DAKA INTERNATIONAL LTD.

Making a splash in the pool accessory market with SolidWorks software

Daka chose SolidWorks software to produce the Sea-Doo Seascooter Dolphin because it provided the most efficient approach to meet the challenging design deadline.

Daka, a Hong Kong -based leading designer, developer, and marketer of inventive consumer products, set the dive propulsion vehicle (DPV) market on its head with the introduction of the Sea-Doo® Seascooter™ DPV, selling more than 100,000 units and creating a new product category in the process. The company thrives on executing a strategy based on developing innovative products that will establish new global consumer markets. Following the success of the original Seascooter DPV, the group decided to pursue the broader pool accessory and family recreation market by introducing the lightweight, compact Dolphin water scooter. More of a swimming aid than a dive vehicle, it features positive buoyancy and a 15-foot depth limit.

According to Pat Mah, Daka chairman, the design cycle for the Dolphin water scooter was especially challenging. "We needed to hit the market ahead of our competitors and imitators. As a result, the window of opportunity for a lower-priced, swimming pool model with additional safety features was extremely small," Mah explains. "Time-to-market is an essential success factor for us, because there is a great deal of copying going on. We had to be very quick to market in order to line up the major retailers and distribution outlets. They are critical to succeeding in an emerging consumer market."

Daka Research (UK) Ltd., the group's design team based in the United Kingdom, was given the task of designing the Dolphin water scooter in half the time of the Seascooter's design cycle. "To meet our ambitious deadline, we needed to use a CAD package with robust design and communication capabilities," recalls Managing Director Alex Kalogroulis. "We decided to use SolidWorks® 3D CAD software because it is very intuitive and represents the most efficient way to work."

Challenge:
Develop innovative products within short development windows in order to beat competitors to market and establish new global consumer markets.

Solution:
Implement the SolidWorks 3D CAD software to reduce development cycles and shorten time-to-market.

Results:
- Reduced design cycle by 50 percent
- Cut development costs by 50 percent
- Expedited tooling and mold development
- Reaped significant market share due to accelerated time-to-market

DS SOLIDWORKS

Overcoming pressing time constraints

With SolidWorks software, Daka's design team was able to produce the Dolphin water scooter in just six and a half months, as opposed to the 13-month design cycle for the Seascooter—a reduction of 50 percent. Kalogroulis notes that part of the shortened design cycle included a one-month complete redesign to improve the manufacturability of certain components in the 31-piece Dolphin assembly.

"Our colleague in Hong Kong began the design, which was highly styled," Kalogroulis explains. "However, not much attention was paid to how the product would be tooled. In fact, we were given only a month to improve the manufacturability of the original design. SolidWorks software played an important role in meeting that deadline."

Using the FeatureManager design tree, Kalogroulis and his team rolled back the model to its original concept and developed the Dolphin as a multibodied assembly within a single part file. "It was quite a challenge to get this project done," he notes, "but we were able to work a lot faster and easier with SolidWorks."

Accelerating development with eDrawings

The ability to use SolidWorks eDrawings® to communicate via email quickly and cost-effectively with tooling specialists in China also contributed to Daka's design group meeting its ambitious deadline. "eDrawings is very useful in helping us to communicate with the toolmaker," Kalogroulis explains. "The Dolphin has four fins, a propeller, and a ring surrounding the gear box—an area where we cannot afford any deviation. With eDrawings, we sent the toolmaker models of the design in progress. So they not only provided feedback, but also let us know if the design could be manufactured cost-effectively. eDrawings also gave the toolmaker a chance to see what they would be asked to do and then prepare for what was coming. As a result, they could conduct mold analyses and provide feedback, all of which saved time and eliminated the potential for rework."

Kalogroulis adds that, because the design was finished so quickly (rapid prototypes were generated after only three weeks), Daka saved an estimated 50 percent in development costs.

Sounding a new market

By using SolidWorks to develop the Dolphin water scooter, including an unanticipated month-long redesign to address the manufacturing issues, Daka met its abbreviated design cycle goals. What's more, they launched the first water scooter to target the broad pool accessory and family recreation market, encompassing more than six million pool owners throughout the United States.

Mah says, "By accelerating the Dolphin's time-to-market, Daka has been able to line up and secure orders from major retailers—such as Canadian Tire, Toys "R" Us, and Sharper Image —including an initial 20,000-unit order from Canadian Tire, one of Canada's leading retailers."

"IT WAS QUITE A CHALLENGE TO GET THIS PROJECT DONE, BUT WE WERE ABLE TO WORK A LOT FASTER AND EASIER WITH SOLIDWORKS SOFTWARE."

Alex Kalogroulis
Managing Director
Daka Research (UK) Ltd.

Using SolidWorks 3D CAD software and the communications capabilities of eDrawings, Daka Research (UK) Ltd. was able to shorten its design cycle on the Sea-Doo Seascooter Dolphin by 50 percent while cutting development costs in half.