

Review the product scenario given below scenario and develop the following deliverables.

1. A Product Concept Document
2. An Initial Project Charter
3. A Market Requirements Document (MRD)
4. A Business Case

Product Scenario

"Air Purifier Market Size was valued at USD 6.3 billion in 2022. The air purifier market industry is projected to grow from USD 7.0 Billion in 2023 to USD 13.4 billion by 2030, exhibiting a compound annual growth rate (CAGR) of 11.4% during the forecast period (2023 - 2030)."

Perfect Purifiers LLC (PP LLC) has been in the Air Purification business for over ten years. They specialize in producing three types of air purifiers.

- High Efficient Particulate (HEPA) Air Purifiers: HEPA filters suck in air through a special HEPA filter and push out fresh air. HEPA purifiers can trap air particles as small as 0.1 Microns.
- Spray Air Purifiers: These small and mobile purifiers spray air into a room or compartment and neutralize gasses or odors. PP LLC has options for cleaning agents to be included in the spray.
- Commercial Air Scrubbers: These are heavy-duty air purifiers used for industrial or commercial purposes. PP LLC produces both wet scrubbers and dry scrubbers.

Opportunity and Team

PP LLC believes they have an opportunity to improve upon their current HEPA air filter line and address a market problem. They have asked Robert Winston to be the Product Manager for this effort. Robert is assigned to Operations. Valerie Kumar will act as the Sponsor for all product initiatives. Valerie will provide funding to approve the Product Concept Document and the Business Case. A team is assembled with the initial goal of designing and developing several prototypes with various features. Initial funding of \$30,000 has been allocated to support team resource needs during the Conceive and Plan phases. In addition, the team was tasked to develop value propositions and positing statements to support the ultimate product launch. Robert will work closely with the following team members. The team will meet every Tuesday afternoon to discuss the status.

- Sylvia Sanders: Marketing Lead
- Hiroshi Tanaka: Lead Engineer
- Ram Chopra: Design Lead
- Maggie Jones: Product Owner
- Sarah Newton: Project Management
- Raul Hernandez: Operations Lead

Market Information

HEPA Air Filters are extremely popular. However, there are issues associated with their purchase. PP LLC surveyed many current buyers and users and analyzed the market problem. Here are some of the biggest shortfalls PP LLC hopes to address with its new HEPA Air Filter product line.

- HEPA filters are not designed to remove volatile organic compounds (VOCs) and viruses from the air. This is a shortfall. Customers want a purifier that eliminates as many of these contaminants as possible.
- HEPA filters cannot remove odors from the air. Many customers have stated they want a purifier to address this issue and clean the air.
- Some HEPA purifiers generate Ozone. This can harm the health of the user and the environment. Many customers state they will not purchase any product with ozone emissions.
- HEPA purifiers must be regularly maintained. They can become a breeding ground for mold and bacteria if they are not maintained. Customers state that they want a purifier with minimal maintenance needs.
- HEPA filters are recommended to be replaced annually. Replacement filters are expensive. Customers state they would like an improved solution.
- Some HEPA purifiers are noisy and distracting. The less noise, the better.
- Many HEPA purifiers only cover a small area. Customers want wider purification coverage at lower prices.

The Competitive Market

There are many HEPA Air Purifiers on the market. Some primary competitors include Donaldson Company Inc., Hengst, MANN+HUMMEL, Honeywell International Inc., and Daikin Industries Ltd.

However, no product eliminates many issues cited by customers. PP LLC believes the time to market its new product line is now. Consumers are increasingly concerned about the air they breathe and are looking for an optimal product solution. It is currently 5th January. PP LLC wants to launch its new line in the next six months to satisfy the summer season that hazardous air conditions have recently plagued due to a few circumstances. They anticipate the design will take three months, development two months, and beta testing one month.

Product Development

Robert and Valerie worked together and estimated initial costs of \$80k to build three distinct prototypes with five features. They believe that returns will exceed \$200k annually for two years, with an Internal Rate of Return of more than 200%.

Valerie will initially want to measure current versus post-launch market share, sales, revenue, and customer satisfaction. The new and improved purifier line fits well with the current PP LLC vision to expand sales and the current market by offering new and improved air filtration technology to benefit current and future customers.

The Engineering team believes they can improve upon the current HEPA line as follows in priority order. They plan to break out product design and development into three phases.

Phase	Purifier Deliverables
Phase 1: Design: January Develop: March	<ul style="list-style-type: none"> • Develop a new dual HEPA purifier with an air freshener and cleaning option. • Reduce noise levels by 50%.

Phase 2: Design: February Develop: April	<ul style="list-style-type: none"> Introduce a new HEPA filter that is easy to remove and replace, less expensive than average filters, and extends filter life to one and a half years. Improve motor strength to increase filtration coverage by 50%.
Phase 3: Design: February Develop: May	<ul style="list-style-type: none"> Eliminate or significantly reduce all ozone generation.

The goal is to have three basic purifier models at various pricing levels.

- The Basic Purifier: Reduces noise and ozone emissions.
- The Better Purifier: Reduces noise ozone emissions and increases motor strength.
- The Ultimate: Reduces noise ozone emissions, increases motor strength, includes the new and improved HEPA filter, and adds an air freshener and cleaning option.

Marketing Research Results

Sylvia did some initial research and learned the following:

- "56% of consumers who decide to purchase an air purifier for their home are above the age of 35. Households in the 25-29 age demographic are the least likely to purchase an air purifier, with just 7.4% doing so. (Kaz, Inc.)"
- "46% of homes with 2+ adults own an air purifier. Single parents with children own an air purifier just 3% of the time. (Kaz, Inc.)"
- Customers want a safe and efficient system that is reasonably priced and eliminates as many issues as possible that impact current HEPA air purifier offerings on the market. Ultimately, they want to ensure the air they breathe is clean and void of as many health dangers as possible.
- Sylvia assumes that PP LLC can increase revenue by 25%, expand its existing market by 10%, and reduce product returns by more than 50% once the new product line is launched.

Operations Overview

Raul Hernandez believes PP LLC can distribute its products through wholesale, retail, and online channels. PP LLC currently has a solid distribution channel network it can leverage.

Raul cited that engineering delays, cost overruns, supply chain issues, and distribution channel price increases are the primary risk factors.

Raul recommended Sarah Newton to manage the project aspect of the launch. Sarah has a solid risk management background and numerous supply chain and distribution contacts she can work with to mitigate potential risks.

Part I: Product Concept development format

Product Concept Development Checklist	
Recommended Entry	Considerations
Market Problem or Opportunity	<ul style="list-style-type: none"> • Market problem or opportunity clearly defined • Considerations include reduced consumer costs, improved features and functionality, or satisfying a gap or niche as applicable
Market Segments	<ul style="list-style-type: none"> • Market segments defined • Multiple segments prioritized
Key Financials	<ul style="list-style-type: none"> • Cost and benefits defined • Key financial metrics (ROI, IRR, NPV) calculated
Market Window	<ul style="list-style-type: none"> • Launch and delivery milestones outlined • Urgency considerations defined
Competitive Landscape	<ul style="list-style-type: none"> • A list of top competitors is provided • Competitor advantages and disadvantages documented • Competition strategy defined
Main Features and Functionality	<ul style="list-style-type: none"> • MVP concept defined • Version feature schedule documented
Key Differentiators	<ul style="list-style-type: none"> • Company strengths and leverage plan documented • Company weaknesses and mitigation plan documented
Go to Market Logistics	<ul style="list-style-type: none"> • Delivery options defined • Delivery logistics outlined
Business Success Measurements	<ul style="list-style-type: none"> • Key Performance Indicators (KPI) listed • Measurement Plan provided

Product Concept Document Product name: BreatheWell Series	
Recommended Entry	Considerations
Market Problem or Opportunity	<p>Indoor air quality continues to be a growing concern among consumers. While HEPA air purifiers remain a popular solution, existing products fall short in key areas:</p> <ul style="list-style-type: none"> • Inability to filter volatile organic compounds (VOCs), viruses, and odours • Potential ozone emission, posing health risks • High cost of filter replacements and need for frequent maintenance • Limited coverage area and noticeable noise levels <p>These challenges represent a significant market gap. With heightened awareness post-pandemic and environmental concerns like wildfire smoke, there is clear demand for an advanced, health-conscious, and low-maintenance air purification system. Perfect Purifiers LLC is uniquely positioned to innovate here.</p>
Market Segments	<p> Primary Segments (Highest Priority)</p> <ol style="list-style-type: none"> 1. Health-conscious homeowners aged 35+ 2. Families with children or elderly members 3. Remote workers/home office users <p> Secondary Segments</p> <ol style="list-style-type: none"> 4. Pet owners seeking odour control 5. Small commercial offices or retail spaces <p>Market prioritization is based on purchasing behaviour, demand for clean air, and willingness to invest in better indoor air quality.</p>
Key Financials	<p> Initial Investment:</p> <ul style="list-style-type: none"> • Prototype development: \$80,000 • Initial funding for concept & planning: \$30,000 • Total Initial Cost: \$110,000 <p> Expected Returns:</p> <ul style="list-style-type: none"> • Annual Revenue: \$200,000+ • Projected ROI: ~182% in 1 year • IRR: >200% over two years • NPV: Significantly positive based on current forecasts <p>Strong consumer demand and a differentiated product line support excellent financial return.</p>
Market Window	<p> Timeline:</p> <ul style="list-style-type: none"> • Design Phase: Jan–Feb 2025 • Development: March–May 2025

	<ul style="list-style-type: none"> • Beta Testing & QA: June 2025 • Product Launch: July 2025 (just before peak air quality season) <p> Urgency:</p> <p>Air quality concerns spike in summer (e.g., wildfire smoke, allergens). Launching before July allows PP LLC to capitalize on seasonal demand and strengthen market share.</p>
Competitive Landscape	<p> Top Competitors:</p> <ul style="list-style-type: none"> • Honeywell International Inc. • Daikin Industries Ltd. • MANN+HUMMEL • Donaldson Company Inc. <p> Competitor Weaknesses:</p> <ul style="list-style-type: none"> • Limited VOC and virus elimination • Lack of odor control • No ozone-free guarantee • Higher maintenance and cost • Smaller coverage areas <p> Strategy:</p> <p>PP LLC will differentiate through innovation (dual HEPA system, ozone-free design), user-friendly features, and affordable tiered models. We'll position BreatheWell as the most thoughtful, safe, and effective air purifier on the market.</p>
Main Features and Functionality	<p>MVP (Minimum Viable Product):</p> <ul style="list-style-type: none"> • Dual HEPA filtration system • 50% noise reduction • Ozone-free purification • Compact and attractive design <p> Feature Rollout by Version:</p> <ul style="list-style-type: none"> • BreatheWell Pure: Noise reduction, ozone elimination • BreatheWell Plus: + Stronger motor, larger coverage • BreatheWell Pro: + Air freshener, new HEPA filter with longer life & easy replacement
Key Differentiators	<p> Strengths:</p> <ul style="list-style-type: none"> • 10+ years of industry experience • Established distribution channels • Strong R&D and engineering talent • Customer trust and brand loyalty

	 Weaknesses & Mitigation: <ul style="list-style-type: none"> • Risk: Engineering delays • Mitigation: Dedicated project manager (Sarah), weekly check-ins • Risk: Supply chain disruption • Mitigation: Established supplier contracts, buffer timeline • Risk: Cost overruns • Mitigation: Defined phases, early prototyping, \$30k planning buffer
Go to Market Logistics	 Delivery Options: <ul style="list-style-type: none"> • Wholesale distribution • Online (Amazon, company site) • Retail partnerships  Logistics Plan: <ul style="list-style-type: none"> • Manufacturing through existing partners • Warehousing and fulfillment via PP LLC logistics hub • Marketing launch coordinated by Sylvia Sanders
Business Success Measurements	 KPIs: <ul style="list-style-type: none"> • Market share growth (% vs. pre-launch) • Revenue and sales targets (\$ per quarter) • Customer satisfaction and reviews (avg. rating > 4.5) • Return rates (< 5%) • Cost per unit vs. projected  Measurement Plan: <ul style="list-style-type: none"> • Weekly dashboards for internal team • Monthly sales and operations reviews • Customer feedback loop through surveys & support logs

Part II: The Initial Project Charter format

Project Charter Topic	Description
Team Composition	<ul style="list-style-type: none">• List all team members• Provide a title and a brief description of their role
Team Purpose	<ul style="list-style-type: none">• Describe the purpose of the team• Develop a brief and motivating team vision
Objectives	<ul style="list-style-type: none">• List objectives the team must accomplish• Strive for actionable objectives
Key Performance Indicators (KPI)	<ul style="list-style-type: none">• List Key Performance Indicators (KPI) the team will use to measure success
Sponsor	<ul style="list-style-type: none">• Define the Product Sponsor• List Sponsor roles and responsibilities
Deadlines	<ul style="list-style-type: none">• Provide a list of key milestones the team must meet
Resources	<ul style="list-style-type: none">• List any resources required for the team to be successful• Identify initial funding required to Conceive and Plan
Meetings	<ul style="list-style-type: none">• List times and places the team will meet• Include any other specific communication requirements

Initial Project Charter Product name: BreatheWell Series	
Topic	Description
Team Composition	<ul style="list-style-type: none"> • Robert Winston – Product Manager <p>Role: Oversee the entire development and launch of the BreatheWell Series. Responsible for ensuring all deliverables are met within budget, scope, and timeline.</p> <ul style="list-style-type: none"> • Sylvia Sanders – Marketing Lead <p>Role: Lead all marketing efforts including market research, brand positioning, messaging, and customer outreach. Responsible for developing marketing strategies and post-launch campaigns.</p> <ul style="list-style-type: none"> • Hiroshi Tanaka – Lead Engineer <p>Role: Direct the engineering team in designing and developing the product's technical aspects. Responsible for product functionality, performance, and innovation in the design of the HEPA filters and noise reduction features.</p> <ul style="list-style-type: none"> • Ram Chopra – Design Lead <p>Role: Lead the design team to create an attractive, user-friendly, and ergonomic product. Responsible for ensuring that the design is feasible and aligns with the customer expectations for aesthetics and usability.</p> <ul style="list-style-type: none"> • Maggie Jones – Product Owner <p>Role: Serve as the liaison between the product team and stakeholders. Responsible for defining the product features and ensuring that the final product meets user needs.</p> <ul style="list-style-type: none"> • Sarah Newton – Project Management Lead <p>Role: Manage timelines, coordinate resources, and ensure that the team stays on track. Responsible for risk management, budgeting, and reporting on the project's progress.</p> <ul style="list-style-type: none"> • Raul Hernandez – Operations Lead <p>Role: Manage logistics, supply chain, and distribution channels. Responsible for overseeing the delivery logistics and ensuring timely manufacturing and delivery of the product.</p>
Team Purpose	<p>Purpose of the Team:</p> <p>The BreatheWell Series team is assembled to develop and launch a ground-breaking line of air purifiers designed to solve current market challenges. Our goal is to bring a high-quality, innovative, and affordable air purification solution to consumers, addressing their most common pain points like noise, ozone, high maintenance costs, and limited coverage.</p>

	<p>Vision:</p> <p>To create the most effective, efficient, and health-conscious air purifier that offers clean air with minimal maintenance, empowering people to breathe easier and live healthier lives. By working together, we aim to exceed customer expectations and position PP LLC as the market leader in air purification technology.</p>
Objectives	<ul style="list-style-type: none"> • Complete Product Design: Finalize the design for all three models in the BreatheWell Series by the end of February 2025. • Prototype Development: Build, test, and refine prototypes for each model by March 2025. • Launch Marketing Campaign: Create a compelling marketing plan to drive consumer interest, with a focus on product features like ozone-free technology, noise reduction, and cost-effectiveness. • Achieve Sales Milestones: Launch the product in July 2025, achieving a 10% increase in market share within the first quarter post-launch. • Ensure Customer Satisfaction: Achieve a customer satisfaction rate of 90%+ by end of the first year, with positive feedback on product quality, ease of use, and effectiveness. • Risk Mitigation: Identify and resolve potential engineering, supply chain, and distribution risks through proactive management and contingency planning.
Key Performance Indicators (KPI)	<p>Design and Prototype Completion:</p> <ul style="list-style-type: none"> • % of design milestones completed on time. • Prototype testing results (pass/fail rates, necessary refinements). <p>Customer Satisfaction:</p> <ul style="list-style-type: none"> • Customer feedback surveys with a target rating of 4.5+ stars. • Net Promoter Score (NPS) of 70 or above. <p>Sales and Market Share:</p> <ul style="list-style-type: none"> • Revenue generated from the first quarter of product launch. • Market share growth (target: 10% increase in first quarter). • Return rates (target: less than 5% within the first year). <p>Cost Control and Budget Adherence:</p> <ul style="list-style-type: none"> • Adherence to the initial \$110,000 development budget. • Number of engineering or design changes that impact costs. <p>Timeline Adherence:</p> <ul style="list-style-type: none"> • Meeting major milestones for design, development, and beta testing. • Time to market (aiming for launch in July 2025).

Sponsor	<p>Product Sponsor:</p> <ul style="list-style-type: none"> • Valerie Kumar, Senior Vice President at PP LLC. <p>Sponsor Roles and Responsibilities:</p> <ul style="list-style-type: none"> • Approve key project documents, including the Product Concept and Business Case. • Provide financial support and resources needed for the Conceive and Plan phases. • Ensure alignment with overall company strategy and goals. • Serve as a senior point of contact for escalated decisions and issues. • Act as the primary champion of the project at the executive level.
Deadlines	<ul style="list-style-type: none"> • Product Design Finalization: February 2025 • Prototype Development Completion: March 2025 • Marketing Plan & Campaign Launch: June 2025 • Beta Testing & Quality Assurance: June 2025 • Product Launch: July 2025 • Customer Feedback Review & Adjustments: End of September 2025
Resources	<p>Required Resources:</p> <ul style="list-style-type: none"> • Human Resources: Engineering, design, and marketing teams to support the product's design, functionality, and promotion. • Technology and Equipment: Testing facilities for prototyping, design tools for product visualization, and software for engineering simulations. • Funding: Initial development funding of \$110,000 for product design, prototyping, and initial marketing efforts. • Supply Chain and Manufacturing: Access to existing PP LLC manufacturing capabilities, with potential partnerships for increased production capacity as needed.
Meetings	<p>Team Meetings:</p> <ul style="list-style-type: none"> • Weekly Check-ins: Every Tuesday afternoon, 10:00 AM - 12:00 PM via video conference or in-person as needed. • Monthly Progress Reviews: First Thursday of each month, with detailed project status reports and risk assessments. <p>Communication Requirements:</p> <ul style="list-style-type: none"> • Daily Updates: Brief updates on key tasks and progress through project management software (e.g., Trello, Asana). • Ad-hoc Meetings: As needed for immediate issues, changes, or critical decisions. • Reporting: Formal progress reports shared with the sponsor and stakeholders at the end of each phase.

Part III: Market Requirements Document (MRD) format

Title	Contents
Market Segment	<ul style="list-style-type: none"> • Targeted Market Segment: Define the customer segment you will target • Specific Buyers and Users: Identify specific buyers and users of your product
Market Problem	<ul style="list-style-type: none"> • Define the Market Problem: Highlight the problems your product will solve for its customers
Market Requirements	<ul style="list-style-type: none"> • List specific functions and features that the customers require • List attributes your product will satisfy
Prioritization	<ul style="list-style-type: none"> • Prioritize each listed requirement against the perceived market importance

<p style="text-align: center;">Market Requirements Document (MRD)</p> <p style="text-align: center;">Product name: BreatheWell Series</p>	
Title	Contents
Market Segment	<ul style="list-style-type: none"> • Targeted Market Segment: The BreatheWell Series will focus on the following key market segments: <ol style="list-style-type: none"> 1. Health-conscious Homeowners (Aged 35+): Consumers in this demographic are increasingly concerned about indoor air quality due to health risks like allergens, pollution, and respiratory issues. They prioritize safety and efficiency when selecting air purifiers. 2. Families with Children and Elderly Members: These households are highly invested in creating a healthy living environment for vulnerable family members. Clean air is crucial for young children, the elderly, and those with respiratory issues or allergies. 3. Home Office & Remote Workers: As more people work from home, maintaining a clean and quiet workspace is essential. Consumers in this segment need effective and noise-free purifiers to ensure optimal air quality during working hours. 4. Pet Owners: Pet owners struggle with pet dander and odours. The BreatheWell Series will address these concerns with effective odour removal and allergen filtration. • Specific Buyers and Users: <ol style="list-style-type: none"> 1. Buyers: Primarily adults aged 30–50, who are decision-makers in households. They are typically well-educated, tech-savvy, and care about long-term health benefits. They tend to be willing to invest in products that improve their health and comfort.

	<p>2. Users: Individuals or families looking to improve the air quality in their living spaces, including those affected by pollution, allergies, asthma, and respiratory conditions.</p>
Market Problem	<p>Market Problem: The market currently faces several significant problems with existing air purifiers, particularly HEPA-based models:</p> <ol style="list-style-type: none"> 1. Inability to Filter VOCs & Viruses: HEPA filters are effective at trapping particulate matter but cannot address volatile organic compounds (VOCs) or viruses. This leaves users exposed to airborne contaminants that can affect health and comfort. 2. Ozone Emissions: Many air purifiers generate ozone as a by-product, which can be harmful to health. Customers increasingly demand ozone-free solutions to ensure the air they breathe is safe and clean. 3. High Maintenance Costs and Frequency: HEPA filters require frequent replacement (usually annually), which is both costly and inconvenient. Additionally, these filters can become a breeding ground for bacteria and mould if not maintained regularly. 4. Noise Pollution: Many HEPA air purifiers are loud and disruptive, making them unsuitable for use in homes, offices, or bedrooms. There is a demand for quieter solutions to avoid disturbing daily activities or sleep. 5. Limited Coverage Area: Many existing air purifiers only cover small areas, making them unsuitable for larger rooms or open spaces. Consumers want products that can cover larger areas at a competitive price.
Market Requirements	<p>Market Requirements: The BreatheWell Series must meet the following key market requirements to address the above challenges:</p> <ol style="list-style-type: none"> 1. Advanced Filtration System: The purifier must use dual HEPA filters capable of capturing particles as small as 0.1 microns, and also integrate technology to remove VOCs and neutralize odours (such as a cleaning agent or chemical filter). 2. Ozone-Free Operation: The BreatheWell Series must be ozone-free or produce minimal ozone emissions, addressing a growing consumer concern about safety and environmental impact. 3. Low Maintenance and Long Filter Life: Filters should last at least 18 months (compared to the typical 12-month lifespan of traditional filters), with easy-to-replace and cost-effective filters that do not require frequent replacements. 4. Noise Reduction: The purifier must reduce noise by at least 50% compared to traditional models, ensuring a quiet and non-disruptive experience, ideal for home use or office environments. 5. Wide Area Coverage: The BreatheWell Series should offer models with varying coverage areas, ranging

	<p>from small rooms (up to 200 sq. ft.) to larger rooms (up to 1,000 sq. ft.), catering to diverse customer needs.</p> <p>6. Affordable Pricing: The pricing for the Basic, Better, and Ultimate models must be competitive, with a focus on offering high value for money while staying within the purchasing power of the target market segments.</p> <p>7. Ease of Use: The air purifiers should be easy to set up, use, and maintain, with intuitive controls and an easy-to-clean design that requires minimal user intervention.</p> <p>8. Energy Efficiency: The product should be energy-efficient, with a focus on low power consumption to cater to environmentally conscious consumers.</p>
Prioritization	<p>Requirements Prioritization:</p> <p>High Priority (Must-Have)</p> <ul style="list-style-type: none"> Advanced Filtration System: Essential for ensuring the purifier addresses VOCs, viruses, and odours, making it a core feature. Ozone-Free Operation: Critical for meeting safety standards and consumer demand. Noise Reduction: A major pain point for consumers, especially those using the purifiers in quiet environments like bedrooms and home offices. Low Maintenance and Long Filter Life: Ensures the product is user-friendly and cost-effective for consumers. <p>Medium Priority (Should-Have)</p> <ul style="list-style-type: none"> Wide Area Coverage: Important for broader market appeal but may vary between models. Affordable Pricing: Key for competitiveness, but can be balanced with product features. <p>Low Priority (Nice-to-Have)</p> <ul style="list-style-type: none"> Energy Efficiency: While important, the primary focus is on solving immediate customer pain points such as air quality and ease of maintenance.

Part IV: Business Case format

Section	Description
Market Situation	<ul style="list-style-type: none"> Define the market situation Provide supporting information
Opportunity	<ul style="list-style-type: none"> Summarize the market opportunity Describe how the company can benefit
Envisioned Solution	<ul style="list-style-type: none"> Describe the envisioned product solution Summarize how the team arrived at the solution Describe why this solution is better than alternatives
Objectives and Assumptions	<ul style="list-style-type: none"> Describe the market objectives that are being pursued Define the business assumptions
Costs	<ul style="list-style-type: none"> Define product solution costs List required resources
Strategic Alignment	<ul style="list-style-type: none"> Illustrate how this product solution aligns with organizational needs Summarize how the product concept aligns with organizational goals
Timing	<ul style="list-style-type: none"> Describe project timing Map timing to the market need Recommend an investment strategy
Cost Benefit Analysis	<ul style="list-style-type: none"> Provide a financial analysis—Illustrate costs vs. benefits Define what happens if the company does not proceed
Risk	<ul style="list-style-type: none"> Identify major risks Document contingency responses/mitigations
Initial Investment and Recommendation	<ul style="list-style-type: none"> Define the initial investment requirements Define long-term investment requirements

<p style="text-align: center;">Business Case</p> <p style="text-align: center;">Product name: BreatheWell Series</p>	
Section	Description
Market Situation	<ul style="list-style-type: none"> The global air purifier market is experiencing rapid growth, valued at \$6.3 billion in 2022 and projected to reach \$13.4 billion by 2030, with a CAGR of 11.4%. Consumers are increasingly aware of air quality concerns due to environmental pollution, health risks, and recent global respiratory health crises. Perfect Purifiers LLC (PP LLC), with over a decade of experience, already produces well-regarded HEPA, spray, and industrial air purifiers. However, its current HEPA line falls short in several areas, including odour removal, VOC filtration, maintenance ease, and noise reduction—concerns now echoed widely in the market.
Opportunity	<p>This is a critical moment to act. The gap between consumer expectations and current market offerings presents a prime opportunity to introduce a smarter, safer, and more convenient HEPA purifier.</p> <p>PP LLC can benefit by:</p> <ul style="list-style-type: none"> Capturing a larger share of a growing market Boosting revenue through innovation and tiered pricing Enhancing brand reputation as a forward-thinking, customer-centric company Retaining and upselling to current customers seeking better solutions
Envisioned Solution	<p> Product Solution: The BreatheWell Series</p> <p>A new line of tiered air purifiers designed to address the most common and pressing consumer concerns. The lineup includes:</p> <ul style="list-style-type: none"> BreatheWell Pure: Reduced noise and zero ozone emissions BreatheWell Plus: Adds higher motor strength for wider area coverage BreatheWell Pro: Adds advanced dual HEPA filtration, odor control, longer-lasting filters, and a built-in air freshener <p> How We Got Here?</p> <p>Through surveys, market research, and internal brainstorming, the team identified core pain points in traditional HEPA products. With engineering feasibility confirmed, the team outlined a phased approach to introduce practical, high-impact improvements.</p> <p> Why This Is Better?</p> <p>Unlike competitors, BreatheWell purifiers tackle noise, ozone, VOCs, and maintenance—all in one solution. They meet modern expectations while staying accessible, attractive, and affordable.</p>
Objectives and Assumptions	<p> Market Objectives:</p> <ul style="list-style-type: none"> Launch a product that increases market share by 10%

	<ul style="list-style-type: none"> • Generate \$200,000+ in annual revenue • Reduce return rates by over 50% • Position PP LLC as a category leader in HEPA innovation <p> Assumptions:</p> <ul style="list-style-type: none"> • The market will continue to grow at or above 11% annually • Consumers will be willing to pay more for convenience and safety • The BreatheWell line will resonate with current and new customers • Distribution and marketing efforts will be able to scale effectively
Costs	<p> Product Development Costs:</p> <ul style="list-style-type: none"> • Prototype Design & Engineering: \$80,000 • Planning & Resource Allocation: \$30,000 • Total Initial Cost: \$110,000 <p> Required Resources:</p> <ul style="list-style-type: none"> • Cross-functional team (engineering, marketing, operations) • Access to existing manufacturing and distribution infrastructure • Tools for prototyping, customer testing, and digital marketing
Strategic Alignment	<p>The BreatheWell Series is a natural evolution of PP LLC's commitment to air purification excellence. It aligns directly with the company's mission to:</p> <ul style="list-style-type: none"> • Expand its consumer market share • Deliver cutting-edge technology that solves real-world problems • Reinforce brand leadership in the wellness and home environment sector <p>This product fits seamlessly into existing operations while enabling future scalability and brand diversification.</p>
Timing	<p> Project Timeline:</p> <ul style="list-style-type: none"> • Design: Jan–Feb 2025 • Development: March–May 2025 • Beta Testing: June 2025 • Launch: July 2025 <p> Market Timing Need:</p> <p>Launching ahead of summer, when air quality concerns (wildfires, pollen, pollution) spike, ensures maximum visibility and impact.</p> <p> Investment Strategy:</p> <p>Invest now in R&D and marketing to secure market share early. Early investment is essential to stay ahead of competition and meet seasonal demand.</p>

Cost Benefit Analysis	<p> Projected Benefits:</p> <ul style="list-style-type: none"> Revenue: \$200,000+ annually for at least 2 years IRR: Over 200% Customer Retention and Upsell Opportunities Improved brand reputation and competitive edge <p> If We Don't Proceed:</p> <ul style="list-style-type: none"> Lost revenue potential Customer dissatisfaction and churn Market share erosion as competitors introduce new features Missed opportunity to lead in an evolving market 										
Risk	<p> Major Risks & Mitigations:</p> <table border="1" data-bbox="323 734 1553 1142"> <thead> <tr> <th data-bbox="323 734 654 798">Risk</th><th data-bbox="654 734 1553 798">Mitigation</th></tr> </thead> <tbody> <tr> <td data-bbox="323 798 654 868">Engineering delays</td><td data-bbox="654 798 1553 868">Weekly checkpoints, phase planning</td></tr> <tr> <td data-bbox="323 868 654 937">Supply chain issues</td><td data-bbox="654 868 1553 937">Leverage existing supplier relationships, build inventory buffers</td></tr> <tr> <td data-bbox="323 937 654 1007">Budget overruns</td><td data-bbox="654 937 1553 1007">Clear cost control policies, contingency allocation</td></tr> <tr> <td data-bbox="323 1007 654 1142">Product-market mismatch</td><td data-bbox="654 1007 1553 1142">Extensive prototyping and customer testing</td></tr> </tbody> </table> <p>Project Manager Sarah Newton will manage risk assessments and responses, leveraging her strong background in logistics and vendor relationships.</p>	Risk	Mitigation	Engineering delays	Weekly checkpoints, phase planning	Supply chain issues	Leverage existing supplier relationships, build inventory buffers	Budget overruns	Clear cost control policies, contingency allocation	Product-market mismatch	Extensive prototyping and customer testing
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Initial Investment and Recommendation	<p> Initial Investment:</p> <ul style="list-style-type: none"> \$110,000 to cover the Conceive and Plan phases, including design, prototyping, and team resourcing. <p> Long-Term Investment Needs:</p> <ul style="list-style-type: none"> Estimated additional \$50,000–\$70,000 for full-scale production, marketing, and post-launch support. <p> Recommendation:</p> <p>Proceed with full support for the BreatheWell Series. The market is ready, the need is clear, and PP LLC has the team and infrastructure to deliver. This is the right product at the right time.</p>										

Name: - Mitali Sandeep Patil

Email: - mitalip203@gmail.com