p>Key Activities </p> <p>Moblie Application Development</p>	<p>Value Proposition </p> <p>User friendly experience of the app</p> <p>Report of data for daily exerices</p> <p>Night model design</p>	<p>Customer Relationships </p> <p>App Provider & App User</p>	<p>Customer Segments </p> <p>AHHD Patients(Suffer from body pain)</p> <p>Programmers(has the AHHD & body pain situations)</p> <p>Advertisers</p> <p>Marketers</p> <p>Application Developers</p>
<p>Key Resources </p> <p>Thunkable Platform</p> <p>App Store</p> <p>Google Play</p>		<p>Reach the target customers' reminding needs</p> <p>Access to the dataBase of collecting data</p>	<p>Channels </p> <p>Moblie App</p>	
<p>Cost Structure </p> <p>Publish Fee(App store&Google Play)</p> <p>Application Maintance Fee</p> <p>Application Deveopement Fee General Management Fee</p>			<p>Revenue Streams </p> <p>Subscription from Customers Hiring Solution</p> <p>Advertisers' Payment Marketing Solution</p> <p>Free Offering</p>	

Figure 1: Business model canvas.

Core Assumptions

The core assumptions for our business model will be described as follows. Our app will be mainly developed on the Thunkable platform. This platform has cooperation with Google and Apple, which can directly establish the app into google play and App Store with less payment. It will reduce some fee for publishing our app. For the revenue part, the profits for our business mainly come from the payment from advertisers and subscription from users since our app is free offering. For the cost of the parts, it will include development cost, maintaining cost, and management cost. We need money for paying the wages for ourselves. The maintenance cost will be the largest cost since it is variable. We need to keep the data servers running on the app. The marketers are required to figure out the similar products in the marketplace for competition purposes. Basically, our relationship for customers is the app provider. Our customers are the app users. The potential customers will be those will hypermobile joints or mobility issues. This may include people such as programmers who often develop joint pain. To find a viable audience these people were categorized into people who use physiotherapy services. Since people who use physiotherapy encompass all the above and they require to do exerices it is a viable target audience for people who would benefit from the app. Therefore, people with hypermobile joints and those who use physiotherapy are the target audience for MovementBuddy.

Economics Report

Cost Analysis

Movement Buddy Inc.

Business Costs and classification

Cost #	Description	Classification	Annual Cost
1	Marketing	Fixed indirect cost	30000
2	Electricity	Fixed indirect cost	66240
3	Salary		
	Out-sourced HR/Legal/Payroll/IT	Labour, Fixed direct cost	13416
	In-House	Labour, Fixed direct cost	365000
4	Overhead		
	Printer paper, stationary, consumables	Fixed indirect cost	6000
5	Rent	Fixed indirect cost	98000
	Sub-Total:		578656
6	Materials (dependent, proj. specific)		
	Prototype (Test tools, platforms)	Material, variable direct cost	12000
	Sub-Total:		12000
	Total		590656

Table 1: Cost analysis for MovementBuddy.

The unit for sale in Movement Buddy Inc. application is an active paid monthly subscription, which we have set a monthly subscription fee of \$5 per active user or \$60 for the year. Thus, the initial launch price for the unit is \$60.

Another assumption was the price. Looking at prices online there are tiers of prices for apps. Typically, people will be most willing to pay for a subscription below \$9.99 per month. A cheap subscription is considered as being between \$0-\$5, a middle tier subscription as \$5-\$9.99 and anything above \$9.99 is considered on the expensive side. Since the struggle will first and foremost getting users to use the app and then pay for the subscription it does not make sense to charge a price in the higher tiers since this will turn away potential users. This app is untested ergo it is better to get publicity and raise prices or readjust the pricing model when a userbase has been established. Additionally, the app is new, and the company is unknown meaning less people will be initially trustworthy of the app meaning they will be less willing to pay more. This led to the price of \$5/month which is consistent with numerous other apps that have large audiences. Examples include Apple Music student pricing, Strava premium etc.

The Salary costs are separated into the cost of outsourcing the Human Resource, Payroll and IT functions of the company. It is not cost effective to have these activities in-house while Movement Buddy Inc. is in the early growth stages. From Ceridian (www.ceridian.com) references an average monthly cost is \$80/monthly, with an additional fee of \$3 per employee, for payroll and HR services. We have assumed a starting employee compliment of 6 employees: a CEO/CFO, a Sales & marketing professional, 1 Senior software developer and 3 Junior software developers. Thus, our annual out-sourced labour costs would be \$13416. Referencing average IT outsourcing costs from NorthStar Inc. (<http://www.nssit.com/what-is-the-cost-of-it-support-for-small-business>), with a micro-business of 6 in-house permanent staff we would estimate a monthly cost of \$1000.

For our in-house labour costs, we have estimated the following starting salaries, for the CEO/CFO \$100000/yr, for the Sales and Marketing professional \$70000/yr, for the Senior software developer \$75000 and \$60000 for the Junior developers a total of \$365000/yr in in-house fixed direct labour cost.

For consumables such as coffee, paper, stationary we estimate around \$500 a month.

For electricity we estimated a fixed indirect cost based on Ontario Electricity distribution rates for small businesses of 11.5c kWh, and an estimated usage of 800kW/hr/month. A annual electricity cost of \$66240.

For Marketing we assume, using Business Development Canada (BDC) (<https://www.bdc.ca/en/articles-tools/marketing-sales-export/marketing/what-average-marketing-budget-for-small-business#:~:text=A%202019%20BDC%20survey%20of,budgets%20in%20excess%20of%20%24100%2C000>), as a reference, an annual fixed indirect, marketing budget for our new start business of \$30000/yr.

We have assumed a rental space close to the downtown area of 7000 sqft with a rental cost of \$14/sq ft/year, this should be sufficient for server storage space, washrooms, café area, open plan seating and a meeting room. A total fixed indirect rental coat of \$98000/yr.

For materials, we are developing a software application, thus, there are no production lines. However, some test equipment or specialised new platforms may be required to validate the application on. Thus, a material cost for prototype equipment has been factored in at \$1000/month or a fixed direct cost of \$12000/yr.

The calculated annual operating costs are \$590,656 for the Movement Buddy Inc.

Income Statement

Position #	Description	1st Year	2nd Year	3rd Year
10	Revenue			

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10.1	Sales Yr 1 30% (6280*60) Yr 2 35% (7236*60) Yr 3 40% (8373*60)	376794	439593	502392
20	Operating Expenses			
20.1	Marketing	30000	30000	30000
20.2	Electricity	66240	66240	66240
20.3	Salary	378416	378416	378416
20.4	Production materials	12000	12000	12000
20.5	Overhead	6000	6000	6000
20.6	Rent	98000	98000	98000
20.7	Total Operating Expenses	590656	590656	590656
30	Operating Income (#10.1 - 20.7)	-213862	-151063	-88264
40	Interest Expenses	0	0	0
50	Pre-Tax Income (#30 - #40)	-213862	-151063	-88264
60	Income Taxes (#50 x Tax Rate)	0	0	0
70	Net Income (#50 - #60)	-213862	-151063	-88264

Table 2: Income statement for MovementBuddy.

One assumption made was the number of users. The number of users is critical for the app since without users there are no customers. The users are the customers. Since it is a service based app the users directly correlate to the revenue, profit and numerous other features regarding the company itself. The target audience is comprised of those with hypermobile joints and are affected by the condition as well as those who require physiotherapy. People such as injured athletes and those with joint issues such as those who have very physically demanding jobs would benefit from the app. The number of people who fit into this category would be very difficult to calculate and not everyone who has joint pain would need the app. Therefore, it was determined that those who need physiotherapy would benefit from the app since they are required to do exercises to help with their rehabilitation. Since the app was created for a person with hypermobile joints, this category was included in the target audience. A study found that 10.97% of the population uses physiotherapy services in a given year (<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6830420/>). Another study found that approximately 1 in every 150 suffer from the effects of hypermobile joints (<https://www.nhsinform.scot/illnesses-and-conditions/muscle-bone-and-joints/conditions/joint-hypermobility>). The app will initially focus on the Canadian market since the market will be more familiar to the company and cultural differences or

foreign laws and regulations regarding operating a business will not need to be taken into consideration. The foreign market will be tested later. Ergo, when the number of people who use physiotherapy yearly and the statistic regarding hypermobile joints is applied to the population of Canada (38 073 065 people), the number of possible users can be extracted. There are thus 4.108 million people who use physiotherapy services in Canada and approximately 253k Canadians have hypermobile joints. This creates a grand total of 4.361 million people in the target audience. Typically a good app will have 20% of their audience as users. Comparing to other fitness apps with visible data such as Strava, it was found that 16%-20% was more realistic (<https://andrewchen.com/dau-mau-is-an-important-metric-but-heres-where-it-fails/>). To create the report the lower bound of the range was used ergo 16%. 16% of 4.361 million people represents 697 760 users for the app. Then a study that on average only 3% of active users will pay for a subscription service(<https://bgr.com/business/app-economics-paid-subscriptions-growing-5658520/>). Meaning that there will be 20 933 people who will be paying for the app of the 697k users.

Summary for Users

We assume 10.79% of the Canadian population or 4.108 million Canadian to be users of physiotherapy and a further 1 in every 150 of having hypermobile issues or 253,000, representing a potential market total of 4.361 million Canadians. Average app uptake in Canada by active users is about 16% this represents 697,760 potential users. Many will not subscribe to the full feature app version, approximately 3% on average do, this represents 20,933 users. With a monthly subscription of \$5, this would represent \$60 yearly income per subscriber. Our estimate is an initial market uptake of around 30%, or our targeted users, with annual increases of 5%. This would project a net profit, without interest or tax considerations, after 5 years of operation of \$37334.

As per instructions no adjustment is made for inflation, tax increases, depreciation is assumed by the outsourcing company, salary increases or any government subsidies over the three years. No business loans or investment partners have been considered in the 3-year plan.

NPV Analysis

A unit for the Movement Buddy Inc. may be considered as a full active paid subscription. From this and our projected sales we may calculate the Net Present Value (NPV).

Projected Sales income Subscribers:

Year	# of Subscribers	Income/Sales
1	6279.9	376794
2	7326.55	439593
3	8373.2	502392
4	9419.85	565191
5	10466.5	627990
6	11513.15	690789
7	12559.8	753588
8	13606.45	816387
9	14653.1	879186

Table 3: Projected sales from income subscribers for application.

It should be noted here referencing back to the assumptions for the number of subscribers that we expect 30% of the possible subscriber demographic in the first year with the 5% annual increase. Therefore 6279.9 subscribers represent 30% of the 20 933 possible subscriber audience of the total wider target audience.

Movement Buddy Inc.

Cash Flow Statements

Year 1

Cash In

Cash Out

Sales	376794	Marketing	30000
Loan	100000	Electricity	66240
		Salary	378416
		Overhead	6000
		Rent	98000
		Materials	12000
Total Cash In	476794	Total Cash Out	590656
Net Cash Flow	-113862		

Year 2

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Cash In

Cash Out

Sales	439593	Marketing	30000
Loan		Electricity	66240
		Salary	378416
		Overhead	6000
		Rent	98000
		Materials	12000
Total Cash In	439593	Total Cash Out	590656
Net Cash Flow	-151063		

Year 3

Cash In

Cash Out

Sales	502392	Marketing	30000
Loan		Electricity	66240
		Salary	378416
		Overhead	6000
		Rent	98000
		Materials	12000
Total Cash In	502392	Total Cash Out	590656
Net Cash Flow	-88264		

Year 4

Cash In

Cash Out

Sales	565191	Marketing	30000
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Loan		Electricity	66240
		Salary	378416
		Overhead	6000
		Rent	98000
		Materials	12000
Total Cash In	565191	Total Cash Out	590656
Net Cash Flow	-25465		

Year 5

Cash In

Cash Out

Sales	627990	Marketing	30000
Loan		Electricity	66240
		Salary	378416
		Overhead	6000
		Rent	98000
		Materials	12000
Total Cash In	627990	Total Cash Out	590656
Net Cash Flow	37334		

Year 6

Cash In

Cash Out

Sales	753588	Marketing	30000
Loan		Electricity	66240
		Salary	378416
		Overhead	6000
		Rent	98000

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		Materials	12000
Total Cash In	753588	Total Cash Out	590656
Net Cash Flow	162932		

Year 7

Cash In

Cash Out

Sales	816387	Marketing	30000
Loan		Electricity	66240
		Salary	378416
		Overhead	6000
		Rent	98000
		Materials	12000
Total Cash In	816387	Total Cash Out	590656
Net Cash Flow	225731		

Table 4: Seven year cash flow statement.

Net Cash Flow

1st Year	2nd Year	3rd Year	4th Year	5th Year	6th Year	7th Year
-113862	-151063	-88264	-25465	37334	162932	225731

Table 5: Net cash flow.

Movement Buddy Inc.

Net Present Value

Description	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
Net Period cash flow (P)	-113862	-151063	-88264	-25465	37334	162932	225731
Discount Rate (i)	0.04	0.04	0.04	0.04	0.04	0.04	0.04
No of time Periods (t)	1	2	3	4	5	6	7
Present values $(P/(1+i)^t)$	-109482.69	-139666.24	-78466.37	-21767.59	30685.83	128767.53	171537.01

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Initial investment or Opex (C)	100000	100000	100000	100000	100000	100000	100000
Net Present Value (NPV) $(P/(1+i)^t) - C$	-209482.69	-239666.24	-178466.37	-121767.59	-69314.17	28767.53	71537.01

Table 6: NPV analysis for MovementBuddy.

The net period cash flow is calculated using the standard Cash Flow income methodology and the values are provided for the first 7 years of operations. This net cash flow value is then input as the Net Period cash flow value for the Present Value (PV) calculation. We estimate a discount rate of 4% based on a low stock market annual investment income for the same investment this provides the value for (i) and we use a time period of a year as per standard NPV calculations (t). The PV is calculated for each time period of 1, 2, 3 years etcetera using the formula, $PV = (P/(1+i)^t)$. This provides the yearly PV value, to calculate the Net Present value over multiple years subtract the value for C or our initial investment. In our software application development, we assume an initial investment of \$100000, as per instructions no interest is calculated for this loan. The investment would be a loan from the investors the company hopes to find, members or from the bank. Since capital is needed to start the business, it is not unrealistic to assume this figure. Additionally this figure is a general benchmark for starting businesses which is reflective by the loan amounts possible including from [Business loans and business financing | BDC.ca](#). The loan furthermore helps the business become profitable more quickly and since interest was not needed for this calculation interest did not play a factor. Using these values we would obtain a positive Net Present Value in Year 6 of operations.

Conclusion

In conclusion, the team created the business model and economic report for MovementBuddy in this deliverable. A viable business model was created using advertisements and a subscription-based service. The subscription model will be implemented initially and with more traction behind the application advertisements will be implemented later. This model will allow further development of the app and to ensure that the business remains profitable. The economic report assessed all the costs and categorizations of the expenditures as well as the estimated profit and break even point. The economic report details the financial aspect of MovementBuddy. The group was able to successfully create a business model and evaluate MovementBuddy financially.

Appendix

WRIKE - Snapshot

<https://www.wrike.com/frontend/ganttchart/index.html?snapshotId=FvGbWR6itQlhULoxOSYSn0x0fwBAAbKa%7CIE2DGMZZGQZTILSTGE3A>