

SITUATION

Teleste Cablevision, a leading producer of television and radio reception and distribution equipment, wanted to take advantage of growth in the demand for indoor reception antennae. The company, based in the United Kingdom, felt that the market had been lacking innovative products, so it decided to invest in developing a stylish design that would offer high performance at a very affordable price. To capture market share, the company had to achieve production of this new, low-cost solution quickly so that it could meet the seasonal buying deadlines of major retailers who place bulk orders for new products. Teleste recognized that if it was to achieve its objectives, it would need to be able to visualize the evolving design in 3D and compress the design cycle as much as possible. Because it had no in-house 3D CAD capability, it chose product design consultancy Kinneir Dufort to develop the concept.

OBJECTIVES

- ✓ Design a new aerial for both TV and multimedia PC users which would combine high performance with a stylish appearance (as unobtrusive and compact as possible, and free from sharp edges and points).
- ✓ Ensure the product would be low-cost, simple to manufacture, and comply with safety standards.
- ✓ Design it to operate in a horizontal position and, if possible, in a vertical position too, since such adaptability would appeal to a wider audience.
- ✓ Begin production within six months to meet customer deadlines.

PROCESS VISION

- ✓ Implement a process that would allow Kinneir Dufort and Teleste to visualize the evolving design so that they could effectively discuss the direction of the product development.
- ✓ Model the detail of the internal components at the same time as the size and style of the exterior to enable quick decision-making.
- ✓ Leverage concurrent engineering to cut development time.

ACTIONS

- ✓ The Kinneir Dufort designers developed and iterated on concepts within I-DEAS Master Series™ software to establish how the moldings would look. Using the visualization capabilities of I-DEAS software, the designers were able to show the Teleste project manager the product

Teleste Picks Up Stylish Aerial

"I-DEAS™ proved to be the right technology at the right time for Teleste. It helped us to complete a new product introduction in record time and secured an additional £60,000 (\$98,000 U.S.) in orders for the aerial."

- Les Shortall
Marketing Manager
Teleste Cablevision



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and gain his approval before the next stage of development. Once the final shape had been agreed on with Teleste, a detailed 3D model was created.

- ✓ Using I-DEAS, they also modeled the volume and shape of the electronic components, importing 2D information from the Teleste designers and working with the Teleste project manager to determine the final layout. They also conducted interference tests to check for fit and tolerances among the components, and then generated drawings from the 3D model so that they could exchange data with the Teleste engineers who continued to evolve the component detail designs in 2D.
- ✓ The 3D model was exported using STL files, and rapid prototypes were made. These enabled discussion with the toolmaker about feed points for injection molding, ease of assembly, functionality and surface finish. Feedback resulted in modifications to the 3D model.
- ✓ Polyurethane resin prototypes were made so that Teleste could present the product to potential customers and take orders prior to full production. The prototypes were also used to evaluate and refine the marketing strategy for the product. At the same time, the toolmakers used them to establish the jigs and fixtures necessary to produce the units on an assembly line.
- ✓ The designers used the prototypes for physical testing to assess where mechanical failure might occur. The results of the test were fed back into the 3D model.

RESULTS

- ✓ The design process, from concept to production, was completed in 20 weeks. Sample production units were available within 16 weeks. Previously, it had taken at least a year for Teleste to develop a new design from concept to production. The new 3D-based process resulted in a 40% saving in time.
- ✓ Teleste met the deadlines of its customers, in particular those of a leading discount retailer which was just going to print with its new catalog. Making this deadline secured an additional £60,000 (\$98,000 U.S.) worth of orders that would otherwise have been lost.
- ✓ Sales-to-date have been more than three times the original estimate, and the aerial has comfortably outperformed previous product introductions. In its second year, the product is expected to sell five times the amount sold in the first year.
- ✓ The demonstrable success of the aerial has led to it being quickly adopted by all of Teleste's major retail customers.
- ✓ Kinneir Dufort was able to use the master 3D model to create variants easily, and four versions of the aerial are now available.

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