

Case Study

Background

A leading global ventilation company with operations throughout Europe, North America, South America, the Middle East, Asia, Australia and Africa partnered with Avnan to support the product redesign of an eco-friendly ventilation system. This company is known to produce energy-efficient fans, air handling units, air distribution products, air conditioning products and air curtains for both residential and commercial facilities. They also provide complete package solutions combining various ventilation products into one system. They are known to be at the forefront of building and selling sustainable, energy-efficient fresh air systems that improve indoor air quality while minimizing energy consumption. Avnan worked with the Canadian and US Divisions that mainly manufactured ERV and HRV units. Avnan's role was to help this client redesign and modernize the multi-function control panels of residential homes that moderate indoor air quality.

At a Glance:

Overview

- Project timeline: 18 months
- Benefit: Redesign of fresh air system controls
- Project Scope: \$500k

Challenges

- Redesign control panel of old fresh air system with new sensors
- Improve functionality while still maintaining low production costs
- Create a competitive product that achieves sustainable goals

Results

- Positive market feedback on the redesigned fresh air systems
- Product scope managed well and delivery to market within budget
- New product line contributed to generating 20-25% increase in sales



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Problem Statement

Avnan's client was poised to grow their business and take advantage of the strong demand for energy-efficient ventilation systems designed to improve air quality and reduce the risk of airborne viruses by moderating appropriate air flow.

With the client's focus on building cutting edge technology and product design, they wanted to modernize the outdated control panels and embed new sensors that bring the product to 21st century standards and create a more competitive advantage for their brand.

The Client needed to partner with a supplier who can provide deep engineering expertise to build out the new sensor functionalities of one of their signature eco friendly products and have the customer-centric mindset to improve the current user experience and Avnan was just the right partner for this challenge. In addition, the Client wanted a partner who had the supply chain management experience to help them get the products to market seamlessly.



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Challenge

The goal of this project was to redesign the interface of the controllers which involved changing the glass face material and adding new wireless sensor capabilities to the existing product. Due to the supply chain issues during the pandemic, some components were difficult to source and import for many ERV companies.

Though this particular project wasn't dependent on chips for its sensors, alternative materials had to be sourced overseas to get the best pricing. Avnan's task was to add new VOC (Volatile Organic Compound) sensor features and design a controller that had the ability to connect up to 5 wireless timers, to activate and override the humidity sensors, to integrate with other home appliances like kitchen and bath fans all while maintaining low energy consumption. This was not only a design challenge but a logistics one.

The client wanted the product in-market within a specific timeframe. With the complexity of the project, scope creep was inevitable but Avnan was able to deliver within the client's expectations and budget.



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Solution

Avnan worked with the client to understand their vision and uncover their needs and expectations. Avnan implemented engineering design revisions to their existing controls and improved the supply chain process to create efficiencies.

They researched wireless communication capabilities and built rigorous testing programs to ensure the new designs met quality standards. Avnan sourced reliable LCD suppliers to provide the parts that best met the product's needs.

While Avnan's engineering team focused on the design and testing of the products from their head office in Canada, the software work was done overseas where skilled labor was high but costs remained manageable. With weekly conference calls, Avnan managed the project scope even with various time zones.

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Conclusion

With Avnan's expertise in product design, electronics engineering and supply chain management, they were able to provide the type of service the Client was seeking. The client wanted a partner that was innovative, agile, customer-focused and collaborative. Avnan was able to meet their expectations in all areas and rose to the challenge in redesigning the electronic control that was core to their signature eco-friendly fresh air product line.

Despite the challenges of managing the project during COVID, Avnan was able to navigate the supply chain issues, source high quality components for the least cost and delivered a competitive product that generated the client's expected sales.

