Department for
Business, Energy
& Industrial Strategy

UNPICKING THE PRODUCTIVITY PUZZLE

Business Basics Programme – final report

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Acknowledgements

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Executive summary

The Business Basics Programme has taken a new approach to tackling the longstanding challenge of low productivity among many small and medium-sized enterprises (SMEs) in the UK. Business support providers – including public sector and private sector organisations, universities, local authorities, and others – were invited to test approaches to promoting the adoption of technologies and management practices among SMEs. Under this experimental approach, the objective was to source new ideas and generate high-quality evidence about the impacts of the interventions being tested. This report discusses both what has been learned from individual Business Basics projects, and what lessons can be drawn from across the portfolio about the design and implementation of business support schemes.

Business Basics was an initiative of the Department for Business, Energy and Industrial Strategy (BEIS), and was implemented in partnership with Innovate UK and the Innovation Growth Lab at Nesta (IGL).[1] Between 2018 and 2022, a total of 32 projects were funded, involving a large number of delivery partners and the participation of more than 3,500 SMEs. Seventeen of the projects were designed as randomised controlled trials (RCTs), with the aim of generating robust evidence about the impact of the interventions. The other 15 were pilots or 'proofs of concept', intended to test the feasibility of innovative interventions and examine whether they had potential for testing in larger experiments.

The relatively small scale of the 32 projects allowed BEIS and project teams to take risks with novel ideas. Running practical experiments has allowed the implementers to quickly identify promising interventions. Five of the programmes that were subject to rigorous testing through RCTs produced evidence of positive impacts on SMEs, and several of the others showed significant promise in piloting. On the other hand, some interventions have been less successful and would require improvements in their design, targeting or implementation to be effective.

Delivering the interventions and encouraging adoption proved to be harder challenges than expected. Much of the learning generated in the course of the programme has been about the barriers that need to be overcome for successful delivery of a business support scheme. Unprecedented shocks (most notably the COVID-19 pandemic) created substantial delivery challenges, but often these were only exacerbating existing difficulties. This experience highlights the benefits of providing support to develop experiments and undertake small-scale pilots to ensure feasibility before launching a programme at scale. But this also reinforces the value of taking a staged approach to testing, making it possible to fail early and learn fast. Being able to learn lessons while testing at small scale implies significant cost savings and time savings, when assessed against the traditional approach of selecting one or two programmes up front for large-scale rollout.

[1] Originally, the Business Basics programme was commissioned by BEIS. However, in February 2023 a new department called the Department for Business and Trade was established and took over responsibility for the Business Basics programme.

It is clear from the findings that positive impact often depends as much on the seemingly small details of design and implementation as on the overarching programme design. For that reason, there is great potential for further experimentation around how to optimise the use of and effectiveness of interventions, rather than simply to assess what the impact is overall. For example, peer-to-peer exchange has been shown to have potential to increase engagement in and impact from business training programmes, but Business Basics projects have also highlighted that there are important considerations around how best to organise peer interactions, how similar peers need to be, and whether businesses will be open to interactions with potential competitors. Getting these details right is essential in order to realise the potential benefits.

Business Basics has also produced learning in the use of rigorous methods, such as RCTs in evaluating business support programmes. While the iterative and experimental approach has clear benefits, it also places new demands on organisations. The Business Basics Programme has made a substantial contribution to promoting an understanding of rigorous evaluation and building the necessary skills among a wide range of organisations. The programme has demonstrated the value of experimentation and has set the stage for a lasting change in the quality of evidence available to inform business support policy in the future.

1. Introduction

The Business Basics Programme was launched by the Department for Business, Energy and Industrial Strategy (BEIS) in order to identify interventions that are effective in promoting the adoption of technologies and management practices among small and medium-sized enterprises (SMEs) in the UK. The 2019 Business Productivity Review (BEIS and HM Treasury 2019) found that improved use of technology and better management practices have the potential to boost productivity significantly. Between 2018 and 2022, the programme funded and supported 32 experimental projects, implemented by a range of business support providers, universities, local councils, and other public and private sector organisations. Seventeen of the projects were set up as randomised controlled trials (RCTs), intended to generate robust evidence about the effectiveness of the interventions. The other 15 were smaller-scale pilots, intended to explore the potential of interventions at an earlier stage of development.

This report reviews the experience of implementing the Business Basics Programme, assessing what has been learned to date and how the findings can be used to improve the effectiveness of business support policy in the future. We begin by examining the importance of improving productivity among SMEs and reviewing existing evidence on the barriers to adoption of new technologies and management practices. Section 3 introduces the Business Basics Programme and profiles the projects that were funded. In Section 4, we discuss how the findings from the Business Basics Programme can be used to inform the design of future business support programmes. Each of the 32 projects has already been evaluated, so this report does not review each project in detail. Instead, we highlight examples of particular interventions that have proved promising, as well as discussing insights from across the portfolio that policymakers may find valuable. (Further details on each of the individual projects funded are included in the annex to this report.) In Section 5 of the report, we examine what has been learned from the programme about making effective use of RCTs in evaluating business support programmes. Section 6 concludes with some suggestions on integrating an experimental approach into policymaking more widely.

2. SMEs and productivity – the policy challenge

Raising productivity – creating more valuable outputs from economic inputs – is a key determinant of living standards. Poor productivity growth means lower growth in household incomes, fewer resources available to invest in public services, and more difficulty in tackling major challenges such as net zero.

Many advanced economies experienced a 'great slowing down' of productivity growth after the financial crisis of 2008/09, but the UK's decline has been steeper than most. UK productivity has been around 20% lower than its pre-2008 trend path, twice as severe as any previous shortfall, and is estimated to have cost workers an average of £5,000 a year in lost income (Office for National Statistics 2019). This has added to longstanding concerns about UK productivity, which has for decades been below the levels of many other advanced nations (Mason and Riley 2018). The UK also has some of the largest geographical differences in productivity among advanced economies, which underlie gaps between regions in wages and living standards (Zymek and Jones 2020).

Businesses are where most activity is undertaken to bring together productive inputs and convert them into value-added outputs. For that reason, it is within businesses where the challenge of increasing productivity must be addressed. As outlined in the Business Productivity Review (BEIS and HM Treasury 2019), the UK has some of the most productive businesses in the world but also a large number of low-productivity businesses.

Productivity gains can be achieved by improving the quality of inputs (such as by training employees), by enabling firms to benefit from improved infrastructure, or by easing market operations. What also matters, however, is the decisions taken within the business about how inputs are combined and technologies and management practices are applied. Concerns that small businesses in the UK are slow to adopt new technologies and effective management practices are longstanding, widely accepted and well evidenced.

Objective of the Business Basics Programme

The Business Basics Programme was first announced in 2017 as part of the government's Industrial Strategy (HM Government 2017), which included a package of measures aimed at tackling the UK's productivity problem at a firm level. Other major policies that were announced at the same time were aimed at expanding the frontiers of research and innovation, in order to generate new ideas and technologies to power growth. In contrast, the Business Basics Programme was designed to address the latent potential within the large group of SMEs that were not making effective use of existing proven technologies and management practices.

Although the objective of increasing adoption of existing technologies and practices may sound modest, the potential gains are substantial. The Confederation of British Industry estimated

that getting businesses to move from acting as 'ostriches' to acting as 'magpies' could generate gains of over £100 billion to the UK economy (CBI 2017). The World Management Survey has demonstrated a strong correlation between good management practices and firm productivity (Scur and others 2021), and some randomised studies (notably Bloom and others 2020) have confirmed that this is a causal relationship. Cirera and Maloney (2017) have spoken of the 'innovation paradox' in developing countries, that investment in technological catch-up is not higher given the scale of the potential returns. A similar quandary faces those trying to understand the issue of SME technology adoption in the UK.

Over the years there has been substantial and widespread investment in public interventions to address this gap. However, very few programmes have been subject to rigorous evaluation (What Works Centre for Local Economic Growth 2016, National Audit Office 2020). As a result, little is known about how effective these interventions have been, and key questions – about what the best approaches are, which situations they work in and which types of businesses they work for – remain unanswered. From the evidence that does exist, we know that interventions can be effective in supporting growth, but that they are not always effective, even when feedback from participants themselves is positive. A review of interventions aimed at promoting technology adoption in firms around the world emphasised the importance of policymakers examining how programmes can be improved and better tailored to particular settings (Alfaro-Serrano and others 2021). Phipps and Fuller (2022) examine the range of potential approaches that have been investigated through policy experiments around the world.

Barriers to adoption of technology and management practices

In designing an intervention to support SMEs in adopting new technologies or management practices, it is important first to understand what the constraints are that make current levels of adoption less than ideal.

Several recent reviews have assessed the barriers facing UK SMEs. Some of these cover technology adoptions only, and some also address management practices and other innovations:

- BEIS, 'Made Smarter review' (2017)
- Confederation of British Industry, 'From ostrich to magpie: Increasing business take-up of proven ideas and technologies' (2017)
- Institute of Directors, 'Lifting the long tail' (2018)
- Be the Business, 'The UK's technology moment – why 2020 can be the year that changed our trajectory on tech' (2020)
- Enterprise Research Centre, 'State of small business Britain 2020' (2020)
- Lloyds Bank, 'UK Business Digital Index' (2022) and 'Transformation with tech' (2020)

The two reviews conducted specifically for the Business Basics Programme, 'Attitudes to adoption' (BEIS 2019a) and 'Nudging firms to improve productivity' (Behavioural Insights Team

2019), are also valuable source of information on the barriers to and drivers of adoption among SMEs.

Figure 1 maps the barriers commonly identified in the published reviews listed above – as well as others targeted by Business Basics projects – according to four broad categories:

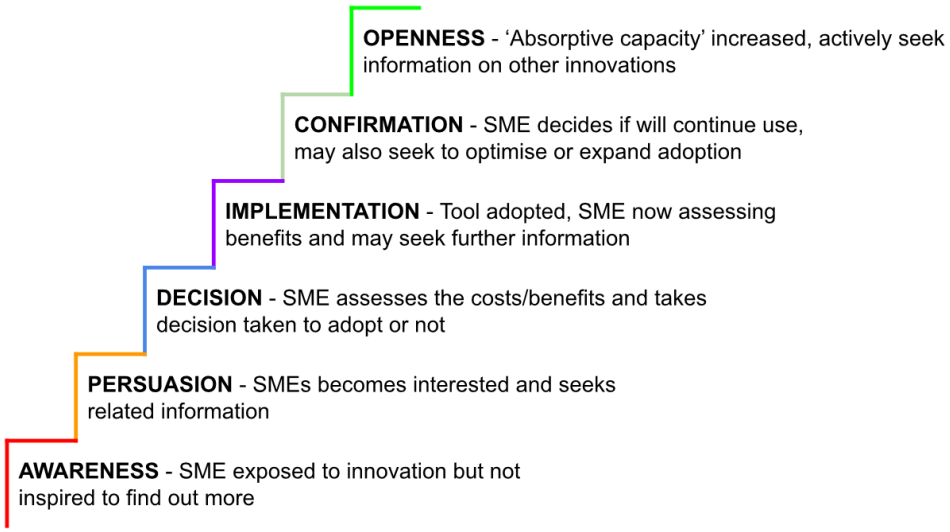
- Inherent barriers: the risks and complexity inevitably involved in integrating new tools with existing ways of working.
- Awareness and attitudes, including a lack of understanding of technologies or practices that a business could adopt, as well as managers' mindset and ambitions for the business and how these relate to decision-making.
- Practical barriers, particularly the difficulty of finding the time, external support and resources to make decisions and then to implement new technologies.
- Technical barriers, particularly relating to the adoption of digital technology – such as connectivity or cyber security risks.

In this section we provide an overview of the insights gained from these evidence reviews, and how they were used to inform the design of projects under the Business Basics Programme.

Adoption requires progression through a series of stages and overcoming a range of potential barriers that can prevent progress

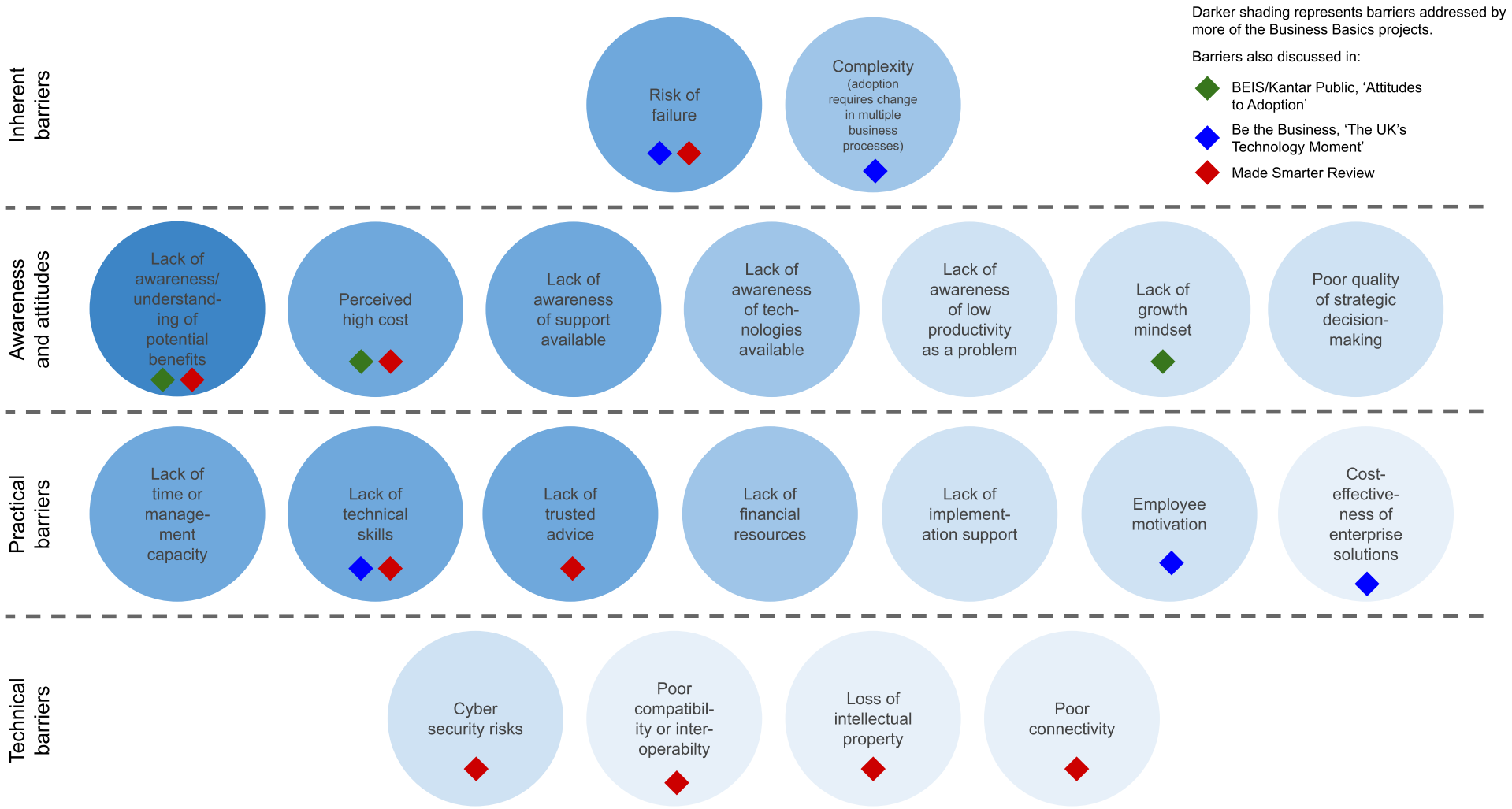
The process of adopting new technologies and management practices can be characterised as a series of stages, set out in Figure 2. Owners or managers of SMEs that are furthest from adoption will not yet be aware that the specific technology or practice exists or is available to them. Once they are aware of its relevance, the process of adoption involves seeking out further information, contacting potential providers, making assessments of the likely costs and benefits, taking a decision on whether to adopt, embedding the technology or practice into their operations, and determining if they wish to continue its use. Finally, the business may emerge as more informed and equipped for further technological improvements.

Figure 2: Adoption process as characterised for the Business Basics Programme



Source: BEIS, developed from Rogers (1995).

Figure 1: Barriers to adoption of new technologies and management practices



An assumption made (often implicitly) in the design of many business support programmes is that the barrier addressed by the intervention is the binding constraint in the adoption process, such that overcoming that barrier will allow the business to proceed towards adoption. For example, interventions may focus on providing information on the technologies available, on the assumption that a lack of information is the key constraint. But this is not necessarily the case: adoption can be a long, uncertain, and even painful process. For a given technology or management practice, progress could halt at any of these stages. This could be the result of a fully informed and economically rational decision if the costs of proceeding are seen as outweighing the benefits. Often, however, a failure to proceed is the consequence of frictions or further barriers that are encountered at each stage.

For instance, Be the Business (2020) highlighted the many pain points that often only become apparent to an SME as they make progress in adopting a new technology. Difficulties range from initially finding the right solution, to knowing how to integrate it within their existing operations, to later fears about the disruption that would be caused by switching to another provider. Employee resistance was another key problem, particularly among businesses with 10 or more employees. Most SMEs surveyed for the Be the Business report had made unsuccessful attempts to adopt new technologies in the past. Employee resistance, complexity, cost, lengthy implementation periods and a failure to meet expectations were cited as the most common reasons for abandoning progress towards adoption.

There is a huge degree of complexity in this process, given the wide variety of businesses, possible technologies, and potential barriers

The circumstances, capacity, needs and requirements will vary significantly across different sizes of business, industries, and market sectors. The structure, decision making processes and resources available to a microenterprise will be very different to a business with 200 employees across multiple locations. A single organisation could face very different barriers when it comes to adopting one technology or management practice rather than another. For example, switching to cloud accounting software will require a different set of skills and different type of employee involvement to the introduction of robots in the production process.

If we consider that adoption occurs because of a series of decisions and judgements made by individuals, then the importance of considering the attitudes and ambitions of those individuals becomes clear. The ‘Attitudes to adoption’ research carried out under the Business Basics Programme developed a typology of five types of SME, depending on decision-makers’ perception of innovation and the length of time they have been in post (BEIS 2019a). The report highlights that businesses identified as ‘defiant resisters’ and ‘reluctant innovators’ often have the potential to benefit from the adoption of quite basic technologies, but that they tend not to be aware of this and so are more difficult to engage in support schemes. In contrast, those further along the innovation spectrum (particularly the ‘cutting edge industry innovators’ and ‘growth-hungry startups’) have a more demanding and diverse range of needs.

This diversity in SMEs’ characteristics and needs implies that support programmes could be more effective if they start with a diagnostic process, or if they focus on providing more tailored consulting (Fischer and Karlan 2015). There are several examples of Business Basics projects

that took each of these approaches. Notably, a diagnostic tool was the most popular of the interventions proposed to the SME managers interviewed for 'Attitudes to adoption'.

Behavioural biases can also act as important barriers to successful adoption

The review of behavioural factors that could be used to 'nudge firms to improve productivity' (Behavioural Insights Team 2019) outlines a number of additional barriers that will affect whether an SME will adopt proven management practices and technologies. These include:

- Overconfidence about how they compare with others
- Expectation errors: mistakes in how they assess potential costs and benefits. These can include present bias, placing too little emphasis on future or uncertain gains.
- Mindsets unconducive to growth, such as low ambition and harmful beliefs. Other research has looked at how mindsets are shaped and how they can result in people seeing not themselves as not running a growth-orientated or technology-driven business (Theodorakopoulos and others 2015).
- Scarce mental resources, given the complex decisions that must be made based on imperfect information and with limited time available to process
- Loss aversion: giving excessive weight to the possibility that innovations do not prove to be effective
- Groupthink: a desire to conform and maintain harmony that can lead to a reluctance to challenge judgements and implement organisational change

The review also identifies several enablers that can support positive change. One is to recognise the importance of 'moments of change': there are specific times when an SME may be particularly open to change, such as after a leadership transition or while experiencing competition from a new entrant to the market. Other enablers – such as peers and networks – could also provide exposure to new ideas and sources of positive encouragement and support.

Some important barriers to adoption lie not within SMEs themselves but within market structure and the wider context

Most business support interventions – including many of the projects funded under Business Basics – focus on barriers to adoption that lie within the business itself. However, features of the markets that SMEs procure from or supply can also act as constraints to or drivers of adoption of new technologies or practices. Some of the most important of these are set out in Table 1. In particular, the Be the Business report has a useful discussion of the constraints that technology providers face in serving SME customers, notably that the small ticket size compares unfavourably to the costs of customer acquisition and providing ongoing support (Be the Business 2020). Three of the Business Basics projects – the Notion, Evolution Invoice and Productivity in Professional Services projects – involved training or technology providers adapting their products and their marketing strategies to reach SMEs, with some success. However, 2 of those 3 cases show that the issues discussed in the Be the Business report are real constraints to serving SMEs profitably. While this was outside the remit of the Business Basics Programme, finding ways to overcome these supply-side barriers is something to explore in future initiatives.

Table 1: Categorisation of barriers to adoption[2]

Category	Barriers
Input markets	Lack of necessary skills among potential employees. Technology suppliers face costs finding SMEs who would benefit. Technologies developed for larger businesses with additional costs to adapt to SME needs. Minimum viable size for the profitable use of a given technology is beyond the reach of many SMEs[3]. Limited finance to cover the costs of adoption. Potential benefits are over-sold by suppliers, leading to lack of confidence on the part of potential adopters.
Within the business	Awareness and knowledge of what technologies or practices are available. Absorptive capacity: the ability to process and apply new information to improve outcomes. Uncertainty about the benefits and therefore unwillingness to cover the costs. Reluctance to seek or pay for, or lack of trust in, external advice and support. Complexity: adoption requires changing many business processes, and/or complementary assets. Risk of failure and salience of previous negative experiences. Business objectives: lack of growth ambition or mindset, prioritising a social mission.
Output markets	Customers are not demanding the use of new technologies. Weak market competition. Shielded from competitors that are using new technology (e.g. export restrictions). Regulations restrict the delivery of goods and services that apply new technologies.
Environment	Limited infrastructure - e.g. lack of connectivity. Lack of common standards that can make it difficult for technologies to connect and raise concerns about being tied to one supplier losing independence and flexibility. Regulation that shapes market operations - e.g. data privacy, infrastructure, overseas trade and intellectual property.

[2] This categorisation is based on Verhoogen (2023).
[3] Not by itself a market failure by itself but could stem from business model failures within the vendor (e.g. knowledge of how to segment customers) or represent a coordination failure or unrealised market (e.g. SMEs could pool resources and share costs of technology).

3. About the Business Basics Programme

The Business Basics Programme applied an experimental approach to address the issues of low adoption of existing technologies and management practices and limited evidence about what works in promoting adoption. The primary aim was to build a more robust evidence base to inform future policy decisions in this area.

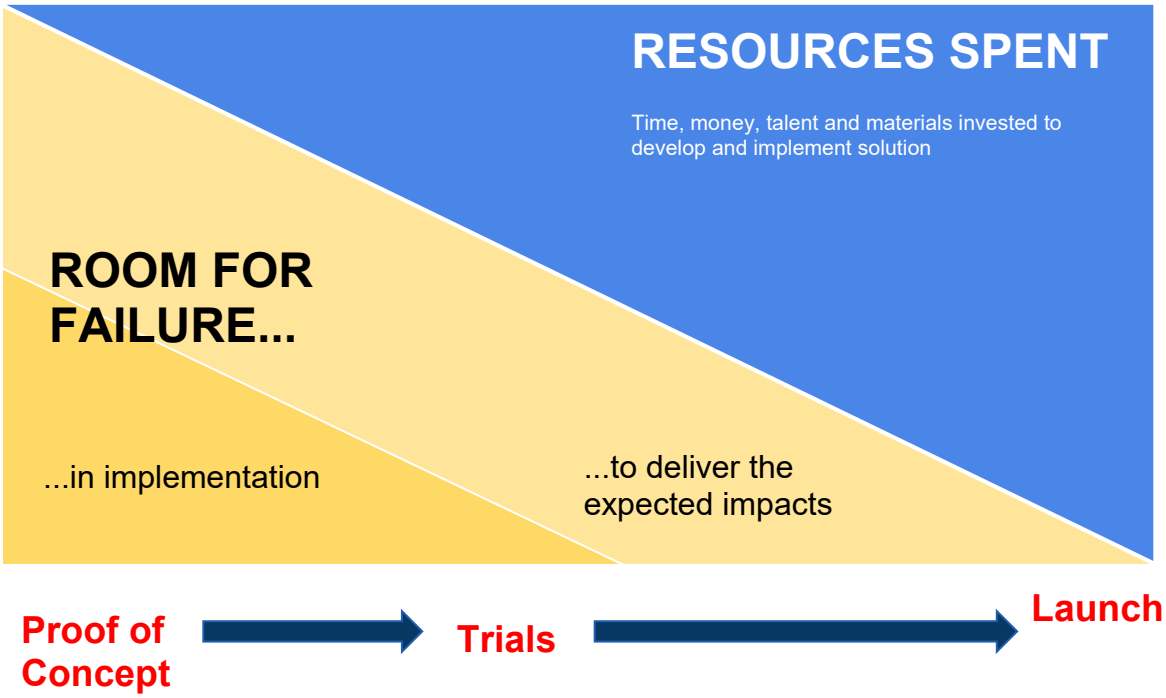
The core activity of the programme involved setting up a series of competitive funding calls, designed to source ideas for innovative interventions from business support providers and to select the most promising to be tested through robust evaluation. The intention of adopting this 'experimentation fund' format was to create a policy approach that would be:

- Dynamic: successive funding calls could be adjusted to findings and policy priorities, taking risks to develop and scale innovative policy ideas
- Smarter: prioritising rigorous evaluation and only spending what was required to learn which solutions to scale and which to close or change
- Inclusive: opening out the opportunity to shape public policy to as many organisations and minds as possible, working with a range of providers and involving SMEs from a variety of regions and sectors

Opening Business Basics funding to a wide range of ideas and organisations enabled BEIS effectively to crowd-source novel approaches to the challenge of low adoption. However, this had the consequence that the evidence generated would be diverse in nature, making it difficult to aggregate findings and compare the effective of interventions. The alternative approach – of defining particular areas of intervention or setting specific hypotheses that should be tested – would likely have produced a more consolidated and cohesive set of findings but would have resulted in a more limited base of applications to select from.

Given the existing uncertainty about how best to design, target and deliver interventions, taking risks was inevitable. The fund created the opportunity to test a wide number of ideas and to provide room for failure (see Figure 3). Smaller proof-of-concept projects were aimed at identifying problems with implementation, and full-scale trials were intended to test whether interventions were able to deliver the expected impacts. In contrast, had the equivalent budget been spent on a single or small number of interventions, it would have been much more difficult to accommodate any risks. This would have made it much less likely that innovative approaches would have been applied or robust evaluation methodologies considered.

Figure 3: Experimental approach



The experimentation fund was complemented by a small number of 'partnership projects', targeted research carried out together with key stakeholders. These projects resulted in the following outputs:

- 'Business Basics: Nudging firms to improve productivity – a rapid literature review of behavioural factors and best-practice business prompts', prepared by the Behavioural Insights Team (2019)
- 'Business Basics: Attitudes to adoption – understanding the barriers and enablers to the adoption of best practice technologies and management practices by small and medium sized enterprises (SMEs)', based on interviews with SME managers carried out by Kantar Public (BEIS 2019a)
- Messaging trials with organisations representing particular industries, investigating whether behavioural insights could increase engagement with offers of business support

Some of the key insights from 'Nudging firms to improve productivity' and 'Attitudes to adoption' have been discussed in Section 2. Learning from these reviews was incorporated into projects funded in the later rounds.

Further partnership projects had originally been envisaged. However, once the programme was under way, the high level of interest in and applications to the experimentation fund meant that this became the most central activity.

With robust evaluation a central feature of the Business Basics Programme, a final area of activity was to develop an overarching evaluation framework for BEIS's business support programmes (BEIS 2019b). This set out the expected standards for business support

evaluation, with the aim of improving methodological rigour and greater comparability across programmes. Some of the requirements introduced by the evaluation framework are:

- Defining a logic model at the design stage for each programme, to set out how the activities are expected to result in the intended outcomes and to guide the evaluation
- Using the most robust evaluation methods (RCTs or regression discontinuity designs) wherever possible, only considering alternative methods if these prove not to be feasible or proportionate
- Using mixed methods – including qualitative research alongside quantitative analysis – to ensure that evaluations provide deeper insights and more persuasive evidence
- Collecting data on measures of productivity and business growth over the medium and long term
- Including benefit/cost ratios or cost-effectiveness calculations for the programme being evaluated

The projects funded under Business Basics followed these criteria as far as possible, given the practical constraints they faced – this is discussed further below, under 'Evaluation methodology'.

Selection of projects

Three funding calls were undertaken, in which a total of £6.4 million was allocated to 32 projects.[4] Two types of project were funded:

- 15 proofs of concept – early-stage projects to test the feasibility of an innovative policy idea and determine whether and how it could be progressed to a larger experiment (with funding of up to £60,000).

17 full-scale trials – projects to deliver and robustly evaluate the impact of different types of interventions (funding up to £400,000). These projects were all set up as randomised controlled trials (RCTs).

The first two funding calls were open to both proofs of concept and full-scale trials, while the third was only for trials. The aim was that successful proofs of concept could be scaled up and tested in a full-scale trial in a later funding round. However, the tight timescales and longer-than-expected time needed for project delivery meant that this ambition was realised only with two of the proofs of concept supported in the first round.

The calls were managed by Innovate UK under its Innovation Funding Service, an established system for running funding competitions and monitoring implementation. Activities were carried out with SMEs based in England only, given that business support is the responsibility of the devolved administrations in Scotland, Wales and Northern Ireland.

[4] One additional project that passed through the selection process was abandoned before being implemented.

Assessment of the proposals received was carried out by staff from Innovate UK, BEIS, and the Innovation Growth Lab at Nesta (IGL). Final decisions on the portfolio of projects were made by a programme board, which also included representatives from stakeholders such as the What Works Centre for Local Economic Growth and HM Treasury.

There was a separate application process for projects led by commercial businesses, although only one project, Evolution Invoice, was selected through this route.

The third funding round focused on projects that were aimed at encouraging SMEs to adopt digital technology. Payment technology was identified as a particular priority area in this round, with up to £1 million of the funding targeted available for projects that would help SMEs avoid and deal with late payments (BEIS 2019c).

Hundreds of applications were received over the three rounds, despite initial fears that it would take time to build awareness of the programme and address concerns about the requirement for robust evaluation. However, while the volume of applications was high, many were found to be out of scope or struggled to convert a willingness to experiment into a viable evaluation strategy. The benefit of conducting multiple rounds was that changes could be made as lessons were learned.

Adjustments made to the application and selection processes had a notable impact on the overall quality and relevance of ideas in the second and third funding rounds. The changes made included:

- Providing further time for project development and delivery. For the first round all proof-of-concept projects had to be completed within 6 months, whereas for the second round they could apply for up to 12 months. In the first round, trials were expected to be designed, delivered and outcome data collected within a 12-month period. This proved too little time, particularly as it was found that more support was required at the design stage. The time allocation for full-scale trials was extended to 15 months in the second round and 18 months in the third round.
- Requiring and supporting project teams in conducting pilots before launching trials. In the final funding round, trials were required to first conduct a small-scale pilot, providing an opportunity to identify and resolve problems before significant resources were invested in the full trial. In effect, projects in this round could combine elements of a proof of concept within an application for a full trial.
- Introduction of a two-stage application process. Large numbers of the proposals submitted in the first two rounds were out of scope – for example, seeking funding to develop a new technological tool for SMEs, rather than testing how to drive the adoption of something already proven. One reason for this was that the funding was administered by Innovate UK's Innovation Funding Service, which normally distributes funding to businesses seeking to undertake their own technological innovations. Changes to better explain the purpose of the fund appeared to have some success during the second round. For the third round, an expression of interest stage was introduced, to give

applicants an opportunity to receive feedback before they took the time to complete a full application.

- Greater advice and support to plan evaluations. Even from the first round, selected projects were provided with support with their trial design, delivery and reporting. However, it was found that many ideas that were of great interest for policy could not be selected due to weaknesses in their planned evaluation, and even selected projects required greater analytical support than had been planned. As a result, additional efforts were made during the second and third rounds to support project teams, including by holding workshops on evaluation design and analysis, and by providing additional resources.
- Refinement to selection processes. The selection process often highlighted tensions between the Business Basics Programme's objectives of testing novel approaches and generating robust evidence. For example, it was unclear how to weigh the policy value of trying a new idea against the typically greater risks for implementation and challenges for evaluation. Adjustments were made to the questions asked for the second and third calls, so that assessors could better understand how evaluations were to be undertaken and so that risks to the trials could be balanced against other selection criteria.

Evaluation methodology

Full-scale trials were required to use an evaluation methodology that would score 4 or 5 points on the Maryland Scientific Methods Scale (What Works Centre for Local Economic Growth 2015), meaning that there should be either random allocation of participants between treatment and control groups, or some mechanism that could be plausibly argued to mimic random allocation. This was a direct consequence of the concern discussed in Section 2 about the quality of evidence produced by evaluations of business support interventions in the past. Random or quasi-random assignment of participants helps to ensure that the treatment and control groups are truly comparable before the intervention takes place, such that any differences in outcomes can be attributed to the treatment.

Project proposing to use other quantitative evaluation methods, such as matching or difference-in-difference designs, were not eligible for funding under Business Basics. This decision was made partly because these methods are already widely applied in evaluations, but also because of the difficulties involved in satisfying the necessary assumptions and delivering reliable results. For example, substantial data collection is often required to provide a sample of sufficient scale and depth of information to identify credible counterfactuals.. Indeed, the potential for existing approaches to generate misleading findings in the context of business-support programmes is demonstrated by one of the Business Basics projects that included a manually-matched comparison group alongside a randomly-selected control group (Roper and others 2020).[5] This is supported by other studies that have compared RCT findings to matching and difference-in-difference methods (Grau Veloso and others 2020).

In the event, all the shortlisted applications for full-scale trials proposed to use an RCT design rather than approaches using quasi-random allocation (such as regression discontinuity or instrumental variables). This likely reflects the difficulty of designing strong quasi-experimental evaluations, that meet the thresholds to score 4 points on the Maryland scale, to answer a specific research question within a single project. It may also partly be a response to the messaging used in promoting the funding calls that highlighted the potential use of RCTs.

It was recognised in advance that there would be some challenges in successfully applying RCTs in business support policy. In particular, the programme managers were concerned to ensure that the numbers of SMEs that signed up to participate in the trials would be sufficient for there to be sufficient statistical power to detect differences in outcomes between the treatment and control groups.[6] Without a sufficient number of participants, the natural variation in outcomes between participants could outweigh any differences in outcomes that were caused by the interventions being tested – meaning that the trial would not be able to produce any conclusions about the effectiveness of the intervention. The ability of the delivery organisations to recruit sufficient numbers was therefore a key consideration during the selection process and was discussed in depth with each project team at the design stage.

A second important consideration was to minimise attrition in the course of the trial – that is, to ensure that data on outcomes could be collected on as many as possible of the trial participants. If outcome data is not available for some of those who originally signed up for to participate in a trial, this causes two problems. Firstly, it reduces sample size available for analysis, leading to the problems with statistical power discussed above. Worse, if the circumstances that lead to data being missing differ between the treatment and control groups, this can result in estimates of the impact of the treatment being biased. Since most of the projects relied on surveys to collect data, maximising survey response rates was therefore a major factor in designing the trials.

Although these difficulties were well understood at the selection stage, both recruitment and attrition turned out to be major challenges to implementation of the Business Basics projects. In some cases the RCT design had to be abandoned because levels of recruitment did not meet the deliver organisations' expectations. This is discussed further below (under 'Implementation challenges'). Section 5 discusses what has been learned from the Business Basics experience about how to address these problems in the future.

In line with the business support evaluation policy (BEIS 2019b), most of the full-scale trials sought to use qualitative methods alongside the collection of quantitative data. In most cases qualitative data was used to understand participants' and delivery personnel's perceptions of the intervention and how it could be improved. Some projects also used qualitative interviews to assess the impact of the interventions themselves – for example, by asking SME participants about whether the interventions had influenced their decisions on technology adoption.

[6] What counts as a sufficient number of participants depends on several different factors and differed in each project – but typically the RCTs implemented under Business Basics were attempting to recruit numbers in the low hundreds.

In the proof-of-concept projects, evaluation was based primarily on qualitative data, collected either in interviews or from open-ended questions on feedback forms. Some of these projects also made use of quantitative data, normally in the form of a before-and-after comparison.

There are two important respects in which most of the Business Basics projects diverged from BEIS's business support evaluation policy (BEIS 2019b). With only a couple of exceptions, projects did not attempt to collect data on medium-term and long-term outcomes such as productivity and business growth. Instead, the intention was that BEIS would be able to use data from HM Revenue and Customs or the Office for National Statistics to assess impacts of the projects on productivity and business growth: this is discussed further below, under 'Potential for longer-term follow up'.

Secondly, most of the Business Basics projects did not attempt to assess benefit/cost ratios or cost-effectiveness. This is both because of the difficulties and uncertainty involved in quantifying the positive impacts of the projects, and because they did not systematically collect data on the cost of delivering the interventions themselves (as distinct from the cost of the evaluation). These issues are discussed further in Section 4.

Projects funded

The projects that were funded are listed in Tables 2 and 3, and are also detailed on GOV.UK. Figure 4 illustrates the range of intervention types tested under the various projects.[7]

Altogether around half of the projects involved organising either one-off workshops or informational events for SME participants (9 projects) or providing a sustained programme of training or workshops (6 projects). In many cases these sessions were supplemented by one-to-one mentoring or advisory support from subject-matter experts. In some cases the workshops or other events were central to the intervention, while in others (notably the Leading to Grow project) the programme began with a joint informational workshop but the support was primarily delivered on a one-to-one basis.

Despite the funding calls being deliberately left open, many of the projects selected were testing approaches that the programme management were already aware of and saw value in testing. For example, 10 of the projects involved SME participants interacting with and learning from their peers. In several cases peer-to-peer interaction was designed in as a key element of the intervention, while in others it was a by-product of gathering participants for in-person events. In contrast, the originators of the Business Basics Programme also expected that subsidising the cost of adoption would be a popular intervention, but this was only tested in two of the projects.

Various other types of intervention were tested by smaller clusters of projects. In particular:

[7] The figures discussed in this section treat the two projects that were initially funded as proofs of concept and later became full-scale trials as single cases, making a total of 30 projects.

- 3 projects involved managers or employees of SMEs following self-guided online training programmes.
- 3 of the projects involved messaging trials, testing how behavioural insights could be used to frame messages that would prompt SMEs to take up offers of support.
- 2 projects sought to prompt SMEs to take action by benchmarking their productivity against others.
- 2 projects attempted to use intermediaries (accountants in one case, bank advisers in the other) as a way to reach and provide support to SMEs.
- 2 projects involved students (either further education students or undergraduates) in providing support or advise to SMEs.

The majority of the projects (18 of the 30) were specifically aimed at encouraging SMEs to adopt digital technologies. This included all 6 of the trials funded in the third round, when this was made a requirement. The remaining projects sought to encourage adoption of specific management tools or practices or to improve the quality of decision-making in general, or had other aims that were related to productivity (such as boosting the wellbeing of employees or business owners).

The portfolio of projects can also be broken down by these dimensions:

- Geographic: Twelve of the projects were open to businesses from across England. The others had a regional or more local focus. In particular, 5 of the projects were specifically open to SMEs from Greater London, 4 had a focus on the South West, and 4 on Yorkshire and the Humber.
- Sectoral: 6 of the 30 projects were specifically aimed at SMEs in the manufacturing industry. Another 6 projects were designed to address SMEs in some other specific sector, while the remaining 18 were appropriate for SMEs in any sector.
- Business size: The majority of projects were open to any SMEs with up to 249 employees,[8] although several specifically targeted microbusiness (with up to 9 employees), or micro and small businesses (with up to 49 employees). Only one project (Be the Business Digital) excluded microbusinesses, on the basis that small or medium-sized businesses had more potential to benefit from the support on offer. We do not have full data on the profile of SMEs actually recruited, but from the 7 full-scale trials for which data is available, 66% of the participants were microbusinesses, 23% had 10 to 49 employees, and 10% had 50 to 249 employees. Micro and small businesses made up smaller shares than among the UK business population as a whole (Office for National Statistics 2022), suggesting that the Business Basics projects were reaching relatively larger businesses on average.

[8] At the time, 249 employees was the upper limit for a business to be considered as an SME.

Table 2: Projects funded: full-scale trials

Funding round	Project	Lead organisation	Intervention
1	Business Boost	Cavendish Enterprise	Programme of facilitated in-person workshops, with peer interaction
1	HeadsUp!	Enterprise Nation	Comparison of online and in-person delivery of facilitated training on digital technologies
1	A scientific approach to SME productivity	City, University of London	Training programme on use of a scientific approach in decision-making
1	AI for SMEs	Greater London Authority	Comparison of in-person events with one-to-one advice and a voucher in promoting adoption of artificial intelligence tools
1	People Skills+	Chartered Institute of Personnel and Development	One-to-one consulting on human resources and people management
2	Engaging Rural Micros	Devon County Council	Comparison of one-to-one advice on technology adoption (including a voucher for adoption) with broader business counselling support*
2	Leading to Grow	Chartered Association of Business Schools	Workshops on digital technologies and one-to-one advice from a business leader
2	Adopting Operational Coaching as a management style	Notion Limited	Self-guided online training on using coaching behaviours
2	Cyber Well	Bournemouth, Christchurch and Poole Council	Self-guided online training on cyber security
2	Making Accountants Digital Enablers (MADE)	Northumbria University	Coaching accountants to support SME clients in digital adoption

2	Developing management system to boost productivity	University of Cambridge	Self-guided business training programme, with opportunity for interacting online with peers and a mentor
3	Evolution Invoice	Evolution AI	Use of email reminders to encourage usage of an invoice-processing system
3	Techknowledgey Transfer	Petroc	Workshops on specific technologies, further education students supporting SMEs with a specific project
3	Manufacturing Connect Lancashire	Edge Hill University	Facilitated in-person workshops, with peer interaction, compared to provision of self-guided materials
3	Evolve Digital	Business West	Facilitated in-person workshops, with peer interaction, compared to provision of self-guided materials
3	Be the Business Digital	Be the Business	Use of bank relationship managers to encourage usage of an informational website
3	Adoption of Digitally Automated Accounting and Payment Technologies (ADAPT)	Cheshire East Council	Online events with a frontier firm, informational website*

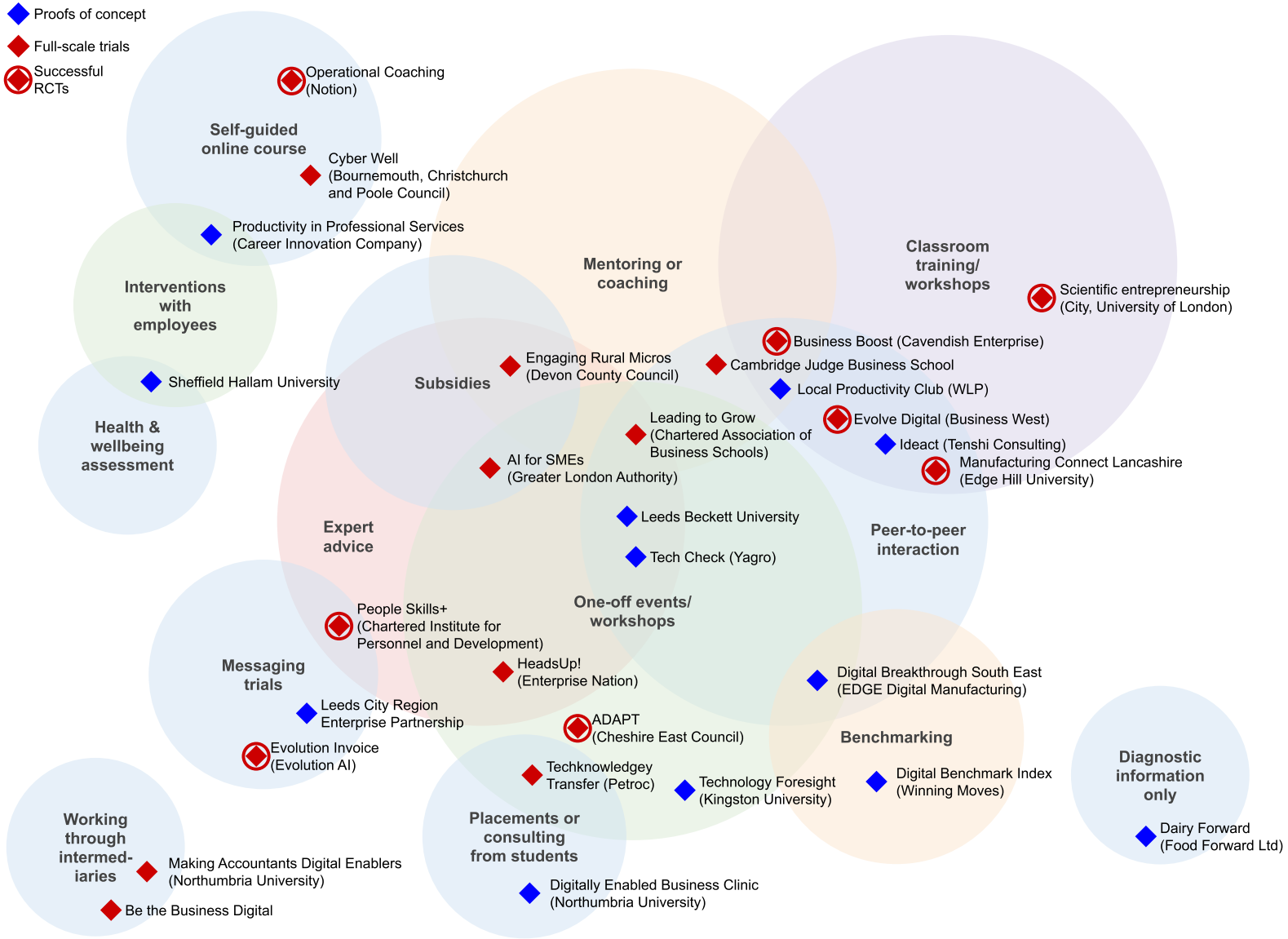
* The Engaging Rural Micros and ADAPT projects followed on from earlier proof-of-concept projects (see Table 3).

Table 3: Projects funded: proofs of concept

Funding round	Project	Lead organisation	Intervention
1	Local Productivity Club	WLP (Anglia Business Growth Consultants Limited)	Business training programme with one-to-one consultant support
1	Engaging Rural Micros	Devon County Council	Research on barriers to growth among rural SMEs
1	Digitally Enabled Business Clinic	Northumbria University	University students supporting SMEs with a specific project
1	Adoption of Digital Automation Practices and Technology (ADAPT)	Skills & Growth Company Limited (Cheshire East Council)	Exposure visits to frontier firms
1	Cloud Accounting	Locality	One-to-one support for voluntary-sector organisations on implementation of digital accounting software
1	Dairy Forward	Food Forward Limited	Report for SMEs on current resource use and information on technologies to improve resource efficiency
1	Productivity in Professional Services	Career Innovation Company Limited	Online self-guided training on career development for SME employees and managers
1	Data-led approach to improving productivity via tailored messaging	Leeds City Region Enterprise Partnership	Combining data sources to improve the targeting of interventions
1	Technology foresight for growth and productivity	Kingston University London	Technology foresight process, assessing the suitability of digital technologies for SMEs
2	Ideact	Tenshi Consulting	Facilitated training programme on design thinking
2	Digital Benchmark Index	Winning Moves Limited	Diagnostic and benchmarking on technology adoption

2	Developing performance management capability	Leeds Beckett University	Workshops and one-to-one support on performance management in manufacturing SMEs
2	Lifestyle behaviour change interventions for employee health and SME productivity	Sheffield Hallam University	Health and lifestyle assessment for SME employees
2	Tech Check	Yagro Limited	Diagnostic survey, one-to-one support, workshops and online resources on technology adoption for agricultural SMEs
2	Digital Breakthrough South East	EDGE Digital Manufacturing Limited	Diagnostic and workshops on technology adoption for manufacturing SMEs

Figure 4: Categorisation of projects by type of intervention



Implementation challenges

The small scale of the Business Basics projects allowed BEIS and the project teams to take risks with novel ideas. The aim was to run practical experiments to separate interventions with significant promise from those that would require substantial improvements in their design or how they were targeted in order to be effective. In Section 4 we discuss the results of specific interventions, and wider learning generating by the projects about what works in promoting adoption. For many projects, however, the lessons learned have primarily been about the barriers to successful delivery of a business support programme rather than about impacts on SME adoption and productivity. Unprecedented shocks – most notably the COVID-19 pandemic – created substantial delivery challenges, but often these were only exacerbating existing issues with how support was to be implemented. One key lesson was therefore the importance of understanding whether an intervention can deliver the expected outputs, before proceeding to test whether those outputs will result in outcomes such as adoption or other changes in the business.

Implementation of the funded projects was overseen by a monitoring officer who reported to Innovate UK, with IGL providing advice and support for evaluations. Projects were expected to follow the overall timelines and approach outlined in their proposals, but there was flexibility for adjustments as trial designs were completed, pilots undertaken and interventions implemented. On many occasions changes were made based on the analytical advice of BEIS and IGL. This flexibility within projects proved to be very important, particularly with the onset of the COVID-19 pandemic.

Among the 17 full-scale projects, 8 can be considered to have succeeded as RCTs, in that they were able to address one of the main research questions defined at the trial design stage.[9] Five of the 8 RCTs produced evidence of a positive impact from the interventions being tested, at least on the immediate outcomes they were seeking to influence. (The results are discussed in Section 4 and summarised in Table 4.) The other 3 trials did not find evidence of impact, either because the intervention had no impact or because any impact was smaller than it was possible to detect with the sample size available.

Of the remaining 9 full-scale projects, in 2 cases (the Leading to Grow and Engaging Rural Micros projects) the RCT design was dropped as a response to the onset of the pandemic.[10] In the HeadsUp! project, the trial showed differences between the two forms of intervention in the proportions of participants achieving the targeted levels of support, but this was not by itself a primary research question. The other 6 projects did not succeed as RCTs, largely because the level of recruitment of SMEs or response rates to surveys did not meet expectations. Nevertheless, each of these projects has generated learning that is valuable for policy decisions and for future evaluations, as we discuss in Section 4 and in the annex to this report.

[9] The specific research questions investigated by each of the projects are detailed in the annex to this report.
[10] For Engaging Rural Micros, random assignment was retained for allocation between the two forms of intervention, but the decision was taken not to retain a control group. It was therefore not possible to answer the original research questions.

The success rate of the RCTs under the Business Basics Programme should be seen in the context of the extremely challenging business environment in the UK over the last few years. Another factor was that the objective of creating robust evidence on occasion had to be balanced against those of getting timely support to SMEs and the wider learning from seeing more novel interventions and partnerships in action. Had maximising the success of the RCTs been the primary objective, there would have been some changes in the portfolio of projects selected and in the details of implementation. For example, one proposed project with a strong evaluation design was not selected because the intervention was not considered novel enough; in other cases, more emphasis would have been placed on carrying out robust pilots before planning full-scale trials. In any case, there is always a likelihood that a field experiment will fail, often for the same reasons that standard policy interventions can face challenges.[11]

It is also worth noting that difficulties with implementation and recruitment are very common and not limited to the occasions where trials are being conducted.[12] That the Business Basics projects have been able to produce valuable learning on a shorter time horizon should therefore be seen positively, even if many of them have not succeeded as RCTs.

Implications of the COVID-19 pandemic

The COVID-19 pandemic caused a rapid and dramatic shift in the economic and operating conditions for most SMEs in the UK. The first lockdown in early 2020 led to many SMEs putting their operations on hold, while others had to switch rapidly to operating online or in a socially distanced way. The easing of restrictions then saw many SMEs preoccupied with restarting their business, and (particularly in some sectors) facing unprecedented levels of demand. Severe disruption continued during the further periods of restrictions later in 2020 and in the first half of 2021, exacerbated by convulsions in global supply chains. These conditions naturally dominated many SME leaders' thinking and absorbed much of their time and attention during the whole period.

At the same time, the pandemic also drove the adoption of digital technology and changes in management practices within many SMEs (Lloyds Bank 2020, Valero and others 2021). Some Business Basics project teams found that SMEs became more open to the kinds of changes they were promoting and were keen to receive support in technology adoption. Other projects found that the support they were offering was no longer perceived as relevant, and had to adjust their approach.

Altogether, the pandemic presented a major challenge to delivery of many of the Business Basics projects. Recruitment became more difficult, meaning that fewer businesses received support than expected. The pandemic conditions also made it harder to reach SMEs to carry out surveys, as a result of temporary business closures and furloughs, but also because researchers tried to avoid distracting business owners from more immediate pressures.

[11] For example, Karlan and Appel (2016) discuss many cases of failures in field experiments in developing countries.
[12] For example, the National Audit Office (2020) identified several business support programmes for which delivery has fallen below initial targets. There are also many such historical examples.

Smaller samples and challenges with measuring outcomes limited the evidence provided by the projects.

All of the projects funded in the second and third rounds were strongly affected by the pandemic, and some from the first round also experienced problems with data collection. The impacts were most severe for projects in the second round, given that the outbreak of the pandemic occurred during the time they were delivering support to businesses. Implementers suddenly had to find new ways to deliver interventions that had been designed on the basis of face-to-face meetings and group workshops, at the same time as facing major changes in the needs of the SMEs being supported. The third-round projects experienced similar issues, but they were at least able to consider alternative approaches in advance. The consequence is that the scope of projects, the types of interventions, the evaluation design and the expected outcomes all had to be reconsidered.

The structure of the programme provided scope for flexibility during implementation. BEIS, Innovate UK and IGL worked together with each of the project teams to help assess the impacts of the pandemic on project delivery and to plan appropriate responses. For those facing the most significant changes in circumstance, these conversations covered the following questions:

- Was the need that the intervention had been designed to address still present among the businesses that had been (or that could be) recruited?
- Could the intervention still be delivered as planned? If not, was there a feasible and effective way to deliver the same form of intervention?
- Was it possible to delay delivery of the project, considering the logistical and financial constraints? Would a delay be of value?
- Were the expected outcomes of the intervention set to change?
- If the need was no longer there, could the intervention and resources be used to address a different and more urgent need among the population?
- What was being learned about how to support businesses during this time?

Each project responded in different ways. In the case of the Leading to Grow project (led by the Chartered Association of Business Schools), the planned workshop format was no longer feasible and the needs of SMEs were seen to have changed considerably. The decision was therefore taken to abandon the planned trial and instead use the resources to deliver a much more open offer of one-to-one support to the SMEs that had been enrolled. In contrast, Devon County Council decided to continue with their Engaging Rural Micros project, since the implementation had already started and the support on offer was seen as still being relevant to the needs of SMEs. However, the council agreed with BEIS and Innovate UK to make the intervention available to the control group and so to sacrifice completion of the RCT, given the urgent needs that businesses faced at that time.

More details of how projects responded to the pandemic can be found in the summaries of the individual projects, in the annex to this report.

Potential for longer-term follow up

Under the Business Basics Programme, each project had to be implemented within a period of 12 to 18 months, including the planning and recruitment phases as well as delivery of the intervention and the evaluation. This meant that, in most cases, final data collection had to be conducted soon after the intervention, with a delay of several months at most. Although the project teams sought to identify short-term indicators that were believed to be precursors to longer-term improvements in business performance, in most cases this connection is not proven.

Given this limitation, it was acknowledged from the outset of the programme that the trials would be selected and designed on their ability to assess short-term impacts only. BEIS proposed to address this limitation by using data available through HM Revenue and Customs (HMRC) and the Office for National Statistics (ONS) to investigate whether there is any evidence for impacts on revenue growth, employment growth, and productivity in the years after the intervention.[13] Such analysis will only be of value for projects in which there is some evidence of a difference in short-term outcomes that could translate into longer-term impacts. It is also necessary that the projects collected identifying information from the businesses that allow them to be linked to records in the HMRC dataset, and that the control group were not given the intervention after the end of the trial.

Two or three of the Business Basics projects are suitable for this longer-term analysis, as shown in the right-hand column of Table 4. In these cases, it will be of interest for the Department for Business and Trade to examine the difference in growth rates and productivity between the SMEs that were allocated to the treatment and control groups, 3 to 5 years after implementation. However, it should be recognised that the numbers of businesses included in the Business Basics trials limit the statistical power available for this analysis: any impacts on productivity or growth will have to be reasonably large for this analysis to be able to detect them.

Another potential way in which HMRC and ONS data could be used is to examine the profile of businesses that took part in the Business Basics projects. Most of the projects used surveys to collect baseline data on some simple characteristics of each business, but the official data sources could be used to gain a more dynamic picture. In particular, it would be valuable to understand whether participants in Business Basics projects tended to have experienced higher or lower growth rates in the past, as compared to the general population of SMEs, beneficiaries of other support programmes or groups identified from other sources such as the Longitudinal Small Business Survey. It would also be possible to examine whether businesses that put themselves forward to participate in these projects tended to be already set up for

[13] We refer to HMRC data as this would be the primary source of information on employment and turnover for most SMEs. Access to this data is available through different routes depending on who is undertaking the analysis and its uses. For example, access for academic research is possible through the Inter-Departmental Business Register, which combines data from HMRC and ONS surveys, and the Business Structures Database that is derived from this. The differences in coverage and content between these sources have implications for analysis but are outside the scope of this report.

future growth, by examining subsequent growth rates among the control groups that received little or no support.

To make linking to HMRC or ONS data possible, BEIS provided guidance to project teams on data protection procedures. BEIS specified the form of the data protection notices that should be provided to participants, designating BEIS as a data controller and allowing the data to be matched to other datasets for the purposes of evaluation. Using similar procedures would likely prove useful in other programmes in the future. However, there were still some instances where data could not be utilised or shared, and the process of transferring data to BEIS has been more complicated and has taken more time than expected.

The HMRC and ONS data only covers later stage impacts (business survival, employment and turnover), and there are sizeable time lags in data becoming available. In Section 5, we discuss the use of other publicly available data to provide insight into SMEs' level of technology adoption, such as by examining the technologies that are used on businesses' own websites. Given the sample sizes of the Business Basics projects, this data would be most applicable to understanding the profile of participating businesses. However, its use could open up new ways to target, deliver and evaluate support in future initiatives.

4. What have we learned for business support policy?

The Business Basics Programme has provided a wealth of insights that can be used to inform future business support policy. Several of the interventions have proved effective – or at least have shown promising initial results – and are clear candidates for scale-up or further testing. In addition, the projects have together generated valuable insights about the various barriers to adoption and about the optimal design of business support schemes. We address each of these areas in turn here.

Which interventions have the potential to be scaled up or tested further?

Evidence from RCTs

The findings of the 8 RCTs that were carried out successfully under the Business Basics Programme are summarised in Table 4. Five of these 8 trials found positive effects from the interventions being tested on at least the first steps in the intended chain of effects that would drive productivity and growth among participating businesses. On this basis, there is a good case for rolling out the 5 interventions at larger scale, using this as an opportunity to examine the longer-term impacts that were beyond the scale and scope of these initial trials.

Full details about each of the 5 interventions and the potential for further scaling and testing are discussed in the annex to this report. To summarise these briefly:

- Start and Grow UK's **Business Boost** programme, a series of workshops aimed at young microbusinesses with high growth potential, was found to have had positive impacts on businesses' adoption of modern management tools (such as the use of SWOT analysis and a business canvas), and, to a more modest extent, in setting out a positive vision and strategy for the business. However, there was no evidence of impact on two other outcome measures – the use of formal business plans and other managerial tools, and plans for investing in business growth. Two of the distinctive features of this programme – peer-to-peer interaction during the workshops and one-to-one follow-up sessions with mentors – were both highlighted in feedback from participants as being particularly valuable.
- Notion's training programme on **Operational Coaching** for SME managers was found to result in SME managers approximately doubling the proportion of time they spend coaching more junior employees, and a corresponding decrease in the time they spend on day-to-day management. While the link between coaching behaviours and productivity or business growth is unproven, it is highly plausible, given the apparent benefits of coaching found in larger organisations (Grover and Furnham 2016). As an

online, self-guided training course, Notion's programme has the potential to be made widely available to SME managers at low cost.

- The training on **scientific entrepreneurship** provided by researchers at City, University of London was successful in inducing business owners to use a more scientific approach in decision making. This appears to have had beneficial impacts on their businesses, particularly by enabling them to make pivots in strategy when necessary. Again the link to productivity is not yet clear, but there are promising indications about the impacts on revenue growth – at least when the data from this trial is combined with that from other tests of scientific entrepreneurship training carried out with start-up businesses in Italy (Camuffo and others 2022). The consistency between the results in the UK and in Italy adds to the confidence that similar positive results would be found when the programme is replicated. The scientific entrepreneurship approach is now being tested in further large-scale RCTs, including one being conducted across 5 countries, including the UK (Novelli and others 2022).
- The **Evolve Digital** programme, run by Start and Grow UK together with Lancaster University Management School, consisted of a series of facilitated peer-based workshops for small family-owned firms. The programme was successful in building participants' confidence in their ability to use digital technologies. In the follow-up survey, significantly more of the participants said that they planned to adopt the use of new technologies within 6 months than did a control group that had access to self-guided materials only.
- The **Manufacturing Connect Lancashire** project, run by Edge Hill University, provided some evidence that SMEs that attended 2 online events – in which they had the opportunity to interact with existing technology users and application experts – were more likely to complete the programme than businesses that were given access to the content only in the form of self-guided online materials. Longitudinal (non-experimental) analysis and qualitative data also indicate that the programme had a positive impact overall on intentions to adopt the new technologies being discussed. A quarter of the participants reported positive impacts in terms of their intention to adopt productivity-enhancing technologies, with some moving to immediate adoption.

In the 3 latter cases, there is potential for using HMRC data to compare the performance of the treatment and control businesses over the years following the interventions, to see whether the differences in initial outcomes does in fact result in an impact on growth and productivity. (This is discussed in more detail in Section 3.) However, the modest sample sizes in each case mean that impacts on growth or productivity would have to be reasonably large to be detectable.[14] There is still a case, therefore, for these programmes to be tested at larger scale during a further rollout.

[14] This is a particular constraint in the case of Manufacturing Connect Lancashire, since the treatment/control difference in completion of the programme was relatively small.

Table 4: Results of the 8 successful RCTs

Project	Lead organis-ation	Intervention: treatment group	Intervention: control group	Business type	Impacts on primary outcome measures (with 95% confidence intervals in parentheses)[15]	Potential for longer-term follow-up on impacts
Business Boost	Start and Grow UK	Six in-person workshops with peer interaction and a one-to-one mentoring session	No intervention	SMEs with up to 19 employees	Awareness and use of productivity-enhancing tools: increase of 2.2 points on an 8-point scale (1.5 to 2.9 points) Vision and strategies to improve productivity: 0.7 points on a 7-point scale (0.1 to 1.3 points) Adoption of formal business plans and other managerial tools: 0.0 points on a 12-point scale (–0.5 to 0.6 points) Investment to improve productivity: 0.0 points on a 7-point scale (–0.6 to 0.7 points)[16]	No: identifying information on the businesses that participated in the trial is not available.
Scientific entrepreneur-ship training	City, University of London	Training programme on using a scientific	Conventional business training programme	SMEs in Greater London with up	Adoption of the scientific approach: 0.2 points on a 4-point scale (–0.0 to 0.4 points)	Yes

[15] Except in the case of Business Boost, figures in this column are taken from the final versions or latest drafts of the project reports that were available as of March 2023. The confidence intervals are calculated from the reported standard errors or *p*-values. In the case of Business Boost, the figures reported in this table are generated from the original dataset, using the evaluators' coding scripts.
[16] The outcome measures were not pre-specified in the trial protocol for this project.

		approach to decision-making		to 249 employees	Number of strategic pivots: –0.01 (–0.17 to 0.15) Value added: –£1420 (–£7400 to £4550)	
People Skills+	Chartered Institute for Personnel and Develop-ment	Comparing alternative messages to promote take-up of free consulting on HR and people management	Not applicable (comparison was between alternative forms of messaging in communic-ations with potential participants)	SMEs in Greater Birmingham and Solihull with up to 249 employees	No clear differences in take up because of the various messages, but rates of response to all communications were very low.[17]	No: no treatment/control difference in take up of support.
Operational coaching	Notion Limited	Self-guided online training programme for SME managers on using coaching behaviours	No intervention	All SMEs with up to 249 employees	Proportion of managers' time spent on coaching: increase of 13.8 percentage points (10.3 to 17.3 percentage points)	No: the control group was provided with the training immediately after the end of the trial.
Evolution Invoice	Evolution AI	Email reminders and other nudges to encourage testing of a	No contact after initial registration email	All SMEs with up to 249 employees	No observed impact from treatment intervention: the threshold for the primary outcome	No: no indication of impact from the treatment.

[17] A planned second RCT on the impact of the consulting support itself did not proceed, because of the low levels of take up of the support.

		software system for which the business had registered			measure was reached by only 2 businesses	
Adoption of Digital Automated Payment Technology (ADAPT)	Cheshire East Council	Webinar on digital accounting and payment technologies, with opportunities for peer interaction	Written information on the technologies via an online portal	SMEs in East Cheshire with up to 249 employees	Awareness and understanding of technologies: –0.1 points on an 18-point scale (–1.5 to 1.2 points) Steps towards adoption of technologies: –1.0 points on a 28-point scale (–4.4 to 2.3 points)	No: no indication of impact from the treatment.
Evolve Digital	Start and Grow UK	Seven facilitated online workshops with peer interaction (42 hours in total, over 11 weeks)	Online materials for self-guided learning	Family-owned businesses with 1 to 49 employees and low existing usage of digital technologies	Technology use self-efficacy: 0.5 points on a 4-point scale (0.1 to 0.9 points) Intentions to adopt digital technologies: 0.5 points on a 4-point scale (0.2 to 0.8 points)	Yes
Manufacturing Connect Lancashire	Edge Hill University	Two facilitated online workshops with peer interaction (4 hours in total)	Online materials for self-guided learning	Manufacturing SMEs in North West England with up to 249 employees	Not known – primary outcome measure was not systematically assessed at endline Secondary outcome measure, progression to end of the programme: increase of 12 percentage points (–1 to 31 percentage points)	Yes, although the treatment/control difference in completion of the programme was relatively small.

Taking a project that has been tested at modest scale to a widespread rollout is not a straightforward process. One important consideration, given the difficulties experienced with recruiting participants for these trials, is how much demand there will be for the interventions when rolled out at larger scale. For each of the projects discussed above, it is likely that there will be sufficient demand from potential participants for a scale up, though in some cases this may mean expanding the geographic area or business sectors that are targeted. The question then arises of how representative the participants in the trial are of the wider population who would be engaged when implemented at scale (Banerjee and others 2017, List 2022). It is always possible that the businesses that come forward to participate when a project was targeted at a relatively small scale differ in important ways from those who would participate in a larger-scale rollout. For example, the participants in a trial may tend to be more proactive or to have different motivations or strong social networks than those who would be recruited for a larger-scale programme. Those characteristics could have important effects on the outcomes they achieved as a result of the interventions, and the typical outcomes among the wider population of businesses may differ. Another consideration for some of the projects is that scaling up would require recruiting larger numbers of delivery staff. For programmes that depend on the quality of facilitation, this could have important consequences for the results. For these reasons, these interventions should not be seen as having been ‘proven’ in Business Basics and rolled out universally. Instead, scaling should be seen as a process which would involve additional testing and adjusting of the programmes.

A particular question when considering the results of projects implemented in 2020 and 2021 (including Evolve Digital and Manufacturing Connect Lancashire) is whether the results would apply in a more typical period, outside the disruption caused by the COVID-19 pandemic. It seems likely that, if anything, the pandemic conditions would have reduced the effectiveness of these interventions. One reason for this is that delivery became more complicated and often had to be carried out online. For example, the implementers of the Evolve Digital project were concerned that forgoing the 2-day residential component that had been planned for the start of their programme would make the peer groups less effective (though this concern was somewhat ameliorated when they had success in establishing group dynamics in a virtual setting). Of course, as discussed in Section 3, the pandemic also created an exceptionally difficult operating environment for many SMEs, which reduced the time, resources and mental bandwidth they had available both to participate in support programmes and to invest in adopting new technologies or practices. Carrying out further tests of the impacts of these initiatives in more ‘normal’ conditions would therefore be of great interest.

Other promising interventions

In addition to the 5 projects discussed above, several Business Basics projects identified promising interventions that would benefit from further testing. In particular, the following proof-of-concept projects were well received by participants and have the potential to be tested at larger scale:

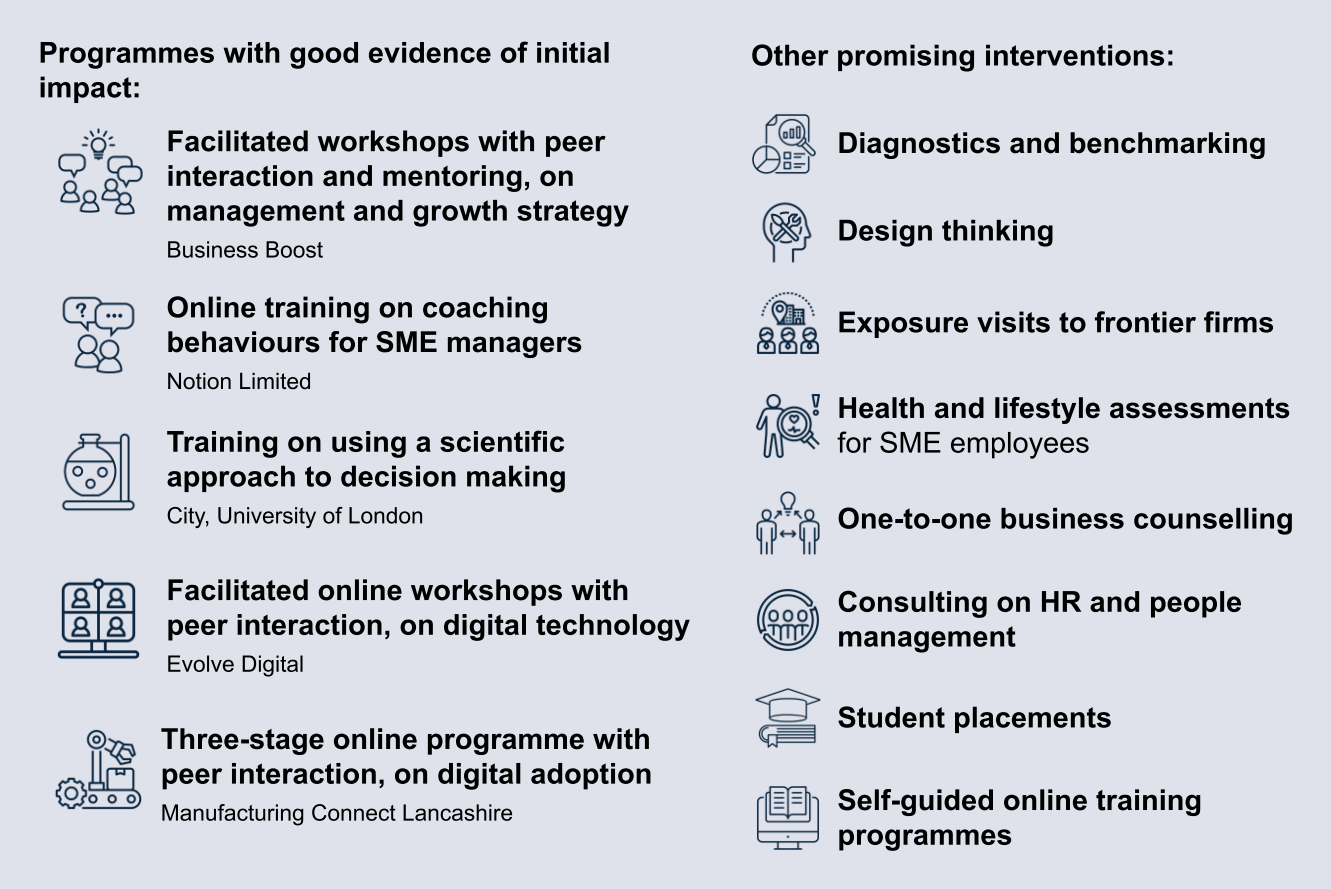
- EDGE Digital Manufacturing’s Digital Breakthrough programme, involving a diagnostic survey, workshops to set strategy and a plan for digital adoption, and referrals to other organisations for further support

- Winning Moves' use of a diagnostic and benchmarking process on digital readiness
- Tenshi Consulting's Ideact programme of training on design thinking
- Health and lifestyle assessments for SME employees, carried out by Sheffield Hallam University
- The workshops on digital technologies for agricultural SMEs provided under Yagro Limited's Tech Check project
- Exposure visits for SME representatives to larger companies in their area, organised by Cheshire East Council under the Adoption of Digital Automation Practices and Technology (ADAPT) project. (In the full-scale trial that followed on from the ADAPT proof of concept, the exposure visits were replaced by online events with the company in question, which were not as appealing to participants and do not appear to have had significant impact.)

Three of the interventions carried out under larger-scale projects also received positive feedback from participants, although the samples that were recruited into the trials were not large enough to provide rigorous assessments of their effectiveness. These are therefore additional strong candidates for further testing:

- 'The Person and the Business' package from Devon County Council's Engaging Rural Micros project. This involved one-to-one support from an experienced business counsellor, focusing on the development of soft skills and a growth mindset. The key question to be considered is whether such a tailored approach that relies on the expertise and interpersonal skills of the counsellor can be replicated by others and scaled in a cost-effective way.
- The People Skills+ programme implemented by the Chartered Institute of Personnel and Development, which provided businesses with tailored one-to-one advice and support on HR and people management issues. There would be a similar question with this intervention about the cost effectiveness of scaling this support. While the programme funded by Business Basics suffered from difficulties with recruitment, the approach has been implemented with more success in other areas.
- Petroc's 'Techknowledgey Transfer' initiative, in which further education students (that is, those in post-secondary studies other than higher education) supported SMEs on technology-related projects. This complements Northumbria University's proof-of-concept project (the Digitally Enabled Business Clinic), in which groups of university students provided consultancy support to SMEs.

Figure 5: Promising interventions



Considerations on cost-effectiveness. An important caveat to the recommendations about scale up and further testing is that we know little as yet about the relative value for money of the various interventions. Most of the projects did not explicitly attempt to assess benefit/cost ratios or cost-effectiveness. This is largely due to the large degree of uncertainty in the measurement of outcomes (even the RCTs that produced promising results have wide confidence intervals, as detailed in Table 4) and uncertainty in how the early-stage outcomes will translate into increased productivity or growth. This would mean that the range of any cost-effectiveness estimates would be large. Another important limitation is that, although overall project costs were tracked by Innovate UK, project teams were not asked to systematically record the costs of designing and delivering the interventions, as distinct from the costs of the evaluation. Providing guidance to project teams on recording design and delivery costs (for example, by providing a template reporting format) would be valuable when funding large-scale quantitative evaluations in the future. Ideally projects would record both the fixed and marginal costs of delivery, in order to assess how cost-effectiveness changes as an intervention is scaled up.

One intervention for which the value-for-money case is clearer is Notion's Operational Coaching training. Since this is a self-guided programme that is delivered online, the marginal cost of delivery is small – and, as discussed above, there are indications of significant impact on the immediate outcomes. Three other Business Basics projects also tested the use of self-guided online training programmes and so also have the potential to be cost effective when

offered at scale even if take-up rates are low or if the impacts are slight. There is, therefore, potential for making the following programmes available more widely, once learning from the Business Basics projects has been incorporated:

- The Cyber Well training course on cyber security
- The Productivity in Professional Services programme offered by the Career Innovation Company
- The 'full digital' version of the Tech Check service provided to farming SMEs by Yagro Limited

The scientific entrepreneurship training provided by City, University of London also has less of a case to make about cost-effectiveness. In this trial, training that incorporated the scientific entrepreneurship elements was compared to a conventional traditional business training programme of the same duration. The results imply that, if business training is taking place anyway, including scientific entrepreneurship principles in the training can have a positive impact at little or no additional cost.

What has been learned about barriers to adoption?

Experience from Business Basics has confirmed the importance of the barriers to adoption of technologies or management practices set out in Section 2, and has highlighted a few critical points for policymakers and delivery organisations to be aware of. Some of the key insights are:

- Adoption is a complex process that requires **overcoming a series of barriers**. While most projects started from a hypothesis about the key barriers that were hindering SMEs, many found that addressing these specific barriers did not lead to widespread adoption. For example, the ADAPT project appears to have been successful in overcoming a lack of awareness about the relevant technologies (the barrier cited mostly often by businesses on entry to the project), but found that businesses' concerns then switched to being about the cost of adoption or a lack of skills or capacity for implementation. The consequence of this is that a single push is unlikely to see many businesses progress up the steps towards adoption illustrated earlier (Figure 2), but a sustained push with varied and responsive forms of support may do.
- The initial challenge of getting business leaders to **start the process of accessing support** is often underestimated. Almost all projects had much greater challenges than expected with engaging and motivating their target population. A contributing factor was the limited time and many demands on the leaders, which often included sifting through many other offers of support. SME leaders are exposed to many offers of digital tools and sources of general management advice, but it can be difficult to assess the features of each offer and the potential benefits within the operations and context of the individual business. On the other hand, experiments outside the Business Basics Programme have shown the potential power of relatively small but well-crafted interventions. For instance, Kim (2021) encouraged firms to make use of data on their

competitors when setting pricing decisions, which led to increased customer engagement and employment.[18]

- Adoption is not a one-time 'yes or no' decision, nor is it a choice that is made in isolation from other business decisions. One of the common challenges was the complexity involved in **embedding the use of technology**, so that it becomes a routine part of how the business is managed. This often requires other adaptations in a business's ways of working as well as the availability of complementary assets such as data or employee skills (Owalla and others 2022). Without these elements in place, introducing a new technology is unlikely to have a significant effect on business performance or productivity. In future business support programmes, it may be beneficial to examine how to embed the use of technologies alongside management practices that are already in use within businesses, or to support the adoption of new practices.
- Business support organisations themselves face **barriers to delivering their services effectively**. Reaching underserved businesses, identifying those with the potential to benefit from support and assessing what support to provide are all key challenges. This continues into delivery. As businesses drop out of the programme, it can be hard to determine whether they have reached the correct decision about their ability to benefit from further support, or whether more should have been done to persuade them to continue.

What has been learned about designing and implementing interventions?

The individual Business Basics projects generated many insights that are valuable in designing and delivering business support interventions more generally. Where a programme, an element of a programme or a specific approach has been found to be valuable in one area, it is worth considering whether this could be applied in other contexts. If a similar insight is obtained from two or more programmes, that improves the confidence that it would apply in additional situations. In this section, we particularly focus on questions for which there is learning from multiple projects in the Business Basics portfolio.

Applying learning from negative experiences is more challenging. If a programme or an activity fails, it can be difficult to know whether this was caused by a misconception in the logic or theory underlying the intervention (for example, a misunderstanding about the barriers to adoption), or simply due to poor implementation (Rossi 1987). We have therefore had to make informed judgements, based on the implementation and process evaluations and on other qualitative insights gathered by the project delivery teams.

A particular constraint on applying learning from projects implemented in 2020 and 2021 is the highly unusual business conditions during those years. Again, we have attempted to assess which of the findings and insights are likely to be relevant outside the context of the COVID-19 pandemic. As discussed above, in most cases the pandemic is likely to have reduced the

[18] Turnover and profitability were not directly measured but proxy measures were indicative of positive effects.

effectiveness of programmes (for example, by forcing delivery organisations to switch from in-person to online delivery), alongside the introduction of additional pressures on already time-constrained SME leaders. Although it cannot be known for sure, it is likely that these projects' experience with recruitment and delivery would have been smoother and their findings would have been more positive were it not for the unique economic and social situation created by the pandemic.

How valuable is peer exchange and support?

Several of the Business Basics projects provided opportunities for SME participants to interact with each other, to discuss the training content or share their experience. There are various reasons for thinking that peer exchange may be beneficial. In principle, creating opportunities for participants to discuss the content of a training programme among themselves can increase the absorption and retention of knowledge. It may also help to increase openness and confidence in the use of new technologies or practices, by demonstrating that other similar businesses face similar challenges and have had some success. Interacting with others that are more advanced in the adoption journey can raise awareness and help with making a more informed judgement about whether the tool or technology can actually deliver in a real-world situation, as well as overcoming concerns about not having access to impartial advice. Finally, peer interaction can also create social pressure to stick with a programme and complete the assignments – but might make it harder to rejoin a programme if a participant has missed some of the content.

The 'Attitudes to adoption' research highlights that SME leaders themselves generally recognise the benefits of interacting with and learning from other businesses (BEIS 2019a). They tend to believe that the most valuable networking opportunities are with businesses from their own sector, and that informal networking is more beneficial than formalised events. These opportunities are already provided for many by existing industry networks, meaning that support programmes will have to prove that they bring additional value.

Even so, there are positive indications from several of the Business Basics projects about the value of the opportunities they provided for peer-to-peer interaction. Including opportunities for exchange between participants was an important feature of 4 of the 5 interventions that showed promising results in RCTs. In each case, peer exchange was thought by the implementers to have been key to achieving the positive results from the projects, although the evaluation designs do not allow us to assess whether the same outcomes could have been achieved had the content been delivered without peer interaction. In the Evolve Digital and Manufacturing Connect Lancashire projects, facilitated online workshops were compared to control groups that had access to the same training material, but delivered through an online portal with no opportunity for interacting with peers. The online workshops clearly added value in the case of Evolve Digital and seem likely to have done so in the case of Manufacturing Connect Lancashire as well. However, in both cases it was the combination of peer interaction with facilitated delivery that was being tested: neither trial is a test of the impact of peer interaction in isolation.

In addition to the RCT evidence, there was positive feedback about the value of peer interaction from participants in several of the proof-of-concept projects, including Digital Breakthrough South East, Ideact, and Yagro's Tech Check. The Yagro case is particularly interesting, since the opportunity for peer interaction was only an incidental consequence of inviting managers of farming SMEs to in-person workshops with technology suppliers, but those interactions appear to have been valued by participants as much as the formal content of the workshops.

On the other hand, peer interaction did not take off as hoped in the project led by researchers at the University Cambridge, nor in the Local Productivity Clubs implemented by WLP (Anglia Business Growth Consultants Limited). Feedback from participants in the Local Productivity Clubs revealed concerns about interacting with competitors and how this might reduce their openness during discussions. The implementers of Digital Breakthrough South East suggested that the optimal approach would be to combine workshops involving peer-to-peer support with some sessions conducted with participants from a single business only. Participants in the University of Cambridge project highlighted that peer exchange is only useful if the other group members are true peers: they should hold positions at a similar level in similar-sized companies. A similar observation was made in Tenshi Consulting's Ideact programme.

The indications that there is often positive impact from peer-to-peer interaction chime with evidence from elsewhere in the world. Cai and Szeidel (2018) studied peer groups consisting of SME managers in China, and found that they resulted in improved management practices, larger networks of suppliers and customers, and increased innovation and productivity. However, participants in groups with several competitors were less likely to share information that might give others gain advantage over them (such as information about a funding opportunity). Building on an experiment in India (Chatterji and others 2018), McKenzie and others (2021) note that peer interactions seem to be most valuable when participants are matched with a similar peer that is slightly better managed than them but not a close competitor. This suggests that businesses that are already relatively well managed may have less to gain from these programmes. Peer-to-peer support can also offer efficiencies when compared to delivering similar support to participants at an individual business. Iacovone and others (2021a, 2021b) investigated whether group-based learning could be used to improve cost effectiveness when delivering consulting support to auto-parts firms in Colombia by comparing outcomes against individual provision. They find that group-based learning delivered the same if not larger benefits at much lower cost. It is also important to note, however, that basing programmes around peer interactions can make delivery more complicated – for instance, by limiting the flexibility to adjust timings to suit individuals' availability. Potential gains from more effective and efficient delivery could be lost if participants are unable to attend sessions. Virtual delivery settings (discussed below), offer one way to reduce delivery barriers, but this changes the nature of the interaction.

Overall, then, peer-to-peer support appears to have substantial promise, but its direct value is not yet proven in the UK, there are important constraints on its use, and there is much still to be learned about how to make it most effective.

What are the relative merits of online and offline delivery of training and support?

Before the onset of the COVID-19 pandemic, a key consideration in designing training and support programmes was the relative merits of delivering support online or in person. It has traditionally been assumed that meeting in person is more conducive to building trust and enabling discussion between participants than purely online interactions. However, online delivery – either through online events or through providing content on one-to-many platforms – typically involves lower costs for the provider, so could prove more cost effective even if the benefits are not as large. From the participant's perspective, online delivery may sometimes be preferable for practical reasons. For example, some SME managers were deterred from participating in the Leading to Grow project by the need to take time away from the business and to travel to the initial workshop.[19] Eliminating the need to travel also makes it possible to take account of factors other than location when forming peer groups. For example, it may be possible to bring together participants from across the country that have similar needs or are operating in a similar business sector.

If an online programme includes a peer-to-peer element, it may be useful for the participants to meet in person (or at least face-to-face in a video call) at the start. Peer interaction through an online interface did not take off in the University of Cambridge project, something the implementers attribute at least partially to the lack of opportunities for the participants to get to know each other in advance.

Ongoing projects were forced to switch rapidly to online interaction as the COVID-19 pandemic took hold in early 2020. While this meant that it was no longer possible to compare the effectiveness of online against offline delivery, it also resulted in delivery organisations learning a great deal in a short period of time about how to hold effective events online. In particular, the projects funded in the third round were designed with in-person interaction in mind but were implemented mostly online after the onset of the COVID-19 pandemic. In some cases (notably Evolve Digital and Manufacturing Connect Lancashire), this transition seems to have been made very effectively, with the participants commenting positively on the level of interaction and discussion that was possible under the projects. On the other hand, the student placements carried out under the Techknowledgey Transfer appear to have been less productive than they would have been if the students have been able to work from the business's premises. A clear example of an intervention that did not translate well to online delivery was the exposure visits to Barclays Bank's Global Technology Centre that were planned to be carried out under the ADAPT project. These visits had to be replaced with webinars, making it more difficult to persuade businesses to participate, and which appear to have been less effective.

Self-guided online training courses are particularly attractive because of their low marginal costs and hence their potential for scaling. For the participant, the flexibility of these programmes is a key benefit: they can be followed at a time and pace that suits the individual. On the other hand, the lack of any externally-imposed timetable or a social commitment can

[19] On the other hand, it is possible that these requirements filtered out potential participants who would anyway have been less committed to the programme. This issue is discussed under the question of recruitment, below.

mean that following an online programme tends to get deprioritised in favour of more urgent work, with the result that many end up never completing the course. This is reflected in the Cyber Well and Productivity in Professional Services projects, in which large proportions of those that signed up for the online programmes did not begin the courses at all, and there were additional drop-offs in participation between each stage of the programmes. The Cyber Well project sought to deal with these challenges by testing the use of an engaging narrative format, video content, sending 'nudge' reminders between modules and including interactive games – but these approaches did not have any clear success. Similarly, Enterprise Nation's HeadsUp! programme also suffered from very low levels of completion among participants who were allocated to online training, despite positive feedback from participants (in this case, the training itself was delivered live by facilitators, but progression between training modules was left to individuals).

There are also two more positive examples of online self-guided programmes in the Business Basics portfolio. Around 90% of those that signed up for Notion's programme of training on coaching skills began the course, and more than half reached the mid-point. It is possible that this is partly due to Notion charging for participation up-front (although it should be noted that the participation fee was paid by the employer, whereas decisions to actually participate were down to individual employees).[20] The Manufacturing Connect Lancashire programme was shorter and completion rates were lower than in the Notion case, but still reached a respectable 45% (that is, among the control group, who did not have any interaction with other participants and were not invited to join the live online sessions provided to the treatment group). Qualitative feedback from participants was very positive both about the quality of the materials (including written materials and video case studies), and that these were helpful in inspiring change and building confidence about technology adoption, as well as providing guidance on practical steps. There may well be potential for others to learn from the Notion and Manufacturing Connect Lancashire programmes in how they design their courses and encourage progression.

What is the best way to enable SMEs to access the expertise they require?

Many SMEs require expertise from outside the business to move towards adoption of new technologies or practices. As highlighted in Section 3, a lack of awareness or knowledge of the technologies available and of their potential is a major constraint to moving along the adoption journey, as is a lack of confidence or skills to implement a solution.

A key question in seeking to overcome these barriers is where the outside expertise should come from. Business Basics projects take various approaches as to the best sources of expert advice and support for SMEs, including:

- External specialists in the technology or practice area. For example, under the proof-of-concept projects implemented by Leeds Beckett University and Kingston University

[20] This is a more general problem when comparing outcomes and progression from intensive with more light touch online learning. For intensive support, we would expect SMEs to invest time deciding if the support will be valuable before they sign up, whereas if starting the intervention requires minimal commitment then starting could be seen as a step in the process of gauging suitability.

London, specialists in performance management or in digital health technologies (respectively) engaged intensively with small groups of businesses.

- Generalist business advisors, mentors or coaches – particularly used (as discussed below) in the Leading to Grow and Engaging Rural Micros projects.
- Other SMEs that are facing similar challenges, a benefit of the peer exchange used in many of the projects (discussed above).
- Similar businesses that are more advanced along the adoption journey – used notably in the Manufacturing Connect Lancashire.
- Larger firms that are operating at the technological frontier – as in the exposure visits and online events with advanced firms organised under the ADAPT project.
- Non-specialist intermediaries with access to the business: accountants in the case of the MADE project, and bank relationship managers in the case of Be the Business Digital.
- Students, as part of structured placements, tested in the Techknowledgey Transfer and the Digital Enabled Business Clinic projects.

Various projects have provided promising indications about the effectiveness of many of these routes (with only the non-specialist intermediaries disappointing – see below). However, there has not been any consistent or structured approach to determining which of these routes are most effective, in terms of delivering expertise and of convincing the business to act on it. Another important consideration is the scalability and cost-effectiveness of the support provided: dedicating a specialist to advise individual businesses may prove to be impactful, but organisations will be constrained in how many businesses they can support in this way.

Another possibility is that enabling businesses to hire staff with specialist skills or to contract out work to external firms may sometimes be more effective than providing support directly. A recent study in Nigeria found that subsidising SMEs to hire in specialist staff or outsource work was just as effective in changing business practices as providing training or consulting, but at half the cost (Anderson and McKenzie 2021, 2022).

There is clearly great potential to build on the base provided by Business Basics by experimenting further with the approaches to sourcing support. It will be of value in future programmes to test delivery routes against each other (for instance, by comparing the impact of visits to frontier firms with providing one-to-one support from a technical expert), or to test adding an additional element to an existing programme (such as asking more SMEs that are already using technologies effectively to speak as part of an existing training programme).

How valuable is one-to-one advice or mentoring?

Several of the projects involved business experts advising or mentoring individual SMEs on a one-to-one basis. None of these projects generated experimental evidence on the impacts of this advice or mentoring. However, in most cases – including the Leading to Grow and Engaging Rural Micros projects and the more specialist support provided under People Skills+ – qualitative feedback was usually very positive. Many of the participants cited examples of

changes they had made in their businesses as a result of this support, and it seems likely that there will be sustained positive impacts in at least some cases. This is in line with findings from the limited number of international studies on the benefits of consulting, including Bloom and others' (2020) finding that improvements in management practices and productivity at Indian textile factories could still be observed 8 to 9 years after they received consulting support, and Bruhn and others' (2018) finding that the growth benefits of a years' worth of consulting to SMEs in Mexico were still evident 5 years later.

A key practical question is how much support to provide. Here the existing evidence base is very limited. In a non-randomised comparative study of SMEs supported by Business Link in the UK, Mole and others (2011) found evidence that intensive assistance (involving a minimum of 2 hours of expert advice followed by ongoing support) resulted in more SME growth than lighter-touch support (such as responding to a simple telephone query or a referral to external support). [21]

Businesses in the Engaging Rural Micros trial were allocated up to 12 hours with their mentor. Under Leading to Grow, businesses were only given 4 hours of support, and many of the implementers felt that they could only scratch the surface of what the businesses needed within this time. Experimenting with the optimal way to allocate contact hours would be useful in future programmes. Similarly, there is high potential for experimenting with other aspects of how mentor and mentee relationships are established, how the meetings are structured, and the optimal balance between mentoring and more directly coaching and advising participants to achieve a set goal.

There are also more fundamental questions about the scalability and cost-effectiveness of this type of support. Qualitative feedback suggests that the success of the mentoring provided under Leading to Grow and Engaging Rural Micros depended heavily both on the mentors' expertise and their interpersonal skills. One constraint to scaling may be the number of potential mentors who have the right level of expertise and skills to provide this type of support. If scaling up were to require compromises in the profile of the mentors, then the interactions may not be as beneficial and the impacts may be more limited.

Even if it is possible to scale this type of support, we do not have evidence about whether the benefits outweigh the cost of the mentors' time. Cost-effectiveness would be maximised by targeting this type of support at SMEs that have the greatest potential to benefit – probably those with high growth potential but that are not currently meeting that potential. But it is difficult to identify which businesses these are.

[21] Mole and others (2011) was the only study comparing different levels of intensity in delivery that was identified by the What Works Centre for Local Economic Growth (2016) in their review of evidence on business advice schemes. We are not aware of any more recent studies that fit this description. However, in Phipps and Fuller (2022) we discuss a number of studies that test variations in support – such as comparing individual advice to group support.

Is working with trusted intermediaries an effective way to channel support for SMEs?

Working through intermediaries who have an established relationship with SMEs had initially seemed promising to reach businesses that are not normally reached by business support schemes. When the intermediary is a trusted adviser, this could also help to reassure them that the advice they are receiving is impartial.

Two Business Basics projects focused on the use of intermediaries to provide advice to SMEs. The 'Making Accountants Digital Enablers' project (implemented by Northumbria University) found that some accountants were keen to provide a value-added service to their SME clients, but that it was difficult to fit this around their routine work and to find the right moment to provide input. Other accountants felt that providing advice on technology was outside their remit. The Be the Business Digital project sought to work through relationship managers employed by Lloyds Bank, but had a similar experience. Despite some initial enthusiasm, relationship managers struggled to balance providing this additional responsibility with their existing work. Many were also hesitant about discussing technology with their SME clients, feeling that this was not their role or they did not have the necessary expertise.

The lack of results in these two cases may partly be attributable to the difficulties of converting high-level support and aspirations into practical processes and incentives that generate the required actions among those that are being relied on for effective implementation. There is, therefore, still promise in the idea of working through intermediaries. However, it is clear that any such initiative will need to overcome two barriers. On the supply side, the intermediaries themselves will naturally vary in their level of enthusiasm or confidence in providing advice on technology or other areas outside their normal remit. On the demand side, the two projects have shown that a cultural change is required in the expectations that SMEs have of their accountants or bankers: something that could take time to develop.

Can informational websites have a positive impact in isolation from other forms of support?

Be the Business Digital was the main example of a project that was intended to test the use of an informational website to support SMEs in making decisions about technology adoption. The site includes guidelines and practical advice on implementation of digital systems (such as customer relationship management or accounting systems), as well as featuring case studies from other SMEs. However, few of the SMEs that were encouraged to do so visited the website, so it was not possible to test its impact on businesses' decisions.

A more positive experience is provided by the ADAPT project, in which participants were given access to an online portal with information on the use of digital accounting and payment technologies. Although experimental evidence is not available (since all trial participants, including the control group, had access to the portal), feedback from users was very positive. Most users said that the information had some influence on their understanding of the benefits of the technologies, although only a minority said it had influenced their decisions on adoption.

What is the potential for use of diagnostics and benchmarking in allowing SMEs to assess their needs?

When participants in SME training programmes are asked for their feedback, it is common to hear that the content was not pitched at the right level for them, or that it did not fit their needs in some other way. In several of the Business Basics projects, many participants felt that the content had been too advanced or too ambitious for an SME at their stage of development, while others felt that the content was too basic. This raises the question of whether diagnostic tools can be used at the start of a programme, either to target the businesses that have the most potential to benefit, or to tailor the content of programmes towards their needs. A better diagnostic process may also help businesses themselves to determine whether the programme will meet their needs, and so boost the levels of engagement among those who decide to proceed.

Many of the Business Basics projects did involve a diagnostic survey or interview with participants on entry to the programme. In some cases, the information from this diagnostic was then used to determine what support the businesses would receive. For example, in the Techknowledgey Transfer project, information from the diagnostic was used to determine which masterclasses businesses would be recommended to attend, while in the People Skills+ project, the diagnostic was used to decide which specialist consultant to allocate to the business for follow-up support. In other cases, diagnostic interviews were carried out but there was no option of customising the support available to participants based on their results (although the diagnostic information may have been used to adapt the programme content to the needs of the participant group as a whole).

Diagnostic questionnaires can also be used for benchmarking businesses' performance, so that they can see how they compare to their peers or to a common standard. Knowledge of their position relative to their peers may be sufficient to prompt a business to act, or to seek out further support. Although the evidence for these effects is limited (Nunez Chaim 2021), there are some recent indications from outside the Business Basics Programme. In a recent RCT, researchers from the University of Nottingham sent information to businesses about how the performance of their websites compared to their competitors and found that recipients responded by making improvements in performance (Kneller and others 2022). In Brazil, including a peer comparison in the report from a business diagnostic was found to accelerate take-up of the support being offered – although the control group (who received the diagnostic report without the peer comparison) caught up within 12 months (Bruhn and Piza 2022a, 2022b). As part of the UK's Growth Vouchers Programme, the use of a basic online diagnostic tool was tested against offering businesses a diagnostic meeting with a specialist advisor, with the expectation that those who had access to the personal diagnostic would be better placed to make decisions about what support they require. Full results are not yet available, but the initial findings suggest that the personal diagnostic had little impact on businesses' choices and outcomes (Adams and others 2016). This may be partly because needing to book a time slot with the advisor reduced take-up, and partly because the sessions were too short to have a significant impact. In many cases the sessions lasted less than 30 minutes, with more positive feedback from those whose sessions lasted longer.

None of the Business Basics projects experimented directly with the use of diagnostics or benchmarking. However, one of the proof-of-concept projects – the Digital Benchmark Index, implemented by Winning Moves – centred on the use of diagnostics, and the diagnostic stage also played a major role in another, Digital Breakthrough South East. In both cases, feedback from participants about the value of these processes was generally positive, and there are indications that the discussions led to progress in the adoption of new technologies in at least some businesses.

An important consideration is how much information to collect in a diagnostic survey, to ensure that the results are informative without the process being overwhelming to a small business. The Dairy Forward project had an ambitious goal to benchmark businesses' resource usage against their peers – but there proved to be major challenges in accessing the data required to do this. The project implemented by Leeds Beckett University involved an intensive diagnostic process, with experts carrying out site visits and asking SMEs to put in place systems to collect data to measure productivity. This may have contributed to the high attrition rate among participants on that project. (Alternatively, and more positively, it is possible the long diagnostic process enabled businesses to identify that the project would not meet their needs.)

Overall, these examples suggest that there is potential for diagnostic tools and/or peer benchmarking to have a positive impact – but also that there is much still to understand about how to make these tools most effective. Further experimentation in this area could be highly valuable, to examine the use of these tools in promoting take-up of support offers, directing SMEs to the most appropriate type of support, tailoring the support available to the business, or prompting changes in businesses' behaviour directly.

How best to recruit SMEs to participate in business support programmes?

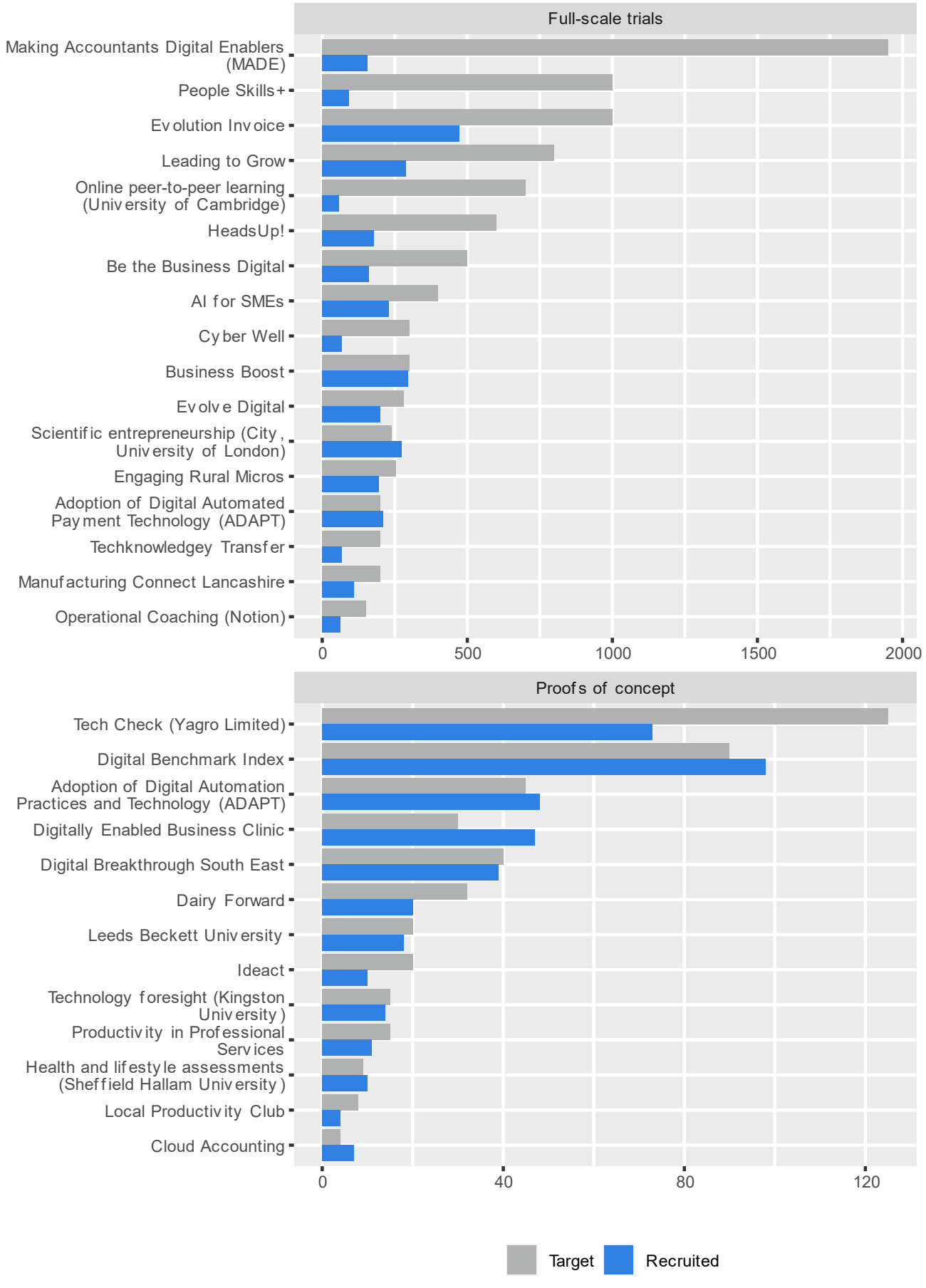
The Business Basics Programme shows that recruiting SMEs to participate in business support programmes is challenging. Nearly all the project teams found recruitment more difficult than anticipated, and most had to adapt their approaches and devote more time and resources to this than expected. There were a variety of reasons for this but most often it stemmed from untested and overconfident assumptions about how to find and engage the targeted businesses.[22]

Figure 6 shows how the number of businesses recruited compared to the original targets, for each of the projects.[23] Only 2 of the 17 full-scale trials met their targets, and in some cases this was only after loosening the eligibility criteria. More of the proof-of-concept projects (5 of the 13) were successful in this regard, but their targets were much smaller. In total, the projects aimed to recruit more than 9,400 SMEs, but achieved only 37% of this.

As a consequence of these difficulties, the projects generated a wealth of learning about what does and does not work in recruiting SMEs.

[22] One purpose of the "proof of concept" was to allow such assumptions to be tested for trials. However, the intention was to resolve uncertainty about impacts rather than the potential to recruit participants.
[23] Two proof-of-concept projects that did not directly recruit SMEs to participate in interventions are excluded.

Figure 6: SMEs recruitment against targets, by project



Recruitment channels

A common theme emerging from many of the projects is that recruitment was only successful when using a personalised approach to businesses, ideally using multiple approaches (such as making contact by phone and email on the same day) and being persistent to convert an initial indication of interest into an active participant.

Many of the organisations implementing projects found that they were most successful when approaching SMEs from their existing contact lists. Of course, the SMEs that are on business support organisations' existing mailing lists are likely to be there because they have received support in the past, and so may have less to gain from additional assistance. In any case, even these businesses generally only responded when contacted directly, by telephone or with personalised emails: there was little response to promotion in newsletters. Making multiple approaches through different channels (such as sending an email and calling by phone on the same day) was seen as being key to success by some of the project teams.

One interesting approach was that used by Devon County Council for the Engaging Rural Micros project. The council tasked their trading standards officers to visit SMEs to promote the project face to face. This produced a large number of interested contacts at a modest cost and meant that many businesses were recruited from beyond the council's existing contacts lists.

In several cases, plans to leverage the networks of local enterprise partnerships (LEPs), Growth Hubs or professional organisations (e.g. accountants) did not work out, due to competing priorities (particularly with no-deal Brexit planning), the purdah period prior to the UK general election in 2019, or reluctance to promote an offer from a private sector provider. In these cases, the teams tended to revert to promotion in newsletters, usually with little result.

The projects that invested in press coverage or advertising in local or trade journals found that there was very little response. For example, a full-page front-cover advert in a specialist publication ('Farmers Weekly') produced only one enquiry from an eligible business. There was also generally little return from promotion at in-person events.

In most cases there was little impact from promotion on social media. The main exception is the project implemented by City, University of London, for which recruitment was carried out wholly via social media. However, in that case, a large team was dedicated to generating content and managing the campaign. The Evolution Invoice project had some success with paid advertising online (with Facebook adverts found to be more cost effective than Google Ads, and much more so than LinkedIn). However, this was a comparatively easier 'sell', since the project only needed to ask SMEs to sign up for a free trial of their software. Few of those that signed up went on to make use of the software.

Sending emails or physical mailings to SMEs from lists provided by data brokers can be effective in some cases, but large numbers of SMEs need to be contacted to produce reasonable numbers of enrolments. In the messaging trial carried out under the People Skills+ project (CIPD), there was a response rate of only 0.05% to thousands of physical letters and flyers that were sent to SMEs to promote the offer of free consulting. There was a similarly low

response to emails sent 'cold' by CIPD, the Cambridge Judge Business School and Leeds City Region Enterprise Partnership.

Notion Limited – who had notable success with cold calling for their Operational Coaching training programme – observed that providing testimonials from previous participants in the training programme was a powerful recruitment device, as was emphasising the benefits of participation to the individual as well as to the business as a whole.

Wider considerations on recruitment

Experience has shown that recruiting the right kinds of businesses is just as important as recruiting large numbers: several projects were able to sign up sufficient numbers of SMEs but then found that many of them did not go on to participate in the programme activities. In particular, the 'AI for SMEs' project was able to enrol 229 SMEs in London by hiring a marketing agency to recruit through cold calling, but delivery partners later noted that many of the SMEs recruited did not have a good understanding of what the project involved. Around 43% of the SMEs recruited through cold calling did not engage at all with the project after initial registration. In the case of Enterprise Nation's 'HeadsUp!' project, only 43% of the 543 SMEs enrolled booked to attend a session, and the numbers that attended were even lower.

Qualitative research with business owners (including that carried out under the Leeds City Region and Engaging Rural Micros projects, as well as the 'Attitudes to adoption' research, BEIS 2019a) found that the concept of 'productivity' does not resonate with many SMEs. Quoting macroeconomic statistics or making generalisations about SMEs as a whole can also be alienating: they prefer recruitment messages to focus on more immediate and tangible benefits that address the needs of the specific business. Even referring to 'growth' may deter some microbusiness owners, who may see expanding their business as conflicting with their lifestyle choices. The Engaging Rural Micros project apparently had some success in overcoming this perception among those that participated, but it is important to be aware that the choice of language in recruitment could affect which businesses will participate in the first place.

As noted in Section 3, the literature review carried out for the Business Basics Programme found that businesses will be more receptive if they are approached during 'moments of change', such as during a change in leadership or an external shock to their business (Behavioural Insights Team 2019). If an approach takes place when a business is not ready for advice or support, then more effort will be required to persuade them to take up the opportunity. This may be why there has generally been more success from hands-on recruitment approaches (which provide an opportunity to persuade the business owner or manager of the value of the support) or from the use of existing networks (since being in those networks is an indication that the business is looking for support).

There are important limitations in applying the learning from Business Basics to other programmes. Many of the projects did not have an established brand (or, at least, not a brand that was known to most SMEs), so they needed to take time to build trust. In addition, most projects were attempting to recruit over a short period. It is possible that some of the

approaches taken – such as the use of press advertising and social media – may have been more effective if used over a longer period to build awareness among the target population.[24]

Figure 7: Key learning points on recruitment

Which employees of an SME are best placed to participate in training or support?

Business support providers often assume that business owners, directors or senior managers are the individuals who are best able to drive changes, and so interactions with the business should be focused mainly on them. However, this assumption may not always be correct, particularly in medium-sized businesses. Some of the Business Basics projects have noted that who participates from within an SME is an important factor for success. In particular, the WLP team encouraged participating businesses to send shop-floor workers to meetings of the Local Productivity Club as well as management, to improve the buy-in for decisions that would be made. The Leeds Beckett University project team noted that having only one or two representatives from a business was a risk to success of their intervention, after finding that the businesses that were represented by only a single individual dropped out of the project. But it is also possible that the causality is the other way: those businesses that were more enthusiastic and more committed to participating in the project in the first place may have been more willing to send multiple employees to the events.

While increasing the number of participants from a particular business may have positive effects, it also increases the costs and involves other complications, such as how to structure peer learning. None of the Business Basics projects systematically addressed the questions of how many and which individuals from a business should participate, so this remains an important area for experimentation in the future.

[24] This is one drawback of the experimental approach being applied. One way to address this would be to target experiments that are created as extensions to more established programmes.

The importance of the question of how to target support within the business chimes with recent research highlighting that, as business size grows, owners are less likely to be engaged in functions such as account keeping or marketing (Anderson and McKenzie 2021, 2022). That study, carried out in Nigeria, suggested that enabling SMEs to hire specialist staff or contract an external service provider may be more effective than providing training or consulting – an intervention that may have potential in the UK as well.

How to encourage SMEs to participate fully and progress through training programmes?

The fact that SME owners or managers sign up for a programme does not mean that they certain to participate fully. Many Business Basics projects have seen rapid drop-offs in participation, with significant proportions of the participants not engaging with the intervention at all, and many more not returning after the first session.

If participants who have signed up do not participate at all in the project activities, this may reflect a weakness in the recruitment or engagement strategy. In the 'AI for SMEs' project run by the Greater London Authority, Most SMEs were recruited by cold calling and had to be convinced to sign up – but many of them did not participate in the project activities or engage at all with the project team. It is likely that there is a trade-off between ease of registration and take-up. The sign-up form for the Evolution Invoice trial was deliberately kept very simple, but only a minority of those that signed up proceeded with testing the software. If the sign-up process is more demanding this may filter out some SMEs that are less committed – but it also risks leading some of those that would have benefitted from the intervention to opt out.

One frequent cause of problems was when there was a significant time delay between people signing up and the launch of the actual programme. Many projects were designed such that the intervention would be launched for everyone at the same time. In such cases, if recruitment progresses more slowly than expected, those who express an interest early on may be kept waiting a long time – and in the meantime, their priorities can change, or they may find support from elsewhere. Ideally programmes should be designed such that everyone can begin immediately or soon after they sign up. If the intervention involves group workshops or interactions between participants, then it may be necessary for the participants to be on the same timetable. But even in these cases, it is usually possible to run the activities for smaller cohorts, so that the delay between signing up and beginning the activities is minimised.

Drop-off in participation rates during the programme may reflect participants 'voting with their feet', if they discover that it is not appropriate for them or not delivering on their expectations. There are some indications from qualitative interviews and participant feedback that this was the case in some projects. Again, this demonstrates the value in piloting interventions at a small scale, to allow the initiative to be adapted and tested again or dropped altogether.

Should delivery organisations charge SMEs for training or support?

Having experienced problems with levels of participation, several of the project teams suggested that SMEs should in future be asked to pay a fee to participate in their programme. The thinking is that this would create a greater sense of commitment by ensuring that the businesses had 'skin in the game'.

Only one of the Business Basics projects – the coaching training course implemented by Notion Limited – involved a participation fee. As noted earlier, this project saw relatively good levels of engagement and progression through the programme, a pattern that is consistent with the theory that charging a fee creates commitment on the part of the participant. Alternatively, it is possible that the participation fee acted as a filter, deterring businesses that were not fully committed to the programme from signing up.[25]

A recent study carried out in Jamaica found that business owners who paid more than a nominal fee for a training programme did participate in more of the training sessions, providing evidence for the 'skin in the game' theory (Maffioli and others 2019, 2020). However, higher fees also deterred poorer and more risk-averse business owners. If a similar pattern were to be found among SMEs in the UK, this would imply that there is a trade-off between using fees to promote participation and excluding underserved groups.

[25] One reason to be hesitant in either interpretation is that the fee was paid by the employer, whereas actual participation in the programme was down to individual managers in the business.

5. What have we learned about running experiments in business support?

Despite the variety in the types of projects funded under the Business Basics Programme, there was commonality in the difficulties they faced. In this section we highlight some of the most crucial lessons about how to run a successful RCT and discuss the three major challenges that have been faced by many of the projects: recruitment, compliance, and survey response rates.

Running a successful RCT

Experience from the full-scale trials carried out under Business Basics has highlighted several essential factors in implementing an RCT successfully:

- **Be clear about the objectives of the trial.** Focus on a key research question and design the trial around this. IGL recommends following the 'PICO' format, with a question that describes the 'population' or profile of businesses to be included in the trial, the type of intervention, the control condition against which they are being compared, and the primary outcome measure(s). The trial may also be able to provide evidence on some supplementary questions, but the research question should be the priority. In early rounds, some projects were motivated by questions that were too broad to answer through a trial or that did not match the design of their trial.

Example of a well-defined research question (from Evolve Digital project):

For small businesses that do not employ more than 2 productivity-enhancing digital technologies [the population], does providing them with 42 hours of facilitated peer-based learning [the intervention] generate greater intention to adopt [the outcome] than solely providing access to online materials for self-guided learning [the control]?

- **Piloting is crucial**, to test and adjust the intervention and to confirm that there is demand for it from SMEs. The best example of this was the trial of scientific entrepreneurship training carried out by City, University of London, which was based on earlier, smaller-scale trials in Italy. Learning from these earlier projects enabled the researchers to implement the training programme smoothly and to collect a rich set of follow-up data from the businesses involved. In contrast, the difficulties encountered in some of the other RCTs – such as the lack of engagement in the Cyber Well, HeadsUp! and AI for SMEs projects, and the difficulties of coordinating data collection between business schools in the Leading to Grow project – could have been identified and solutions tested if piloting had been carried out at a smaller scale first.
- Implementation matters. Some projects have failed to realise impacts because of seemingly small details in delivery – such as frustrations with the interface of a digital

service leading users to give up. Carrying out a thorough pilot would have allowed many of these issues to be resolved early and may have led to different results from the trial.

- **Have a clear back-up plan** and changing plans if it becomes clear that the trial will not work. This was done in the case of the University of Cambridge and Be the Business Digital projects: both defined clear thresholds for recruitment and switched to a different evaluation methodology once it was clear that these would not be met.
- Work with an **evaluator with experience in experimental research**, or with a strong background in quantitative analysis and the flexibility and willingness to learn. Running an RCT is very different in nature to traditional forms of evaluation. The requirement for randomised allocation means that the evaluation design is incorporated into the project from the start and requires close collaboration between the delivery and evaluation staff. Researchers with experience in more conventional ex-post evaluations may not necessarily have the skills for running an RCT.

Red flags in trial design

Be cautious about proceeding with an RCT if any of the following apply:

Research question is unclear, or does not specify the participants, intervention, type of control and outcome measures

Trial design does not correspond to the research question

Outcome measures not clearly defined, or it is not clear how to collect data on them

Intervention(s) have not been piloted in their current form with actual SMEs

Low demand from SMEs was encountered in pilots or previous projects with this type of intervention

Critical feedback was received from participants in pilots or previous projects with this type of intervention, unless the weaknesses have been addressed and the solutions tested

Project does not have a comprehensive risk register

Project does not have a plan of how to adapt the design if recruitment, compliance or (if applicable) survey response rates are below expectations

Lead evaluators have little or no experience in experimental research or evaluation

Dealing with common challenges in RCTs

Recruitment

In Section 3, we discussed what has been learned from the Business Basics Programme about recruiting SMEs for business support interventions in general. Signing up enough SME participants is particularly important in carrying out an RCT (or any other type of quantitative evaluation), because of the necessity to achieve a good sample size. In a small sample, it is likely that the treatment and control groups would not be well matched, even if they are randomly selected. However, running an RCT sometimes presents an additional challenge for recruitment: how can SMEs be motivated to enroll in a programme (and, if necessary, to complete a baseline survey) if it is not possible to tell them in advance whether they will participate in the intervention?

One approach to this challenge is to be completely open, telling potential participants that the programme is new, that it is being tested as part of a research project, and that they may or may not be randomly selected to participate. This approach was used in the Business Boost and Leading to Grow projects.[26] Informal feedback from the Business Boost project team suggests that SME participants understood and accepted this approach – although the control group proved less willing to respond to the follow-up survey.

If the control group will also be receiving some form of support, then participants can be told at the time of signing up that they will be randomised to receive one of two or three possible interventions – something that was done in the AI for SMEs project. In the ADAPT trial, participants were told that they were signing up for access to a basic service (an online information portal, the control intervention), but that there was a chance that they would later be offered the chance to participate in an additional intervention (the treatment).

The Notion project employed an approach that is common in RCTs elsewhere, informing participants about the randomisation but committing to provide the intervention to the control group at the end of the evaluation, after the final surveys have been collected. The main disadvantage of this approach is that it limits the potential for assessing longer-term impacts of the intervention, since the treatment and control groups will have received the same support in the end. In Notion's case this approach was particularly challenging because all participants were asked to pay a fee at the start of the trial, even though the control group would only have access to the training course several months later. However, it is notable that 17 of the 22 SMEs in the control group agreed to pay under these conditions.

If the trial design involves providing different forms of support to the treatment and control groups, it may not be necessary to inform the participants that they are part of a randomised trial at all. For example, the City, University of London project compared the scientific entrepreneurship training to a more conventional business-training programme, so it was possible to tell all participants that they were being recruited for a business training programme

[26] However, support was later offered to most of the control group in the Leading to Grow project, as a response to the onset of the COVID-19 pandemic.

without mentioning that they would be randomly allocated to one of two routes. There are two potential pitfalls when comparing outcomes between two interventions:

- If the treatment and control interventions are too similar, then a trial may have little potential to detect difference in outcomes between them. This may have been a problem in the Cyber Well trial, in which the experience of participants in the two groups in the training programmes they followed were not sufficiently different to have produced a difference in outcomes.
- If the treatment and control interventions are too different, it becomes difficult to describe to potential participants what they are signing up for. For example, the Engaging Rural Micros project involved comparing two interventions that were very different in nature. This meant that the recruitment messages could not give participants any information at all about the type of support they were receiving, telling business owners only that they would be participating in research. This apparently led to confusion about what to expect from the project, and to many businesses not taking up the support that they were offered.

Aside from the question of what to communicate to participants when they sign up for a trial, the Be the Business Digital project encountered another complication that has affected the results of the trial. Some programmes or tools are intended to be used reactively, when a business with the right characteristics to benefit approaches the provider. However, to carry out a structured evaluation like an RCT, it is necessary to test the intervention with a critical mass of businesses within a specific time period. This may require providers to go out to businesses and offer the service proactively – with the implication that the evaluation findings apply in an (arguably) artificial situation. In this respect, the evaluation could be seen as an efficacy trial, testing whether the intervention can have a positive impact, rather than testing it in the context in which it will actually be used.

Compliance

As discussed in Section 4, in many projects significant numbers of businesses that signed up did not go on to participate in the interventions, and many dropped out before completing the programme as intended. This causes problems in a trial. To take full advantage of the randomised design, outcomes should be compared between the treatment and control groups as a whole, as they were defined at the point of randomisation at the start of the project.[27] However, if many of the members of the treatment group do not actually participate in the activities, then any impact of those activities will be diluted when examining the outcomes on average across the group. Therefore, the trial has less statistical power for detecting any impacts from the treatment – meaning that the sample size needs to be increased to compensate.

[27] This is done so as to avoid the results being biased by individuals' decisions to drop out. Randomisation ensures that the treatment and control groups are comparable at the start of the project. If some of the treatment group participants drop out and outcomes are examined only among those that completed the intervention, there is no guarantee that they will be fully comparable to the control group.

The ideal approach to dealing with this problem is to increase participation and decrease drop-outs among those who sign up for a programme. But practically when planning a trial, it is also important to be conscious that take-up may be lower than hoped, and to plan for this when assessing how many businesses need to be recruited.

Survey response rates

To compare outcomes between the treatment and control groups, it is necessary to have data on those outcomes. In most of the Business Basics projects, this has meant asking participants to respond to surveys. Securing good response rates to surveys is therefore crucial to obtaining robust findings from a trial.

In many cases, response rates have been disappointing. Among the 11 Business Basics trials that carried out a survey at the beginning and end, the average response rate was only 43%.[28] However, this figure varied widely by project, from 76% in the case of Notion to 19% in the GLA project. There is therefore some potential for learning from the successes across the portfolio.

The factors that appear to have contributed towards higher response rates are:

- **Participation in the project activities**: The best predictor of whether a business will respond to a follow-up survey is their level of participation in the project activities. Understandably, SMEs were much less likely to respond if they had not participated at all or dropped out early in the process. This limits the potential for drawing conclusions about an intervention's effectiveness in two ways. Firstly, it means that little data is available from those that dropped out of a programme early on, and so the outcome data applies only to a subset of the participants. Secondly, in trials in which the control group did not have the opportunity to participate, response rates tended to be lower among the control group than the treatment group: this creates potential for bias in the estimates of impact from the intervention.
- **Personal contact**: Response rates were generally high in cases in which key staff from the project team had been in close contact with and/or were known well to the SME participants, probably because they felt an obligation to an individual rather than to an anonymous institution. This will of course be more difficult in larger-scale trials, though some elements of this approach could be retained. For example, the individual in the marketing/promotions team who recruited an SME participant to a trial could also be made responsible for follow up contact to that business, including when requesting survey responses.
- **Being persistent**: Teams reporting a need to remind SME participants several times about surveys, and, in particular, to phone them rather than simply sending emails. At

[28] The best indication that this was below expectations comes from the assumptions made in the trial protocols, prepared at the design stage for each project. Most trials in rounds 1 and 2 did not make allowance for survey attrition, stating instead that they expected response rates to be very high. By the time that the projects for round 3 were being planned, it was clear that response rates had often been a challenge. The 5 projects in round 3 that depended on survey data therefore assumed that response rates to their final surveys would be 66% on average – but they actually achieved a rate of only 37%.

least two projects switched to carrying out surveys by phone after it became clear that response rates to online surveys were very low.

- **Providing ongoing benefits**: The 'scientific entrepreneurship' trial run by City, University of London had a particularly ambitious data-collection approach, involving monthly interviews for 8 months after the end of the intervention. In order that participants would still feel involved in the project throughout this period, they were invited to monthly information and networking events, as well as being offered mentoring sessions with instructors from the original training programme. This strategy appears to have been successful, with 55% of the original participants still responding to the surveys in the eighth month. However, this was clearly a significant investment that would not be possible in many cases.
- **Direct incentives**: In one of the proof-of-concept projects, control group participants were given a small gift voucher in return for responding to a follow-up survey. However, with a very small sample size, it is difficult to assess how effective this incentive was.

An approach that appears promising but that has not been used in the Business Basics Programme to date is to use participants' survey data to provide them with some feedback about their performance or about how they compare to their peers (the other respondents). With a modern online survey interface, providing feedback can be automated so that it appears immediately after respondents have completed the survey. This seems likely to improve response rates by tweaking participants' curiosity and making them feel that the survey is of benefit to them, rather than the survey being of value only to the evaluators.

There is much that is still not known about how to increase survey response rates from SMEs – including the importance of the length of the survey, the mode (online or by telephone), the survey interface design for online surveys, and the effect of incentives. Even outside the Business Basics Programme, there is little evidence available on these factors. The Growth Vouchers trial included some experimentation on this, and found that the most impactful intervention was to remind participants that they had made a commitment at the start of the trial to respond to follow-up surveys (Organisation for Economic Cooperation and Development 2017, pages 301-302). There is great potential for experimenting in future programmes to find the most effective methods to improve survey response rates.

An additional way to address the challenge of survey response rates is to make more use of data that does not rely on surveys. Potential sources of data for outcome measures include:

- Administrative data collected while delivering the services. For example, the Manufacturing Connect Lancashire trial is using participants' progression through the stages of the training programme as an outcome measure itself, with the aim of assessing whether the treatment (incorporating peer-to-peer activities in the training programme) increases progression.
- Other publicly-observable data – for example, from observing businesses' websites and social media feeds. The AI for SMEs project inspected the websites of participant businesses to assess how many had adopted the use of chatbots after the intervention. Outside the Business Basics Programme, a trial promoting social innovation among

SMEs in several EU countries involved examining businesses' websites and social-media feeds for evidence of whether they had begun to report taking part in any activities related to social innovation (Nichersu 2022). A recent experiment by researchers at the University of Nottingham used data on the performance of businesses' websites to assess whether they had made any changes in technology use after receiving a benchmarking report (Kneller and others 2022). IGL is developing tools (building on the work of Mateos-Garcia and Richardson 2022) to facilitate access to a richer set of potential explanatory and outcome data using publicly available information on businesses and alongside this leveraging the online footprint of SMEs to provide a richer set of explanatory and outcome measures that would also be less prone to attrition. This would include monitoring the use of and expenditure on technologies found on companies' websites to draw estimates of their software adoption level, also the use companies' website descriptions to draw a bottom-up classification of industrial sectors.

- Business-level data available to government – notably the data on turnover and employment in HMRC's database, which can be used for assessing longer-term outcomes.

6. Conclusions

The Business Basics Programme enabled BEIS to experiment with a range of approaches to promoting the adoption of proven technologies and management practices by SMEs. As outlined in Section 4 (and highlighted in Figure 5), 5 of the full-scale trials generated robust evidence that the interventions tested had positive impacts on the early-stage outcomes they were seeking to influence, such as intentions to adopt. These 5 interventions are good candidates for larger scale rollout and for further testing, to determine whether the initial impacts translate into productivity improvements over the longer term, as well as to assess their scalability and cost-effectiveness. Several other interventions have shown promise in piloting or initial implementation and are therefore also potential candidates for testing at larger scale. Just as importantly, the programme also identified interventions that did not work as intended or that would require substantial adaptation before being tested again.

With these findings, the Business Basics Programme has taken a significant step forward in generating evidence about the impacts of business-support programmes. However, the programme has also demonstrated that there are no simple conclusions about ‘what works’. To take one example, many of the successful interventions incorporated opportunities for learning from peers, but this was also a feature of interventions that did not prove to be effective. It is essential to get the details of design and delivery right in each context. This underlines the need for testing approaches multiple times, using experimentation to optimise design, and combining rigorous approaches for evaluating causal impacts with other research methods to gain a richer understanding of when and how outcomes are realised.

By creating the Business Basics Programme, BEIS became a global leader in applying experimental approaches to raising SME productivity. As highlighted in Section 2 of this report, despite the importance of supporting SMEs there is very little robust evidence to inform policy in this area. The Organisation for Economic Cooperation and Development recently concluded that evaluations were less frequent and less reliable in SME and entrepreneurship policy than for other areas of public policy (OECD 2023). Among the different methods available in the evaluation toolkit, randomised trials have been particularly underutilised in this domain. There are many reasons for this, including cost, complexity and the length of time required to deliver results (Haynes and others 2012). The experience from the Business Basics Programme provides a clear counter to these views: the programme has been able to show on a relatively short timescale which interventions have promise and which do not. Being able to make these assessments while testing at small scale implies significant savings in both costs and time, compared to the usual approach of designing a programme up front and then launching it at full scale.

Another significant achievement of the Business Basics Programme has been to provide an opportunity for business support organisations to work closely with researchers and evaluation professionals. This has allowed for mutual learning and provides a strong foundation for future experimentation and data-informed analysis of the impact of programmes.

We recommend that BEIS continue investing in experimentation and using experimental evidence to inform policy decisions. There is clearly much still to be learned about which types of interventions can be used to improve productivity among SMEs, and Business Basics has shown that experimentation can play a valuable role in this. There is also great potential for experimentation to be used to optimise the design of programmes, by comparing various approaches against each other – for example, to understand the relative benefits and cost-effectiveness of in-person programmes against online self-guided learning, or in using rapid experiments (commonly known as 'A/B tests') to find the best approach to recruiting SMEs to participate.

This activity need not be limited to national government policy. To continue generating evidence in this way and have informed business support policy, it is important that programme delivery organisations at all levels are motivated to carry out experiments and to capture and share their findings. One way to provide the right incentives would be to invest in scaling up the approaches that have shown evidence of success. This is one respect in which the Business Basics approach could be improved: the opportunities for promising proofs of concept to be scaled up to full-scale trials were more limited than had been expected (only two proofs of concept did so), and there was no mechanism through which successful trials could be scaled further. The design of experimentation funds in the future should include clear pathways to scale, to ensure that delivery organisations have the potential for benefiting from the investments they have made.

The experience of conducting 32 small-scale experiments and pilots has generated a wealth of learning to inform the implementation of future business support programmes. The lifetime of the Business Basics Programme coincided with historic levels of disruption and uncertainty in the UK economy, which created severe challenges for the implementation of programmes as well as for the businesses they were seeking to support. However, many of the difficulties encountered – notably that of reaching, recruiting, and retaining SMEs through the lifetime of a programme – became clear before the onset of the COVID-19 pandemic, and will continue to be significant challenges into the future. The learning discussed in this report should help to mitigate these problems and to provide potential solutions to test. But the key lesson from the experience with Business Basics is clear: the value of taking an experimental approach, making it possible to fail early and learn fast.

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