GNG2101 Report

Project Deliverable G – Business Model and Economics Report

Submitted by

Group A4.1

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List of Acronyms

Acronym	Definition
VR	Virtual Reality

1 Introduction

In this deliverable, a potential business for commercializing our product is created and expanded by developing a business model canvas. The most suitable business model for our product is a freemium model where customers can use the product; however, they will need to purchase the premium version which gives them access to features that are not included in the base game. In addition, a 3-year income statement illustrates the operating income of the product once it is commercialized. The NPV analysis also describes the costs and profits over multiple years, and we analyzed the feasibility of these assumptions by gathering information from market research and our target audience.

2 Main Subject Body of the Report

G.1 Business Model

G1.1

Identify and describe a type of business model that would be well suited to commercializing your team's product. Discuss the reasons for your choice.

The best business model to commercialize our immersive experience would be a freemium business model. The following points go over reasons why other methods of commercialization

(realistic methods for a digital product) would not work and why a freemium payment business model is the best course of action:

- An advertising business model would not be best because running advertisements at any point in time during the experience would ruin the immersiveness and is in poor taste.

- A subscription-based business model would be pointless because the immersive experience is not meant to be used regularly. Customers would have no incentive to regularly provide payment for a product they are likely only to use a few times.

- A one-time purchase business model is relatively straightforward – the customer purchases the experience to be able to use it. This method, however, has its drawbacks. Doing so restricts a portion of our demographic (university students) who do not have the disposable income to spend money on things without first getting an idea of the experience.

- A freemium business model makes the most sense to commercialize our product as it allows our entire demographic to try out our experience for free, then require payments for premium features. The free version of our experience could solely provide the schizophrenic's perspective, have no pop-up statistics to go alongside the experience, remove the user's choices within the experience (they cannot choose dialogue options, for instance), and so forth. Then, for a small one-type fee, they can purchase the paid version of the experience, unlocking all the premium features mentioned earlier and more.

G1.2

Fill in a triple bottom line business model canvas by answering the how, what, who and how much of your chosen business model.

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

- uOttawa (MakerRepo)
- Unity
- GitHub</td><td>Key Activities

- Application Development
- Schizophrenia Research</td><td rowspan="2">Value Proposition

- Offer an accessible way for users to develop empathy for people living with schizophrenia</td><td>Customer Relationships

- Academic</td><td rowspan="2">Customer Segments

- uOttawa students
- uOttawa professors</td></tr>
<tr><td>Key Resources

- Unity (Development Application)
- Unity Marketplace
- GitHub
- MakerRepo</td><td>Channels

- MakerRepo
- Unity Marketplace</td></tr>
<tr><td colspan="3">Cost Structure

- Free Version (Free)
- Paid Version (9.99 CAD)</td><td colspan="2">Revenue Streams

- One-time payments available within immersive experience for users to gain access to premium features</td></tr>
</table>

Table 1: Triple bottom line business model canvas

G1.3

Describe the core assumptions that you have made in developing your business model canvas and comment on its feasibility. Important: These core assumptions should be based on the business model you have chosen and not on your prototype (e.g. what type of clients do you assume your product will attract?).

1. We assume that our product will mostly attract university students that are interested in learning or understanding what it is like to suffer from schizophrenia.

2. We also assume that our audience will have access to VR headsets. We have recently modified the project to be compatible with most headsets with the intent of widening our audience base.

3. Our cost structure includes a paid version and a free version. We assume that most people would not buy the paid version on our initial release. However, we plan to add in-app purchases or even add more bonus features for the paid users.

G.2 Economics Report

G2.1

Include a list of variable, fixed, direct and indirect costs associated with your business, based on the manufacturing and sale of your product. Make sure that you distinguish between price and cost and realize that prototyping and higher-volume manufacturing costs will probably be different.

Manufacturing:

Direct fixed cost:

- Coding hardware (computers, tablet)
- Coding software (coding application)
- VR-headsets (for testing)

Saling:

Indirect fixed cost:

- Publication fees (costs from publishing the application on digital platforms like steam, Apple Appstore.....)
- Promotions (advertisement, Flash event)

G2.2

Develop a 3-year income statement, which includes sales revenue and costs of units sold for each year, gross profit, operating expenses and operating income (no need to include interest and taxes).

Note: cost of units sold is $0 since the product did not require any paid assets during development.

Gross Profit = Sales (Revenue) – Cost of units sold

= ($9.99 • (900 units)) - ($0)

= $8,991

Operating Income = Gross profit – Operating expenses

= ($8,991) - (coding hardware + Steam publication + marketing)

= ($8,991) - ($1,000 + $134 + 3($250))

= $7,107

G2.3

Assumptions:

- Coding hardware (laptop):
  - around 1000 CAD
- Coding software (unity):
  - free
- Salaries:
  - 5 employees (us as students): 0 CAD/ employee/ year
- VR headset for testing:
  - Free (team members already own headsets)
- Publication fees:
  - $100 to publish = around 134 CAD
- Marketing:
  - Design Day: free
  - Ads: 250 CAD/ year
- Cost per unit:
  - 9.99 CAD/ unit

- Units sold:
    - 300 units sold/ year

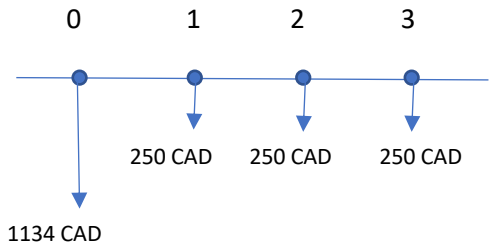

Figure 1: Expenses Cash Flow Diagram

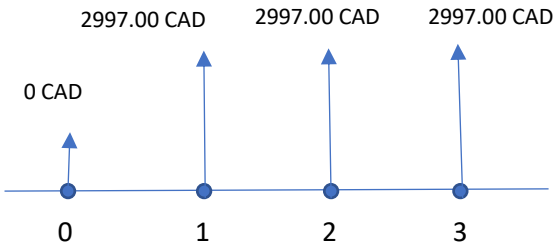

Figure 2: Income Cash Flow Diagram

Annual interest rate = 10%

$$NPV_{exp} = 1134 + \frac{250}{(1+0.1)^1} + \frac{250}{(1+0.1)^2} + \frac{250}{(1+0.1)^3} = 1755.71\ CAD$$

$$NPV_{inc} = 0 + \frac{2997}{(1+0.1)^1} + \frac{2997}{(1+0.1)^2} + \frac{2997}{(1+0.1)^3} = 7453.10\ CAD$$

$$NPV_{inc} - NPV_{exp} = 7453.10 - 1755.71 = 5697.39\ CAD$$

Break-even point:

$$N = \frac{NPV_{exp}}{P_{unit}} = \frac{1755.71}{9.99} = 176\ units$$

Therefore, 176 units must be sold in order to break even.

G2.4

The first assumptions that we made when developing our economics report were for the costs of our coding software and hardware. The coding software that we required to build our product was Unity. Unity is a software that can be used to develop VR experiences and as students we were able to access the software for free. When assuming the cost of the hardware (laptop) that will be needed to build and maintain our VR experience. We did some research and discovered that people tend to pay around $700 for a laptop; however, since this price is in USD and since VR development requires a laptop with good graphics, we assumed that the cost of the hardware would be about 1000 CAD. Furthermore, the cost of our VR headset for testing is free since multiple of the developers working on the project own VR headsets which can be used to complete all testing. As for publication fees and marketing, it was determined from some research that the cost to publish would be around 134 CAD. The cost to advertise with YouTube ads for example varies according to the amount of advertising that we would require but for a smaller project like our own, we could pay around 250 CAD per year. In addition, we assumed that the cost for salaries would be 0 CAD since all the developers working on our project are students completing the project for a course. Finally, in order to make assumptions related to the cost of our product and the number of units sold per year, we needed to look at the demand in our target market and the percentage of the market that we would own. Virtual reality is currently a very big and continuously growing market. Over recent years, experiencing video games, sporting events and more through virtual reality has become very popular among various age groups. While it is the case that VR is a very large market, there are a lot less VR experiences that are created with similar purposes as our own, therefore we expect to own a bigger percentage of our market than if we were creating a VR game for example. On the other hand, it is important to note that the amount of demand in our market is not as big as the demand

in the market of VR gaming, therefore, we would be wrong to assume that we could make as many sales as big VR gaming companies. While keeping all these points in mind, we found it reasonable to sell our product at 9.99 CAD per unit and assume that we could sell around 300 units per year.

3 Conclusions and Recommendations for Future Work

This deliverable allowed our team to envision what a potential business and economics model would be if our final product were commercialized. We outlined the direct and indirect fixed costs and created a 3-year income statement that includes the gross profit and operating income. Also, an NPV analysis allowed us to examine and visualize the costs and profits over the next 3 years. Our team will continue working on the VR application development in order to have a finished and functional product that instills empathy in time for Design Day.

Wrike Snapshot Link:

https://www.wrike.com/frontend/ganttchart/index.html?snapshotId=kPYrMivicojgvOxytElz3OAaOvySDReM%7CIE2DSNZVHA2DELSTGIYA

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