

# D Squared Product Development

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**Daniel Isler**  
Technical Director



## Product design specialist speeds up innovation with AI and smart manufacturing investment

A product development consultancy has accelerated innovation with smart manufacturing and AI investment.

D Squared Product Development, based in Liverpool, develops everything from respiratory protection and drug delivery devices to power tools and vacuum cleaners.

Backed by a grant from Made Smarter North West, the business invested in new software, additive manufacturing and laser cutting technology, helping cut lead times, increase production capacity and reduce waste.

Meanwhile, through a Made Smarter Digital Internship, the business is exploring how AI tools can support faster product development and innovation.

Daniel Isler, Technical Director at D Squared Product Development, said: “We are a small business punching above our weight in a highly competitive international marketplace. Working with Made Smarter has allowed us to deploy new technologies and upgrade existing ones much sooner than would otherwise have been possible, helping us stay agile and competitive in a fast-moving market.”

### The Challenge

Founded in 2012 by Technical Director Daniel Isler, D Squared supports clients across their product development journey, from concept generation and CAD modeling through to prototyping, testing and production.

The company’s digital strategy has focused on investing in the latest design and production technologies, reducing its reliance on subcontractors and strengthening its

innovation capabilities. But growing competition and the shift of product development overseas have increased the pressure to remain digitally capable and competitive.

Recognising the need to continue investing in new technologies, automation, workforce skills and AI, the business looked for support.

### The Solution

D Squared first became aware of Made Smarter North West through recommendations within the Liverpool City Region innovation ecosystem.

Daniel said: “Our biggest challenge is not understanding the value of digital technology, but finding the time and dedicated resources needed to properly explore, implement and integrate new tools while continuing to deliver live client projects. Made Smarter got this straight away and structured its response to our needs accordingly.”

After working with Lead Technology Adoption Specialist Kevin Smith, the business successfully applied for a £9,500 grant towards a £19,000 project focused on digital tools and additive manufacturing technology.

The first phase focused on optimising SolidWorks and Creo CAD systems and implementing Product Data Management software.

The second phase upgraded D Squared’s additive manufacturing capability through the installation of a Formlabs Form4 SLA printer and a large format Bambu Labs H2D FDM printer.

The final phase integrated the X-Tool P2S CO2 laser cutter into existing workflows.

Alongside the equipment upgrades, the business introduced cloud-based collaboration tools to improve efficiency and strengthen links between design and production, alongside IoT-enabled process tracking systems that allow machines to run unattended.

With operations more integrated, D Squared accessed a Digital Internship to explore the potential of AI tools.

Anoushka Phillips, a BA (Hons) Product Design student from Nottingham Trent University, partnered with the business to pilot how AI-assisted tools could support concept generation, visualisation, client communication and early-stage design iteration.

Using sketches, CAD models, and existing renderings as the inputs, generative AI and visualisation tools were tested on past projects and Anoushka’s own designs.

The project showed how AI could speed up concept development and improve communication without compromising practical engineering requirements, helping the business improve client communication and build confidence around AI adoption.

Following the success of the first placement, D Squared secured Anoushka for a second internship, allowing the business to move from research and experimentation into live commercial application.

### The Benefits

Made Smarter support has enabled D Squared Product Development to accelerate investment in new technologies, automation and AI exploration much earlier than would otherwise have been possible.

The investment reduced lead times for additive manufacturing by up to



50%, increased production capacity by 20% and cut material waste by 15%, with the project paying for itself within seven months.

Alongside the operational improvements, D Squared identified significant workforce and skills benefits. The project protected design and engineer roles and provided wider upskilling across the team through greater understanding of advanced technologies and connected systems.

The internship also allowed D Squared to explore and apply AI tools far more quickly than would otherwise have been possible.

Daniel said: “The placement gave us the time and space to explore AI tools that support faster, more exploratory design, while keeping designs grounded in real-world manufacturing constraints.”

Meanwhile, Anoushka Phillips gained valuable industry experience.

“The internship allowed me to apply my university learning in a commercial environment and understand how creativity and feasibility have to work together on live projects,” she said.

The investment also supported D Squared’s wider ambitions around bringing more manufacturing capability in-house, reducing external dependency, expanding into new markets and growing export activity beyond the UK and Ireland into international markets including the USA and UAE.

### The Future

Working with Made Smarter has accelerated D Squared’s plans to continue investing in digital manufacturing, automation and AI to support future growth and competitiveness.

Daniel added: “The support from Made Smarter has helped us accelerate ideas and investments that would otherwise have taken much longer to implement. It has strengthened our confidence to keep exploring new technologies, expand our in-house capability and continue building a business that can compete on both creativity and engineering expertise.”

