Summative Assessment of Lancashire Cyber Foundry

A Final Report by Hatch
June 2023

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Executive Summary

i. Lancashire Cyber Foundry is a £2.1m ERDF-funded project focused on supporting businesses to innovate using digital and cyber technologies. The project was delivered from the 1st November 2019 until the 31st June 2023. This evaluation report covers the delivery period November 2019 to June 2023.

ii. The evaluation considers the programme's strategic fit (both at the start of the programme and throughout delivery), financial and delivery performance, beneficiary outcomes and impacts, a value for money assessment, in addition to a qualitative assessment of the programme's delivery and management.

Project Relevance and Consistency

iii. There has a been a significant development in the local and national policy landscape which has strengthened the case for programmes like Lancashire Cyber Foundry. The project has centred on addressing the underinvestment of cybersecurity among businesses in Lancashire and promoting technology innovation. Whilst the project's rationale and design was initially informed by evidence from two demand studies, the case for investment has grown since the COVID-19 pandemic which required more businesses to act digitally and the release of the UK Government's National Cyber Security Strategy.

Progress Against Contractual Targets

iv. By the end of the activity in June 2023, the project is expected to meet all of its expenditure and output targets. Whilst the project was disrupted by the COVID-19 pandemic which forced Lancashire Cyber Foundry to adapt its support and move online, since restrictions have eased the project has exceeded its output targets. The flexibility of the delivery team in being able to shift support to provide intensive, technical assists to businesses in-light of new demand from the pandemic has contributed to its success.

Delivery and Management Performance

Management and Governance

v. From the outset, the project manager has been very effective, implementing reporting processes and frequent meetings to ensure efficient delivery of LCF. The delivery team has built strong relationships with different sub-teams to aide delivery.

Marketing and Engagement

vi. Existing networks, referrals and LinkedIn marketing have proven the most effective in promoting the project and generating leads. The project has successfully engaged with a diverse range of beneficiaries through targeted marketing and engaging with organisations who work alongside under-represented groups. As a result, the project has supported a nearly 50/50 split of male and female-led businesses, and 29% of beneficiaries were based in East Lancashire.

The Support Offer

vii. A key asset of the support offer has been the technical academic support. The vast majority of beneficiaries who received this (>90%) found the technical assists to be suitable, beneficial and tailored for their needs which enabled them to improve their knowledge of cybersecurity technologies and concepts. Likewise, introducing studentships halfway into delivery to address the demand for prototyping was regarded as the most effective support for developing prototypes over a short period of time and meeting a lower skill technical need.

viii. All beneficiaries were satisfied with the support they received. In particular:

- The business development manager diagnosing business needs and matching support appropriately based on beneficiaries' prior knowledge of cybersecurity.
- Having flexibility and agility in the support offer to accommodate changes in business demand / circumstances, for example delivering hybrid workshops during the COVID-19 pandemic and focussing messaging on digital resilience.
- Continued engagement and referrals to other LU business support projects and external programmes after support closure.

ix. For future programs, improving the onboarding and eligibility process, and beneficiaries' understanding of the final outputs and frequency/intensity of support were recommended.

Outcomes and Impact

x. Beneficiaries have improved knowledge of cybersecurity technologies, strategy and processes as a result of the support:

- 93% of beneficiaries indicated that their lack of knowledge of cyber security technologies is now less of a barrier and 7% stated it is no longer a barrier.
- 67% of beneficiaries have made a lot of progress and/or achieved the goal: to gain knowledge of cyber strategy / security processes.

xi. There have been moderate economic impacts to date, reflecting the fact that many businesses have only recently received support and have not yet implemented all of the changes they plan to make to their business. However, the economic impact is expected to increase in the future. Based on beneficiaries supported by the end of March 2023, net additional GVA is estimated at £2.36 million to date and increases to £4.87 million when considering future expected impacts (£2.51 million). In terms of employment, the project has created 15 net additional jobs to date. In the next three years, this is expected to increase to 32 jobs. However these impact estimates are subject to significant uncertainty and should be treated as indicative.

Cost Effectiveness and Value for Money

xii. The project represents good value for money. LCF has generated £1.12 net additional GVA for every £1 public investment (by end March 2023). Over the next three years, the return on investment is expected to rise to £2.32. For cost per net additional job, the project has invested £140,200 per job created which falls to £65,700 when future impacts are accounted for. This is higher than most benchmarks, although we would note that job creation was based on modelled estimates due to gaps in the available data. The impact estimates for this project and comparator projects are subject to significant uncertainty and margins of error.

Recommendations

1) **Review and streamline eligibility testing in any future iteration of the project.** The eligibility process often delayed the onboarding stage for beneficiaries, and resulted in frustration among the delivery team and beneficiaries. This was due to the centralisation of ERDF compliance at the University, 'back and forth correspondence' of information submitted and nature of ERDF funding guidelines. There would be merit in simplifying the eligibility route and ensuring information requirements are well understood by beneficiaries before joining the project.

2) **Consider delivering a post-support offer to ensure businesses can continue to benefit from the project.** The evaluation highlighted beneficiary interest in meeting other participants, which can support development, collaboration and sharing of cyber knowledge. Implementing post-support pathways such as a project alumni network and access to coworking space should be considered to encourage peer-peer networking and continue the project's legacy.

3) **Expand the technical support offer to encourage further business and academic collaborations.** Delivering bespoke technical 1-1 support through academics and studentships was a key success of the project that facilitated business outcomes and a strong output performance. The evidence suggests there is demand for more intensive support and deeper collaborations between beneficiaries and academics to further develop prototypes. Increasing the capacity of the technical team to deliver more hours of support would help facilitate long term collaborations between the University and businesses, and drive innovation impacts.

4) **Continue building relationships with external partners to align with future funding and cyber developments.** The evaluation indicates that cybersecurity is becoming strategically important in Lancashire and elsewhere, due to the relocation of cyber organisations and recent national cyber strategy. As ERDF funding is phasing out, there would be merit in identifying strategic partners and looking at opportunities to collaborate to secure future funding.

5) **Continue to deliver an agile and flexible support offer.** The redesign of the support model was an effective delivery change that enabled the project to exceed its output targets, despite the challenges of the pandemic. Delivering business support which is responsive to a changing business and socioeconomic environment is a key area of best practice, and should be considered in any future iteration or similar intervention.

6) **Ensure that there is clear communication of the support deliverables and expectations of support from the outset.** The evaluation suggests that business expectations had to be managed carefully, in regard to the nature and duration of support, final support outputs and the extent of prototype development. In a future iteration, it would be useful to communicate this clearly from the outset so beneficiaries know what to expect from participating in the project.

2. Introduction

2.1 Hatch was commissioned by Lancaster University to undertake a Summative Assessment of the Greater Innovation for Lancashire Cyber Foundry (LCF), a £2.1m ERDF-funded project focused on supporting businesses to innovate using digital and cyber technologies. The project was designed to be delivered over a 3-year period from the 1st of November 2019 until the 31st of December 2022 (as outlined in the original Grant Funding Agreement). On the 12th April 2022, the project submitted a project change request to have a no cost time extension to 31st August 2023. This evaluation report covers the delivery period November 2019 to June 2023.

2.2 LCF's overarching objective was to target R&D innovations which would lead to the creation of new and improved products and processes, from which companies could differentiate and diversify in their market sectors, leading to significant growth. The focus was on cyber essentials and digital innovation opportunities, helping retain and grow jobs, as well as improving resilience and survivorship. There was a particular focus on inclusion of sectors identified as potentially benefiting from LCF interventions including sectors such as Advanced Manufacturing and Engineering, Aerospace and Aviation, Automotive, Energy Industries and Creative, Digital, and ICT.

2.3 The purpose of conducting a Summative Assessment is to gain an independent understanding of the project performance, impacts and value for money, in addition to exploring the mechanisms through which these impacts have been achieved and insight into what and why delivery approaches work. This includes reviewing any examples of best practice, challenges experienced and lessons which can be applied in future projects.

2.4 The Summative Assessment is structured to address to the ERDF Summative Assessment Guidance and the requirements of the brief, as indicated below.

Evaluation Approach

2.5 The Summative Assessment adopts a **Theory of Change approach** (which relies on the logic model and self-reported methods including consultations and a beneficiary survey which were carried out as part of this report) which is consistent with the requirements of the ESIF Programme, the Department for Levelling Up, Housing and Communities (DLUHC), formerly the Ministry for Housing, Communities and Local Government (MHCLG), guidance on the preparation of the Summative Assessment and other associated guidance.

2.6 The DLUHC have provided guidance on the preparation of the Summative Assessment which states that the report must cover the following five themes. These were also tailored to the project context and all strands of research were synthesised to clear and well evidenced conclusions and lessons tailored to internal and external audiences.

- **Relevance and consistency:** a review of project design and context which fully and critically explores all aspects of the project's intervention logic and market failure rationale.
- **Progress against the project's contractual targets**: considering performance against expenditure profile, output targets and horizontal principles and identifying the factors which explain performance.

- **Experience of delivering and managing the project:** analysis of the effectiveness of project implementation to build a picture of how the project was delivered and managed, identifying what has worked well and less well.
- **Analysis of outcomes and impacts attributable to the project**: providing an initial summary of project impacts, harnessing qualitative insights from SME beneficiaries and setting out the extent to which additionality is being achieved.
- **Cost effectiveness and value for money:** modelled using self-reported data from the beneficiary survey to provide a clear quantitative assessment of the return on investment (expected and actual) associated with the project

2.7 These requirements were met through an evaluation methodology which has used a combination of quantitative and qualitative research methods. The evaluation drew on a variety of relevant information, data and qualitative insights including:

- **A review of background documentation:** and approved project logic model, submitted as part of the ESIF bid, to understand in detail and assess its continued relevance.
- **Detailed analysis of the project monitoring data:** captured by the team (including claims data, in addition to beneficiary monitoring data) and via beneficiaries to assess performance against financial and output targets.
- **A review of delivery context:** encompassing consultations with delivery partners and project stakeholders, capturing perspectives on project design, delivery and the mitigation of challenges, governance and impacts.
- **Beneficiary consultation:** including a web-based SME survey and in-depth interviews with a sample of beneficiaries. This will explore beneficiary motivation for seeking support, views on experience and quality of intervention, outcomes, impacts (actual and expected), attribution and views on how the project could evolve better to meet their needs and support growth ambitions.
- **Quantitative impact analysis:** to obtain a more granular view of the economic impacts experienced by beneficiaries by grossing up impacts of the surveyed businesses, making gross-to-net impact calculations and assessing value for money for the net impacts achieved.

2.8 Although use of self-reported beneficiary surveys has its limitations as a means of estimating economic impact due to the potential for businesses to incorrectly recall of misreport the changes in business performance and the contribution of support, our evaluation scoping concluded that this was the most appropriate method, given the budget available and the limited opportunity to use counterfactual methods due to issues such as time lags in business datasets.

1.1 This has been supplemented by a small selection of case studies which provide additional qualitative insight that explores in more detail the complexity of the mechanisms through which business support can generate and sustain impacts.

Dissemination of the Summative Assessment

2.9 Dissemination of the Summative Assessment key findings is essential for transparency and accountability purposes, in addition to ensuring that the findings are drawn on to inform the remaining delivery of the project, and the design, delivery and strategic direction of future projects.

2.10 Lancaster University has indicated in the LCF Summative Assessment plan that the findings of the Summative assessment will be shared with a variety of stakeholders in a number of formats, such as print, on-line and through local media channels. Stakeholders include funding bodies, University Senior Management, project delivery staff, beneficiaries, the academic community and business networks. Findings will be shared with the following stakeholders (although this is intended as a general guide and there could be additional types of stakeholders):

- DLUHC
- the Lancashire Local Enterprise Partnership
- Lancaster University Senior Managers and project team
- Shared learning networks such as PraxisAuril
- Research Councils (RCUK) and Innovate UK.

Structure of the Evaluation Report

2.11 The Summative Assessment report is structured around the following topics:

- **Section 2: Project Context and Continued Relevance,** this will consider the project logic model, alongside the economic and policy context in which the project was designed, including the nature of market failure, project objectives and rationale for the delivery approach. We will also consider the changes in economic and political environment which may have impacted the projects continued relevance and delivery rationale.
- **Section 3: Progress Against Contractual ERDF Targets,** this will consider the progress with project implementation in terms of performance against expenditure profile, output targets and horizontal principles.
- **Section 4: Delivery and Management Performance,** this will provide a more qualitative analysis of the implementation of both the capital and revenue elements of the project, the project's delivery performance and consider the challenges and achievements in terms of different elements of project delivery.
- **Section 5: Outcomes and Impacts,** this will set out the progress that the project has made towards the outcomes and impacts set out in the project's logic model and provides estimates of the gross and net additional economic impact. We will also assess the project's value for money, drawing on the impact analysis and looking at comparisons against benchmarked business support projects.
- **Section 6: Conclusions and Recommendations,** this section will synthesise the evaluation findings drawing on evidence from all research strands, outlining the conclusions that can be drawn and emerging recommendations to inform the remaining delivery period.

3. Project Context

3.1 This section reviews the economic and policy context in which the Lancashire Cyber Foundry was designed and explores the nature of the market failure it was seeking to address, the project objectives and rationale for the delivery approach adopted. It includes critical analysis about the appropriateness of the project design, given its objectives.

3.2 It then reviews changes in the economic and policy environment which may have impacted on the delivery of the Lancashire Cyber Foundry, assessing the continued relevance and consistency of the project in light of any changes that have occurred during its delivery period.

3.3 The analysis in this section has been informed by:

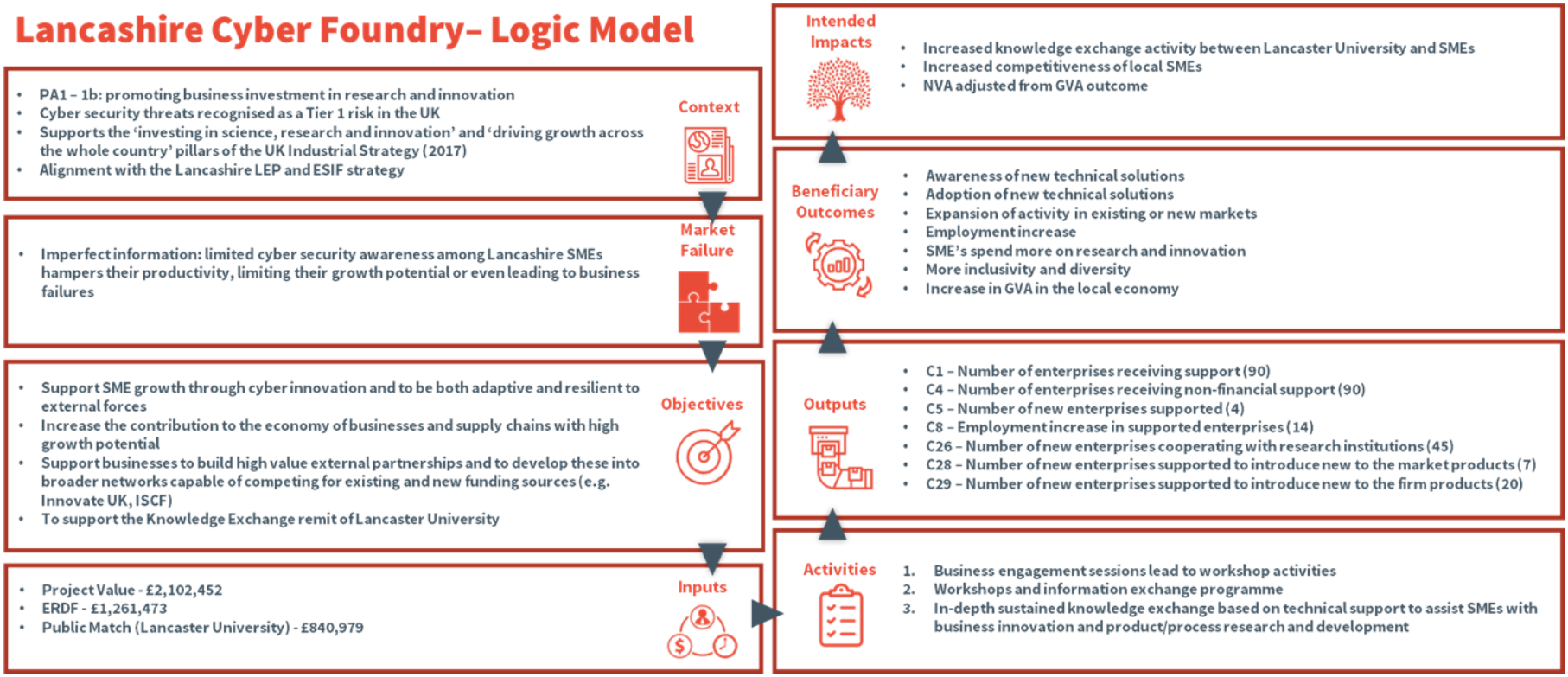
- A review of background documents for the project, including the project's original ESIF application form and other internal project management and delivery documents
- Desk-based analysis of relevant social and national policy documents and socioeconomic data
- Interviews with members of the project management and delivery team (a full list of consultees is provided in Appendix A).

3.4 This section draws on the Lancashire Cyber Foundry's ESIF application form and logic model and as such reflects the project's original expectations and vision. Since the funding agreement was signed, there have been changes in the way the project has been delivered in practice. These changes and the rationale are analysed further in sections 3-5.

Project Logic Model

3.5 The intervention logic underpinning the need for the Lancashire Cyber Foundry is presented in Figure 3.1. The model traces the project's rationale to its intended outcomes in a sequential manner.

Figure 3.1 Lancashire Cyber Foundry – Logic Model



Source: Hatch, drawing on Lancashire Cyber Foundry Full ESIF Application and LCF Summary Assessment Logic Model

Strategic Context

National Level

3.6 The Lancashire Cyber Foundry (LCF) was delivered under ERDF Priority Axis 1 of the 2014-20 programme Promoting Research and Innovation. Specifically, it addressed investment priority 1b: promoting business investment in research and innovation.

3.7 The LCF supported the UK Industrial Strategy (2017), particularly its 'investing in science, research and innovation' and 'driving growth across the whole country' pillars. By bringing together LU's academic capabilities, dedicated technical support and knowledge exchange professionals, the project sought to address the market gap in R&D cyber security provision for SMEs and accelerate commercialisation of technical approaches, whilst also improving collaboration and interdisciplinary exchange.

3.8 The ESIF Application acknowledged Lancashire's aspiration to be a digital region as well as the prospect of significant Government Communications Headquarters (GCHQ) investment in the wider region. It demonstrated that the LCF was in line with the Lancashire LEP and ESIF strategy, as it sought to build on Lancashire's science and technology excellence by:

- growing its private sector science and technology business base.
- supporting innovative solutions and emerging technologies to tackle societal challenges.

3.9 The ESIF Application recognised that LCF aligned with strategic aims set out in Lancaster University's Digital First strategy 2019-2024:

- *Staying Ahead*, by connecting with national centres of excellence, working with large employers and contributing to the development of Lancashire Innovation Ambassadors.
- *Routeways to Excellence*, by encouraging the development of Knowledge Transfer Partnerships and acting as a test bed for digital development.
- *Broadening the Innovation Base*, by providing a leadership innovation programme but also through LU investment in start-up incubation provision and by facilitating communication to share best practice in innovation.
- *Enabling Infrastructures for Innovation*, by LU expanding it graduate placement programme for SMEs.

Regional and Local Level

3.10 As outlined in the **Central Lancashire Economic Regeneration strategy 2026** (2010), one of the main strategic goals in the region was to deliver growth in the Energy, Advanced Manufacturing and Engineering and Creative industries. These objectives are in line with the goals of the LCR project which aimed to improve competitiveness, productivity and innovation through the adoption of cyber security.

3.11 The importance of supporting businesses to increase resilience and their ability to respond to emerging opportunities and threats was highlighted in the **Lancashire Innovation Plan** (2018). Specifically, Strategic Aim 3 outlines the need for greater diffusion of innovation and selling the benefits of innovation for competitiveness and growth. The project will address this by supporting SMEs to improve their cyber resilience in their pursuit of innovation and expanding their innovation capacity. In creating a self-sustaining SME cyber security ecosystem in

Lancashire, LCF will also promote and celebrate innovation in the county, as per Strategic Aim 5 of the Plan.

3.12 The focus on supporting SMEs across a range of sectors was supported by the **Lancashire ESIF Strategy** (2015), which emphasised the importance of creating the right local conditions for business and investment success. The Strategy also focused on strengthening its industrial bases through targeted innovation to ensure that Lancashire remains globally competitive and attractive to international investors.

Project Need and Rationale

3.13 The ESIF Application highlighted the need for the LCF by recognising that cyber security threats are classed as a Tier 1 risk in the UK. Over time, cyber-attacks have become more frequent, more sophisticated, and thus increasingly costly. They create an unstable operating environment that can threaten business continuity, especially in sectors sensitive to such threats (e.g. Legal, Health & Social Care, Fintech). Moreover, the emergence and growth of smart city initiatives, like CityVerve and Industry 4.0, have demonstrated that cyber threats can translate into physical threats by jeopardising the region's Critical National Infrastructure.

3.14 In the early 2000's, the Towards Software Excellence programme of the then Department for Trade and Industry, which was run by the National Computing Centre, showed the challenges SMEs faced in making their business secure whilst also developing innovative cyber security technologies. These challenges were compounded by the pressures stemming from satisfying customers, investors and creditors. The Application recognised that the need to guide and support SMEs to improve their cyber security operations was still pertinent eighteen years later, as evidenced by the Cyber Essentials Scheme of the National Cyber Security Centre.

3.15 Consultations also suggested that there was a need for a cybersecurity focussed support offer in Lancashire which could build a network that rural and women-led businesses can tap into.

Market Failures

3.16 The LCF sought to address the **imperfect information** market failure arising from Lancashire SME's limited cyber security awareness, especially of the productivity gains that can be realised through increased cyber security. SME's lack of knowledge on cybersecurity and its benefits, meant that businesses were unaware of how IT systems can protect their business. This resulted in an underinvestment of cybersecurity, which was evidenced in:

- a regionally focussed cyber security survey undertaken by LU in 2012, showing that the lack of SME investment in cyber protection was worst relative to national statistics. This largely stemmed from businesses' difficulty understanding the benefits such investment would yield.
- Pierre Audoin Consultants were commissioned to undertake a market demand analysis by LU in 2014 which showed that there was underinvestment in cyber security, especially cyber protection and cyber innovation, by companies in the region.

3.17 This market failure continues to persist today with more recent evidence indicating that businesses lack the awareness or incentive to make decisions which will improve cyber security and improve business performance:

- According to the UK Government's Cyber Security Breaches Survey[1], lack of expertise, particularly at senior levels, acts as a significant barrier to securing the appropriate level of funding and establishing an overall cyber security approach for businesses. There is still a lack of commercial incentive, as well as perceived importance, with the survey identifying education as the key enabler of cyber resilience.
- The National Cyber Security Strategy[2] references that businesses still do not understand the cyber security risks they face which acts as a disincentive for investing in cyber security, and provides little motivation to report breaches and attacks.

3.18 In tandem, consultations implied that there were **coordination failures** at the time the project was designed. SME's capacity constraints meant that implementing cybersecurity systems were perceived as 'costly' or 'resource intensive'. The absence of a free, public sector-funded service meant cybersecurity and understanding internet risks were either outsourced to private sector companies or not implemented at all.

Overall, the demand studies suggest there was a need for the project, and the rationale for public investment is evidenced through market failure arguments for intervention.

Objectives

3.19 The LCF Logic model clearly set out the following key objectives:

- supporting SMEs to grow through cyber innovation and to be adaptive and resilient to external forces.
- increasing the contribution to the economy of business and supply chains with high growth potential.
- supporting businesses to build high value external partnerships and to develop these into broader networks capable of competing for existing and new funding sources (e.g. Innovate UK, ISCF).
- to support the Knowledge Exchange remit of LU.

Inputs

3.20 This section sets out the funding sources and structure of the project, as they were originally outlined in the ERDF Grant Funding Agreement (August, 2019). The changes that came in effect with the approval of the Project Change Request (PCR) in April 2022 are outlined in Chapter 3.

3.21 The total project value, as outlined in the ERDF Grant Funding Agreement (August, 2019), was £2.1m of which 60% was ERDF funded and the remainder was match funded by Lancaster University.

Table 3.1 Costs and Funding

	Funding
Total ERDF	£1,261,473
Total Public Match (Lancaster University)	£840,979

[1] Department for Culture, Media and Sport, Cyber Security

[2] HM Government, National Cyber Strategy, 2022

Total Project Spend	**£2,102,452**

Source: ERDF Grant Funding Agreement, August 2019

3.22 The expenditure plan assumed the itemization of costs summarised in Table 3.2.

Table 3.2 Breakdown of Expenditure

	Spend
Salaries	£1,704,915
Flat Rate Indirect Costs	£255,737
Office Costs	£48,300
Marketing	£20,000
Other Revenue	£39,000
Consultancy	£4,500
Professional Fees	£30,000
Total	**£2,102,452**

Source: ERDF Grant Funding Agreement, August 2019

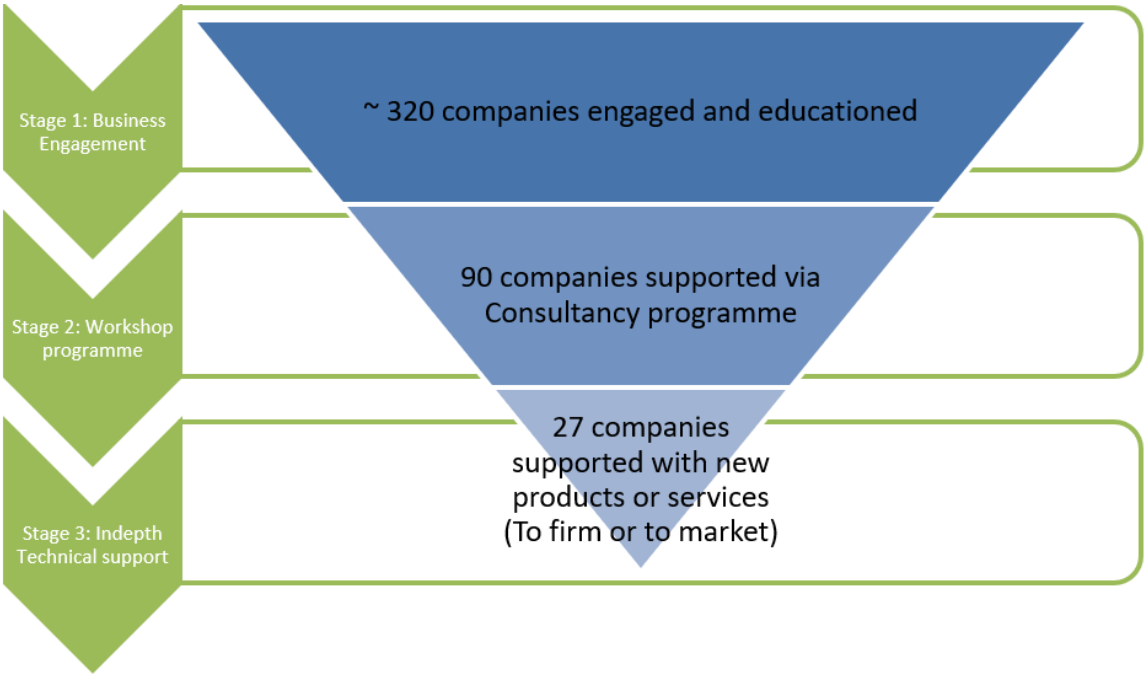
It is not clear from the application form how the costs were estimated, although consultation evidence implies that the project design was generally based on the Greater Manchester delivery model.

Project Activities and Client Journey

3.23 The LCF targeted SMEs in the Lancashire LEP area. Although its focus was on cyber security and its industries, it sought to attract SMEs in any sector where cyber security could be used to offer differentiation or access to new markets. A funnelling approach was intended to identify businesses that would benefit the most from the project and was informed by the Greater Manchester Cyber Foundry delivery model.

3.24 Namely, the project sought to engage over 300 business through the business engagement and recruitment process, followed up with consultancy support for 90 of those businesses. In-depth technical support would then be provided to 27 of the 90 companies participating in the consultancy programme.

Figure 3.2 Project Gateway – A Funnelling Approach



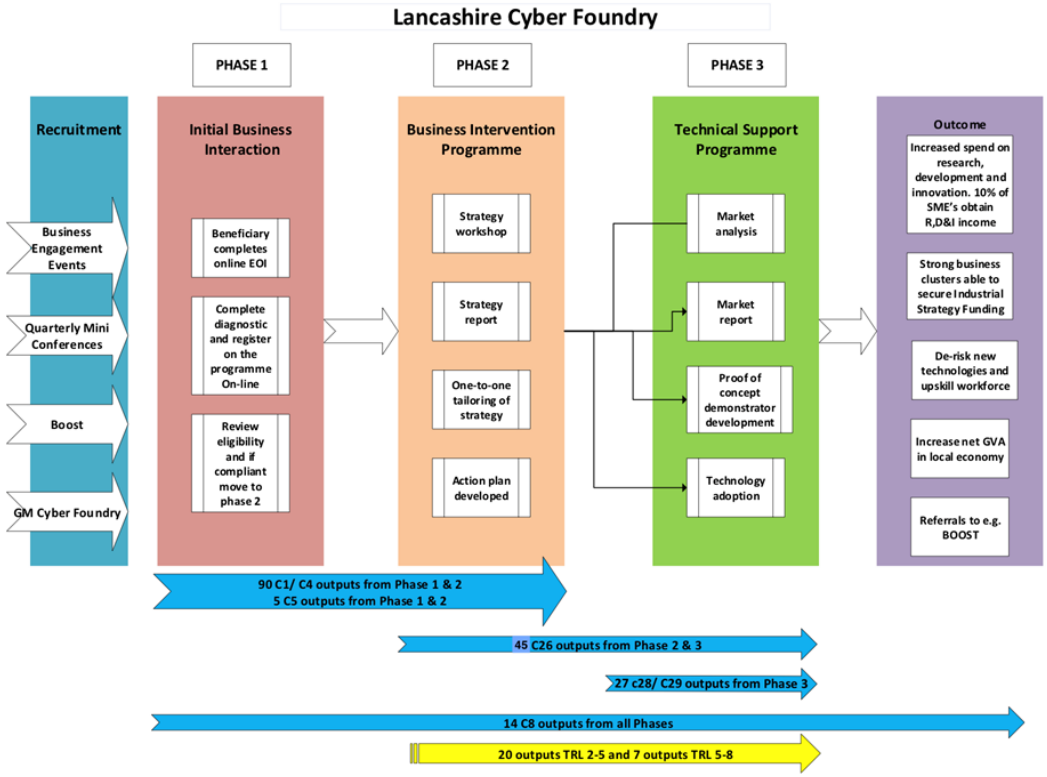
Source: ESIF Full Application Form

3.25 Business engagement and recruitment was to include a series of actions, including a web portal with promotional and advisory material as well as engagement events that would act as the primary feeder to the workshop programme. Existing networks, like Boost the Lancashire Business Growth Hub, were to be used to attract businesses to these events.

3.26 The three phased client journey is detailed in Figure 3.3. The initial business interaction (Phase 1) required that SMEs complete an online EOI, complete a diagnostic and register on the programme online.

3.27 SMEs found to be eligible proceeded to the Business Intervention Programme (Phase 2), which offered an in-person day long workshop and a subsequent one-to-one session to develop a tailored business strategy and individualised action plan. The workshop was used to identify businesses that could benefit from LU expert support on a research based, technical intervention that could lead to a new product or service. The Technical Support Programme (Phase 3) resulted in a market analysis for the proposed innovation as well as a proof of concept demonstrator (PoCD), which could be used to attract further investment.

Figure 3.3 The Client Journey



Source: ESIF Full Application Form

3.28 LCF was intended to be delivered at the LU campus, operating out of the School of Computing and Communications (SCC), thus providing SMEs with access to its state-of -the-art innovation facilities, R&D assets, and academic expertise. The core Knowledge Exchange (KE) team at SCC, based in the InfoLab21 building, was responsible for project management and for recruiting an expert team to support administration and delivery of the project content. Consultancy expertise was procured through the official channels to provide specialist SME support, where appropriate. Lancaster University has well established procurement procedures, detailed in its Financial Regulations, reinforced by a specialist Procurement Team.

3.29 The project was overseen by a Strategic Board comprised of senior representatives from LU as well as senior representatives of relevant external organisations like Boost, the Chamber of Commerce, and the Federation of Small Businesses. The Board responsibilities included aiding wider connectivity within the local business support arena and ensuring that beneficiary interests and needs were targeted and met. Board members were not directly involved with the project to ensure separation of duties and of strategic decision-making from operational decision-making and potential conflicts of interest.

3.30 Project monitoring of all ERDF delivery was performed by the Project Support Unit (PSU) at LU. The PSU was independent from the actual delivery and administration of the project, but it provided direct administration and compliance guidance and support to the project as necessary.

Overall, the evidence suggests that the design of project activities and the client journey was fit for purpose, and sufficient to address a wide set of beneficiary needs. The design of the project

was also based on a well-established 'funnel' model which engages a wide range of business, but then targets more intensive support on those businesses with greatest potential for growth. This should ensure that the impact of the intervention is maximised. It is less clear how the support offer was designed to encourage knowledge sharing among businesses and building strategic partnerships, in line with the intended project objectives.

Outputs, Outcomes and Impacts

3.31 The contractual output targets for the project were established by drawing on LU's experience, the predecessor Cyber Foundry project in Greater Manchester and lessons learned from delivering a substantial number of ERDF funded business support and collaboration projects over the past fifteen years. To establish deliverable targets, LU considered the time and human resource required to deliver the in-depth, bespoke interventions and collaborations envisioned by the project. As such, the targets were considered realistic at the time the project was designed.

3.32 The targets set out in the original application form were as follows:

Table 3.3 Original Output Targets

Output	Target
C1: Number of enterprises receiving support	90
C4: Number of enterprises receiving non-financial support	90
C5: Number of new enterprises supported	4
C8: Employment increase in supported enterprises	14
C26: Number of new enterprises cooperating with research institutions	45
C28: Number of new enterprises supported to introduce new to the market product	7
C29: Number of new enterprises supported to introduce new to the firm product	20

Source: LCF ESIF Full Application Form

3.33 The LCF logic model identified the following intended outcomes:

- Awareness of new technical solutions
- Adoption of new technical solutions
- Expansion of activity in existing or new markets
- SME's spend more on research and innovation
- More inclusivity and diversity

3.34 The LCF logic model also set out the following intended impacts:

- Increased knowledge exchange activity between Lancaster University and SMEs
- Increased competitiveness of local SMEs
- Increase in GVA in the local economy
- Employment increase

Theory of Change

3.35 Building on the project's original logic model and informed by consultation findings, a theory of change diagram is presented overleaf. The Theory of Change diagram traces the step-by-step rationale for the LCF project to its intended outcomes and impacts in a sequential manner and explains the assumptions which the intended outcomes and impacts depend on.

3.36 The diagram reflects some of the changes to LCF's design, including the shift away from a funnel approach to prioritising bespoke R&D support and delivering studentships to support prototype development.

3.37 These changes are explored in more detail in Chapter 4.

Figure 3.4 Theory of Change

Source: Hatch

Changes to Delivery Context

3.38 This section of the report reviews changes in the economic and policy environment which may have impacted on the delivery of Cyber Foundry, assessing the continued relevance and consistency of the project in light of any changes that have occurred during its delivery period.

Key Contextual Factors

3.39 Since Cyber Foundry launched in November 2019, there have been significant changes in the local and national political and economic landscape, which may impact on the project's delivery, impact and continued relevance. The following table review a range of policy and changes in the socioeconomic context and assesses their potential impact on, or implications for, the project. Where data is available, we have used 2019 as the baseline year.

Table 3.4 Changes to Delivery Context

Factor	Changes Since Project Inception	Potential Impact on Project
Build Back Better: our plan for growth (2021) – To replace the UK Industrial Strategy	• The plan identifies levelling up the entire UK, transitioning to net zero and the vision for Global Britain as its three priorities, which it aims to achieve by building on three pillars of growth: infrastructure, skills and innovation. • A broad spectrum of actions to strengthen innovation are outlined, including increasing the international competitiveness of high-growth, innovative businesses and supporting SMEs to grow through two productivity enhancing schemes (Help to Grow: Management and Help to Grow: Digital).	• The LCF aligns with the government's continued commitment to innovation. • The project's rationale and objectives respond to the aim of bolstering the adoption and diffusion of innovative technologies and ideas.
Levelling Up the United Kingdom (2022)	• Outlines a system change approach to the way that government works to deliver the levelling up Agenda. At its heart are twelve national missions. Among others, they aim to encourage innovation, boost productivity, and boost economic growth. • The agenda specifies that BEIS will aim to invest at least 55% of its total domestic R&D funding outside the Greater South East by 2024-25. In addition, the UK Government will target £100m of investment in three new Innovation Accelerators.	• The LCF Hub aligns with the government's continued commitment to innovation. • The project supports businesses in Lancashire, which is a county with below average productivity and economic performance. Addressing productivity gaps is a key metric for levelling up. Increasing innovation and boost business growth will contribute to the mission to address geographic inequalities and contribute to levelling up.
UK Innovation Strategy: Leading the Future by creating it (2021)	• The UK innovation strategy sets out the government's vision to make the UK a global hub for innovation by 2035. The strategy commits to fuelling businesses that want to innovate, stimulating innovation to tackle major challenges faced by the UK and the world and drive capability in key technologies. It highlights the UK Government's ambition to make the UK a	• The LCF aligns with the government's continued commitment to innovation. • The project's rationale and objectives respond to the aim of supporting businesses who want to innovate by providing them with the confidence and knowledge to invest in digital and cyber technology which will lead to more business growth and further opportunities.

	global hub for innovation, placing innovation at the centre of everything the nation does.	
National Cyber Strategy 2022	• Presents how the UK will harness the opportunities presented by technological advancements in the digital age whilst addressing the risk posed by cyber attacks which threaten businesses and organisations. • By 2025, the Strategy intends to strengthen the UK cyber ecosystem by investing in people and skills, and deepening the partnership between government, academia and industry; build a resilient and prosperous digital UK; and take the lead in the technologies vital to cyber power	• LCF supports this agenda through its commitment to supporting businesses to seek innovative solutions and build cyber resilience. • In particular, it creates partnerships between SMEs and the expertise of the University. • Consultations supported this vision, emphasising that there is still an absence of knowledge on the systems businesses need in place to innovate and how to implement them. • Consultations also highlighted that with the National Cyber Force (NCF) being relocated to Salmsbury in Lancashire, this has created a spotlight on cyber in the county and businesses have become more aware of 'cyber' and its importance.
EU Exit (2021)	• The UK and EU agreed on a post-Brexit trade deal which came into force in January 2021. The new deal has resulted in uncertainty for businesses, in relation to trade, employee and other regulatory considerations.	• As the UK left the EU a year ago, it is too early to gauge the full impact of this on the Lancaster economy. From consultations, there was a concern that if Brexit causes further costs to businesses, this may continue to deter or prohibit them from investing in cyber solutions. • The impacts of the EU exit are expected to be more prevalent for businesses in future, particularly for beneficiaries who are internationally trading. The LCF can assist businesses with understanding and overcoming

		growth and cyber security challenges that the EU Exit has caused.
COVID-19	• Since the pandemic outbreak in the UK in March 2020, the Government has enacted several measures, which have restricted the economic and social activity, to curb the spread of the Coronavirus. • To date, these measures have included but are not limited to three separate national lockdowns, a tiered regional lockdown approach, and restrictions to certain sectors and business' operations. • To support the economy, through the pandemic, the Government has introduced several support schemes such as the job retention scheme, bounce back loans scheme and specific sector funding to support vulnerable individuals and businesses which have restricted them from operating normally. • COVID-19 has also seen a significant increase in home-working as more businesses have moved towards digital working, making technology even more important in how a business operates. At the same time, cyber-attacks have increased, as well as data breaches. SMEs are particularly vulnerable as companies tend to use their personal devices more to access corporate information, which does not guarantee the same level of cyber security as an office or corporate equipment. This raises the question of whether businesses are prepared for the new cyber security risks. [3]	• The impact of COVID-19 on the UK economy has been significant. These impacts have also been felt locally, where the pandemic has created uncertainty for Lancashire businesses, impacting decisions to invest in technology, innovate and grow their business. • Business support schemes are now even more important to help businesses through and beyond the COVID-19 pandemic. Business support and investment will be crucial to secure and enable the future recovery and growth needed to rebuild the economy. • Cyber security continues to emerge as an integral area for ensuring businesses can adapt to and harness the opportunities which have arisen from the increased in home-working and other digital opportunities from COVID-19. Deloitte recommend businesses can apply new technology and tools, prepare for attacks, and improve their cyber security awareness. LCF can assist in this through its focus on improving innovation and growth whilst boosting cyber resilience. • Consultations highlighted the relevance of cyber support as the operations and needs of business changed as more moved online. At the same time, LCFs content has helped provide businesses with the support to adapt to changing circumstances and needs.

[3] Impact of COVID-19 on Cybersecurity (deloitte.com)

		• Consultees agreed that the impacts of the COVID-19 pandemic on businesses was a key driver in changing the design of the delivery model. There was a greater need to digitally pivot and be 'cybersafe' as operations moved online, and there was increased demand for prototype development. As a result, the delivery team shifted from a 'funnel approach' to prioritising technical innovation support to accommodate business needs. This is explored in more detail in Chapter 4.
UK Shared Prosperity Fund (UKSPF)	• UKSPF will replace the current European Union Structural Funds, which will finish by end of 2023. This may reduce the availability of funding to continue delivering SME support post-2023. • Lancaster City Council was allocated £5.3 million to support three core areas: Communities & Place, Supporting Business, and People & Skills. • In August 2023, Lancaster submitted its overall UKSPF Investment Plan, identifying priority interventions in the three core areas. This included investment in research and development and strengthening local entrepreneurial economy	• With fewer funds available to universities, this may restrict the ability to continue supporting businesses or reduce the amount of funding available. • The allocated interventions could, however, provide some funding towards continuing Next LCF and help businesses in the three intervention areas identified.
Innovate UK, Building the Future Economy 2021-2025[4]	• Articulates the role Innovate UK will play with partners to help deliver the UK innovation strategy. Commits to helping businesses grow through the development and commercialisation of new products, processes and services, supporting by an outstanding innovation ecosystem.	• LCF aligns with the ambitions of Innovate UK to support businesses to grow and access new opportunities. • LCF supports the innovation ecosystem by connecting businesses with the knowledge, facilities and resources at Lancaster University.

[4] Innovate UK action plan for business innovation 2021 to 2025 – UKRI

	• To do this it will look at the future economy, focusing on opportunities for businesses in achieving creating and benefiting from advances in technology, and supporting horizon scanning and foresight. • Developing an innovation ecosystem by increasing coordination to support innovating businesses between public agencies, academia, infrastructure and the regulatory environment. Innovate UK will help partners work better, design better programmes and help businesses access more easily the support, knowledge and facilities they require to succeed.	
Lancaster University, Strategic Plan 2021-2026	• Since its last Strategic Plan in 2015, the economic and political context of the UK has changed. The Strategic Plan responds to the new challenges faced regionally and nationally, and seeks to build economic growth and wellbeing in the region. • Commits to continuing to deliver research that transforms practice and thinking. Lancaster will continue to develop research excellence through strong interdisciplinary and collaborative research. Research areas of opportunity which support this include health, data, security and sustainability.	• LCF responds to this strategy through its commitment to supporting businesses to grow and innovate. • LCF also supports areas of opportunity within data and security.
Lancashire Economy Baseline	• GVA per head of population in Lancashire is £21,982, a decrease of 4% since 2019. Although the reduction in GVA reflects the England average, the productivity rate is still significantly lower than the rate across England of £29,757[5].	• GVA per head in Lancashire is lower than the national average, while worker productivity in the healthcare sector is lagging. Cyber Foundry's focus on SME innovation in the ICT sector may facilitate engagement in higher value activities. In turn, this can lift the region's GVA, especially if

[5]ONS, Regional gross value added (balanced) per head and income components, 2022

	• Productivity in the ICT sector appears slightly lower in Lancashire than nationally, with GVA per FTE worker at £96,184 as opposed to £99,509. • The unemployment rate in Lancashire is 4.9%[6], compared to 3.7% at the same time last year (and 2.5% in 2020)Unemployment is now higher than the national average of 3.9% despite previously being below in 2021 and 2020. • Lancashire's business base, similar to the national business base, is predominantly made up of SMEs, accounting for 99.7% of all businesses[7]. Among these SMEs, Lancashire has a slightly lower proportion of micro businesses (88.4%) relative to the national rate (89.6%), but relatively higher proportions of small (9.6% vs 8.5%) and medium (1.6% vs 1.5%) businesses. • ICT sector businesses make up 4.1% of Lancashire's business base, compared to 7.5% in England. SMEs make up a similar proportion of ICT firms locally (99.7%) than nationally (99.8%), with small businesses (6.1% vs 5.6%) being especially more prominent. • Latest data for 2019 showed that Lancashire had fewer business births per 1,000 working age population than the national level with 6.9 business births per 1,000 working age population compared with 8.5 for England[8].	R&D spill-over effects are diffused to other businesses. • Unemployment in Lancashire is higher than the national average. This is in contrast to previous years trends which highlights the importance of creating new employment opportunities in Lancashire. • ICT sector businesses are less concentrated in Lancashire than nationally. However, the higher proportion of small businesses may mean there is open opportunity for Cyber Foundry to target small businesses and start-ups in the LEP. • This also holds true when looking at the LEP's business birth rate, there is clear opportunity for potential entrepreneurs and new businesses to be supported to form and be sustained.

[6] ONS, Annual Population Survey, 2022

[7] ONS, UK Business Count, 2022

[8] ONS Business Demography (2020) and ONS Mid-Year Population Estimates (2020)

Cyber Security Breaches Survey[9]	• Large companies are more likely to say cyber security is a high priority (95% versus 85% overall). As a priority cyber security is increasing year-on-year from 77% and 80% in 2021 and 2020. • UK businesses are still underinvesting in cyber security with notable differences when broken down by sizing. 72% of large firms have a cyber security policy compared to 55% medium, 43% small, and 32% micro businesses. • 89% of large firms have taken action on 5 or more guidelines recommended to improve their cyber security compared top 80% of medium firms, 65% small, and 45% micro.	• Cyber security continues to be a challenge. Whilst there have been improvements in the last year, the difference between SMEs and larger businesses highlights support is still required to support the more vulnerable SMEs. • Whilst businesses initially seemed to de-prioritise cyber security during 2021, likely due to the responding to COVID-19 challenges, this has now increased in priority. This was reflected in consultations with delivery members noting businesses have started to see how cyber security is central to business growth and performance, highlighting the need for more education and support to help them improve cyber security.

Key Summary – Appropriateness of Project Design and Relevance

- LCF was clearly aligned with national and regional policy priorities that were in place when the project was designed (such as the Industrial Strategy and the Lancashire Innovation Plan). The recent publication of the National Cyber Strategy shows that the project continues to be highly relevant to policy priorities.
- There was clear evidence of need for LCF, with demand studies showing there was significant underinvestment in cybersecurity systems among businesses in Lancashire relative to national levels. More recent evidence for the UK as a whole, shows that small businesses continue to underinvest in cyber-security. This supports the market failure argument and rationale for public sector investment.
- Recent changes such as the launch of the National Cyber Force (NCL) in Samlesbury, Lancashire, and the opening of a GCHQ site in Manchester has facilitated the development of a 'cyber corridor' in the North West. This has increased the spotlight on cyber security and made Lancashire businesses more aware of the potential benefits. Again, this suggests the importance and relevance of the LCF project has grown over time.
- The original design of project activities was fit-for-purpose, and sufficient to address a range of cybersecurity needs, with a mix of light touch and more intensive R&D support activities. However, with the onset of the COVID-19 pandemic, the project then focussed on bespoke R&D support to

[9] DCMS, Cyber Security Breaches Survey, 2022

support businesses who were digitally pivoting and later delivered studentships to meet demand for lower skilled prototyping. The redesign of the delivery model has increased the relevance of LCF in supporting digital innovation.

- Targets were estimated based on the predecessor Greater Manchester Cyber Foundry delivery model and Lancaster University's experience of delivering business and innovation support. The original targets were conservative and later increased as a result of pivoting to bespoke support.
- There was no consultation feedback on how LCF has responded to or have future plans to align delivery to the upcoming UKSPF. The end of ERDF and the more competitive funding environment under UKSPF may make it more difficult to sustain the delivery of LCF in future.

4. Progress Against Contractual ERDF Targets

1.2 This section provides a summary of LCF's performance against ERDF contracted financial and output targets by project closure, and analyses reasons for performance. It also outlines whether there has been progress against the ERDF cross cutting themes.

Changes to Contractual Requirements

4.1 A project change request (PCR) was submitted in April 2022 and later approved. This proposed a reprofiling of the financial budget and contracted output targets, with a no cost time extension extended the project to 31st July 2023. It was anticipated that this would help deliver more longer term, deeper business assists and collaborations, and increase progress against the C26, C28 and C29 targets.

4.2 The revisions to the output targets are set out below:

Table 4.1 Original and Revised Project Outputs

	Original (Nov 2019)	Revised (PCR April 2022 onwards)	Variance	% Variance
Public Match	£840,981	£840,981	0	0%
ERDF	£1,261,471	£1,261,471	0	0%
Total	£2,102,452	£2,102,452	0	0%
ER/C/O/01 Number of enterprises receiving support,	90	90	0	0%
ER/C/O/04 Number of enterprises receiving non-financial support,	90	90	0	0%
ER/C/O/05 Number of new enterprises supported,	4	4	0	0%
ER/C/O/08 Employment increase in supported enterprises	12	12	0	0%
ER/C/O/26 Number of enterprises cooperating with research institutions	45	42	-3	-7%
ER/C/O/28 Number of enterprises supported to introduce new to the market products	5	14	9	180%
ER/C/O/29 Number of enterprises supported to introduce new to the firm products	20	20	0	0%

Source: ESIF PCR Application and Assessment Form for the Lancashire Cyber Foundry project

Performance Against Contractual ERDF Targets

4.3 The project's performance as at Q1 January 2023, and forecast performance by the end of the delivery period, is summarised below:

Table 4.2 Spend and Output Performance, December Q1, 2023

Indicator	Original targets	Reprofiled contracted targets (Nov 2019 - June 2023)	Performance to date (Q1 2023)	Expected Performance by project completion	% of Reprofiled Target
Public Match	£840,981	£840,981	£670,293	£840,981	80%
ERDF	£1,261,471	£1,261,471	£1,163,018	£1,261,471	92%
Total	£2,102,452	£2,102,452	£1,833,311	£2,102,453	87%
C1: Number of Enterprises Receiving Support	90	90	92	92	102%
C4: Number of enterprises receiving non-financial support	90	90	92	92	102%
C5: Number of New Enterprises Supported	4	4	6	6	150%
C8: Employment Increase in Supported Enterprises	12	12	15	18.9	158%
C26: Number of enterprises cooperating with research institutions	45	42	44	44	105%
C28: Enterprises Supported to Introduce New Product to Market	5	14	15	15	107%
C29: Enterprises Supported to Introduce New Product to Firm	20	20	25	25	125%

Financial Performance

1.3 By Q1 2023, Lancashire Cyber Foundry had spent £1,833,311 or 87% of its total contracted expenditure target (£2,102,452). This underspend is primarily attributed to significant

underspend in the travel budget resulting from COVID-19 restrictions. Whilst more networking and engagement events began to occur in person from Q1 2022, a large number of business meetings and workshop continued to be performed virtually. More events and meetings began to take place in-person from Q3 2022 which is likely to continue until the programme's closure and will be accounted for in travel budget spend, addressing the previous underspend. The time extension to the project will enable LCF to meet its expenditure targets by end delivery.

Output Performance

1.4 After receiving formal approval for the submitted reprofile, the Lancashire Cyber Foundry team have been able to work towards the new contracted outputs. As of Q1 2023, it has already exceeded the contracted targets for C5. Due to the positive feedback from start-up organisations, progress reports suggest that the project anticipates to exceed this target as other start-ups begin to receive support by Q2 2023.

1.5 Whilst the programme was initially slow to meeting its targets, this was due to the COVID-19 pandemic. Consultees explained that businesses were focussing on day-to-day survival, and saw investing in cyber and digital innovation as less of a priority. However, as the worst effects of the pandemic have alleviated and businesses have started planning for the future, there has been growing awareness of how cyber-security can help their business grow safely. Due to a lack of this type of support in Lancashire and Cumbria, the delivery team believed there was a genuine need for this kind of business support.

1.6 Forecasts for the project show that Lancashire Cyber Foundry will continue to meet or exceed the reprofiled targets by the projects closure in Q2 2023. Consultees noted that C28 and C29 output targets have performed strongly throughout the project. This success was in part due to the experience of the delivery team who had worked on similar programmes before including Greater Manchester Cyber Foundry and could adapt to meet the needs of businesses.

1.7 This flexibility allowed the delivery team to focus on providing technical assists at the start of the project which is where the majority of business demand was concentrated due to the big shift online from COVID-19 restrictions. Whilst businesses did not necessarily see the value in research and innovation during this time, one delivery consultee explained that businesses were increasingly conscious about cyber security and the technical assistance they required to become secure.

1.8 The introduction of student internships into businesses was welcomed by both delivery consultees and beneficiaries who praised the level of output targets students could deliver. As the project has progressed, the delivery team have been able to provide additional requests for students and expand the number of students involved.

Horizontal Principles

1.9 The project has responded to the ERDF horizontal principles of equality, diversity, environment and sustainability via Lancaster University's existing policies set up to address these principles. This is achieved by assisting beneficiary businesses to factor the horizontal principles into future business operations and resource planning for new product, process and service development.

1.10 LCF has supported the **Equality and Diversity**, and **Tackling Poverty and Social Exclusion** principles, through deploying different marketing and monitoring approaches:

- Ensuring there was no language bias towards underrepresented groups, particularly for women and more deprived localities in Lancashire.

- Collaborating with external organisations such as Pink Link Ladies who have strong female-led business networks.
- Using targeted marketing methods to improve female representation in the project (explored further in Chapter 5).
- Collecting and recording additional demographic data to evidence the project's equality, diversity and inclusion impact, for example gender profile, ethnic minority group, age and profile of senior management.

4.4 While the team have made efforts to encourage more inclusivity in its take up and delivery, there was no feedback or evidence provided which suggests beneficiary businesses have factored the horizontal principles into future business operations and resource planning for new product, process and service development.

Key Summary - Project Progress

- LCF has underspent against its total expenditure target (87%), mainly due to under expenditure in travel costs during COVID-19 restrictions. However, the project is expected to meet its target by end delivery, as more engagement events and meetings will continue until project closure.
- The project has met or exceeded all output targets, with the highest attainment in supporting employment growth (C8, 158%), new enterprises (C5, 150%) and new products to firm (C29, 125%). Despite an initial slow start during the COVID-19 pandemic, the prioritisation of technical assists to meet business demand and the studentship offer were fundamental in achieving a strong output performance.
- LCF has supported the ERDF horizontal principles, 'Equality and Diversity' and 'Tackling Poverty and Social Exclusion' by implementing marketing and engagement methods which encouraged take up from underrepresented groups and more deprived / isolated localities in Lancashire. In tandem, the delivery team have monitored additional metrics to compare engagement with different demographic groups.

5. Delivery and Management Performance

5.1 This section provides an analysis of how effectively the project has been implemented, highlighting factors which explain the project's development and performance. It synthesises findings from consultations with management and delivery staff of the Lancashire Cyber Foundry project (a full list of consultees is provided in Appendix). These semi-structured consultations were carried out over February and March 2023 by Microsoft Teams calls. A list of consultees was provided by Lancaster University, which included current and past management and delivery staff involved in designing and delivering the project.

Project Administration and Governance

The project team worked well with PSU to ensure compliance with administrative requirements

5.2 LU's PSU ensure that the project is compliant with ERDF requirements such as alignment of beneficiaries with eligibility criteria and contractual target indicators. This high level of scrutiny over the detail of outputs and outcomes claimed, meant that the delivery team took care to ensure beneficiaries were onboarded correctly and knew what information they were required to provide. Consultees indicate that this process has worked well.

Regular meetings strengthened relationships in the delivery team

5.3 The project was managed and governed through a series of regular meetings which the project manager had oversight of via one-to-one discussions with project leads. Regular meetings included:

- Delivery team meeting - a weekly discussion of delivery goals, progress to date, and next steps. This included the business development, administration and technical teams.
- Advisory board meeting – held every six months, this provided a forum for discussion of strategic issues with the PSU team and external stakeholders to drive local and national objectives
- The technical manager met with students once a week to check their progress and future delivery plans

5.4 Delivery consultees noted that these regular meetings helped to increase team cohesion and transparency. The project manager was frequently praised for her role in overseeing a team with diverse roles, and efforts in building relationships across the sub-teams.

Reporting processes provided accountability and transparency in delivery

5.5 Project monitoring was discussed in all meetings referring to an Excel spreadsheet tracking indicators such as beneficiary recruitment, outputs achieved and final activity. The project team reported that this helped everyone to know what they were working towards in terms of timelines and targets, resulting in roles and responsibilities being clear to all. With hindsight, consultees thought that regular advisory board meetings should have happened from the outset of the project.

5.6 As a result of management and governance discussions, the process of managing studentships changed multiple times. This process was initially led by the project manager but this changed

later in delivery and is now overseen by the technical manager. On reflection, it would have been more effective to have started this early rather than late into delivery.

Marketing and Demand Stimulation

Networking and Linkedin promotion was most effective in raising awareness of the project

5.7 The project team used a range of marketing methods to engage beneficiaries with the Lancashire Cyber Foundry project. These included engagement with the project team's existing networks, networking at trade shows and expositions, use of social media posts, podcasts, and press releases such as within the Lancashire Business Review.

5.8 Particularly successful methods included:

- **'Day in the Life' Q&A summaries with students undertaking studentships** which were promoted on LinkedIn. This method allowed LU to share insight into what students did in their role and how it benefitted them. This helped to raise awareness of LCF among students and businesses alike to get involved with the project.
- **Face-to-face networking at conferences and exhibitions** – Delivery consultees reported that this was a good method of generating leads as it enabled them to facilitate deep conversations with a wide pool of businesses to understand their challenges. During 2020, the team pivoted towards online networking as their ability to continue this face-to-face was prevented under COVID-19 restrictions. Once restrictions lifted a hybrid approach proved successful to get cyber sector messages across to businesses according to their networking preferences.

5.9 This was confirmed by businesses who completed the beneficiary survey. Of those who responded, 37% met someone from LCF at an event, 11% saw an advert, and another 11% were referred from another business support provider.

Targeted methods were deployed to widen reach and encourage a more diverse take up

5.10 In 2022, the project employed a marketing lead. Compared with the previous use of LU's central marketing unit, this new team member had resource to make use of business engagement targeted to this specific project. Consultees report that this dedicated marketing resource helped to strengthen lead generation and that having this from the outset of the project would have boosted early engagement and supported further information sharing about the project. Having a marketing lead has also enabled the business development manager to prioritise efforts on lead generation and project promotion.

5.11 Throughout the project design and delivery, the project team worked to ensure that marketing communications were tailored to attract women onto the project. This was done by, for example, changing language used to sound less masculine, leading talks at female business events, and joining female only network groups (such as Pink Link Ladies). Delivery consultees report that this had a positive impact on engagement and diversified the businesses supported with 47% of businesses supported led by women.

5.12 The project manager was also keen to engage strategically to widen the project reach across Lancashire. Historically, LU has been effective in engaging with north of county whilst struggling to attract businesses in east. Targeted approaches to engage with more East Lancashire businesses included attending conferences in East Lancashire, hosting meet and greets in the

locality, and attending networks of central and east Lancashire businesses, manufacturing groups and the Chamber of Commerce in East Lancashire. Further to this, the team made sure to tailor messaging to the needs of East Lancashire businesses.

5.13 The monitoring data shows that 29% of beneficiaries supported were from East Lancashire and 71% were based in West Lancashire. With hindsight, the project delivery team would have also undertaken more targeted activity in rural communities.

5.14 Whilst delivery consultees reported the project engaged with beneficiaries working in a fairly broad range of sectors, some felt more could have been done to engage with the manufacturing and agricultural sectors. This could have involved attending sector specific events and marketing within sector specific publications.

The project has fostered good relationships with wider business support to encourage referrals

5.15 Referrals from other business support projects were also an important route to engagement with LCF. As the only free cyber security business support project in Lancashire, LCF collaborated with a number of wider business support projects. These included the GM Cyber Foundry, LU's Health Innovation Campus and management school, Advanced Manufacturing Research Centre, Lancashire's Business Growth Hub Boost, and the Lancashire observatory crime unit.

5.16 The LCF delivery team had close relationships with other LU business support projects, with most referrals between them and a minority with Boost. Consultees reported that the ERDF office hub allowed them to understand which needs could be met through other support. The project was particularly well linked with LU's Health Innovation Campus given the knowledge around cyber is important to many healthcare businesses, for example concerning medical records held on computers.

5.17 The project also partnered with Morecambe College to host workshops as part of the college's cyber course. Delivery consultees noted that while referrals were mostly sent outwards to other projects, this has helped to foster good relationships with other projects, encouraging them to return referrals. More referrals into LCF would have been welcomed, as it would have created an external pipeline for recruitment.

Project Delivery

5.18 The delivery of LCF support involves the following stages:

- **Application stage**: The beneficiary makes an enquiry. They join the technical team for a mindmap session to discuss how the project can help them.
- **Eligibility testing**: Following the mindmap session the technical team pass on details to the project manager and Business Development team who then assess eligibility and need. Information shared by businesses is checked by PSU and the project team ask the business for further detail if needed.
- **Diagnosis of barriers and need**: The technical manager works closely with the business to diagnose their cyber needs.
- **Bespoke, intensive support**: The business receives support from a researcher familiar with their areas of need. Following this, eligible businesses are matched with a researcher within the technical team for three months. Some businesses receive studentship

support. To gain this, an overview of the businesses skills requirements is prepared and shared with the LU student recruitment service.

- **Workshop support**: businesses attended an in-person workshop on security awareness and how to protect their business from cyber threats.
- **Support closure**: Feedback sessions are held with the technical team. The delivery team hold a follow up meeting to discuss possible referrals to other support. A handover report is provided to the business in simple language so that they can continue to take forward lessons learned. Each report includes contact details to encourage further engagement after the support is complete.

Onboarding and eligibility processes could have been more streamlined

5.19 To encourage take up of support, the delivery team sought to gather information on the businesses themselves as far as possible via eligibility meetings and public information. While the delivery team focussed their efforts on ensuring eligibility forms were completed correctly, this was difficult at times with limited public business trading data. PSU supported this process by double checking the information submitted. Still, delivery consultees felt the application process was onerous and could be streamlined further were it not for ERDF funding requirements. In any case, one consultee noted that better communication about the funding requirements would have helped.

5.20 In particular, queries of data shared by businesses required checking back with them which delayed the process and frustrated businesses. The process for onboarding businesses for studentships was more complex, particularly in terms of finding suitable students for each specific business as this took a lot of time. Some felt that having more resource and time would have helped speed the onboarding process for studentships.

The project was able to respond to need through matching support to the needs and existing knowledge of businesses

5.21 The diagnosis of business needs process shifted successfully from a funnel approach to a more bespoke offer in response to demand for support with digital pivoting. The delivery team described two routes of support which ensured support was matched appropriately to businesses' needs:

- Businesses with less cybersecurity knowledge were put into the 'funnel' model and selected support based on the challenges they faced such as workshops and 1-1 support.
- Businesses with more advanced cybersecurity knowledge were prioritised for technical support from the academic team.

5.22 Common barriers to growth explored at this stage were a lack of understanding around digital and general technical knowledge, how to embed digital processes, and managing COVID-19 and cyber risks. Where the need was too significant to address through the support, the team advised businesses to break them down into more manageable deliverables.

5.23 One area of need which could not be supported was how to market the business offer. The project made a large number of referrals to the Lancaster University team in this area, particularly to the UNITEplus project.

The COVID-19 pandemic brought an opportunity to reshape the support offer

5.24 There was consensus that despite the early challenges of the pandemic such as recruiting staff, and delivering support online, the pandemic has benefitted project delivery overall. Consultees identified two changes to delivery during the pandemic which made delivery more agile and responsive to business needs:

- **Hybrid workshops**: workshops were delivered in a hybrid approach halfway through delivery to attract a larger business audience. This enabled businesses to better balance support with their existing commitments, and benefit from peer-peer learning.
- **Adapting support content**: business demand changed during the pandemic which meant that workshop content and other LCF resources pivoted to support needs around digital resilience and innovation.

The studentships were effective in meeting technical needs

5.25 Studentships were introduced halfway into delivery due to the demand for prototyping and was regarded as the most popular and effective support offer. Many businesses became interested following the LCF introduction to cybersecurity concept workshop sessions. Studentships met a need for lower skilled R&D work over a short period of time and often enabled prototypes to be developed.

5.26 Some businesses needed support to move or adapt their products or services being delivered digitally. The delivery team met this need drawing on advice of academics. This led to focussing on bespoke support with prototypes to boost engagement and outcomes. Bespoke support involved building a product and testing its cybersecurity, writing a report about cyber risks. This also generated wider impacts, such as:

- more students being involved in the project through studentships
- strengthening the delivery team's skill base
- students securing permanent employment with businesses supported, facilitating retention of talent in Lancashire.

Prioritising 1-1 bespoke support facilitated intensive assists

5.27 Initially the project was designed to provide support with knowledge exchange, innovation and then one-to-one support. Recognising the need for support to pivot digitally, the delivery team discussed the best way to support businesses with academics. The result was an updated programme design which focuses on bespoke 1-1 support in developing prototypes to boost engagement and outcomes. The bespoke support involved activities such as help building a product and testing its cybersecurity, alongside a report about cyber risks. This prevented delays in delivery and resulted in wider impacts such as more students being involved in the project via studentships and strengthened the delivery team's skill base.

5.28 One stakeholder noted that the secure digitalisation programme was the most effective workshop as it allowed businesses to understand their blind spots and to check cyber risks with experts before starting to grow. The delivery team and external consultees suggest that beneficiaries were satisfied with the management and delivery of the support. They believe that this was in part due to good communication with the beneficiaries around how long support would take to be delivered.

The support deliverables could have been better understood among beneficiaries

5.29 While all consultees recognised the personalised approach to support was effective, some felt the expectations of businesses could be better managed. In particular they felt more clarity was needed around the nature of the digital innovation support, what the final result of support was likely to be and the funding implications when securing future investment. Despite this they note that where businesses were not able to develop a working prototype, they did still learn important lessons which they could take forward into attracting further funding.

5.30 Consultees generally reported positively about the support closure process drawing on anecdotal feedback from beneficiaries. One consultee felt more information could be provided to businesses to advise on their next steps.

Key Summary – Delivery and Management

- The delivery team have worked cohesively during delivery. Regular meetings and transparent reporting processes have contributed to strong relationships built within a multidisciplinary team.
- Networking at in-person events and promoting studentship Q&A summaries were effective in raising awareness of the project and generating leads. Targeted methods were also used to engage with underrepresented groups (mainly women) and East Lancashire. These were successful in achieving a more representative take up.
- The project collaborated and built relationships with other LU projects, particularly the Health Innovation Campus and external partners such as Boost and the Lancashire Observatory Crime Unit. This facilitated signposting and referral of support.
- The changes in the delivery model such as prioritising bespoke 1-1 support and offering studentships were effective in meeting beneficiary needs such as demand for lower skilled prototyping and digitally pivoting the business.
- Consultation evidence indicated two improvements to consider in delivery:

- streamline the application and eligibility process to minimise delays in onboarding businesses and students onto the project.
- communicate clearly the support deliverables to beneficiaries from the outset to manage expectations on the final output and any funding implications.

6. Beneficiary Experiences and Outcomes

6.1 At its core, LCF aims to provide R&D support to businesses who could use cyber security and digital innovation to create or improve products, services or processes, find new opportunities and retain or increase jobs. To evaluate progress made against these aims, it is important to understand the way that barriers to growth for businesses have been overcome and how that has led to enhanced outcomes and impacts.

6.2 This section provides a summary of the beneficiary survey findings on outcomes at the business level and satisfaction with support received. It also draws on project monitoring data and case study evidence to understand the characteristics of businesses which have been supported by LCF and qualitative insights on their experiences, respectively.

Sources of Outcomes and Impacts

6.3 The outcome assessment presented in this chapter draws on different sources of evidence including:

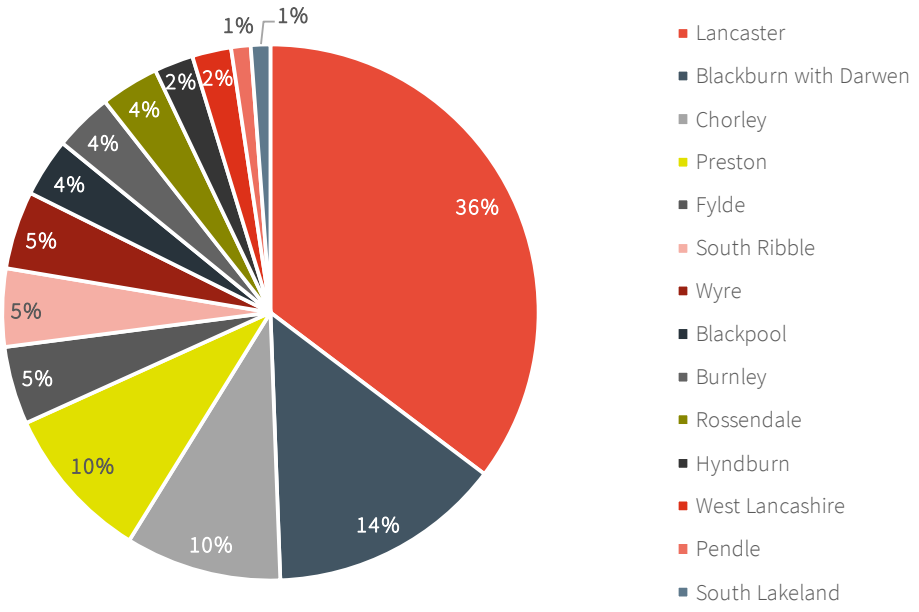
- a review of the latest project monitoring data provided by Lancaster University (ESIF form 1-013) which covers 92 of the businesses supported to the end of Q1 2023.
- an online beneficiary survey completed by 26 businesses, which provides qualitative and quantitative insights on beneficiaries' motivations for joining the programme, progress against barriers to growth and intended goals, the quality of support and whether the programme can be attributed to beneficiaries' current and future turnover and employment changes. The low sample sizes mean the findings are not statistically representative, but still provide valuable evidence of the experiences of beneficiaries and the types of benefits for their business.
- delivery and stakeholder consultation findings, which supports the survey evidence and explores wider perspectives on beneficiaries' experiences with support and outcomes and impacts achieved as a result of the project.
- a selection of three case studies, which provides detailed insights on how the support facilitated change within businesses and improvements in performance. It also captures beneficiaries' views on key challenges and successes in delivery, and suggestions for improvements.

Characteristics of Businesses Supported

6.4 Analysis of beneficiaries supported showed that:

- Nearly two-thirds of businesses were from Lancaster (36%), Blackburn with Darwen (14%) and Chorley (10%).
- The majority of businesses were based in urban settings (76%) with a small proportion in rural areas (24%).

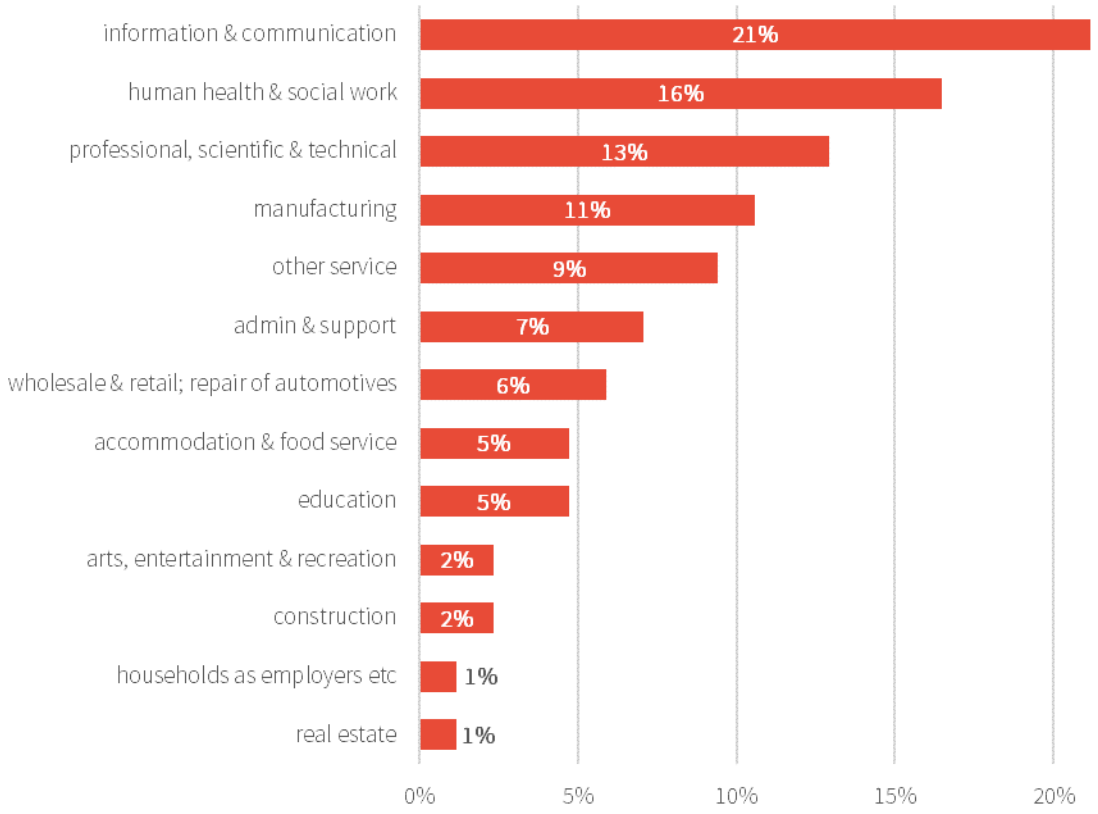
Figure 1.1 Location Breakdown of Beneficiaries



Source: Lancaster University (ESIF form 1-013)

6.5 Analysis of the sectors of beneficiary businesses shows that a wide range of sectors have been supported, with the most common being information and communication (21%), health and social work (16%) and professional, scientific and technical sectors (13%). Over half of the businesses supported (53%) belonged to priority sectors of interest to the Lancashire Cyber Foundry programme, including creative, digital and ICT (36%), advanced manufacturing (11%) and automotive (6%).

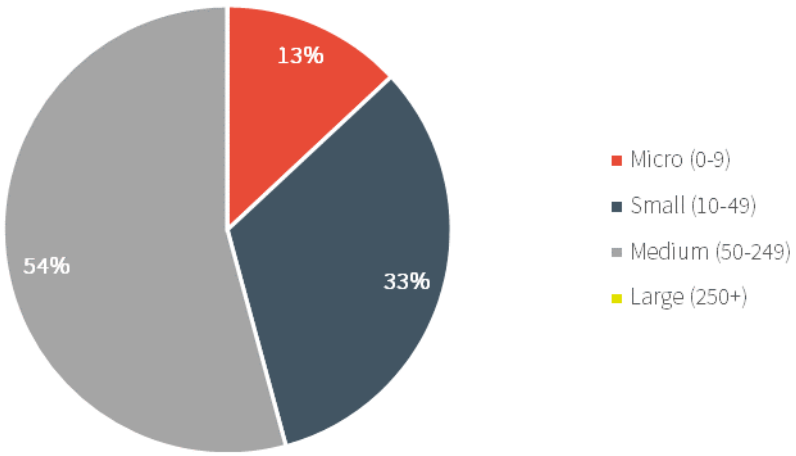
Figure 1.2 Sector of Beneficiaries



Source: Lancaster University (ESIF form 1-013)

6.6 Beneficiary monitoring data shows that whilst all of the businesses supported were small-to-medium sized enterprises, the majority (54%) of SMEs supported were medium sized enterprises, employing between 50 and 249 staff.

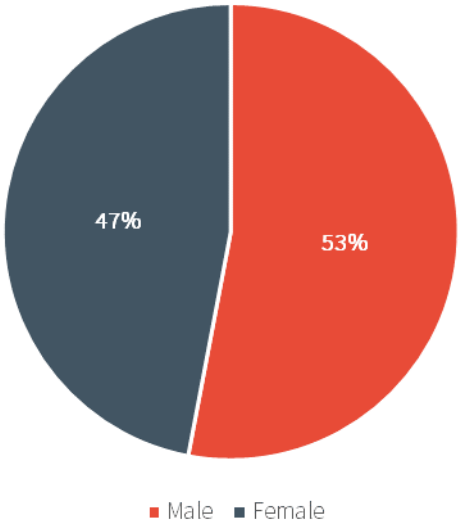
Figure 1.3 Employment Size Band of Businesses Supported



Source: Lancaster University (ESIF form 1-013)

6.7 One of the ambitions of Lancashire Cyber Foundry was to encourage female participation in the project. Breakdown of businesses showed that there was nearly a 50/50 split of participants with 47% of participants female.

Figure 1.4 Gender Breakdown of Beneficiaries



Source: Lancaster University (ESIF form 1-013)

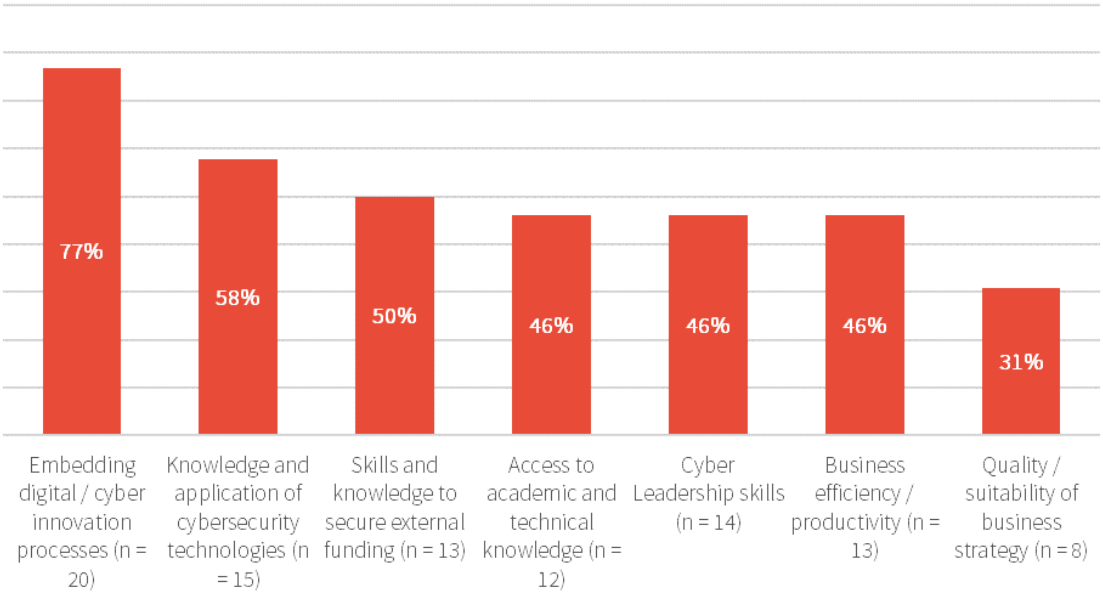
Business Outcomes

Motivations for Seeking Support

6.8 Before joining the project, the most common barriers to growth reported by beneficiaries were:

- Embedding digital/cyber innovation processes (77%)
- Knowledge and application of cyber security technologies (58%)
- Skills and knowledge to secure external funding (50%)

Figure 1.5 Barriers to Growth



Source: Lancashire Cyber Foundry Beneficiary Survey, 2023; Hatch (N = 26)

1.11 The barriers businesses faced aligned with what beneficiaries mentioned during consultations when discussing what their motivation for joining the programme were, including:

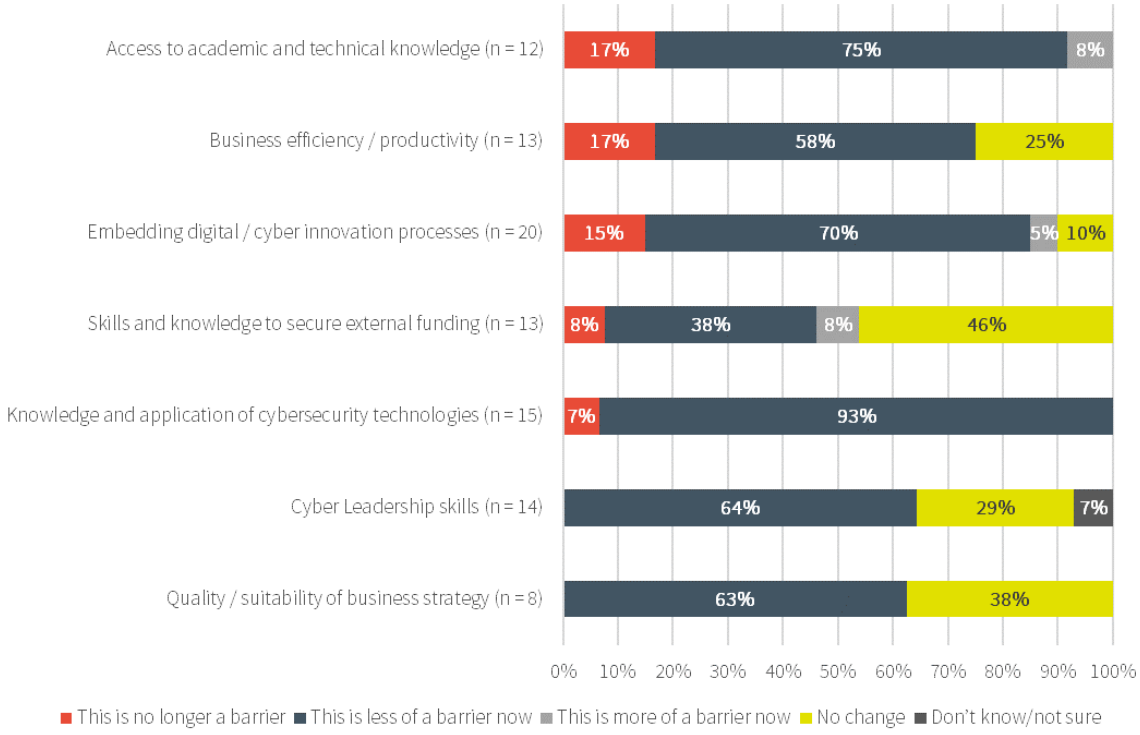
- Wanting support with understanding how cybersecurity technology can help them address the security challenges and questions businesses were finding with their hardware and applications.
- Developing technologies which can maximise business performance and expand into new online markets
- Funded support provision to help businesses benefit from cyber technology which was perceived as increasingly difficult for businesses to fund themselves after Brexit, COVID-19 and inflation challenges.

Indicators of Business Change

6.9 Since receiving support from Lancashire Cyber Foundry, businesses have made good progress in overcoming their barriers to growth:

- 75% on average reported that their barrier is now less or no longer a barrier to growth.
- The most progress was made in overcoming 'knowledge and application of cybersecurity technologies' with 93% saying this is less of a barrier now and 7% saying it is no longer a barrier.
- The least progress was made against 'skills and knowledge to secure external funding' with 46% saying they had made no progress in overcoming this barrier.

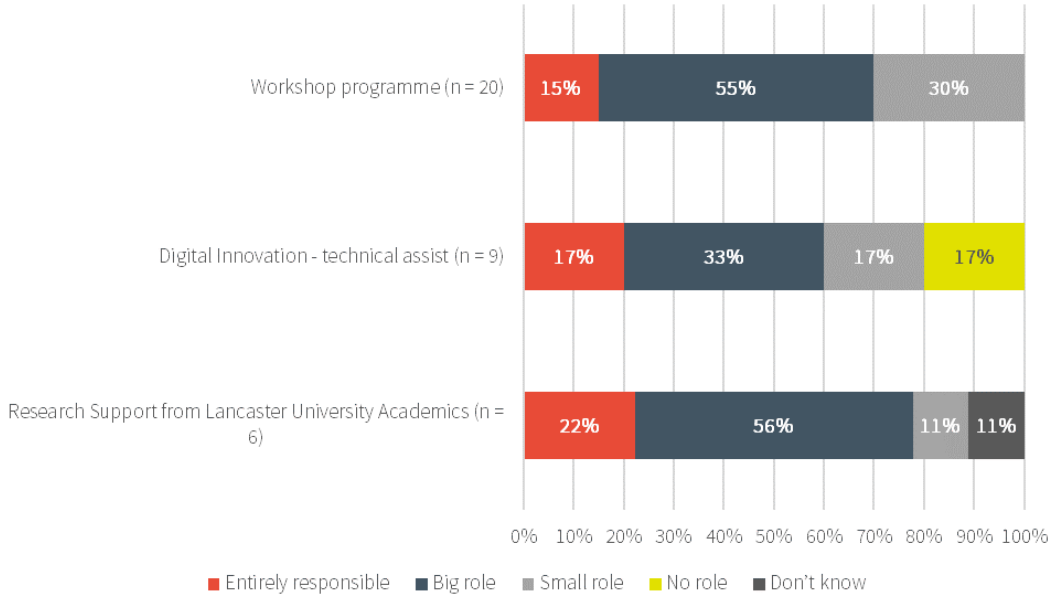
Figure 1.6 Progress Made in Overcoming Barriers to Growth



Source: Lancashire Cyber Foundry Beneficiary Survey, 2023; Hatch (N = 26)

6.10 Research support from Lancaster University academics was regarded by beneficiaries as playing the biggest role in overcoming barriers to growth (56%) with a further 22% saying this was entirely responsible.

Figure 1.7 Types of Support Which Played a Role in Overcoming These Barriers

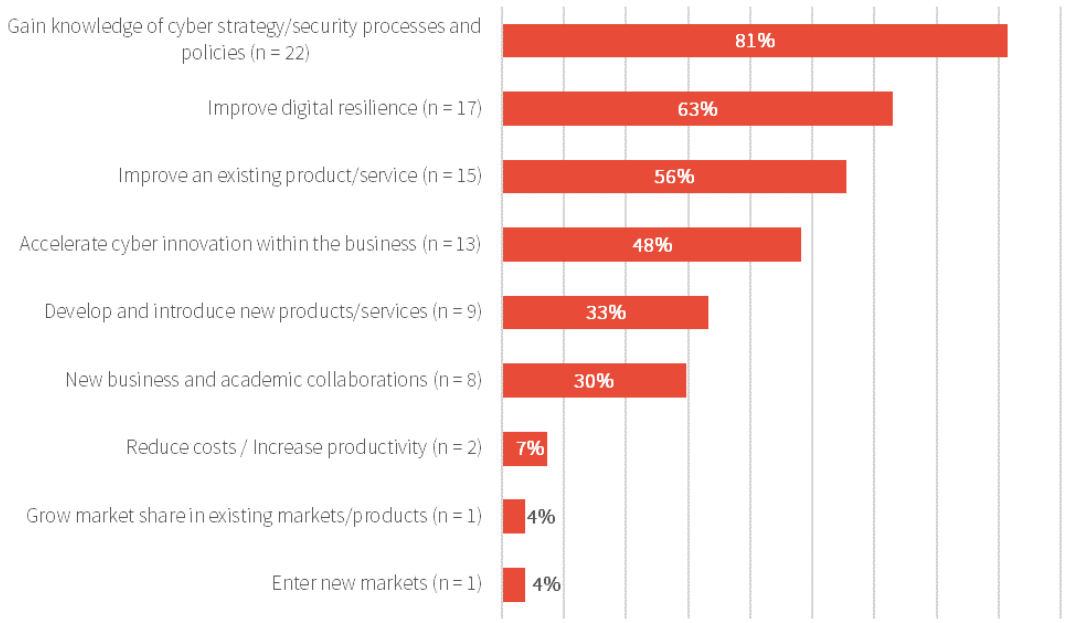


Source: Lancashire Cyber Foundry Beneficiary Survey, 2023; Hatch (N = 26)

Outcome Achievement

6.11 In the survey, beneficiaries were asked to reflect, prior to receiving support from Lancashire Cyber Foundry, what specific goals they were hoping to achieve. **Error! Reference source not found.** shows that the vast majority of respondents wanted to gain knowledge of cyber strategy/security processes (81%) with over half also wanting to improve digital resilience (63%).

Figure 1.8 Beneficiaries' Goals Before Receiving Support

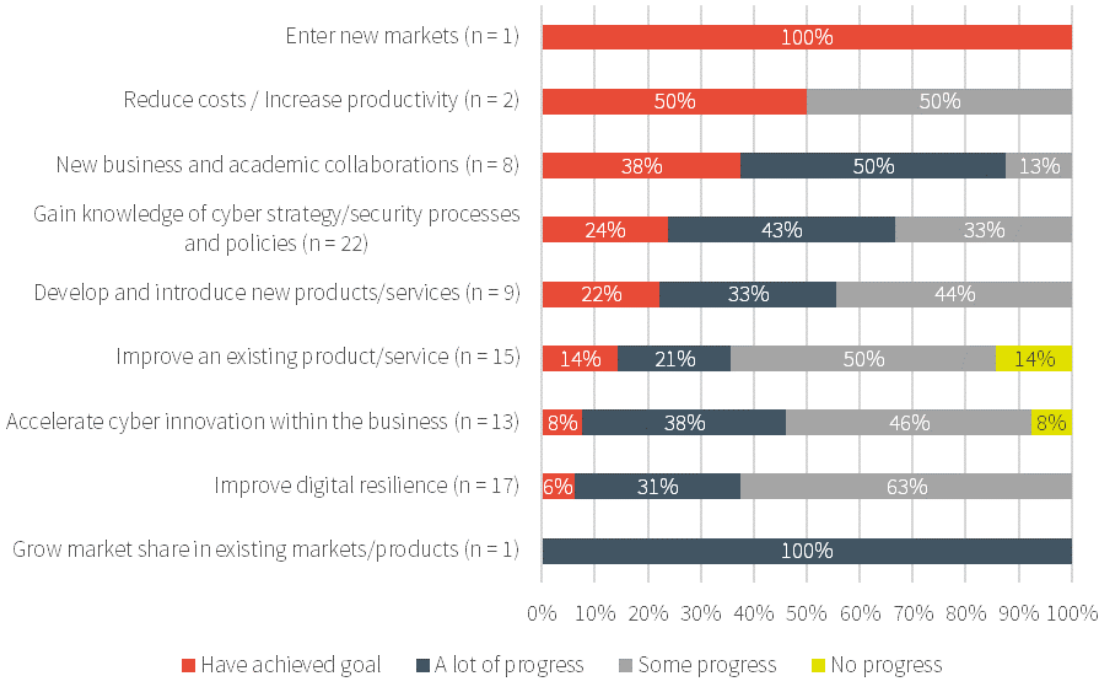


Source: Lancashire Cyber Foundry Beneficiary Survey, 2023; Hatch (N = 26)

6.12 Since receiving support:

- The most progress was made against entering new markets (100%) although this related to a single business, new business and academic collaborations (88%), and gaining knowledge of cyber security/security processes and policies (67%). This was consistent with consultations with the delivery team who expected businesses to become educated in cyber security processes.
- The least progress was made against improving an existing product/service (14%) and accelerating cyber innovation within the business (8%). Whilst consultations with the delivery team expected more businesses to have developed cyber innovation, it was recognised that there is often a delay in acquiring the knowledge and implementing it into the businesses with many innovation benefits requiring time to be realised. This has implications for the value of benefits for business performance that can be measured at this stage, which is relevant for the assessment of impacts in the following chapter.

Figure 1.9 Progress made in Achieving Goals



Source: Lancashire Cyber Foundry Beneficiary Survey, 2023; Hatch (N = 26)

6.13 The survey findings were also reflected in consultations with beneficiaries. During these conversations, beneficiaries cited they:

- felt supported in developing prototypes which could lead to them introducing new products and services to market, aiding the competitiveness of their business and reducing costs.
- still faced a barrier developing these prototypes into viable products due to the current economic climate preventing them from progressing their plans.
- businesses caveated that they had not been able to develop their product as much as they expected to and needed to seek financial support from providers elsewhere to help progress. This was reiterated by strategic partners who acknowledged businesses needed 'next steps technical assist' to support them in knowing what to do with their prototype and potential funding opportunities. Nevertheless, beneficiaries acknowledged that they had still gained invaluable knowledge and technical expertise which has helped them gain additional funding elsewhere to build upon or develop a new prototype which can be taken to introduce a new product or service.

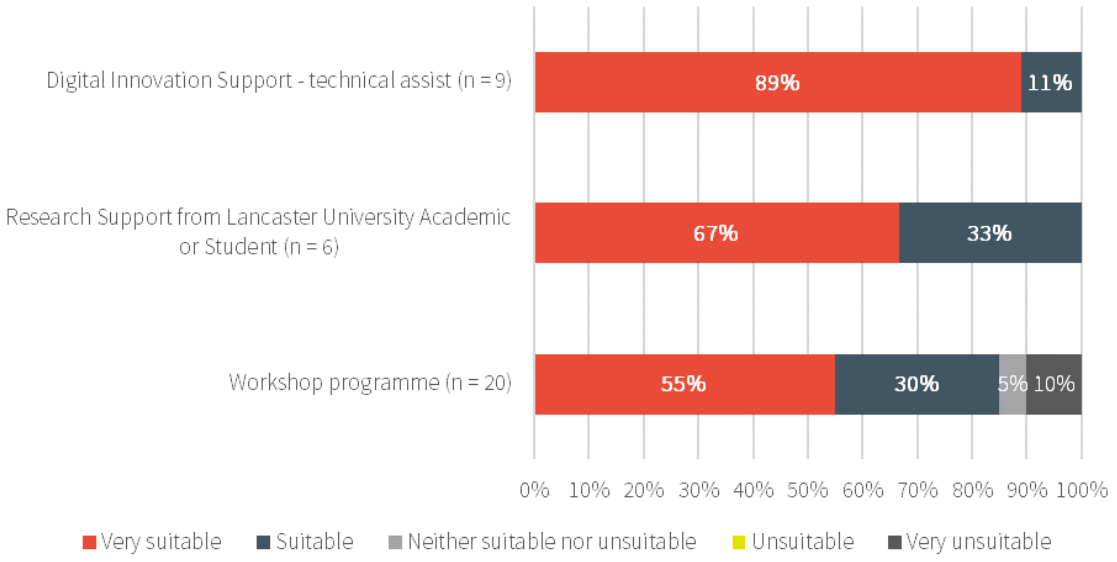
Experience with Support

6.14 When asked about the suitability of support received:

- 95% felt that the support they received was suitable or very suitable.
- Digital innovation was regarded as the most suitable (87%)

- The workshop programme was seen as the least suitable with 10% saying the support was very unsuitable. However, a higher number of beneficiaries still regarded the support as suitable or very suitable (85%).

Figure 1.10 Suitability of Support Received

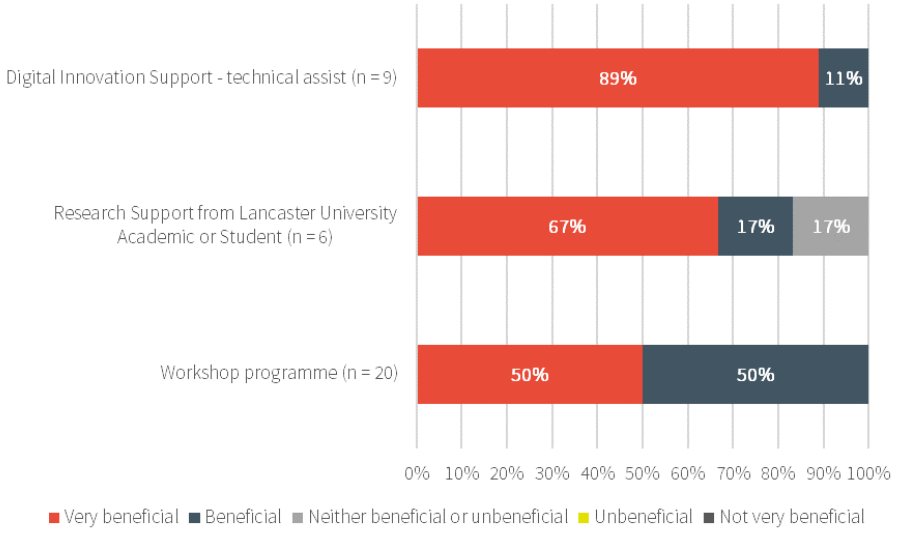


Source: Lancashire Cyber Foundry Beneficiary Survey, 2023; Hatch (N = 26)

6.15 Of the support received:

- 94% on average believed the support they received was beneficial or very beneficial to their business.
- Digital innovation support was the most beneficial with 89% saying this was very beneficial.

Figure 1.11 How Beneficial Was the Support Received

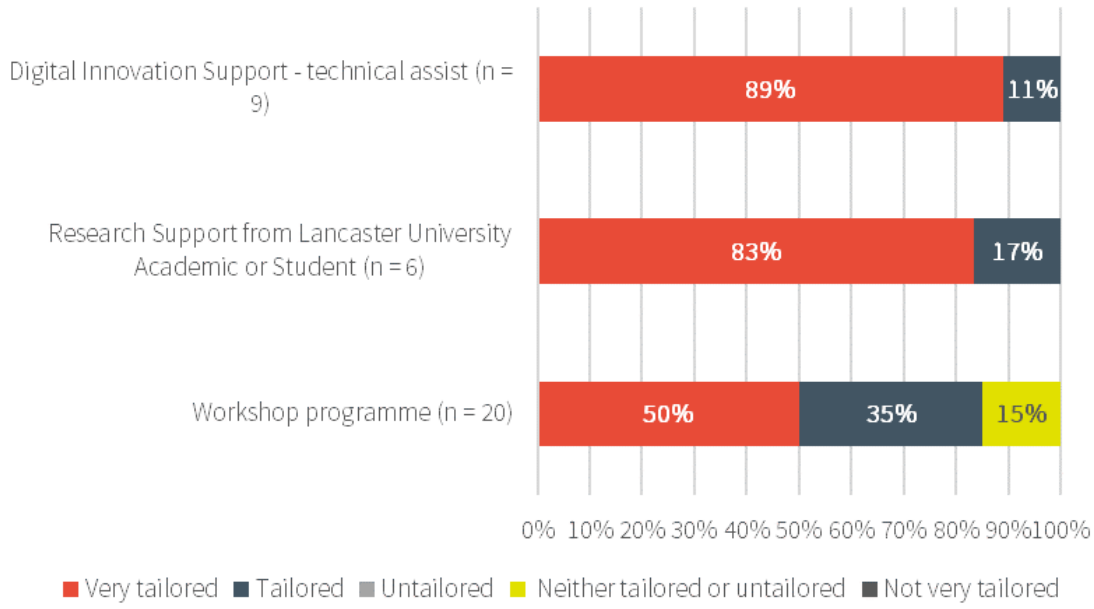


Source: Lancashire Cyber Foundry Beneficiary Survey, 2023; Hatch (N = 26)

6.16 When asked how tailored the support was:

- 100% of beneficiaries believed the support packages were tailored to the needs of the businesses.
- Digital innovation continued to be seen as the most tailored with 89% identified this as very tailored.
- Only 15% of respondents who received workshop support felt the support was neither tailored or untailored.

Figure 1.12 How Tailored Was the Support Received

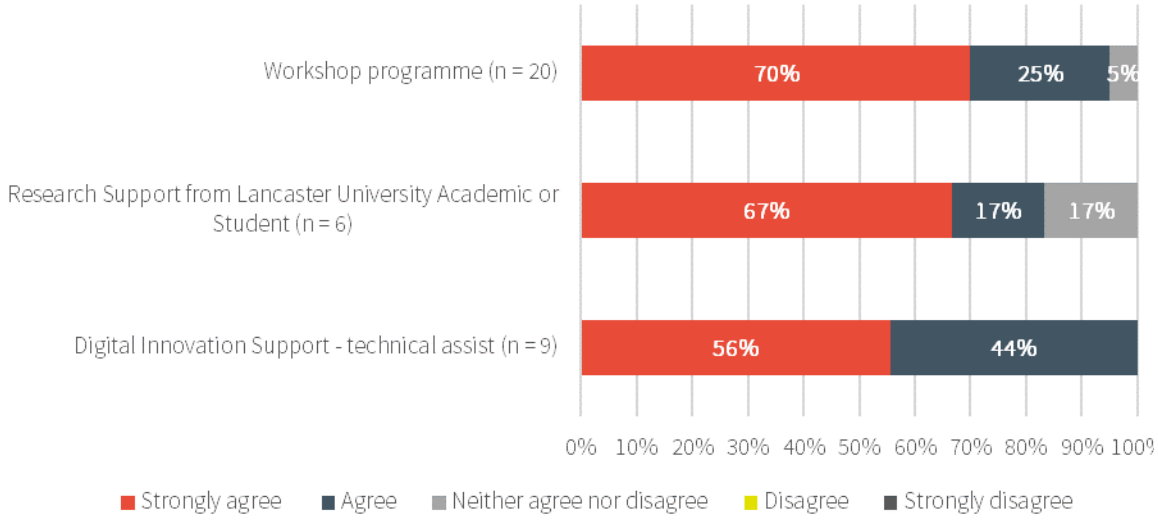


Source: Lancashire Cyber Foundry Beneficiary Survey, 2023; Hatch (N = 26)

6.17 When asked if beneficiaries knowledge had improved as a result of the support received:

- 93% on average agreed or strongly agreed that their knowledge had improved.
- Those who received digital innovation support reported the highest improvement of knowledge with 100% agreeing or strongly agreeing that their knowledge had improved.

Figure 1.13 Knowledge Improved as a Result of Support Received



Source: Lancashire Cyber Foundry Beneficiary Survey, 2023; Hatch (N = 26)

6.18 Overall, 100% of businesses who completed the survey were either satisfied (27%) or extremely satisfied (73%) with the support they had received.

6.19 When asked how Lancashire Cyber Foundry could be improved, the main themes raised by beneficiary responses was:

- **More in-person engagement**: whilst beneficiaries recognised that the COVID-19 pandemic forced the project to move online, many believed future projects would benefit from in-person sessions to meet with practitioners, ask questions, and increase engagement in content which is often technical. Despite this, some respondents acknowledged remote sessions were easier to engage with due to distance and the absence of travel.
- **A network of project alumni**: both beneficiary survey responses and consultations raised a desire to meet other participants to support development, collaboration and knowledge exchange.
- **Dedicate more time to implementing technical support**: beneficiaries would have liked more time on understanding the delivery of technical support or documents which explained the technical elements as a future reference point. Some businesses also commented that a follow-up session on implementing technology would have helped with fewer 'lecture-style' sessions.

Case Studies

Figure 1.14 Case Study 1

Reliable Insights is a hardware delivery platform who provide data analytics for businesses

Location: Lancaster
Sector: IT
Type of support received: 140 hours of support from a Lancaster student

2019 — Business created
2022 — Participated in LCF
2023 — Company currently employs 5 FTEs
2023 — In the process of developing their data hub solution prototype into a packaged product

The company is hoping to grow its hardware side of the business and double employees in the next 12-18 months

Reason for seeking support: as members of the Fraser House Digital Hub, the business was introduced to someone from LCF. The business was interested in developing a data hub solution which contained an open platform which could capture data from sensors but were concerned about the cyber security and safety implications which could arise from entering this area.

Project support activities

- After selecting a student to support them and defining the project specification, the student then conducted research into what the data hub may look like, how it could be standardised, and the industry standards and protocols to consider including MQTT and OPC servers.
- The business was provided with a report containing the analysis and recommendations for what the data hub could look like.

Benefits

- Whilst the business would have still focused on developing the prototype, LCF accelerated the process and gave them confidence. They have now partnered with a sensor supplier and are developing their data hub solution prototype.

Limitations/ Challenges

- Whilst the report was welcomed and has helped develop the prototype, if more time was available the business would have liked it developed further into a hard specification for the product, but 140 hours was always optimistic for what they wanted to achieve.

"LCF gave us confidence in the end solution. Whilst we might have come to a similar solution ourselves, we would not have the full confidence that we were use best practice without LCF"

Source: Hatch, 2023

Figure 1.15 Case Study 2

Design Fix interior design business which focuses on niche and private interior design

Location: Newton
Sector: Creative
Type of support received: Funding for R&D and cyber security awareness

2007 — Business created
2022 — Participated in LCF
2023 — Business has pivoted away from niche interior design into private interior design due to revenue challenges

Exploring app development but may be delayed by current economic climate

Reason for seeking support: After meeting the LCF team at a networking Zoom meeting, Design Fix decided to engage in the programme in order to update their knowledge on cyber security awareness and explore whether their idea for an interior design app could work and generate additional revenue.

Project support activities

- In developing an app prototype, the LCF team helped the business understand whether their idea was possible.
- Provided the business with different options for generating revenue via the app including license holders and product sponsorship.

Benefits

- Whilst the business has not yet developed the prototype, they believe the app could help generate additional revenue in the future. They believe that 1-20% of future benefit will be attributable to the programme.
- Cyber security has given the business confidence in their current systems and knowledge.

Limitations/ Challenges

- Although the funding required a lot of paperwork, the business was grateful for the support and assistance provided to complete administration requirements.

"LCF made a serious subject warm and memorable, it was very efficient, very clear and [I] appreciate the help with the paperwork"

Source: Hatch, 2023

Figure 1.16 Case Study 3

Serconnect A mains provider which brings power and electricity using underground cables, overhead lines and substations

Location: Blackbourn
Sector: Utilities
Type of support received: Student internship

Reason for seeking support: After meeting Lancaster University at a cyber security conference, Serconnect were looking for an app to be developed which would ensure National Electrical Registration Scheme compliance was linked to our training matrix for ISO evidence. It would ensure notifications for training expiry dates would be automated, saving back office paperwork, and provide an electric ID card on sites.

Project support activities

- After attending a cyber security workshop, a student intern was employed to develop an app which providers engineers with their compliance certificates, links to the internal training matrix, and informs both back office and engineer staff when certificates are about to expire.

Benefits

- The development of a prototype will help the business simplify their administration process and digitize paperwork.
- As this app does not exist elsewhere, Serconnect will be able to stand apart from competitors and are considering licensing the app to create additional revenue streams.

Limitations/ Challenges

- The business did not identify any limitations or challenges encountered during the programme.

"LCF meant we could harness technical expertise which as an SME you do not always have the time or money to do. They were able to do the research, save us time, and introduce technology into the company sooner than we would have been able to do."

Source: Hatch, 2023

Key Summary – Beneficiary Experiences and Outcomes

- Most beneficiaries supported by LCF were medium sized businesses based in Lancaster, Blackburn and Darwen and Chorley. They typically operated in the information and communication, healthcare and professional services sectors.
- The project has made progress against the intended outcomes identified in the theory of change, particularly against building awareness of and adopting new technical solutions and accessing new markets:
  - since receiving LCF support, 93% of beneficiaries indicated that their lack of knowledge of cyber security technologies is now less of a barrier and 7% stated it is no longer a barrier.
  - since receiving LCF support, 67% of beneficiaries have made a lot of progress and/or achieved the goal: to gain knowledge of cyber strategy / security processes.
- Beneficiaries reported less progress against improving an existing product/service and accelerating cyber innovation within the business. There was limited evidence on whether the project has improved business competitiveness and enhanced their product development, suggesting that more time is required for these impacts to materialise.
- Beneficiaries were very positive on their experiences with support, particularly regarding the digital innovation technical assists. The vast majority (>90%) reported that they found LCF suitable, beneficial and tailored for their needs – and the support has contributed to improving their knowledge.

7. Impacts and Value for Money

7.1 This section provides a summary of gross and net additional economic impacts, in addition to an assessment of the value for money that the project has provided during its lifetime and an indication of potential future impact.

Assessment of Economic Impact

Outline of Method

7.2 The assessment of LCF's economic impact draws on the evidence gathered through an online beneficiary survey undertaken between April and May 2023. Survey invites were issued to 85 beneficiaries supported during 2019-2023. 17 complete responses were received in total, representing a response rate of 20% (+/- 21% margin of error at 95% confidence level).

7.3 To assess changes in business performance, survey respondents were asked to indicate whether they believe the LCF project has had or will have an impact on their business turnover. Eight businesses (47% of respondents) reported that the project has had a positive impact on turnover to date. Eleven believe it will have a positive impact on turnover in the future (65% of respondents).

7.4 The survey did not ask respondents whether the project has had a positive impact on employment to date, as the delivery team confirmed that this information had already been collected from beneficiaries through monitoring data. However, the survey did ask whether respondents expected the support to result in future growth in employment; six respondents (35%) believed that it would. However, it was not possible to match the responses from these businesses to the employment data provided by the project. Therefore, future impacts on employment were modelled based on future growth in turnover.

7.5 Where businesses said they do not expect their turnover to be affected by the LCF project it was assumed the impact was zero. Those that said the project has had an impact, or will have an impact in the future, were asked to provide an estimate of the magnitude of change. Turnover was converted in to GVA based on the ratio of turnover to GVA for the sector in which businesses operate.

7.6 Respondents were then asked a series of other questions to establish the net additional impact of the intervention on jobs and GVA. This allowed us to estimate the average net additional impact per business. These responses were then grossed up based on the total number of beneficiary businesses.

Limitations

7.7 There are a number of limitations and caveats that apply to this type of approach to quantifying impact:

- Margins of error: given the low sample size for businesses reporting a change in turnover or employment, the estimates are subject to large margins of error (+/-21%). In other words, the impacts could be substantially different to the figure presented here.

- Challenges in self-reporting: it is difficult for businesses to accurately estimate the impact of an intervention on turnover and employment, and this particularly applies to estimating future impacts.
- Inability to capture other business benefits: this method fails to capture other potential benefits from support, including reductions in costs as a result of the support received. Furthermore, this does not capture the benefits to businesses from improved resilience (e.g. from the risks of cyber attacks) which is likely to be a significant benefit for businesses in the case of this project. It would be very difficult to quantify these types of benefits through a survey.
- External factors affecting business performance: other factors such as the COVID-19 pandemic, Brexit and the cost of living crisis are likely to have affected businesses ability to realise economic benefits over the study period.

7.8 As a result, the findings are subject to significant uncertainty and should only be interpreted as being indicative of the impact of the LCF project. Other options for assessing the additional impact of LCF on employment and turnover, such as treatment/control group approaches, were not feasible in this case due to time-lags in business datasets, which mean data is not available after the 2020/21 financial year.

Assessing additionality

7.9 In order to translate gross to net additional impacts, it was necessary to make a number of adjustments and assumptions which are explained below:

- **Displacement**: this relates to the growth of businesses as a result of the project which occurs at the expense of other businesses in Lancashire. This is likely to occur where businesses are serving local markets and competing with other Lancashire based businesses. Displacement was therefore calculated by asking businesses roughly what proportion of their clients are based in Lancashire now, and how they expect this to change in future (e.g. as a result of moving in to new markets). The overall level of displacement in this case was 7%. This is very low, indicating most businesses that benefitted from the project are operating in much larger markets than just Lancashire (i.e. the rest of the UK and internationally).
- **Leakage**: this relates to the proportion of impacts that benefit those living outside the Lancashire LEP area. Since all businesses are based in Lancashire, we assume leakage is zero for turnover. For employment impacts this was estimated by asking respondents what proportion of their employees live outside Lancashire. This was 33% for those that expected future impacts on employment.
- **Multiplier effects**: these arise as a result of growing businesses spending money in Lancashire through their supply chains and the salary expenditure of their employees. These have been estimated by matching business beneficiaries to sectors and using the sector level multipliers in Hatch's in-house regional input-output model for the North West, adjusted for the Lancashire LEP impact area.
- **Optimism bias**: no optimism bias was assumed for assessing change in employment and turnover to date, as it was assumed business would provide this information on an objective basis. There is greater uncertainty and a more significant risk of businesses being over-optimistic when forecasting future impacts. Formal optimism bias guidance from HM Treasury focusses on capital costs and does not recommend a reasonable

assumption about optimism bias. The qualitative guidance available in this respect suggests that sensitivity analysis should be used where no other evidence is available. Therefore, 20% is applied as a conservative central optimism bias assumption, which implies that 80% of future impacts expected by beneficiaries will be realised.

- **Persistence**: it is assumed that impacts on turnover/GVA will persist for three years, but reducing year on year, before decaying as other factors start to exert a larger influence on business performance. This is a reasonable persistence period to assume for employment and GVA impacts, and consistent with assumptions in other summative assessments carried out by Hatch

Impact Estimates

7.10 As outlined above, the modelling of impacts is based on a sample of 17 beneficiary responses. To assess the economic impacts for all beneficiaries, the figures were grossed up to the population of supported beneficiaries at the end of the programme[10] (85). The total cumulative impacts based on businesses supported to date is presented in Table 6.3 below.

7.11 The table shows that the project has generated around £2.36 million net additional GVA to date which is expected to grow by £2.5 million over the next 3 years. This results in a total impact of £4.87 million net additional GVA including impacts to date and impacts in the future.

7.12 In addition, we estimate the project has generated around 15 net additional FTE jobs to date. This is expected to grow to 32 FTEs over the next three years.

Table 7.1 GVA and Employment Impacts of all Beneficiaries Supported (end March 2023)

		Impacts To Date	Expected Future Impacts	Total
GVA	Direct	£2,005,000	£2,014,000	£4,019,000
	Indirect & induced	£354,000	£496,000	£850,000
	Total	**£2,359,000**	**£2,510,000**	**£4,869,000**
Employment (FTE)	Direct	11	12	23
	Indirect & induced	4	5	9
	Total	**15**	**17**	**32**

Source: Hatch Beneficiary Survey, 2023. Note: Totals may not equal the summation of individual figures presented due to rounding.

Value for Money

7.13 Our assessment of LCF's value for money only draws on the project expenditure from the public sector[11] (£2,102,543) and outputs (92 beneficiaries supported based on achieving the C1 target). The table below provides a summary of the current net additional return on investment and cost per net additional FTE job supported (at end March 2023) and the estimated total lifetime net

[10] Every business which received support was asked to participate in the survey

[11] This figure includes the ERDF grant (£1,261,472) and public sector match funding (£841,071).

additional return on investment and cost per net additional FTE job expected (taking account of current plus future impacts expected).

7.14 The table below shows that the cost per net additional FTE for LCF was £140,200 (at end March 2023), however this falls to £65,700 when we include future jobs impacts. The project has generated a return on investment of £1.12 net additional GVA for every £1 invested, which could rise to £2.32, when expected future impacts (over the next three years) are included.

Table 7.2 Value for Money (by end March 2023)

	Total Programme Spend	Achieved to date	Total Lifetime
Total Programme Spend	Cost per Job	£140,169	£65,704
	GVA	£1.12	£2.32

Source: Hatch Beneficiary Survey, 2023

7.15 The 2016 DCLG Appraisal Guide suggests that anything exceeding a £2 return on public investment represents high value for money. On this basis, the Phase 2 return on investment (£2.32) can be judged as delivering good value for money.

Benchmarking VfM Figures

7.16 Hatch has reviewed the value for money assessments of previous business support evaluations we have undertaken. The table below shows a wide range of GVA returns on investment.

7.17 Based on these figures, LCF's cost per net additional FTE job (£65,704) exceeds the benchmarked programmes. The project's benefit-cost ratio of £2.32 also falls between the minimum and median benefit-cost ratio of other benchmarked programmes.

7.18 This indicates that the project is expected to below average on its return on investment, compared to the other projects reviewed. However, caution is needed when interpreting how Lancashire Cyber Foundry compares to a diverse set of projects, offering different types and intensities of support.

Table 7.3 Comparator Return on Investment Figures

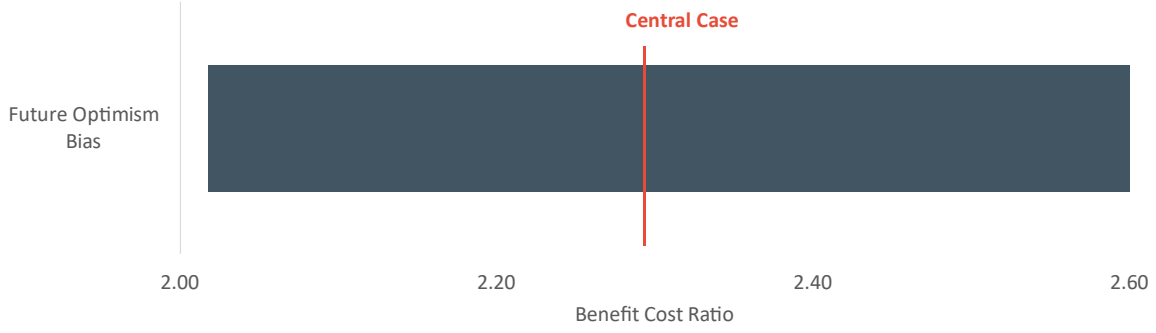
	Impact to date (by end March 2023)			
	LCF	Minimum	Median	Maximum
Cost per Net Additional Job	£140,169	£7,616	£25,551	£41,422
Benefit Cost Ratio (BCR)	£1.12	1.5	6.78	4.1
	Impact to date (by end March 2023) and future			
	LCF	Minimum	Median	Maximum
Cost per Net Additional Job	£65,704	£3,855	£18,133	£51,131
Benefit Cost Ratio (BCR)	£2.32	2.18	9.8	4.3

Source: Hatch Beneficiary Survey, 2023. Note: Totals may not equal the summation of individual figures presented due to rounding.

7.19 In the core modelling we have applied a 20% optimism bias on reported future impact and assume 80% of the future impacts expected by beneficiaries will be realised. To test the importance of this assumption, we have modelled the overall return on investment figure in the case that this was altered to 60% in a low scenario and 100% in a high scenario.

7.20 Figure 7.1 shows how the overall GVA per £1 of funding invested would change as a result of these adjustments. It demonstrates that these changes could lead to a net additional return on investment ranging between £2.02 and £2.61 per £1 invested.

Figure 7.1 Sensitivity testing and its impact on LCF's benefit cost ratio



Source: Hatch, 2023

Key Summary – Impacts and Value for Money

- To date the project has generated around £2.36 million net additional GVA which is expected to grow by £2.5 million over the next 3 years. This results in a total impact of £4.87 million net additional GVA including impacts to date and impacts in the future.
- In addition, the project has generated around 15 net additional FTE jobs to date. This is expected to grow to 32 FTEs over the next three years.

- When assessing the return on investment of LCR, the project has generated £1.12 net additional GVA for every £1 public investment (by end March 2023). Over the next three years, the return on investment is expected to rise to £2.32. This indicates that the project represents good value for money.
- The project has a cost per net additional FTE of £140,200 (at end March 2023), however this falls to £65,700 when we include future jobs impacts.

8. Conclusions and Recommendations

8.1 This section of the report summarises the findings against the five summative assessment themes as set out below, and in the ERDF summative assessment guidance relating to evaluation. It also provides recommendations for future delivery.

Conclusions

Project Relevance and Consistency

A redesigned support model further strengthened the relevance of LCF in meeting business needs

8.2 The design of LCF was initially centred on addressing the underinvestment of cybersecurity among businesses in Lancashire and promoting technology innovation. These were evidenced in two demand studies which verified the rationale of the project and informed the intended objectives, outcomes and impacts. This rationale has strengthened with the release of the UK Government's first National Cyber Security Strategy.

8.3 During the COVID-19 pandemic, there was an increased demand for prototyping among businesses and a need to pivot digitally due to the restrictions in place and shift to remote working. The project responded to this by redesigning the delivery model from a 'funnel' approach to fast-tracking businesses to bespoke technical support. As a result, this has increased the relevance of LCF in supporting digital innovation locally.

The project supports a growing strategic interest in cybersecurity

8.4 Since project inception, policy developments and other changes have meant cyber security has grown in importance at a local, regional and national level. This includes the National Cyber Strategy, the launch of the National Cyber Force in Samlesbury, Lancashire, and the opening of a GCHQ site in Manchester. These developments have raised awareness of cybersecurity in the business community and reinforced the rationale for LCF.

8.5 Going forward, the evaluation evidence indicates that the project is in a good position to seek collaboration opportunities and support the 'cyber corridor' in the North West.

Progress Against Contractual Targets

Strong output performance was driven by a flexible support offer

8.6 In April 2022, a PCR was submitted to reprofile the C26 and C28 targets as well as extend delivery to 31st August 2023. Despite early challenges with engaging businesses during the COVID-19 pandemic, as of Q1 2023, the project has met or exceeded all output targets. The project overachieved on supporting employment growth (C8, 157%), new enterprises (C5, 150%), enterprises to introduce new products to firm (C29, 125%). This was largely attributed to the studentships and having flexibility in the support offer to prioritise intensive, technical assists to meet business demand.

8.7 The design of contractual targets was informed by the predecessor Greater Manchester Cyber Foundry delivery model and experience of LU staff in delivering business support projects. There were reflections that the original targets were more 'conservative', however these were designed in a pre-COVID-19 environment which did not account for the increased need among businesses to digitally pivot their business and be cyber safe.

Expenditure targets are expected to be met by project closure

8.8 The impact of COVID-19 restrictions on travel, marketing and office expenses earlier in delivery has resulted in some underspend (87%) against the total expenditure target. While there has been a return to office working since restrictions eased, most business meetings and workshops have continued to be delivered virtually. In the final quarter of delivery, the project team plan to hold more meetings and events in-person which will address the remaining under expenditure by project closure.

Delivery and Management Performance

Delivery of the project benefitted from strong and effective project management

8.9 From the outset, the project manager implemented reporting processes and frequent meetings to ensure that delivery was steered appropriately. Having regular meetings to set delivery goals, discuss project performance and future plans were effective in providing accountability and having transparency of roles and responsibilities. This resulted in strong relationships built between different sub-teams (including business development, marketing and technical academic staff) and more cohesive delivery.

Existing networks, referrals and LinkedIn marketing were most effective in promoting the project and generating leads

8.10 The delivery team networked at conferences and exhibitions either virtually or in-person (depending on COVID-19 restrictions) to engage with different businesses and raise awareness of the project. This was effective in understanding the challenges businesses faced and communicating the LCF support offer. The team also developed close relationships with LU business support projects such as Health Innovation Campus, and external organisations which facilitated collaboration at events and cross referrals.

8.11 'Day in the life Q&A' case studies were promoted on LinkedIn to market the studentship offer. This was successful in encouraging students and businesses alike to join the project.

Targeted methods were successful in supporting a more diverse group of beneficiaries

8.12 The project made efforts to attract women-led businesses as these are often underrepresented in the cybersecurity sector. Businesses were also targeted in East Lancashire, which have been historically difficult for LU to engage with. Successful methods have been changing language used to sound less masculine, joining female only network groups, and hosting events / attending meetings in less represented localities. As a result, the project has supported a nearly 50/50 split of male and female-led businesses, and 29% of beneficiaries were based in East Lancashire.

Technical academic support was a key asset of the support offer

8.13 Studentships were introduced halfway into delivery due to a growing demand for proto-typing. This was regarded by delivery staff as the most effective support for developing prototypes over a short period of time and meeting lower skilled technical needs. In tandem, beneficiaries had positive experiences of the digital innovation support provided by the technical team. The vast majority (>90%) found the technical assists to be suitable, beneficial and tailored for their needs which enabled them to improve their knowledge of cybersecurity technologies and concepts.

The client journey was appropriate in delivering support, but some aspects could be improved further

8.14 The evaluation evidence indicates that there was a clear client journey in place and beneficiaries were navigated through the support. All beneficiaries were satisfied with the support they received. Aspects which have been effective in delivering meaningful support have been:

- The business development manager diagnosing business needs and matching support appropriately based on beneficiaries' prior knowledge of cybersecurity.
- Having flexibility and agility in the support offer to accommodate changes in business demand / circumstances, for example delivering hybrid workshops during the COVID-19 pandemic and focussing messaging on digital resilience.
- Continued engagement and referrals to other LU business support projects and external programmes after support closure.

There were a few aspects which were considered less effective, such as the onboarding and eligibility process, and beneficiaries' understanding of the final outputs and frequency/intensity of support.

Outcomes and Impact

Beneficiaries have improved knowledge of cybersecurity technologies, strategy and processes as a result of the support

8.15 Before joining LCF, most beneficiaries reported that they faced challenges with embedding digital / cyber innovation processes (77%) and having limited knowledge and application of cybersecurity technologies (58%) in their business. As a result, beneficiaries wished to either improve their knowledge of cyber strategy / security processes (81%) and/or digital resilience (63%).

8.16 The support has enabled the majority to overcome their barriers and make progress against their goals. Since receiving support:

- 93% of beneficiaries indicated that their lack of knowledge of cyber security technologies is now less of a barrier and 7% stated it is no longer a barrier.
- 67% of beneficiaries have made a lot of progress and/or achieved the goal: to gain knowledge of cyber strategy / security processes.

Progress has been made against the project's intended outcomes but some impacts require more time to materialise

8.17 The project has helped businesses to make progress against the following outcomes, supporting some of the intended outcomes identified in the logic model and theory of change:

- Building awareness new technical solutions
- Adopting new technical solutions
- Accessing new markets
- Business and academic collaborations

8.18 There was limited evidence that the project has accelerated cyber innovation, improved business competitiveness via enhancing product development, and contributed to beneficiaries securing investment. However, this is expected as innovation and investment related impacts will require a longer timeframe beyond the project to materialise.

Moderate economic impacts to date, which are expected to improve in future

8.19 Based on beneficiaries supported by end March 2023, net additional GVA is estimated at £2.36 million to date and increases to £4.87 million when considering future expected impacts (£2.51 million). In terms of employment, the project has created 15 net additional jobs to date. In the next three years, this is expected to increase to 32 jobs. However, these impact estimates are subject to significant uncertainty and should be treated as indicative.

Cost Effectiveness and Value for Money

The project represents good value for money

8.20 LCF has generated £1.12 net additional GVA for every £1 public investment (by end March 2023). Over the next three years, the return on investment is expected to rise to £2.32. This indicates that the project represents good value for money.

8.21 In terms of cost per net additional job, the project has invested £140,200 per job created which falls to £65,700 when future impacts are accounted for. This is higher than most benchmarks, although we would note that job creation was based on modelled estimates due to gaps in the available data. The impact estimates for this project and comparator projects are subject to significant uncertainty and margins of error.

Recommendations

1) **Review and streamline eligibility testing in any future iteration of the project.** The eligibility process often delayed the onboarding stage for beneficiaries, and resulted in frustration among the delivery team and beneficiaries. This was due to the centralisation of ERDF compliance at the University, 'back and forth correspondence' of information submitted and nature of ERDF funding guidelines. There would be merit in simplifying the eligibility route and ensuring information requirements are well understood by beneficiaries before joining the project.

2) **Consider delivering a post-support offer to ensure businesses can continue to benefit from the project.** The evaluation highlighted beneficiary interest in meeting other participants, which can support development, collaboration and sharing of cyber knowledge. Implementing post-support pathways such as a project alumni network and access to coworking space should be considered to encourage peer-peer networking and continue the project's legacy.

3) **Expand the technical support offer to encourage further business and academic collaborations.** Delivering bespoke technical 1-1 support through academics and studentships was a key success of the project that facilitated business outcomes and a strong output performance. The evidence suggests there is demand for more intensive support and deeper collaborations between beneficiaries and academics to further develop prototypes. Increasing the capacity of the technical team to deliver more hours of support would help facilitate long term collaborations between the University and businesses, and drive innovation impacts.

4) **Continue building relationships with external partners to align with future funding and cyber developments.** The evaluation indicates that cybersecurity is becoming strategically important in Lancashire and elsewhere, due to the relocation of cyber organisations and recent national cyber strategy. As ERDF funding is phasing out, there would be merit in identifying strategic partners and looking at opportunities to collaborate to secure future funding.

5) **Continue to deliver an agile and flexible support offer.** The redesign of the support model was an effective delivery change that enabled the project to exceed its output targets, despite the challenges of the pandemic. Delivering business support which is responsive to a changing business and socioeconomic environment is a key area of best practice, and should be considered in any future iteration or similar intervention.

6) **Ensure that there is clear communication of the support deliverables and expectations of support from the outset.** The evaluation suggests that business expectations had to be managed carefully, in regard to the nature and duration of support, final support outputs and the extent of prototype development. In a future iteration, it would be useful to communicate this clearly from the outset so beneficiaries know what to expect from participating in the project.

Appendix A - Consultees

A.1 Consultations were carried out between February and March 2023 with delivery and management staff, external stakeholders and a small selection of project beneficiaries. A mixture of telephone calls and Microsoft Teams video calls were used.

A.2 The consultations were carried out in the format of semi-structured interviews, with aide memoires used to help guide the questioning. The following were consulted as part of the evaluation:

Table A.1 Consultees for the LCF Evaluation[12]

Name	Role	Organisation
Dan Prince	Academic Lead	Lancaster University
Alex Lee	Technical Manager	Lancaster University
Gemma Collins	Business Partnerships Officer	Lancaster University
Juliet Clark	Cyber Security	Lancashire Constabulary
Rebecca Robinson	Project Manager	Lancaster University
Lisa Edge	Chief Executive	Lancashire
Mike Thomas	Co-Founder	Reliable Insights
Emma Bone	Corporate Services Manager	Serconnect
Susie Tucker	Owner	Design Fix

[12] Roles and organisations refer to those which were correct at the time of evaluation.

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