

## **GNG2101** Report

# Project Deliverable G Business Model and Economics Report

Submitted by

[One handed walker steering. A2, Team 3]

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## Introduction

After our first prototype, we have completed our second one to use as the final product to make our business model and economics report. In this deliverable, we will be proposing a business model suitable to commercialise our product using a triple bottom line business model canvas. Then we will be doing an economics report for the next 3 years, using the costs involved and also income statements of the prospective 3 years. Finally we will do a Net Income analysis NPV for the next 3 years and finish with the assumptions on our report.

# **Business Model**

For the business model, we will discuss a business model suitable to commercialise our product, then to make a triple bottom line business model canvas. And finalise on the core assumptions that have been made in developing our business model and its feasibility.

For our product we believe that the online business model would be the best and most suitable. The production can be made just by the owners and the product could be commercialised via an online store/ website or such as using an online boutique on Amazon. This is easy to use and navigate for us and also user friendly, the customer has all the measures and the device being easily installable it is the best choice.

Key Partners Warehouse and delivery workers Assembly workers assemble the product. Insurance company	Key Activities Marketing R&D Customer service Production Key Resources Materials for the product: Brake wires, Steel bar, bike brakes and attachment blocks. Warehouse/asse mbly workers	Value Propositions We are presenting a single handed walker steering device which is easily attachable/detacha ble to different types of walkers. This device will facilitate the use of the walker when the user has only one operational arm.	Customer Relationships Direct relationship Personal assistance Channels Online/website Amazon Store eBay	Customer Segments Customers who are: walker users, with one functioning arm and who have mobility difficulties.
<b>Cost Structure</b> Marketing and sale Materials Product Developme	s ent	Revenue stream Sales Sponsorships Services	IS	

#### **Triple Bottom Line Business Model Canvas**

# **Economics Report**

For the economics report, we will review the project costs to help us make an income statement for the next 3 years. A break-even point will be distinguished afterward using the NPV analysis.

### Costs involved

#### Variable Cost (Direct Cost)

This type of cost would cover things like;

- Steel Bar
- Brake wires
- Bike Brakes
- Attachment blocks to build the product (bolts, screws, nuts, clamps...)
- A cost that can be included is the credit card fee because if one of the team members decides to go and buy the product themselves from a hardware store instead of buying them online, it is likely that they might pay it with their credit card which will get included into the variable cost.
- If the client actually wants to use this product, we would have to send out this product to the client which would have a certain delivery fee that can get included in the variable cost.
- A machine rental could be added as a variable cost. This is because we need a CNC machine to cut the metal. The more requests come in for this product, the more we would have to rent out this machine leading to an increase in the cost.

- If customers refund our products since we would most likely have a refund policy, the expense of this would come out of our pocket and the cost of this totally depends on the number of refunds that occurred which would make it a variable cost.

#### **Fixed Cost (Indirect Cost)**

- This type of cost would cover things like;
- Building rental
- Utilities of the laboratory (mainly for the STEM building)
- Loan repayments if there are any
- Depreciation of the machines (CNC)
- Insurance for owners & workers
- Property Taxes

After analyzing the costs listed, we need to clarify that the only direct costs are associated with the materials needed (variable), thus, indirect costs are costs that are not directly accountable to a cost object (such as our particular project, facility needed, function or product). Like direct costs, indirect costs may be either fixed or variable. This is why indirect costs include administration, personnel (our team at the beginning). These are those costs which are not directly related to production. Some indirect costs may be overhead, but other overhead costs can be directly attributed to the one-handed steering walker device and are direct costs.

### **Income Statements**

## 1st Year

Price per product 1st year \$50

Cost per product 1st year \$37.50

#### Crystal Dreams Boutique Statement of Income For the Year Ended 11/01/2023

Revenues	
Products	12,500
Less Returns and Allowances	
Services	0
Other	0
Total Revenue	12,500
Costs	
Products	9,311.25
Services	0
Other	0
Total Cost	9,311.25
GROSS PROFIT	3,188.75
Operating Expenses	

General and Administrative	5,000
Insurance	3,000
Non Recurring	0
Payroll Taxes	0
Rent	1,000
Research and Development	0
Salaries and Wages	0
Sales and Marketing	0
Utilities	500
Other	0
Total Operating Expenses	9,500
OPERATING INCOME	-6,311.25

Non-Operating or Other	
Interest Revenue	
Interest Expense	
Gain on Sale of Assets	
Loss on Sale of Assets	
Gain from Legal Action	
Loss from Legal Action	
Depreciation and Amortization	
Other Gain	
Other Loss	
Total Non-Operating or Other	0
PRE-TAX INCOME	-6,311.25
Taxes	
Income Tax Expense	0
NET INCOME	\$-6,311.25

### 2nd Year

Price per product 2nd year: \$54.99

Cost per product sold 2nd year: \$40

#### Crystal Dreams Boutique Statement of Income For the Year Ended 11/01/2024

Revenues	
Products	32,994
Less Returns and Allowances	
Services	0
Other	0
Total Revenue	32,994
Costs	
Products	24,000
Services	0
Other	0
Total Cost	24,000
GROSS PROFIT	8,994

#### **Operating Expenses**

General and Administrative	5,000
Insurance	3,000
Non Recurring	0
Payroll Taxes	0
Rent	1,000
Research and Development	0
Salaries and Wages	0
Sales and Marketing	0
Utilities	500
Other	0
Total Operating Expenses	9,500
OPERATING INCOME	-506

Non-Operating or Other	
Interest Revenue	
Interest Expense	
Gain on Sale of Assets	
Loss on Sale of Assets	
Gain from Legal Action	
Loss from Legal Action	
Depreciation and Amortization	( 30)
Other Gain	
Other Loss	( 6,311.25)
Total Non-Operating or Other	-6,341.25
PRE-TAX INCOME	-6,847.25
Taxes	
Income Tax Expense	0
NET INCOME	\$-6,847.25

### 3rd Year

Price per product 3rd year: \$64.99

Cost per product sold 3rd year: \$45

Sales and Marketing

**Total Operating Expenses** 

**OPERATING INCOME** 

Utilities

Other

#### Crystal Dreams Boutique Statement of Income For the Year Ended 11/01/2025

Revenues	
Products	77,988
Less Returns and Allowances	
Services	0
Other	0
Total Revenue	77,988
Costs	
Products	54,000
Services	0
Other	0
Total Cost	54,000
GROSS PROFIT	23,988
Operating Expenses	
General and Administrative	5,000
Insurance	3,000
Non Recurring	0
Payroll Taxes	0
Rent	1,000
Research and Development	0
Salaries and Wages	0

0

0

500

9,500

14,488

#### Non-Operating or Other Interest Revenue

Interest Revenue	
Interest Expense	
Gain on Sale of Assets	
Loss on Sale of Assets	
Gain from Legal Action	
Loss from Legal Action	
Depreciation and Amortization	(30)
Other Gain	
Other Loss	( 6,847.25)
Total Non-Operating or Other	-6,877.25
PRE-TAX INCOME	7,610.75
Taxes	
Income Tax Expense	0
NET INCOME	\$7,610.75

## **NPV** Analysis

Expenses (using balance sheet values)								
Year		Total Costs		PV		NPV	r	
1	\$	18,811.25	\$	18,811.25	\$	94,205.69	10%	
2	\$	33,500.00	\$2	27,685.95				
3	\$	63,500.00	\$4	47,708.49				

Income (using balance sheet values)								
Year	Tot	al Revenues		PV		NPV	r	
1	\$	12,500.00	\$	12,500.00	\$	98,361.31	10%	
2	\$	32,994.00	\$2	27,267.77				
3	\$	77,988.00	\$!	58,593.54				

Net Income Analysis (PV)							
Year	Total Revenues		Total Costs		Ν	et Income	
1	\$	12,500.00	\$	18,811.25	\$	(6,311.25)	
2	\$	27,267.77	\$27,685.95		\$	(418.18)	
3	\$	58,593.54	\$4	7,708.49	\$	10,885.05	

**Net Income NPV (for 3 years) --->** \$ 4,155.62



This style was chosen to accurately represent values (no arrows could be added)\*



After considering all the costs and revenues involved in the 36 months of analysis (gathered form the income statements) we came to the conclusion that that business becomes profitable after the 3rd year of operation with a Net Present Value of \$4,155,52. However, to reach our break-even point we need to sell 831 units (rounded up) to make up the money for the costs with the revenues generated. This analysis was done considering the time-value mechanics (PV) and with the projected sales. This means that our break-even point is at 2 years and 4 months; all the assumptions to arrive at this conclusion will be discussed in the following section.

### Assumptions

After doing research on the product that we made, it is safe to say that it correlates with the numbers we had on the income statement. We considered the fact that for the next 3 years, we would be working from someone's basement to minimize the utility costs. For the first year, we are planning on making 2 units every 3 days, 2 units per day second year, and 4 units per day third year. Working in someone's basement would reduce the utilities and the rental costs. We as a team discussed that this production rate is doable with the 5 of us which helps us eliminate the salary factor in our operating expenses. The price and cost per product each year has been calculated using the BOM and the yearly inflation rate. When we get the required materials that are on the BOM, it makes it sufficient enough to make 3 units with those purchases which means that the cost per unit is around 30 dollars. The yearly inflation increases the price and the cost rounds to 1-3 percent.

Another assumption that can be made is that the product will not be bought in bulk by corporations but instead, will be bought by individuals. This is a fair assumption to make because corporations have no use of buying this equipment in bulk.

The shipping of the product will also be done by the team. This assumption was made because the product won't be manufactured in large quantities and there won't be a substantial volume of customers as the product hits a niche market.

The product is niche, therefore purchases will not happen often and there will be a few of them. The business model we chose also reflects the fact that we will sell our product in low volumes, because the costs involved with a physical store will not offset the low sales volume because this product targets a very specific audience.

Also, for the NPV there were some assumptions made, this include the nominal rate of interest at 10%, no fluctuations in the price of the steel components, no discount in prices for a large quantity of materials, a linear depreciation of the tools needed in the first year of the business and it's very important to clarify that we did not include interests or taxes in our calculations which as a result would have caused the NPV of the 3 analysis to be lower, a larger amount of units sold and a longer time to reach the break-even point.

## Conclusion

In this deliverable, we created a business model and economics report, developed a business model canvas, listed the core assumptions to be made, made a 3 year income statement, and did an NPV analysis for our one handed walker steering device. The optimal business model for our product is the online business model because it suits our small scale production and supports online shipping and shopping. When creating the economics report, different types of costs were taken into account, like building and selling our one handed walker steerer, and were split into direct, indirect costs. Our income statement was then built, which revealed that our operating income would be negative for the first 2 years. We calculated our breakeven point using an NPV analysis and figured that it would be when we would sell 831 units which would be completed in 2 years and 4 months. And to maximize profitability, we would have to work from someone's basement for the first 3 years, and we will be making 2 units every 3 days for the first year, 2 units per day second year, and 4 units per day third year. Our final goal is to complete our final prototype in a few weeks and have it become fully functional. Our team is on the right track to complete it, and it will be finished before the design day.