

RaidOn Radon

Business Plan



Presented By:

Aakanksha Patil - Ananth Mani - Devneet Singh

Shivika Bhayana - Sparsh Gupta - Suchit Godala - Swapnil Lad

RaidOn Radon is comprised of seven talented and hardworking team members. On behalf of the entire team, RaidOn Radon would like to express gratitude towards the mentors for their gracious contribution. If any questions or concerns arise, please contact RaidOn Radon through email at raidagainstradon@gmail.com or call at (678) 549-7971. Thank you.

EXECUTIVE SUMMARY

Radon is the leading cause of lung cancer in non-smokers. It is a naturally occurring radioactive gas which forms from the natural breakdown of uranium. People who are not working to mitigate radon levels in their homes and offices are being silently killed. Radon is a growing problem and RaidOn Radon is dedicated to solving that problem.

In order to combat radon levels, homeowners have previously used a piping system to decrease these elevated levels. Although this method has been effective in reducing radon, it is costly, time and labor intensive, and requires drilling a hole from which a fan pushes radon rich air out of the house. The process of drilling a hole into a house's foundation can be dangerous and expensive. This can cost anywhere from \$900-\$2000.

RaidOn Radon has devised a far more financially effective solution to decrease radon levels through the use of certain natural oils. This patent-pending combination can be practically used by applying a thin film on an HVAC filter. This method has been supported by the Director of Synthetic Chemistry Lab at Harvard University (Proof of Concept letter can be found in Appendix G). The cost of purchasing these filters over an extended period of time takes over 30 years to equate to the cost of the piping system.

The target market is filter production companies who will sell these radon mitigation filters to consumers who have identified or are concerned with high radon levels. RaidOn Radon is going to conduct trials during its first year in business to provide a sense of trust and security in the process and is then going to license out the technology to existing air filter companies. With radon becoming an increasing issue, the use of cost effective methods for eradication are crucial, and we believe that RaidOn Radon can provide the best solution.

RaidOn Radon will require \$200,000 in startup funding for lab tests, further proof of concept, payroll, insurance, legal fees, and patent fees. (The full breakdown of these costs is provided in Appendix A). Investors can expect a 356% ROI within 4 years because of the low costs required to get the company up and running. RaidOn Radon not only presents investors with a great investment opportunity, but also gives them the satisfaction of investing in a company which is focused on helping people breathe cleaner air.

BUSINESS VISION

Problem

Radon, a colorless, odorless, radioactive gas, derives from the natural breakdown of uranium. Radon remains the second leading cause of lung cancer in the United States as well as the first leading cause of lung cancer in the United States among nonsmokers. Approximately 1 in 15 homes endure elevated radon levels, while roughly 20,000 deaths arise annually as a result of these inflated levels, and even that number is growing each year. The problem consists of the fact that current radon mitigation systems in homes are expensive and inefficient. The piping systems have a substantial amount of installation costs, while high-efficiency particulate arrestance (HEPA) filters are ineffective in reducing radon levels.

Company Vision

RaidOn Radon strives to achieve a world in which lung cancer and other respiratory diseases are not caused as a result of radon inhalation. In today's circumstances, the methods of terminating Radon in households are neither efficient nor financially viable. RaidOn Radon intends to ensure a technique for radon elimination that establishes a proven method with feasible pricing.

Mission Statement

RaidOn Radon will reduce radon induced lung cancer by providing people with clean, radon-free air in their homes and office buildings.

PRODUCTS AND SERVICES

Product

By taking normal air filters which are placed in HVAC vents and spraying them with our unique oil compound, RaidOn Radon will provide an air filter which can effectively filter out radon particles as well as dust particles, This makes filters more appealing to consumers by being cost effective and more efficient at eliminating more particles than the ones currently available for purchase. The method of radon absorption by edible oils has been tested by Dr. Karunakara Naregundi, Dr. Somashekarappa HM, and Professor Darwish Al-Azmi who co-authored a scientific article on the topic. Oils that will be used in this process include coconut, gingelly, and other natural oils. After having these filters go through experimental trials to prove that they are effective in eliminating radon particles, RaidOn Radon will approach large filter manufacturing companies and partner with them to create the ultimate, lucrative business. The team has already written a draft for a patent.

Financial Management

A licensing deal would provide an excellent source of revenue in the primary business years of the company. After suffering a slight loss in the first year, the profit becomes positive in the following years and shows a high ROI for its investors. Because the company is centered around a licensing deal, there is no manufacturing or distribution costs, which decrease the expenses of the business.

In addition, previous research has shown that currently, Americans are spending over 10.6 billion dollars on radon mitigation, and most of this expense is from the costly radon pipe mitigation system that is used for treatment currently. RaidOn Radon's unique solution for radon mitigation optimizes radon mitigation methods while also marginalizing area for future pricing growth, maintaining customer satisfaction, and minimizing costs. Because of these reasons, RaidOn Radon is a strong competitor for existing mitigation systems and companies.

Start-up costs for RaidOn Radon are extremely low due to the fact that it is a licensing business, not an actual product-based business. The largest portion of the start up costs are dedicated to legal fees such as the patent filing fees and attorney fees. In addition, we must prove our concept to established, brand-name companies in the field. Other starting costs come from testing filters

and legal fees. Please see appendix A for the full start up cost breakdown and appendix B for the financial projections for the years after.

Start-up/Acquisition Summary

RaidOn Radon requires \$178,000 for initial costs of lab testing, obtaining the utility patent, other fees associated with the patent, oil compound materials, and payroll for scientists. Most of the startup cost is due to the executive payroll, legal fees, and lab testing. By year 4, the costs for marketing, research and development, and the executive payroll will have increased due to the growth in the company. Marketing must increase in order to get public awareness about the new product and encourage consumers to buy the new technology. An increase in funds for research and development is necessary in order to expand the company and venture into new fields. The executive payroll will increase to \$147,000 because of the increased profits. To acquire the \$178,000 required to start-up RaidOn Radon, the company will pitch to angel investors and venture capitalists until \$200,000 has been raised, The company will raise extra money in case of unsuspected problems. The exact cost breakdown is located in Appendix A and B.

Licensing

RaidOn Radon is targeting companies within the United States.

The team will license the oil compound to major filter companies within the United States. Major targets include 3M, Trueblue, and Precision-Air. By licensing to these companies, which hold a large percent of the market share in the filter industry, RaidOn Radon will not have to compete directly with large name brands. A licensing agreement also eliminates manufacturing and logistics cost for RaidOn Radon.

By licensing to filter companies, we will still be able to reach general population suffering from elevated radon levels. 1 in 15 homes in the United States have elevated levels of radon. This large impacting problem has generated a \$10.6 billion spending cost to solve this issue. Filter companies sell filters throughout the year as they need to be replaced constantly. Due to this, RaidOn Radon will be gaining recurring revenue due to the royalty we will place on our compound as the recurring customers must keep replacing the filters within their homes.

After licensing with HVAC system filter companies, we will approach companies that use filters in different applications. We will target Roomba and Dyson vacuum filters since some of the toxic radon gas which circulates through the HVAC system is found near the ground and at ground level, especially in the lower levels of a house. This method will also generate recurring income, once again, because filters require constant replacements.

Marketing

Competition

Current solutions include piping systems and HEPA filters. The piping system consists of large PVC pipe drilled into the customer's basement floor along with a small fan. Within the pipe, there is a fan which pushes the air from the basement and out of the house; the fan requires constant energy to function. Overall this method ranges anywhere from \$900 to \$2,000, making it an expensive commitment especially if the home is rented or bought for a short period of time. Another competitor are HEPA filters which claim to absorb radon. These filters also go into the HVAC system but according to the EPA, these filters are not effective. This is because radon decay product are electrically charged particles that stick to the air molecules, and then these molecules pass through the HEPA filters. HEPA filters do not decrease radon levels to a safe level. Our method uses an oil compound which absorbs the radon decay particles while still allowing clean air to pass through, therefore effectively mitigating radon gas.

Promotion

Since we are a B2B company, our primary target markets are filter companies such as 3M, Trueblue, and Precision-Air. In order to promote RaidOn Radon, we will pursue five major methods. We will hire a publicist on a monthly basis. He or she will be primarily responsible for media attention and press coverage. Furthermore, we will utilize social media such as Facebook and Twitter to reach out to our target market and create word of mouth buzz. The advantage of social media is that it provides costless publicity for our company. Eventually with more profits, we will pay for social media. Paying for social media allows us to access feature such as the Facebook post "boost" option or Twitter tweet promotion, making RaidOn Radon widely viewable.

Another method is Google ads. When a company searches for "radon", RaidOn Radon will show on top of the search page. We plan to advertise on Google all year long. We will allot time and money for three expos or regional conventions. Trade shows especially are useful in quick meet and greets with potential partners. These events will allow us to gain the interest of other companies and help us build more partnerships. We will also take advantage of incentives by creating a RaidOn Radon scholarship. Applicants will compete in writing an essay or creating a poster on radon. Our company will grant winners \$1000 in total per year. This raises awareness of radon as well as promotes our business to other companies.

S.W.O.T. ANALYSIS

Strengths

RaidOn Radon has two main advantages. First, we are far cheaper than the current PVC piping system. The PVC piping system requires thousands of dollars of initial investment because of the drilling and installation of the pipe. This process can range from \$900 to \$2000. Filters sprayed with our unique compound will be slightly more expensive than current HVAC filters and will not require extra effort to put into use as consumers must replace HVAC filters three to four times every year. RaidOn Radon is also more effective than the current cheap solution of HEPA filters because the EPA has claimed these filters to not absorb radon particles to a safe level. RaidOn Radon's compound and technology has obtained approval by a Harvard chemist and scientists who have tested radon's capabilities and properties.

Weakness

RaidOn Radon's oil compound is a new technique for radon mitigation. The lack of brand name and experimental data and proof creates a weakness for our company. Through proof of concept trials in labs, RaidOn Radon will obtain data on the effectiveness of the compound in radon mitigation. These results will then help RaidOn Radon prove the effectiveness to large companies in order to license its technology to 3M and other brand-name filter companies. A partnership with a major corporation will help build our reputation and brand name.

Opportunities

With the unique technology, the team can approach various companies who will pay a license for the process. RaidOn Radon will not be giving exclusive rights to use the technology right off the bat. The company's responsibility will be simply to grant rights to other companies for the use of our process. This way RaidOn Radon will not have to pay for manufacturing or transportation. Moreover, a royalty will generate recurring revenue and customers, as consumers must constantly replace their filters either 3 or 4 times a year. The success and revenue gathered through HVAC filters will allow the company to expand into other areas such as vacuum filters.

Threats

Filter companies may try to copy our compound and use it for their own filters. We are in the process of preventing this issue by filing for a utility patent. This will give us exclusive rights to use the oil compound for the purpose of radon mitigation through filters.

SALES STRATEGY

Pricing/Licensing

We will license our radon absorption method to large name-brand filter companies already in the air-purifying business. We will target companies such as TrueBlue, 3M, Precision-air, etc. RaidOn Radon will incentivize companies by offering our first client a low licensing charge as well as a lower royalty on each filter sold. This will cause other companies in the same field to follow suit if they want to stay competitive. We will offer the first client a \$50,000 licensing fee plus a 30 cent royalty on each filter sold. All companies that follow will be charged a \$75,000 licensing fee and 40 cent royalty on each filter sold. Each filter costs around \$10 so a 30-40 cent royalty does not make much of a dent in the manufacturer's profits. Manufacturers will not be given an exclusive deal.

Implementation

Our implementation strategy consists of three phases: Phase 1 entails proof of concept, Phase 2 involves licensing agreements from HVAC filter companies, and Phase 3 includes approaching new venues such as vacuum filters.

In Phase 1, the first thing on the agenda is to obtain the utility patent. Research shows that there is no patent similar to the one discussed. This conclusion has been reached through an analysis of other applications of similar oil compounds and methods of radon mitigation. This study proved that no other filed patent applies radon mitigation techniques on filters with oils. RaidOn Radon is working with a lawyer and patent attorney to get our technique approved, it is currently patent-pending. After we acquire the utility patent, we will conduct 50 test trials on consumers' HVAC filters. We will approach this trial population by spending two days at home improvement stores. On the first day we will go to Home Depot and ask 25 people to participate in the experiment. On the second day we will go to Lowe's and ask another 25 people. We will incentivize these consumers to participate by offering them \$100 dollars for participation. We will place sensors in these participants' homes in order to find the radon level. We will give each a filter sprayed with our compound. Four months later we will check the levels again. As the results will show, these levels will be significantly lower than the original levels. For more information on Phase 1 refer to Appendix B. For further, more official confirmation of the radon absorption method, UL lab testing will also be conducted and costs will be added into startup costs and absorbed into profits accordingly. After proving the method, Phase 2 begins.

In Phase 2, we will contact and make agreements with HVAC filter companies with the intent of licensing the compound to their facility so that they may in turn sell to consumers. We will approach main filter companies such as 3M, Trueblue, and Precision Air. A partnership with these companies does not create competition for RaidOn Radon and reduces need for manufacturing and transportation. During this phase, we project to acquire up to 1.5% of the market.

In Phase 3, we will expand beyond household filter companies to incorporate more industries. These include Roomba, vacuum cleaning companies, and other air suction products.



OPERATIONAL PLAN

Research and Development

RaidOn Radon's oil-manufacturing process and oil compound is U.S. utility patent-pending, therefore no other company has the right to use oils to mitigate radon levels. RaidOn Radon will invest part of its money into research and development, which will search for new applications of our product within the radon field and other radioactive emissions such as thoron. For example, the research and development will look into filter design that we can suggest to companies. These designs will consist of things such as an indicator light to tell the consumer the level of radon in their household (Green is good, Yellow is moderate, and Red is bad). We will look into making the filter "smart" by adding a bluetooth mechanism to the filter so that it can communicate with a phone application and remotely notify the consumer of their radon levels with ease. They will also search for new companies to partner with and implement the oil and filter method in order to broaden the application. For more proof of research see Appendix E.

Company Ownership/Legal Entity

RaidOn Radon is structured as a partnership with all seven partners holding equal shares. Investors will hold a combined share of 15% of the company in return for the \$200,000 investment.

Exit Strategy

In most circumstances investors would like to see a strong exit strategy to feel comfortable about making an investment, and it rewards early investors for participating. However, due to our licensing approach, RaidOn Radon will continue to make profit from the royalty charges on each filter, which can be very lucrative for any investor. Also, a buy out can occur from a company who is tired of paying the royalty, and more importantly wants exclusivity on the patent to create an edge over their competitors.

APPENDIX

Start Up Cost Breakdown

ITEM	COST
Basic Utility Patent	\$300.00
Utility Patent Search Fee	\$540.00
Examination Fee	\$220.00
Patent Attorney	\$2,250.00
Executive Payroll	\$140,000.00
Payroll for Lab Scientists	\$5,360.00
Payroll for Clinical Trial Employees	\$10,000.00
Payment to Clients for Clinical Trials	\$5,000.00
Insurance (annual)	\$10,000.00
Oil for Trial Filters	\$8.99
Paying for University Lab Facility	\$1,600.00
25 Radon Gas Detectors for Trials	\$2,774.75
50 Trial Filters	\$449.50
TOTAL STARTUP EXPENSES	\$178,503.24

A. Year Two, Three, and Four Cost Breakdown

YEAR 2	
ITEM	COST
Patent Attorney	\$2,250.00
Executive Payroll	\$140,000.00
Insurance (annual)	\$10,000.00
Marketing	\$83,500.00
Research & Development	\$119,522.55
TOTAL EXPENSES	\$355,272.55
YEAR 3	
ITEM	COST
Patent Maintenance Fee	\$980.00
Patent Attorney	\$2,250.00
Executive Payroll	\$140,000.00
Insurance (annual)	\$10,000.00
Marketing	\$91,850.00
Research & Development	\$318,726.90
TOTAL EXPENSES	\$563,806.90
YEAR 4	
ITEM	COST
Patent Attorney	\$2,250.00
Executive Payroll	\$147,000.00
Insurance (annual)	\$10,000.00
Marketing	\$105,627.50
Research & Development	\$557,772.00
TOTAL EXPENSES	\$822,649.50

B. Financial Projections

	YEAR			
	1	2	3	4
A. Total Filter Market Size	398,408,577 filters	398,408,577 filters	398,408,577 filters	398,408,577 filters
B. Percent Acquired	0%	1.5%	2.5%	3.5%
C. Fixed Costs	\$178,503.24	\$355,273	\$563,807	\$822,650
D. Revenue	\$0	\$2,390,451	\$3,984,085	\$5,577,720
E. Absorbed Losses	\$0	\$178,503	\$0	\$0
F. Profit Loss/Gain	\$178,503	\$1,856,675	\$3,420,278	\$4,755,070

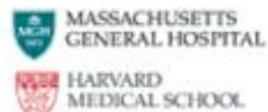
C. Revenue vs. Profit Loss/Gain Graph



D.Profit Over Time Graph



E. Harvard Proof of Concept Letter



Brijesh Bhayana, PhD

Wellman Center for Photomedicine

Mass. General Hospital and Harvard Medical School

Telephone: (617)-643-708

March 15, 2015

Dear Students,

Please accept this letter as validation of your inventive idea regarding radon absorbing filters. With my knowledge through postdoctoral research at the Massachusetts Institute of Technology (MIT) and current employment as a chemist at Harvard University, I hereby affirm the practicability of this project in terms of mechanics and functionality.

Radon absorption through the use of an oil compound (coconut, gingelly, etc.) is firmly supported by the scientific publishing "*A study on radon absorption efficiencies of edible oils produced in India*" by co-authors Karunakara N. and Al-Azami D. Your idea of implementing these oils on HVAC filters to increase radon absorption efficiency will not adversely affect humans using these filters due to the fact these filters will still clean air of its other impurities as current HVAC filters do. The oils will also not adversely affect HVAC systems because only a small yet effective quantity will be sprayed on the filters. In summary, your filters will function as current HVAC filters but will absorb radon particles and decay more effectively than the present methods of radon mitigation, making this idea an innovative solution for a detrimental issue.

Regards,

Dr. Brijesh Bhayana (Director of Synthetic Chemistry Lab at Harvard University)
