



## Background

BOMAC, established in 1976, is a top UK company for heating elements and products, catering to global markets and major appliance manufacturers. They balance meeting demands through Far Eastern manufacturing while providing flexibility and quick responses to customer needs.

BOMAC supports applications with design, development, and test resources, including CAD design, type approvals, and testing. They ensure their products meet high industry standards for safety, reliability, and durability.

## Challenge

The majority of BOMAC's products require product assembly jigs. The manufacture of the jigs is predominantly subcontracted to third-party suppliers, which can have a knock-on effect throughout BOMAC's supply chain. This can be costly and slow (currently, lead times are circa four weeks). BOMAC would like to develop the capability to design and manufacture jigs in-house through the adoption of computer-aided design and computer-aided manufacturing (CAD/CAM) and a computer numerical control (CNC) router.

This would reduce the time of design to manufacture of products, and in the long term, it could reduce production costs.

Delivery Partner



## Solution

As part of the initial discussions between BOMAC and the Horizons lead, VEC, the teams identified potential areas of assistance centred around knowledge transfer to support the adoption of CAD/CAM (e.g. CNC router) technologies into their design and production process, creating a digital system for best cause of action for product assembly.

This would include greater insight and understanding of integrating with existing 3D CAD modelling capabilities and 3D printing, in addition to the potential cost benefits of this technology adoption.

The VEC hosted an in-depth knowledge transfer workshop for evaluating the best-aligned automation tools, including CNC technology, using software such as Solidworks for the example approach. The workshop took into consideration existing (and future) products and production processes for improving in the short and long term.

The VEC team also underwent a bespoke evaluation for BOMAC for various CNC equipment options whilst utilising their expansive network of local technical experts to showcase and demonstrate several options that would be well matched for their needs.



Delivery Partner



VEC Engineers organised a visit for BOMAC to visit the advanced manufacturing facility at the Campus Technology Hub on-site at Sci-Tech Daresbury. Here, the teams were shown key demonstrations of a range of 3D printing technologies which were all explained for showcasing advantages of additive manufacturing. The VEC then gave a presentation on the different categories and current capabilities of 3D printing in addition to the predictions and forecast of this technology in the future for improved planning.

A presentation focusing on CNC technology was also given to BOMAC, investigating the steps that BOMAC would need to go through to implement their own CNC. Several UK CNC suppliers were contacted for the retrieval of quotes for BOMAC as technical specialists at VEC could explore the differing specs based on the requirements for BOMAC to identify the best value for money ahead of investments.

## Impact

The upskilling of teams and greater awareness that BOMAC now hold will support them in utilising this technology in-house, reducing their dependence on third-party organisations, and saving time and money as valuable resources.

The BOMAC teams will also be in a better position to make well-informed decisions confidently when considering future investments in equipment and skills.

The teams are already exploring how to expand and adapt this technology across their manufacturing lines to solve multiple tasks and reduce time spent on manual tasks.

Following the knowledge transfer workshops, VEC supported BOMAC in the development of an Innovate UK bid application, where they were found to be successful. The grant will aid the company in investing in the development of a new, technologically advanced product.

BOMAC have since followed up on the quotations sourced by the VEC, visiting a CNC supplier in the North West. If their application is successful BOMAC will procure the CNC machine through the Horizons program, BOMAC hope to continue their expansion of equipment as they grow the business.

**"We are extremely pleased with the support and assistance provided by the VEC in addressing our challenges regarding the in-house design and manufacture of product assembly jigs. This collaboration has been instrumental in enhancing our understanding and capabilities in adopting computer-aided design and computer-aided manufacturing (CAD/CAM) technologies, particularly in relation to CNC routers."**

Julia McDonald, Commercial and Marketing Director,  
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