Case Study

Loughborough University: Novel Product results from Commercialisation of Research

Commercialisation of a principle of physics – ready for licensing and spin-out business. Identification of market demand through industrial and commercial engagements for a novel, counter-intuitive technology that reduces the environmental impact of noise.

Situation: Assess market demand for R&D discovery

Challenge: Identify market sectors and engage industry

Requirement: Assess demand, application viability and commercial opportunities

Solution: Improved prototypes, run site trials and proving of feature benefits

Benefits: Broad industrial commitment to adoption and purchase.

Loughborough University's Enterprise Office leads the University's consultancy and new technology ventures as a conduit to commercialisation that accelerates and facilitates success for their industrial partners and research.

The Enterprise Office required a dedicated commercial champion to guide and coach a Physics' Department project team following initial investigations and engagement activities.

Situation: Commercialisation of research

A research project undertaken at Loughborough University uncovered a new principal of physics that blocks sound. Prototyping work had proven the theoretical performance for a narrow range of noise frequencies in industry. A successful funding application enabled more resources for commercialisation activities, having identified EU legislation as a driver for change.

Challenge: Engaging the market

A new principle of sound blocking for noise attenuation had not attracted as much interest as expected despite being efficient and effective in prototype form. Several companies had received presentations from the project team but hadn't committed to take up the offer of a license or to further the relationship.

Commercial applications and numerous engagements with prospect customers were required to identify market demand and establish contact with prospect licensees. The product performed well, however, market interest needed to be developed and interested stakeholders identified.

"We contracted Patrick (bd3T) to determine the market demand and commercial viability of research findings and to accelerate engagements with potential industrial interests regarding a novel Sound Blocking technology."

Dr. Daniel Elford , Loughborough University, Physics Dept

"We thought we'd be pushing at an open door, but no companies or organisations took up on the new product idea. That left us with a lot of work to do and few resources or ideas on how to continue."

Dr. Luke Chalmers, Loughborough University, Physics Dept

Requirement: Assessing market demand

The University project team required several engagements to demonstrate the technology, assistance on commercial issues, extended proving trials and licensing arrangements. A critical factor was that engaged companies needed to understand the relevance to their own situation and be open for further developments.

An in-depth study of the features and benefits of the technology was also required to identify broader applications, encourage wider participation in demonstration activities, and to identify potential licensees for targeted licensing arrangements. Site surveys on site for designs and the research's development to extend the breadth of effective sound blocking.

Solution: Improved prototypes and feature benefits appraisal

bd3T guided the creation and organisation of an upgraded demonstration format and improved the prototypes, including proven case study examples.

Design analysis by bd3T identified additional benefits and extended scope of potentially interested parties. Situational problems of potential users raised the attractiveness of features like the device's air permeability, visual see-through, lower mass and lighter weight and potential portability. In addition, cost savings benefits were established in reduced energy consumption and reduced environmental impact.

Additional prototypes and a reformatted demonstration attracted numerous companies to witness comparisons with conventional attenuation materials and methods. The 'walk around' prototype demonstrated a broader sound frequency attenuation experience. As a result the project engaged process manufacturing; mining and extraction, aerospace testing, rail infrastructure and airport operations.

Industrial enquiries resulted in confidentiality agreements and further on-site trials for potential licenses. This led to several site survey developments, detailed designs and proposals.

Benefits: Trial applications and orders

Enquiries were won from numerous engaged companies with commercial agreements and licenses pending. To support these, several designs were prepared for commercial proving trials. Further product and application cost data reinforced the status and benefits of this spin-out technology. These would provide:

> **End user operational benefits in reduced complaints, unrestricted working hours and legislative compliance to satisfy the Environmental Agency**

> **Special purpose equipment manufacturers had new products available to them using the latest technology**

> **Environmental benefits to satisfy EU legislation in a commercially proven form**

> **Further research opportunities arose during the project for different applications and products.**

The legislative driver for noise control did not become significant during this project, however this project work has enabled it to be ideally placed to satisfy legislation and maximise its potential market demand.

"Patrick's extensive and broad knowledge of businesses introduced us to a large number of potential customers and end users, more than envisaged, and he was able to add commercial context to academic technical developments."

Dr Joanne Whitaker, Head of IP Commercialisations, Loughborough University Enterprise Office

"The project resulted in several new opportunities and various and varied applications for prototypes, leading to licence opportunities."

Dr. Daniel Elford Loughborough University, Physics Dept

"The team have really valued your input and the project itself has benefited greatly from the large number of industry contacts you have been able to provide and introduce to the technology."

Dr Joanne Whitaker, Head of IP Commercialisations, Loughborough University Enterprise Office

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About bd3T

Finding markets for new product ideas and the technological innovation to help fulfil orders won arising from research or simply a clever idea. This commercialisation process uses broad experience, across industry sectors to find best margins, prove benefits and satisfy customer needs and wants. bd3T wins first orders for businesses with new products in new and existing markets.

Specialties

Leading the commercial success of manufacturing developments, including technical and commercial aspects of launching new products and services:

> Evaluation of designs and proving test procedures and compliance.

> Engaging industry with emerging technologies for business development.

> Understanding industrial interests for market's adoption of new technologies.