Birdstone Delivers Schweppes Redesign with 3D Systems' Expert Prototyping Services

Packaging agency selects 3D Systems' On Demand Manufacturing team for the delivery of true-to-life prototypes for glass and PET bottles.

The variable material properties of glass and PET required different prototyping approaches.

As new private label products continue to proliferate the beverage category, established brands like Schweppes are under increasing pressure to stay current in the eyes of the market. To refresh its image as an upper mainstream option for mixers and sparkling beverages, Schweppes enlisted Birdstone, a Melbourne, Australia-based packaging agency to design a contemporary look for their sparkling waters and carbonated soft drinks.

Schweppes products are offered in both glass and PET (polyethylene terephthalate) plastic bottles. For a comprehensive redesign and evaluation, Birdstone was tasked with generating design proposals and prototypes for each material option. To ensure both sets of prototypes convincingly represented their real world counterparts, Birdstone collaborated with 3D Systems On Demand Manufacturing throughout the Schweppes redesign, taking advantage of the service bureau's deep manufacturing expertise and broad technology portfolio to quickly deliver high quality, true-to-life prototypes to its client.

Designing contemporary packaging across materials

A packaging redesign is no small undertaking. Not only is a production overhaul typically required and expensive, but it puts a brand's visual identity on the line. Both Schweppes and Birdstone were highly invested in getting the redesign right and implemented several design check-ins and evaluations throughout the process to ensure they were on the right track.

CHALLENGE:
Validate new bottle design across glass and PET plastic materials.

SOLUTION:
Prototyping, production, with engineering consultation by 3D Systems On Demand Manufacturing to achieve true-to-life prototypes for evaluation.

RESULTS:

- Accurate prototypes to match the appearance, weight and visual properties of glass and PET
- Collaborative approach instills confidence in prototyping process
- Expert guidance ensures selection of correct materials and process for true-to-life results
- Timely delivery keeps project moving forward on track

3D Systems' On Demand Manufacturing experts advised on the best processes to achieve the desired results.

According to Grant Davies, Director, Design & Strategy at Birdstone, "Our biggest challenge running such a large project for Schweppes was designing a family appearance for multiple materials." Fortunately, a history of successful collaborations with 3D Systems' On Demand Manufacturing team had proven to the packaging agency that it could focus its energy on design and confidently outsource model production to 3D Systems' manufacturing experts. 3D Systems' consultative and collaborative approach hinges on establishing a clear mutual understanding of both visual and functional project requirements to facilitate quick and accurate quoting and fulfillment.

With 3D Systems briefed and on board, Birdstone began its work to contemporize key Schweppes brand elements without abandoning the company's rich history. Once a design direction had been selected, the project's complexity grew. To ensure the final family design could be replicated in both glass and PET, design work for each material was undertaken simultaneously. Birdstone worked closely with Schweppes to develop multiple designs that were refined to three distinct concepts, each meeting key objectives including an increased label area; a sleeker, more premium shape; and a volume reduction for the PET bottle to 1.1 liters.

The 750ml glass design was CNC machined from acrylic (PMMA) with a high polish finish.

Multiple checkpoints to validate the design

In creating a new packaging design, there are multiple review checkpoints to ensure all stakeholders agree with the direction and impact of a proposed concept. As a design concept earns more confidence, the sophistication of its representation evolves, typically from a 2D and 3D concept model, to a visualization and animation, and finally to a physical prototype for in-hand evaluation.

Accordingly, to provide Schweppes with early prototypes to assess the new bottles' hand feel and proportions, Birdstone ordered 3D printed models in multiple sizes from 3D Systems. These early Stereolithography (SLA) prototypes were central to a concept development workshop, in which stakeholders from marketing to operations reviewed them and provided feedback. Prototyping at this early stage allowed all decision makers to reach a consensus around format and direction before further investments were made in any one design.

Achieving true-to-life bottle prototypes

Once Schweppes was satisfied with the designs internally, it was time to test them with customers. For this stage of the design evaluation it was important for the prototypes to be as realistic to the final product as possible to enable an authentic interaction with, and reaction to, the new designs. Again working with 3D Systems, Birdstone outlined the prototype requirements. The glass and PET versions would each need to convincingly replicate the specific appearance, weight and visual properties of the final two materials.

The variable material properties of glass and PET required different prototyping approaches. Through a combination of creative thinking and an in-depth understanding of different manufacturing technologies and materials, 3D Systems' On Demand Manufacturing experts advised on the best processes to achieve the desired results: for the 750ml glass design, 3D Systems CNC machined acrylic (PMMA) with a high polish finish; for the thinness and flexibility of the PET design,

3D Systems again opted for SLA 3D printing using Accura® ClearVue™ with premium finishing. 3D Systems Accura ClearVue is a rigid and tough clear 3D printing material offering the highest clarity and transparency on the market.

According to Birdstone, both prototyping processes produced outstanding replicas of the production materials and Birdstone completed the prototypes with self-adhesive graphic labels to give the bottles their research-ready appearance.

A total of six bottles were made across three design concepts, which were then subjected to a week of hands-on consumer research. The final design was selected based on these results, giving Schweppes and Birdstone reinforced confidence in the new chosen direction.

As the project continued through to design engineering, Birdstone continued working with 3D Systems as it refined the final bottle concepts with each of the packaging suppliers, and requested two additional sets of prototypes made to the final product specifications.

New design gains traction

Following the initial market release of the refreshed Schweppes range, the beverage company has continued to extend the new design family across additional bottle sizes. According to Birdstone Director Iain Blair, "The market success and Schweppes' confidence in the design can be directly attributed to the meaningful research that was conducted, and which was made possible by the high quality prototypes by 3D Systems."

Schweppes' new bottle design has thrived since its release and helped reposition the brand as a high quality, high value offering in the face of private label competition.

For the thinness and flexibility of the PET design, 3D Systems used SLA 3D printing with Accura® ClearVue™.

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