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## **Staffordshire Advanced Manufacturing, Prototyping and Innovation Demonstrator (SAMPID)**

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## FULL PROJECT EVALUATION MARCH 2023

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<b>Project Name: Staffordshire Advanced Manufacturing, Prototyping and Innovation Demonstrator (SAMPID)</b>	<b>Project Number: 32R19P03142</b>	<b>Project Value (ERDF): £1,064,906</b>
<b>Project Manager: Rachel Wood</b>	<b>Approved Match Funding Value: £709,944</b>  <b>Total Lifetime Cost of the Project: £1,774,850</b>	<b>Project Start Date: 01 November 2019</b> <b>End Date: 31 July 2023</b>
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## 1.0 EXECUTIVE SUMMARY

The purpose of this report is to present the finding of an evaluation of the Staffordshire Advanced Manufacturing, Prototyping and Innovation Demonstrator Programme (SAMPID) operated by Staffordshire University. The evaluation has been conducted by Baswich Business Services Ltd, who are experienced economic development, business support, and evaluation consultants with experience of both the successful delivery and evaluation of ERDF projects.

This evaluation reports on the progress of the Staffordshire Advanced Manufacturing, Prototyping, and Innovation Demonstrator Programme up to and including March 2023. The SAMPID service will continue to be delivered to beneficiaries until July 2023, with a focus on any lessons learnt and incorporating recommendations for the remainder of the Programme. It will also consider alternative funding available to support the programme beyond ERDF.

This report, and any supporting documentation, has been prepared in a format which meets the specific requirements of the Department for Levelling Up, Housing and Communities (DLUHC) Guidance.

The headlines:

- SAMPID is a highly regarded innovation service offering Staffordshire small and medium sized enterprises (SMEs) advanced manufacturing, prototyping, and innovation demonstrator facilities.
- The Programme achieves extremely high satisfaction ratings from its business clients: in our sample some 96% of respondents were satisfied with the service and support they have received through Staffordshire University.
- Business beneficiaries spoke highly of the project team and the academic staff engaged in their projects. SAMPID has played a transformational role in the development of many businesses.
- The SAMPID programme has earned considerable respect from stakeholder and referral agencies, with all those surveyed speaking positively about the programme, its benefits, and the delivery team.
- The uncertainty caused by COVID-19 and Brexit has had a significant impact on demand. Businesses have delayed strategic investment decisions due to uncertainty within the business climate.
- Partners, stakeholders and business beneficiaries highlighted that the Project Manager and the team were extremely passionate about the programme and all reporting and communication was exceptional.
- The Programme is seen by all as an effective and efficient way to encourage companies to prototype and carry out research and development in a low

cost/low risk manner.

- There are clear examples that the programme has encouraged Staffordshire businesses to invest in their own equipment, thus replacing outdated and inefficient equipment to drive up productivity.
- The programme has upskilled students, making them far more confident and employable.
- The Programme has responded to suggestions from the Interim Summative Assessment and made changes to the programme. One such change was to expand the part time Technician role to a full-time position.
- SAMPID plays an important role in fostering innovation and a research and development culture within the business community, as can be seen by their increased engagement and 100% of beneficiaries stating it has helped them in their business.
- The Programme is on track to achieve its contractual performance targets.
- The Programme is very reliant on its team: their individual personas were positively recognised by both clients and partners. This is both a strength and a weakness and action should take place to minimise any associated risks.
- The service demonstrates that there is a clear need to highlight the business case and to continue to provide workshops, case studies, University staff and students to support and encourage businesses to engage. Failure to do so would result in Staffordshire falling behind other counties.
- Thought needs to be given to a suitable tracking activity to demonstrate 'added value'. Currently the return on investment is limited to the ERDF funding output requirements. During our research it was evident that there were additional benefits to businesses over a longer period which are not reported.
- The service provides a valuable model for low risk, low-cost business engagement – part of its success is the fact that it resides within Staffordshire University which allows it to engage both academics and students to support the beneficiaries. However, in the future, some thought may need to be given on how such a service will be funded and whether there are any elements which lend themselves to commercialisation.

## 2.0 PROJECT BACKGROUND, CONTEXT AND RATIONALE

### 2.1 Project Background

Staffordshire University delivers the Staffordshire Advanced Manufacturing, Prototyping and Innovation Demonstrator (SAMPID) project which is designed to support eligible Stoke-on-Trent and Staffordshire Local Enterprise Partnership (SSLEP) Small and Medium Size Enterprises (SMEs) with:

- product design.
- prototyping.
- development of new physical products and product components.
- new product processes.

The University conducted a demand analysis covering businesses in the target sectors across the SSLEP area. The analysis demonstrated demand for the services proposed and identified that a lack of access to specialist advanced manufacturing facilities and knowledge in the area is a key barrier to innovation.

During the analysis the University provided details of existing complementary provision in the area, as well as current programmes running within the University to ensure there was no duplication in terms of the prototyping and product development to be offered within the targeted sectors.

The project is funded by the European Regional Development Fund (ERDF) under Operational Priority Axis 1: Promoting Research and Innovation investment in SMEs to enhance research and innovation infrastructure capacities, to develop innovation excellence and investment. Staffordshire University SAMPID project supports the following investment priorities:

1b - promoting business investment in research and innovation - developing links and synergies between enterprises, research and development centres and the Higher Education sector, in particular promoting investment in product and service development, technology transfer, social innovation, eco-innovation, public service applications, demand stimulation, networking, clusters and open innovation through smart specialisation - supporting technological and applied research, pilot lines, early product validation actions, advance manufacturing capabilities and first production, in particular in key enabling technologies and diffusion of general purpose technologies.

SAMPID is delivered through a dedicated advanced manufacturing and prototyping demonstrator facility based in the Mellor building at Staffordshire University. It aims to work with 50 SMEs across several sectors that would benefit from advanced manufacturing methodologies through 12-week collaborative projects. Each individual project is led by a

Prototyping and Innovation Consultant with support from a specialist academic relevant to the defined project.

The aim of the project is to improve the R&D and innovation capabilities of SMEs through the provision of access to advanced manufacturing facilities and expertise based at Staffordshire University.

The facility contains pieces of advanced manufacturing equipment including 3D metal printers, a robotic arm and probe station. Eligible SMEs have access to this equipment through a booking system and are supported by a dedicated Project Technician on site who provides inductions, training, and general support with the SAMPID machinery.

Support is also delivered through 12-week interventions where the SME has access to knowledge transfer through an allocated academic expert and prototyping consultant at the University. Successful SMEs are allocated a dedicated academic, selected based on the type and needs of the business. The support is led by demand from the SMEs and the intervention is project managed with standard project management methodology being deployed. They work together on delivering an agreed project over the twelve-week period; completing a case study at the end and where necessary being referred to a relevant support programme.

The project also aims to develop an advanced manufacturing cluster, bringing together a group of SMEs to share research, innovations, and market challenges; holding regular development meetings at the University and supported by large companies. This aligns with the Industrial Strategy and the reported need for 'Innovation Clusters'. It should be noted that this part of the project had been delayed due to COVID restrictions but is playing a role in the University's Engineering Industrial Strategy Board.

The SME journey for engagement follows the timelines below:

Following an eligibility assessment – with ERDF criteria being reviewed - the SME completes a full application and strategic fit which is assessed. Strategic fit is assessed through:

- Level of innovation
- Potential to deliver new products (to company and market)
- Propensity for the creation of new jobs
- Market
- Potential for growth in turnover and profit
- Efficiency gains
- Alignment to Local Industrial Strategy (LIS)

The eligibility check normally takes between 5 to 10 working days. Once approved the applicant is asked to complete a full application which is reviewed within 10 working days and presented at the Operational Board. Once successful, live project intervention for 12 weeks takes place. Following the 12-week intervention there is a full review, and a case study is completed.

## **2.1 Context and Rationale**

The context at the bid submission for SAMPID was that according to The Institute for Manufacturing UK supply chains were relatively weak. Only 40% of parts used in vehicle assembly were UK sourced and only around 50% of parts in the UK were sourced in our country, whereas 90% of services were sourced in the UK. Partnerships with universities was noted as one area which can overcome these issues through new product development, access to skills, special expertise and assets such as demonstrators weaving robotics, additive manufacturing, AI, data and visualisations through virtual and augmented reality to de-risk technology adoption to drive innovation in SMEs.

75% of UK companies were deemed to have a low productivity tail which is particularly the case for SMEs (Productivity Leadership Group). One of the reasons behind low productivity is low capital investment to support innovation and productivity gains (Industrial Strategy). 2015 data showed that 36% of surveyed companies introduced new products and only 25% innovated their processes. The challenge was particularly evident with Small and Medium Size Enterprises (SMEs) where UK SMEs lag behind on new product development and process innovation in comparison to other EU nations.

UK based SMEs were also behind with the adoption of automation technologies which impacts on and hinders their productivity and competitiveness. Ineffective or a lack of support to remove ambiguity and demonstrating/ showcasing what 'good' 'advanced' technologies look like plays a role in SMEs not investing in capital equipment (Made Smarter).

Although R&D and innovation are a key component towards retaining the UK's manufacturing position, the investments in these key areas are below that of other competing nations. One of the challenges that UK companies face is getting products to market as quickly as possible to gain and / or retain competitive advantage through innovation.

The lack of capital and new product development investments and absence of dedicated support in these areas impacts on SME competitiveness and on the productivity of the UK. This is a clear market failure. New product development and innovations can improve productivity; however, people's skills play a vital role, and the manufacturing sector has a substantial opportunity to improve productivity across the UK. Market failures, a lack of investment in skills, equipment and capital are key barriers for growth.



The Made Smarter 2017 report underlined demonstrators as key to showcasing what is possible, through the creation of communities of best practice and by creating the environment that enables new product development, testing and integration via dedicated and specialist advanced manufacturing 'sandpit' platforms.

Demonstrators support faster adoption of new technologies that will strengthen companies' competitive position, develop supply chains and remove stigma between humans and robotics where people can work alongside 'cobots', with automation focused low-level tasks and humans focus on high-level and creative tasks.

Staffordshire University undertook a market demand assessment as an online survey (as a methodology) in collaboration with the Staffordshire Growth Hub. This showed that out of total 42 surveyed companies:

- 90% confirmed that prototyping and innovation are extremely (60%) or very important (30%) to their business.
- 74% design new products in-house.
- 76% prototype new products of which 73% is done in-house.
- 67% stated that they have never invested in advanced manufacturing and / or prototyping equipment.
- As part of the new product development (design, prototyping, innovation) companies stated that the following areas are important:
  - 70% (extremely, very important, moderately) access to specialist prototyping facilities.
  - 87% access to relevant expertise.
  - 87% access to skilled staff.
  - 83% access to dedicated human resource to support new product development.
  - 83% ability to use new or existing materials in new ways.
- 87% confirmed that their new product development cycle is slow and that it could be improved through:
  - 77% access to specialist facilities.
  - 77% access to specialist prototyping expertise and skills.
  - 57% facilities proximity - we currently travel outside of Staffordshire LEP area to access prototyping facilities.
  - 73% access to materials development and testing facilities.
- 53% confirmed that current new product development cycle has a negative impact on their competitiveness.
- Only 23% of companies confirmed that their manufacturing process and techniques are 'fully or highly advanced'.
- 16% of companies stated that they would benefit from access to 3D metal printing
- 16% Automation – 5PLC and HMI systems with software development tools.

## Staffordshire Advanced Manufacturing, Prototyping and Innovation Demonstrator (SAMPID)

- 14% Metal printer for simulating manufacturing principles.
- 8% Plastic electronics – spin coating system.
- 8% Inspection camera system
- 4% Low carbon – gas turbine electrical generation system.
- 2% from Probe Station
- 72% of companies confirmed that Staffordshire currently lacked such facilities.
- 76% of companies stated that they would benefit from SAMPID project and same percentage confirmed that they would be interested in it thus providing immediate pipeline of beneficiaries.

In addition, Staffordshire is home to around ~41,000 companies out of which 98-99% are SMEs and over 3,400 of companies' class themselves as manufacturing / scientific / research (Bureau Van Dijk, 2019).

SAMPID therefore aimed to accelerate and merge new technologies such as robotics with manufacturing and digital to deliver the multiplier benefits effect and address the fact that SSLEP is ranked 35th out of 39 LEPs in terms of levels of innovation.

Source: Industrial Strategy, Made Smarter, Productivity Leadership Group.

### 3.0 PROJECT AIMS AND OBJECTIVES

SAMPID enhances the prototyping, new product development and innovation capabilities of SMEs through specialist cross-disciplinary support in modern and advanced manufacturing.

Support is provided to eligible SSLEP SMEs in the application of advanced manufacturing technologies including robotics, 3D printing, creative technologies (immersive and/or visualisation), electronics, product design and process improvement in industrial engineering. SAMPID support for SMEs leads to new and better performing products and increased utilisation of advanced and modern manufacturing methods, technologies and processes.

Such improvements drive growth of SMEs and enable them to enter new and grow within existing markets. Innovations in new product development and advancing their manufacturing practices also supports diversification into new supply chains.

The primary objectives are to:

- Introduce new and improved products in SSLEP SMEs through advanced manufacturing methods and techniques.
- Increase profit margins as a result of better performing products.
- Increased revenue and profits in SMEs leading to growth in regional output.
- Improve productivity through advanced manufacturing methods and techniques.
- Create high-value jobs requiring specialist skills, retain graduates in the region.
- Access to new UK and international markets for SMEs through new and improved products and manufacturing techniques.
- Increased competitiveness of SSLEP SMEs in national and international supply chains.
- Raise awareness of advanced manufacturing technologies in SSLEP.
- Improved SME productivity.
- Increased regional GVA output.
- Advanced manufacturing SME cluster in SSLEP.

## 4.0 METHODOLOGY

Baswich Business Services Ltd was commissioned, following a competitive procurement process, in July 2020. The procurement remit was to undertake an independent interim and final summative evaluation of the Staffordshire Advanced Manufacturing, Prototyping and Innovation Demonstrator in line with the Funding Agreement received by Staffordshire University from the Department of Communities and Local Government (now Ministry of Housing, Communities and Local Government). This funding agreement stipulated that as a condition of funding, Staffordshire University must procure an evaluation of the Programme, following guidelines specified by DCLG.

The Programme evaluation was completed by two experienced evaluation professionals: Jonathan Andrew and Adele Cope. Both have prior ERDF and summative assessment experience and used this experience to develop an assessment methodology that maximised the effectiveness of the research.

The interim Programme evaluation was completed by Baswich Business Services Ltd in December 2021 following the methodology agreed with Staffordshire University as part of the competitive procurement process. Therefore, the below methodology was also applied to this final evaluation report, to deliver consistency.

The methodology used for the interim and full evaluation was our well-established evaluation methodology agreed at the outset with the project management team. The research used both quantitative and qualitative elements.

The methodology comprised analysis of quantitative data of business and stakeholder feedback from support provided to businesses since the interim programme evaluation was completed.

As the Programme is funded through European Structural Investment Funds (ESIF), the approach has been adapted to comply fully with the requirements of a Summative Evaluation as set out by ERDF Fund Programme 2014-2020: Project Summative Assessment Guidance ESIF-GN-1-033. The summative assessment is intended to provide an update from the interim Programme Evaluation in terms of the Programme's performance in relation to project implementation, evidence of efficiency, effectiveness, and value for money.

The evaluation has also been conducted in such a way as to provide insights into, and evidence of whether interventions have worked (or not) and provide lessons for the future with a particular focus on how the Programme can be sustained in the future. This is important as the project evidence will be combined with national evidence of progress and impact to assess the overall impact and effectiveness of the ERDF operational programme across England.

The evidence will be used nationally to make the case for the delivery approaches in the future and make the case for future funding.

This evaluation has been constructed around the following stages:

- Stage 1 – Document Review and Development of Evaluation Tools

The existing documentation was reviewed. The key indicators of the Programme were clearly defined, and the Logic Model was updated to reflect the range of services available to the businesses and the objectives and outputs of the Programme.

The information was used to:

- Assess the Programme's activity and value for money, and progress since the interim evaluation.
- Determine what and how to gather the necessary information to demonstrate Programme impact.
- Develop interview tools to use with beneficiaries, partners and stakeholders in a way which would fill any gaps in available information, test findings and provide qualitative impact on businesses on the value of specific activities.

- Stage 2 – Business, Partner and Stakeholder Interviews

It was agreed that analysis of the business testimonials would be used together with an online questionnaire to all organisations that have accessed the programme since the Interim Programme Evaluation was completed.

Online interviews were undertaken with stakeholders to explore the nature, extent and value of the partnership working, what had gone well and what had not gone so well and why, as well as where there was scope for change or improvement.

- Stage 3 – Reporting and Dissemination

The final report has determined the range of hard and soft evidence to provide an update on the achievement, outcomes, impact, and the context within which the Programme sits. The Programme's statistical data has been presented where required in both table and graphical format with appropriate commentary.

Interview intelligence has looked at various elements of the Programme's processes and successes to facilitate the development of relevant sections of the report. Where possible, we have supported outcome information with brief and anonymous examples. Evaluation reports can sometimes be difficult to digest, so to make the report as accessible and valuable as possible, we have included an executive summary which includes key recommendations.

#### 4.1 Key Research Questions

The business beneficiaries of the Staffordshire Advanced Manufacturing, Prototyping and Innovation Demonstrator were sent an online questionnaire to provide feedback on the following questions:

- What is your company size?
- Did a representative from Staffordshire University hold an initial meeting with you to discuss your needs? If so, how would you rate the experience?
- Did you meet (either virtually or in person) with a relevant Staffordshire University academic team member and a Research and Innovation Consultant (student) to discuss your project in detail?
- Once the project started, how satisfied were you with
  - The support from the SAMPID project team?
  - The input from the University's academic staff?
  - The support from your Research and Innovation Consultant (student)?
- Did you utilise the advanced manufacturing and prototype equipment and associated materials provided by Staffordshire University?
- How satisfied were you with the advanced manufacturing equipment and materials provided by Staffordshire University?
- Has the Staffordshire Advanced Manufacturing, Prototyping and Innovation Demonstrator Project helped your business?
- Has your project been impacted and/or changed as a result of Brexit?
- Did Covid-19 and associated restrictions impact on your use of the SAMPID facilities for your project?
- Overall, how was your experience of the SAMPID project?
- How likely would you be to recommend the SAMPID service offered by Staffordshire University to other businesses?

The online questionnaire was supplemented with a more in-depth telephone interview to understand and gain further feedback on the answers received to the questions outlined above.

## 5.0 PROJECT ACHIEVEMENTS

### 5.1 Project Achievements

The project contract started on the 1<sup>st</sup> of November 2019 with activity due to end in December 2022 and a financial completion date of the 31<sup>st</sup> of March 2023. This end date was extended to the 31<sup>st</sup> of July 2023 as per Project Change Request submitted on 27<sup>th</sup> of June 2022 and approved on 10<sup>th</sup> of August 2022.

The project aims to achieve the following outputs:

- 50 enterprises supported (C1 and C4 outputs).
- 5 new enterprises supported (C5 outputs).
- 8 jobs created (C8 outputs).
- 50 enterprises supported to cooperate with a research institution (C26 outputs)
- 10 enterprises supported to introduce new to market products (C28 outputs).
- 12 enterprises supported to introduce new to firm products (C29 outputs).

### 5.2 Project Outputs and Current Results Table

As of 31<sup>st</sup> of March 2023 the project has achieved the following results against target:

#### Project Outputs & Performance Claimed to Date

Indicator	Targets		Performance at Time of Evaluation (up to and including Q1 2023)		Projected Performance at Project Closure		Overall Assessment (RAG)
	Original	Adjusted (If relevant)	No.	% of Target	No.	% of Target	
Expenditure (£m)	£1,774,850		£1,510,936.20	85%	£1,683,647.52	90%	
C1: Number of Enterprises Receiving Support	50		40	80%	50	100%	
C2: Number of enterprises receiving grants	N/A	N/A	N/A	N/A	N/A	N/A	N/A
C4 Enterprises receiving non-financial support	50		40	80%	50	100%	
C5 Number of new enterprises supported	5		5	100%	6	120%	

C8 Employment increase in supported enterprises	8		10	125%	10	125%	
C26 No. of enterprises co-operating with Research Institutions	50		40	80%	50	100%	
C28 No. of enterprises supported to introduce new to market products	10		5	50%	10	100%	
C29 No. of enterprises supported to introduce new to the firm products	12		13	108%	13	108%	

*Source: Figures provided by the SAMPID project team as of the 31 March 2023*

### 5.3 Project Spend

**Project Spend Table showing profile, Project Current and End Project Estimate Spend**

<b>Programme TOTAL</b>	<b>Profile to Claim 14, Q1 2023</b>	<b>Project End Estimate</b>	<b>Notes</b>
Capital	£522,865.68	£522,865.68	
Salaries	£653,955.77	£760,674.09	University staff (PM, EP, Academics etc) and students
Marketing	£7,104.62	£10,000	
Other Costs	£220,254.62	£255,532.56	Materials, hospitality, travel, professional fees, PhD stipends and spend etc
Professional Fees	£6,900	£15,500	Summative Assessment
Overheads	£99,843.79	£119,075.19	FRIC
<b>Total</b>	<b>£1,510,924.48</b>	<b>£1,683,647.52</b>	<b>Variance: 5% (£91,202.48)</b>

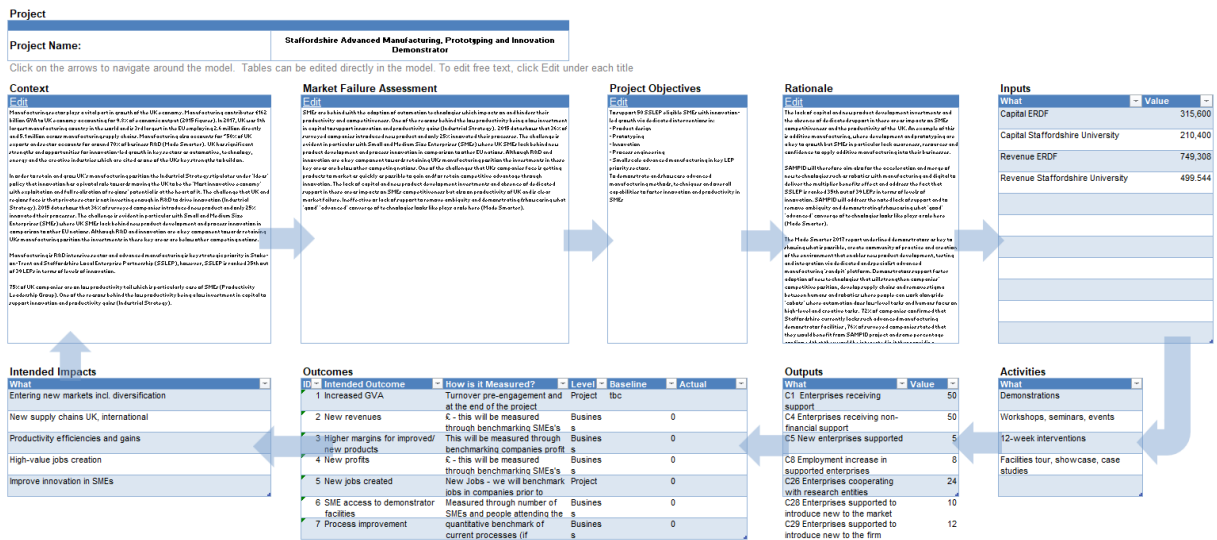
*Source: Figures provided by the SAMPID project team as of the 31 March 2023*



## 5.4 Assessment of Impact by Aims, Objectives and Results

The Programme aims and objectives can clearly be seen in the Staffordshire Advanced Manufacturing, Prototyping and Innovation Demonstrator Logic Model (diagram 1 below). The full project bid highlighted the following objectives:

- 50 enterprises supported (C1 and C4 outputs).
- 5 new enterprises supported (C5 outputs).
- 8 jobs created (C8 outputs).
- 50 enterprises supported to cooperate with a research institution (C26 outputs)
- 10 enterprises supported to introduce new to market products (C28 outputs).
- 12 enterprises supported to introduce new to firm products (C29 outputs).



## 5.5 Performance Against Contract

The latest Project Change Request was submitted by Staffordshire University to DLUHC in June 2022 and approved in August 2022. The request was for the project to be extended. The practical completion date was originally 31<sup>st</sup> December 2022 which was extended until 30<sup>th</sup> June 2023. The financial completion date was originally 31<sup>st</sup> March 2023 and was extended until 31<sup>st</sup> July 2023.

Project performance can be seen in table 5.2 Project Outputs and Performance. As of the 31<sup>st</sup> of March 2023, the project has achieved:

- 85% of Revenue Defrayed
- 80% of their C1 and C4 Business Assists
- 100% of their C5 New Businesses Created

- 125% of their C8 Jobs Created
- 80% of C26 No. of Enterprises Co-operating with Research Institutions
- 50 % of their C28 No. of Enterprises Supported to Introduce New to Market Products
- 108% of their C29 No. of Enterprises Supported to Introduce New to the Firm Products

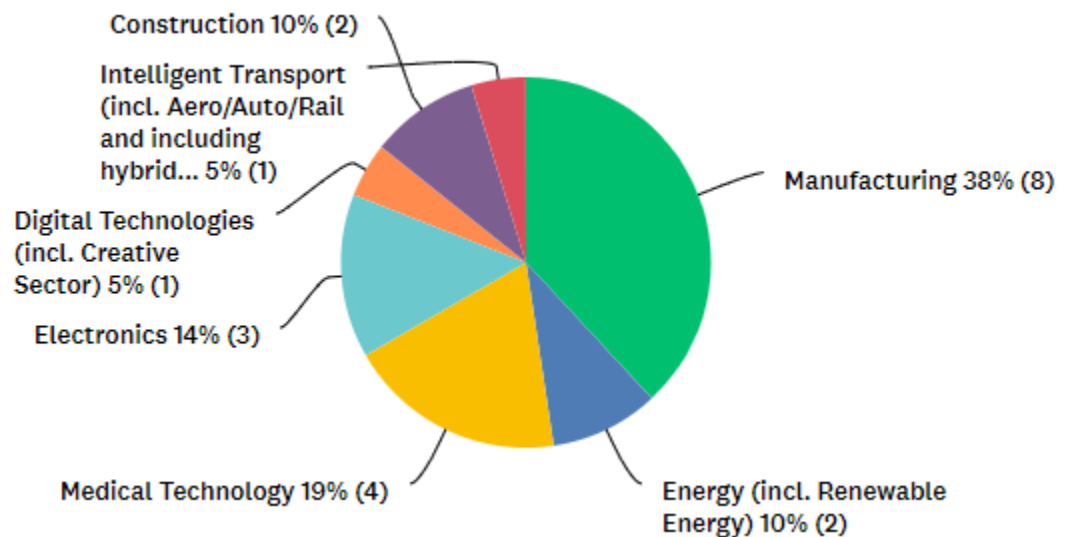
The forecast for project closure is full or over achievement of all outputs.

## 5.6 Beneficiary Feedback

Of the 40 businesses that have completed projects to date, a total of 27 responses were received from business beneficiaries, giving a response rate of 67.5%.

### 5.6.1 What Is Your Company Sector?

Of the 27 responses received, a total of 21 companies provided details relating to their business sector, as shown in the chart below:



The majority of responses received were from businesses in the manufacturing sector, scientific and technical activities sector, closely followed by wholesale and retail trades and charities, arts, entertainment and recreational focused businesses.

The professional services category is wide ranging, covering businesses including graphic design, business consultancy and other businesses where time and knowledge is their unique selling proposition.

The table below shows the number of responses received by sector:

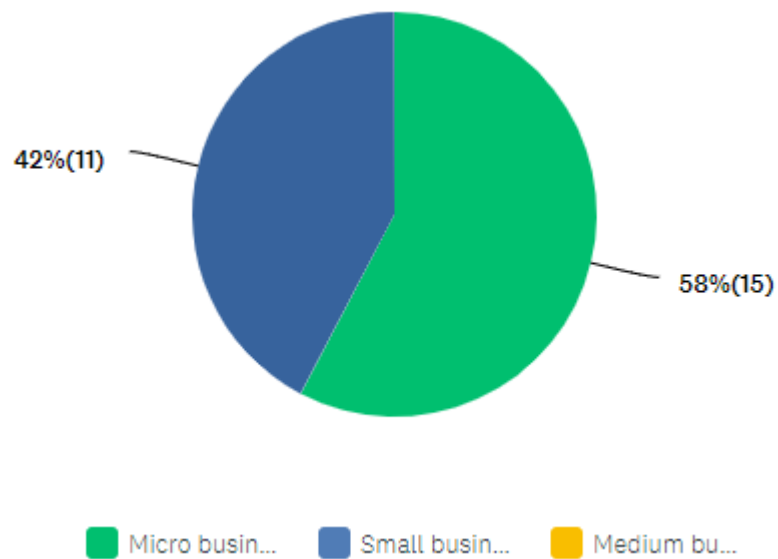
Sector	Responses (%)	Responses (No.)
Manufacturing	38	8
Energy (incl. Renewable Energy)	10	2
Medical Technology	19	4
Construction	10	2
Electronics	14	3
Digital Communications (incl. Creative Sector)	5	1
Food & Drink Sector	0	0
Smart Textiles	0	0
Intelligent Transport (incl. Aero/Auto/Rail and including hybrid / electric vehicle design, electric motorsport and associated supply chains and product components)	0	1

Other respondents to the online questionnaire identified as being in the following sectors:

- Water hygiene
- Emissions monitoring
- Innovation for carbon capture
- Design engineering

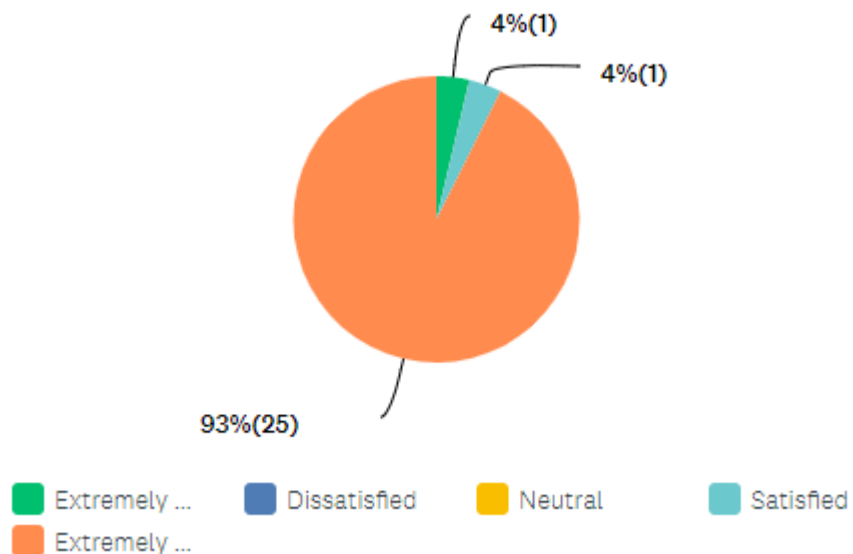
#### 5.6.2 What Is Your Company Size?

A total of 26 responses were received to this question. The chart below demonstrates all respondents categorised themselves to be either micro businesses (58%) with fewer than 10 employees, or small businesses (42%) with between 11 to 49 employees.



**5.6.3 Did a representative from Staffordshire University hold an initial meeting with you to discuss your needs? If so, how would you rate the experience:**

Every respondent to the question asking whether a representative from Staffordshire University had held an initial meeting with them to discuss their needs confirmed that they had done so. When asked how they would rate the experience of that initial meeting, 93% were extremely satisfied with the quality of the meeting, 4% (1 respondent) were satisfied and 1 respondent was extremely dissatisfied



Upon probing respondents further as to the reasons for their responses, a wide range of feedback was received. It is evident that the level of satisfaction with the initial support received is directly linked to the professionalism and knowledge demonstrated by the University representatives in that initial meeting, combined with a genuine interest in the business and their requirements. Examples of some of the comments received from respondents are illustrated below:

*"Extremely efficient and professional and fully understood the requirements of our business."*

*"We approached this subject with a clear goal and identified opportunities to bring together technical know-how with practical knowledge to address our requirements."*

*"Rachel was great at understanding our business and needs straight away, we are very lucky to have worked with her."*

*"Very happy with the support received from Staffordshire University's staff. They were all very helpful and understanding of our business needs."*

*"The team at Staffordshire University were nothing but helpful and lovely! A pleasure to work with."*

*"Rachel Wood who was our representative instantly understood our ideas and needs, she went to extra lengths by asking questions and really digging into the project."*

*"Discussion detailed and informative - everything very clear. Support provided excellent."*

*"Rachel came to our offices explained what was possible and how things worked. Everything she said was correct and happened as she said it would."*

*"Options well explained."*

*"Great communication and involvement in the project to ensure we got the right candidate and that the funding was suitable for us."*

*"They understood our business needs and have greatly assisted a student to expand their knowledge in the design and manufacture of equipment. Practical experience is hard to come by and invaluable to progressing oneself and industry."*

*"Discussed the envelope of potential support to aid the development of our technology - helped us to identify specific avenues which we wanted to pursue in respect to support."*

*"I felt that the representative spent time to get to know our needs and really understand them. They prepared the first draft of paperwork for me as well which was extremely helpful for a time-poor person like me and also demonstrated the extent to which they understood our needs."*

*"The SAMPID project provided me with advice, encouragement and a professional management of my new product."*

*"The team that started this and carried it through were outstanding, open, honest and extremely professional."*

**5.6.4 Did you meet (either virtually or in person) with a relevant Staffordshire University academic team member and a Research and Innovation Consultant (student) to discuss your project in detail?**

Every respondent answered this question, and each respondent confirmed they had met, either virtually or in person, with a Staffordshire University academic team member and with a Research and Innovation Consultant to discuss their project in detail.

Furthermore, when asked how satisfied they were that the academic staff member and Research and Innovation Consultant (student) fully understood the requirement of the business, all except two respondents were either extremely satisfied or satisfied that their requirements had been understood. One respondent was neutral, and one respondent was very dissatisfied.

When asked specifically about the University's academic team and the Research and Innovation Consultants, feedback included:

*"The University was really responsive and supportive throughout the whole process. It went far better than we could have ever anticipated and the support we had has made a real difference to our business."*

*"Prompt response to enquiries and actioning of requests."*

*"The response was second to none. I was kept informed all the way as to where we were with the project."*

*"Very quick and effective."*

*"Time frame set out clearly and kept to."*

*"The application was considered quickly, and I was kept informed of progress throughout the process, which was excellent. Even if it had not been accepted, I would have considered this to be good service."*

*"In view of the difficulties that COVID presented; I was very pleased with the response."*

*"The team that started this and carried it through were outstanding, open, honest and extremely professional."*

*"Again, everything happened when we were told it would and we had plenty of help with the paperwork."*

*"This project has highlighted to the University that they need to have more suitable 3D printing devices, that can produce larger items without distortion."*

*"This is taking into account a hold-up relating to needing to wait for a KRISP project to be undertaken and completed by Keele Uni before the SAMPID project could start as it built on the KRISP output."*

There was only one piece of negative feedback received in answer to this question:

*"The academic member of staff was excellent, but unfortunately the student we had was very poor."*

**5.6.5 Once the project started, how satisfied were you with?**

- a. The support from the SAMPID project team?**
- b. The input from the University's academic staff**
- c. The support from your Research and Innovation Consultant (student)?**

Each of the 27 companies who responded to the evaluation answered this question.

- a. The support from the SAMPID project team

Every respondent except two stated that they were extremely satisfied with the support they received from the SAMPID project team. One respondent stated they were satisfied, and one respondent stated they were extremely dissatisfied, but did not elaborate on this response.

- b. The input from the University's academic staff

Of the respondents, 78% were extremely satisfied with the input they received and 19% were satisfied with the input they received. Only 1 respondent (3%) stated they were extremely dissatisfied with the input from the academic staff.

c. The support from your Research and Innovation Consultant (student)

A total of 82% of the respondents stated they were extremely satisfied with the support they received from their Research and Innovation Consultant (student) with a further 11% being satisfied. Two respondents (7%) stated they were extremely dissatisfied with their Research and Innovation Consultant (student).

One company acknowledged they were part of the recruitment process for the student and stated that when they realised things were not working as they should, believed they should have flagged the issue and requested an alternative student, rather than persevering in the knowledge that they were unlikely to achieve their objectives.

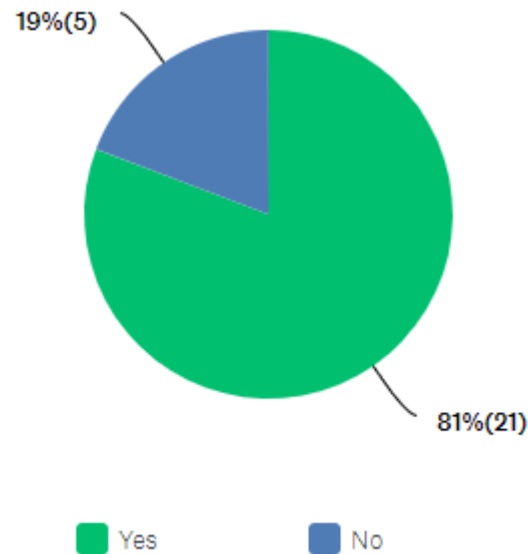
However, for the majority of beneficiaries, the Research and Innovation Consultant (student) was a real benefit and there are instances of students being recruited by the company they were engaged by.

*"We interviewed four students. Some were unprepared and had not done any research on our company. The student we selected was motivated, enthusiastic and brought a younger, fresh pair of eyes to the project, frequently making recommendations that were sensible and appropriate to the development of our project. I would absolutely recruit her into the business with no hesitation, she made me think in a different way and that brought real benefits."*

**5.6.6 Did you utilise the advanced manufacturing and prototype equipment and associated materials provided by Staffordshire University?**

26 out of the 27 respondents answered this question with 21 (81%) confirming they had used the manufacturing and prototype equipment and associate materials provided by Staffordshire University, as shown in the chart below:





Further feedback from respondents elicited the following observations:

*"We were very impressed by the facilities that were available to us, that we wouldn't otherwise have been able to access. Until this project, we didn't realise the University had this equipment and it made a real difference to our business."*

*"Staff did everything they could, but we were let down by our student so didn't get the maximum benefit from the prototype equipment."*

*"We had use of the 3D printer which enabled us to make a model ready for prototype testing, this ensured we did not waste money or time."*

*"I was very impressed with the 'state of the art' equipment."*

*"Look forward to doing this in future - if possible."*

*"The design stage took longer than expected."*

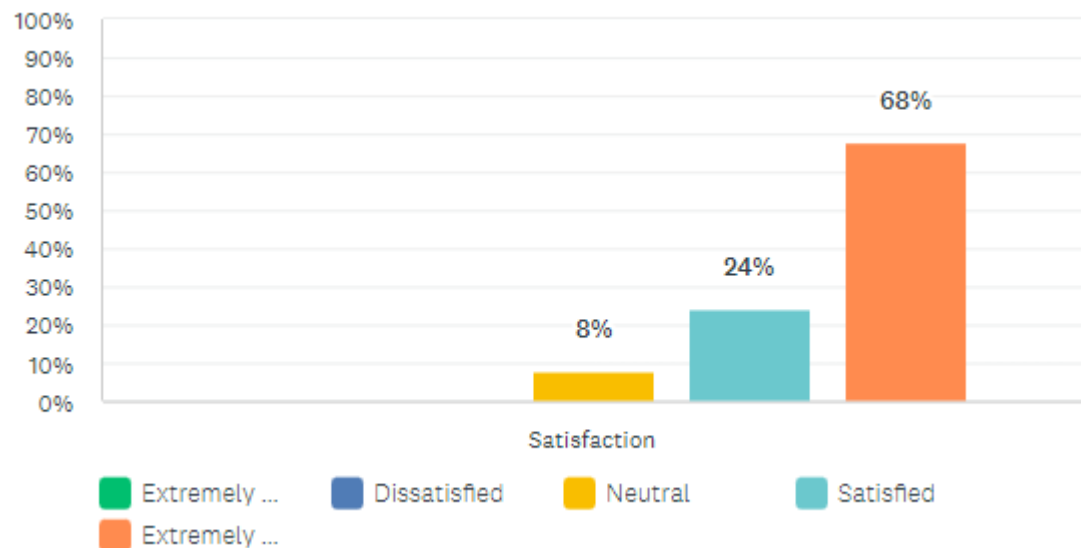
*"Yes, the Company has, the only problem has been the distortion in the products that have been produced. I was shown personally that some machines were not capable of making small items and that other machines could not produce larger items without distortion."*

*"Strimplates through their Research and Innovation person utilised 3D printing equipment and also CFD modelling of our system."*

*"Utilised the large robot for our prototyping project. I think it's called "Alan" after Alan Turing?"*

**5.6.7. How satisfied were you with the advanced manufacturing equipment and materials provided by Staffordshire University?**

A total of 25 responses were received to this question. The table below demonstrates the usefulness of those responses, as rated by respondents:



The table demonstrates that 68% of respondents were extremely satisfied with the equipment and materials provided by the University, with a further 24% satisfied. Only two respondents to this question responded 'neutral' when asked the question.

From the further feedback received, it is evident that one of the companies whose response was neutral arose as their product was not suitable, rather than any failings of the University's equipment or materials.

*"The equipment we used produced exactly what we wanted."*

*"The equipment used was way above anything that we have or could afford to purchase, so it was helpful and insightful to see it in action."*

*"The experienced staff clearly identified the most appropriate equipment and processes required."*

*"There was a waiting list to use the equipment which caused delays."*

*"We didn't make anything physical but used 2D and 3D computer software."*

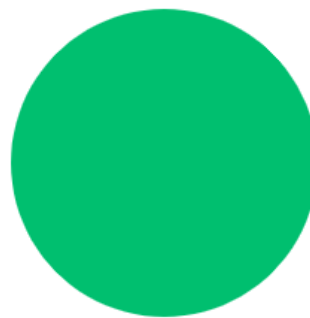
*"I felt the equipment was installed and maintained to a high standard, and the lab manager clearly had an interest and good knowledge of the equipment. I was also pleased that the University were willing to acquire additional hardware that we needed for the project, such as an ethernet-connected controller with I/O."*

*"We made superb progress from the start to the end of the program with support from the students and the staff and you should be very proud of them all."*

*"I am satisfied with what we achieved; unfortunately, it was not possible to do a full testing of my product. This was not the fault of anybody involved; it was just because my product was not suitable."*

#### **5.6.8 Has the Staffordshire Advanced Manufacturing, Prototyping and Innovation Demonstrator project helped your business?**

A total of 25 responses were received to this question, with every respondent answering positively to the question.



■ Yes      ■ No

Upon further questioning, the following feedback was provided:

*"We need to find a solution to the outstanding issues we found during the project, which means there aren't any benefits just yet."*

*"It has enabled us to move on to the next stage development of our business."*

*"Yes, we can see the pitfalls of our products and we can innovate from here to improve them."*

*"We are now developing a much more detailed CFD project with the Hartree Centre at Daresbury (Hartree being a National Centre for simulation / Digital / AI modelling. Without the CFD element of the SAMPID project it is not likely we would be considered by Hartree."*

*"It's too early to make that decision, but I'm pleased with how things are going so far."*

*"It was so good, we set on the student."*

*"We will have a new product to launch September 2022."*

*"It has helped us understand the cooling of our machines."*

*"A new engineer has been taken on and we now have a completed prototype product that should lead to greater sales due to a larger market the product is suitable for."*

*"Staffordshire University, plugged the gap we had in manufacture design and have enabled the Company to move forward quickly to manufacture and sales for both home sales in eliminating costly trenching to provide new/replacement underground services and Export the products for the benefit of the UK."*

*"The support has shown through CFD the mass transfer effect - and across some derivative ideas we have developed. The 3D printing has proven the route and potential for modularisation of the system for sizing to specific needs."*

*"It has raised awareness of the quality of Staffs University students within my company, which has led us to aspire to offer opportunities for placements and careers to them. I am also very pleased and proud to be getting engagement from the University and raising the awareness of a niche business like Promtek within the University community."*

*"Yes. I have a meeting in November with the largest roof tile manufacturers in Europe with a view to agreeing some kind of deal."*

*"We now have a route to market with a ground-breaking opportunity that if we get this right will create numerous jobs."*

#### **5.6.9 Has your project been impacted and/or changed as a result of BREXIT?**

All 27 respondents answered this question, with 90% stating that BREXIT had made no impact or changes to their project. 10% of respondents stated that BREXIT had impacted

their project, and that without support from the SAMPID project, it was unlikely that their project would have progressed.

*“There are now extra regulatory controls and costs that we have to contend with.”*

*“We had to wait to access the robot in the lab, so it did delay the delivery of the project a little bit, but it did not impact the quality of the result.”*

*“The SAMPID team responded in a way that allowed the project to continue.”*

**5.6.10 Did COVID-19 and associated restrictions impact on your use of the SAMPID facilities for your project?**

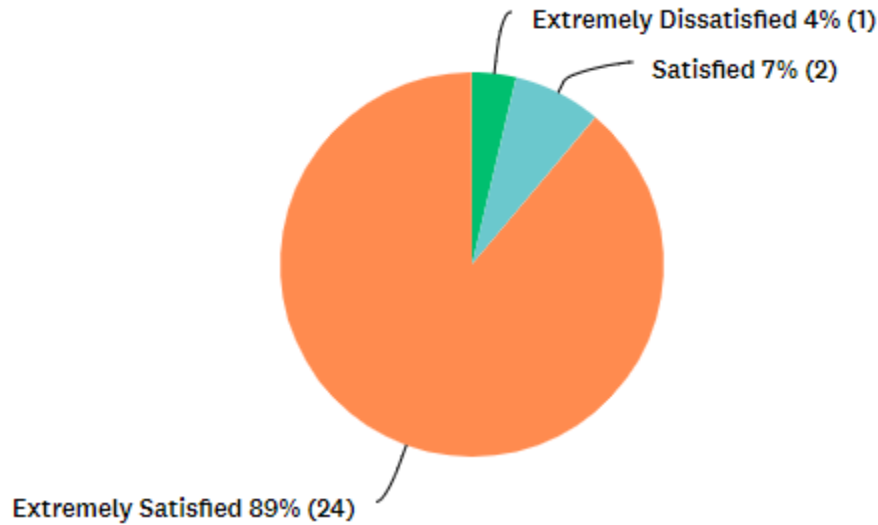
Again, all 27 respondents answered this question, of which 25 stated that COVID had no impact on their use of the SAMPID facilities for their project, suggesting that the University had suitable measures in place to ensure that the disruption caused by COVID was minimised. Of the two respondents who stated their project had been impacted, neither of them considered the delay to be unreasonable.

*“We had to wait to access the robot in the lab, so it did delay the delivery of the project a little bit, but it did not impact the quality of the result.”*

*“The SAMPID team responded in a way that allowed the project to continue.”*

**5.6.11 Overall, how was your experience of the SAMPID project??**

Every respondent answered this question, and 96% are either extremely satisfied or satisfied with SAMPID, with only 1 respondent stating they are dissatisfied with the project.



When questioned further about their experience, respondents made the following observations:

*"The overall service, attention to detail and willingness to understand our needs was first class."*

*"The University and staff have supported us throughout the project, I would recommend it to any business."*

*"The project has been well managed and very helpful, but the choice of student was poor (I was also responsible for selection). In hindsight, he should have been replaced but it was too far into the project to restart."*

*"Everything was amazing, I wish we could do it all again."*

*"The project was very well received - the SAMPID student was excellent and if we had been in a recruitment phase of our development, we would have asked him to join the business."*

*"The project has been a great learning experience for ourselves, and also Harry, our placement. I believe this is a great experience for Harry after he finishes University, and the company has a new innovative product that could save a lot of people's lives worldwide. I am eternally grateful to Rachel for all her support and guidance. The whole project ran so smoothly and on schedule. We have now employed Harry to the side of his degree."*

*"Project completed to a good standard - further development required to overcome an issue found."*

*"Everyone in the project has been helpful and prompt."*

*"It was excellent experience, COVID stopped our income because the Company normally works in places where people either congregate or live. So, work had to be curtailed. The SAMPID project allowed our moling projects to keep moving forward to create quality jobs and begin to Export."*

*"The projects has proven that modulisation of the hardware is possible with a route to metal 3D printing. The CFD has gone some of the way to prove how the Mass Transfer effect does what it does. The CFD has also proven the potential for an adaptation to the system which can be put in as an Innovative Step for the patent."*

*"We were very pleased to have a completed piece of work that will form the basis of a feasibility study and more detailed prototyping. This would have been impossible without SAMPID - the idea would still be a concept in my head, just a dream."*

*"I couldn't imagine how I would of got as far as a meeting with Europe's biggest roof tile manufacturer."*

*"The team that started this and carried it through were outstanding, open, honest and extremely professional."*

#### **5.6.12 How likely would you be to recommend the SAMPID service offered by Staffordshire University to other businesses?**

Every respondent provided an answer to this question and every respondent except one stated they were extremely likely to recommend the SAMPID service to other businesses.

Upon further questioning, respondents stated:

*"All personnel involved were incredibly helpful and knowledgeable, showing a full understanding of our needs."*

*"Our experience with the University, and the project, has been fantastic."*

*"An excellent service - we were provided with excellent support from start to finish!"*

*“Have better 3D printing machines more suitable for Industrial use.”*

*“As you get more successful, put support processes in place to make sure you maintain this excellent service even as demand increases and keep measuring your performance on this critical factor.”*

*“I am extremely proud to have worked with such a professional team.”*

*“You have no area's that I am aware of that you are falling short. In fact, you have set the bar very high for the next time. well done.”*

*“The staff at the University are very helpful and always tried to meet our needs.”*

## **5.7 Stakeholder Perceptions**

From the original 7 stakeholder contacts given to us, we were able to conduct in-depth interviews with 7 of them.

The stakeholders interviewed can be categorised as a cross section of those responsible for planning and delivering business support for Stoke-on-Trent and Staffordshire businesses locally, sub-regionally and regionally:

- Project Group Members.
- Operational Group Members
- Local Referral Agencies.
- Higher Education Institution staff.

We used a common semi-structured interview template with stakeholders as the basis of a broad-ranging discussion with each. As well as their experience of working with Staffordshire University and the SAMPID Project Team, we explored views of any gaps in the service, what might happen if the service ceased and whether it should be continued, and if so, how this may be achieved.

We found that the service is highly valued and is seen as an integral part of Stoke on Trent and Staffordshire business support by stakeholders and referral agencies alike. We heard nothing but praise for the professionalism of the service delivery with key members of staff complimented for their service delivery.

Everyone interviewed was impressed with the calibre of the service provided, the timeliness in which the service was delivered, the knowledge of the local and sub-regional business landscape and the practical opportunities provided for business engagement.



Stakeholders highlighted the value of the programme lies in its ability to provide businesses with a cost-effective and risk-free opportunity to test out their innovations using equipment which they do not have and that in many cases the cost would prohibit them from procuring. The project provides further value by providing additional labour to the companies in the form of skilled and knowledgeable innovation consultants through the students and academic staff.

In the interim evaluation some of the partners did express that they were concerned that there was some duplication in service via other universities, who were approaching businesses in Staffordshire. The universities mentioned were Wolverhampton and Greater Birmingham and Solihull. There was only one mention in the follow up interviews that the Wolverhampton Smart Concept Fund, had just re-opened. This did not impact on demand or performance of the SAMPID project.

In the interim report most of the partners highlighted the need to share information and improve the marketing via written case studies. It should be noted that stakeholders appreciated that this was due to COVID. Since the interim report the team have created and provided us with case studies, a video case study and testimonials from both the businesses and the students. The student testimonials have been included below.

The need to close the loop on business referrals was mentioned in the interim report and Intermediary agencies since reported that they felt that they were being kept up to date with client progress now but still felt that the clients were not necessarily being referred back into the Growth Hub for further support.

Partners continued to praise the meetings, highlighting that they were well planned, information and reporting was of a high standard and highly praised was the opportunity to hear first-hand from a student taking part in the programme. Partners appreciated the comprehensive insights, data analysis provided at the programme and operational meetings.

It should be noted that COVID and Brexit had delayed business engagement at the beginning of the project, but the team used the time to set up a very robust programme and market the opportunity and were therefore able to catch up once restrictions had been removed. The first project did not start until the 10<sup>th</sup> of January 2021.

In the interim report It was noted that the uptake and number of student applications to take part in the programme was disappointing considering what a great opportunity it is. Following on from proactive presentations from the Programme Manager to students on the benefits of applying, the take up has been greatly improved and there have been no shortages of student applications. Some of this success was also attributed to the use of student ambassadors who had already completed SAMPID projects.

Whilst it has not been possible to interview students as part of the stakeholder interviews for the full Summative Assessment report. Below are some testimonials demonstrating their positive feelings towards the programme and the benefits.

*"I would recommend the SAMPID project to all students as a way to improve knowledge and gain real industry experience. During my time with Efficiency Group, I was able to practice and improve my CAD modelling and CFD analysis skills in a business environment which will be beneficial to my future career."*

**Hajar Nour, Prototyping and Innovation Consultant, Efficiency Group Ltd**

*"You not only gain more technical experience but also build a relationship with the company and learn how to communicate and interact in such scenarios. You get to use the lab facilities which is great, and you get to learn skills in industry that you wouldn't learn on your course alone. I would definitely recommend the SAMPID project to other students looking to gain industry experience."*

**Shruti Chakraborty, SAMPID Prototyping and Innovation Consultant, Promtek Ltd**

*"This SAMPID placement undoubtedly had a significant impact on my confidence and the experience I gained through working on the project. In actuality, I believe that discussing my experience using the advanced technology in the interview was important in helping me secure this position."*

**Laszlo Banyik, SAMPID student for Powelextrics Ltd who has gone on to gain full time employment.**

*"It has been a great experience and I'd definitely encourage people to apply for the SAMPID jobs!"*

**Luke Cox, Prototyping and Innovation Consultant, Mirage Ltd**

*"SAMPID has been brilliant for me, best thing to have happened to me during my education, it's given me so much experience and a full-time job!"*

**Harry Griffiths, Prototyping and Innovation Consultant, Partnership Medical Ltd**

A further suggestion for future delivery was that the programme could benefit from allowing flexibility with the timescales and intervention levels in terms of support to the businesses. This would allow some companies to access less than 12 weeks and others to access more, if

required. There could also be the addition of private contribution in the form of match funding for the more intensive projects.

All stakeholders were complimentary about the value that the service added to their work but stated that the referral process could be more reciprocal with Staffordshire University referring companies back to the Growth Hub for further support. However, a few of the stakeholders admitted that these referrals may be taking place, but they are unaware by the time the referral comes via the Growth Hub.

In the interim report it was suggested for future projects of this type it would be advisable to ensure that there is at least one full time technician, if not more because of the value they add to the projects. This suggestion was considered and the one 0.5 FTE technician in post was taken on full time for the remainder of the programme. All stakeholders agreed that this was beneficial.

Several partners saw scope for further joint working e.g., delivery of joint events and representation at events promoting the LEP area. Webinars have been delivered to promote SAMPID, but these have not included partner organisations. There have also been several events delivered in partnership, but these were only possible once Covid restrictions had been lifted.

The peer-to-peer mentoring group between the PhD students and the undergraduate students on the industry projects was deemed to add a great deal of value to both the students and the business projects. This group greatly benefited the students and businesses. The students learnt new skills and the businesses benefited from the student gaining fresh perspective on any issues they were facing.

All the stakeholders both at the interim report and full report expressed that they would continue to support the programme and would welcome the continuation of the programme beyond the scope of the project. However, since the interim report the funding landscape has and continues to change. The Shared Prosperity Fund has been allocated to local authorities with a cap on administration costs of 4%. As such, it is unlikely to be a viable route for innovation projects due to the high delivery costs. The stakeholders felt that Innovate UK would be a more viable route but that this would limit the type and size of companies that could be supported.

It should also be noted that Staffordshire's Business Innovation Centre is in the process of closing and therefore there will be a huge gap in innovation provision in Staffordshire, if the Universities are not provided additional funding to continue their services.

It was highlighted in the interim report that the businesses continued to engage with Staffordshire University beyond the lifespan of the project. The University has continued to support businesses in the submission of UK Innovation grants for business beneficiaries and accessing Knowledge Transfer Partnership (KTP). In addition, companies have looked to purchase their own equipment because of a successful product innovation and students have gained employment due to their increased confidence and practical experience.

Positive outcomes which have been highlighted are:

- Harry Griffiths, former Prototyping and Innovation Consultant on SAMPID has won a Special Recommendation for 'Best Final Project' in his degree around the work carried out with Partnership.
- Medical Ltd. Partnership Medical Ltd have also invested in two plastic 3D printers due to the project.
- Crib Gogh Ltd kept on their SAMPID student on a freelance basis after the project had finished.
- Rovoscope Ltd took on their student intern on a full-time basis.

The partners continued to praise the project management team, stating that their approach, communication, and support was highly valued and to be applauded. It is especially important to note how well the team have engaged academics into the process with specific groups set up. Also highlighted was the way that business expectations were well managed, highlighting what could be achieved within the timescale.

The engagement of commercially minded staff to the project was deemed as one of the key reasons for its success.

## **5.9 The Programme Board**

A Programme Board was established as per the application to provide oversight on the project. The board is accountable and responsible for all financial decisions, outputs, the direction and parameters of the project and ensuring suitable and sufficient frameworks are established to achieve the project's objectives within the guidelines and legislation of the grant funding agreement.

The Programme Board is composed of the following individuals and meets a minimum of 6 times per year:

- Head of Employer Partnerships and Apprenticeships

- Programme Manager (Project Lead)
- Management Accountant (Financial oversight)
- Head of Project Delivery
- Project and Portfolio Officer (PPO)
- Dean of School of Creative Arts and Engineering
- External Growth Hub representative (links to partner activity)
- Head of Technical Services

The Project Board reviews each proposed SAMPID project to ensure strategic fit with the project scope and priorities such as its outputs, level of innovation, potential new/improved products (new to market, new to company), propensity for new job creation, markets, potential for growth in T/O and profits and supply chains, efficiency gains, alignment to strategic priority areas of the SSLEP.

The Project Board also receives progress reports on project milestones, objectives and outputs and budgetary performance. The group review and authorise project claims and monitor risks and issue logs and authorise any remedial action.

Monthly meetings were due to take place in person and some have done so but due to the Covid situation some have been conducted virtually. This has not impacted the project and has encouraged full attendance. It has also had the additional benefit of not holding up projects if they come in after or before a board meeting, as they can still be considered.

## 6.0 CROSS CUTTING THEMES

### 6.1 Equal Opportunities

The project promotes equal opportunities and non-discrimination. Staffordshire University and all delivery partners adhere to the principles and processes set out in EU and UK equality legislation. The University is committed to building a diverse and inclusive community and has a range of policies and statements to support this aim and legislative requirements, with annual equality monitoring and data collection ([http://www.staffs.ac.uk/support\\_depts/equality/policy/](http://www.staffs.ac.uk/support_depts/equality/policy/)).

As the project team operate within Staffordshire University, they adhere to the University's policies and procedures on equality of opportunity and diversity. These are a mandatory element of the University's staff induction procedure, along with additional training courses e.g., unconscious bias.

The project has adopted the following principles to further integrate promotion of equality into the preparation, implementation, monitoring and evaluation actions of the project:

- no exclusion on the grounds of protected characteristics.
- projects are designed to meet the needs of all potential participants.
- services are responsive to the needs of all communities and underrepresented groups.
- support is targeted towards under-represented communities where relevant.

The Project team ensures that equality is embedded in all relevant project materials and paperwork. The principle of equal opportunities is embedded into supplier selection, procurement arrangements, contract management and monitoring.

At Project level, the University regularly evaluate, the equality and diversity of project beneficiaries and stakeholders; and take measures to provide the best balance possible. An equality impact analysis is required for all project activity within the University to identify risks and mitigating factors to prevent discrimination through awareness or access. This analysis takes place at full application utilising the University's organisational guidelines available at: [http://www.staffs.ac.uk/support\\_depts/equality/policy/analysis/index.jsp](http://www.staffs.ac.uk/support_depts/equality/policy/analysis/index.jsp).

Staffordshire University provides a range of services, equipment and support for disabled students and staff. This includes equipment to help individuals with visual and physical impairments, as well as specialist software for individuals with sight issues or dyslexia. Libraries and IT centres are fully accessible to wheelchair users. All University buildings are accessible with equipment such as hearing loops, etc and all documentation considers guidelines for visual impairment.

The project is delivered mainly from University facilities, with business outreach and engagement activities being undertaken mainly on University premises providing access to these facilities and equipment. The University can provide adapted communication/promotional materials, through the University's disability team.

## **6.2 Environmental Sustainability**

The project is delivered in line with the principle of sustainable development, including the aim of preserving, protecting and improving the quality of the environment as well as the need to prepare for expected changes to the environment and climate. Staffordshire University as the Programme Lead is legally obliged to ensure compliance with the standard framework of both European and UK environmental controls and carbon reduction targets.

The University meets these requirements through specific organisational policies and procedures ([http://www.staffs.ac.uk/support\\_depts/environment/policies/index.jsp](http://www.staffs.ac.uk/support_depts/environment/policies/index.jsp) ) covering several aspect areas including strategies for carbon reduction and sustainable travel with a tool for suppliers to access for sustainability support.

The University also has a sustainable development procurement policy:

[https://www.staffs.ac.uk/assets/sustainable\\_development\\_procurement\\_policy\\_tcm44-86774.pdf](https://www.staffs.ac.uk/assets/sustainable_development_procurement_policy_tcm44-86774.pdf).

At a project level, to minimise any negative impact on the environment the University seeks to implement sustainable improvements through the preparation and delivery of a sustainable development plan. This outlines how they review project policies and procedures and the impact on the environment throughout project delivery. The project team works with existing ERDF project teams to identify best practice and provide reports on lessons learned and identify good practice examples from their activity.

The project specifically seeks to support and maximise positive environmental impacts and mitigate negative impacts through:

- Wherever possible hold seminars in buildings which minimise carbon emissions – such as Staffordshire University's Science Centre.
- Wherever possible hold seminars in locations which are accessible by public transport.
- Minimise the number of project meetings with the use of video conferencing to reduce scope 3 carbon emissions associated with travel.
- Wherever possible use suppliers with ethical e.g. Fairtrade credentials • Use electronic communication and the web as primary communication tools of communication associated with the project.
- Supporting/encouraging “green” solutions from companies (tech/services/products) through the project (e.g. application of the low carbon gas turbine proposed).

- Signposting participating beneficiaries for specialist external expertise around sustainable practices through local support networks (e.g. Staffordshire Business Environmental Network, Sustainability West Midlands, Growth Hub).

The commitments to sustainable development and the action plan requirements are part of the induction process for any new staff, along with a briefing on the sustainability policies of Staffordshire University and local initiatives e.g., car share scheme, cycle to work scheme.



## 7.0 PROJECT SPEND

### 7.1 Project Spend Table

**Project Spend Table showing profile, Project Current and End Project Estimate Spend**

<b>Programme TOTAL</b>	<b>Profile to Claim 14, Q1 2023</b>	<b>Project End Estimate</b>	<b>Notes</b>
Capital	£522,865.68	£522,865.68	
Salaries	£653,955.77	£760,674.09	University staff (PM, EP, Academics etc) and students
Marketing	£7,104.62	£10,000	
Other Costs	£220,254.62	£255,532.56	Materials, hospitality, travel, professional fees, PhD stipends and spend etc
Professional Fees	£6,900	£15,500	Summative Assessment
Overheads	£99,843.79	£119,075.19	FRIC
<b>Total</b>	<b>£1,510,924.48</b>	<b>£1,683,647.52</b>	<b>Variance: 5% (£91,202.48)</b>

**Source: Figures provided by the SAMPID project team as of the 31 March 2023**

## **8.0 STRATEGIC ADDED VALUE**

### **8.1 Trends and Issues**

The pipeline (as of the 31st of March 2023) now has 34 projects successfully completed, 7 active, 1, pending start, 4 at interview stage, 2 approved and 2 business at application stage, totalling the contracted amount of 50. The end of project forecast is to have supported 50 businesses.

There is no doubt that the impact of COVID-19 and Brexit has had on businesses, with many reluctant to make investment decisions and delay project works. Despite this the project has managed to still meet its project performance.

Currently there is no certainty of additional funding available to encourage businesses to invest in advanced manufacturing, prototyping or innovation demonstrators. This may limit the successful implementation of new products if businesses do not have the resources available to test their products.

### **8.2 Key Barriers to Achievement**

Since the interim Summative Assessment, some challenges were experienced by the team and partners in relation to the project delivery, profile and the level of demand. The main changes implemented and the reasons for those changes are as follows:

- The impact of COVID-19 presented a major challenge to the project at the start. The Project team experienced difficulties in communicating and engaging with businesses and it was difficult to procure the equipment. Businesses were also unable to access the equipment, located at the University during lockdown. This was rectified by a series of promotional marketing webinars and the programme also obtained an extension until 31<sup>st</sup> of July 2023.
- The impact of the invasion in the Ukraine on energy prices has caused a significant shock to many businesses, faced with rapidly increasing energy costs, leading to a reduction in funds available to invest in new technologies.
- The closure of the Business Innovation Centre has led to a reduction of potential referrals, but these have been picked up by the Growth Hub.
- A Project Change Request (PCR) was agreed in August 2022 to extend the project until the 31st of July 2023 whilst at the same time project spend and outputs were reprofiled.

### **8.3 Key Opportunities**

Following the interim report, it was recognised that the programme would benefit from the technician being made a full-time employee on the project rather than part time. This has worked well as it has enabled the programme to catch up from the impact of COVID-19.

Reporting should consider going above and beyond ERDF requirements to assess the longer term added value of the Programme. Examples would be whether the businesses have benefited from Programme and seen a longer-term increase in their productivity and / or profitability, whether the products have led to environmental improvements or reduced the skills gap in advanced manufacturing.

#### **8.4 Management and Delivery Processes**

Since the outline application, clarity was provided on several areas including State Aid advice, market demand assessment, the SME journey, strategic fit and detail around the equipment and facility proposed. As a result of these clarifications, the proposed outputs were increased, and a new delivery structure was provided. The Management and Governance of the Staffordshire Advanced Manufacturing and Prototyping and Innovation Demonstrator (SAMPID) project are as follows and have not changed from the original application/grant funding agreement.

All individuals involved with the development of the original application are still involved with the project and are named within the Programme Board or Operational Team and are familiar with ERDF regulations.

The project is led by an experienced ERDF Programme Manager with support from an experienced Project and Portfolio Officer. These posts were recruited and personnel in place from the 2nd of March 2020.

The project is managed in line with Staffordshire University's project delivery framework based on PRINCE2 project management principles and delivered in accordance with all European Regional Development Fund (ERDF) regulations.

A Programme Board has been established as per the application to provide oversight on the project. The board is accountable and responsible for all financial decisions, outputs, the direction, and parameters of the project and ensuring suitable and sufficient frameworks are established to achieve the project's objectives within the guidelines and legislation of the grant funding agreement.

The Programme Board is composed of the following individuals, and they meet a minimum of 6 times per year:

- Head of Employer Partnerships and Apprenticeships
- Programme Manager (Project Lead)
- Management Accountant (Financial oversight)
- Head of Project Delivery
- Project and Portfolio Officer (PPO)

- Dean of School of Digital Technologies and Arts (previously Creative Arts and Engineering)
- External Growth Hub representative (links to partner activity)
- Head of Technical Services

The Operational Team act as the main delivery and primary point of contact for all project activity. This team consists of:

- Programme Manager - 1FTE
- Project and Portfolio Officer - 0.5FTE
- Head of Employer Partnerships and Apprenticeships - 0.03FTE
- Employer Partnerships Development Managers x 2 - 0.05FTE (each)
- Business Development Consultant - 0.4FTE
- Business Development Coordinator - 0.6FTE
- Specialist Academic Leads - 0.3FTE
- Technician - 0.5FTE
- Research and Innovation Analysts x 3 1FTE (each)
- Prototyping and Innovation Consultants (up to 50 student interns/graduates) - 0.1FTE (each)

All known existing University staff working on the project were confirmed and letters outlining their ERDF allocation to the project and their roles and responsibilities were reviewed and issued prior to the project inspection visit which took place on the 31 March 2020.

Specialist Academic Lead roles were allocated on a project need basis, and individual staff and further letters were confirmed at this time.

The two new roles of Programme Manager and the Project and Portfolio Officer were appointed and in place from 2nd March 2020.

The role of Prototyping and Innovation Consultant (intern/graduate) are recruited as and when a bespoke project is identified.

The role of Technician has been appointed and the successful candidate was in post by May 2020. The Research and Innovation Analysts were recruited following the PIV and made aware of their allocation to the project and their roles and responsibilities on appointment.

The project did request an amendment to the original project application. The request was to change the Academic Participants. Originally this role was submitted to include Associate Professors/Senior Lecturers only (Grade 9).

On review of the academic skills matrix, it was evident that the project needed to call on expertise from a wider pool of academic staff to ensure business beneficiaries could access the most appropriate expert to support their individual need.

The proposal was to extend the original role to include all academic staff positions including: Lecturers (grade 7), Senior Lecturers (Grade 8), Associate Professor (Grade 9) and Professor (grade 10) and a group rate agreed for each role. It was confirmed that all project staff would be made aware of the relevant European Regional Development Fund Guidance and the approved application/funding agreement.

## **8.5 Added Value**

As referenced previously, the Programme currently only reports under ERDF requirements yet there is clear indication of added value. It was evident that the impact and outputs of projects would continue beyond the monitoring stage. The equipment will also continue to be available beyond the lifespan of the project to both businesses and students.

The reporting format does not capture how the Staffordshire Advanced Manufacturing, Prototyping and Innovation Demonstrator may have increased businesses productivity and profitability in Staffordshire. From the business beneficiaries we have engaged through the evaluation, there is some anecdotal evidence to suggest that the programme will impact positively in these areas.

It is clear from the stakeholder interviews and testimonials that students have benefitted greatly from the programme in terms of confidence and employability. This has also helped to reduce the skills gap which businesses often cite as impacting their growth potential.

Whilst some academics have been reluctant or unable to participate due to their research and teaching timetable there is also evidence that some academics have used the experience to further their research and have found the experience both enjoyable and valuable.

The peer-to-peer mentoring achieved from undergraduate and PhD students regularly getting together has been a huge success and is something that would benefit from continuing beyond the scope of the project.

## **8.6 Project Value for Money**

Currently 43 businesses have been supported (C1 and C4 output), with 6 of these being new enterprises (C5 output), 43 being enterprises supported to co-operate with research institutions (C26), 5 to support an enterprise to introduce new products to the market (C28) and 13 to support an enterprise to introduce new to firm products (C29). The project has a total spend of

£1,774,850 of which £526,000 is capital purchases. This means that the rate of intervention is high at £35,497 per business if 50 companies are assisted. Currently the per company ratio is £41,275.58. It is important to note that the equipment will continue to be available and used beyond the scope of the project and that a per company intervention based on the revenue costs alone stands at £24,977.04.

Since the interim report there have been 10 jobs created and it should be noted that one student has been offered a permanent position and that two students have had their projects extended by a further 6 months (the cost being met by the business). The C28 output which had been delayed due to the unprecedented COVID lockdown situation has now achieved 50% of the project profile and the forecast is to fully meet the output at project closure.

In addition to this three of the companies taking part are in the process of exploring and submitting bids to Innovate UK with the assistance and input from Staffordshire University's academic staff and Knowledge Transfer Partnerships are being explored by SAMPID company beneficiaries.

An already existing Industry Advisory Board made up of corporate companies from across Stoke-on-Trent and Staffordshire has had the addition of an SME from the SAMPID project join to reflect the needs of smaller companies. This company was introduced by the SAMPID Project Manager and at the time of writing this report another SME was being approached to join.

Project continuation and scale-up (which has been highlighted as beneficial and welcomed by stakeholders) would ensure better project value for money.

## **8.7 Exit Strategy / Sustainability**

We have provided below an analysis of options that exist for the future of the SAMPID Programme. All options (except closing the service) depend on securing the support of external funders. We have concentrated the evaluation on the benefits to the customer and the sustainability of the service but have also factored in the likelihood of securing the funding required.

### **a. Close the service.**

The evidence tells us that the Programme is valued by businesses and partner organisations. It has acted as a catalyst for businesses to invest in their prototyping and research, which in turn has led to new opportunities, business efficiencies and growth.

There is evidence of significant business benefits in terms of increased productivity, accelerated investment plans and improved efficiencies and profitability arising from the programme.

We believe, from discussions with businesses and stakeholders, that some additional benefits are not reported as they are not part of the requirement for ERDF purposes. However, we recommend that consideration be given to collating them for future funding opportunities.

The SAMPID programme has delivered clear business benefits to those beneficiaries who have participated, including the development of new products and services, potential to increase productivity and profitability and the provision of skilled labour to support. On this basis we evaluate closing the Programme as the least favoured option.

*Whilst this is not our preferred option, we understand this may be the outcome due to the lack of alternative funding sources.*

b. Mainstream the support.

The evidence suggests that currently there is an uncertainty around funding available to continue this service beyond the contract end date and that commercialisation of the Programme, whilst not impossible would be difficult due to the nature of the support and the associated cost of delivery. The current economic climate could also impact the level of businesses willing to engage, due to the associated costs.

We evaluate mainstreaming the full integration of the service at time as not being a practical option.

c. Downscale the service.

If the programme was to be downscaled, fewer businesses would benefit from support, and this would impact on the overall investment activity across Stoke-on-Trent and Staffordshire. It would also reduce the value for money and as the equipment has already been procured this would not be beneficial.

We evaluate downscaling in terms of project value but with no additional equipment procured as a potential dependent on funding support available.

d. Expand the service.

Although we can see that the Programme is well-regarded, due to the current economic climate and uncertainty within the business community, combined with a

lack of potential funding sources to continue the project, we do not consider that the service should be expanded at this moment in time.

e. Continue as now.

The Programme is providing a valuable service for which there is sufficient demand to justify its continuation. In addition, the equipment has already been procured and as such the project expenditure could be lowered whilst keeping the number of beneficiaries as they are. This would enhance the project value and allow for further work with existing companies, thus enhancing the impact and extending the reporting period.

*This is our preferred option.*

f. Re-focus the service.

We believe the existing focus of the service to best reflect demand from businesses and therefore on that basis, we would suggest that the Programme does consider and look at future funding opportunities to allow for continuation. Its ability to engage businesses and encourage them to invest in their future is key to ensuring the on-going prototyping and research and development in businesses in Stoke-on-Trent and Staffordshire.

*In the short-term we believe this option to be limited due to the current economic climate however more long term we believe this option would strengthen the offer and provide the flexibility required to provide a service which is needed and valued by the businesses of Staffordshire and thus improve the sustainability of the Programme.*

Options Appraisal Evaluation Ranking

(1-5: where 1 is the most attractive and 5 is the least attractive):

Close the service	5
Mainstream the support	3
Downscale the service	4
Expand the service	4
Continue as now	1 (dependent on funding requirements)
Re-focus the service	3 (dependent on funding requirements)



## 9.0 CONCLUSIONS AND LESSONS LEARNED

### 9.1 Conclusions

The programme has benefited greatly from the recruitment of staff with a wealth of experience in both an academic and business setting. There is a great deal of evidence that much of the project's success lies in the way it is being managed and through the personalities of those running the programme.

The setting up a student group together with the PhD students to offer peer to peer mentoring support is an excellent idea which generates added value to the project deliver and upskills the confidence and knowledge of the students in supporting the business projects.

The introduction of a SAMPID SME to the University's Industry Advisory Board is beneficial to ensuring that SME needs are identified and met. It would be good to ensure further representation.

There is a current need to re-instate the feedback loop and referral system for the companies engaged on the SAMPID project to ensure that businesses can tap into any further beneficial business support via the Growth Hub.

Business beneficiaries were overwhelmingly positive about SAMPID, with many respondents articulating the benefits around fast-tracking research and development activity meaning the viability of their proposed ideas were assessed earlier than may otherwise have been the case.

Business respondents were impressed with the calibre of the students who had been assigned to specific projects and appreciated that support that the students and companies received from the academic staff within the University.

To further support businesses, for those projects completed, a more detailed feedback loop to identify and progress next steps for the business, with potential funding sources if appropriate, should be robustly followed.

Feedback from the businesses has been obtained. Testimonials and written case studies have been collated and shared with the stakeholders and included in this report. Whilst students were not part of the stakeholder interviews for the full Summative Assessment report, their testimonials were included and stakeholders had a presentation from a student, which they praised as being extremely informative and enjoyable.

It was felt that one of the strengths of the programme is that the project is not embedded into the student's qualification course because it ensured fairness in opportunity and treated it fully as an employability activity, which therefore met industrial requirements.

A review of how students are engaged and how further applicants could be encouraged should be assessed. Talks by the Programme Manager to students should continue as these are an effective method of encouraging uptake.

The use of student ambassadors is seen as an extremely effective way of encouraging student engagement in such programmes.

Having access to additional equipment, such as the "Smart Zone" has helped to broaden the support available to the businesses and made students aware of the advanced manufacturing facility available.

The programme is an excellent way to encourage the sharing of knowledge between academics and industry. It provides industry with a cost-effective means to test their innovation ideas, it increases academic knowledge of industry, in particular SMEs and develops student employability by developing their technical abilities and confidence.

The project is seen as an integral part of the Stoke-on-Trent and Staffordshire economic strategy and therefore future funding should be explored now to ensure that the project continues beyond ERDF.

There have been some notable positive outcomes such as higher business engagement with the University and the retention of students by companies who have taken part. The project has also acted as a catalyst to other support, including from Innovate UK as well as other support from within Staffordshire University.

## **9.2 Recommendations**

It is evident from the evaluation that the majority of business beneficiaries participating in the project saw clear and tangible benefits within their business, which has accelerated their development plans. The focus on innovation within the sectors targeted by the project is critical to maintain competitive advantage. Therefore, we recommend that Staffordshire University explores alternative funding and delivery options to maintain the service.

The innovation section of the Prosperity Fund was suggested as a possible source of future funding, and this should be explored by Staffordshire University and its partners.

Staffordshire University should explore whether any elements of the Demonstrator can be commercialised to embed innovation into the Staffordshire economy. At a time when we are seeing reduced funding, and therefore reduced support to Stoke-on-Trent and Staffordshire SME businesses, the need for continued support is never greater.

The professionalism and enthusiasm demonstrated by the Project Team, Academics and Students alike has contributed to the overall success of the project. For future projects, the methodology used to implement and manage this activity should be documented and replicated to provide the team with a stronger chance of success. Where possible, we would recommend the project staff are retained in this field of activity, further developing the links they have between businesses and Staffordshire University.

## APPENDIX 1 - TESTIMONIALS

Being part of the project allowed us to accelerate our thinking to prove the viability of a new concept for our business. By using the university's robotic arms, we have been able to test a new process and encouraged us to further develop this type of advanced manufacturing for our customer base.

**Charles Williams, Director, Promtek Ltd**

One of the beauties of SAMPID is, not only do you get a bright young student who brings all the latest technology to the table, but you've also got access to a number of academics. So, in a sense, you get a number of skills brought during the one project.

**Rob Hartley, Managing Director, Rovoscope Ltd**

The university offers a step change, and it's the best way to describe it: for bringing an idea to life.

**Steve Heaword, Technical Director, Crib Gogh Ltd**

The opportunity to have access to specialist product design, knowledge and laboratories through the project has more than delivered on our expectations. We will have no hesitation in recommending the SAMPID project to other businesses.

**Donald Harrison, Managing Director, DHC Innovations Ltd**

SAMPID is a great opportunity for any local business to develop a product that would otherwise be difficult to accomplish without high costs for development.

**Lee Bloor, DRM Technic Ltd**

I see Staffordshire University as a go-to resource for us when we're looking for either new ideas or talent that we want to bring into the business. All the success of the project to date is down to the SAMPID student and her approach so she gets full credit for that.

**Charles Williams, Promtek Ltd**

The project has achieved all the set objectives and gone beyond in reference to the level of CFD analysis completed. This was on the wish list as an additional target.

**John Carr, Strimplates UK Ltd**