

Value Genesis: Respiratory Therapy – Take a Breath

Client: Leading medical equipment company in the respiratory therapy field.

Challenge: The company was looking to develop and launch a new product offering to directly compete with a competitor's existing product. Having ideas that bore upon a number of key product features related to end user needs, they faced the challenge of translating those needs directly into product requirements. They also faced significant intellectual property barriers in duplicating the competitor's approach.

Diagnosis: Initially, the company faced the prospect of identifying a key set of top-level product requirements. More importantly, these requirements were to specifically differentiate the new product from the competitor's existing product. However, the company was recently coming off of an engagement with an Industrial Design firm that failed to adequately address the company's need for comprehensive product requirements definition, and as such, the needs were not completely lucid. Thus, understanding key customer needs became a priority.

Furthering the developmental difficulty, the functional operation of the device, as well as the technical implications of the company's hypothesized, high-level product requirements remained largely unmapped. This was most evident in the lack of the company's ability to test, evaluate and validate the performance of the device.

Finally, after a review of the Intellectual Property position of the firm, it was noted that numerous competitor patents were in place. The competitive IP position needed to be circumvented in order to develop a proprietary Intellectual Property portfolio.

Methodology: The company had a general feel for end user needs exhibited in the marketplace, and had moved to translate those needs into product concepts that were subsequently narrowed down to candidate products, but it lacked the means to both validate the hypothesized needs and expeditiously translate those needs into an actionable product definition.

The process of moving the product from a series of concepts through tactical development to a tested product began by

base-lining the existing device. Through product base-lining, evaluation of concepts and testing of those concepts, initial product-level requirements were translated into technical requirements. The primary difficulty in the translation of requirements was the detailed evaluation of the different modalities of the product, as its specific interworkings were not completely understood.

As the understanding of the product evolved experimentally, cost effective methods for testing the product were developed. Based primarily on this testing, product family architectures were developed to meet the top-line requirements. The importance of a single, platform product architecture was emphasized, allowing future product enhancements and line extensions to be easily added and tested.

Finally, the overall design process paid explicit attention to the evaluation of the intellectual property position, and through analysis, yielded a design configuration that could be legally protected, while at the same time did not infringe upon existing patents. The patent workaround process led to a product that addressed more patient physical orientations, and is more readily accepted by (and hence used) the classes of patients who need it most.

Results: The key end result of the Value Genesis process was the successful translation of top-line requirements into an award-winning line of quality, tested and proven products. More importantly, this line of products was based upon a modular architecture that provided a platform for future product line enhancement and spin-offs.

Shortly after the release of the product, it became the standard in the industry, further validating the design and development process. Quantitatively, in its first year of production, the product line accounted for more sales than total sales to date of the competitive product. Finally, the Intellectual Property developed for the first family of products was leveraged in the development of the next product offerings.

The Value Genesis process took a baseline set of user needs and product concepts, and expanded and translated those into a highly leveraged product platform and IP portfolio that resulted in industry-leading sales and follow-on product generations.

