

START-UP BUSINESS PLAN

POWER PADDLE

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4/27/2025

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I. EXECUTIVE SUMMARY

PROBLEMS

Personalized Play

- No way to track stats when you play pickleball
- Finish a game unaware if you improved or not

Community Aspect

- Sense of the community is weak
- Desire to connect with others who share the love of the game

WHO ARE WE?

The Power Paddle is a cutting-edge pickleball paddle that integrates advanced sensor technology to track essential performance metrics. The paddle's unique screen known as the **Pickle Panel** displays real-time stats and is protected by a durable, scratch-proof cover. This innovative paddle elevates players' performance and enhances their overall pickleball experience. Along with the paddle, the separate application known as **Pickle Pair** is an online platform where pickleball players can join a community where they play matches, book courts, and assess individual progress.

CHANNELS



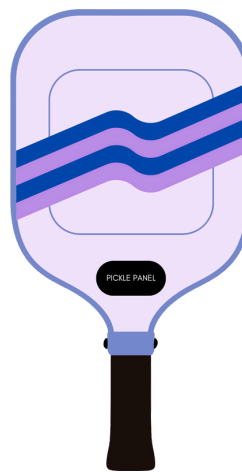
UNIQUE VALUE PROPOSITION

Solo Paddle Mode

-Game mode used to practice skills with the Power Paddle both **individually and everywhere**

Pickle Pair

-Within the app, find players with a Power Paddle near you with **similar skill levels** to play with



SOLUTIONS

The Power Paddle contains sensors strategically placed in zones that track several analytics like average serve speed, average hit speed, and forehand and backhand count. These are viewable on the Pickle Pair App. The App provides an in-depth AI analysis regarding your personal gameplay session.

COST STRUCTURE

TYPE	YEAR 1	YEAR 2
CAC	\$210,997	\$665,990
DIST.	\$73,457	\$220,099
HR	\$1,355,000	\$3,047,500

INVESTMENT

The Power Paddle is seeking a \$750,000 investment in exchange for a 15% equity stake in the product. The investment will be paid back in full in just 2 years, meaning during the third year of projected sales, investors would take home upwards of **\$2 million**. By investing in the Power Paddle, you are expanding the world's fastest growing sport and investing in the **future** of pickleball.

KEY METRICS

Customer Satisfaction

Market Share

Financial Indicators

TARGET MARKET

Ages 18-34

-40% of our efforts will be concentrated on this younger age group that dominates the **social media audience**

Ages 35-60

-60% of our efforts will be concentrated on this older age group that likely has more **experience** and **capital**

REVENUE STREAMS

CPU: \$249.99	UNITS SOLD	REVENUE
YEAR 1	10,000	\$2,499,900
YEAR 2	35,000	\$8,747,650
YEAR 3	120,000	\$29,998,800

II. PROBLEM

The Pickleball Craze

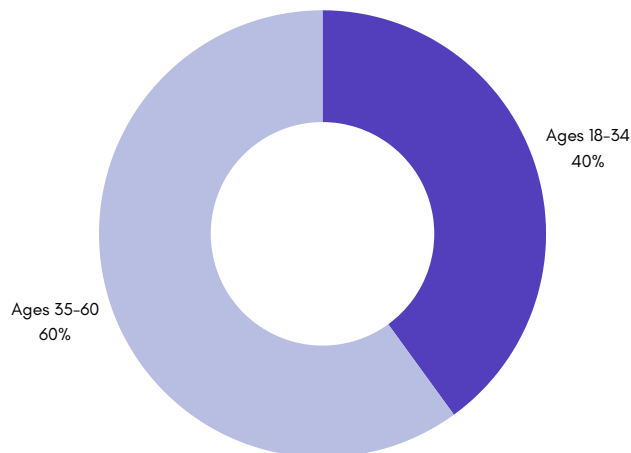
Pickleball has rapidly gained popularity across the United States, **captivating players of all ages** and transforming a simple backyard game into a beloved pastime. With its wide-ranging appeal, the sport attracts a **diverse crowd** and brings together players from various age groups. As a testament to its growing popularity, recent statistics reveal that over **19.8 million** in the US are active pickleball players, showcasing its immense appeal and inclusive nature.

Pickleball players often invest in paddles that **lack essential features** for skill enhancement and self-assessment. Without access to insightful data on their performance, players struggle to identify their strengths and weaknesses, weakening their ability to make **targeted improvements**. The absence of a **comprehensive data collection system** that analyzes shot types, speeds, surface interactions, and accuracies lowers the overall sporting experience and limits players' potential growth in the game.

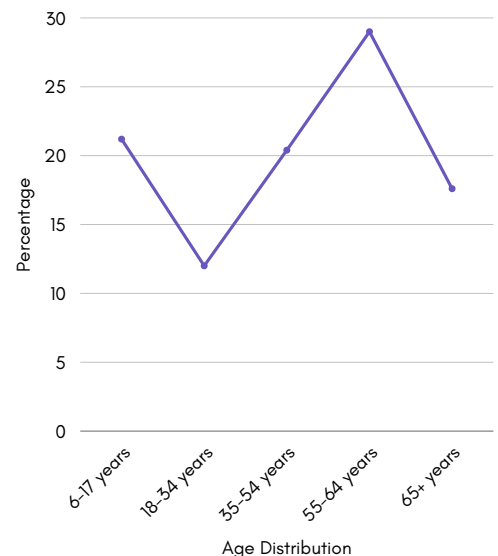
In addition, another key challenge has also emerged in the domain of pickleball. Finding suitable playing partners with **similar skill levels** can be difficult due to the broad demographic the sport attracts. This issue often prevents players from experiencing the desired social aspect and competitive balance that make pickleball so engaging. To address this obstacle, innovative solutions are needed to **bridge the gap** and connect players with like-skilled partners, allowing them to fully enjoy themselves in this thrilling game and create meaningful connections within the community.

III. CUSTOMER SEGMENTS

Our Focuses



Pickleball Demographics



Demographic Breakdown

Pickleball boasts a remarkably diverse age range among its players, making it a truly **inclusive sport**. Its popularity has skyrocketed in the past four years, attracting a balanced mix of participants from **teenagers to senior citizens**. The game offers varied experiences, appealing to both **casual and consistent** players alike. As demonstrated by the data, Pickleball transcends the boundaries of a simple backyard game, evolving into a versatile sport enjoyed by all.

However, in light of the recent popularity of Pickleball among the 35-60 age demographic, our marketing strategy will prioritize this group. **60%** of our focus will be on the 35-60 demographic while **40%** will be on the 18-34 demographic. Younger players may be less likely to afford **higher-priced Pickleball products**, making the older demographic a more suitable audience. Additionally, we have further segmented our target market into casual and consistent players, allowing us to cater to their **specific preferences** and expectations from the game. Whether you are a curious beginner seeking to gauge your skill level or an ambitious player striving to monitor progress, the Power Paddle serves as an invaluable tool for enhancing your game. The **Power Paddle** is an innovative and universal Pickleball paddle designed to cater to this diverse audience.

IV. UNIQUE VALUE PROPOSITION

Elevate And Connect

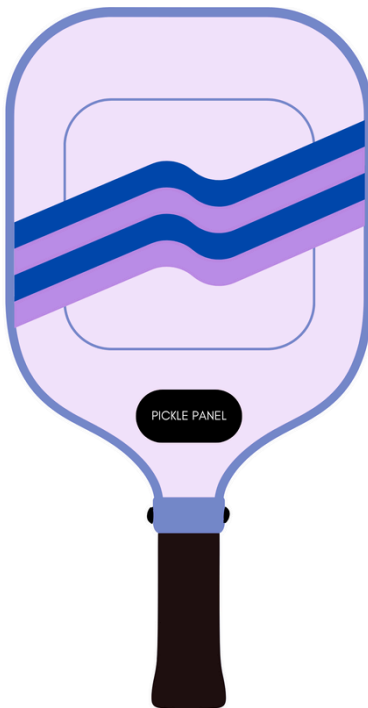
The Power Paddle is the pioneering technological pickleball paddle that further develops your game by tracking crucial workout-related statistics for the user to see during and after their session. The counterpart to the the Power Paddle, the Pickle Pair app, will be the primary source of display for the in-depth user statistics that are seen post- gameplay and will also construct a unique personal profile to match users with similar playing styles and logistics in nearby areas using the built in GPS system within the app.

Play Anywhere

Along with the “Team-Paddle” analysis, the Power Paddle also contains a “Solo-Paddle” mode for when users do not have access to pickleball courts or want further practice on their own. The only required items include the Power Paddle and a wall the user is able to hit against. The Power Paddle will track the users stats exactly how it would track in “Team-Paddle” mode and provide the same in-depth analysis afterwards. This is a great opportunity for users to work on improving specific skills pertaining to the game.

V. SOLUTIONS

The Power Paddle



Introducing the Power Paddle, the first pickleball paddle designed to enhance your game through advanced sensor technology. Made with high-end carbon fiber, this innovative paddle tracks performance metrics, including average hit speed, serve speed, forehand and backhand tally, and hit zone precision. These stats will be monitored and available in “Team Paddle” and “Solo Paddle” modes. Players in “Solo Paddle” mode are encouraged to utilize the game mode to work on specific shots that may need improvement. In addition, the Power Paddle will also contain a “Pickle Panel” screen above the handle. The Pickle Panel will display features the user can see during the workout. The Pickle Panel is covered in a Shatter-Proof and Scratch-Proof Tempered glass protector to ensure the Panel remains untouched during gameplay.

Regarding obtaining personal analytics for each user, we will utilize the features of Inertial measurement unit (IMU) sensors within our paddle to assist us in calculating the speed of user shots as well as where the user is hitting the ball on the paddle. However, many different types of sensors will be placed in the final model.

Features

HIT + SERVE SPEED

With the implementation of a Gyroscope sensor within our paddle, users will be able to see how fast their serve speed is and how fast their average swing per ball hit is.

FOREHANDS/BACKHANDS

Touch sensors will be placed along the inner and outer zones of our paddle on both the front and back to sense when the ball hits the front of the paddle or the back. The sensors will be connected to a microcomputer attached in the handle.

HIT-ZONE ANALYSIS

The sensors within our paddle will also have the ability to calculate the zone of the paddle where the user hits the most, as hitting the sweet spot is the preferred outcome for users.

The Pickle Pair App

INDIVIDUAL APPROACH



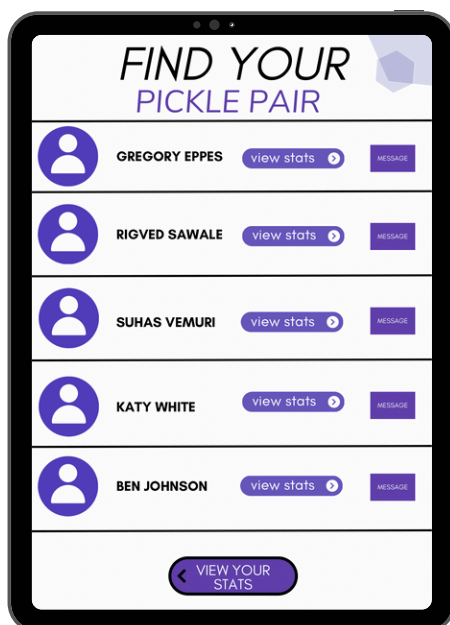
The Power Paddle brings a revolutionary, individualized approach to the world of pickleball, transforming the way players train and develop their skills. Equipped with state-of-the-art sensor technology, the paddle gathers and analyzes key performance metrics such as shot count, zone analysis, serve and hit speed, and shot angles. By harnessing the power of AI, the paddle translates this wealth of data into personalized feedback, enabling players to pinpoint their strengths and weaknesses with precision. In essence, the Power Paddle not only enhances the individual playing experience but also creates a deeper understanding of the sport, leading to continuous growth and mastery within the user. The Paddle can be seen as the ultimate tool to improve individual skills, acting as a coach.

PERSONALIZED COACHING

Traditional coaching for sports often involves recurring expenses and time commitments, such as scheduling weekly lessons, which can be a burden for many players. By investing in the Power Paddle, you can eliminate these hassles and enjoy a convenient, one-time purchase solution. Say goodbye to the upkeep and scheduling associated with coaching, as the Power Paddle enables you to work on your skills at your own pace and convenience. With this innovative product, enhancing your Pickleball abilities becomes an enjoyable experience, removing the chores typically involved in sports improvement.



COMMUNITY APPROACH



The Pickle Pair app is designed to enhance the social aspect of pickleball by providing an inclusive platform that allows players, specifically those who purchase the Power Paddle, to connect and engage with each other. Our aim is to maintain an accessible market pool, but the app will only be available to consumers who have purchased the Power Paddle. However, the app will still directly sync with the player's overall Universal Pickleball Rating (UPR), match history, graphical analysis of wins and losses, and a player pairing system based on proximity. Once matched, players can view each other's profiles and stats, creating an understanding of their partner's style before stepping on the court and engaging in activity with them.

VI. CHANNELS

Marketing and Advertisement

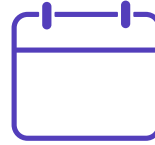
SOCIAL MEDIA



PARTNERSHIPS



EVENTS



WORD OF MOUTH



Our marketing strategy employs the use of a multi-channel approach in order to maximize the amount of engagement the Power Paddle receives. To ensure the popularity of and the product stays high, we will use social media to market in various ways, highlighting The Power Paddle's benefits. To further establish the brand and maintain a professional image, we will organize partnerships with large names in the Pickleball industry, such as endorsements with professional athletes. Additionally, hosting events to promote the product will boost traction with all our demographics.

Product Distribution

E-RETAIL



RETAIL SALES



APP MARKETS



DELIVERY SERV.



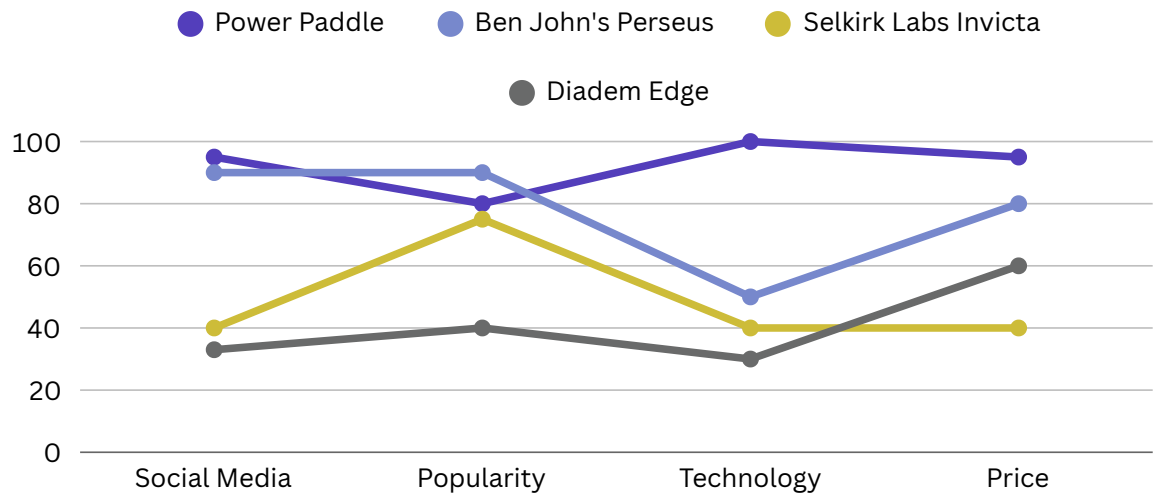
We plan to distribute our product through general retail stores including Costco, Academy, and Best Buy. With the reach that these retail stores contain, the marketability of our product will improve, giving us a slight competitive advantage. The Power Paddle will also be sold on online retailers like Amazon and Walmart. The Pickle Pair application however, an intangible program, will be available on the App Store and Google Play Store for users to download free of charge after purchasing the Power Paddle.

VII. REVENUE STREAMS

Projected Revenue					
Cost Per Unit:	\$249.99				
	Units Sold	Revenue	Profit	Total Cost	ROI
Year 1	10,000	\$2,499,900.00	\$880,446.00	\$1,619,454.00	.54x
Year 2	35,000	\$8,747,650.00	\$4,814,061.00	\$3,933,589.00	1.22x
Year 3	120,000	\$29,998,800.00	\$18,745,737.00	\$11,253,063.00	1.67x

Priced at \$249.99 per unit, the Power Paddle is expected to sell 10,000 units within the first year at a revenue of \$2,499,900.00. With the expected expenses the first year coming out to \$1,619,454.00, we expect to have a take home of \$880,446.00, which has an ROI of .54x. The Second year post launch of the Power Paddle, we expect to sell 35,000 units at a total of \$8,747,650.00. Taking away the expenses of the second year, we plan to have a profit of \$4,814,061.00 and an ROI of 1.22x. During our third year, we expect sales to take off and sell 120,000 units and gross a total of \$29,998,800.00. The expenses during our third year will amount to \$11,253,063, leaving us with \$18,745,737.00.

Competitor Analysis with other Luxury Paddles



Graph Analysis

Currently in the market, there are several high end paddles that would be direct competition the Power Paddle. Dominant players in the current market include the Ben John's Perseus paddle with JOOLA, Selkirk Labs Invicta, and the critically acclaimed Diadem Edge. When comparing these paddles to the Power Paddle, they lack certain key aspects that the Power Paddle holds. None of these paddles contain technology or any sort of sensors to track user movements, which is the biggest separating factor regarding the Power Paddle. The Power Paddle is also the cheapest option out of those presented even with the special features it contains.

Gross Profit Margin

To calculate Gross Profit Margin, perform the calculation of $(\text{REVENUE} - \text{COGS}) / (\text{REVENUE}) * 100$ to obtain a Gross Margin Percentage.

THIRD YEAR **GPM**: 80.6%

Revenue Growth

By performing the calculation of $(\text{CURRENT REVENUE} - \text{PREVIOUS YEAR'S REVENUE}) / (\text{PREVIOUS REVENUE}) * 100$, we will be able to measure revenue growth per year.

THIRD YEAR **RG**: 2.43x

Net Lifetime Value

Net Lifetime Value is calculated by performing $(\text{AVERAGE PURCHASE VALUE} * \text{PURCHASE FREQUENCY} * \text{CUSTOMER LIFESPAN}) * \text{GROSS MARGIN}$.

THIRD YEAR **NLT**: \$1410

VIII. COST STRUCTURE

Customer Acquisition Costs			
CAC Estimate	Year 1	Year 2	Year 3
Social Media/Content Creation	\$25,000	\$50,000	\$100,000
SEO (Seach Engine Optimization)	\$30,000	\$48,000	\$65,000
Shopify Plus Subscription	\$48,000	\$48,000	\$48,000
Payment Processing	\$74,997	\$262,490	\$899,964
Website Development	\$7,000	\$5,000	\$5,000
Sponsorships and Events + etc.	\$25,000	\$250,000	\$2,000,000
Misc. Promo Materials	\$1,000	\$2,500	\$5,000
TOTALS:	\$210,997	\$665,990	\$3,122,964

We expect to spend \$210,997 the first year following the launch of the PowerPaddle for Customer Acquisition Costs (CAC). As the pickleball market is heavily advertised on social media, we expect to spend a large chunk on promoting our product on several social media platforms. Along with social media, we also plan to spend \$30,000 per year on Search Engine Optimization (SEO) to direct pickleball players on the internet to our product easier. To finish up our CAC costs, we estimate around \$1,000 for miscellaneous costs the first year and \$2,500 and \$5,000 for Years 2 and 3. Acquisition per customer can be calculated by dividing the total CAC costs by the total number of units sold per year. Our acquisition cost per customer is **\$21** our first year, **\$23** our second, and **\$26** our third as we expand our operations and customer base.

Distribution

Distribution Estimate	Year 1	Year 2	Year 3
Apple App Store	\$99	\$99	\$99
Google Play Store	\$25	\$0	\$0
Fulfillment + Shipping	\$73,333	\$220,000	\$660,000
TOTALS:	\$73,457	\$220,099	\$660,099

As our business idea is both a tangible and intangible product (Both The Power Paddle and the Pickle Pair Application), we plan to distribute both items via various channels. This will require the hefty fees of Fulfillment and Shipping expenses. As our product gains traction throughout its years of operation, these costs will gradually increase by a multiple of 3x. The Pickle Pair application will be available on both the Apple App store which charges a yearly fee of \$99 and the Google Play Store, which charges a one time fee of \$25 to have your app displayed and downloadable for users. Our third year contains the heaviest of our Distribution expenses, totaling \$660,099.00.

Human Resource Cost

HR Estimate	Year 1	Year 2	Year 3
Cost of Goods Sold (COGS)	\$485,000	\$1,697,500	\$5,820,000
Marketing Manager	\$160,000	\$160,000	\$160,000
Customer Support	\$80,000	\$80,000	\$80,000
Manufacturing Manager	\$110,000	\$110,000	\$110,000
CEO/COO Salaries	\$300,000	\$300,000	\$300,000
Research and Development	\$200,000	\$700,000	\$1,000,000
TOTALS:	\$1,355,000	\$3,047,500	\$7,470,000

Our densest portion of our cost structure are the Human Resource Costs. Within our Human Resource Costs, our densest costs are the COGS or Costs of Goods Sold. The Power Paddle costs us \$48.50 to create, and to calculate the COGS, multiply the manufacturing costs by the number of units sold. Along with our COGS, we also have the expenses of our team member salaries. We will employ 2 Marketing Managers each with a respective salary of \$80,000. Customer support will answer consumer messages and address potential concerns while the Manufacturing Manager will oversee the Fulfillment and Shipping operations. Along with these employees, our CEO and COO position will each take home a salary of \$150,000, respectively. Our second most cost dominating aspect of Human Resources is our Research and Development Department. One of the most important parts of achieving market success, our R&D Department will analyze trends to make improvements to the Power Paddle and Pickle Pair App to determine the most optimal sales approach for our product. Our Human Resource Costs increase exponentially by year. As our products market expands and the demand for the Power Paddle also increases, explaining the high costs of our Human Capital.

IX. KEY METRICS

Customer Satisfaction

Making sure our customers are satisfied with the Power Paddle is a priority for us, and we hope to achieve this by observing customer reviews on platforms where our product is sold and our app is downloaded as well as by asking users for input on the product 6 months after their purchase.

Market Share

By analyzing how the Market Share changes after our product is introduced, we will be able to see how well the vast Pickleball market reacts to the Power Paddle. From there, we will analyze trends of how popular the Power Paddle is becoming compared to standard Pickleball Paddles to help us make future decisions.

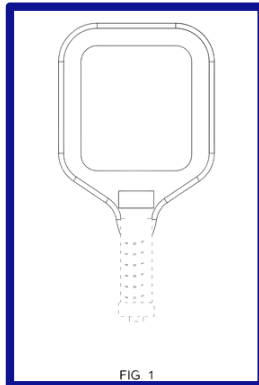
Financial Indicators

Taking into account net sales, losses, and return on investment provides data to how the product is doing and if any improvements in the current sales plan needs to be altered. Drops or spikes in user engagement/purchases can help determine what changes need to be made in coming adjustments.

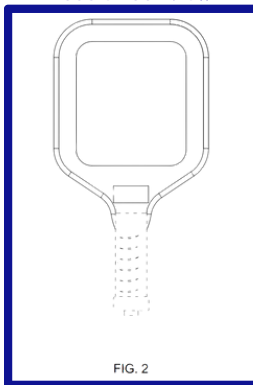
X. COMPETITIVE ADVANTAGE

Drawings used to file patent

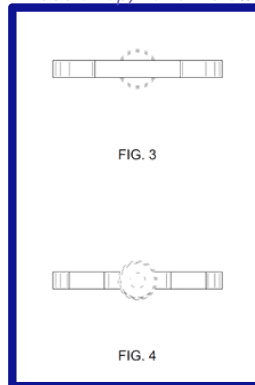
Paddle Front View



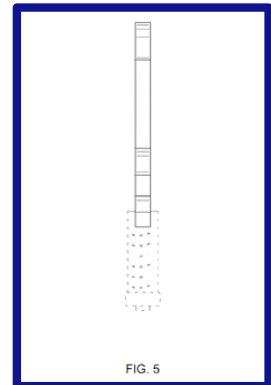
Paddle Back View



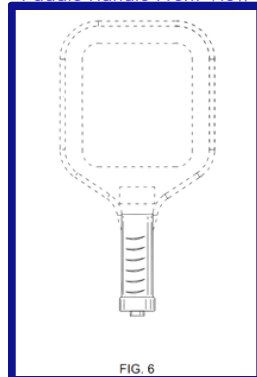
Paddle Top/Bottom View



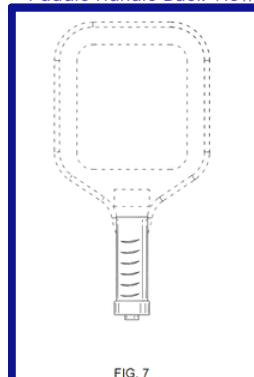
Paddle Side View



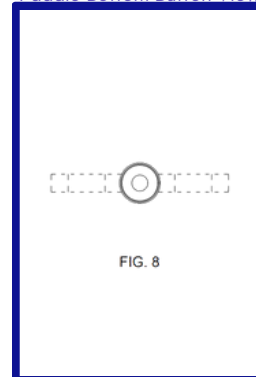
Paddle Handle Front View



Paddle Handle Back View



Paddle Bottom Button View



(Refer to Appendix for Tangible Prototypes and more)

Intellectual Property Protection

In order to dominate the market as soon as we enter it, we utilized these drawings to file a unique design patent on the hardware design of the Power Paddle. By submitting high-quality, detailed drawings that clearly depict the Power Paddle's unique design elements, the patent application will have a higher likelihood of approval. Securing a design patent ensures legal protection against potential infringements, safeguarding the investment in research, and marketing of the Power Paddle.

Visual Appeal

Detailed design patent drawings provide a unique visual representation of the Power Paddle's innovative features and aesthetics. By highlighting the paddle's distinct attributes, such as the built-in AI technology within the Pickle Panel for performance tracking and personalized analytics, these drawings emphasize the paddle's competitive edge in the pickleball market. This visual differentiation can attract consumers seeking cutting-edge technology and advanced performance tracking capabilities in their pickleball equipment.

Enhanced Marketability

The Power Paddle's design patent drawings are an essential tool in achieving market dominance. These detailed illustrations highlight the paddle's unique features and competitive advantages, enabling it to stand out in the market and attract the attention of customers, investors, and partners. By showcasing the paddle's innovative design the patent drawings contribute to establishing a strong brand identity, fostering customer loyalty, and driving sales.

XI. CONCLUSION

\$750,000
FOR
15%
EQUITY

The Power Paddle is seeking a \$750,000 investment for a 15% equity stake within our company. Seeing as how our initial year's costs total to **\$1,619,454.00** a **\$750,000** investment would help cover the majority of the funds necessary for Distribution, Marketing, and Customer Acquisition. The Power Paddle is expected to return a gross profit margin of **80.5%** in just the third year. Also by the third year, the Power Paddle is estimated to net **\$18,747,737.00** giving you a return on your investment of **1.67x**. Your investment will be paid back in full in just **2 years**, giving you the opportunity to enjoy the benefits of the Power Paddle's high netting Year 3.

By investing in the Power Paddle, you aren't investing in a regular paddle. You are investing in the **future of pickleball**.

XII. BIBLIOGRAPHY

- Jacobsen, Michael. "Pickleball by the Numbers." Team Insight, Formula4Media, 28 Sept. 2023. www.formula4media.com.
- Luxe Pickleball. "Explore the Pickleball Boom." Luxe Pickleball, 2024. luxepickleball.com.
- Mackie, Brandon, and the Sports and Fitness Industry Association. "2023 State of Pickleball: Participation and Infrastructure Report." Pickleheads, 2023. www.pickleheads.com.
- "Nearly 50 Million Adult Americans Have Played Pickleball." The App Global, 2024. www.theappglobal/news.
- "Picklenomics: The Economics of America's Fastest Growing Sport." Business Review at Berkeley, University of California, Berkeley, 2023. businessreview.studentorg.berkeley.edu.
- "USA Pickleball Annual Growth Report 2023." USA Pickleball, 2023. usapickleball.org.

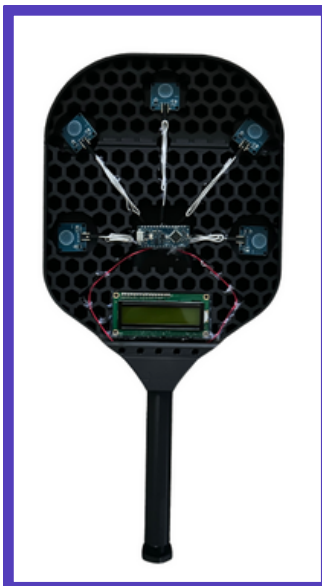
XIII. APPENDIX

Power Paddle V1



Our first iteration was made from initially designing The Power Paddle in **Fusion360**. We then took that design and outsourced it to a 3D Printer and then began the construction. Notice the space for the screen and the standard honeycomb interior.

Power Paddle V2



Our second prototype was made using the same platform to design and 3D printing process. Sensors and an actual LCD Screen were placed within the paddle as well. Off the paddle and on a circuit, code was written to **successfully program** the paddle to track statistics.

United States Patent and Trademark Office Electronic Receipt

Page 1 of 2

uspto UNITED STATES PATENT AND TRADEMARK OFFICE
Alexandria, VA 22313-1450
www.uspto.gov

ELECTRONIC PAYMENT RECEIPT

APPLICATION # 29/982,374 RECEIPT DATE / TIME 01/06/2025 03:27:42 PM Z ET ATTORNEY DOCKET # -

Title of Invention
PICKLEBALL PADDLE WITH INTEGRATED SCREEN

Application Information

APPLICATION TYPE Design - Nonprovisional Application under 35 USC 171 PATENT # -

CONFIRMATION # 5938 FILED BY Seema Mehta

PATENT CENTER # 68614366 AUTHORIZED BY -

CUSTOMER # 197524 FILING DATE -

CORRESPONDENCE ADDRESS - FIRST NAMED INVENTOR Miss Aarini Mehta

Payment Information

PAYMENT METHOD CARD / 3772 PAYMENT TRANSACTION ID E202516F29148728 PAYMENT AUTHORIZED BY Seema Mehta

FEE CODE	DESCRIPTION	ITEM PRICE(\$)	QUANTITY	ITEM TOTAL(\$)
3830	PROCESSING FEE, EXCEPT IN PROVISIONAL APPLICATIONS	28.00	1	28.00
3112	DESIGN SEARCH FEE OR DESIGN CPA SEARCH FEE	32.00	1	32.00
3312	DESIGN EXAMINATION FEE OR DESIGN CPA EXAMINATION FEE	128.00	1	128.00
3012	BASIC DESIGN APPL. FILING FEE	44.00	1	44.00
	TOTAL AMOUNT:			\$232.00

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