



Economy of the Future

The economic and social
impacts of the SETsquared
Scale-Up Programme

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A report by

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Forward

Welcome to SETsquared's Scale-Up Impact Report, created by Warwick Economics and Development.

The UK Science and Technology Framework set out a clear ambition to guide and unlock investment, catalyse private sector R&D and boost the innovation activity of firms leading to UK economic growth. However, our most innovative SMEs with potential to scale can often struggle to develop the capacity, capabilities and collaborations required to secure public and private funding. Success rates in applications for UKRI funding to drive R&D and attract private investment are broadly the same across the UK, but regions outside of London and the South East lag significantly in the scale of bids.

The SETsquared Scale-Up Programme, established in 2018 with funding from Research England's Connecting Capability Fund, was designed to address these challenges. We developed a new model which transforms how SME's can engage with the expertise within our Universities, unlocking collaborative opportunities for SMEs who may not understand the benefits of working with researchers and who may not have accessed R&D grants previously. We focused on four innovation sectors mapped against Government's Industrial Strategy - health & wellbeing, digital innovation, advanced engineering and manufacturing and environment, sustainability, marine and maritime.

When the programme was started, SETsquared was a partnership of five universities. Cardiff came onboard as a partner specifically within the Scale-Up Programme with funding from the Higher Education Funding Council for Wales (HEFCW). This proved to be the catalyst needed for them to become a full member of SETsquared, so we're now proudly a partnership of six world-leading universities. We hope that the experience of this programme will support the wider UK innovation ecosystem unlock the potential of collaboration between University and SME teams.

The Business Support Journey (Figure 2.2, page 9) illustrates the steps businesses were taken through (although not always in a completely linear way!) As a starting point, member companies were helped to understand their innovation needs by taking some of them through a two-day workshop where they could start to unpack the key value in the company, and how they could create new or greater value by changing their model or targeting different customer challenges or markets.

Building a team that could provide hands-on support to the business as well as having a reach into each university was vital to delivering the R&D value of the Programme. Having a sector-lead who could engage with the SME, understand their technology challenges, and see where academia could support them with R&D projects to strengthen and validate their work, proved a successful approach. Combining this with an Innovation Advisor at each university, who helped find the appropriate academics to support the SME's challenges and ensure the academics were interested in engaging, meant we were able to establish credible project bids that made it to submission, and more importantly added value to the company once funded.

Have we achieved all we set out to? I would say yes and more! We've certainly met all the Programme's targets in terms of membership, events and R&D and equity fund raising, but there's so much more to it than that.

The model created has leveraged the collective capabilities of the six partner universities, demonstrating how significant commercial, environmental, and societal outcomes can be achieved by building a cluster and a concentration of activity. It has created a dynamic market where researchers and companies can find the right partner to work with, which has resulted in strong, quality R&D funding bids borne out by the 35.5% success rate. These bids with injections of equity investment have allowed the companies to accelerate their growth.

This legacy model is being utilised across SETsquared's focus sectors (health & wellbeing, NetZero and next-generation digital) along with many tools and training materials. SETsquared's Innovation Platform has developed as a hub for all members to share with one another and access the support SETsquared provides.

Looking back on all that we've achieved makes me incredibly proud. I hope you find this report a useful document and one that may inspire new programmes and new models for university and business engagement.

Karen Brooks

Head of Scale-Up, The SETsquared Partnership

Scale-Up Programme Impact

Helping companies win funding and investment through university collaboration



461

members across the UK



3,500

businesses & academics benefitted from CR&D knowledge



£713m

investment secured by members



£1.3bn

GVA to the economy between 2018 – 2030



£72m

R&D funding for programme members



£14.9m

CR&D funding for universities



10

Executives into Business



£7.50

return on investment for every £1 spent

1. Introduction

- 1.1. The SETsquared Scale-Up Programme is a business acceleration Programme that links the research talent and expertise of the six SETsquared partner universities – Bath, Bristol, Cardiff, Exeter, Southampton and Surrey – with innovative technology businesses to secure public grant and private investment for business-led innovation growth.
- 1.2. Research England (RE) established the Connecting Capability Fund (CCF) Programme in 2018 **to incentivise Higher Education Providers (HEPs) to share good practice and capacity across the sector, through collaborative partnerships which would explore different aspects of commercialisation**. In particular, these partnerships would support strategic approaches to commercialisation of university research and collaborative research with industry.
- 1.3. A pilot round funded 18 three-year CCF projects, and 11 of these received either a one or two year extension to continue to evolve their activities. The **SETsquared Scale-Up Programme** received **£5 million CCF grant** during the pilot stage for three years until March 2021, followed by the Programme receiving **£2.65 million** of follow-on funding to continue running until June 2023. The University of Cardiff also participated in the Programme, with the Higher Education Funding Council for Wales (HEFCW) contributing £819,492 from October 2018 to March 2021.
- 1.4. The purpose of this report is to present:
 - the progress the Programme has made to date in terms of collaborations between universities and small and medium sized businesses (SMEs), including collaborations happening for first time, grants, academics involved, collaborative research & development (CR&D) wins, and equity raised;
 - the value of the CR&D and other support offered by the SETsquared Scale-Up team (e.g., grant writing support, support to raise equity or access to a curated capital angel network) for university collaborators and businesses involved;
 - the value gained by businesses through their collaboration with the Programme and the knowledge base in terms of effects on business growth;
 - assessment of the potential contribution of the Programme to economic, social and environmental impacts; and
 - good practice and lessons learned to inform future business-led collaborative support Programmes.

1.5. Primary and secondary research was conducted between April and June 2023 to inform the report, including:

- Review of Programme data, as included in the Programme's CRM database.
- Desk-based review of literature and data to inform the assessment of economic impacts and social impacts related to case studies.
- Individual interviews with Innovation Advisors¹ and academics in the universities participating in the Programme (a total of 12 interviews were conducted).
- An online survey of all businesses involved in the Programme to inform assessment of socio-economic impacts, in addition to desk-based review of Programme data and interviews with businesses and universities, a survey was conducted with businesses that have been supported by the Programme. 108 members of the Scale-Up Programme responded to the survey (23.4% response rate). The survey asked a range of questions including about the profile of the members (e.g., type of business, sector, areas of research, employment size etc.), support received by the Programme and benefits arising from the Programme.
- In-depth interviews with six businesses to provide additional information in relation to benefits and impacts generated with the contribution of the Scale-Up Programme.²

1.6. The remainder of this document is structured as follows:

- Section 2 provides an overview of the Programme, drawing on the Programme's data.
- Section 3 discusses the impacts of the Programme, drawing on the survey and interviews, and presents case studies that describe engagement of the programme with industry, researchers and academics, and resulting benefits.
- Section 4 draws conclusions and presents good practice and lessons learned.

¹ Innovation Advisors were set up by the Scale-Up Programme and sat inside the University. Their role was to act as the conduit to finding the appropriate academic(s) who would be interested in working with the SME on a bid and could fulfil what the SME was looking for in terms of expertise, knowledge, research or resources.

² Please contact info@setsquared.co.uk for further information about this survey.

2. The Scale-Up Programme

- 2.1. The Programme supports innovative, growing businesses to raise public funding and private investment to undertake CR&D with academic expertise from across SETsquared's six university partners. The Programme pools the resources of partner universities to develop new, high-profile research commercialisation projects with businesses in key sectors including:
- advanced engineering and manufacturing
 - digital innovation
 - environment, sustainability, marine and maritime
 - health and wellbeing.
- 2.2. The Programme helps its members³ develop scalable business models that make the most of the potential commercialisation of university research. The Programme helps members:
- identify the innovation gap;
 - get the best research talent, often from multiple universities; and
 - secure the private and public co-investment to finance the innovation roadmap.
- 2.3. The Programme has three distinct areas of support:
- a. General support including innovation workouts, impact workouts, masterclasses and curated opportunities to meet investors and customers;
 - b. Targeted support to identify university collaborators, develop and win CR&D bids; and
 - c. Support to raise equity investment.
- 2.4. The main types of support received through the Scale-Up Programme relate to **investments and leveraging of finance, client management skills, and university engagement**. The full support package offered by the Scale-Up Programme is presented in Figure 2.1 and Figure 2.2 presents the SME business support journey.

³ Associate membership of the Scale-Up Programme provided companies with access to events & networking opportunities, a place on one of SETsquared's fully funded Workouts, CR&D support including funding scanning and academic matchmaking and equity investment support. Associate membership incurred a £150 administration fee. If support was provided to create a CR&D funding bid companies would become an uplifted member, required to comply with subsidy control legislation. This would give companies a dedicated grant writer ranging from a 'critical friend' for writing as well as interview support to increase the likelihood of success. This membership cost £1,600; however, for the majority of members this fee was waived due to businesses being under the subsidy control threshold.

Figure 2.1: Overview of the SETsquared Scale-Up Programme Offer



Networking with peers

Skilling up through expert-led events

Access to member-only discounts and offers



Access to research expertise and clinical ecosystems

Introductions to key opinion leaders

Build strong experienced project teams



Support for collaborative R&D funding

Help with R&D roadmap

Find the right funding call

Support bid writing



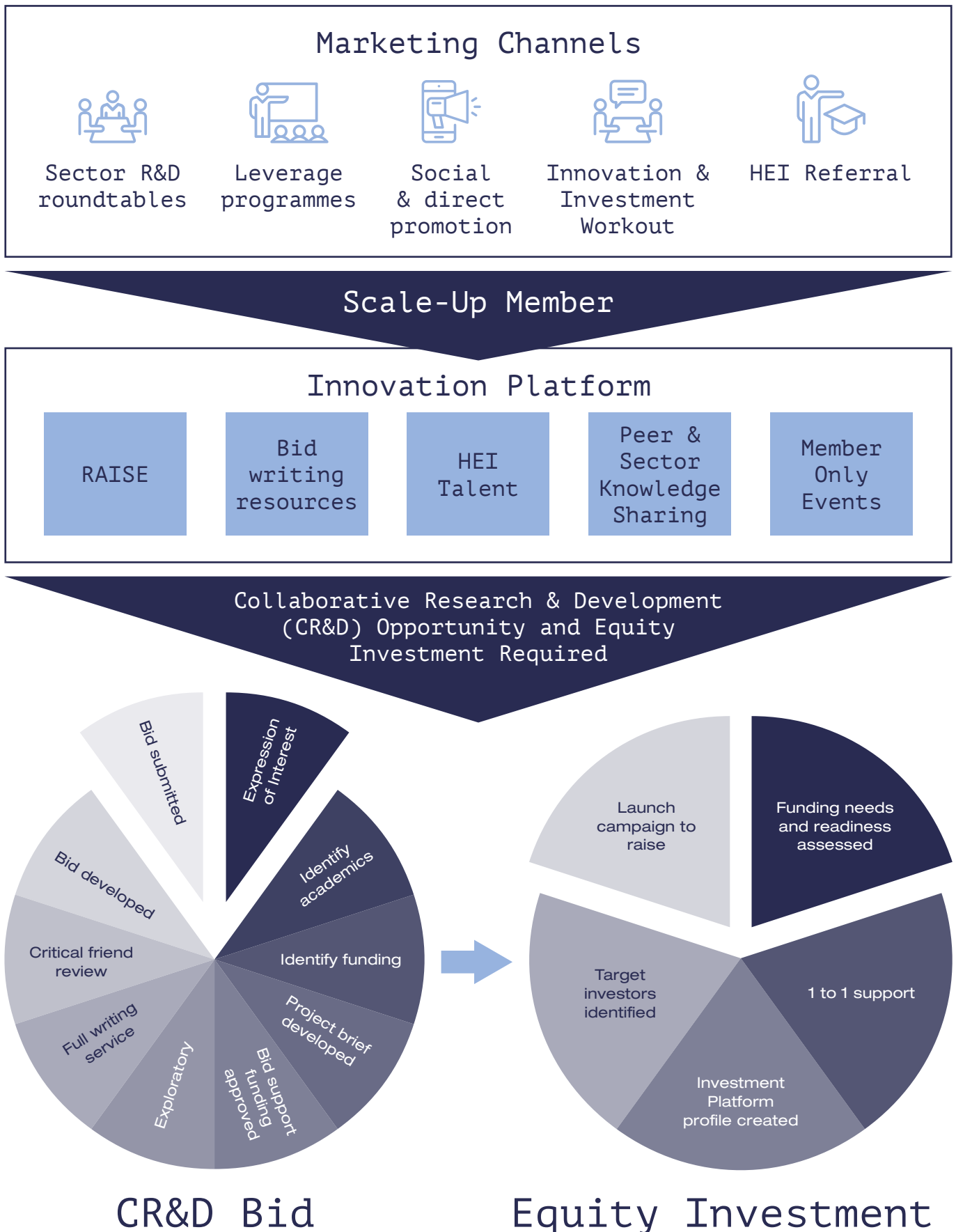
Support for private investment

RAISE playbook / resource

INTEL: PitchBook / Beauhurst

Investment Network

Figure 2.2: Scale-Up Programme SME Business Support Journey



2.5. The SETsquared Scale-Up Programme also includes support to University spinouts through the Executives into Business (EIB) Programme. This support includes recruiting business executives to lead strong and innovative companies spinning out from the SETsquared partner universities. In delivering the EIB programme, SETsquared partnered with the Northern Accelerator Programme⁴ to share expertise and networks. The Northern Accelerator Programme is a collaboration between the North East's universities to commercialise research and boost the region's economy, but also evidence from research conducted by the ScaleUp Institute. For example, according to the findings of the 2020 (annual) survey by the ScaleUp Institute⁵, to meet their leadership requirements, scaleups would value greater access to Non-Executive Directors (NEDs), peer networks and mentors. The Executives into Business Programme addresses this demand and places experienced business executives during the pre-incorporation phase of the spinout to work with the university and founders to set up a robust, viable business. An example of the support provided by EIB is described below.

Executive into Business (EIB) - Example of support provided

- ✓ Develop a detailed three year business plan, considering the best route-to market and marketing strategy, that both the founder academic(s) and University consider both realistic and acceptable and appropriate to submit to potential investors.
- ✓ Support the founder academic(s) to agree the IP Licence and Shareholders Agreement with the University
- ✓ Work with the existing founder academic(s) to map out the key activities and resources needed to launch and finance the business and raise funds to support these activities, including:

Phase 1: Review existing business ambitions and options for quickest route to market (license/spin out) and write a comprehensive and robust business plan with realistic funding requirements, financial plans, sales forecasts and marketing and sales strategy;

Phase 2: Complete spinout legal and governance issues and position; and

Phase 3: Negotiate and secure seed capital or other funding required by the business in accordance with the business plan (e.g., complete fundraise).

⁴ The Northern Accelerator was established with funding from Research England (RE) and the European Regional Development Fund (ERDF). It involves Durham, Newcastle, Northumbria, Sunderland and Teesside universities working together to match experienced business leaders with academic founders to ensure spinouts have strong management teams from the outset.

⁵ ScaleUp Institute Annual Scaleup Survey 2020.

2.6. To date the Programme **has placed 10 EIBs**, and, in general, the feedback about the EIB programme has been positive, as illustrated by the following statements made by businesses that have been supported through this programme:

“The Executive’s experience and reputation were invaluable in driving the business forward to the point that the business is ready for investment. The main benefits have included investment, connections, product development and strategy, business plan, financial modelling, marketing strategy.”

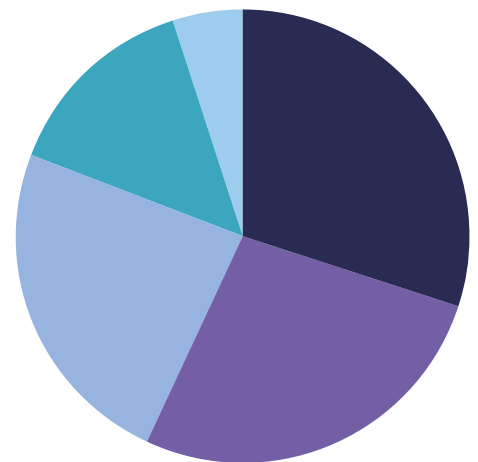
“The support enabled us to gain an experienced adviser who could act on behalf of our business - providing third-party insights on the commercial feasibility of the innovation. It also meant we had someone to advise who was experienced and independent.”

2.7. The EIB programme has just been completed and, therefore, it is still too early to assess the impact of the support on business performance.

Programme membership

2.8. The Scale-Up Programme CRM has **461 members**. Members of the Programme represent the following sectors:

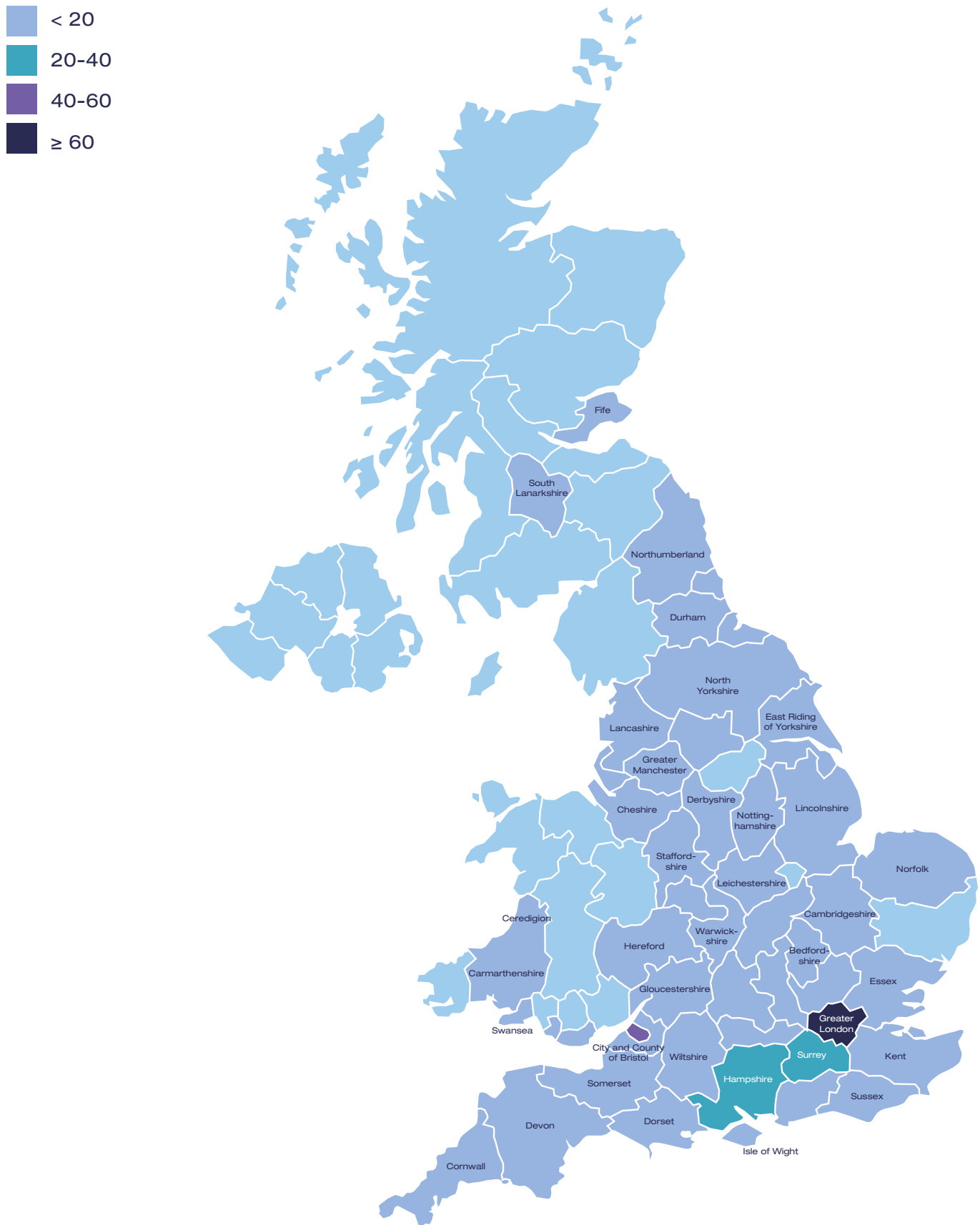
- **Digital innovation** (30%)
- **Health and Wellbeing** (27%)
- **Advanced Engineering and Manufacturing** (24%)
- **Environment, Sustainability, Marine and Maritime** (14%)
- **Multiple** (5%)



2.9. **Most members (7 in 10 businesses) have joined in the last 2-3 years**. Members of the Scale-Up Programme are also relatively new/young businesses with most firms incorporated after 2015. Members of the Scale-Up Programme range in size and revenues, with the majority being SMEs with less than 50 employees.

2.10. Figure 2.3 shows that, as expected, there is a higher concentration of members located in the south of England, with 72 members located in London. **The map clearly illustrates that the Scale-Up Programme has had national reach: more than 50% of members are outside SETsquared’s geography.**

Figure 2.3: Location of Scale-Up Programme members



3. Programme Benefits and Impacts

- 3.1. The evaluation has shown that within the five years of its operation, the SETSquared Scale-Up Programme has brought together a range of business, academics and researchers, investors, and local stakeholders through 127 events (approximately 25 events per year), and made some substantial contributions to financial, economic, and social benefits and impacts. Securing investment and improved business performance to date is also highly likely to have longer-term impacts in terms of business growth, i.e., creating jobs and Gross Value Added (GVA), within the economy. Furthermore, technologies and products emerging from the collaborative R&D activities supported by the Programme to date point towards significant breakthroughs in sustainability, health, artificial intelligence and advanced engineering sectors.
- 3.2. This section presents benefits and impacts that have emerged from CR&D projects and the support of the SETSquared Scale-Up Programme for businesses, the knowledge base/universities and academics and researchers involved, and the economy and wider society. Estimates are presented for: a) benefits and impacts to date (i.e., based on Programme activity to June 2023); and b) future economic and wider social impacts.

A. Benefits and Impacts of Collaborative R&D to date

Access to finance and investment raised for businesses participating

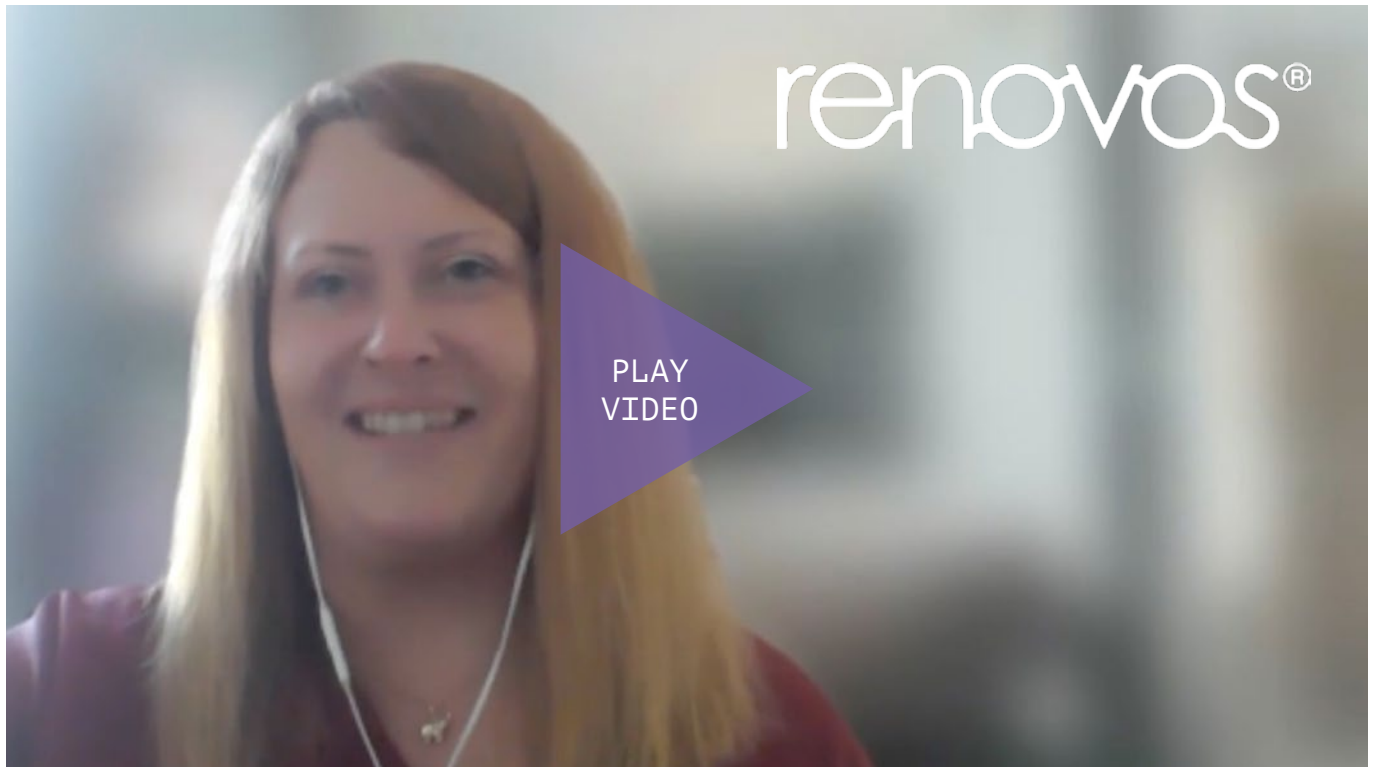
- 3.3. Members of the Scale-Up Programme have been **very successful in securing investment, with £713 million⁶ secured between 2018 and 2023**. This is based on information collected by SETSquared and verified through [Beauhurst's](#) database. This amount of finance raised is based on a third of members (38%, 176 of 461 members) for which information is available⁷ as follows:
- 49 members each secured investment of up to £250,000 each, with a total of £6 million;
 - 52 members secured between £250,000 and £1 million each, with a total of £27 million;
 - 65 members secured between £1 million and £10 million each, with a total of £225 million; and
 - **10 members** have secured more than £10 million each, accounting for a total of **£455 million**, almost two-thirds of the total amount raised.

⁶ Including both equity and debt financing. Equity financing refers to a share of ownership in the business/spinout given away in exchange for capital while debt financing involves the spinout getting a business loan, either from an investor or a financial institution.

⁷ Nearly two-thirds of members (285) have either not secured investment, or there is no information available about their investment raised.

- 3.4. The business survey also indicated that businesses raised funds through multiple channels including equity and debt financing as well as through government grants. The survey also reveals that **equity financing is relatively more common than debt financing** among businesses. **Approximately 3 in 10 businesses involved in the Scale-Up Programme have accessed equity finance compared with 2 in 10 drawing on debt financing and 5 in 10 accessing grants.** In terms of funds raised, the amount of funds raised through equity finance are considerably larger than debt financing and grants.
- 3.5. The business survey shows that the Scale-Up Programme **has successfully supported members of the Programme to secure grant funding and form successful collaborations with universities:**
- 62% of businesses in the Programme collaborated with an academic from a SETsquared university.
 - Members report that the Scale-Up Programme has helped them secure an estimated 80% of all of the grants raised by businesses in the Programme.
 - Nearly 90% of grants secured were raised by those that reported that they have collaborated with one of the SETsquared universities.
 - Over 80% of all equity secured by businesses in the Programme was raised by businesses that had collaborated with one of the SETsquared universities.
 - Aggregating the findings of the survey to all the businesses supported (using the number of businesses in the Programme), suggests that SETsquared have been involved in helping businesses securing between £155 million and £359 million of investment.
- 3.6. Overall, according to the survey results, **4 in 10 businesses reported that SETsquared Scale-Up Programme had helped them secure investment.** This was highest among **environment, sustainability, marine and maritime businesses, where nearly 6 in 10 businesses (57%)** reported that the Programme had helped them secure investment.
- 3.7. Furthermore, comparing the level of attribution to the SETsquared Scale-Up Programme by the type of investment/finance raised, **almost 80% of businesses that secured grants** reported that SETsquared had contributed to securing investment, i.e., indicating that **SETsquared is very good at helping businesses to secure grant funding.**
- 3.8. In addition to the examples provided in paragraph 3.5, the following example presents a business that has benefitted from the support of the Scale-Up Programme and secured a significant grant.

Renovos Case Study



Established in 2017

3 employees

Southampton

renovos.co.uk

Renovos is a spinout from the University of Southampton, currently commercialising research on skeletal stem cells, translational orthopaedics, and materials for tissue repair. The new material, RENOVITE, acts as an injectable scaffold which attracts regenerative cells and localises and retains delivered biologics at ultra-low effective doses for safer and more efficient applications in tissue regeneration.

- Secured £692k grant funding from Innovate UK and £801k UKRI Future Leaders Fellowship to further develop the RENOVITE® technology.
- Secured investment from Biocomposites, an international medical devices company that engineers, manufactures and markets world leading products for regenerating bone and managing infection in bone and soft tissue.

“It’s hard to say where we’d be [without the Scale-Up Programme]. We’d have to review our fundraising strategy for sure, as it’s much more difficult without the non-diluted funding. The funding we have now is so significant, that we’d have to divide this round into smaller rounds rather than raise the full amount in one go. It has also been good to have a pair of eyes from outside of the sector to know that the funding application reads well.”

Agnieszka Janeczek, Founder/CEO, Renovos

Economic benefits - improved employment and turnover

3.9. The survey also indicates that the Programme has made a **substantial contribution to employment growth among the businesses participating in the Programme, and also finance they have raised**. Based on the survey responses, it can be estimated that:

- The total number of employees across businesses supported by the Programme has more than doubled, **with an increase of 260% between 2018 and 2023 (from a total of 300 employees in 2018 to 780 in 2023)**, including an increase in the number of businesses with employees and the number of employees for businesses that already had employees at the start of the Programme.
- Survey respondents that reported that SETsquared have helped with the business's employment growth account for 71% of the increase in employment.
- In terms of how the **SETsquared Scale-Up Programme has helped businesses, the most common response has been 'helping to grow faster' (79%), followed by the Programme having helped the business achieve a higher turnover (41% of businesses) and 35% of businesses reporting that the Programme had helped them increase profitability.**

3.10. Overall, it is estimated that, in 2023, the **members of the Scale-Up Programme:**

- **employ over 3,100 persons;**
- **have a combined revenue of £115 million; and**
- **directly contribute £57 million of GVA to the UK economy.**

3.11. Ecomar provides one of the examples of improved business performance for a relatively new business through the support of the Scale-Up Programme and Plasticowood, a more established company highlights the value to be gained from working with Universities on collaborative research and development projects. Both companies are great examples of the environmental impact that can be gained by accelerating these companies focused on carbon reducing technologies.

Ecomar Case Study



Established in 2019

15 employees

Fareham, Hampshire

ecomarpropulsion.com

Ecomar is a marine engineering company working to reduce global emissions by creating innovative battery and hydrogen-electric powertrains, drastically cutting carbon emissions and millions of litres of fuel.

- Introduced to the University of Exeter's Centre for Future Clean Mobility to secure £5.6m of collaborative R&D funding with support from Scale-Up.
- Raised angel investment alongside grant funding through the Regional Angel Investment Accelerator.
- Employment has risen fourfold with increased sales revenue, profitability and productivity.

"The Scale-Up Programme has moved us on probably five years beyond where we dreamed we would be at this stage. We now have 15 people in our workshops, producing one-megawatt internal ship systems for large vessels, whereas three years ago, it was two men in a tent on the driveway. Ecomar Propulsion could not be the company it is today without the work of SETsquared and the University of Exeter."

Anthony Bennett, Chief Operating Officer, Ecomar Propulsion

Plastecowood Case Study



Established in 2014

40 employees

Rhyl, Denbighshire

plastecowood.com

Plastecowood manufactures Smartawood™ an eco-friendly, carbon negative lumber product using plastic packaging waste from UK households that replaces concrete, steel or wood.

- Introduced to the University of Surrey's Engineering Department.
- Secured £100k Innovate UK grant with support from the Scale-Up team.

"The R&D we would normally do is heavily application-focused. The R&D that the University enables us to do is more fundamental. They've got a fantastic infrastructure to work with businesses, knowledgeable people, and specialist kit, which is a real asset for companies like ours. Another benefit is the level of credibility it brings. It allows us to go back out to the wider world and say we've done some work with a university and it's like a stamp of approval."

Henning von Spreckelsen, Director, Plastecowood

Benefits for the university knowledge base

3.12. By June 2023, the Programme has:

- been involved with 311 projects with universities;
- helped to win 111 projects, indicating a success rate of 35.7%
- generated £14.9 million awards for SETsquared university partners through CR&D (approximately £3 million per year); and
- raised £9.9 million in leverage.

3.13. Table 3.1 presents the award benefits for each university partner to June 2023.

Table 3.1: Scale-Up Programme Awards for SETsquared Partner Universities (June 2023)

SETsquared University Partner	No of projects with the university as the primary lead	No of projects won with the university the primary lead	Total CR&D raised by the university (£ million)
Bath	68	30	3.67
Bristol	34	11	1.72
Cardiff ⁸	19	9	1.76
Exeter	70	25	3.66
Southampton	57	23	2.50
Surrey	63	13	1.60
Total	311	111	14.91

⁸ Cardiff University was only a programme member between October 2018 and March 2021.

3.14. The following examples describe projects involving academics and researchers that have been supported by the Programme.

Competition: Biomedical catalyst 2021: early and late stage awards

Project title: Data-driven fitting for the next generation of prosthetic sockets with Radii Devices

Project Value: £494,365

Summary: The aim of the project was to develop a revolutionary system to support prosthetists in the design of prosthetic sockets, supporting the complex rectification process with data and AI to enable better designs for perfect fit, faster, with fewer patient appointments.

Academic Lead: Professor Alex Dickinson

University feedback: *“Capacity can be an issue for academic schedules. The bid support and review of documents provided by the SETsquared team has been transformational.”*

Company website: radiidevices.com



Competition: Fast Start: Innovation

Project title: CS1 Steer-by-Wire Pre-Industrialisation Demonstration Project with Chassis Autonomy

Project Value: £49,924

Summary: The aim of the project was to use fast start funding to design, develop, manufacture and operate a test rig to demonstrate the fail-operational capability of CS1 -- our second generation steering system. The CS1 design was frozen in June 2022 and is currently in manufacture using funds from our first investment round.

Academic Lead: Professor Aldo Sorniotti and Professor Patrick Guber

University feedback: *“Collaborations with industry give credibility to science and the support offered by the SETsquared team has been excellent...they have dealt with all the administrative elements of this collaboration.”*

Company website: chassisautonomy.com



Competition: i4i Connect Stage and Development Application

Project title: A new human:computer interface for augmentative and alternative communication with Earswitch

Project Value: £150,000

Summary: The project objectives are to demonstrate technology need and appeal and to create a prototype device for focussed user testing. This i4i Product Development application seeks to accelerate the development of the prototype Earswitch into a communication tool for people with severe communication difficulties. Earswitch is developing a revolutionary communication tool for people with severe communications difficulties and disabilities. One application of its technology results from its partnership with the University of Bath and the Motor Neurone Disease Association which has led to a prototype communication tool for people with advanced motor neurone disease, an illness which affects 1 in 300 people in their lifetime.⁹ By utilising a novel interface, it is expected to create an entire new communication pathway which can be utilised ‘hands-free’ in multiple ways. This extends from people who cannot otherwise communicate with current technology, through to creating superior hearing aids with greater, more discrete, or user-friendly functionality.

Academic Lead: Dr. Benjamin Metcalfe

Feedback: *“The support of the Programme team has been extremely valuable in bringing various partners together and introducing us to new networks.”*

Company website: earswitch.co.uk



⁹ Source: Motor Neuron Disease Association [Here](#)

3.15. Interviews with Innovation Advisors and Academics have highlighted the significance of the Programme in: **match making with industrial (and other academic) partners; and bid writing and preparation.** Other benefits highlighted by academics include:

- The excellent reputation of SETSquared among funders and the understanding of the funding infrastructure by the SETSquared team, including the central team but also Innovation Advisors located at each partner university.
- The Programme acting as a useful tool for engaging with SMEs as part of the innovation agenda and accelerating impact and impact cases, and in general extending industry networking opportunities for researchers.
- The Programme has enabled some Schools to use SME collaboration evidence to support accreditations. For example, Cardiff Business School used a successful Scale-Up collaboration as part of its evidence to support its Small Business Charter accreditation assessment.
- The power of the wider SETSquared marketing machine supporting the Programme and related activities, and SETSquared's influence with the investor landscape and its network of angel and other private investors.
- The Programme enabling access to specialist sector leads for access to expert network and bigger R&D opportunities while also offering support within universities to broker relationships and keep the relationship/activity on track.
- Offering opportunities for academics to work on interesting projects and real-world challenges and ideas, and also work with other institutions on projects.

Collaborations with multiple partners and disciplines

3.16. As described in the following case study, the SETSquared Scale-Up Programme has been instrumental in multi-University/stakeholder working.

3.17. The example describes a bid (£1.2 million) that brought together academic expertise from across three Universities (Cardiff, Bath and Southampton) as well as local Health Boards (e.g., [Cardiff and Vale University Health Board](#)). As stated by one of the Innovation Advisors, **“the whole was considerably greater than the sum of the parts.”**

Oxford Brain Diagnostics Case Study



Established in 2019

8 employees

Oxford

oxfordbraindiagnosics.com

Oxford Brain Diagnostics Ltd is a spinout company from the University of Oxford that is developing diagnostic tools to enable early detection of disease, track progression, and support in the diagnosis of Alzheimer's disease using MRI brain scan data.

- Introduced to research teams at the University of Southampton and Cardiff University to successfully secure £1.4m NIHR grant funding.
- Increased productivity as a result of the NIHR grant.
- Gained additional clinical insight, interaction with patient groups, and early insight into the practical challenges associated with NHS adoption.

"I doubt we would have applied for the NIHR grant without the support of the Scale-Up Programme. Having people to actually help us write [the applications] was incredibly useful. The Scale-Up Programme is helping us to access new markets, scale the team, test technology across the NHS and speed up the adoption of new technology. The feedback we have received has pulled things forward by years on the clinical side."

Terry Pollard, Chief Operating Officer, Oxford Brain Diagnostics

B. Future impacts

Economic impacts 2024-2030

- 3.18. Securing investment and improved business performance is highly likely to have longer-term impacts in terms of business growth, i.e., creating jobs and GVA within the economy.
- 3.19. For example, based on the findings of the business survey, participants in the Programme expect to raise investment of between £650 million and £1,375 million within the next year (2024). Furthermore, over 90% of members of the Programme are considering a collaboration with one of the SETsquared universities in the next year.
- 3.20. Drawing on the findings of the business survey and previous research for SETsquared partnership, future economic impacts up to 2030 have been estimated for **employment, turnover and GVA**, as follows:
- The businesses supported through the Programme are estimated to employ about 3,100 persons in 2023. By 2030, **this is projected to increase to 5,900 employees.**
 - It is anticipated that the businesses supported by the Scale-Up Programme will have generated **over £2.65 billion in turnover by 2030.**
 - The businesses supported are expected to continue to contribute **over £300 million of GVA per annum to the UK economy by 2030 and beyond.**
- 3.21. Table 3.2 provides an overview of these estimates and the assumptions made.¹⁰

Table 3.2: Scale-Up Programme Awards for SETsquared Partner Universities (June 2023)

	In 2023	By 2030 (forecast)	Cumulative (2018-2030)
Employees	3,132	5,925	
Turnover (£m)	£ 114.9	£ 606.2	£ 2,650
GVA (£m)	£ 57.4	£ 303.1	£ 1,325

Note: 2023 Prices for cumulative data

¹⁰ [Download a copy of the Impact Report - SETsquared](#)

Note: Assumptions

Indicators		Source
Employment at start of Programme	6	Business survey respondents
Employment growth during the Programme	10% per annum (p.a.)	Business survey respondents
Employment Growth on leaving the Programme	20% p.a.	Previous SETsquared impact analysis
Turnover Growth	20% p.a.	Business survey respondents
High Growth Scale-Ups	10% of Scale-Ups	Previous SETsquared impact analysis
Turnover growth of high growth Scale-Ups	£3 million by year 5 £6 million by year 6	Previous SETsquared impact analysis
GVA as a % of turnover	50%	Previous SETsquared impact analysis
Annual survival rate after leaving the Programme	95%	Previous SETsquared impact analysis

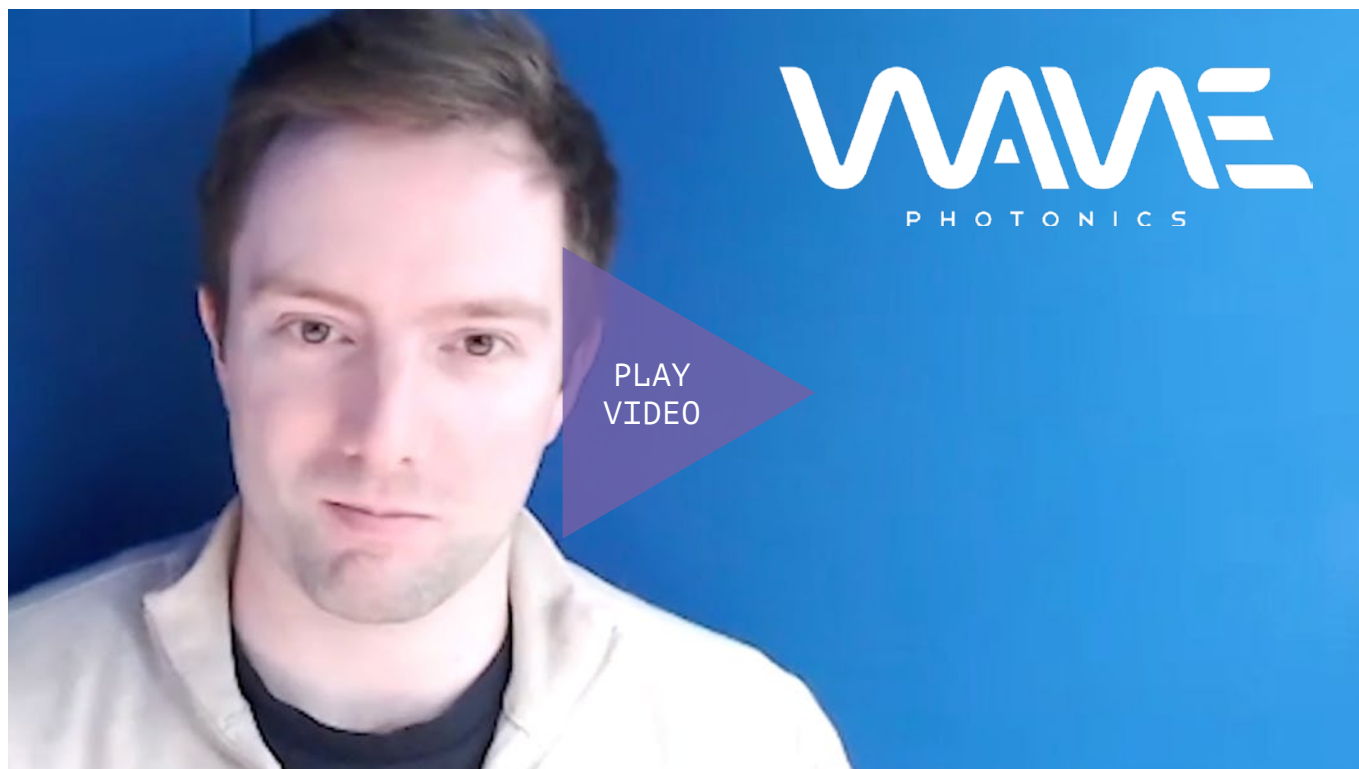
3.22. The survey indicates that much of the research and development grant funding that has been raised by the businesses could be attributed to the SETsquared Scale-Up Programme. The review of the Scale-Up Programme data also indicates that a relatively high proportion of grant applications that were supported by SETsquared were successful (35.7%).

3.23. As shown by the case studies presented below (**Wave Photonics and Transdermal Diagnostics**), **this R&D funding should have longer-term benefits for these companies but also economic and societal benefits.**

3.24. Valuing SETsquared contribution to this future growth potential has been calculated using the survey and Programme data as well as standard additionality assumptions that have been used in previous SETsquared analysis.¹¹ Applying these assumptions **indicates that £153 million of future GVA generated is attributable to the SETsquared Scale-Up Programme.**

¹¹ Deadweight is estimated at 85%, with leakage, displacement and substitution estimated as being relatively low, i.e., 10%, 25% and 25% respectively. In the light of the Programme's national presence, a multiplier of 1.52 has been also applied.

Wave Photonics Case Study



Established in 2021

5 employees

Cambridge

wavephotonics.com

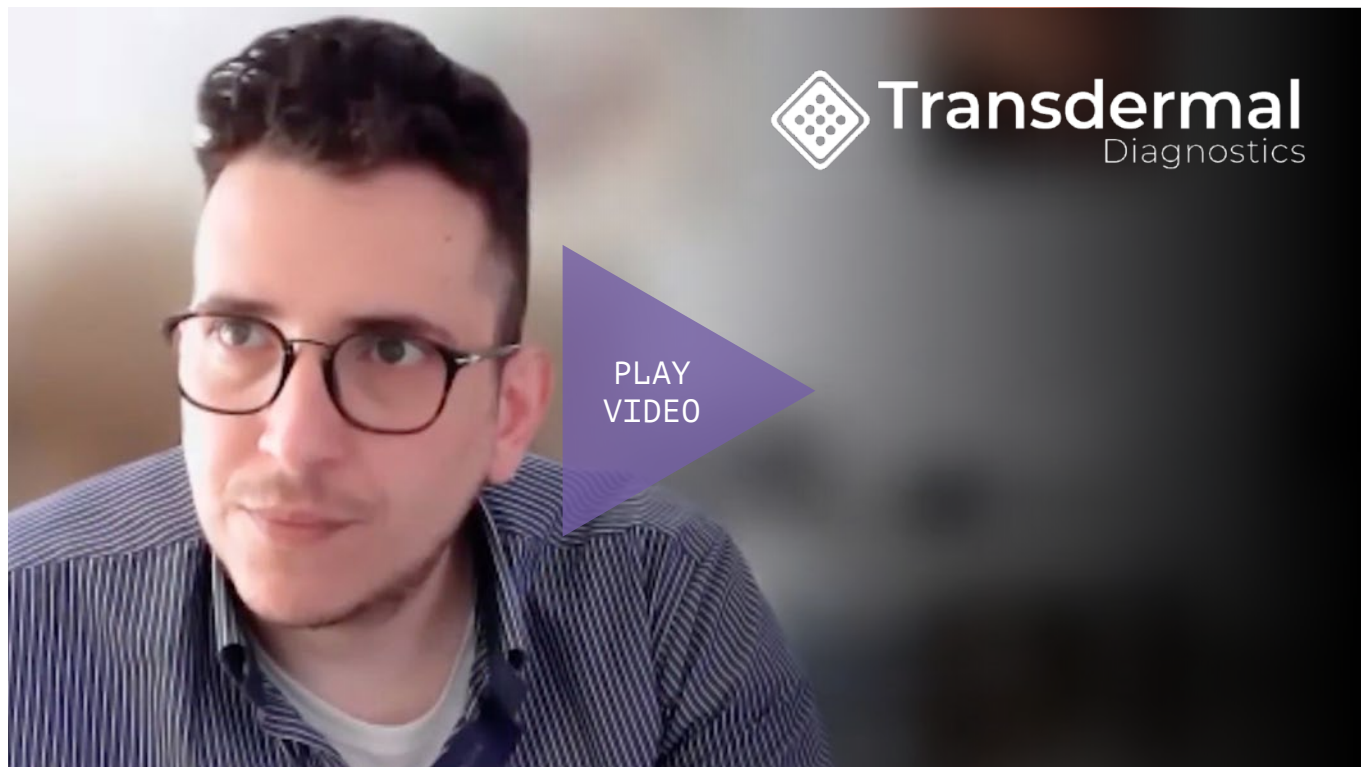
Wave Photonics is an engineering and manufacturing company using computational techniques to create tools and IP to enable and accelerate the development, mass production and adoption of more energy-efficient communication in the form of integrated photonics.

- Introduced to academics at the University of Bristol and Southampton.
- Won a £500k Innovate UK funding alongside partners Alter Technology TUV NORD UK, Senko Advanced Components, the University of Southampton, and the University of Bristol to develop packaging solutions for Quantum Photonic Integrated Circuits with Scale-Up support.

“There’s a fair chance we would not exist as a company [without the support] because we raised our pre-seed investment round partly based on winning the grant. The funding and investment are what we’ve used to build everything since. Maybe we would have found some other way to survive and move forward but it’s perfectly possible that we wouldn’t be here.”

James Lee, Chief Executive Officer, Wave Photonics

Transdermal Diagnostics Case Study



Span out from the University
of Bath in 2022

6 employees

Bath

transdermal-diagnostics.com

Transdermal Diagnostics is developing a non-invasive, wearable device to improve the prevention, diagnosis, and management of chronic health conditions, currently focusing on diabetes.

- Introduced to clinical leads ahead of application for NIHR Invention for Innovation programme.
- Raised significant investment from angel investors, venture capital and Innovate UK.
- Secured ICURe follow-on funding with the University of Bath.

“SETsquared’s Scale-Up programme has been a real enabler for Transdermal Diagnostics. We’ve used the positive narrative of having won an Innovate UK grant [with its support] to also close a major round of investment. It basically helped the company kickstart and get off the ground.”

Luca Lipani, CEO, Transdermal Diagnostics

4. Conclusions

Summary of findings

- 4.1. The Scale-Up Programme was set up with three broad and distinct areas of support:
 - a. Targeted support to identify university collaborators, develop and win CR&D bids;
 - b. Support to raise equity investment; and
 - c. General support including innovation workouts, impact workouts, masterclasses and curated opportunities to meet investors and customers.
- 4.2. The evaluation has shown that the Programme has been successful in all these areas in a relatively short time, i.e., between 2018 and 2023, and has successfully supported members of the Programme to secure grant funding and form successful collaborations with universities, resulting in:
 - 111 projects won with significant contribution from the Scale-Up Programme;
 - £14.9 million awarded to SETsquared university partners through CR&D (approximately £3 million per year); and
 - Members of the Programme securing investment of £713 million between 2018 and 2023.
- 4.3. In addition, 4 in 10 businesses reported that the SETsquared Scale-Up Programme had helped them secure investment. This was highest among environment, sustainability and marine and maritime businesses, where nearly 6 in 10 businesses (57%) reported that the Programme had helped them secure investment.
- 4.4. Furthermore, comparing the level of attribution to the SETsquared Scale-Up Programme by the type of investment/finance raised, almost 80% of businesses that secured grants reported that SETsquared had contributed to securing investment, i.e., indicating that SETsquared is very good at helping businesses to secure grant funding.
- 4.5. It is also estimated that the economic impacts generated to date and future impacts are considerable. For example, in 2023, the members of the Scale-Up Programme:
 - Employ over 3,100 persons.
 - Have a combined revenue of £115 million.
 - Directly contribute £57 million of GVA to the UK economy – indicating a £7.5 return per £1 of CCF invested in the programme.

4.6. Drawing on the findings of the business survey and previous research for the SETsquared Partnership, it is also estimated that:

- Employment by the businesses supported through the Programme will increase to 5,900 employees.
- Businesses supported by the Scale-Up Programme will have generated over £2.65 billion in turnover by 2030, leading to approximately £1.3 billion GVA.
- £153 million of future GVA generated is attributable to the SETsquared Scale-Up Programme.

Good practice and lessons learned

4.7. The feedback received during the interviews also shows that:

- The Programme has offered a successful model of engagement of Universities with SMEs and innovative SMEs with Universities, removing complexities in navigating each other's organisations and establishing the foundations for long-term relationships.
- 50% of the Programme's members were outside of the SETsquared region – this signals national reach and brand visibility as well as a model that stimulates cross cluster collaboration and inward investment which could be important to UK innovation strategy on clusters.
- Growth of businesses is accelerated with relatively small (albeit labour/resource intensive) interventions, e.g. improving networking, reviewing bids and bidding preparation masterclasses.



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For any queries about any elements of this Report, please contact us at info@setsquared.co.uk

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