GNG2101

Design Project Prototype Test Plan

FLOWTECH INDUSTRIES AND A03-CFL3

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University of Ottawa

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Table 1, Acronyms

Acronym	Definition

Table 2, Glossary

Term	Acronym	Definition

1. Introduction

This paper describes our project, which involves the creation and testing of multiple prototypes for a flow limiter designed based on the Nosey cup, with the goal of improving drinking for individuals who have limited mobility and difficulty using traditional cups. The work was focused on meeting the client's specific needs while refining the design through various stages of prototype development. The purpose of this document is an extension of the previous project document, from initial testing done to the first prototype to the presentation of the final designs, along with insights from testing and client feedback.

The primary objective is to design a device that can be can regulate liquid flow to accommodate the unique requirements of the client. Throughout the design process, the team carefully balanced functionality with user comfort, keeping the client's preferences at the forefront. Key considerations included transitioning from early prototypes to final models for production and selecting durable, easy-to-clean, and aesthetically pleasing materials.

This report is meant to be a continuation of previous work done for the project. The paper focuses on the iterative process of prototype testing, and client feedback. This report also includes economic considerations to be taken when manufacturing the cup flow limiter. Additionally, the Bill of Materials (BOM) is presented for the finalized design, including technical drawings, specifications, and an inventory of the materials required for manufacturing. Any changes made during the iterative design process are reflected in the updated Gantt chart.

Finally, the conclusion summarizes the successes and challenges the team encountered, as well as the lessons learned from testing the prototypes. Unresolved issues are also identified, and their potential implications for future work, offering suggestions for further research or design improvements that could enhance the product's usability.

Throughout this report, a thorough analysis and explanation is provided. By combining these components, the aim is to deliver a final product that not only meets the client’s needs but also adheres to high standards of quality, usability, and user satisfaction.

2. Prototype 1, Project Progress Presentation, Peer Feedback and Team Dynamics

2.1 Prototype I

1. Critical Assumptions and Tests

We discovered a number of crucial presumptions regarding the usability and functioning of our product during our early design conversations. One important presumption was that the flow-limiting cup would have enough mobility and durability thanks to a ball joint. However, during the initial testing, we ran into issues, such as breakage because of the size of the ball joint. We chose to swap out the ball joint for a swivel joint in order to verify this assumption because it was more user-friendly and more durable. The Durability factor from our Design for X (DFX) analysis, which highlights the significance of long-lasting materials and components, is directly related to this improvement.

2. Prototype Creation and Documentation

Users can always check the drink level thanks to our first prototype's cup, which is made of somewhat translucent plastic. Including a swivel joint improves use while also adding to the product's overall functionality and durability. A visual representation of our prototype is shown here, complete with drawings and pictures of the cup lid and swivel joint.

Purpose and Function of the Prototype:

This prototype's objectives are to evaluate the swivel joint's performance and the liquid level's visibility. We want to make sure that these features fulfill our desired criteria and improve the user experience.

3. Prototype Testing and Evaluation

We conducted several tests to evaluate the performance of our prototype against the target specifications developed in Project Deliverable C. The results of these tests are summarized in the table below.

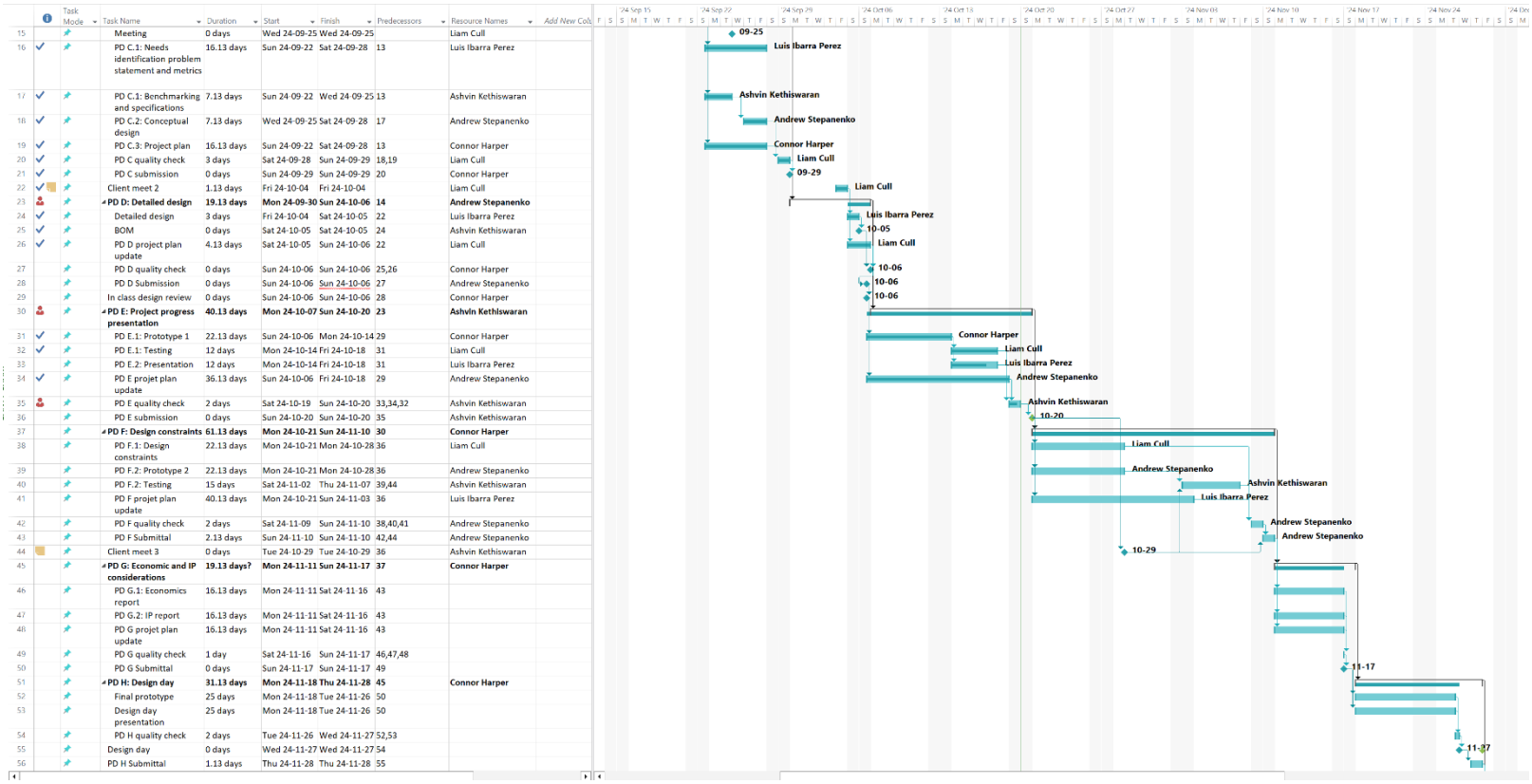
Target Specification	Expected Value	Actual Value
Liquid	Clear	Clear
Flow Rate	Controlled	Controlled
Weight	Lightweight	Lightweight
Volume	Standard	Standard
Durability	100 cycles and drops	150

The prototype successfully demonstrated clear visibility of the liquid and maintained a controlled flow rate. Additionally, the swivel joint proved to be more durable than the previous ball joint design, exceeding our expectations by withstanding 150 cycles during testing.

2.2 Project Progress Presentation

[CFL3-Design Review.pptx]

2.3 Project plan update



	Task Mode	Task Name	Duration	Start	Finish	Predecessors	Resource Names
15		Meeting	0 days	Wed 24-09-25	Wed 24-09-25		Liam Cull
16		PD C.1: Needs identification problem statement and metrics	16.13 days	Sun 24-09-22	Sat 24-09-28	13	Luis Ibarra Perez
17		PD C.1: Benchmarking and specifications	7.13 days	Sun 24-09-22	Wed 24-09-25	13	Ashvin Kethiswaran
18		PD C.2: Conceptual design	7.13 days	Wed 24-09-25	Sat 24-09-28	17	Andrew Stepanenko
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56		PD H Submittal	1.13 days	Thu 24-11-28	Thu 24-11-28	55	

3. Design Constraints

After the design review and initial presentations, it was suggested that certain modifications be made to the initial design. These modifications are based on DFX factors. Identifying these constraints is crucial for the success of the product as they can result in increased costs, increased manufacturing difficulty, lack of needs being met, among others. In this section, 2 different DFX factors were chosen, along with their design constraints. With these constraints, modifications are suggested to improve the product.

3.1 Design for Simplicity

Designing for simplicity ensures that the cup flow limiter is easy to use, manufacturable, and cost-effective. A simplified design is especially important as the product is intended for a young user with limited mobility. By reducing part complexity, we reduce potential points of failure, simplify cleaning and maintenance, and enhance the usability and reliability of the product for caregivers. A few key changes have been made to the design to ensure that the cup flow limiter is as simple as possible. The following changes have been made to the design:

1. **Two-hole System**:
   To maintain simplicity while controlling liquid flow, the design uses a minimalistic two-hole system—one for drinking and one for airflow. This setup supports ease of use by creating a controlled, consistent drinking experience without introducing unnecessary complexity. This can be contrasted with the previous idea of having multiple holes all around the cup flow limiter.
2. **Reduced Part Count**:
   The design incorporates a static and dynamic component without extraneous parts. By minimizing parts, the product is easier to assemble and maintain, further supporting durability and cost-effectiveness. Fewer components also simplify the cleaning process, an important consideration for caregiver convenience.
3. **Nosey Cup Compatibility**:
   The design is now tailored specifically to fit a Nosey cup, eliminating the need for additional adaptors or custom fittings. This ensures that the product integrates seamlessly

into the user's current setup, reducing part complexity and potential compatibility issues. Previously, it was planned to manufacture the cup from scratch or buy an existing cup. However, the team realized that manufacturing a cup would be too complicated and existing cups that are not Nosey cups are too big for the client.

3.2 Design for Durability

Durability is essential to ensure the product withstands daily handling, including potential drops, and remains safe and functional over its lifespan. Given the intended user's limited mobility, the cup flow limiter must be robust and able to endure impacts without compromising safety or integrity. Below are items that will be changed for the design to ensure that the cup flow limiter is durable and will not break:

1. **Material Selection**:
   A strong, non-toxic plastic material is chosen for its impact resistance, reducing the risk of cracks or damage from drops. This choice enhances the longevity and safety of the product, ensuring consistent performance despite repeated handling.
2. **Rubber Dampening**:
   To further improve impact resistance, rubber elements will be incorporated in key areas of the design. These rubber components help absorb shock from drops, protecting the structural integrity of the cup and maintaining its usability over time.
3. **Minimized Stress Concentrators**:
   By using a two-hole design instead of multiple smaller holes, the product is made more rigid with fewer stress points that could compromise durability. This reduction in stress concentrators helps prevent cracks or fractures, extending the product's lifespan.

Proof

To begin, the first constraint of design for simplicity is effectively satisfied in our design through the analysis of our prior models compared to our present one. Compared to our previous design,

which employed multiple pieces and multiple openings in the flow limiting system, the present one has been drastically simplified. Prior, our design was much more complex relying on a flow limiting system composed of an array of holes around a disc which is then layered on another disc which can be adjusted on top leading to a variable flow rate limiter. However, this approach was too complex even without considering the rest of the components that make up the cup. Our new design, which only has two holes, one for drinking and one for air flow, offers a simpler solution to the same problem without sacrificing any usability. Based on the simple analysis of just two being much smaller than approximately 12 openings on the previous design, our current system satisfies this constraint.

Secondly, the constraint for design for durability is also effectively addressed in our design through some logical analysis regarding the techniques used. Our previous tests regarding durability had more than satisfactory results. In addition to this, we will be using a similar material and the updated design includes improvements such as the rubber dampening, and fewer stress points. With these notions in mind, it is assumable that this design has comparable if not higher degrees of durability. This way of comparing and using our previous durability tests is an adequate measure that will only be further validated with a physical experiment when the next prototype is produced.

3.3 Untested Critical Product Assumptions

A critical product assumption that we have not tested for is for cleanabilty. Although we have done a myriad of tests that covered other critical product assumptions such as durability and water sealing. We have yet to account for the capabilities of dishwashing or even simply hand washing

the cup system with external additions like dish soap. A test running the prototype lid through the dishwasher with a normal soap will prove to be helpful as we can see how well the sealant holds up whilst also judging the cleanability of the system. Looking back at the DFX factors from Project Deliverable B, the ones that this assumption relates to are material selection and cleanability. Material selection since our chosen plastic and sealant contribute to the overall cleanability and therefore safety of the user. Similarly, the cleanability DFX directly connects to this assumption as the client being able to clean the cup system through the dishwasher is an inherent benefit for their ease of use.

3.4 Updated BOM

Item Description	Supplier/Link	Quantity	Price per Unit (CAD)	Total Price (CAD)
3D printing filament	Makerspace			
Nosey Cup	Amazon	1	$7.00	$7.00
Clear Grade Food Silicone Sealant	Amazon	1	$14.00	$14.00

3.5 Prototype Testing

Table 3: Prototype Testing Results, Target Specs. vs. Real Specs.

Metrics **(Without Cup)**	**Units**	**Target Value**	**Test Value**
Liquid **Flow Rate**	Milliliters per second (ml/sec)	1 drop per second	0.5<= drops per second
Weight	Grams (g)	<100g	12.69g

Volume	Milliliters (ml)	100mL	Volume of any Adapted Cup
Durability	Number of drops from 3ft (#)	No damage after 10 drops	No damage after 100 drops
Handle	Millimeters (mm)	10 mm	N/A
Dimensions	Centimeters (cm)	Height: 12cm Diameter: 7.5cm	Height: <1 cm Diameter: 7 cm (elliptical radius)
Price	CAD ($)	$10	$21

Figure 1: Close up of CFL Plastic Piece

Figure 2: Close up of CFL Back

3.6 Testing Observations

From testing the CFL, we found that it almost meets the target specifications mentioned in deliverable C. With testing only done to the lid of the limiter, we can assume that for the other values not accounted for, fill in metrics with any cup that the lid is attached to. With our focus on durability and simplicity, our product is tested to be smaller than our target values and more durable to drops as our product effortlessly survives hundreds of falls from counter heights (3-4ft).

This testing didn't come without its flaws. During testing, the silicon sealant used for testing the product does not bond well with the plastic material used for the lid (3D printing Filament). This

meant that with scrapes and minor rubs, the outside silicon sealant layer of the lid is compromised, allowing the seals between the cup and the lid to be worn down and useless after regular use. This calls for a different material to be used either for the lid itself or for the water sealing coating on the outside.

Another issue during testing involved the small plastic piece used for limiting liquid flow. This piece is too small for the opening created for it. This allowed for gaps to appear when liquid started to flow as it seeped around the sides and top causing liquid to spill out of the cup. This meant that if any liquid was stopped, regardless of the stopper, would flow through anyways because of the lack of sealing done to the movable parts on the prototype. The next step for this issue is to create a proper seal with the moving part and the lid itself by getting a better fitment printed on the 3D printer or to include a proper rubber gasket to put in, it will provide better sealing capabilities than the silicone.

Other creature comforts for the next design should include a wider push tab for the lid limiter and lockable sections for the limiter to lock into. When the limiter is pushed a lot, it gets uncomfortable and tiring on the finger. This can be fixed by adding a wider push tab for the user to use without getting sore. This will also be beneficial for the locking mechanism that should be in place. This will benefit the user as they won't resort to holding the tab in place when drinking but lock it in place for a steady rate of flow.

This is a good place to start off after conducting these tests. Testing proved to our team our weak spots and places where we have over engineered. Other things that we may focus on are

lowering the cost of the product. This is due to its real value being greater than the target specification we had set out.

3.7. Outline of the Presentation

1. Introduction

Brief summary of the project's purpose and goals.

Key challenges addressed (e.g., durability, ease of use, flow control).

2. Prototype Progress

Present current prototype status, including design refinements like the two-hole flow system and material adjustments for durability.

Show testing results related to flow rate, durability, and usability.

- Display images of critical parts (e.g., lid design, swivel joint) to demonstrate functional improvements.

3. Design Adjustments Based on Client Feedback

- Recap any previous feedback and show how it influenced the changes in design.
- Highlight modifications for simplicity and durability, like rubber dampening for impact resistance and minimized stress points.

4. Outstanding Issues and Next Steps

- Acknowledge unresolved issues like cleanability testing and potential material changes for better sealant compatibility.
- Outline upcoming steps for refining the design based on testing insights.

5. Economic Considerations

- Present preliminary cost breakdown and any economic adjustments made to maintain cost-effectiveness.

6. Future Plans and Deliverables

- Overview of what's planned next: additional testing, design pitch preparation, and final prototype completion.

3.8 Information to Gather from the Client:

1. Feedback on Current Prototype

- Does the client feel the two-hole system and flow rate improvements align with their needs?
- Are there additional adjustments they'd like regarding the material or usability?

2. Insights on Cleanability Preferences

- Ask for more specifics on how they envision cleaning the product (e.g., frequency, dishwasher versus hand wash).

3. Further Customization Preferences

- Get input on potential ergonomic features, such as wider tabs for easier operation or lockable sections for steady flow.

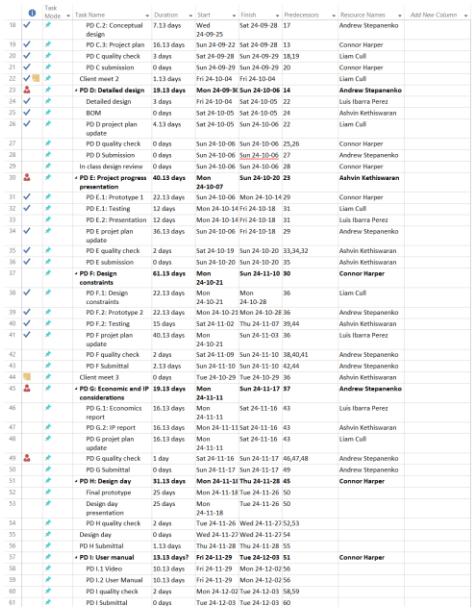
4. Final Aesthetic Preferences

- Confirm color preferences, translucency, and any minor aesthetic adjustments they'd like to see in the final design.

5. Feedback on Economic Feasibility

- Discuss the product's projected cost and any budget constraints the client may have.

3.9 Project plan update



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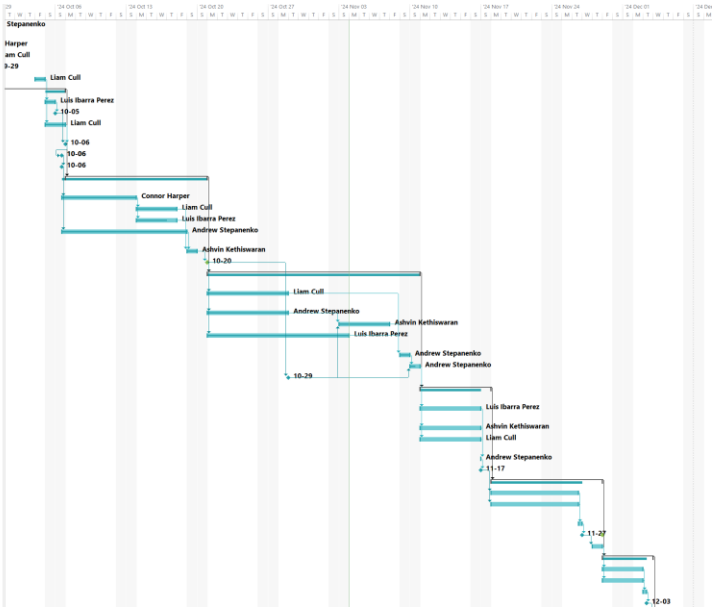
58		PD I.1 Video	10.13 days	Fri 24-11-29	Mon 24-12-02	56		
59		PD I.2 User Manual	10.13 days	Fri 24-11-29	Mon 24-12-02	56		
60		PD I quality check	2 days	Mon 24-12-02	Tue 24-12-03	58,59		
61		PD I Submittal	0 days	Tue 24-12-03	Tue 24-12-03	60		



4. Economic and IP Considerations

4.1 Intellectual Property

1. Adjustable Drinking Cups Pub No.: US20170318992

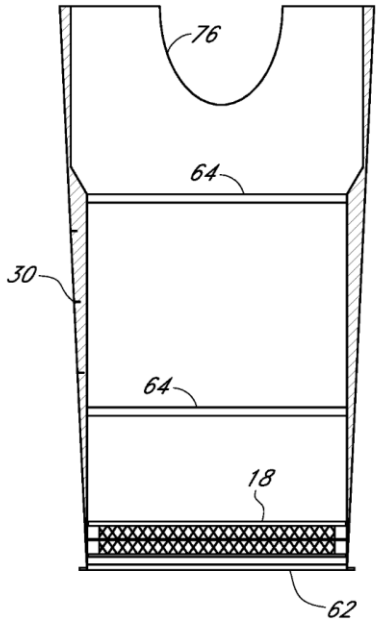


FIG. 3

Figure 3, Diagram from patent (Ankeny, IA. United States Patent No. US20170318992, 2017)

This is a patent that appears to be for a product like, or for the Nosey Cup for which the product we are designing attaches to. While our solution is not a specific derivation of the design of the nosey cup, it is an extension of the use of the nosey cup. As an improvement upon the original design of the nosey cup for our niche we would be able to patent our product, however, the original patent of the nosey cup would remain.

2. Beverage Container Lid With Adjustable Flow Rate US20190112112

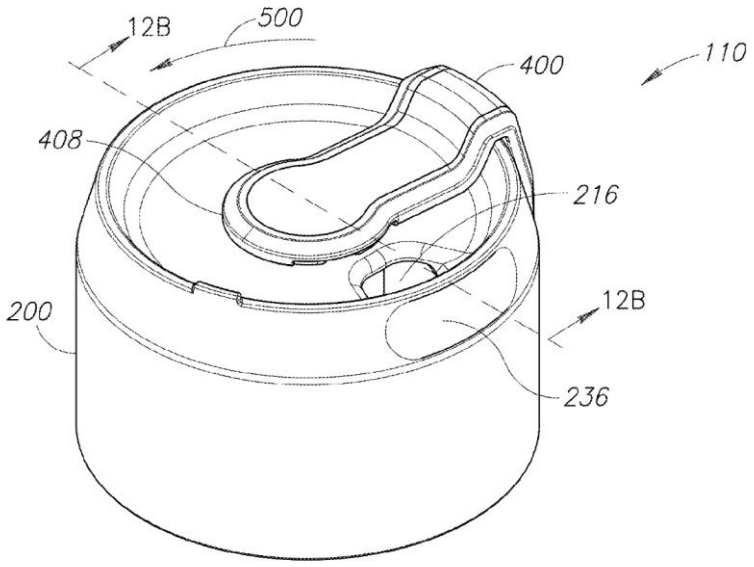


Figure 4, Diagram from beverage container lid with adjustable flow rate (Seattle, WA, United States Patent No. US20190112112, 2019)

This patent is closer to the product we intend on creating. Some key differences between this patent and the design of our solution are the attachment method, flow limit limiting method, overall appearance, and intended use cases. Our solution features a snap-on attachment type vs the patent's screw on type. The product we are designing also uses a vertical slider to limit the flow rate whereas this product features a screw-based system to limit the flow rate outside of the liquid container. Additionally, the existing product has the appearance of a cylindrical extrusion with a twisting handle located on top of the device, our solution is more of a flat puck with a large notch on the side opposite of the fluid restrictor made to accommodate the users nose. Finally, the existing product is designed for the convenience of the end user in setting the desired flow rate out of their container, our product is designed with ergonomics and accessibility as an aid for those who may have disabilities in the restriction of fluid flow.

G.2.2

Both of these existing patents relate to the two parts of our solution the cup, and the cup flow limiter. The cup component is less important to our design but it is important to note that our product is meant to be an improvement to the usability of the device. As a derivative our design would be patentable but the patent for the original cup would still remain in place. Thus, we would not be able to manufacture nosey cups to pair with our cup flow limiter without a commercial license by the owners of the patent to explicitly allow replication of their product or wait until the time on the patent has expired.

The flow limiter patent is interesting as the intended function is the same but it is pointed towards two different markets entirely. There would have to be some research by the team on the ability to file the patent for the cup flow limiter we designed vs the one mentioned. The method of restricting flow rate, attaching to the liquid container, and the ergonomics of the design are all different between the patent and our design. With enough supporting documentation, justification, and demonstration of our thinking process it would theoretically be possible to patent our lid design as an improvement specifically to the nosey cup as opposed to a generalized bottle design that the above patent states in their documentation.

4.2 Economics report

4.2.1 Cost Classification

Our classification table reflects the costs and expenses we have accumulated throughout the project's existence so far. Currently, using our production costs for our prototypes we can conclude our findings using this table:

Cost Classification Table

TYPE / COST	MATERIAL, LABOR OR EXPENSE	FIXED, VARIABLE, OR SEMI-VARIABLE	DIRECT OR IN-DIRECT
$17.20 PER HOUR FOR SALARIES	Labor	Fixed	Direct
$16.00 FOR PRODUCTION MATERIALS	Materials	Variable	Direct

In this table we include the price of the materials used to create one prototype and the cost of salaries. Since our salaries are variable costs, we assume the cost being relative to the minimum wage set out by the government of Ontario multiplied by the number of hours that our team spent constructing it. This makes the cost variable as these wages could be changed at any time by the government and could vary with the time spent constructing the product by our team. Costs not included on the chart are overhead, depreciation, rent, and electricity. This is because we do not occur charges regarding these applications. Our team currently uses Makerspace and other local 3D printers to construct parts of the product. This means that with the use of public printers, we do not pay for fees on electricity, depreciation of the printer itself, and the renting of the building where these 3D printers are located.

Although this seems great for the business, in the long run, if demand increases, our team will have to expand and invest in personal 3D printers. This is due to the inconsistency that public 3D printers give. With more orders coming in, printers will have to be working constantly to keep up with demand, meaning our team cannot rely on the public availability of printers to make the product, as that is impossible to overcome. Another solution could be to find a

manufacturing company, like ones in China, to manufacture our product at a lower production cost with the biggest fees being shipping.

The table gives us valuable information right now, but we project our costs according to a different model. This is because we predict a lower production cost for our design when selling our product in bulk. According to our market research, we predict the cost per product will be cut to $0.91, pushing our product's price down to $9.99, changing with supply and demand. And with personal 3D printers in the future, we can price the filament the same but extra charges like electricity and depreciation will accumulate.

4.2.2 Income Statements

Table 4, Income statement for first 3 years of operation

FlowTech Industries **Income Statement**	**Year 1**	**Year 2**	**Year 3**
Revenue: Nosey Cup and Lid Package	$9.99 * 3750 units **$37 462.50**	$9.99 * 3900 units **$38 961**	$9.99 * 4056 units **$40 519.44**
Cost of goods sold	Direct Labour: 200 hours * $17.20 **$3440**	Direct Labour: 200 hours * $17.20 **$3440**	Direct Labour: 200 hours * $17.20 **$3440**
	Materials: $0.91 *3750 units **$3412.50**	Materials: $0.91 * 3900 units **$3549**	Materials: $0.91 *4056 units **$3690.96**

Gross Profit	**$30 610**	**$31 972**	**$33 388.48**
Operating Expenses	Advertising: $4000	Advertising: $3500	Advertising: $3000
	Travel	Travel	Travel
	Utilities	Utilities	Utilities
	Rent	Rent	Rent
	Equipment	Equipment	Equipment
Net Income			

Assumptions for revenue based on the market research information are the selling price of the nosey cup and lid package for $9.99, the cost per unit coming down to $0.91 per unit, and 3750 units sold the first year with a gradual increase of 4 % per following year.

For the costs of goods sold a mass-produced material cost of $0.91 is used. Additionally, for direct labour costs a starting value of 200 hours of labour at $17.20 is utilized.

4.2.3 NPV Analysis

To understand the profitability of our product and determine the number of units that need to be sold to break even, we conducted a Net Present Value (NPV) analysis. This approach calculates the present value of future cash flows over the first three years of production, allowing us to assess both the project's viability and break-even point.

1. **Initial Fixed Costs**: $21

2. **Production and Labor Costs**:
   - **Labor Cost**: $17.20 per hour, based on an estimated 200 hours annually.
   - **Material Cost**: With mass production, materials cost $0.91 per unit.
3. **Selling Price**: $9.99 per unit.
4. **Projected Annual Sales Volume**: 4,000 units.
5. **Discount Rate**: 7% (an industry-standard rate for small-scale manufacturing ventures).

Based on these figures, our annual fixed cost (primarily labor) amounts to approximately **$3,441**, while the annual variable cost (production materials) totals **$3,640**.

Annual Revenue and Cost Calculations

The projected **annual revenue** from selling 4,000 units at $9.99 per unit is **$39,960**.

Using the adjusted material cost, the **annual total cost** is calculated as follows:

$$\text{Total Annual Cost} = \text{Fixed Cost} + \text{Variable Cost} = 3{,}441 + 3{,}640 = 7{,}081$$

Thus, the projected **annual net income** is

$$\text{Net Income per Year} = \text{Revenue} - \text{Total Cost} = 39{,}960 - 7{,}081 = 32{,}879$$

NPV Calculation for Three-Year Forecast

The NPV analysis over three years considers the annual cash flows discounted at a rate of 7%. The cash flow for each year is the annual net income, discounted to present value.

Year	Cash Flow	NPV of Cash Flow

1	$32,879	$30,724.30
2	$32,879	$28,711.03
3	$32,879	$26,797.07

The **Total NPV** for the three-year period is approximately **$86,232.40**, indicating a positive net present value and projecting profitability within this timeframe.

Break-Even Analysis

To identify the break-even point, we calculated the minimum number of units required to cover all fixed and variable costs. The break-even point is determined as follows:

$$BreakEvenUnits = \frac{FixedCosts}{Selling\,\mathrm{Pr}\,iceperUnit - VariableCostperUnit}$$

With a fixed cost of **$3,441** and a contribution margin (selling price minus variable cost) of **$9.08** per unit:

$$BreakEvenUnits = \frac{3{,}441}{9.08} = 382\ units$$

Therefore, **382 units** must be sold to break even, after which the business will begin generating a profit.

4.2.4 Market Research

The cup flow limiter, designed as an attachment for Nosey cups for children with cerebral palsy (CP), is positioned to meet a niche need in the Canadian market. The following sections of this report outlines key assumptions regarding market size and demand, market share potential, pricing strategy, sales volume forecasts, and other relevant factors.

TARGET MARKET SIZE AND DEMAND

The target demographic for the cup flow limiter includes parents or caregivers of children with limited mobility or special needs, particularly those with CP. According to a study by Amankwah et al., current estimates indicate that approximately 94,000 Canadians will live with CP by 2031, which is an increase from 75,000 in 2011 (Amankwah, et al., 2020). The study also mentions that about 2,200 new cases are diagnosed annually among children under 20 years old. From that pool, on average, around 10% will adopt this early product (The adoption curve, n.d.). This means that in the first few years, around 3,750 users may benefit from this product (assuming the 10% adoption rate and assuming half of people with CP are children). In addition to these potential users, one can also consider the broader market for adaptive drinking products. For example, the sippy cup market alone is projected to grow from $9.7B USD in 2023 to $15B USD by 2033 at a compound annual growth rate of 4.4% (Sippy Cups Market Outlook (2023 to 2033), n.d.). This trend reflects a growing awareness among parents regarding child safety and the increasing demand for adaptive products that facilitate easier drinking for children with special needs.

These projections indicate a rising popularity of adaptive products designed for inclusivity and accessibility. These market trends described above indicate a rising popularity of adaptive products

designed for inclusivity and accessibility. As such, a healthy demand for the cup flow limiter is forecasted due to its unique features that enhance usability for children with CP while resembling standard cups. Given these factors, it is anticipated that the product will have a steady increase of around 4-5%, like the growth rate of the sippy cup market.

To analyze the competitive landscape, existing products were identified. Products like other adaptive cups and sippy cups available in Canada were identified. This product market is relatively niche; however, it includes established brands like Philips Avent and Tommee Tippee, which offer similar products. Given that the direct competition is very limited, it is estimated that capturing 4-5% of the target market within the next 3 years post launch is realistic.

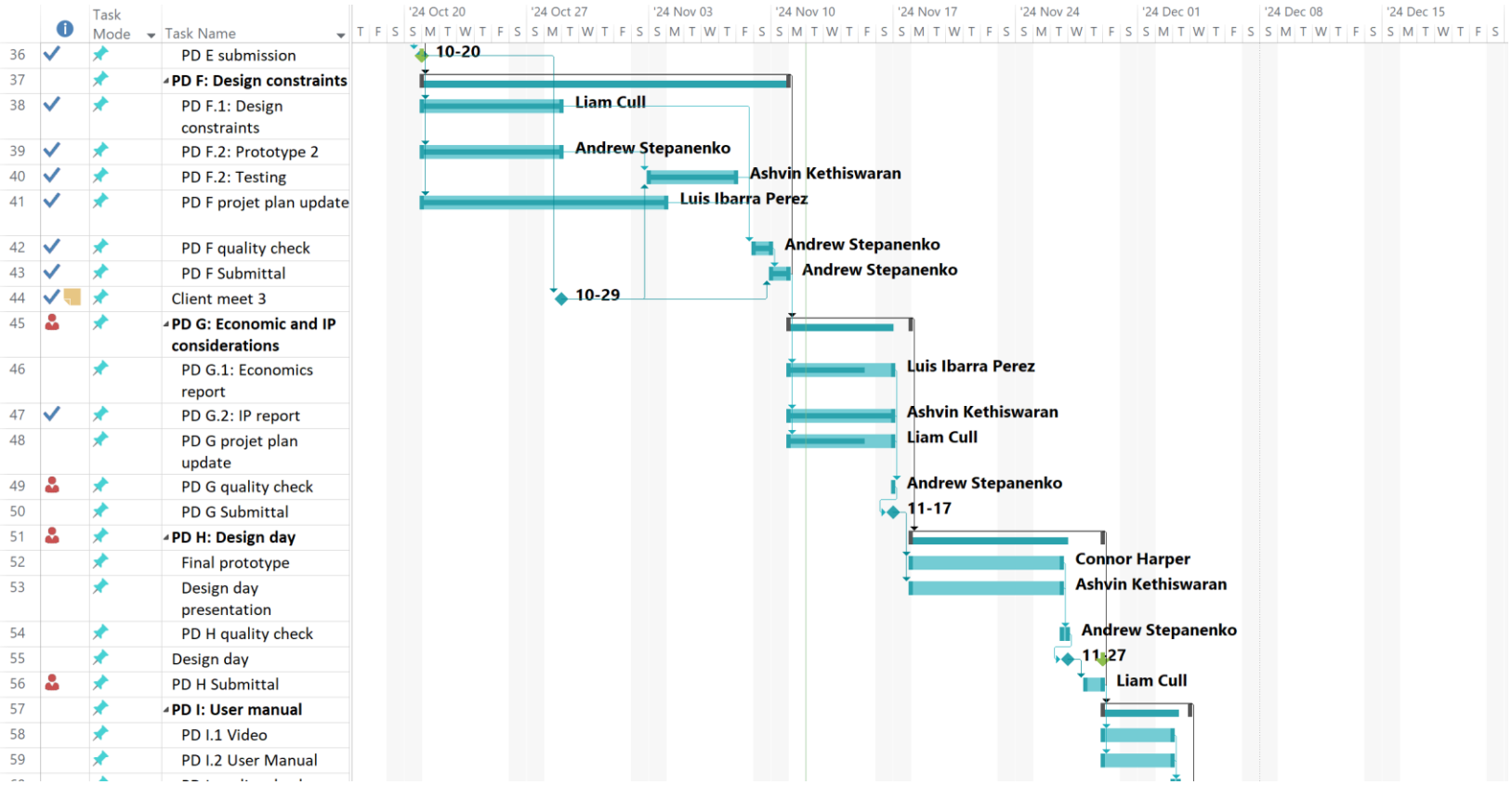
PRICING

Estimating production costs is crucial for establishing a viable price. It is projected that the cost of producing 1 cup flow limiter is $16.00 with tax included. However, by mass producing the product, the cost can be reduced to $0.91 per unit. This is because it is estimated that one silicone sealant bottle would be enough to coat 20 units. To determine a competitive price range, the competition's products were analyzed. A sippy cup of around the same size was determined to be $21.99 (BIBS Baby Glass Bottle Complete Set Latex, n.d.).

To attract new customers with a competitive price, and using some psychological tricks like using odd numbers (5 Psychological Pricing Tactics That Attract Customers, 2024), the price of the product was deemed to be $9.99. As the company gains more customers, the price can be modified to meet supply and demand.

The product can mostly be sold in online platforms like Amazon for the ease of the customer. However, deals can be made to have the cup flow limiter in stores as well.

4.3 Project plan update



4 Design Day Pitch and Final Prototype Evaluation

Write your design day pitch and plan your prototype demo.

5 Video and User Manual

6.1 Video pitch

Add link to video.

6.2 User manual

See separate template for the user manual. Do not write the content here.

6 Conclusions

Summarize your lessons learned and your work related to your project. Discuss any outstanding issues or implications for the project.

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