

Made Smarter Adoption Programme

**Final Impact Evaluation
June 2025**

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engage

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Executive Summary

This executive summary presents the key findings of the Made Smarter Adoption (MSA) evaluation report, covering the period from 2022 to 2025. The report assesses the effectiveness of the programme in achieving its objectives of driving industrial digitalisation within UK manufacturing SMEs.

Programme's description and rationale

- The Made Smarter Adoption programme is a UK government initiative designed to boost productivity and innovation within the manufacturing sector by promoting the adoption of Industrial Digital Technologies (IDTs). The programme offers a package of support including impartial expert advice, support to understand IDT integration within businesses (i.e. the digital road maps), training aimed at enhancing firms' digitalisation to business leaders (i.e. Leadership and Management programme) and matched grants of up to £20,000 to de-risk IDT investments.
- The programme was tested through a pilot in the North-West between 2018 and 2021, before being extended to three other regions in 2021 (North-East, Yorkshire & Humber, West Midlands). It was further extended in the 2022 to 2025 period, including an extension to the East Midlands. MSA aims to overcome key barriers to IDT adoption, including information asymmetry, financial constraints, and skills' gaps. It is a key component of the UK's industrial strategy and contributes to broader government priorities such as innovation and SMEs' growth.

Key insights on programme's delivery

- MSA significantly exceeded its targets for providing digitalisation support, with over 1,400 businesses developing digital roadmaps – between 2022/23 and the end of 2024, 60 percent more than expected. Take-up of other support strands, including intensive advisor support, leadership training, and grants, was also higher than anticipated.
- The five delivery regions effectively engaged the eligible population, reaching 4 percent of manufacturing SMEs across the five regions. The programme primarily engaged micro and small manufacturers (2-49 employees) across a broad range of sectors. Grant funding primarily supported investments in data capture and systems, and robotics and process control automation.

Key insights from process evaluation

- The MSA regional delivery model fostered strong engagement and trust with local businesses, leveraging digital marketing, tailored campaigns, and referrals. Participating firms expressed high satisfaction with the support provided, particularly the impartial advice and the support provided through roadmaps. The regional model also led to some inconsistency in support, and firms occasionally faced challenges accessing specialist expertise in areas like AI
- The grant application process was generally smooth and efficient, with due diligence procedures in place to mitigate risk and ensure good use of public funding. The multi-layered governance structure, balancing regional autonomy with DBT oversight, effectively monitored progress. However, inconsistencies in data collection and reporting across regions hindered national analysis and comparability. Greater standardisation of core programme elements, such as roadmaps and

leadership training, could potentially ensure a consistent service across regions and reduce duplication of effort.

IDTs adoption

- MSA effectively targeted financial, awareness, implementation, and skills gaps related to IDT adoption. Participating firms progressed to higher Digital Readiness Levels (DRLs) faster and adopted IDTs at a higher rate than non-participants, with 78 percent reporting IDT adoption post Made Smarter.
- Made Smarter beneficiaries reported a positive impact on senior and general workforce digital skills, through the Leadership and Management programme and additional investment in staff training (workforce training investment rose from £2,600 per year to almost £25,000). The programme appeared most effective for firms with lower initial DRLs, benefitting largely from the general awareness-raising activities and the impartial advice provided. Moreover, participating firms tended to reach a digital maturity ceiling at DRL5, beyond which they rarely progress further.
- Although the £20,000 grant was rated positively by recipients, doubts were raised on its sufficiency to support transformative digitalisation projects, such as extensive automation or the implementation of some high-cost ERP systems. Allowing multiple grants or alternative funding mechanisms, could enable more ambitious and long-term projects and achieve greater productivity gains.

Firm level Impacts

- Participating firms reported a range of benefits from adopting Industrial Digital Technologies (IDTs), including improved production planning, enhanced customer experience, new product/process development, and cost reductions.
- However, the findings indicated that the programme had a limited effect on firms' growth. While analyses replicating previous research into the programme pointed to a positive impact on turnover and employment, the more robust approach applied on the most recent MSA beneficiary data, did not identify statistically significant effects on turnover, employment and productivity, this result chimes with the findings from the case studies, that indicated an overall positive effect of the scheme, that had not yet materialised on revenues. The immediate aims of IDT investments were to largely improve production efficiency (with any effects on revenues expected as an indirect byproduct in the future), while the econometric research showed limited evidence of direct impacts on business performance indicators.

1 Introduction

Ipsos UK, in partnership with George Barrett, was commissioned by the Department of Business and Trade (DBT) to undertake a process and impact evaluation of the Made Smarter Adoption programme in April 2023. This study builds on a prior evaluation of an initial pilot programme delivered in the North-West region¹ and later survey research exploring the perceptions of the impacts of programme amongst participating firms.² It explores the effectiveness of programme delivery processes as the pilot has expanded to cover five regions and longer term evidence of its impacts on the adoption of IDTs amongst manufacturing SMEs. This report sets out the final findings of the process and impact evaluations of the programme.

1.1 Made Smarter Adoption programme

The Made Smarter Adoption programme is a UK government initiative designed to boost manufacturing growth, productivity, and competitiveness through the adoption of Industrial Digital Technologies (IDTs) among small and medium-sized manufacturing enterprises (SMEs). The programme aims to overcome key barriers to IDT adoption, such as low awareness, funding difficulties, and skills shortages. Its key components are described below:

- **Expert advisor-led support:** Participating SMEs received guidance from expert advisers, assisting them in identifying suitable IDTs and developing strategies for successful adoption and implementation.
- **Digital Roadmapping:** SMEs were provided with a tailored digital roadmap, outlining a clear path for IDT adoption, and addressing potential challenges and barriers.
- **Match-funded grants:** The programme offered match-funded grants of up to £20k, enabling SMEs to purchase specialist services and equipment required for IDT adoption.
- **Tailored leadership programme:** The Made Smarter Adoption programme delivered a leadership development programme to SME leaders, equipping them with necessary leadership and management skills to facilitate IDT adoption in their businesses.
- **Organisational and Workforce Development:** This component of the programme focussed on providing support to organisations to innovate and adapt to new technologies. This included offering guidance on developing and implementing a digital strategy, providing training for employees (via a Digital Champion Toolkit) and offering leadership development programmes for senior leaders. This was only made available in the North-West region.

1.2 Evaluation Aims and Objectives

This evaluation aims to respond to the following questions that were agreed with DBT during the scoping phase of the study. The scope of the process evaluation covered the period of Made Smarter Adoption delivery covering the period 2022/23 to 2024/25. The impact evaluation takes a longer-term view exploring

¹ Greater Manchester Combined Authority (2021) A process and impact evaluation of the 'Made Smarter' North-West Adoption pilot

² Department for Business, Energy and Industrial Strategy (2023) Made Smarter Adoption research project

the longer-term impacts of the programme since November 2018 (when an initial pilot of the programme was taken forward in the North-West region).

This evaluation builds on prior research into the effectiveness of the programme. This includes an evaluation of the emerging impacts of the North-West pilot. The results of this study showed that generally the businesses involved had a limited level of preparedness for engaging with digital technology. The programme largely aided these businesses in improving their readiness for digital capabilities, though there was less extensive evidence of participants adopting advanced IDTs. Overall, the evaluation of the North-West pilot found a high level of satisfaction among participant firms and progression to higher level of digital readiness among beneficiaries. In terms of emerging impacts, a counterfactual impact evaluation study compared Made Smarter Adoption participants with equivalent businesses (with respect to sector, region and size) taken from the wider business population and found a 6.5 percent impact in turnover and a 3.9 percent impact on employment. A survey of participating firms was also completed in 2022 which obtained similar findings in relation to satisfaction and impacts.

This evaluation builds on this previous research by extending the focus of the process evaluation to the five regions that have delivered the programme since 2022 and an increased focus on establishing the net impacts of the programme (using a wider range of data sources and approaches to establishing a counterfactual). Table 1.1 reports the complete list of evaluation questions. It is important to note, however, that the present study, was unable to provide evidence for the following points:

- **Regional variations in quality:** While there was variation in delivery models, the quantitative data available did not highlight material differences in performance against output targets or beneficiary perceptions of quality – and qualitative evidence was limited as beneficiaries typically only had experience of a single model and could not draw comparisons.
- **Benchmarking against alternative models:** The scope to address this was challenging, owing to the absence of evaluation evidence (including on comparable programmes internationally).

Table 1.1: Evaluation questions

Governance
Do governance mechanisms (e.g. Programme Board, regional monitoring) give DBT sufficient oversight of regional implementation?
Do regional governance arrangements give accountable bodies sufficient oversight over regional delivery and performance?
How effectively have regions shared lessons learned about programme delivery?
Have appropriate KPIs been established to monitor the implementation of the programme? Is monitoring of these KPIs effective and consistent across regions?
Are there any important variations in the standard of delivery across participating regions?
What are the strength and weaknesses of the different delivery approaches taken by the regions?
Is the regional delivery model efficient relative to the potential alternatives (including international comparators)? What is its 'added value', if any?
How far does Made Smarter Adoption complement or duplicate other support programmes nationally or locally? What, if any, links are in place to coordinate/ avoid duplication with these other support programmes?
Are the decisions for successful applications consistent and fair across all regions?
Demand

To what degree have promotional activities been effective in raising awareness of the programme amongst eligible SMEs?
How far has demand for the programme (from businesses meeting qualifying criteria/likely to benefit from the support available) been sufficient to meet its targets for participation?
How far are processes for assessing the eligibility of SMEs efficient and effective?
How far are processes for assessing eligibility of SMEs fair and consistent across regions?
Initial diagnostics and roadmapping
To what extent are participating SMEs able to commit sufficient resources to participate in Made Smarter Adoption? Does the expected share of participating SMEs progress to complete digital roadmaps?
How far do diagnostic services provided through Made Smarter Adoption provide clarity on the scope for SMEs to adopt IDTs, the potential benefits, and the barriers that may need to be overcome to effectively integrate digital technologies into production operations?
To what extent do digital roadmaps provide SMEs with a clear and feasible action plan for adopting and integrating IDTs into their production operations?
What commitments to progressing the action plans set out in digital roadmaps have been made by participating SMEs?
What progress have SMEs made in progressing the digital roadmaps developed through the Made Smarter Adoption? What challenges or barriers have been encountered?
Intensive support
How far is intensive support provided through the Made Smarter Adoption appropriately tailored to the needs of SMEs identified through the diagnostic and roadmapping process?
To what extent are SMEs satisfied with the quality and timeliness of the intensive support provided through the Made Smarter Adoption programme?
To what degree has the intensive support provided facilitated the adoption and integration of digital technologies into production operations?
Do SMEs have any relevant support needs that are not met by Made Smarter Adoption or through referrals to other programmes?
Workforce development
How far is leadership and management training designed to give business leaders the leadership skills and capabilities needed to instigate and accelerate changes required for digitalisation?
To what extent do appropriate staff participate in the leadership and management training?
How do workers that benefit from leadership and management training adapt their behaviour in response to the training provided?
To what extent does the Made Smarter Adoption programme diagnose the broader workforce development or skills needs of SMEs in adopting IDTs?
To what extent have SMEs made complementary investments in training or recruitment in response to their participation in the programme?
Grants
How far are due diligence arrangements for awarding and monitoring grants sufficiently robust to manage risks to value for money (e.g. insolvency of firms receiving grants)?
To what extent are the investments supported likely to deliver the intended productivity gains?
To what degree have SMEs successfully integrated the technologies supported into their production operations?
To what extent would firms have made comparable investments in the absence of public support?
Outcomes and intended impacts
How far has participation in the programme raised Digital Readiness Levels and enabled the adoption of IDTs?
How far has adoption of IDTs produced (or is on course to produce) the anticipated gains in efficiency and productivity?

To what extent have improvements in productivity facilitated the growth of participating SMEs - including effects on sales, exports, and employment?
To what extent have improvements in productivity led to benefits to workers (e.g. in the form of higher wages)?
To what extent has the programme resulted in energy and/or resource efficiency savings? (e.g. via reduced emissions)?
Do the productivity gains resulting from the programme justify the resources expended in the delivery of the programme?
Would SMEs have obtained equivalent support from the private sector or other public programmes in the absence of Made Smarter Adoption? If so, how would costs have compared with costs of provision through the programme?
How far has the programme contributed to reducing regional disparities in economic performance or other positive spillovers?

1.3 Methodology

This report draws on evidence collected from the following strands of activity:

- **Background literature review:** A review of the programme business' case, the regional MOUs as well as the previous research conducted by Steer and IMF on the Made Smarter Adoption Pilot programme was conducted at the outset of the evaluation in April May 2023. In addition, the team reviewed the British Standard Industry (BSI) documentation about Digital Readiness Levels (DRL) as well as the different guides used by the regions to assess DRLs.
 - **Analysis of Monitoring Information:** These reports are split into monthly and quarterly, they are collated by the Made Smarter regional delivery partners and provided to Ipsos by DBT. Monthly MI data provides information about programme delivery costs by region and KPIs achievement. In this report we used monthly MI up to December 2024. Quarterly reports instead provide information on the characteristics of the businesses joining the scheme as well as the type of services provided by the scheme. The data made available for this report covered the third quarter of the 2024/25 financial year.
 - **Qualitative interviews:** Ipsos UK conducted 26 interviews with stakeholders involved in the design and delivery of the programme, both nationally and regionally, as well as 25 interviews with firms that have received support via the Made Smarter Adoption programme. These interviews were conducted in two waves between January and March 2024 and in the same period in 2025.
 - **Analysis of two quantitative surveys:** Ipsos UK ran two waves (wave one ran from December 2023 to January 2024 and wave two in September 2024) of the beneficiary and non-beneficiary telephone survey, to collect self-reported information on the scheme's emerging impacts on participating businesses. For the purposes of the survey, beneficiaries were defined as those which had reached Service Level 3 or above, meaning they engaged with Made Smarter Adoption and had at least got to the in-depth assessment stage. Non-beneficiaries were defined as those which had reached Service Level 1 or 2, meaning they had made an application to the programme or undertaken an initial assessment but not progressed any further.
 - **Sample sizes and response rate:** In wave 1 the survey achieved a response rate of 18 percent reaching 160 complete interviews out of 892 contacts provided by DBT. Of the 160 interviews achieved, 97 were beneficiaries of the Made Smarter Adoption programme, and 63 were non-beneficiaries. In wave 2, we achieved a response rate of 15 percent, reaching 273 respondents. Of the 273 interviews achieved, 182 were beneficiaries of the Made Smarter Adoption programmes, and 91 were non-beneficiaries.
- Econometrics:** Finally, the evaluation team, performed a series of econometric analyses using

administrative datasets held at the ONS' Secure Research Services (SRS), to gauge the impact of the programme on business' performance. To assess the causal impact of the programme on participant businesses, Ipsos compared Made Smarter Adoption beneficiary businesses reaching Service Level 3 or above (i.e. the treatment group), with three different comparison groups, these were:

- A sample of manufacturers taken from the general population
- A sample of firms engaging with the scheme but not progressing beyond Service Level 2 (the first discussion with a specialist advisor)
- Later Made Smarter Adoption applicants. This approach is called an 'early versus late' comparison or 'pipeline' design, whereby Made Smarter Adoption businesses signing for the programme in early years are compared to firms enrolling in later years. This method compares treated only firms but at different point in time.

The econometric analysis was conducted on 2,402 Made Smarter Adoption businesses covering the years from 2017 to 2023. The team replicated the same methodology applied in the pilot evaluation to assess the quantitative impact of the scheme. Additionally, alternative – and potentially more robust – approaches were applied³, comparing a group of Made Smarter Adoption beneficiaries with an equivalent group of Made Smarter Adoption applicants that did not benefit from the programme's services. (i.e. that only reached Service Level 1 or 2). Full details are set out in the technical appendix.

1.4 Structure of the report

This report is structured as follows:

- **Introduction:** provides a brief overview of the Made Smarter Adoption programme, the evaluation aims, the related evaluation questions and the methodologies applied to conduct this evaluation.
- **Chapter 2:** Provides a detailed description of the Made Smarter Adoption programme and presents the full Theory of Change as well as the evaluation questions.
- **Chapter 3:** Provides a description of the programme's monitoring information.
- **Chapter 4:** Sets out the full process evaluation.
- **Chapter 5:** Describes the key findings with respect to IDT adoption and digital readiness levels, drawing from the two waves of the beneficiary and non-beneficiary surveys.
- **Chapter 6:** Presents the firm levels impacts drawn from the econometric analysis.
- **Chapter 7:** Sets out the conclusions and recommendations.

³ Staggered Difference in Differences has been developed by Callaway and Sant'Anna in 2021.

2 Made Smarter Adoption Programme

The following section provides an overview of the Made Smarter Adoption programme. It describes its key features and sets out the economic and strategic rationale for its implementation. The section also provides a theory of change for the programme, outlining how its activities were expected to achieve its intended outcomes and long terms impacts. Finally, the chapter concludes by presenting the key evaluation questions and an overview of similar international schemes implemented in some advanced economies.

2.1 Programme overview

Made Smarter is the UK Industrial Digitalisation initiative which aims to put the country at the forefront of the 4th Industrial Revolution. It comprises two programmes, Made Smarter Adoption (the subject of this report) led by the Department for Business and Trade and the Made Smarter Innovation programme administered by UKRI. Both initiatives are governed nationally by the Made Smarter Commission that provides leadership and guidance. Linked to DBT Priority Outcomes⁴, the Made Smarter Adoption programme aims to increase the productivity of manufacturing companies through the adoption of Industrial Digital Technologies (IDTs), generate better jobs and stimulate innovation in the manufacturing sector. The key strategic objectives of this scheme are summarised below:

- **Tackle information barriers to the adoption of IDTs:** By providing impartial expert advice, Made Smarter Adoption aims to enhance IDTs knowledge among manufacturing SME leaders so that they can identify and adopt the most suitable IDT technology for their business.
- **Address the financial barriers to IDT adoption:** The scheme offers the possibility to award matched grants. This is to reduce the level of uncertainty around investments in IDTs, de-risk such investments and overcome the existing finance gap in capital markets.
- **Address the leadership and management of IDTs:** Leaders of beneficiary firms are offered the opportunity to access digitalisation and management training over three years. This is to ensure IDTs are effectively implemented within businesses.
- **Close the IDTs skills gap in the workforce:** For the North-West region specifically, SMEs' workforces attend specific digital technology training to close the existing skills gap.
- **Help manufacturers reduce their CO2 emissions contributing to Net Zero:** Made Smarter Adoption aims to support firms to improve their production and resource efficiency thereby reducing CO₂ emissions.

Made Smarter is central to delivering some of the UK government's key priorities over the next decade and the scheme is designed to link with objectives of different government departments. Specifically, Made Smarter Adoption is identified as a priority within the DBT Outcome Delivery Plan (ODP) as it is expected to

⁴ The Made Smarter Adoption programme was conceived to address the following DBT Priority Outcomes: a) backing long term growth and levelling up opportunities, driving productivity and better jobs, b) improve technology take-up across the economy and particularly across SMEs. enhance the investment in R&D to boost future facing sectors like AI and life sciences, c) delivering Net Zero carbon emissions, drive green industrial revolution and creating clean technologies.

contribute towards innovation, enterprise growth and delivery of Net Zero goals. In the context of the UK Innovation Strategy, the programme provides a road map for technology diffusion and adoption. Furthermore, it is also positioned as an important programme for enhancing manufacturing competitiveness and growth in regions in need of economic regeneration.

At the heart of the Made Smarter initiative is industrial digitalisation – the application of digital tools and technologies to the value chains of manufacturing businesses. These IDTs can enable significant improvements to both performance and productivity. The programme was tested through a pilot in the North-West between 2018 and 2021, before being extended to three other regions in 2021 (North-East, Yorkshire & Humber, West Midlands). It was further extended with an annual budget of £8m for the 2022 to 2025 period, including an extension to the East Midlands. The key elements of the programme are listed in Table 2.1 below.

In the Autumn Budget 2024, the Government announced a further extension with £16m in funding for 2025–26. This increase will enable the programme to be expanded to all nine English regions, building in lessons learnt from the initial programme rollout.

Table 2.1: Made Smarter Adoption key features

Made Smarter Adoption Support	Overview
Diagnostic stage	Through the Made Smarter website, applicants complete an initial eligibility step to ensure they can take part in the scheme. Following their application, and if they are eligible, businesses are put in touch with digital transformation specialists to provide an objective assessment of their technological needs.
Digital road mapping	Information about technological needs is complemented with additional wraparound support to ensure SMEs understand how IDT(s) can be integrated into their business and the dependencies that must be in place (e.g. skills and understanding, training, match funding) to maximise the productivity benefits.
Advisor led support	The Made Smarter Adoption advisor support works in tandem to the digital road mapping to provide broader, more flexible/personalised support to business leaders.
Grant funding	Once an SME understands its technological needs and has sought expert advice/completed a digital roadmap, it may face barriers to investment. Potential barriers to adoption might include financial constraints, a lack of understanding of the potential value of IDTs, or cost of upskilling staff. The ability to apply for up to £20k grant funding may de-risk the IDT investment for firms and stimulate private sector investment. A minimum of 50percent industry match is required.
Leadership programme	Made Smarter Adoption delivers a programme of training to upskill SME leaders with the skills and understanding required to create transformative change. To complement other support this programme provides SME leaders with key skills, including how IDTs will impact on internal processes/operations, leading to improved company culture and people management/upskilling.
Digital internships	No longer available, although will be reintroduced in 2025/26. The pilot programme also included digital internships to improve skills supply in the areas of IDTs.

Made Smarter Adoption Support	Overview
Organisation and workforce development	This component of the programme is available in the North-West region and provides organisation health check – gauging how the business stands in relation to vision and values, leadership and management team skills, succession planning, performance and review process, planning and people development, and working with other funding partners (e.g. for training). This is complemented by a more detailed organisation review to help identify any people development needs to support digital transformation and plans for how these might be addressed.

2.2 Rationale

2.2.1 Strategic rationale

The Made Smarter Adoption programme responds to some key issues constraining productivity growth in the manufacturing sector identified in the 2017 Made Smarter Review:

- **Underinvestment and low adoption of industrial digital technologies (IDTs)** among UK SME manufacturers, holding back the sector's growth, competitiveness, and productive efficiency. The review cited 2017 estimates by the World Economic Forum that the adoption of technologies in the fields of artificial intelligence, industrial robotics, and internet of things had scope to deliver \$100 trillion in productivity gains. However, adoption rates amongst SME manufacturers were lower in the UK than in many other advanced nations, reducing overall productivity levels below their potential.
- **Need to overcome the barriers to IDT adoption** by developing understanding among manufacturers and providing impartial advice on implementation. The review highlighted fragmentation of the UK's business support landscape following the closure of the Manufacturing Advisory Service as a significant barrier to adoption, with SMEs facing no clear route to access advice on the potential benefits of, and challenges involved in, adopting IDTs.
- **Close the skills gap** by investing in digital technology training so that manufacturing workers know how to use IDTs effectively, as well as digital management courses tailored for SME leaders. The review highlighted that many businesses faced skills shortages – particularly in digital engineering capabilities – constraining their adoption of IDTs.

The manufacturing sector has also faced more recent pressures arising from COVID-19, the UK's withdrawal from the European Union and changes to trading relationships. The COVID-19 pandemic resulted in a greater drive for technology that enabled remote monitoring as well as increased use of automated/robotic technology to mitigate staff resourcing issues. An Enterprise Research Centre (ERC) Business Future Survey released in 2020 found that firms which invested in digital technology weathered economic decline caused by the pandemic better than those who did not. The ERC also found that over 40 percent of UK SMEs suffered a downturn in turnover due to the pandemic, with 30 percent being forced to make cuts to their workforce as a result. On the other hand, the pandemic did create conditions that encouraged businesses to seek out the adoption of IDTs.

2.2.2 Economic rationale

While firms can potentially obtain advice in relation to the adoption of IDTs from the market, the Made Smarter Adoption Business Case highlights several market failures that may constrain utilisation below socially optimal levels:

- **Asymmetric information** – The majority of manufacturing businesses in England are SMEs (particularly small and micro firms), which have less capacity to seek out information that might help them identify the benefits of new technologies. IDT adoption and innovation remain low as a large portion of manufacturers have incomplete information about the business support available and therefore do not access the networks that promote business growth and innovation. Made Smarter Adoption aims to raise knowledge of IDTs among manufacturing SMEs and to promote their adoption.
- **Imperfect information in capital markets** – The high risk and uncertainty involved in adopting IDTs can make it difficult for manufacturing SMEs to invest. This is particularly a problem for small companies which can struggle to raise funds from banks and can find it harder to internally justify early-stage investment because of the high risk and uncertainty involved.
- **Management and Leadership** – The management capability of a firm has a clear influence on its performance, with nearly three-quarters of SMEs in England saying they lacked management and leadership skills. In relation to IDTs, the lack of understanding of these technologies may hinder the benefits deriving from their adoption. Made Smarter Adoption funds digital management training, so that the benefits deriving from investment in IDTs can be fully realised.
- **Lack of skills and expertise** – Many manufacturers will lack the skills and expertise to implement IDT benefits even once advice and solutions have been identified. Businesses will need to have the right expertise and business model/processes to effectively address this issue. Made Smarter Adoption aims to enhance skills and expertise by providing workforce support. Over the period covered by this evaluation, this support was only provided in the North-West region.

An independent evaluation of the Made Smarter Adoption North-West Pilot in 2021⁵ also indicated that participants in the pilot programme performed significantly better than an equivalent group of manufacturers not engaged with any support, creating an additional 803 jobs and increasing their turnover by more than £157 million. The relative density of the manufacturing sector in the North and the Midlands also highlights the potential for such a programme to support regional rebalancing by promoting productivity growth in lagging regions.

2.3 Theory of change

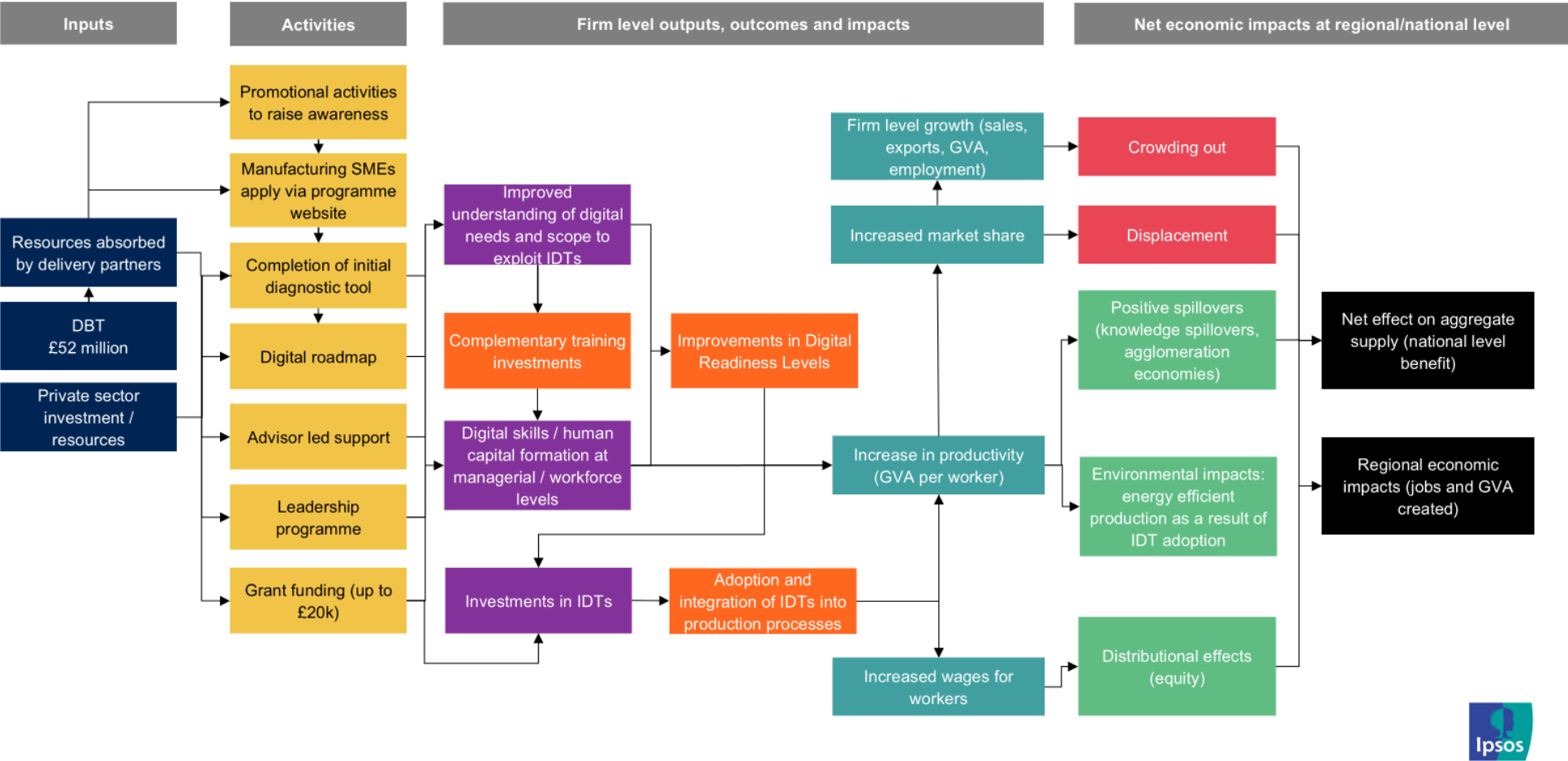
This section presents the Theory of Change (TOC) for the Made Smarter Adoption programme. It sets out the inputs, activities, and outputs to be delivered and how these are expected to result in the intended outcomes/impacts. It provides details of the change that is expected to occur as a result of the intervention, detailing the key steps along the way and the hypothesised causal

⁵ Greater Manchester Combined Authority (2021) A process and Impact evaluation of the 'Made Smarter' North-West adoption pilot..

pathways/mechanisms between them. The TOC provides the overarching framework to guide the data collection, analysis, and interpretation of the findings from the evaluation.

The following analysis aligns with previous evaluative work conducted by Steer on the Pilot (2018–2021) and the research conducted by the Institute for Manufacturing at the University of Cambridge and incorporates additional analysis in relation to the indirect economic impacts of the programme (in relation to possible displacement, crowding out, and agglomeration economies). The associated Logic Model is reported in Figure 2.1 below (for brevity, this does not include all items identified in previous logic models, though these are covered in the following narrative).

Figure 2.1: Made Smarter Adoption – Logic Model



2.3.2 Inputs

The inputs of the Made Smarter Adoption programme are detailed below:

- **Government funding:** £20m was allocated to a Made Smarter Adoption pilot in 2018, providing support to manufacturing SMEs in the North-West with the aim of increasing the adoption of industrial digital technology. £8m was then used to extend the Made Smarter Adoption programme in the North-East, Yorkshire and Humber, and West Midlands in 2021-2022. A further £24m was allocated – £8m per year – for the continuation of the Made Smarter Adoption programme over 2022-2025, and the programme expanded to a fifth region (East Midlands).
- **Made Smarter Commission** – A national commission co-chaired by the Minister of State for Business and Trade was established to provide a vision and leadership for the Made Smarter initiative. The Commission meets regularly and receives high level updates from the Regional Steering Groups (RGS). These bring together local partners, representatives from local industry and DBT officials. The role of the RGSs is to review the progress made by each region against the key KPIs and report them to the Made Smarter Commission.
- **DBT staff resource** – DBT staff manage the delivery of the Made Smarter Adoption programme, provide support and guidance to the regional leads, participate in regional governance mechanisms, as well as setting the scheme's KPIs and providing oversight of the programme. They also provide the secretariat to the Made Smarter Commission.
- **Accountable Bodies:** Four Combined Authorities and a County Council act as the accountable bodies for the programme's management. These bodies are accountable for the delivery of the programme to DBT, with their obligations set out in a Memorandum of Understanding that outlines each regions approach to delivering the programme and its associated targets for engaging and supporting manufacturing SMEs.
- **Delivery bodies – Growth Hubs:** Accountable bodies have all contracted external delivery partners to provide support through the programme (most frequently the local Growth Hub). Other external partners (e.g. High Value Manufacturing Catapult centres, Business Schools and Universities) have also been contracted to deliver technical advisory elements of the programme. Where elements of delivery are outsourced, compliance with public procurement rules is required under the terms of the MoU. Delivery bodies are also responsible for allocating capital grant funding (i.e. including due diligence checks on the businesses, due diligence on financial viability, etc).
- **Private sector resources** – It should also be noted that participating firms commit resources in the form of time to participate in the programme. Additionally, those manufacturers eligible for capital grant funding are required to match the amount received by raising private capital or from internal funds. Finally, participation in the programme may also lead to other costs for SMEs – for example, if decisions are made to invest in additional equipment, training, or in the development of new products.

2.3.3 Activities

The programme's inputs are expected to lead to the activities described below:

- **Promotional and marketing activities:** The success of the programme is dependent on sufficient levels of participation amongst SMEs. To generate awareness of Made Smarter Adoption amongst SMEs and increase their likelihood of engaging with the programme, delivery partners work with existing networks (e.g., via Growth Hubs and other local support programmes) to identify eligible SME manufacturers. Delivery partners are also expected to use market research, targeted marketing and PR to inform their understanding of demand and extend their reach beyond existing networks. Case studies, ministerial engagement, trade body involvement, Made Smarter Adoption staff leading or presenting at events and social media presence are also being utilised to increase awareness of the programme.
- **Manufacturing SMEs apply via programme website:** SMEs are invited to register on the Made Smarter website. Firms need to demonstrate their eligibility by showing that they are manufacturers and by confirming their employment and turnover (i.e., to show that they fall within the SME category).
- **Pre-engagement assessment:** Following registration, businesses are contacted by an advisor, who starts a pre-engagement assessment to understand more about the company's needs. After this initial contact, businesses that are not deemed suitable for Made Smarter can be redirected to other forms of support, otherwise they progress to the Digital Transformation Workshop and road-mapping. As emerged during the scoping consultations, suitability for the scheme is based upon the advisor's judgment, who will assess the company against three broad criteria: a) company leadership commitment towards technological change, b) potential impact of the roadmap on the business, and c) necessity of the roadmap itself. Some regions also apply criteria based on the Digital Readiness Level of the business (e.g. in Yorkshire and Humber), with the expectation that only businesses of a certain level of digital maturity will be able to maximise the benefits of participation in the programme.
- **Digital Transformation Workshop:** Relevant firms move on to a detailed diagnostic assessment of their business to evaluate their need for Industrial Digital Technology (IDT). During this session, aspects like business strategy, operations and capabilities, business culture, business challenges and Digital Readiness Level are analysed and discussed with the digital transformation advisor. The workshop ends with the development of an action focused digital roadmap for IDT adoption.
- **Digital roadmap:** This plan seeks to help manufacturing SMEs to develop a tangible strategy for IDT adoption and typically includes one or a combination of Made Smarter Adoption services tailored to the business's requirements, resulting in a bespoke, firm-led package of services. It utilises information gathered on the firm's current operations, business challenges and areas of opportunity through previous stages of Made Smarter Adoption support. The roadmap drives the next phase of the firm's engagement with the Made Smarter Adoption programme, in addition to identifying potential requirements for external expertise or finance.

- **Intensive support⁶:** Participants in the programme can obtain additional help with the development and/or implementation of their road map. This aspect of the programme provides a minimum of 10 hours of additional advice to help a business move forward with their roadmap, though the specific focus of this advice will vary in line with the needs of the SME. It could include further support with scoping technical requirements for an investment into IDT, support with building a business case for a project, guidance on accessing another support programme, or support with increasing sustainability.
- **Leadership programme:** To provide business' managers with the right skills and vision to deploy IDTs in the long term, Made Smarter Adoption offers a specific Leadership & Management Programme also known as Leading Digital Transformation which is delivered in partnership with local Higher Education Institutions. This aims to address the challenges posed and exploit the opportunities offered by industrial digitalisation. Key elements of the programme include a) site visits to top performing manufacturers who have adopted IDTs, b) enabling connections with peer network cohorts, c) showcase sessions delivered by a recognised business school and d) written training materials developed by Made Smarter Adoption staff. The Leadership & Management programme is not the only support dedicated to SME staff:⁷North-West⁸ region the Organisation and Workforce Development (OWD) strand is also available. The objective of the OWD is to enable SME workers to effectively use the adopted IDTs, by identifying digital champions in the company and performing organisation reviews to see if employees need support in the digital transformation (i.e. review of roles and responsibilities and developing training plans for the digital technology project).
- **Matched grant funding:** Capital grant funding of up to £20k, with minimum 50percent match from industry, is designed specifically to help firms overcome barriers caused by limitations on access to finance. Made Smarter Adoption grants enable manufacturing SMEs to purchase IDT equipment and software. Regional institutions with manufacturing expertise, such as innovation centres, universities, and national labs, form an expert panel in each region to help assess and approve grant funding proposals.
- **Digital internships:** During the Made Smarter Adoption North-West Pilot and between April 2021-September 2022 in the other four MSA regions, the programme was offering student placements in Made Smarter Adoption beneficiary firms, to provide the link between universities and industry. After being in place for 18 months these were discontinued due to budget constraints.

2.3.4 Firm level outputs

These activities are expected to lead onto the following outputs:

⁶ From the East Midlands Delivery Plan: intensive support should include, but is not limited to: developing the technical specification of equipment, hardware or software, managing procurement of IDT, implementation planning, implementation risk analysis & mitigation, selection of technology and approach, quantifying likely benefits of implementation, outline financial justifications – ROI, NPV, IRR, pay back, employee training & development, cultural change management, set ups, trials, pilot runs, de-snagging, de-bugging, user acceptance testing (UAT), product and process validation and verification.

⁸ OWD is currently present only in the North-West.

- **Businesses sign up:** The number of manufacturing SMEs applying for Made Smarter increases.
- **Initial contact with Made Smarter Adoption advisors:** Following the eligibility checks through the Made Smarter Adoption website, businesses are contacted by an advisor.
- **Digital road mapping:** Businesses are supported to develop a digital roadmap following the pre-engagement session with the Made Smarter Adoption advisor.
- **Intensive support:** Intensive support is allocated to those businesses requiring digital advice of more than 10 hours.
- **Grants:** Manufacturing SMEs are allocated grants.
- **Leadership and management programme:** Business leaders attend the Leadership and Management programme and/or attending the Leading Change for Digital Change programme in the North-West region (as part of Organisation and Workforce Development support).

2.3.5 Firm level outcomes

Following on from the outputs, the following firm level outcomes can be expected (to the extent that these results would not have happened in the absence of the programme – i.e. net of deadweight):

- **Improved understanding of IDTs and their potential benefits:** Firms engaging with Made Smarter and receiving support from an advisor and participating in a digital road mapping session are expected to have an improved understanding of their digital needs and the scope to exploit IDTs.
- **Road map implementation:** Following on from the Digital Transformation Workshop, Made Smarter Adoption beneficiaries will progress with the implementation of their digital roadmap. Among others, this would translate in developing the specifications of the digital equipment needed, managing the procurement of the chosen IDT and/or scoping the IDT training needs for their workforce⁹. Those firms that require intensive support will spend additional time with the Made Smarter Adoption advisor to move forward with their roadmap and enhance their understanding of the key steps to take to effectively deploy the digitalisation plan.
- **Increased leadership skills:** SME leaders participate in the Leadership and Management programme and following this will acquire practical knowledge of the functioning of IDTs by visiting other SMEs that have already completed the digitalisation journey. They will relate to a network of peers and will be better equipped to enable the digital transformation internally (by changing their business model, influencing their company culture, understanding better their challenges etc). As a result, more business leaders will be trained in the use of IDTs and equipped to manage the process of change involved in their adoption.

⁹ The digital road mapping actions are also dependent from the company's starting Digital Readiness Level.

- **Digital skills awareness:** the drafting of the digital roadmap will increase awareness and understanding of IDTs and the digital skills required to implement these in the businesses' operations. Business leaders will strengthen their IDT knowledge through the leadership programme, and in some cases, workers may also benefit from specific IDT training (if identified appropriate as part of the road map). As a result, the level of digital skills among manufacturing companies will increase.
- **Improvements in Digital Readiness Levels:** These outcomes, expert impartial advice, and digital road mapping, will improve Digital Readiness Levels in the short term by helping manufacturing SMEs to evaluate their strengths and weaknesses and identify the most effective IDT solutions for their business and the likely benefits involved in adoption.
- **Adoption and integration of IDTs:** Participants in the programme will be expected to accelerate their adoption of IDTs (i.e. adopting IDTs faster than they would have done in the absence of the programme). This would be expected to be accompanied by an increase in capital investment associated with equipment purchases (which may be partly funded by grants where firms have been awarded these). Examples of IDTs include:
 - **Industrial internet of things (IIoT):** The industrial internet of things is a subsection of the internet of things (IIoT) – a network of smart devices in the industrial sector that monitor, collect, analyse, and exchange data.
 - **Data and systems:** Data and systems technologies allow businesses to analyse data, improve planning, and ultimately reduce waste. This might be complemented by other complementary investments to generate the required information (such as sensors, blockchain technologies, mobile devices).
 - **Automation and robotics:** Automation (including artificial intelligence) and robotics involve using technology to complete human tasks. In some cases, automation and robotics can improve quality, as well as resulting in less waste throughout production.
 - **Additive manufacturing (AM) or 3D printing:** Additive manufacturing (AM) is the process of creating a physical object by building it layer by layer. Three-dimensional parts are made by adding material – as opposed to subtractive manufacturing methods, such as machining, where material is removed to create the desired shape.
 - **Augmented reality (AR), virtual reality (VR) and mixed reality (MR):** augmented reality uses digital elements to create an enhanced version of reality. Virtual reality uses technology to simulate a real-life environment, whilst mixed reality combines elements of the physical world with a virtual environment.
- **Complementary investments:** Successful adoption of IDTs may also require firms to make complementary investments to improve their absorptive capacity (e.g. in training).
- **Referrals to wider support:** Manufacturing SMEs could also be referred to other existing government programmes suited to their needs (e.g. Help to Grow Management, Productivity through People).

2.3.6 Firm level impacts

The long-term firm level impacts associated with Made Smarter are expected to comprise:

- **Efficiency gains:** Adoption of IDTs may result in a variety of efficiency gains for businesses:
 - **Production and assembly:** Arising from improved planning efficiency, better use of data to monitor/understand processes, better utilisation of assets, fewer defects and errors, or improved factory safety.
 - **Product and process design:** Arising from greater customisation or removal of manual processes.
 - **Enterprise management:** Arising from better inventory management.
 - **Supply chain management:** Arising from improved flexibility and agility, improved visibility, or improved integration.
 - **Sales and marketing:** Arising from better customer satisfaction and/or better profit margins on products.
 - **Materials and energy management:** Arising from reduced energy or materials use in manufacturing processes, better awareness of energy/resource use, reduced waste, improved recycling practices, or reduced use of fossil energy resources.
- **Firm level productivity:** Digitally enhanced production processes will enable firms to become more operationally efficient and this will translate in improved productivity. For example, adopting automation and robotics technology will improve the quality of the outputs, potentially allowing products to generate higher revenues. Additive Manufacturing (AM) or 3D printing, will allow production to be more efficient through reducing the materials employed during the production (reducing production costs). Firms may also be able to achieve economies of scope, for example, if adoption of IDTs enables them to develop new products. Productivity gains will be visible in an increase in GVA per worker.
- **Sales and output growth:** Improved competitiveness may lead onto increased sales (including sales in export markets). This would be expected to be accompanied by an expansion in output (GVA).
- **Employment:** The expansion of output could potentially lead to the recruitment of additional (or more highly skilled) workers. However, the net effect of the programme on employment levels is potentially ambiguous – as productivity gains may enable some firms to reduce their cost base by reducing employment levels (i.e. a substitution effect).
- **Environmental impacts (reduced CO2 emissions):** IDTs will provide alternative and better ways to make things, potentially improving energy efficiency and reducing waste. For example, the implementation of IIoT augmented reality and data & systems, will provide the opportunity to understand machines' energy use so that it is possible to optimise energy efficiency. Virtual Reality (VR) applications have the potential to allow customers to experience products on their phone or through a VR headset – giving them a chance to test before purchasing and decreasing the likelihood of returns (and associated emissions costs). The net effect of the programme on overall emissions will depend on a combination of how far the scheme leads to greater output growth (leading to greater efficiency) and how far it improves resource efficiency.

2.3.7 Net economic impacts

An assessment of net economic impacts also requires consideration of offsetting effects that may limit the net benefits to the UK economy.

- **Displacement:** The expansion of businesses supported by Made Smarter Adoption supported businesses may be achieved at the expense of the market share of their domestic competitors, resulting in corresponding reductions in employment and GVA elsewhere in the UK economy. Nevertheless, overall GVA will still increase if this involves a transfer of output from less to more productive producers in the long run.
- **Crowding out:** Even where manufacturing businesses expand without displacing domestic competitors, greater demand for factor inputs may place pressure on wages and prices, reducing demand elsewhere in the regions involved or the wider economy. Once prices have adjusted, net economic impacts will be determined by the expansion in GVA driven by productivity growth.
- **Positive spillovers (knowledge spillovers, agglomeration economies):** The presence of innovative businesses in specific areas will likely generate knowledge spillovers that may reach other manufacturing firms, creating a virtuous cycle. This can generate/reinforce existing manufacturing agglomerations with consequent advantages (i.e. concentration of suppliers, reduced costs of production). Such knowledge spillovers may also be promoted directly by the programme – e.g. via peer-to-peer learning and demonstrators enabled by Made Smarter Adoption.
- **Regional rebalancing:** Through supporting firms' production and safeguarding jobs, the Made Smarter Adoption programme in specific regions can significantly contribute to strengthening their economic development, rebalancing them with respect to other regions.

2.3.8 Contextual factors

There are a variety of broader contextual factors with the potential to influence the effectiveness of the programme:

- **Growth Hubs:** Growth Hubs were established to address issues of fragmentation in the business support landscape and to give businesses a single port of call for accessing publicly provided business support services (either locally or through national programmes). 38 Growth Hubs have been established by Local Enterprise Partnerships and, as noted, have been used in most regions as key delivery partners for the Made Smarter Adoption programme. It is anticipated that the scale and capabilities of Growth Hubs (and potentially their ability to access the specialised technical expertise needed to deliver intensive support through the programme) may vary across subregions, which may influence the effectiveness of the programme. Additionally, the breadth of local service provision may influence the degree to which referrals can successfully be made for issues or challenges arising that may not be met by Made Smarter Adoption.

- **Help to Grow:** The main parallel programme of business support being delivered at the national level is the Help to Grow programme¹⁰. The programme was initially designed with two components. Help to Grow: Management provides general leadership and management support for SMEs in the UK and could potentially complement the more specific (digital adoption-focused) leadership and management skills training provided through the Made Smarter Adoption programme. There was potentially greater scope for duplication in relation to the Help to Grow: Digital programme (which offered vouchers for support with digitalisation), although this programme was focused on different technology solutions suited to all SMEs rather than industrial technologies for manufacturing, and has now been wound down.
- **Shared Prosperity Fund:** Stakeholders highlighted the potential for locally developed projects via the Shared Prosperity Fund to duplicate key features of the Made Smarter programme (or indeed to fund complementary projects).
- **Trading relationships with the EU:** The withdrawal of the UK from the EU has altered the nature of trading relationships with the EU (the largest consumer of goods produced in the UK). These changes may also alter the competitiveness of the manufacturing SMEs as well as the incentives to invest in the adoption of IDTs (noting that these effects may be positive or negative).
- **Monetary tightening:** it should also be noted that the monetary tightening pursued by the Bank of England in recent years in response to inflationary pressures will have raised the cost of capital for many SMEs. In turn, this may have reduced the commercial viability of some (potentially more marginal) investments in IDTs and limited the overall impacts of the Made Smarter Adoption programme. Conversely, these developments could also have placed pressure on SMEs to adopt cost-saving technologies.
- **COVID-19 pandemic:** The COVID-19 pandemic created a complex and varied impact on businesses, particularly manufacturing SMEs. Supply chain disruptions hindered sourcing of materials and implementation of new technologies, while the shift to remote work presented challenges for on-site technology implementation (even as it accelerated the adoption of certain digital tools).

¹⁰ The Help to Grow programme is not exclusively open to manufacturers but it is open to SMEs from every sector.

3 Programme Delivery

This chapter presents an overview of the delivery of the programme, exploring how far the programme has delivered its intended outputs in line with expectations set out in the Memorandum of Understanding agreed with DBT at the start of 2022/23. This section is based principally on monthly and quarterly monitoring returns provided by the five delivery regions to DBT as part of on-going performance management of the programme. This section also provides an overview of the characteristics of businesses engaged in the programme.

3.1 Key findings

- The Made Smarter Adoption programme is on course to exceed its targets for providing digitalisation support to manufacturing SMEs over the 2022/23 to 2024/25 programming period. More than 1,400 businesses developed digital roadmaps through participating in the programme between 2022/23 and the end of 2024, 60 percent more than expected.
- Take-up of other strands of support offered through the programme – including intensive support from IDT advisors, leadership and management training, and grants for digitalisation projects – was also higher than expected.
- The findings indicated that the five delivery regions have been effective in engaging the eligible population and there were no significant variations in performance against targets at the regional level. The programme reached four percent of manufacturing SMEs within the five regions covered by the programme, between 2022/23 and the end of 2024, suggesting a high level of demand of the programme.
- Expenditure on the programme (at £19.8m) was also in line with expectations at the start of the programme.
- The programme has principally been taken up by micro and small manufacturers with 2 to 49 employees. Firms from a broad range of manufacturing sectors have been engaged through the programme, though participation was concentrated largely amongst lower value-added sectors.
- Monitoring information indicates that grants provided through the programme have principally been used to support investments in data capture and systems and robotics and process control equipment.

3.2 Delivery of expected outputs

The MOUs agreed between each region and DBT set out a series of KPIs defining expectations in relation to the volume of businesses engaged in the programme and the delivery of different types of support made available through the programme (including development of digital roadmaps, receipt of intensive IDT support, participation in leadership and management training, and investment grants awarded). Monitoring data from April 2022 to December 2024 (with one quarter of delivery to go) indicates that¹¹:

¹¹ Note that there are some regional differences in the definition of KPIs.

- The five regions had made initial engagement with 2,883 firms by the end of December 2024 against a target of 3,099 (93 percent of target).
- However, while the number of firms making initial engagement was slightly lower than expected, this has not affected the delivery of the programme and more businesses than expected progressed to the stage of receiving substantive support from the programme. 1,472 businesses participated in digital road-mapping activity against a target of 915 (60 percent over-performance)
- Additionally, there has been extensive take-up of the support offerings provided through the programme. At the end of December 2024, 1,000 firms had taken up intensive support from IDT advisors (against a target of 803), 547 had taken up leadership and management training (against a target of 295), and grants had been awarded to 527 firms (against a target of 428).
- As illustrated in the following table, performance was also relatively uniform across the five delivery regions, with every region expected to exceed all or most of their KPI targets.
- Overall, this indicates that the regions have been effective in engaging the target population for the interventions and that there is a high level of demand for the programme amongst manufacturing SMEs.

Table 3.1: Monthly Monitoring Information data comparison of progress towards current target (end of December 2024)

KPI	Yorkshire and Humber	West Midlands	North-West	North-East	East Midlands
Engagements	Ahead of Target	Behind Target	Behind Target	Ahead of Target	Behind Target
Roadmaps	Ahead of Target	Ahead of Target	Ahead of Target	Ahead of Target	Ahead of Target
Intensive Support	Ahead of Target	Ahead of Target	Ahead of Target	Ahead of Target	Behind Target
Leadership Management Training	Ahead of Target	Ahead of Target	Ahead of Target	Ahead of Target	Ahead of Target
Grants Awarded	On Target	Ahead of Target	On Target	Ahead of Target	Ahead of Target

Source: Made Smarter Adoption Monthly Monitoring Information to December 2024

3.3 Delivery costs

Table 3.2 below summarises information on the costs of the programme's delivery up to December 2024.

- A total of £19.8m of costs were incurred between March 2022 and December 2024. Delivery of the programme was in line with expected budgets.

- The highest share of the programme's expenditure was accounted for by capital grant funding (which accounted for 32percent of the total budget), with the delivery of business and technology advice accounting for 18percent and 20percent of the total respectively.

Table 3.2: Made Smarter Adoption delivery costs by region

Cost item	West Midlands	East Midlands	Yorkshire and the Humber	North West	North East	Total	%
Business Advice (DTS)	836,530	364,000	1,312,993	845,925	294,603	3,654,051	18.4%
Technology Advice (IDTA)	1,696,116	410,335	746,982	1,120,722	0	3,974,155	20.0%
Programme Management	282,698	225,600	429,749	909,993	290,873	2,138,913	10.8%
Marketing Management	102,775	136,184	296,038	428,433	77,265	1,040,695	5.2%
Capital Grant Funding	2,471,148	716,569	491,135	1,876,829	964,983	6,520,664	32.8%
Leadership & Management Delivery Costs	125,000	42,120	48,750	102,000	288,862	606,732	3.1%
Intern Salaries (until Q2 FY22/23)	22,765	0	0	57,821	0	80,585	0.4%
Non-salary Staff Costs (e.g. Travel & Accommodation)	46,554	0	10,000	35,157	834	92,545	0.5%
Capital Equipment Costs for Delivery Team (e.g. IT, other equipment)	36,222	0	0	9,793	62,332	108,347	0.5%
Capital Marketing Costs (e.g. adverts, copywriting, design)	399,418	40,403	2,169	675,140	141,427	1,258,557	6.3%
Accountable Body Admin Fee	66,000	136,851	152,000	45,000	199	400,049	2.0%
Total	6,085,224	2,072,062	3,489,816	6,106,812	2,121,379	19,875,292	100%

Source: Made Smarter Adoption Monthly Monitoring Information between April 2022 and December 2024.

3.4 Characteristics of participating firms

This section provides an additional analysis of information collected on the businesses enrolled in the scheme which is collected on a quarterly basis (and was available for the period April 2022 to the end of December 2024).

3.4.1 Penetration rate

Overall, the number of firms enrolled in the programme across the five delivery regions (2,026) represented four percent of the total number of manufacturing SMEs in those areas (as derived from ONS business counts taken from NOMIS). This indicates that the programme has achieved reasonable reach.

Table 3.3: Number of businesses enrolled by region and

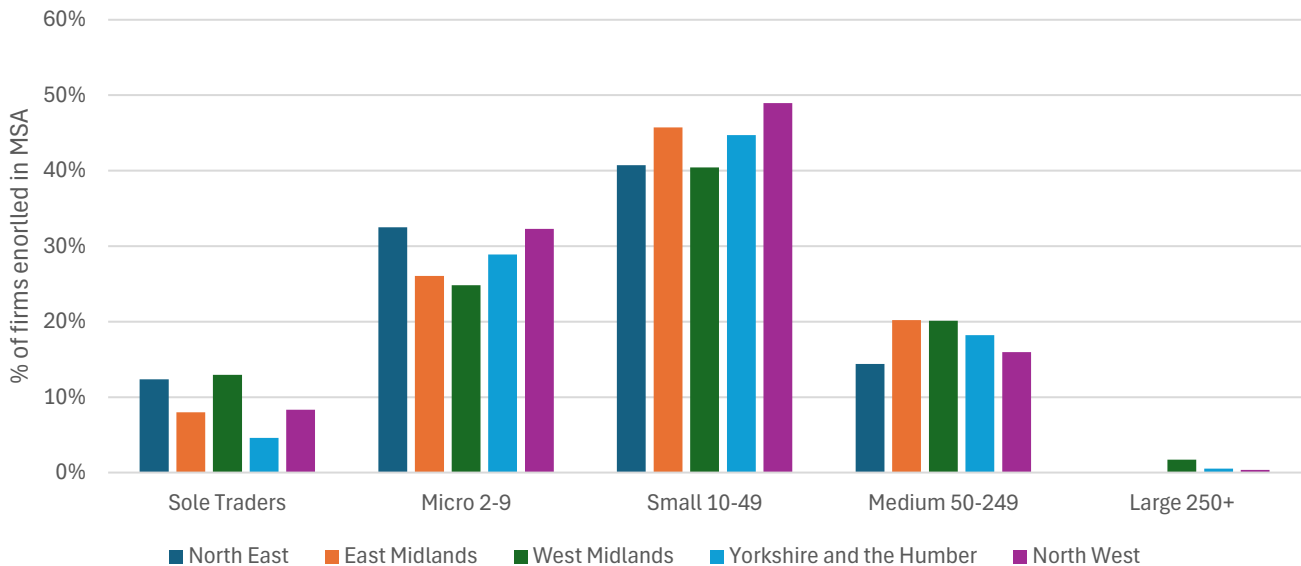
	Number of SMEs enrolled	% of region's SME manufacturers reached
Yorkshire and the Humber	570	6%
West Midlands	532	5%
North-East	243	7%
East Midlands	376	4%
North-West	305	3%
Total	2,026	4%

Source: Made Smarter Adoption Quarterly Monitoring data, Q3 2024/25 for all regions. Base: 2,026 firms and NOMIS Business counts.

3.4.2 Size profile

Figure 3.1 shows that the programme has predominantly engaged with smaller manufacturers – with 40 to 50 percent of those enrolled being small sized companies with 10 to 49 employees, followed by micro-businesses (with two to nine employees).

Figure 3.1: Size of businesses enrolled in Made Smarter Adoption by region



Source: Made Smarter Adoption Quarterly Monitoring data, Q3 2024/25 for all regions. Base: 2,027 firms.

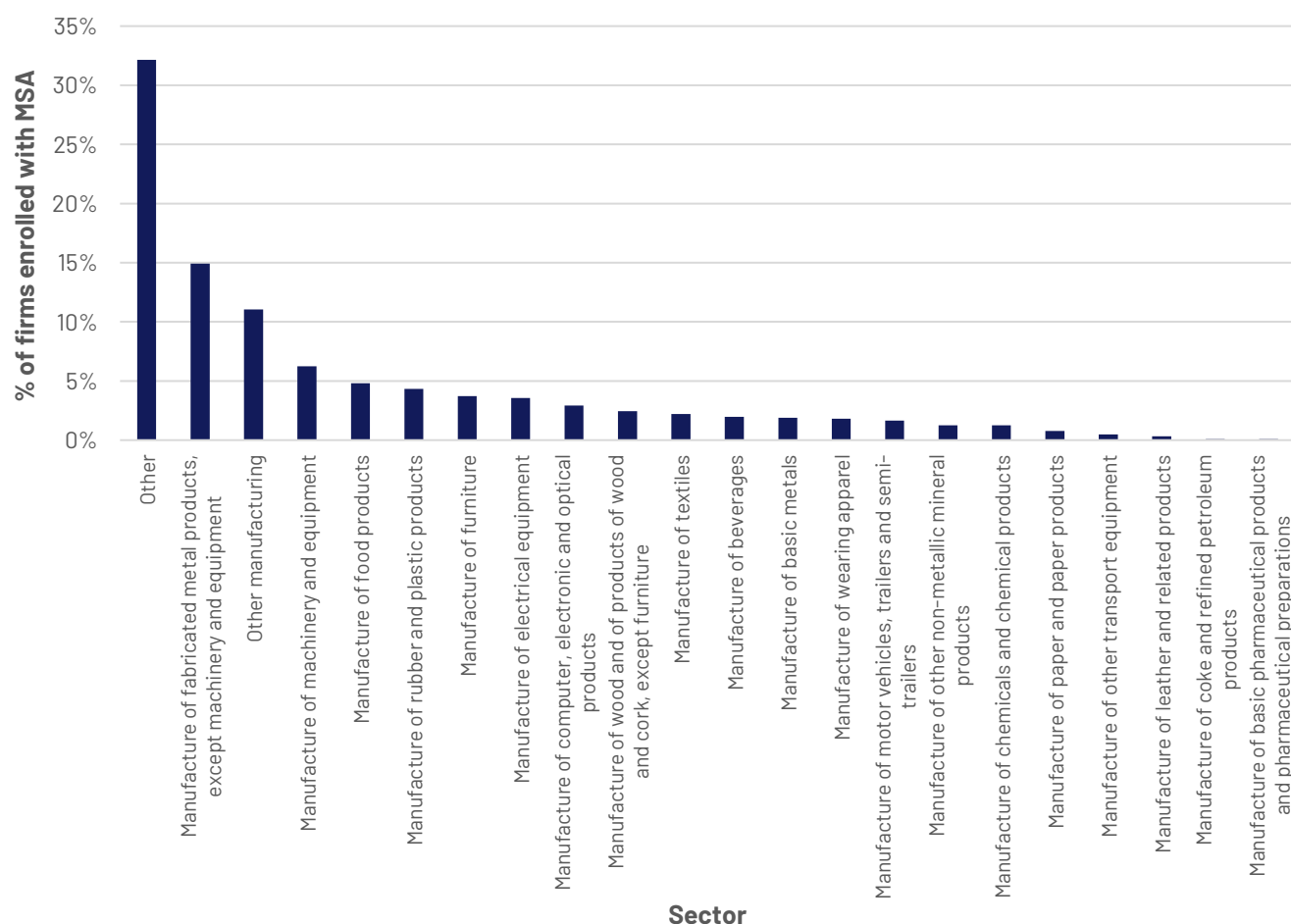
3.4.3 Sector profile

Information on the sector profile of firms engaged was obtained by linking records of their Companies House Reference number to details of the sector associated with the registration of their business. The programme has engaged with firms across a wide range of manufacturing industries, although firms were more

concentrated in lower manufacturing value-added sectors (e.g. manufacturing of fabricated metal products, food products, rubber and plastic products, and furniture), with less representation from advanced manufacturing industries such as automotive, aerospace, and pharmaceuticals (though firms may have been in the supply chains of these sectors).

It should be noted that more than 32 percent of firms enrolling with the programme were not classified as manufacturers under their filings with Companies House. This aligns with the results of the prior evaluation of the North-West pilot programme and reflects that some companies operate complex businesses with multiple operating arms (with the company registered under the sector which accounts for the largest share of its activity). There was no evidence that the Made Smarter Adoption programme was reaching firms outside of its intended target group.

Figure 3.2: Sector profile of firms enrolled with the programme¹²



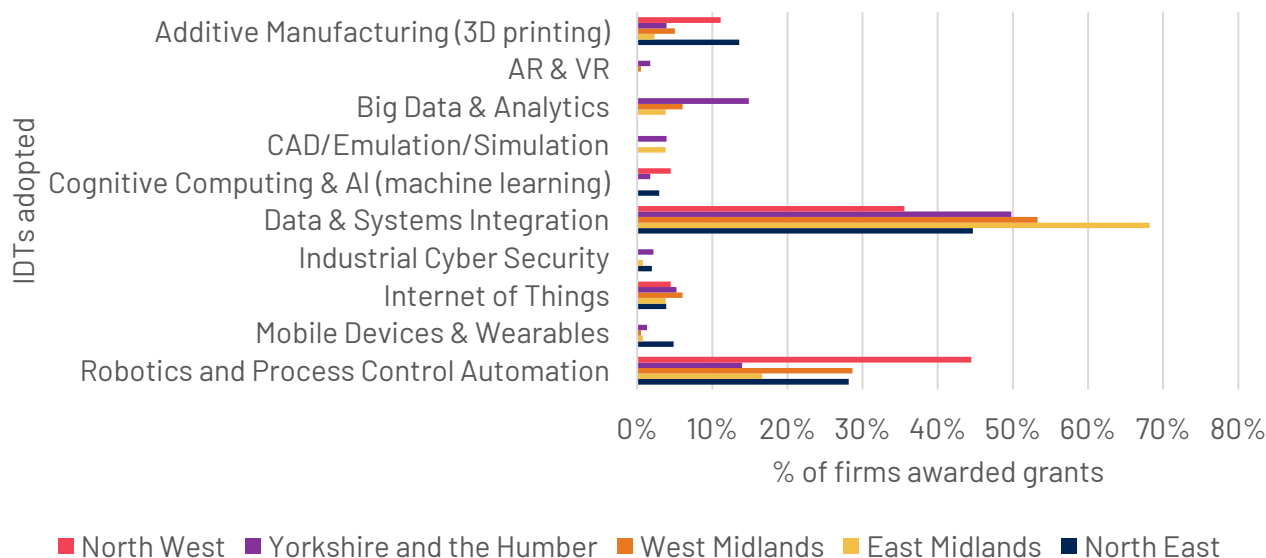
Source: Made Smarter Adoption Quarterly Monitoring data, Q3 2024/25 for all regions, Companies House. Base: 2,027 firms. Other manufacturing (SIC32) includes manufacturing of jewellery, musical instruments, sports goods, games and toys, medical and dental instruments, and other manufacturing activities not elsewhere classified in the Standard Industrial Classification.

¹² Other category contains businesses in a wide range of non-manufacturing sectors

3.4.4 IDTs adopted with support of grant funding

Figure 3.4 provides details of the IDTs adopted within each region with the support of grant funding. Data and systems integration were the most widely supported technology, followed by robotics and process control automation.

Figure 3.3: IDTs adopted by region



Source: Made Smarter Adoption Quarterly Monitoring data, Q3 2024/25 for all regions.

3.5 Diversity and inclusion

The survey of participating firms was used to obtain information on the characteristics of owners, partners and directors. On average, firms reported that 71 percent of directors were male, 28 percent were female, and less than one percent were of other genders. There was representation of a mix of ethnic backgrounds amongst senior leaders, including White British and Irish backgrounds (95 percent of firms), Asian and Asian British backgrounds (12 percent of firms), Black or Black British background (5 percent of firms), mixed or multiple ethnic backgrounds (6 percent of firms), and other ethnicities (3 percent of firms). Fifty-five percent of firms reported that they had a diversity and inclusion strategy in place.

Direct benchmarks for the UK manufacturing sector are difficult to obtain. However, these measures are broadly in line with the ownership characteristics of the wider SME population as reported in the 2022 Small Business Longitudinal Survey (DBT, 2023).

4 Process evaluation

This section presents the findings of the Made Smarter Adoption programme process evaluation. The evidence has been collected through qualitative interviews with nine wider stakeholders, eight DBT officials and 25 case studies with Made Smarter Adoption beneficiary businesses. Interviews were conducted over two waves in early 2024 and early 2025. This section also draws on the survey of participating firms.

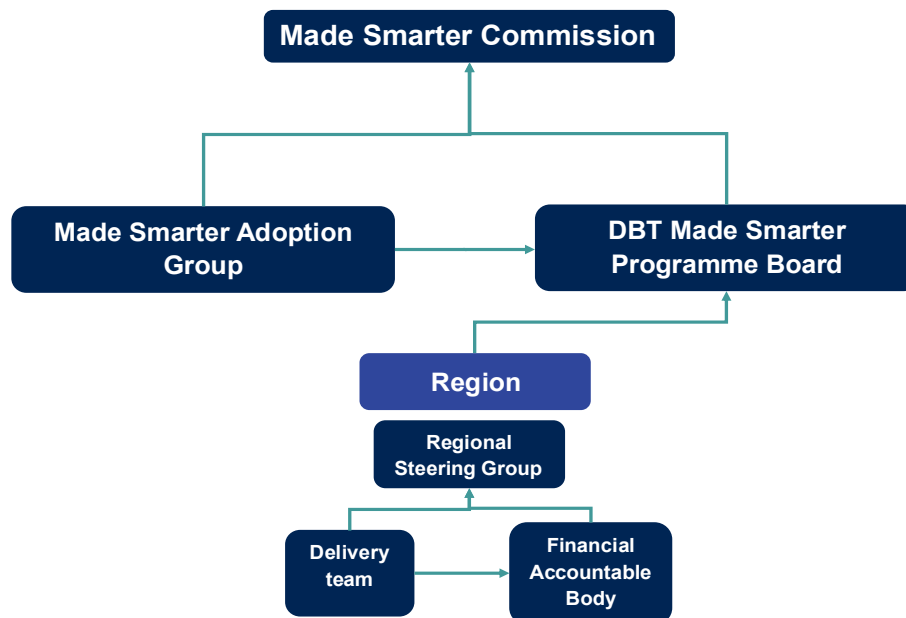
4.1 Key findings

- The regional delivery model is valued with respect to engagement and building trust with local businesses. Regions have successfully employed a mix of digital marketing, tailored campaigns, and word-of-mouth referrals to engage businesses – contributing to the programme exceeding its targets for engagement with businesses.
- Firms engaging with the Made Smarter Adoption programme expressed a high level of satisfaction with the support that has been provided through the programme, particularly the impartial advice from digital advisors and the comprehensive roadmaps. These services were generally seen as valuable in helping businesses understand digital technologies, clarify their needs, and develop a structured approach to adoption.
- Firms and stakeholders highlighted that the regional delivery model has also led to some inconsistency in the support provided to businesses. Firms also noted that in some cases, it was sometimes challenging to obtain specialist expertise – e.g. in AI, automation, or ERP systems. Some firms also considered they may have benefitted from a longer-term relationship with their IDT advisors, with the support available focused on initial implementation issues.
- The grant application process was considered generally smooth and efficient. Due diligence procedures are also in place to mitigate risk and ensure public funds are used effectively. However, considerations around additionality was assessed differently across the regions, and there may be opportunities to strengthen this aspect of the grant allocation process – particularly if the programme is used to award larger grants in the future.
- The multi-layered governance structure of the Made Smarter Adoption programme, with regional autonomy and DBT oversight, is generally effective in monitoring progress. Regular reporting requirements (monthly and quarterly), both financial and performance-based, provide sufficient oversight to DBT on the regional implementation of the scheme. However, inconsistencies in data collection and reporting across regions, stemming from a lack of standardised definitions and methodologies, hinder national analysis and comparability.
- Greater standardisation of core programme elements, such as roadmaps and leadership training, could potentially ensure a consistent service across regions and reduce duplication of effort. This standardisation might focus on key aspects like content, objectives, and delivery format, while allowing for some regional flexibility to address specific local needs. Centralising functions like CRM, marketing, and advisor support may also improve consistency, whilst creation of a pool of specialist advisors could address niche technical needs that may not be met by regional teams.

4.2 Overall programme governance

The Made Smarter Adoption programme is managed by a multilayered governance structure reported in Figure 4.1. These arrangements aimed to ensure coordination and accountability between the regions, involved in the day-to-day delivery of the scheme, and central government, providing broad guidelines.

Figure 4.1: Made Smarter Adoption governance structure



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Consultations with DBT stakeholders and regional leads confirmed that the existing Made Smarter Adoption governance arrangements are sufficiently robust to monitor progress and support achievement of the programme's objectives. More specifically, consultees reported:

- **Effective governance:** Consultees agreed that the regular reporting requirements (monthly and quarterly), both financial and performance-based, are evidence of effective monitoring and provide sufficient oversight to DBT on the regional implementation of the scheme. Regional leads, while desiring more formalized communication channels, acknowledge that the existing structure allows for flexibility and responsiveness to local needs, ultimately contributing to the programme's success. *"With regards to the national kind of Made Smarter governance, I think they have included us, they have listened. So, I've been quite comfortable with it so far"*. Among DBT stakeholders, programme expansion from April 2025 has been a strong driver to reconsider the current governance arrangements and to ensure these will be adequate to monitor the programme nationally. *"We have put in place a new coordination group to bring all regions together because there's a huge amount of learning to be done across all nine regions now which will be delivering the scheme from April"*.
- **Communication practices:** There was a consensus amongst stakeholders that communications between the regions and DBT could be more consistent and structured. While informal communication channels exist, regional leads expressed a strong desire for more formalised meetings and knowledge sharing with DBT. Regional leads referred to the pilot phase of the scheme, where meetings between regions and central government occurred monthly, but were discontinued from 2022 onwards: *"There*

used to be a series of meetings in the pilot phase where we would all meet with the regions and with government. Those got cancelled, in the full deployment of 22 onwards. So, the regions basically set [informal meetings] up because we wanted to share best practice and maintain some level of communication between ourselves". The view amongst regional leads was that the absence of official and centrally coordinated meetings hindered the sharing of best practices.

- **Effectiveness and transparency of decision making:** Stakeholders generally found decision-making processes efficient, with a sufficient level of consultation between regions and central government. *"Ultimately, we don't have all the answers to delivering the programme. So, it is very much a collective effort, and we are open and transparent as to what we do and how we do it".* However, some regional leads expressed a desire for more feedback from DBT on their monitoring reports.
- **Regional vs central delivery model:** Stakeholders also consistently reported that the current delivery model, where regions are given a certain degree of autonomy over a fully centralised system, appears to work well with respect to engagement and building trust with local businesses. Regional leads also emphasised the importance of being able to tailor programme delivery to the specific needs and contexts of their regions. This includes considering local industry strengths, and geographical challenges. *"Each region has different needs, different businesses... if you just came out with a blanket offering, you wouldn't get that kind of one-to-one impact."*

However, greater standardisation was called for in relation to specific aspects of the scheme, especially in the context of the future expansion of the programme, building on the experience gained in the past 3 years. More specifically, consultees recommended:

- **Standardisation of the road mapping and leadership and management services:** The Made Smarter regional model worked well because it allowed some flexibility to customise the programme's services for the local businesses. However, this meant that the same service could be delivered very differently across regions. An example was made about roadmaps, that in some regions cover *"a couple of pages, while in another it might run to 30 pages"*. Similar observations were also with respect to the leadership and management course (which, while similarly branded, has differing content and objectives across regions) and advisory support (where some regions have greater depths of specialist advisors than others – e.g. the High Value-Added Manufacturing Catapult in the West Midlands). Stakeholders from central government also highlighted the need for greater consistency of service to ensure comparable quality and reducing duplication of effort.
- **National expertise and resources:** Another point was made about the need to reform and centralise the technical advisory support provided within Made Smarter. Specifically, consultees recommended pooling the technical expertise providing in a single service, providing support based on a specific need rather than based on geography. This would include expertise in emerging technologies like AI or automation and would prevent IDT knowledge from being concentrated in one region, allowing it to be shared as needed. This point was especially relevant for highly specialised, niche technologies, where knowledge is not widespread and is held by only few advisors (and as flagged in the following section, such specialist advice will be needed if the needs of more digitally advanced businesses are to be met more effectively). *"You can conceive of certain specialist interventions... where there just wouldn't be the volume of demand in any region individually to justify... hiring that expertise. But if that expertise was a national resource that could be deployed to regions as needed, that could be a good approach."*

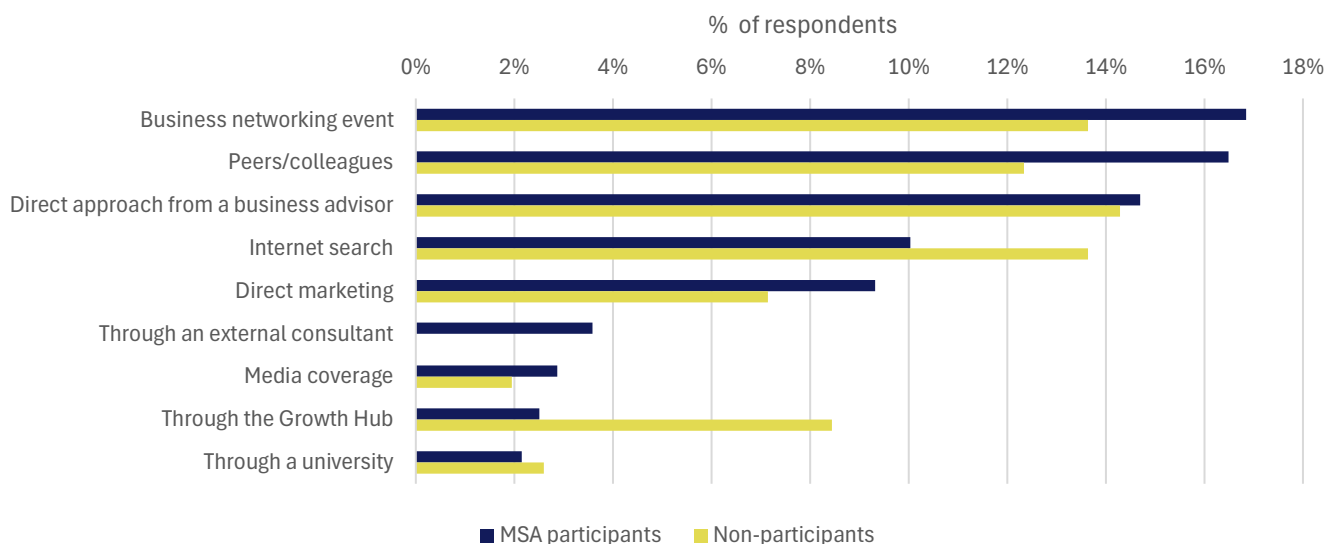
Some stakeholders also raised the possibility of upskilling technology advisors, where their knowledge of specific IDTs was lacking. *"I think one of the challenges will be because we put so much on the advisors and their capabilities, and inevitably they come with their specialisms. So, I think there's something about making sure the advisors are upskilling".*

- **Central resources hub:** Some stakeholders suggested the enhancement to the MSA website, to host best practices, training materials, case studies, supplier directories, and other resources.
- **Unique CRM system:** Stakeholder also highlighted the potential value in a national Customer Relationship Management (CRM) system, such that details of the Made Smarter Adoption beneficiaries will not feed into the regional CRM but a national database, as this would make data collection about businesses more efficient. *"And then if they've registered, you've got the details, you know, we have to update our CRM system, but it would be quite as easy just to update a central CRM system."* Another stakeholder claimed: *"At the very least, the data should be comparable. And if it isn't, then that can be mandated by the centre. But I think having a place to put all the data, one place would be a sensible approach."*

4.3 Marketing and engagement

As highlighted in the previous chapter Made Smarter has proven highly effective in engaging its target group. Consistent with prior evaluation research into the programme, the regions have principally relied on informal marketing and/or word-of-mouth awareness raising to promote the programme. These mechanisms have proven effective in stimulating sufficient demand for the programme to enable the five regions to meet their targets for engagement with businesses.

Table 4.1: Means through which firms became aware of Made Smarter Adoption



Source: Ipsos UK, beneficiary (279) and non-beneficiary (154) survey w1 and w2.

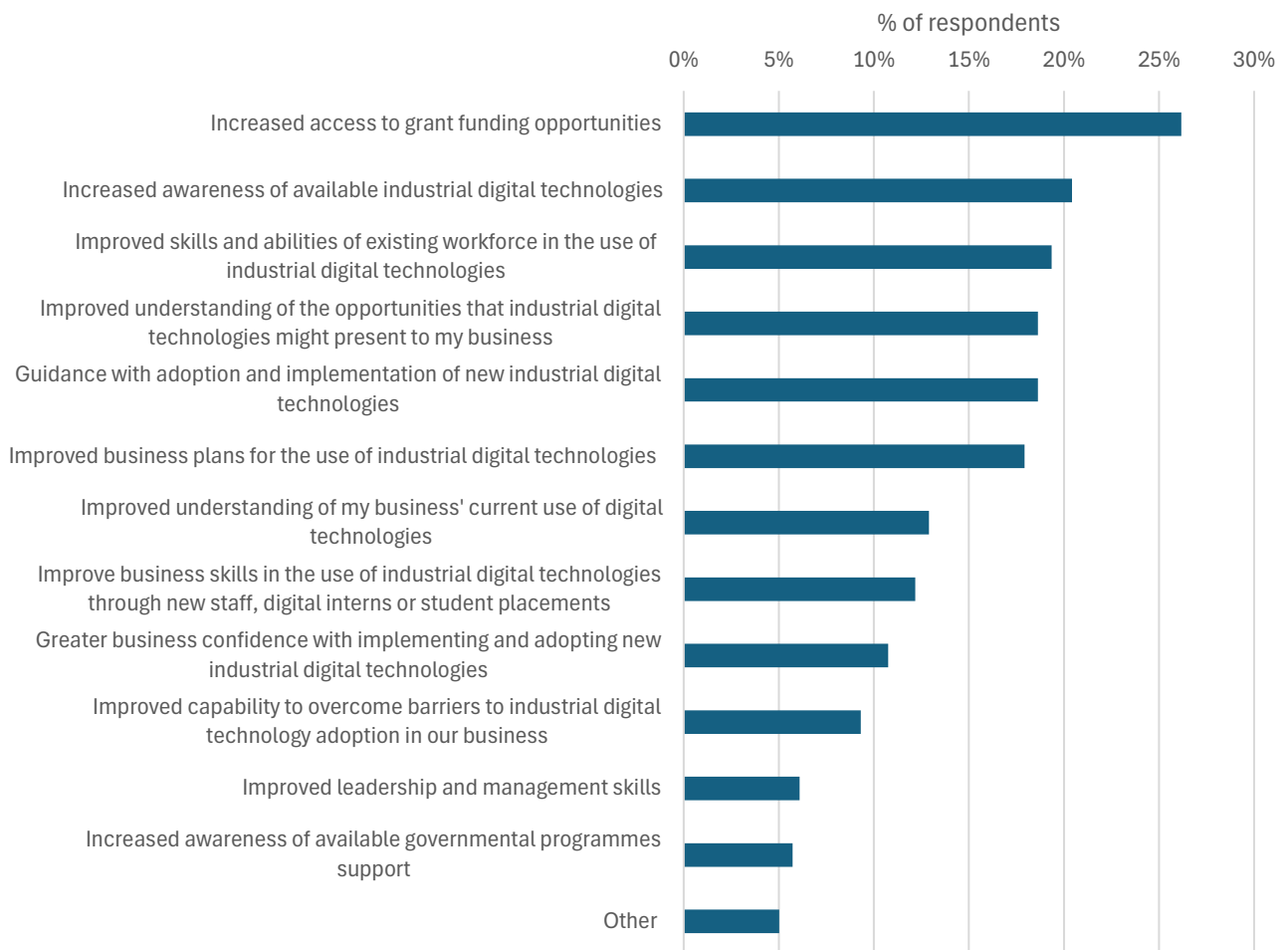
The regions employed multiple channels, such as social media (LinkedIn, Facebook), mailings to business members of Growth Hubs, radio campaigns and referrals from Made Smarter beneficiaries (with the specifics varying across regions). The key themes emerged around the promotional activities are:

- **Digital marketing:** Most regions relied heavily on social media (LinkedIn, Facebook) to raise awareness and engage with businesses. Although in one region it was reported that social media marketing was very effective with the “low hanging fruit” (i.e. businesses already keen on digitalisation), while now that the scheme had been in place for some time, these strategies were less successful. As such they decided to employ more “face to face marketing, and very localised events” to try and reach businesses that are less digitalised and hence hard to reach. This suggests that, particularly in one region, the pool of companies keen on digitalisation, is reducing and as a consequence the engagement strategies need to evolve accordingly.
- **Dual approach:** One region reported having adopted a dual marketing approach for businesses located in urban versus firms based in rural areas. The region relies on physical events and direct approaching conducted by the digital advisors to engage urban businesses and on radio advertising to reach firms based in the rural areas.
- **Tailored marketing:** Stakeholders recognised also the need to tailor marketing content to resonate with different business types, particularly micro versus larger SMEs. However, they generally utilise the same channels, adjusting messaging and content to target specific audiences. *“We use the same channels for both audiences... but we do change the content. If we want more micros, we'll emphasize the content around stuff that's interesting to micros.”*
- **Referrals and case studies testimonials:** Another effective way of attracting new businesses has been via referrals from Made Smarter Adoption beneficiary firms as well as “peer-to-peer testimonials” and the presentation of successful case studies to business audiences (mostly among the Growth Hubs’ contacts). Generally, there was consensus among stakeholders that the Made Smarter brand had increased its profile since the start of the programme and got strong recognition among manufacturers: *“The Made Smarter brand has got traction, it's got gravity, it's recognized, it's got a good reputation out there.”* In one instance, the budget allocated to marketing was redirected towards the provision of roadmaps, as the marketing activities were considered already successful: *“We've essentially dipped into our marketing budget... to supplement further roadmaps because the Made Smarter brand is so much more prevalent.”*

4.4 Application process and enrolment

4.4.1 Motivations for application

Among Made Smarter Adoption beneficiary businesses, 25 percent applied to access grant funding opportunities, while 21 percent sought to increase their awareness of the digital technologies available. This finding is in line with feedback from case studies and regional stakeholders, who reported that grants have been a significant factor in attracting eligible businesses to apply.

Figure 4.2: Motivations to participate in Made Smarter Adoption among beneficiaries

Source: Ipsos UK, beneficiary and non-beneficiary survey base (279) w1 and w2.

A similar pattern is observed amongst firms that made initial engagement with Made Smarter Adoption but did not progress their involvement further (where 62 percent reported that the prospect of obtaining capital grant funding was the aspect of greatest interest).

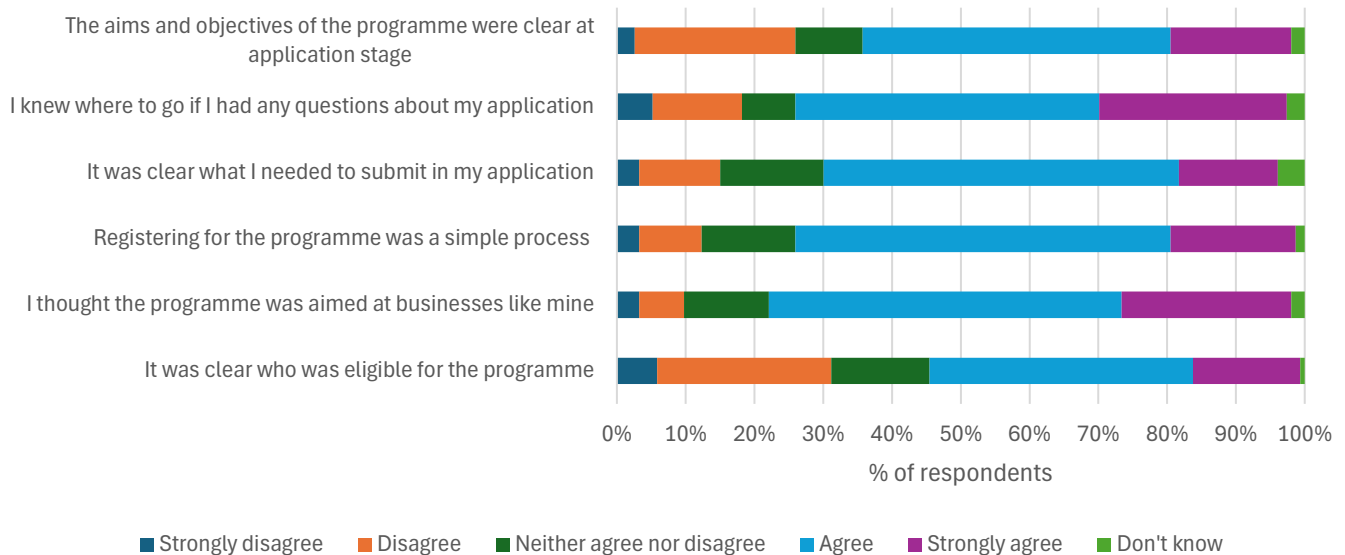
4.4.2 Application process

With respect to the application process, the case studies indicate that the majority found it straightforward, especially when guided by an advisor. *"Pretty simple, to be honest with you. It was an initial meeting and discussion of what, I think it was [redacted] that came to see me, just discussing what could be offered to us and how many days we wanted, and the decision was down to myself, and just decided to go with it."* Applications also took place through the Made Smarter website that was rated positively by applicants.

Case studies however, found that in few instances business owners found the process unclear, particularly in understanding what the programme entailed and how it would benefit their specific business. This was particularly true for companies with low digital readiness levels, that did not seem to grasp the potential benefits of the scheme: *"I wasn't 100percent what exactly it was, what it was enhancing. It just covered digital technology; it didn't have any specifics. It's hard for me, not being fully versed of all the digital technology out there"*.

The survey of firms that made initial engagement with Made Smarter Adoption but did not progress their involvement further, while showing strong satisfaction with the initial registration process, were less likely to agree that the aims and objectives of the programme were clear at the application stage and that the eligibility criteria were clear. As such, there may be opportunities to improve communications around these aspects.

Figure 4.3: Views of on the registration process, firms that made initial engagement with Made Smarter Adoption but did not progress their involvement further



Source: Ipsos UK non-beneficiary survey. Base (154) w1 and w2.

4.4.3 First assessment

Once firms have applied to Made Smarter, they are contacted by the programme's advisors and conduct a pre-engagement assessment, to understand their suitability for the programme (digital maturity and readiness for adoption):

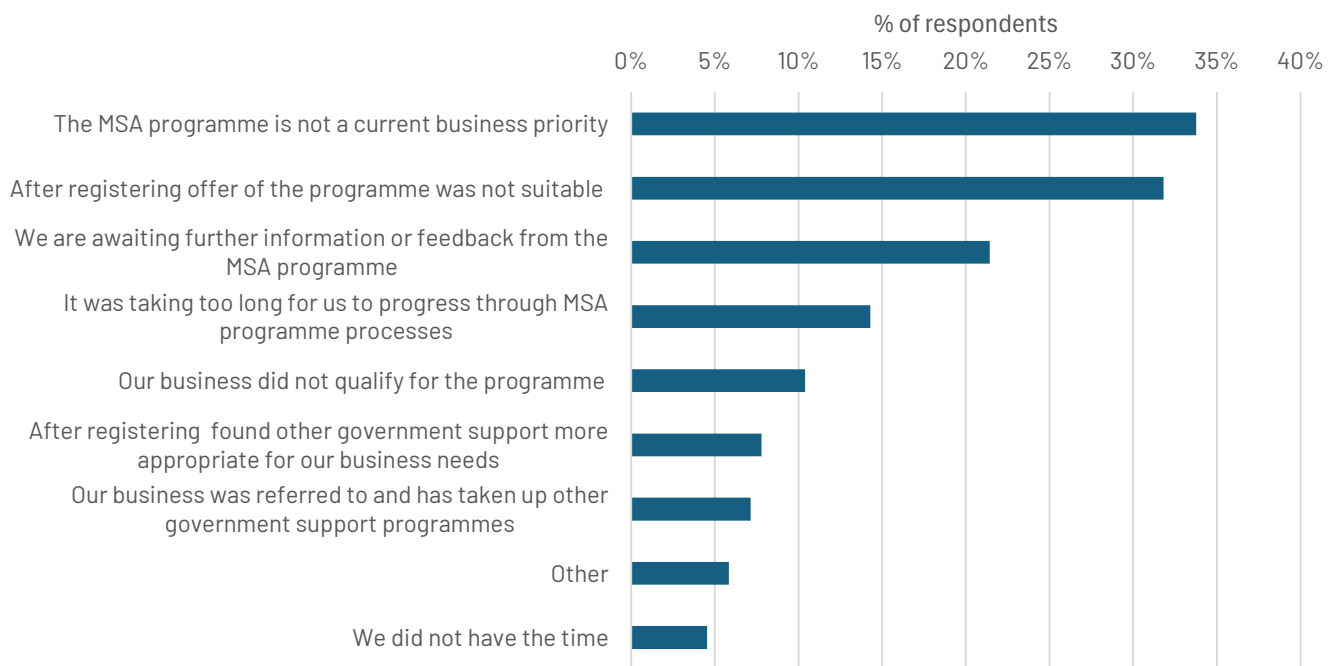
- **Increased understanding of IDTs:** Many businesses reported that the assessments helped them gain a better understanding of IDTs and their potential applications in their specific operations. This was particularly true for businesses that were new to digital technologies. *"It made us more aware of what we could do. Obviously, I wear many hats, I'm not an expert in digitalisation, it just made us aware of what we could do and what we could do if there was further funding and if we were to invest in more."*
- **Clarification or validation of business needs:** The assessments also helped businesses clarify their own digital needs and priorities. For firms that already had digital plans in place, the assessments provided valuable validation and external perspective. *"Perhaps talking to someone independent about it helped me clarify, verify that that was the right choice".*

4.4.4 Reasons for disengagement

As shown by Figure 4.4, firms that made an initial engagement with the programme, but did not progress their involvement further, the most common reason given for disengagement was that the programme was not considered a business priority (reported 35 percent of respondents). However, a further 32 percent reported that after registering they realised the offer of the programme was not suitable for their business

(again highlighting potential opportunities to improve communications around the scope and focus of the programme).

Figure 4.4: Reasons for disengagement with Made Smarter Adoption (non-beneficiaries only)



Source: Ipsos UK non-beneficiary survey. Base (154) w1 and w2.

4.5 Overall satisfaction with support package

The Made Smarter support package consisted of different services: digital roadmaps, intensive support, leadership and management programme and grants' offering. The following section assesses each service, considering the evidence collected through the different strand of research. Overall, the package of support was positively received by participants, with 86 percent of respondents responding to the survey reporting that they were either very or fairly satisfied with Made Smarter Adoption. This result is in line with the Made Smarter North-West Adoption Pilot beneficiary survey (2021), where businesses interviewed reported very high levels¹³ of satisfaction with all the services provided by the scheme. Additionally, evidence collected through the case studies suggested that the main reasons driving MSA beneficiaries' satisfaction were:

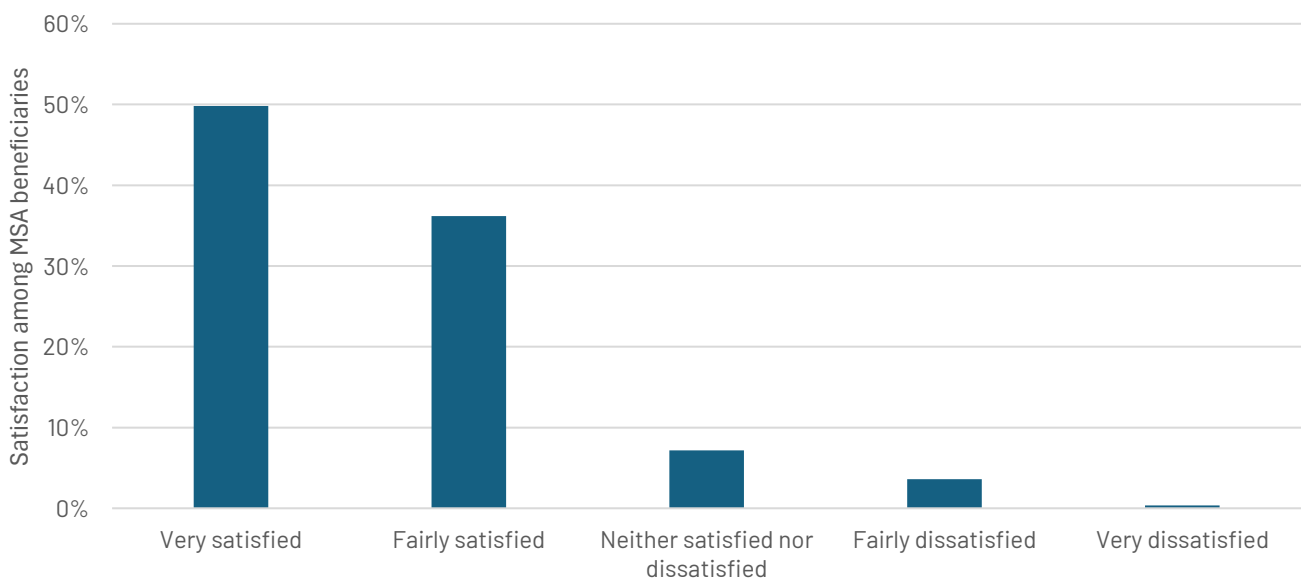
- **Quality of advisory support:** The majority of business leaders benefitting from MSA support package, were happy with the advisory support received. MSA participants often reported that the practical expertise and in depth knowledge of IDTs in the manufacturing sector "exceeded expectations" and supported firms making informed decisions about technology selection. It was also flagged that the advisors had been friendly and "assisted businesses along the way giving them extra advice". This

¹³ It is not possible to report an overall satisfaction figure for the Made Smarter Adoption NW pilot 2021, as the question was asked differently in that instance. Respondents were asked to rate their satisfaction with respect to each service provided rather than provide an estimate of the scheme. However, in the NW Pilot, respondents expressed very positive opinions for all services.

suggest a positive and high engagement between beneficiary businesses and Made Smarter advisors, that contributed to the high level of satisfaction with the programme overall.

- **Application process:** The application process was consistently rated positively, for its simplicity. Businesses had no major issues applying for the programme and reported that: “the process was straightforward, not a problem at all”, or “From what I actually experienced, it was really really easy... we've applied for like productivity grant in the last few years and I think they were a lot more onerous than this one”.
- **Holistic nature of the scheme:** The programmes’ multifaceted approach was equally valued: “To have something that has that breadth, both grant and advisory is really valuable as well as the training actually”. A East Midlands’ manufacturer, appreciated the complementarity and the relevance of the support provided, highlighting the scheme’s comprehensiveness.

Figure 4.5: Overall satisfaction with the support provided by Made Smarter Adoption



Source: Ipsos UK, beneficiary survey. Base (279).

4.5.2 Quality of roadmap workshops

Digital Roadmaps offered through the Made Smarter Adoption programme were aimed to help guide businesses through digital transformation. These workshops brought together business decision-makers and expert advisors to identify areas for improvement and develop a tailored digital adoption roadmap. The digital roadmap process included a Digital Readiness Level (DRL) diagnostic, carried with different tools¹⁴ aimed at assigning each Made Smarter Adoption beneficiary with a digital maturity score, following the PAS 1040:2019 guide developed by the British Standards Institution (BSI)¹⁵. These workshops were generally

¹⁴ The North West and West Midlands used a digital diagnostic tool developed in house, while the North-East, the East Midlands and the Yorkshire and Humber, adopted an assessment tool developed by Edge Digital.

¹⁵ The PAS 1040:2019 can be found here: https://www.bsigroup.com/contentassets/266b2326fa5141f6b249003b514ae5be/pas_1040_a5_leaflet.pdf

viewed positively by participating businesses, and played a crucial role in stimulating strategic thinking, providing a structured approach to IDT adoption, and offering valuable advisor support:

- **Stimulating strategic thinking:** The case studies suggested that the road-mapping workshops were helpful in supporting businesses, stimulating their strategic thinking and helping to provide a structured approach to IDT adoption (as described further in the following section). The workshops encouraged businesses to look beyond immediate challenges and explore the full potential of digitalisation, prompting them to consider how a wider range of IDTs could transform various aspects of their operations, leading to potential long-term benefits. The road-mapping process facilitated the creation of a long-term vision for digital transformation, guiding informed decisions about IDT investments and ensuring alignment with overall business goals.
- **Advisory support:** The general feedback on Made Smarter digital advisors was mostly positive, with beneficiary businesses consistently praising the support received by the advisor, offering expert guidance and tailored recommendations in most cases. During the digital roadmapping workshops, advisors' support materialised in different ways, by a series of Teams calls with the business owner as well as on-site visits to workshops/factories. Some case studies reflected that the on-site visits during the were highly valuable as they allowed the advisor to gain a deeper understanding of the businesses' operations.
- **Views on diagnostic assessments:** Most firms' leaders interviewed reported that the assessment made by the digital advisor was appropriate and provided the right solutions for the business. Interviewees highlighted that the digital advisor *"made them think differently"* about the steps they needed to take to progress in their digitalisation journey: *"They asked all the relevant questions, and they make you look at things that you might not necessarily look at. So by doing that you're learning a bit more about your business because you're researching what you need to do to improve your business. So it all has a beneficial effect."*
- **Views on resultant actions:** In most cases businesses reported being able to effectively implement the actions agreed in the roadmaps. Feedback on these plans was generally positive, and businesses found them clear and actionable plans, in some instances the steps discussed during the road mapping where already something that firms intended to do but did not know how to approach in practice, in other cases business owners were unaware of the steps to take to digitalise further. *"What the roadmap identified, was the ERP system as the priority. This is a big two-year project and I would say what it has done is really kickstart that. So, we've done ERP. We have completed our workshop and our initial design and we're just about to move into our implementation phase. So I think we've progressed actually very quickly through that."* In the majority of cases, businesses reported that the advice received by the advisor helped them finding the right solution for their business and recognised the value and the quality of the digital advisor.

However, the case studies suggested there may be opportunities for improvement in terms of ensuring an effective digital advisor-business fit, balancing roadmap breadth with focus, and a more standardised approach:

- **Consultant mismatch:** While the support received from the advisors in the roadmapping workshops was rated positively by firms, in a small number of cases there were reported mismatches between the consultant's expertise and the business's specific needs. This was particularly problematic for

businesses needing specialised guidance, like those implementing large ERP systems or very specific AI-based IDTs. This aspect was highlighted by DBT stakeholders and supports the case for some reorganisation of the advisory services, where these are not just allocated geographically, but according to the business' needs. *"Our consultant probably didn't quite fit with the priorities within that roadmap, which was around ERP... Ours was a generalist. So, I think we probably didn't have initially the best fit of consultant. However, we've kept working with them, so. But, yeah, the road mapping was useful, but I think what it did identify was ERP was our main focus."*

- **Roadmap breadth vs focus:** In most cases, roadmaps provided a useful short to mid-term plan for IDT adoption but in one instance it was considered to be too broad (*"a 10 year plan", leather good manufacturer from the East Midlands*) and hence potentially less actionable. Another business found it confusing and not practically actionable and ended not implementing its actions after six months. The long timeframe of some roadmaps, and the wide range of digital opportunities presented, seemed to have made it difficult for some businesses to prioritise tasks, potentially leading to inaction.

4.6 Intensive support

The Made Smarter Intensive Support program provided an additional layer of assistance to businesses beyond the digital roadmap. This included over ten hours of tailored support to address specific needs, such as refining technical requirements for investments in IDTs developing business cases for projects, navigating other support programs, or improving sustainability practices. The goal was to support businesses delivering their digitalisation goals. Feedback gathered through the case studies indicated that:

- **Accessibility and responsiveness:** Several respondents praised the accessibility and responsiveness of their advisors, highlighting their willingness to answer questions, provide guidance, and offer support throughout the implementation process. One respondent noted that their advisor *"was always very helpful,"* and *"on hand,"* while another found that their advisors were *"genuinely quite active in trying to support us."*
- **Expertise:** Some respondents also highlighted the valuable insights and expertise provided by their advisors, particularly in relation to specific technologies or implementation challenges. This included the advisor's ability to identify opportunities they hadn't thought of, leading them to explore new avenues for improvement.
- **Support for grant applications:** Advisors often assisted businesses with their grant applications, ensuring they met the requirements and presented a strong case for funding.
- **Inconsistency in advisor expertise:** However, some businesses reported that the level of technical expertise among advisors varied and sometimes, as mentioned previously, there was lack of specialised expertise in specific technologies (such as AI-based IDTs). This aspect was also noted among DBT stakeholders, and it drove considerations about increasing the standardisation of the technical advisory services. Some businesses reported being paired with advisors who had a deep understanding of their specific needs, while others felt that their advisors were more generalists.
- **Lack of on-going support:** The programme's focus on initial implementation meant that some companies lacked ongoing support for addressing challenges that arose after the initial project was complete. One firm reported that the four days of consultancy support provided through the

programme was insufficient for their needs and expressed interest in ongoing support that they could buy into.

4.7 Leadership and management programme

Once businesses had completed the digital roadmap workshop, they were offered the opportunity to attend a Leadership and Management programme. This course was aimed at equipping senior leaders in manufacturing SMEs with the skills to navigate and leverage the opportunities of industrial digitisation. The programme used a blended learning approach incorporating site visits to best-practice manufacturers, project-based work within peer networks, and training materials developed by recognized business school in each Made Smarter region. In addition to the Leadership and Management Programme, the North-West region offered an additional digital training course for employees (Leading Change for Digital Champions) that will be adopted by all the other Made Smarter Adoption regions in 2025/2026.

Across the case studies the Leadership and Management training offered a broadly positive addition to the Made Smarter programme, providing participants with valuable knowledge, practical skills, and networking opportunities that helped them with navigating the challenges of digital transformation:

- **Relevant and insightful content:** The leadership and management training was seen as effective as it provided participants with relevant content that addressed real-world challenges faced by businesses undergoing digital transformation. Participants particularly valued the focus on practical skills and strategies, such as project management and communication, which they could directly apply to their roles. The training also helped broaden their understanding of Industry 4.0 technologies and concepts, enabling them to make more informed decisions about IDT adoption and more confidently lead their organisation through the digital change Made Smarter Adoption sought to enable.

One firm explained why the Leadership and Management course was beneficial: *"Have you got these leadership skills? And if not, then it makes you go back and reassess and hopefully next time you do the quiz and you know, that you've put them in place and implemented them. I think it's been beneficial, especially for people who haven't been in that sort of learning environment in the past as well."*

- **Enhanced understanding and confidence:** This training also enhanced participants understanding of, and confidence in, digital transformation. It helped provide a framework for understanding the process, making it feel less daunting and more achievable. Participants report that they gained knowledge and skills that boosted their confidence in leading their teams through digital change. *"It is also interesting to be with a cohort of other manufacturers in similar positions with similar problems. So, you know, you learn as much from the course and the lecturers and the modules as you do from the cohort of delegates participants, and we are already talking as a cohort about maintaining a network afterwards... So, that actual network and networking is almost as useful as some of the content from the programme and I think both the specific and the wider content of the programme is useful."*
- **Networking and peer-to-peer learning:** The training also helped to foster valuable networking and peer learning opportunities, in one region this programme also included site visits to large established manufacturers so that Made Smarter Adoption attendees could learn from those that are more advanced in their digitalisation journey. More generally, one of the benefits of the leadership and management programme was to create a supportive network for participants where they are able to seek advice and encouragement through their digital transformation journeys. *"Yes. I mean, I think we might be ahead, we've already started talking about that as an independent group, whether there's going*

to any facilitated mechanism for that, I don't know because we haven't finished yet, but we already decided as a group that we wanted to do it. So, we started exactly that, setting up a WhatsApp group and talking about visits to one of the other facilities."

A business leader provided feedback on the difference between online and in person sessions during the Leadership and management programme: *"Some (sessions) were quite information overload. There were pockets of interactivity, but a lot of it is just like sitting and listening and you know, when you're working from home or on teams, it's easy to, to wander a bit. But the in-person sessions were just so much better and it was easier to like collaborate as well."*

- **Time constraints:** The most significant barrier to the Leadership and Management training for some business leaders was the time commitment required, something that varied across the regions due to differences in delivery. In some regions this training required a significant time commitment from senior employees, taking up several days across a number of weeks or months, which was demanding for the programme's target audience of SMEs. In addition, the fixed schedule of the training programmes in certain regions further limited accessibility for those with demanding schedules.
- **Inconsistent delivery quality:** Some participants suggested that this training suffered from inconsistent delivery quality and a lack of tailored content. The reliance on external partners like universities and training providers resulted in varied instructor expertise and teaching styles, leading to uneven experiences for participants. Additionally, the "one-size-fits-all" approach to content did not fully address the diverse needs and experience levels of participants, with some desiring more in-depth coverage of specific topics and others finding some modules less relevant. This aspect raises an issue of how far diverse needs can be met by a single standardised course (and more tailored support may again be beneficial).

The Leadership and management programme receives positive feedback overall. Participants value the program's insightful content, particularly its focus on practical skills and strategies for digital transformation. The programme demonstrably enhances understanding of and confidence in digitalisation, providing a manageable framework for the process. Networking opportunities and peer-to-peer learning are also highly valued, with some participants establishing ongoing networks. However, the program faces challenges regarding time commitment, which varies across regions and can be demanding for SME leaders. Inconsistent delivery quality due to reliance on external partners and a "one-size-fits-all" approach to content are also noted. Some participants suggest a more tailored approach to better address diverse needs and experience levels.

4.8 Grant funding

The process of applying for grant funding through the Made Smarter Adoption programme was generally viewed positively by participating businesses. Most businesses interviewed found the grant application process to be relatively straightforward and user-friendly, particularly compared to other government schemes. The Made Smarter team was generally perceived as supportive and helpful throughout the process, suggesting the grant funding process has been set up efficiently.

In terms of the robustness of the assessment of grant applications, several steps have been in place to protect against the misuse of public funds. Stakeholders consistently reported that they applied financial due diligence, including credit checks and review of company financials, to ensure that grants are awarded to financially sound companies as well as being used for the intended purpose to protect against fraud.

Advisors also assess the proposed project's viability, ensuring the chosen technology is appropriate, aligns with the roadmap and does not include ineligible costs like software licensing.

However, while all regions reported that they considered additionality (i.e. the risk that public funds would be allocated to projects that might have been taken forward in the absence of public funding) there was little consistency in the way this was approached. Most regions do minimal post-grant monitoring to track the impact of funded projects (e.g. follow-up checks to confirm that the assets acquired are effectively utilised). Strengthening these processes may not be proportionate in the context of a maximum grant size of £20,000, although it is recommended that this is considered if the programme was to award more significant levels of grant funding (as suggested in the following section).

5 Impacts on IDT adoption

The next section sets out an assessment of the effectiveness of Made Smarter Adoption in achieving its intermediate objective of stimulating the adoption of Industrial Digital Technologies (IDTs) amongst manufacturing SMEs (the following section considers the effects of adoption on underlying competitiveness and growth). This section draws on primary research with participating SMEs as well as econometric analysis seeking to quantify the effects of the programme on investment levels.

5.1 Key findings

- Made Smarter Adoption is well-designed to address the key barriers to IDT adoption faced by manufacturing SMEs. The programme's core elements – expert advice, road-mapping, leadership training and grant funding – directly target the financial constraints, lack of awareness, implementation challenges, risk aversion (arising from the perceived novelty of IDTs and the pace of technological change) and skills gaps that firms commonly report.
- The programme has been successful in raising Digital Readiness Levels (DRLs) and promoting IDT adoption among participating firms. Firms participating in Made Smarter Adoption progressed to higher DRLs than initially engaged firms that did not participate, while almost 80 percent of firms reported adopting some form of IDT.
- While the programme has catalysed investments in training, the skills of the workforce remain an ongoing issue for many firms and has hindered the implementation of digitisation initiatives. Persistent skills gaps, particularly in advanced digital skills, highlight the need for a greater focus on workforce development within the programme. This could involve providing more direct support for training, promoting apprenticeships and traineeships, and collaborating with education and training providers.
- The programme appears to be most effective for firms at lower levels of digital readiness. More advanced firms, while benefiting from grant funding and validation of their plans, may not gain as much from the general awareness-raising and basic training components. Adapting the programme to offer more specialised and advanced support for digitally mature firms could enhance its impact.
- Participating firms tended to reach a digital maturity ceiling at DRL5, beyond which they rarely progressed further. Some of this is explained by the timeframes of the evaluation, with many firms only recently participating in the scheme. However, case study evidence highlighted a range of factors that hindered on-going progression, including a tendency to see digital transformation projects as one-off 'stand alone projects,' lack of alignment between digital improvement and wider business improvement projects, and adequacy of financial planning to ensure sufficient resources for on-going improvement are allocated. Adapting the programme to provide more ongoing support could encourage firms to embed a more strategic and long-term approach to digitalisation.
- There are questions about the sufficiency of the current grant amount (£20,000) to support transformative digitalisation projects, such as ERP system implementations or extensive automation. Adapting the funding model to offer tiered grants, allow multiple grant applications, or explore alternative funding mechanisms could enable firms to pursue more ambitious initiatives and achieve greater productivity gains, increasing programme's additionality.

5.2 Baseline levels of IDT adoption

5.2.1 Business drivers of interest in IDT adoption

Case studies of participating SMEs revealed a range of factors driving their interest in adopting IDTs:

- **Competitive pressures:** Participating SMEs highlighted that they were facing competitive pressures that were driving their interest in IDTs. This was frequently framed in terms of higher input costs relative to overseas competitors – including the costs of labour, energy, premises and raw materials. There was also a perception that the UK had experienced greater upward pressure on wages since 2022 than other nations. Some respondents specifically referenced issues with a declining quality of skills supply and on-going increases to the National Minimum Wage in reducing their competitiveness. Some firms also highlighted that e-commerce platforms (e.g. Shopify) had become more accessible and had enabled other manufacturers to sell directly to consumers, reducing barriers to entry, and broadening the base of competition they faced.
- **Recognition of inefficiencies:** Firms highlighted that outdated or underutilised systems were producing inefficiencies. They often highlighted that systems were poorly integrated with other systems, resulting in slow information flow, reliance on paper-based processes, and poor stock control. Other businesses recognised the potential of automation to improve efficiency, reduce errors, free up staff for higher-value tasks, and eliminate production bottlenecks.
- **Existing interest in digital technologies and innovation:** There was also a group of firms with significant prior interest in digitalisation and its potential to drive business growth and competitive advantage. These firms had often already implemented some forms of digitalisation, and were typically seeking external expertise and validation and to expand their capabilities and integrate or automate their systems further.

The interviews also highlighted that the firms engaging with the programme included a combination of businesses with a clear vision that had identified specific problems and had specific digitalisation projects in mind, and others with a general awareness of the potential for improvements but who were either open to different technology options or were heavily reliant on advisors to help identify potential solutions (with variable levels of baseline understanding of digitalisation).

5.2.2 Baseline levels of IDT adoption

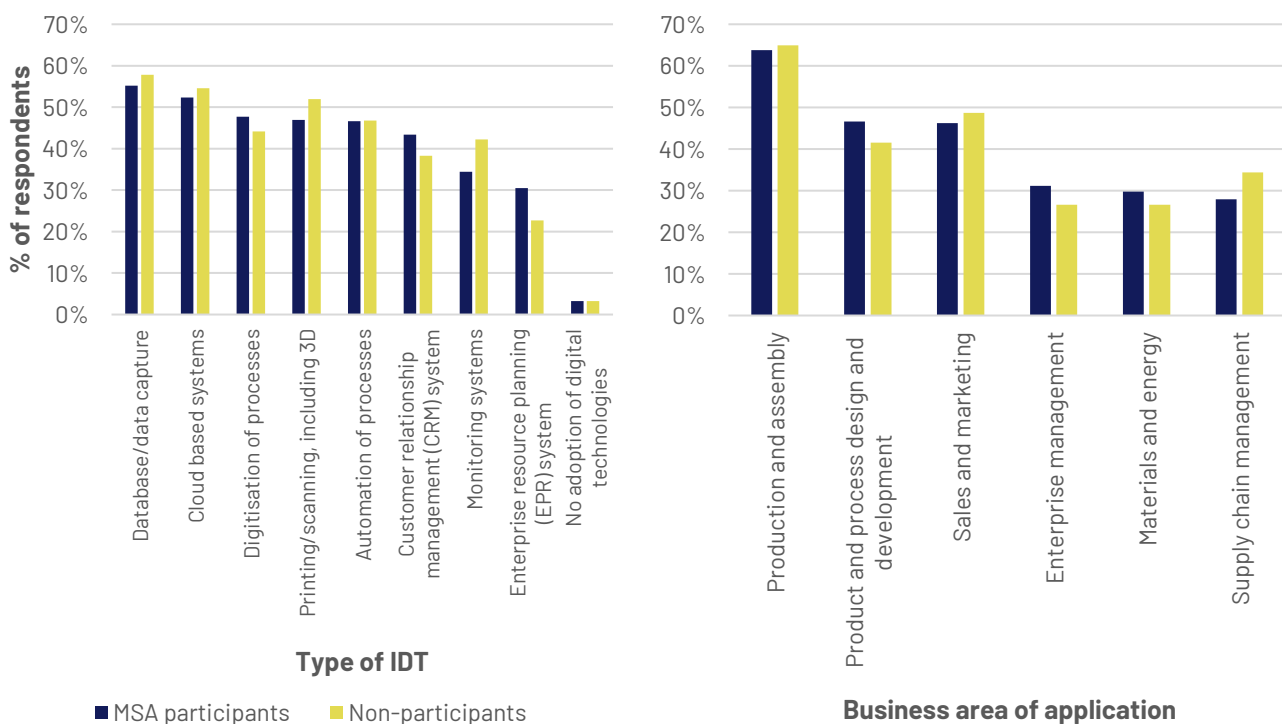
The findings of the study indicated that, superficially, adoption of IDTs were widespread amongst participating SMEs. However, technologies were generally adopted on a piecemeal basis, with systems often in need of updating and/or integration, with most participating firms showed low levels of digital maturity:

- 97 percent of participating firms responding to the survey reported that they had adopted at least one form of IDT prior to their engagement with the programme. A broad mix of technologies were reported, covering both production technologies (e.g. 3D printing and industrial process automation) and enterprise management and planning systems.
- However, while baseline adoption levels were reportedly widespread, the case studies illustrated the wide range in levels of digital maturity on entry to the programme. In most cases, firms had some level of prior IDT adoption, but this was focused on specific functions and digital systems were typically not integrated. As highlighted below, most firms reported that their digital maturity levels were low (with

the majority at DRLs 1 to 3 prior to their engagement with the programme). However, there were also both examples of firms demonstrating extensive IDT adoption (e.g. a company using virtual reality and 3D printing technologies for automotive design and prototyping) through to firms with no prior experience of digitalisation (including one firm that relied heavily on hard-copy paperwork for processes like quoting, delivery notes, and invoicing).

- Participating firms reported an average annual investment level in IDTs of £130,000 for the 2021/22 financial year. The majority (£115,000) was accounted for by investments in industrial equipment, with the remainder (£15,000) being invested in software. Just under a third (28percent) reported that they made no investments in IDTs in 2021/22. There were no material differences in the IDT adoption profile of programme participants and those that engaged with the programme but did not progress their involvement to the digital road mapping stage.
- Levels of initial digital readiness also did not necessarily determine levels of ambition for digitalisation. Some businesses with low initial levels of digital maturity displayed measured ambitions and were focused on addressing specific challenges with smaller scale digital solutions (seeing participation in the programme as a way to take their first steps towards digitalisation). However, some companies had highly ambitious goals for digital transformation, seeing digitalisation as a means of achieving significant productivity gains to improve their competitiveness.

Figure 5.1: Reported rates of IDT adoption by technology area and business area of application



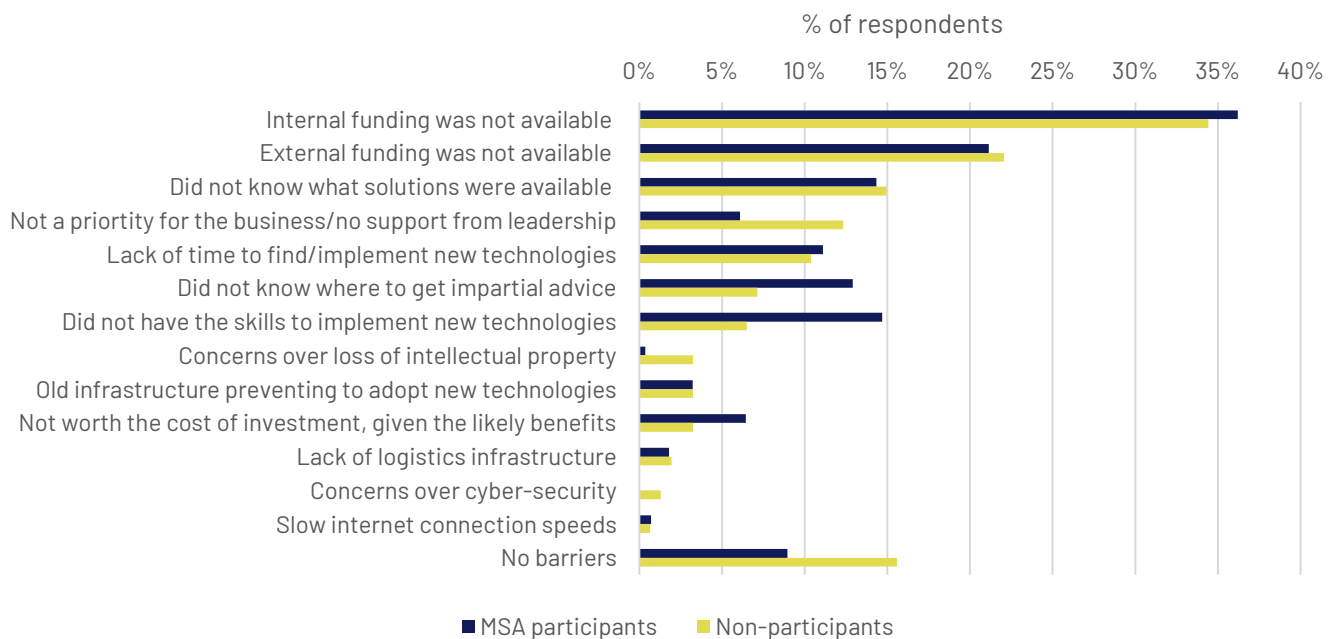
Source: Survey of Made Smarter Adoption participants and firms that engaged with Made Smarter Adoption but did not progress to Digital Roadmapping.

5.2.3 Barriers to adoption

The survey of participating firms highlighted that funding constraints were considered the principal factor constraining investment in IDTs amongst both firms that participated in Made Smarter Adoption and a sample of firms that made initial engagement with the programme but did not progress their involvement further.

Other types of issue – such as lack of time, level of priority given by senior leaders, or knowledge of the available solutions – were less widely reported.

Figure 5.2: Factors inhibiting business investment in Industrial Digital Technologies



Source: Survey of Made Smarter Adoption participants and firms that engaged with Made Smarter Adoption but did not progress to Digital Roadmapping

Interviews with participating firms provide further details on these issues:

- **Financial constraints:** Financial constraints were the most widely reported barrier to adoption of IDTs. Some respondents highlighted low profit margins and unpredictable cash flow as factors limiting their ability to attract external finance and their ability to invest. However, several risks associated with investment in IDTs were highlighted by respondents that limited appetite for investment. This included elevated uncertainty in relation to the return on investment (e.g. relative to replacing existing machines), the perceived novelty of some IDTs (e.g. one respondent highlighted the need for a technology to be 'tried and tested' before they would be willing to invest), and the speed of technological advancement (creating worries that technologies would quite rapidly become obsolete).
- **Anticipated implementation challenges:** Many businesses also anticipated that implementation of IDTs would involve frictional costs owing to the complexity of integrating IDTs with existing systems and processes (requiring careful planning, technical expertise, and the commitment of significant time to ensure successful implementation).
- **Lack of awareness and understanding:** Lack of understanding of both the available technologies and ability to evaluate competing options were also widely reported as constraints.
- **Skills:** Several firms highlighted skills issues as a significant barrier to change. These ranged from deficits in basic IT skills issues in the workforce, with one respondent describing much of their workforce as 'not computer literate' through to specific technical skill gaps (e.g. in automation). These

skill gaps could not easily be addressed through recruitment, with one company highlighting that it took two years to recruit an IT manager with the right skills.

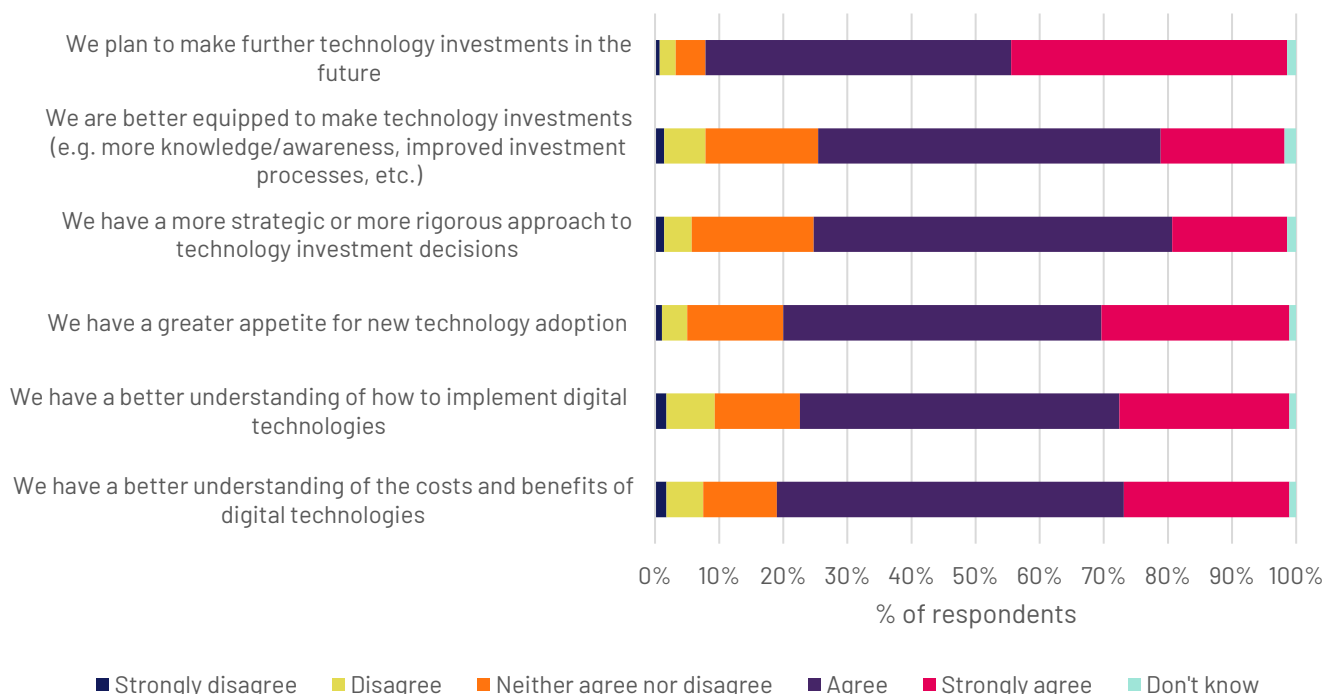
- **Resistance to change:** However, personnel issues were not limited to challenges with the skills of the workforce. Many respondents also highlighted cultural issues that created barriers to adoption – including resistance amongst employees to changes in working practices.

These themes closely aligned with the rationale for the Made Smarter Adoption programme, with its key elements aligning closely to the key barriers to adoption faced by manufacturing SMEs. However, while the leadership and management programme was developed partly to help leaders manage the process of change and transformation, the programme has so far focused less on workforce development issues: workforce development has been provided in the North-West and is rolling out England-wide from April 2025.

5.3 Awareness and understanding of the benefits of IDTs

The Made Smarter Adoption programme appears to have been effective in raising awareness of the benefits of IDTs among participants. As illustrated in the following figure, the majority (at least 70percent) of programme participants agreed that participating in the programme had given them a better understanding of the costs and benefits of IDTs and how to implement them, as well as better equipping them to make technology investments. The programme also appears to have increased appetite for investment in IDTs, and more than 90 percent of programme participants reported that they planned to make further technology investments in the future.

Figure 5.3: Reported effects of participating in Made Smarter Adoption on understanding and attitudes to adoption of IDTs



Source: Survey of Made Smarter Adoption participants

The in-depth interviews with participating firms helped illustrate how the programme helped enable these outcomes:

- **Developing an understanding of costs and benefits of IDT implementation:** Participating firms provided a wide range of examples of how the different elements of the programme helped to build understanding of the costs and benefits of IDTs. This included the role of the road-mapping process and support provided by advisors in helping companies with quantifying the time savings or efficiency gains that might be possible with new systems, understanding costs of purchasing and installing new technologies, and calculating the payback period. While some firms (typically those of a higher digital maturity level) could make these assessments without assistance, participation in Made Smarter Adoption enabled many firms to access the external expertise and objectivity required to undertake these evaluations. The case studies also underlined the importance of these evaluations in supporting investment decisions. This was linked to the limited resources available to SMEs – several firms highlighted the centrality of a ‘clear ROI’ in securing buy-in for investment decisions from senior decision makers and sign-off from finance directors.

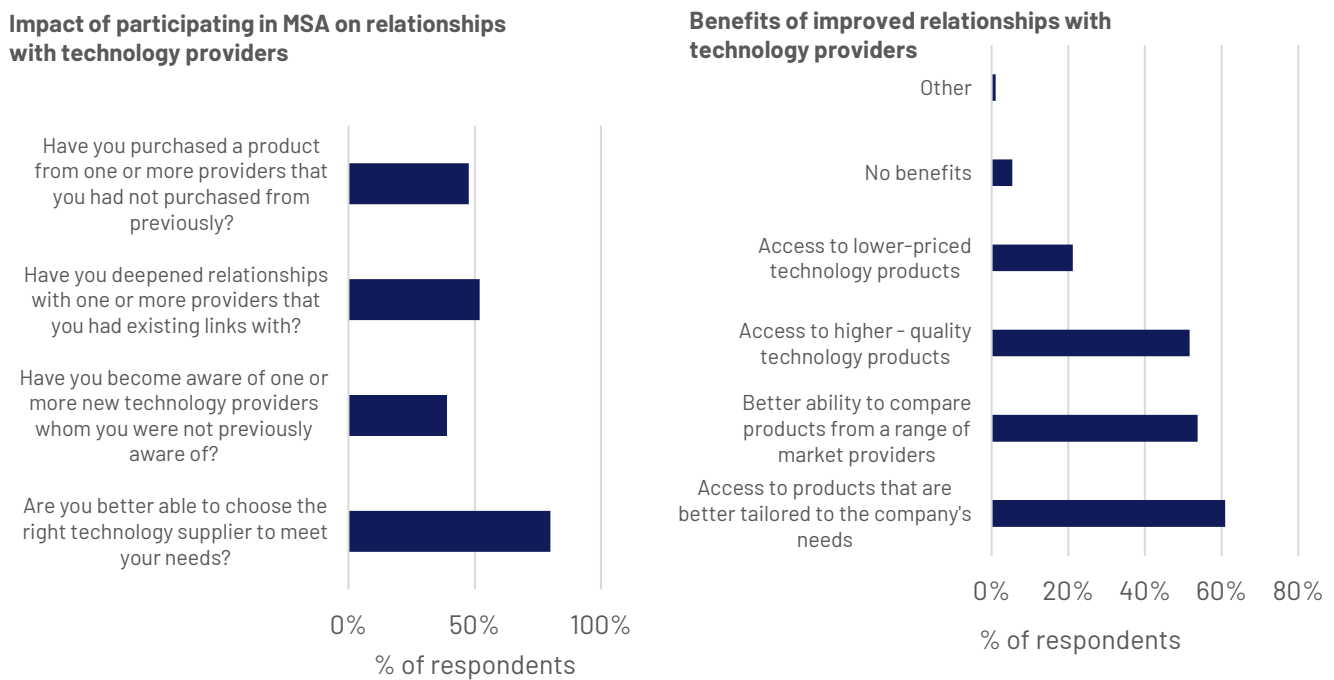
For example, one food and drink manufacturer reported a loss of four to five percent of their barrels annually due to an inefficient manual asset tracking system, representing a significant financial cost. Participating in the programme helped the company quantify these losses, identify a solution in the form of Radio-Frequency Identification (RFID), assess the likely savings from reduced asset losses, and estimate the payback period (reduced from 2-3 years to 1-1.5 years because of grant funding).

- **Exposure to new technologies:** The programme was also effective in exposing firms to new technology options, particularly for those with limited prior knowledge. Numerous firms highlighted the role of Made Smarter Adoption advisors in providing an overview of the wider landscape of technology solutions and the potential productive advantages offered by innovative approaches. Demonstrations and site visits were also frequently noted as an important mechanism for enabling firms to understand what was possible with advanced technologies. One illustrative example involved a site visit to Siemens that enabled one firm to see first-hand how other companies were using IDTs, including examples of automation, data collection, and process optimisation, which had a profound impact on their strategic vision for their own production operations.

Exposure to new technology options had a wide variety of benefits for firms. There were numerous examples of firms that discovered more suitable and/or cost-effective solutions, found inspiration for new ideas and innovation, or gained greater confidence in their decision-making. This was reinforced by the results of the survey. As illustrated in the Figure 5.4, more than 80 percent of Made Smarter Adoption participants indicated they were better able to choose the right technology supplier to meet the needs, 60 percent reported they were now able to access products that were better tailored to their needs, and more than 50 percent indicated they had improved their ability to compare products from competing providers.

This aspect of the programme was less important for those coming to the programme with a relatively high level of digital maturity. There were also some examples of firms that came to the programme with strong preferences for their existing suppliers and were reluctant to explore alternative options (despite the recommendations of the Made Smarter Adoption advisor) and may not have pursued the most suitable or cost-effective solutions. Case studies also highlighted the importance of ensuring that demonstrations were relevant – one steel fabricator highlighted its experience of attending the Manufacturing Technology Centre in Coventry in which it was given exposure to technologies that were too advanced for its current capabilities and potentially more suitable for large scale mass production operations than a SME operation focused on bespoke manufacturing.

Figure 5.4: Reported effects of participating in Made Smarter Adoption on relationships with technology providers



Source: Survey of Made Smarter Adoption participants

- **Implementation challenges:** The support provided through the programme also helped firms identify potential implementation challenges and plan for these effectively. The initial digital readiness assessments often highlighted areas of weakness in operations, the workforce, and processes, signalling potential hurdles that might need to be overcome, while advisors were also able to provide advice based on common industry patterns through both the Digital Road-mapping sessions and on-going advisory support. The leadership and management programme also provided senior leaders with an understanding of how to manage the process of change, while the opportunity to connect with peers also facilitated discussions with other firms' approaches to tackling cultural challenges giving further insights.

For example, one clothing manufacturer consulted was seeking to implement a digital production management system. The company was used to manual processes and had a workforce with limited computer skills and a history of resisting change. The Made Smarter Adoption advisor helped the company understand the importance of a structured change management programme involving clear communication about the system's benefits, training on its use, and incentives for accurate data entry. The advisor also recommended a phased implementation to minimise disruption and allow employees to adapt.

As signalled above, the Leadership and Management programme offered by the scheme, appeared to be less important for firms that joined the programme with a comparatively high level of digital maturity who were confident in their ability to evaluate competing technology options (a group that represented perhaps 20 percent of the firms engaged by the programme, based on the evidence around digital readiness levels below). While some of these firms valued the opportunity to validate their ideas with external advisors and

stay on top of technology trends, their principal motivation for engaging with the programme was the prospect of securing grant funding.

As these companies often came to the programme with a clear vision of what they wanted to achieve, there may be opportunities to improve the effectiveness of the programme by offering a tailored programme of support for more advanced firms. This could involve a shift from basic education around IDTs to strategic guidance on aspects such as prioritisation, integration and interoperability, data analytics, and advanced training. Specialist advisory support available on an 'on-demand' basis to allow firms to engage with the service in relation to specific problems, may also be more suitable for this group. An advanced programme of support could also help firms that advanced their digital readiness levels with the support of Made Smarter Adoption to progress further or more rapidly with their digitalisation journey.

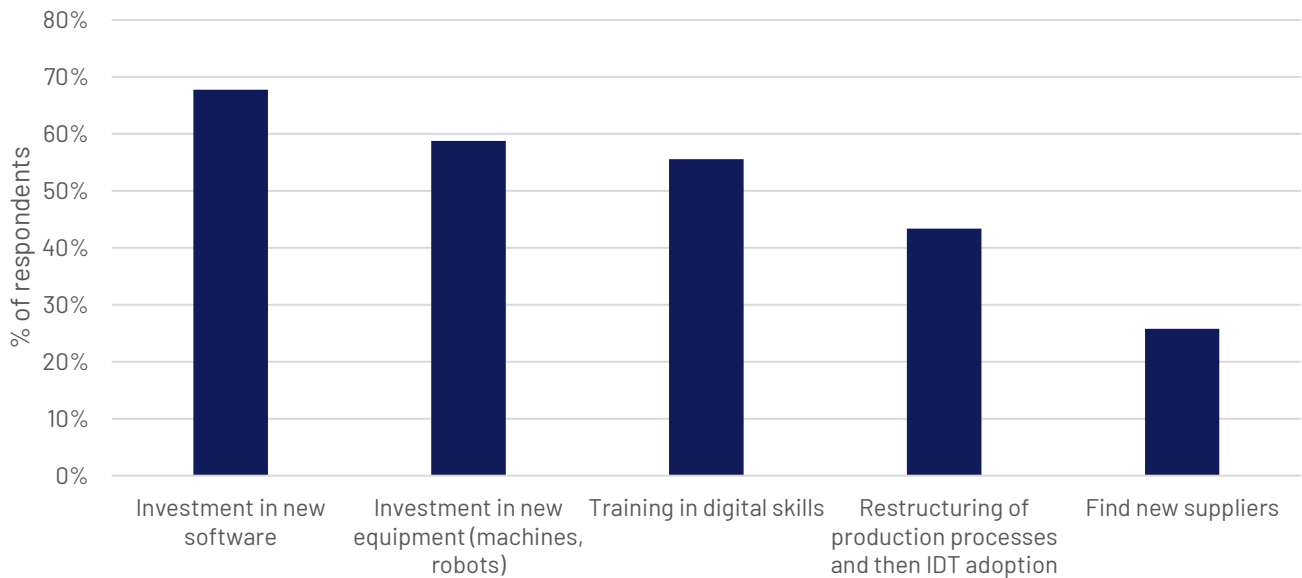
5.4 Development and implementation of adoption plans

5.4.1 Plans emerging from digital road mapping

The digital road-mapping process led to the formation of IDT adoption plans and the identification of a wide array of actions to be taken forward. The survey of participating firms suggested that these most frequently involved investments in new software (68 percent of cases), hardware (59 percent), and training in digital skills (56 percent). The case studies also revealed the diverse range of actions covered under these broad themes – including:

- Implementation or upgrading of Enterprise Resource Management systems.
- Software and hardware investments to promote production process automation with the goal of reducing unit labour costs.
- Digital marketing and e-commerce improvements – including implementation of new e-commerce platforms, search optimisation, and improving user experience for website visitors.
- Data collection and analysis – implementing systems to collect data from existing machines to enable more sophisticated analysis and improved decision making.
- Skills development and cultural change – covering both staff retraining and change management programmes to secure buy-in from the workforce to changes in working practices.

The level of ambition associated with these plans varied considerably, from incremental improvements to existing processes (such as improving stock control processes to streamline workflows), targeted improvements to production processes (e.g. automating specific processes to address identified production bottlenecks), and in some cases highly ambitious programmes of transformational change (complete overhauls of ERP systems or factory modernisation programmes). The level of ambition generally varied with the level of digital maturity of the firm – with more advanced firms tending to pursue more ambitious programmes – the level of financial resources available to fund investments, and the extent of the firm's expansion goals.

Figure 5.5: Reported actions identified through the road-mapping process

Source: Survey of Made Smarter Adoption participants

5.4.2 Progress made with implementation

The survey of participating firms suggested that the large majority of firms (84 percent) had made progress in implementing the actions identified through the road-mapping process – with 51 percent reporting that they had taken forward ‘some’ actions identified and 33 percent reporting that they had taken forward ‘most actions’ identified. Completion rates were also slightly higher for those that reported that they were awarded a grant (with 98 percent reporting that had taken forward most or some actions identified). It should also be noted that the survey represents a ‘snapshot’ taken at a particular point in time where some firms may have only relatively recently completed the road-mapping process, and implementation rates can be expected to rise further over time.

The case studies highlighted some variation across participants – with most firms making significant progress implementing their digital road maps, but with others experiencing delays, setbacks, or abandoning implementation plans altogether. This indicates that, while the digital road-mapping process provided firms with a useful framework for planning their digital transformation journey, they were not a guarantee of success. The following themes emerged from the case study evidence:

- **Successful implementation:** The case studies provided a range of examples of firms successfully implementing digital roadmaps. These included a food manufacturer that took forward a complex programme of digitalisation projects – including automated weight checking to limit product giveaway, a robotic packing line, and IT infrastructure upgrades, a printing company that invested in equipment to automate the process of configuring paper folding machines (which was identified as a significant production bottleneck), alongside a range of data capture initiatives, and the successful implementation of RFID tracking (as mentioned above).

These examples of success were characterised by several common features. Successful projects were typically underpinned by a clear vision and clearly identified problems to be solved through digitalisation. This enabled beneficiaries to focus their efforts, apply clear criteria for choosing between technology options, and set measurable performance indicators to track progress and the

realisation of intended benefits. Successful projects were also typically characterised by strong commitment by senior leaders, a willingness to invest, access to appropriate internal or outsourced technical expertise, and adaptability in recognition that digitalisation can be an iterative process.

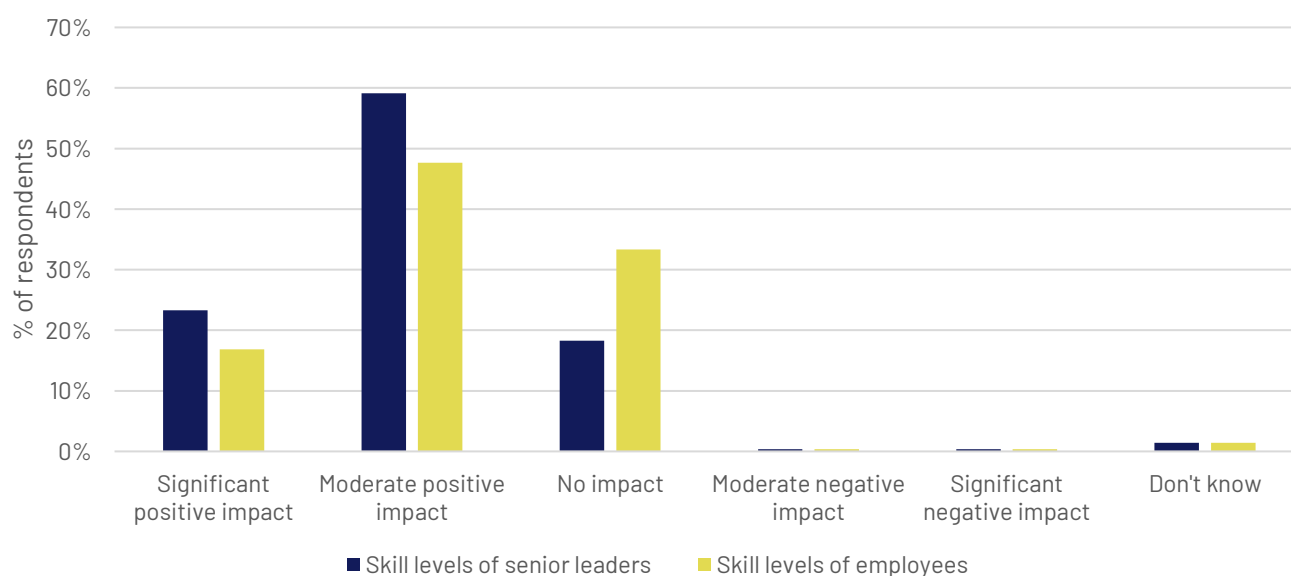
- **Barriers and challenges faced:** However, many firms encountered a variety of barriers and challenges that prevented them from implementing their plans in full. These included:
 - **Cashflow:** Financial constraints emerged as an issue in several cases. Many firms were reliant on internal resources to take forward investment programmes, and rising input costs since 2022 had placed pressure on margins and limited their ability to commit resources to investment programmes (even with grant funding). One textile manufacturer was forced to abandon plans for introducing automating a sewing process as a consequence of these types of issues.
 - **Technical challenges:** Technical challenges were also encountered by many companies that led to descopeing of projects or hindered successful implementation. The majority of the problems encountered appeared to relate to software rather than hardware. Typical issues included challenges with integrating different software systems, limitations associated with software systems that did not have the desired capabilities, and concerns around cyber-security. In some cases, firms appeared to have underestimated the complexity of software projects and the internal resources that would be required to progress projects.
 - **Internal capability:** Some of these issues were linked to internal capability. One chemical manufacturer described their attempt to build a CRM system from scratch: they lacked the internal expertise in software development and underestimated the internal resources, leading them to abandon the project and seek alternative solutions. Another firm was seeking to integrate their stock system, driver software, and asset tracking system, which required custom coding which was outsourced to a provider in India and ultimately led to significant delays. There were also examples of over-reliance on small numbers or individual members of staff – one plastics manufacturer was forced to considerably downgrade their digitalisation plans as a consequence of the loss of a pivotal employee and their tacit knowledge.

Many of the hurdles encountered related to internal skills with software projects and these examples highlight that enriching support for firms in relation to software selection and implementation of software solutions could be beneficial in increasing the likelihood of successful implementation. However, as noted above, complementary support in the form of targeted workforce training programmes to address specific skills gaps around software development, data security and/or cyber-security could also be beneficial.

5.5 Workforce development

The survey of participating firms highlighted that most firms engaged by the Made Smarter Adoption programme experienced a positive impact on the skill levels of both senior leaders and the general workforce. These effects were most prominent amongst the senior leadership – potentially reflecting the emphasis of the programme to date on training support for this group via the leadership and management programme.

Figure 5.6: Reported skills impacts of participation in Made Smarter Adoption – senior leaders and general workforce



Source: Survey of Made Smarter Adoption participants

- Change management capabilities:** While the impacts of the programme on capabilities of senior leaders' understanding of IDTs is discussed above, the case studies revealed that the leadership and management programme helped equip leaders with the skills and knowledge to effectively lead digital transformation initiatives within their organisation – including dealing with the challenges of change management, development of communication strategies and building employee buy-in. The case studies highlighted a range of examples of how participation in the training facilitated the implementation of IDT adoption plans. For example, one Operations Director drew on their existing HR knowledge and the insights gained from training to implement a "programme of change management" to address employee resistance to the new digital production management system. This involved communication, training, and incentives to encourage adoption.
- Complementary investment in workforce training:** Although the programme did not provide direct support for workforce training (except in the North-West), actions for workforce development were widely identified through the process of digital road-mapping. The participant survey indicated that participation in the programme is likely to have encouraged firms to follow through on these complementary investments (as illustrated in Table 5.1). Firms that participated in the programme reported that their average annual expenditure on IDT-specific training expanded almost tenfold (rising from £2,600 to almost £25,000), while the percentage reporting making no investment in IDT-specific training fell from 69 percent to 37 percent. While non-participants also expanded their investments in IDT specific training, these were less pronounced.

The case studies revealed a wide range of examples where participation in the programme induced training investments that benefitted the wider workforce. This included several examples of company-wide training programmes in new digital systems and certification of employees using new digital production equipment.

Despite improvements in digital literacy, many firms acknowledged that critical skill gaps were persistent in their workforce – particularly in more advanced digital skills. These were typically difficult to address through

recruitment, with firms highlighting the challenges involved in attracting skilled workers to small manufacturers and on-going issues with an ageing workforce. This again highlights a potential ‘gap’ in the support package provided through Made Smarter Adoption in relation to supporting firms with general workforce development issues – which will be added to the support on offer England-wide from April 2025.

Table 5.1: IDT specific investment in training – Made Smarter Adoption participants and firms that initially engaged but did not progress their involvement further

	Made Smarter Adoption participants			Non-participants		
	2021/22	2023/24	% change	2021/22	2023/24	% change
Annual IDT specific training expenditure (£m)	2,600	24,900	958%	4,700	18,200	386%
% making some investment in IDT specific training	31%	63%	+32 pps	33%	50%	+17 pps

Source: Survey of Made Smarter Adoption participants and firms that engaged with Made Smarter Adoption but did not progress to Digital Roadmapping

5.6 Improvements in Digital Readiness Levels

The survey of participating firms provided a strong indication that participation in the programme improved digital readiness levels considerably. As illustrated in the following figure, participating firms consistently progressed to higher (self-reported) digital readiness levels. In addition, the average DRL among MSA participants increased from 3.5 to 4.1 before and after participation, while among non-beneficiaries it only changed from 3.3 to 3.7. Firms that made initial engagement with the programme, but did not progress their involvement any further, saw relatively little change in digital readiness – implying that the programme has had an important effect in improving the digital maturity of participating firms.

However, the findings also indicated that beneficiaries of the programme tended to reach a ‘ceiling’ of DRL5 (defined as employees engaged in digital transformation and the business beginning to see business case benefits) past which they rarely progressed. This was largely consistent with the case study evidence. While several firms demonstrated significant progress in their digitalisation journeys, there were few examples of continuous advancement with most seeing a plateau in progress once the immediate focus of the project was addressed. The case studies highlighted a number of factors driving this:

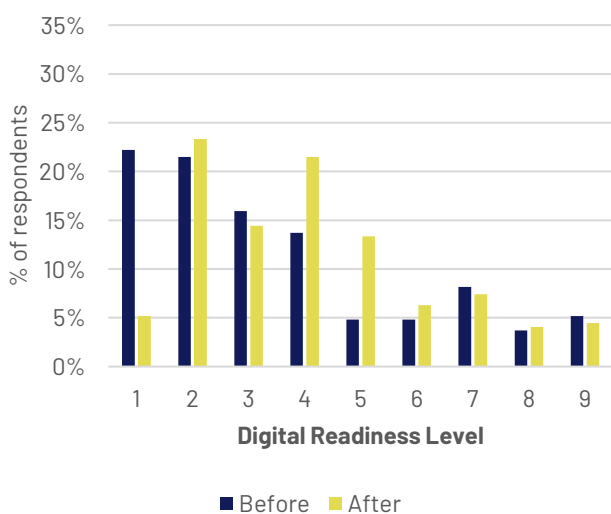
- **Stand-alone projects:** Firms often saw digital transformation projects as ‘discrete’ initiatives and separate from their overall business strategy. The lack of alignment between digitalisation and business objectives created challenges in sustaining a long-term commitment to digitalisation.
- **Internal bandwidth:** The implementation of digitalisation projects also absorbed significant amounts of time from small teams, who were focused on successful implementation rather than considering further improvements that might be made in the future. One business reflected on their future plans for digitalisation: *“There are future considerations within the ERP project itself. So, we know ... the immediate requirements are definite, but then there are some that are nice to have ... the system can do that [but] we’re not going to do it immediately. But ... because this project in particular is just so ... company-changing, particularly over the next 12 months ... this is just going to be the main focus for the core project team. Which will be myself and obviously the IT guys. So, I think immediately ... this will be the only focus. And it needs to be the only focus, otherwise we’ll run the risk of it failing.”*

- **Economic uncertainty and financial constraints:** Other firms also highlighted that long-term digital transformation required significant financial resources to enable both maintenance and improvement of technologies, and better financial planning to allocate resources to digitalisation projects in the future. General economic uncertainties also acted as a constraint on further digitalisation (in a similar manner to factor hindering implementation of road map actions) – one business reported ‘*So, although [the programme is] well-intentioned, possibly in the cycle that businesses find themselves in at the moment, which is in the recession, high interest rates, hopefully coming out of recession, it's a difficult time to make big investments. And I think a lot people, SMEs, will be thinking the same*’

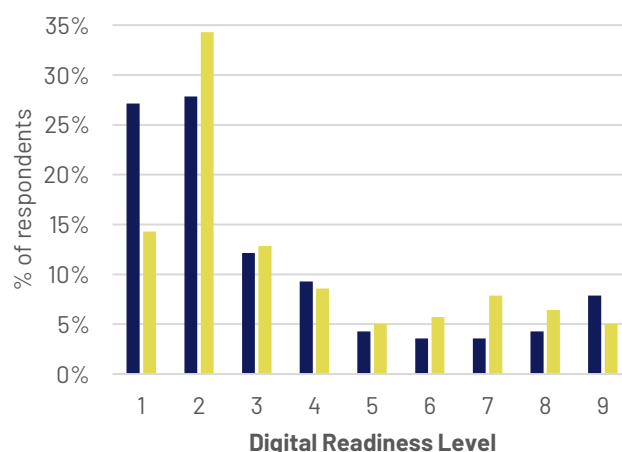
These patterns are also potentially linked to the design of Made Smarter Adoption in which the programme’s advisory support is typically focused on the initial implementation phases and grant funding provided for one off projects (and a number of firms reported that they would have found on-going support beyond initial implementation beneficial). There may be value in considering a more expansive version of the programme that provides more extensive on-going support to help firms with the greatest potential to embed a more strategic and long-term approach to digitalisation than is possible within the current parameters of the programme.

Figure 5.7: Changes in Digital Readiness Levels between initial engagement with MSA and the time of the survey, participants in Made Smarter Adoption and firms that initially engaged but did not progress their involvement further

MSA programme participants



Non-participants



Source: Survey of Made Smarter Adoption participants and firms that engaged with Made Smarter Adoption but did not progress to Digital Road mapping. Data refer to wave1 and Wave 2 of the beneficiary and non-beneficiary surveys combined. Wave 1 occurred between December 2023–Jan2024 and wave 2 happened in September 2024.

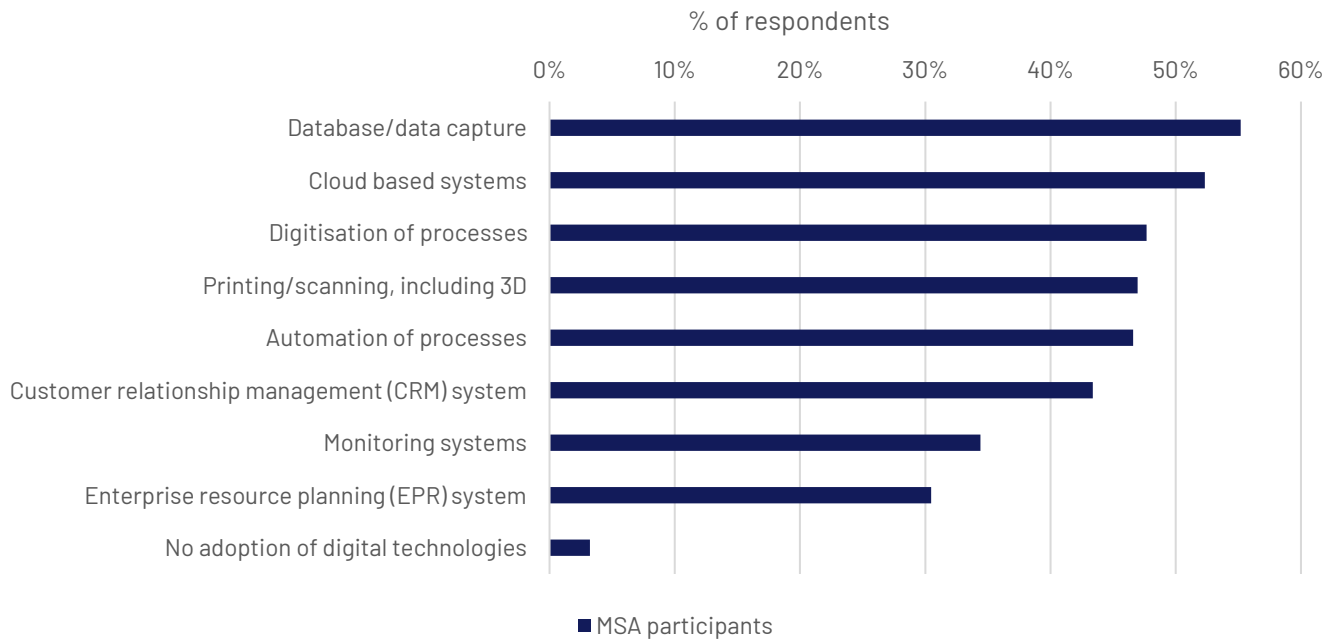
5.7 Adoption of IDTs

5.7.1 Types of technology adopted

The survey of Made Smarter Adoption participants indicated that most participants (78 percent) implemented some form of new IDT following their participation in the programme. As illustrated in Figure 5.8, around 47 percent of participants took forward automation programmes, and a similar proportion took forward digitisation of processes and database/data capture initiatives. IDT implementation projects were

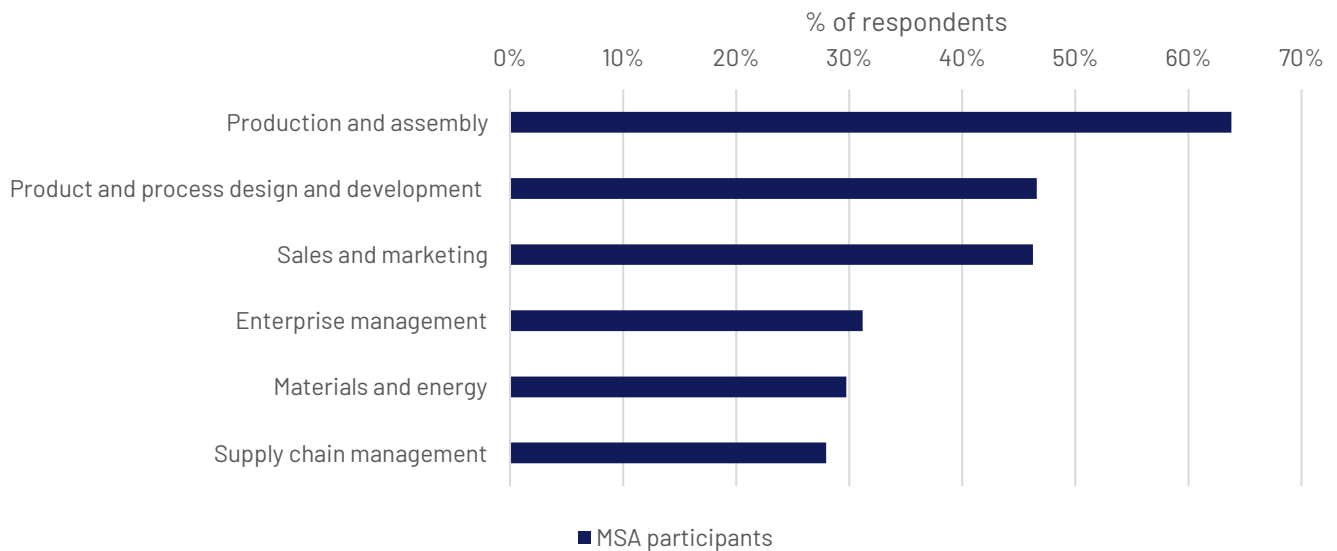
largely focused on production and assembly operations (Figure 5.9). The average cost of these investments was reported to be around £55,000.

Figure 5.8: Types of IDT adopted post-Made Smarter Adoption and business areas of application



Source: Survey of Made Smarter Adoption participants.

Figure 5.9: Business areas with IDT adoption



Source: Survey of Made Smarter Adoption participants.

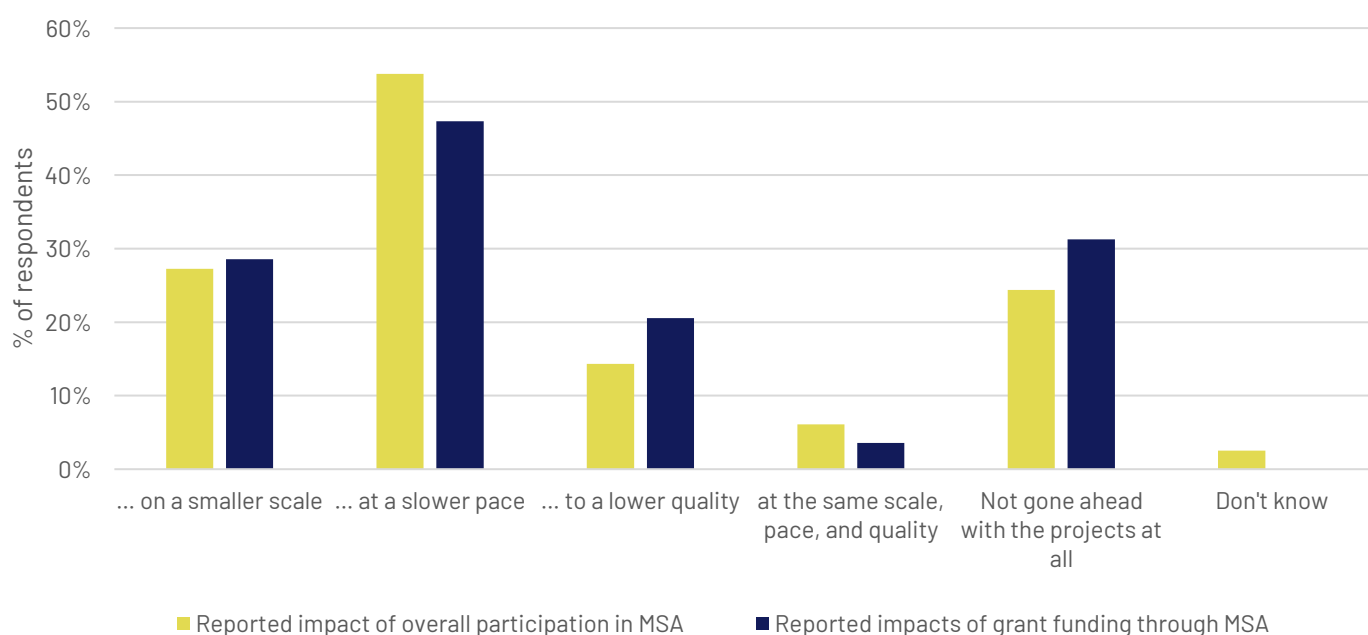
5.7.2 Self-reported views on additionality

Overall, both the survey of participants and the case studies indicated that most participating firms considered that they would have taken forward some form of digitalisation initiative forward had they not participated in the programme. However, participants considered that their participation had an important role in enhancing projects in the following ways:

- **Acceleration:** The grant funding and advisory support enabled businesses to implement technologies sooner than they would have otherwise. As illustrated in the figure below, around 50 percent of participants indicated that they would have otherwise taken forward their digitalisation programme at a slower pace. This result was consistent with the case study evidence, where many firms consulted acknowledged that they were likely to take forward their programmes regardless – but their participation enabled them to fast track early-stage background research into the project and helped de-risk decision making.
- **Scale, scope and quality effects:** Participation in the programme also exposed businesses to a wider range of IDTs and their potential applications, helping businesses make more informed decisions about technology investments and potentially increasing the scale, scope or quality of investments made.
- **Addressing funding constraints:** The survey of participants indicated that in 85 percent of cases the project was funded with internal resources, while 49 percent of respondents also reported that they received grant funding from Made Smarter Adoption. The case study evidence on how far grant funding was critical in enabling projects to go forward was generally linked to the level of ambition (and cost) of the investment made:
 - **Transformative investments:** Firms engaged in the case studies generally considered that the up to £20,000 grants made available through the programme were insufficient to make any material difference to the payback period associated with significant investments in IDTs. This included one business that highlighted that the grant was a very small percentage of the £400,000 estimated cost of its ERP implementation. Another textile manufacturer indicated that £20,000 in grant support was ‘totally inadequate’ for developing a bespoke robotics process. Given the overall cost of significant investments in digitalisation, it is considered unlikely that grant funding will have altered the relevant cost-benefit calculus or led to large scale additional investments in IDTs that would not have happened at some stage anyway.
 - **Targeted investments:** Grants made available through the programme may have made a more significant difference in the context of businesses making smaller, incremental investments targeted at specific production processes (e.g. a furniture manufacturer procuring ‘digital fences’ for their saw, or a transformer repair company purchasing tablets for site operatives). In these cases, the grants were likely to have had a more significant impact on payback periods.
 - **Variation by baseline digital readiness levels:** The apparent level of additionality was linked to baseline levels of digital readiness. Businesses with limited resources, low digital maturity, and a lack of internal expertise, tended to consider the programme a more important factor in their ability to take forward digitalisation initiatives. Firms that were already digitally advanced expressed more scepticism about the programme’s relevance to their business.

Overall, the findings indicated that the grant funding arrangements associated with Made Smarter Adoption could benefit from adjustment if the aim of the programme is to support more extensive digitalisations and promote more significant growth in productivity. There may be value in considering tiered grant systems (allowing some firms to pursue more significant levels of funding in the context of transformative investments), allowing firms to make multiple grant applications to support a continuous digitalisation journey, and perhaps examining the potential role of alternative funding mechanisms (e.g. loans repayable contingent on the profitability of projects) and/or providing effective signposting to loan schemes provided outside of the programme.

Figure 5.10: Self-reported impact of overall participation in Made Smarter Adoption and grant funding on ability to take forward digitalisation programmes



Source: Survey of Made Smarter Adoption participants. Responses to the question 'In the absence of the Made Smarter Adoption programme/grant funding from Made Smarter Adoption, would you have taken your digitalisation projects forward...'

5.7.3 Impacts on capital investment

Issues of additionality were also explored through the econometric analysis (the methodology is summarised in more detail in the following chapter) using longitudinal data on capital investments for participating firms and a variety of comparison groups of firms¹⁶ obtained from ONS' Annual Business Survey.

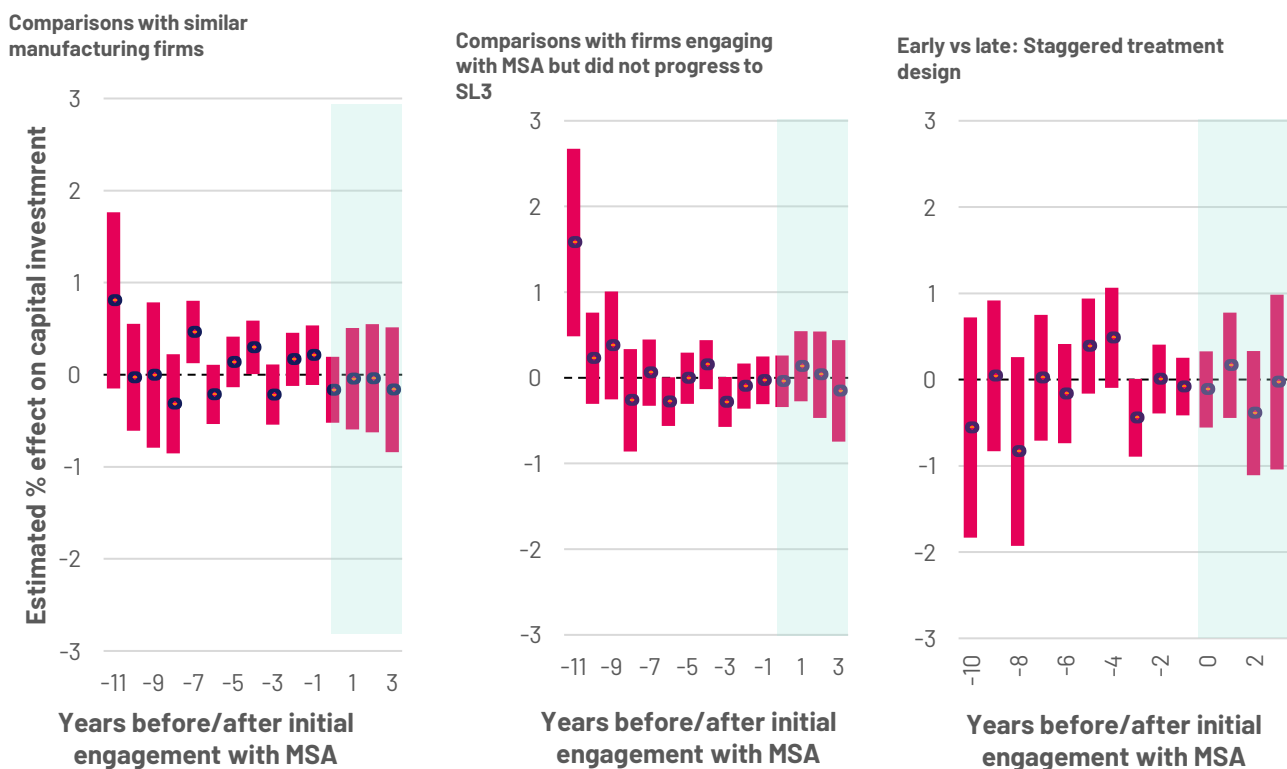
The results of these analyses are displayed in the following figure. These figures show the estimated percentage difference in capital investment spending between MSA participants and three comparator groups in the years before and after their participation in the programme (a sample of similar manufacturing firms that did not participate in the programme, firms that initially engaged with the programme but did not progress their involvement to MSA, and comparisons between participants that engaged in earlier and later

¹⁶ Including those that made initial engagement with the programme but did not progress their involvement any further, manufacturing businesses drawn from the general population displaying similar growth and productivity trajectories prior to their engagement in the programme,

years). 95 percent confidence intervals associated with these estimates are shown by the pink bars associated with each year – and the programme is inferred to have had a statistically significant impact on participants if bounds of these intervals exceed (or fall below) zero in the years following programme participation. The results of the analysis showed:

- Participation in the programme did not have a significant effect on annual investment levels regardless of the comparison group used in the analysis (as illustrated in the following figure). However, given the size of the grants (£20,000) relative to average annual capital investment levels reported by the sample of firms included in the analysis (£2.8m in 2022), it was highly unlikely that a statistically significant effect would be detected unless the grants catalysed significant programmes of follow-on investments. This reinforces the analysis above that raises questions regarding the sufficiency of the grants provided through the programme to support material impacts on investment levels.
- It should also be noted that the sample¹⁷ of firms included in the analysis was based on those respondent to the ONS Annual Business Survey (which is a sample survey of SMEs) and were skewed towards larger SMEs and these findings may not generalise to the overall population of firms supported by the programme.

Figure 5.11: Estimated impact of participation in Made Smarter Adoption on capital investment levels



¹⁷ The sample of firms referenced in the paragraph above, is drawn from the Annual Business Survey. This survey is administered to 62,000 firms in GB and 11,000 in Northern Ireland every year and it is representative of the UK business population. The ABS selects firms that are registered to pay VAT, it tends to be skewed towards larger firms (those with 100 employees or more), but small and medium businesses are also sampled and adequately represented.

Source: Made Smarter Adoption monitoring information, Annual Business Survey (ONS), Ipsos analysis. Effects post-Made Smarter Adoption shaded in blue.

6 Firm level impacts

This chapter presents the findings on the firm-level impacts of the Made Smarter Adoption programme. This includes the presentation of the results from a programme of econometric analysis comparing firms that have participated in the programme since 2018 to firms that did not participate in the programme. This is presented alongside further evidence of the benefits of IDT adoption obtained from the survey of participating firms and the programme of case study research.

6.1 Key findings

- Participating firms reported a range of benefits from adopting Industrial Digital Technologies (IDTs), including improved production planning, enhanced customer experience, new product/process development, and cost reductions. Participants also reported positive impacts on production quality, speed, new product introduction, and cost reduction. However, quantifying these improvements was difficult for some, particularly those implementing broader digital systems rather than specific technologies.
- The findings indicated that the programme had a limited effect on the growth of firms participating in the programme. While analyses replicating previous research into the programme pointed to a positive impact on turnover and employment, more robust approaches did not identify statistically significant effects. The case studies indicate that these findings might be expected. The immediate aims of IDT investments were to largely improve production efficiency (with any effects on revenues expected as an indirect byproduct in the future), while the econometric research showed limited evidence of direct employment impacts from IDT adoption alone, which was supported by limited examples of direct employment impacts highlighted by participating firms in the case studies. It is worth noting that the impacts on firm growth from IDT adoption may take longer to materialise and hence are not able to be captured within the analysis undertaken in this evaluation.
- Productivity gains were a key benefit highlighted by participating firms in case study and survey findings. However, the econometric analysis did not show a statistically significant "step-change" in productivity immediately following programme participation. However, the analysis found positive impacts on GVA and GVA per worker three years after participation, potentially reflecting the time needed for IDT investments to translate into performance improvements. These gains were largely driven by reduced input consumption – consistent with the reported objectives of many IDT investment projects.
- However, while these econometric results provide a positive indication of the likely future economic benefits of the programme – aligning with positive findings on programme participation for firms interviewed in the case study research – the findings should be interpreted cautiously. This is because the estimated effects were of a magnitude that could be considered unrealistic, such as firms seeing an increase in productivity greater than 30 percent three years after participating in Made Smarter Adoption. This large productivity also imply benefit to cost ratios that could not be considered credible. Further research is needed with longer time series to confirm the validity of the results and provide a more precise estimate of the magnitude of effects.

6.2 Methodology

To provide insight into the longer-term causal effects of the Made Smarter Adoption programme on the performance of participating firms, records of 2,402 firms that registered with Made Smarter Adoption with between 2017/18 and 2023/24 were linked to a variety of administrative datasets including the Business Structure Database and the Annual Business Survey through the ONS Secure Research Service. These provided annual observations of a variety of firm performance measures including:

- Capital investment (as reported in the preceding section)
- Measures of firm growth – including employment, turnover, exports and GVA
- Productivity – GVA per worker and intermediate consumption

Further details of the data employed in the analysis is provided in the following table.

Table 6.1: Datasets used in econometric analysis

Dataset name	Years covered	Description	Variables
Business Structure Database (BSD)	2012 – 2023	An annual snapshot of the Interdepartmental Business Register (IDBR) with coverage of all firms registered for VAT or PAYE. This dataset provides yearly measures of employment, turnover and turnover per worker and covers the UK business population comprehensively.	Turnover, Employment, Productivity (expressed as turnover/employees)
Annual Business Survey	2012 – 2022	An annual survey of the business population undertaken by ONS, used to generate estimates of output and other national accounting measures in non-financial services sectors.	Capital Investment, GVA, GVA per worker, Exports, Consumption of intermediate goods and services.

To obtain robust estimates of the impacts of the programme, it is necessary to compare the performance of participating firms (which for the purposes of this analysis was defined as firms that progress to Service Level 3 –further in depth assessment and support from a digital advisor) to an equivalent group of non-participating firms (to establish what may have occurred in its absence). This presents some challenges, as firms that seek support through the programme are likely to differ in systematic ways to those that do not. For example, firms seeking Made Smarter Adoption support may have greater awareness and interest in pursuing productivity raising investments (or may have simply had a greater interest in securing government subsidies). In this case, comparing participants to the general population of SME manufacturers would likely overstate the impacts of the programme, as participants would likely outperform non-participants regardless of the support provided. Three strategies for addressing these potential issues with selection bias were adopted as set out in the following table.

Table 6.2: Comparison groups

Dataset name	Description
Matched comparisons with SME manufacturers	The first approach replicated the principles of analysis undertaken as part of the evaluation of the North-West pilot programme and focused on identifying a sample of SME manufacturers that shared similar observable characteristics to participating firms on the basis of (a) their industrial sector, (b) their size, and (c) their performance trajectory prior to the introduction of Made

Dataset name	Description
	Smarter Adoption in terms of employment, turnover and productivity growth (covering the period 2012 to 2017). The comparison sample was identified using Propensity Score Matching methods. The key risk with this approach is that it does not account for unobservable differences between participants and other businesses (i.e. those factors that may have motivated their engagement with the programme). As illustrated by the findings of an evaluation of the Growth Vouchers scheme published in 2024¹⁸, these types of approach have been shown to significantly overstate the size and persistence of the impacts of business support programme as firms seeking advisory support typically outperform those that do not. This is underlined in Figure 6.4 and Figure 6.5, which show that programme participants were already growing more rapidly (in terms of turnover and employment) than 'similar' manufacturing SMEs prior to their engagement with the programme (implying that they might be expected to continue to outperform other manufacturers regardless of their participation in the scheme).
Comparisons with those reaching Service Level 2	To address potential concerns around the biases that may arise from comparisons to the general business population, a second set of comparisons were made with those firms that registered with the programme but did not progress to substantive support (i.e. they reached Service Level 1 or 2). As this group had expressed an interest in the programme, it can be assumed that they share some unobservable characteristics (e.g. motivations and managerial focus) in common with Made Smarter Adoption participants. As such, this approach is likely to yield more robust results than comparisons with the general SME population. Figure 6.4 and Figure 6.5 show that participating firms generally were following similar growth trajectories to firms that disengaged following initial contact – providing a higher level of confidence that the results are subject to lower levels of potential bias driven by differences between the two groups. However, there may be residual concerns that those disengaging with the programme may also differ in systematic ways to those progressing to Service Level 3. For example, as highlighted in Section 4, while these firms were associated with low digital readiness levels, many disengaged because they considered the programme inappropriate for their business (perhaps suggesting that digitalisation was less needed for their business and/or they were less motivated to pursue digitalisation).
Early vs late – staggered treatment design	To address these residual concerns around potential bias, a final set of analyses sought to infer the impact of the programme from comparisons between firms that joined the programme in earlier years to those that joined in later years (with the assumption that those participating in the programme first will experience the impacts of the programme at an earlier stage). This approach, known as a pipeline design or staggered treatment design, leverages the staggered entry of firms into the programme, by treating firms joining in later years as a 'control' group against which to compare the 'treatment' group of earlier adopters. This design is particularly relevant for programmes like Made Smarter, which has seen a rolling intake of businesses since its inception in 2018. As this approach only makes comparisons between firms that eventually were supported by the programme, it is likely to be most effective in addressing possible concerns around biases driven by differences between groups. A full description of the approaches taken can be found in the Technical Annex. This approach tended to provide results that were similar to comparisons with firms that made initial engagement with the programme but did not progress their involvement further.

¹⁸ Draft note: Insert reference.

Estimates of the impact of the programme were generated by applying 'staggered difference-in-differences' models. These models infer the impact of the programme by comparing the relative performance trajectory of Made Smarter Adoption participants and the relevant comparison groups and are robust to both unobserved differences between firms that do not change over time and unobserved but time-specific 'shocks' affecting all firms (e.g. the COVID-19 pandemic in 2020 or the energy price crisis in 2022/23). Full details of the approach adopted is set out in the Technical Appendix.

Some subgroup analysis was completed where possible – including a longer term analysis of the North-West pilot programme (sample sizes were insufficiently large to complete analysis of other regions), and a breakdown of findings by employment size band for analyses completed using the Business Structure Database (where sample sizes provided close to comprehensive coverage of the population of firms participating in the programme).

6.3 Reported benefits of IDT adoption

6.3.1 Immediate benefits of IDT adoption

Respondents to the survey of Made Smarter Adoption participants indicated that firms had experienced a range of benefits as consequence of adopted IDTs. These included:

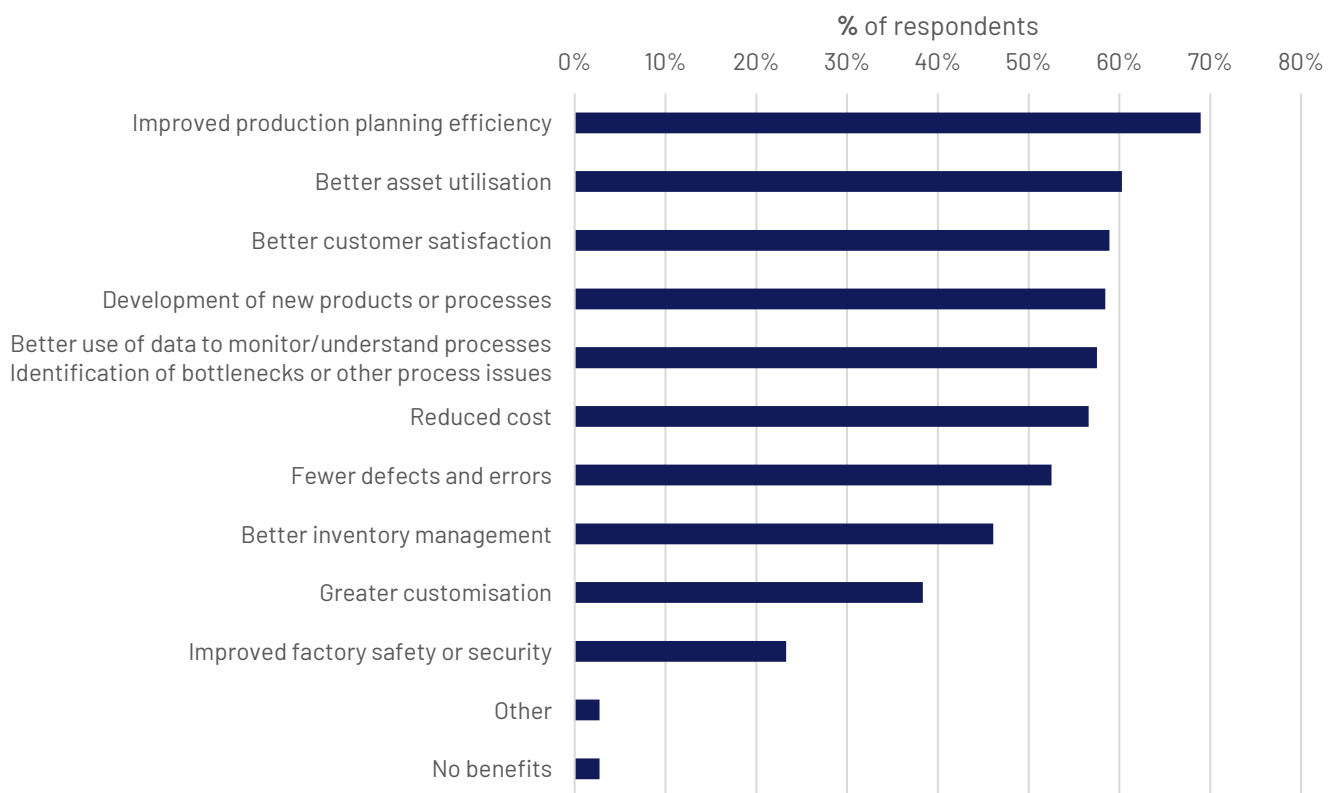
- **Improvements to production planning efficiency:** The most reported benefit of IDT adoption (reported by 69 percent of respondents) was improvements to production planning efficiency, with large shares of firms also reporting related benefits around better asset utilisation (60 percent), better use of data to monitor/understand processes (58 percent), and better inventory management (46 percent). The case studies provided several examples of how IDTs, particularly new software systems, enabled more efficient and effective production planning. One steel fabrication company noted that their new ERP system provided "instant" updates on operations. This real-time data visibility facilitated quicker responses and improved resource allocation. A printing company used their Management Information System (MIS) to group jobs with similar requirements, minimizing setup times and streamlining production flow, and leading to significant efficiency gains.
- **Improved customer experience:** Firms also widely reported that the adoption of IDTs had helped to improve customer experience (reported by 58 percent of respondents). Again, the case studies provide illustrative examples of how these benefits were realised. One brewery used a new asset tracking system to provide more personalized service by tracking which beers were on-site at each pub and offering tailored recommendations to customers. A chemical manufacturer aimed to shorten their turnaround time from enquiry to quote by implementing a CRM system, leading to improved customer responsiveness. Finally, a classic car parts supplier used the programme to improve their website and online marketing to attract international customers, expanding their reach and making it easier for foreign buyers to purchase their products.
- **New products or processes:** Adoption of IDTs was reported to enable the introduction of new products or processes in 58 percent of cases. The case studies indicated that the adoption of IDTs facilitated the introduction of new products primarily by enhancing design and production capabilities. One architectural metalwork company used data captured through their new CRM system to analyse competing products and identify opportunities for developing their own product line. This led to a shift towards offering standardized products, representing a significant change in their business model.

Another automotive design consultancy leveraged their investment in VR and 3D printing to develop a bespoke seating buck, allowing clients to experience their designs in a more immersive and interactive way – enhancing their service portfolio and attracting new clients.

- **Cost reductions:** Cost reductions resulting from the adoption of IDTs were highlighted by 57 percent with a further 53 percent noting a reduction in defects and errors. Again, the case studies provide a range of illustrative examples. One food manufacturer reported achieving significant cost savings by implementing an automated weight checking system (reducing product giveaway by 2 percent). Another furniture manufacturer reduced material waste through more accurate cutting enabled by digital measuring on their saw. Finally, a plastics manufacturer highlighted the energy efficiency of their new injection moulding machine in contributing to lower energy consumption and supporting their sustainability goals.

However, the case studies also reveal a mixed picture regarding the realisation of expected benefits from IDT adoption, with some companies encountering challenges that limited their success or delayed the realisation of benefits. For example, one transformer repair company highlighted that initial goal was to implement a two-way digital communication system for site operatives, allowing real-time updates to documents. Due to software limitations and security concerns, they had to settle for a one-way system where documents could only be viewed, not updated, limiting the intended benefits of efficiency and real-time information sharing. These types of examples reinforce the importance of careful planning, thorough evaluation of technology options, robust implementation processes, and ongoing support to ensure that IDT adoption delivers the desired outcomes.

Figure 6.1: Benefits of adopting IDTs (amongst those adopting IDTs post- Made Smarter Adoption)



Source: Survey of Made Smarter Adoption participants

6.3.2 Reported impacts on operational performance

Participating firms also reported a range of tangible improvements in operational performance as a consequence of their participation in the programme:

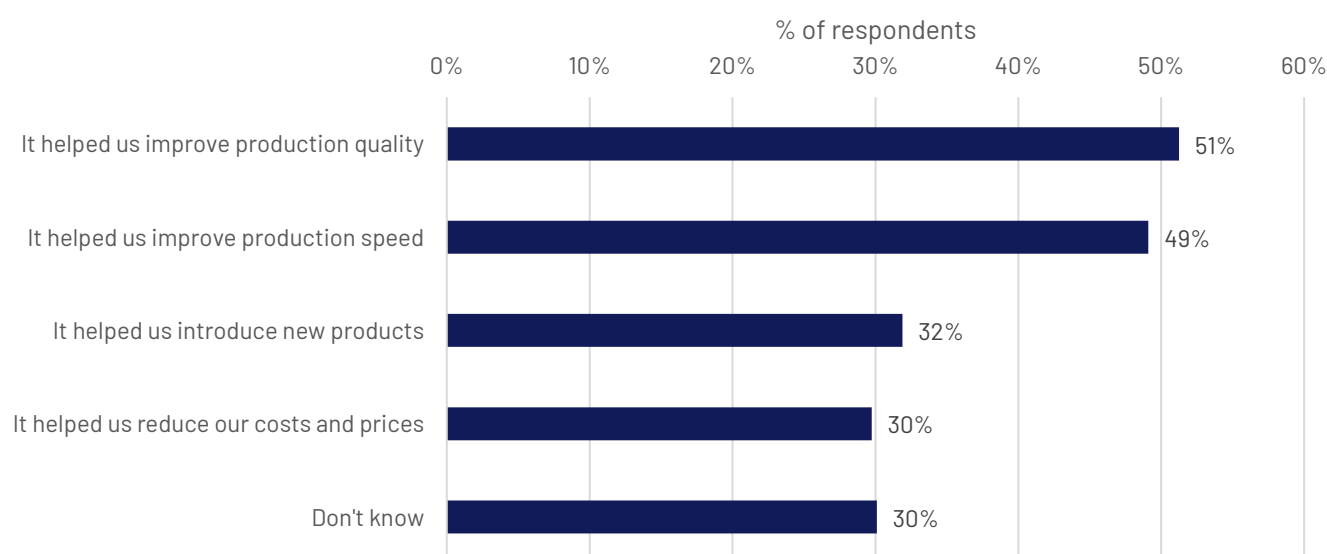
- 51 percent of respondents to the survey indicated that participating in Made Smarter Adoption had helped them improve production quality.
- 49 percent indicated that participation helped improve production speed
- 32 percent reported that it had helped them introduce new products, and,
- 30 percent that participation helped reduce their costs and prices.

The case studies provided a mixed picture. Some firms were able to provide tangible evidence of the impact of adopting IDTs on their business. For example, one food manufacturer was able to report that its robotic packing line increased throughput and contributed to a 25 percent growth in production (from 70 tonnes to 100 tonnes per week), resulting in an expansion of their turnover to £11.5m. Another firm reported that the adoption of asset tracking technologies reduced waste, with annual savings of £2,000 to £6,000. However, in many cases, firms found it challenging to draw out tangible operational or commercial outcomes:

- **Type of digital technology funded:** Firms in interviews that had used grant funding to adopt specific or distinct digital manufacturing equipment (e.g. 3D printing technology or VR equipment) were more likely to report that the intervention had led to specific quantifiable improvements in commercial metrics than those adopting more general digital systems or management approaches (e.g. Enterprise Resource Planning (ERP) systems or digitalisation of previously paper based activities). This was partly linked to the digital readiness level of the firm prior to engagement with the programme, with firms of a lower digital readiness level often needing to implement general digital systems improvements compared to the adoption of significant digital manufacturing equipment. Again, this reinforces the importance of supporting continuous advancement to deliver the programme's longer term economic objectives.
- **Timespan since intervention:** Many of the firms interviewed indicated that there had been limited time since they had implemented the digital technology. Therefore, many of the anticipated benefits and impacts on the firms taking part had yet to be realised. This may be particularly the case for firms that adopted digital systems such as ERP improvements or monitoring, as the time required for the benefits to efficiency, strategic management and product quality may be longer compared to firms that adopted distinct manufacturing technologies.
- **Ability to measure gains in performance:** Many firms were unable to report specific gains in performance – due to the difficulty of isolating the impact of IDTs from other factors or a lack of focus on measuring and tracking financial outcomes.
- **Role of external factors:** Wider factors affecting the ability of firms to drive through tangible commercial or operational outcomes included falling labour productivity, international competition and factors contributing to operational costs. For example, one case study interview outlined that their industry, textiles manufacturing, was characterised by falling levels of productivity due to the limited

availability of skilled labour due to long-term industry decline and the effects of the UK's withdrawal from the European Union.

Figure 6.2: Firm-level outcomes of participating in Made Smarter Adoption on business operations



Source: Survey of Made Smarter Adoption participants

6.4 Impact of firm performance measures

6.4.1 Survey based measures of performance

The survey of Made Smarter Adoption participants and firms that made initial engagement, but did not progress to substantive support, was used to capture evolutions in turnover, exports, employment, and productivity (turnover per worker) between 2021/22 (the pre-Made Smarter Adoption baseline year) and 2022/23 or 2023/24 (depending on whether the firm was surveyed in the first or second wave). These findings showed:

- Participants in the programme saw positive changes across all metrics gathered through the survey - turnover, exports, employment and turnover per worker (noting that the representativeness of the survey is uncertain).
- However, these positive changes were also observed in the comparison group of firms that initially engaged but did not progress their involvement further.
- Based on comparisons with the ONS Annual Business Survey, programme participants saw their turnover grow less rapidly than manufacturing SMEs across the UK economy (2.2 percent vs 17 percent)¹⁹ over a similar period (2021 to 2023).

¹⁹ Source: ONS (2024) Non-financial business economy, UK: employment size band

- Participating firms tended to be larger than non-participating firms and higher levels of turnover per worker (which could reflect either higher levels of productivity or greater levels of outsourcing) – reinforcing the discussion above that there are likely to be systematic differences between the two groups.

Table 6.3: Changes in turnover, exports, employment and turnover – 2021/22 to 2022/23 / 2023/24 – participants in Made Smarter Adoption and firms that initially engaged but did not progress their involvement further

	Made Smarter Adoption participants			Non-participants		
	2021/22	Endline	% change	2021/22	Endline	% change
Turnover (£000)	8,723.6	8,913.9	2.2%	3,750.5	4,072.2	8.6%
Exports (£000)	564.8	737.4	30.6%	724.3	956.6	32.1%
Employment	32.7	34.6	6.0%	25.1	25.7	2.5%
Turnover per worker (£)	278,200	282,415	1.5%	140,700	168,100	19.5%

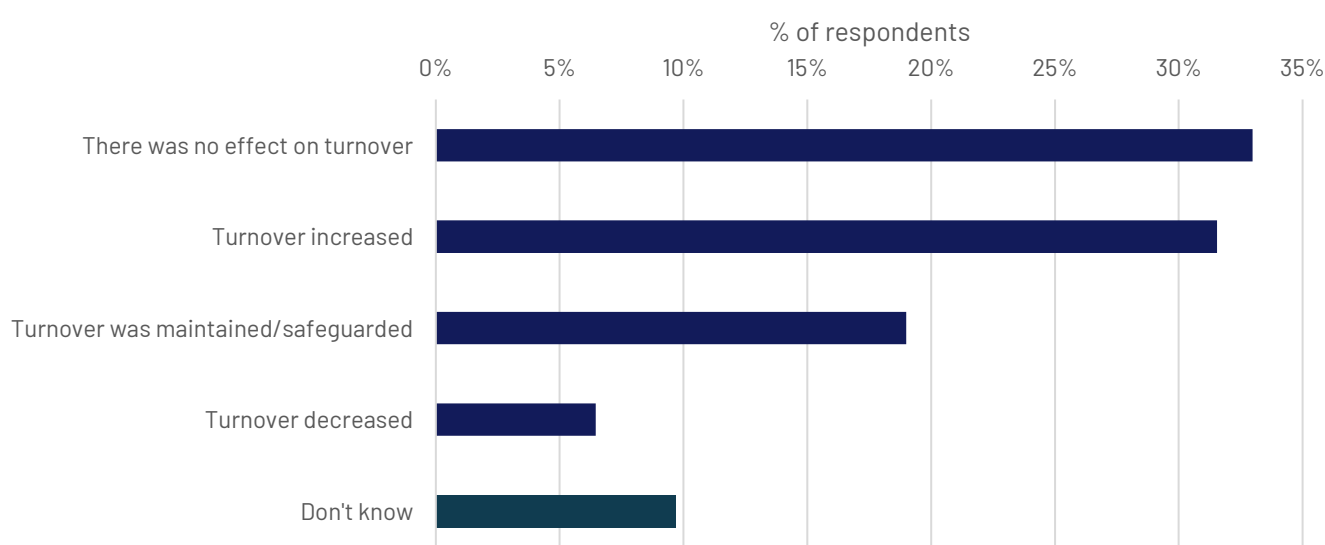
Source: Survey of Made Smarter Adoption participants and firms that initially engaged but did not progress their involvement further. The endline was 2022/23 or 2023/24 depending on whether the firm participated in Wave One or Wave Two of the survey.

6.4.2 Estimated impacts on turnover and exports

The survey of participating firms yielded mixed perspectives on how far participation in the programme had a direct effect on sales. As illustrated in the following figure, around third of firms reported that Made Smarter Adoption had had a positive effect on turnover (32 percent), while a further third reported that their participation had no effect on sales volumes (33 percent). A further 18 percent reported that they were able to maintain their sales volumes due to their participation in the programme.

It should be noted that case study interviews indicated that while increased revenue was a common aspiration, it was not always the primary aim of IDT adoption. Many firms focused on using IDTs to improve efficiency, reduce costs, and enhance product quality, seeing these as foundational steps towards enabling future revenue growth.

Figure 6.3: Perceived impact of participation in Made Smarter Adoption on turnover

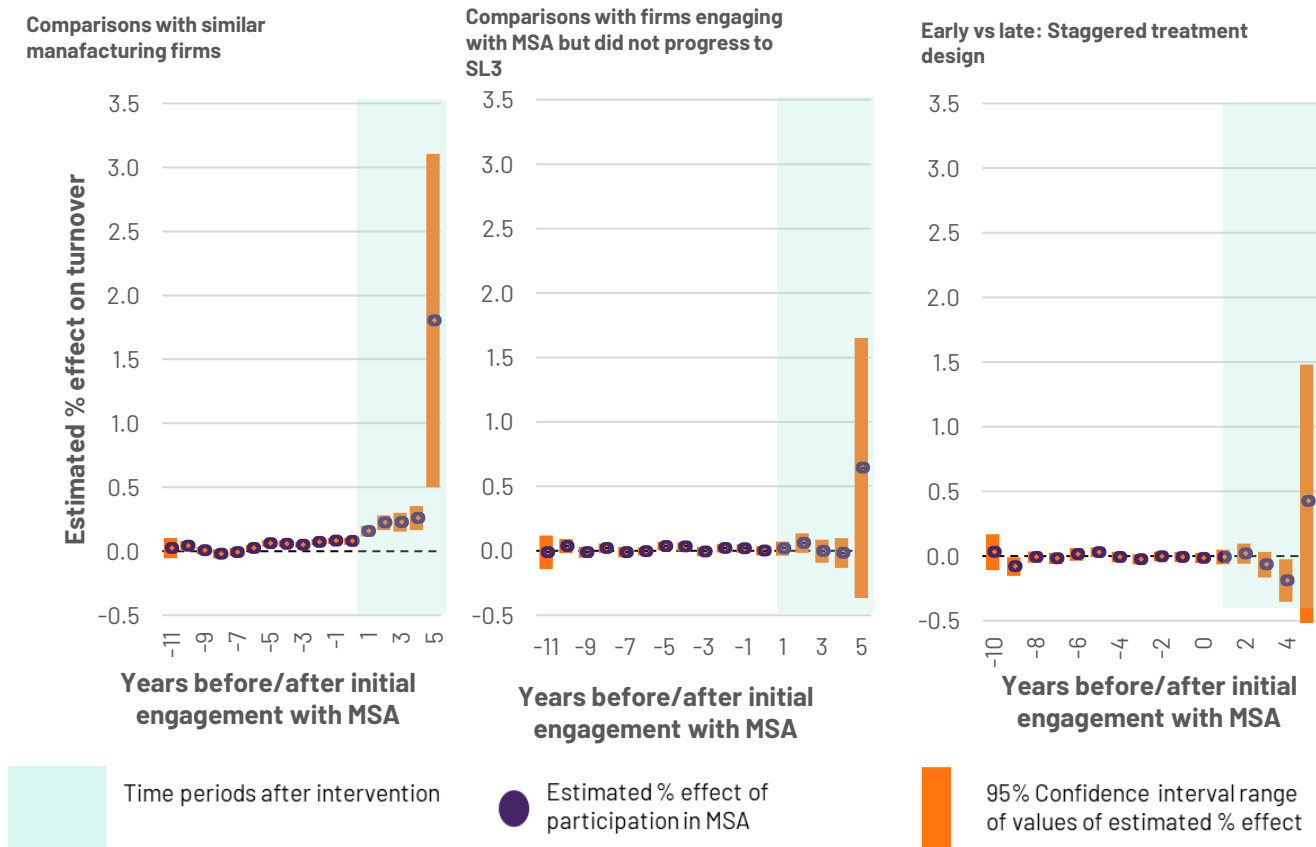


Source: Survey of Made Smarter Adoption participants

The results of the econometric analysis indicated that:

- When using the matched sample of manufacturing SMEs as the counterfactual group, there was a positive and statistically significant effect on turnover (an average effect of 16.3 percent over five years following initial participation). This broadly aligns with the findings of the evaluation of the North-West pilot programme, which adopted a similar approach to the construction of a comparison group.
- However, these findings could not be replicated using more robust comparisons with firms that initially engaged but did not progress to substantive support or using comparisons between firms that engaged in earlier and later years. The results of these analyses did not find any statistically significant effect on the turnover or exports of participating SMEs following their participation in Made Smarter Adoption. These findings were consistent across firms of different sizes and regardless of the nature of the support package received.
- Taken together these findings provide a signal that the programme has attracted firms that were likely to have outperformed the wider population of manufacturing businesses regardless of their participation in the programme. However, given the nature of the support provided and the expected long-term benefits of digital adoption and increased digital readiness, it may be too soon to see the materialisation of commercial impacts such as increased turnover.

Figure 6.4 shows the results of the analysis. Again, these figures show the estimated percentage difference in capital investment spending between MSA participants and three comparator groups in the years before and after their participation in the programme (a sample of similar manufacturing firms that did not participate in the programme, firms that initially engaged with the programme but did not progress their involvement to MSA, and comparisons between participants that engaged in earlier and later years). 95 percent confidence intervals associated with these estimates are shown by the orange bars associated with each year – and the programme is inferred to have had a statistically significant impact on participants if bounds of these intervals exceed (or fall below) zero in the years following programme participation.

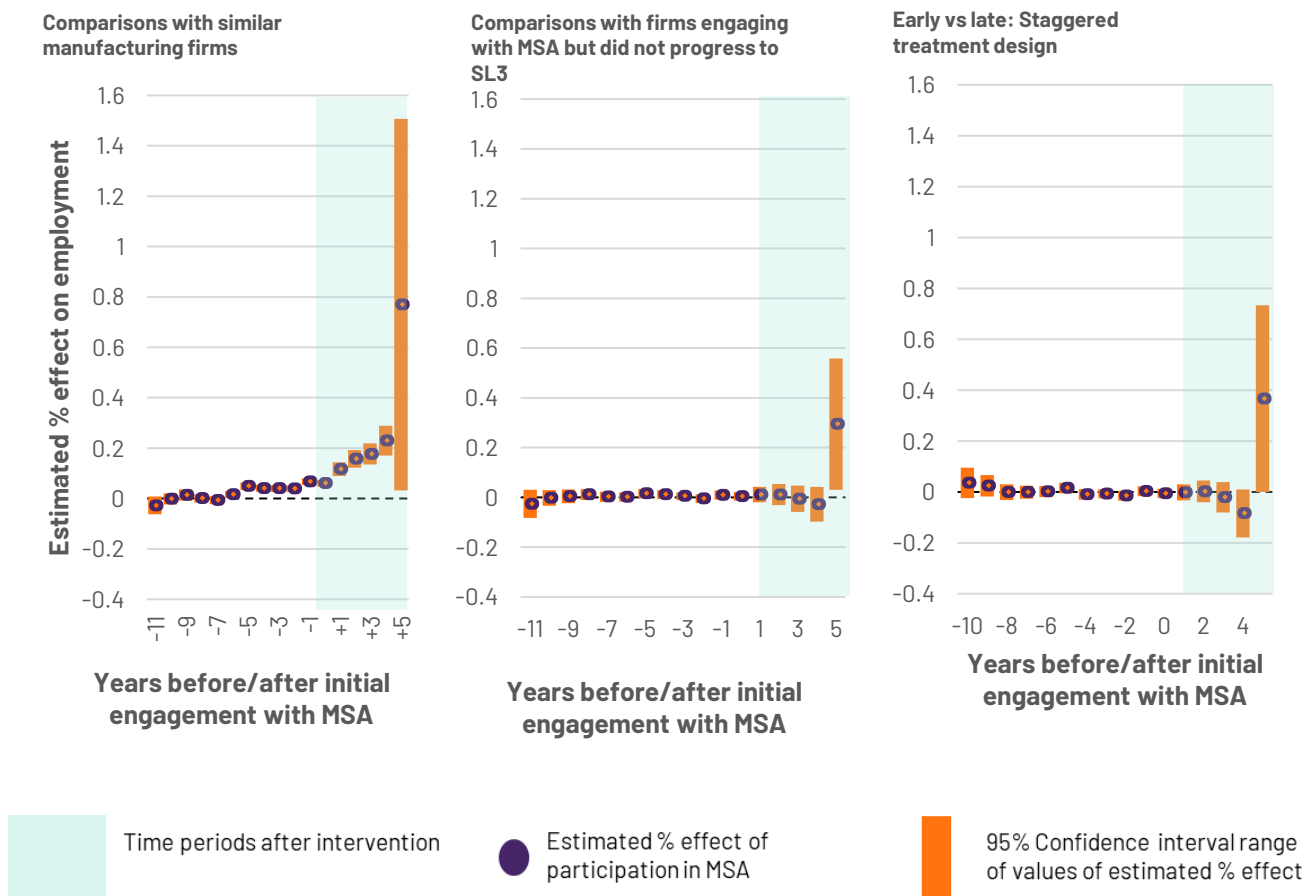
Figure 6.4: Estimated impact of participation in Made Smarter Adoption on turnover

Source: Made Smarter Adoption monitoring information, Business Structure Database (ONS), Ipsos analysis. Effects post- Made Smarter Adoption shaded in blue.

6.4.3 Estimated impacts on employment

Similar findings were obtained in relation to the employment impacts of the programme, as illustrated in the following figure. While the comparisons with a matched group of SME manufacturers implied that the programme led to a 12.5 percent increase in employment, no statistically significant impacts were identified using more robust approaches (though there are signals of positive impacts in the fifth year post-participation, this result was subject to significant uncertainty as it is based on a small cohort of firms that joined the programme in its first year).

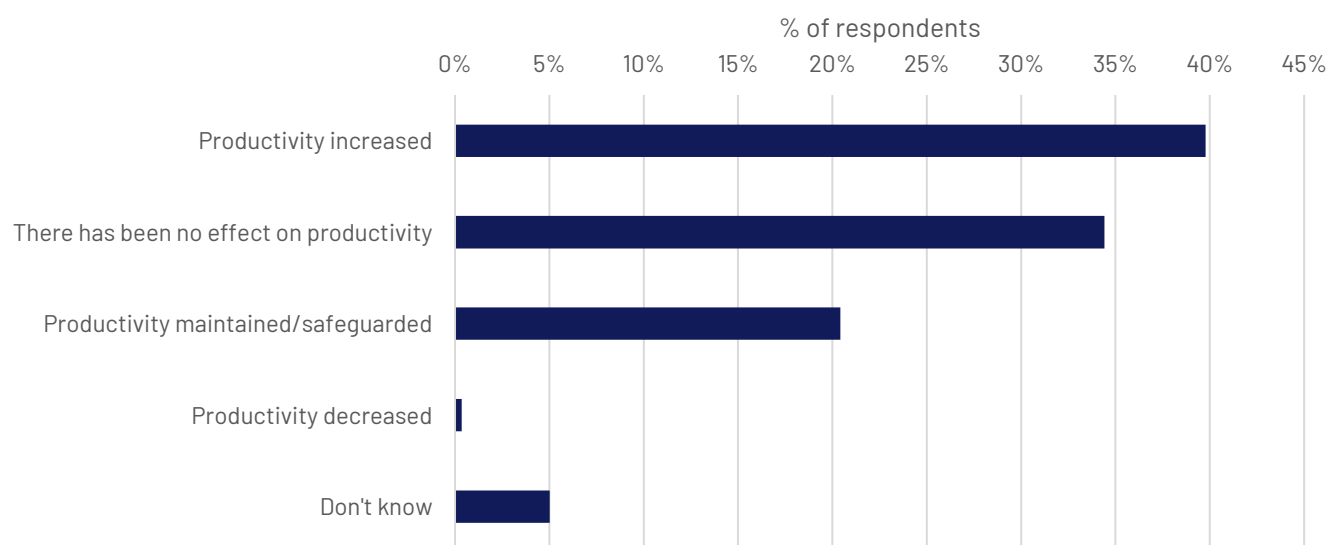
The case studies also provided limited evidence of direct employment impacts resulting from IDT adoption. While some firms experienced significant production growth and increased their workforce, they attributed this expansion to a combination of factors, including increased demand and new market opportunities, rather than solely to IDT adoption. However, some respondents highlighted that IDTs enabled them to redeploy staff to higher-value tasks.

Figure 6.5: Estimated impact of participation in Made Smarter Adoption on employment

Source: Made Smarter Adoption monitoring information, Business Structure Database (ONS), Ipsos analysis. Effects post- Made Smarter Adoption shaded in blue.

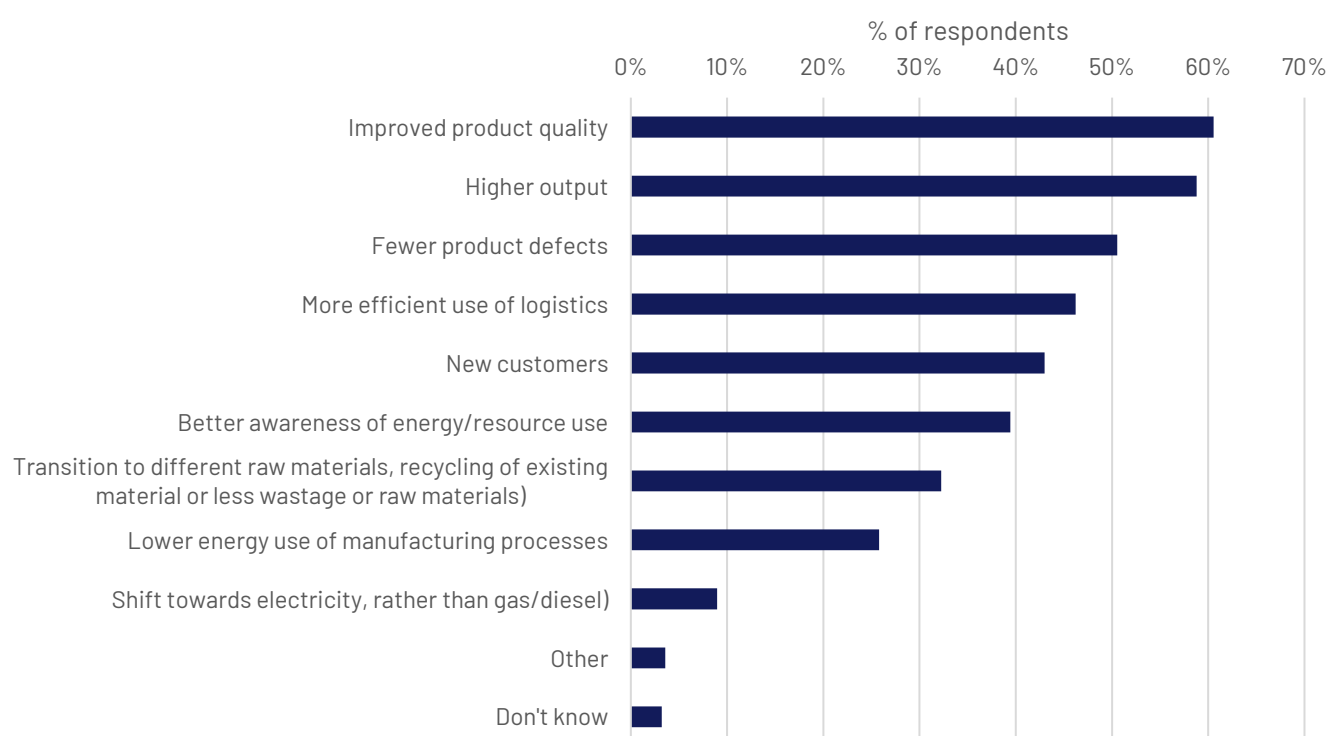
6.4.4 Productivity

Productivity gains were the most widely reported impact of participating in Made Smarter Adoption reported by respondents to the survey, with 40 percent indicating that productivity had increased as a result of the programme.

Figure 6.6: Perceived impact of participating in Made Smarter Adoption on productivity

Source: Survey of Made Smarter Adoption participants

The survey also provided some indication of the drivers of perceived productivity improvements, as outlined in Figure 6.7. The most frequently reported positive impacts arose from improved product quality (61 percent), followed by higher output (59 percent), fewer product defects (51 percent), and more efficient use of logistics (48 percent). A smaller proportion of respondents indicated that productivity improvements were driven by improvements in energy efficiency, including lower energy use of manufacturing processes (26 percent) and a shift towards electricity rather than gas or diesel (9 percent).

Figure 6.7: Nature of positive impacts on productivity

Source: Survey of Made Smarter Adoption participants

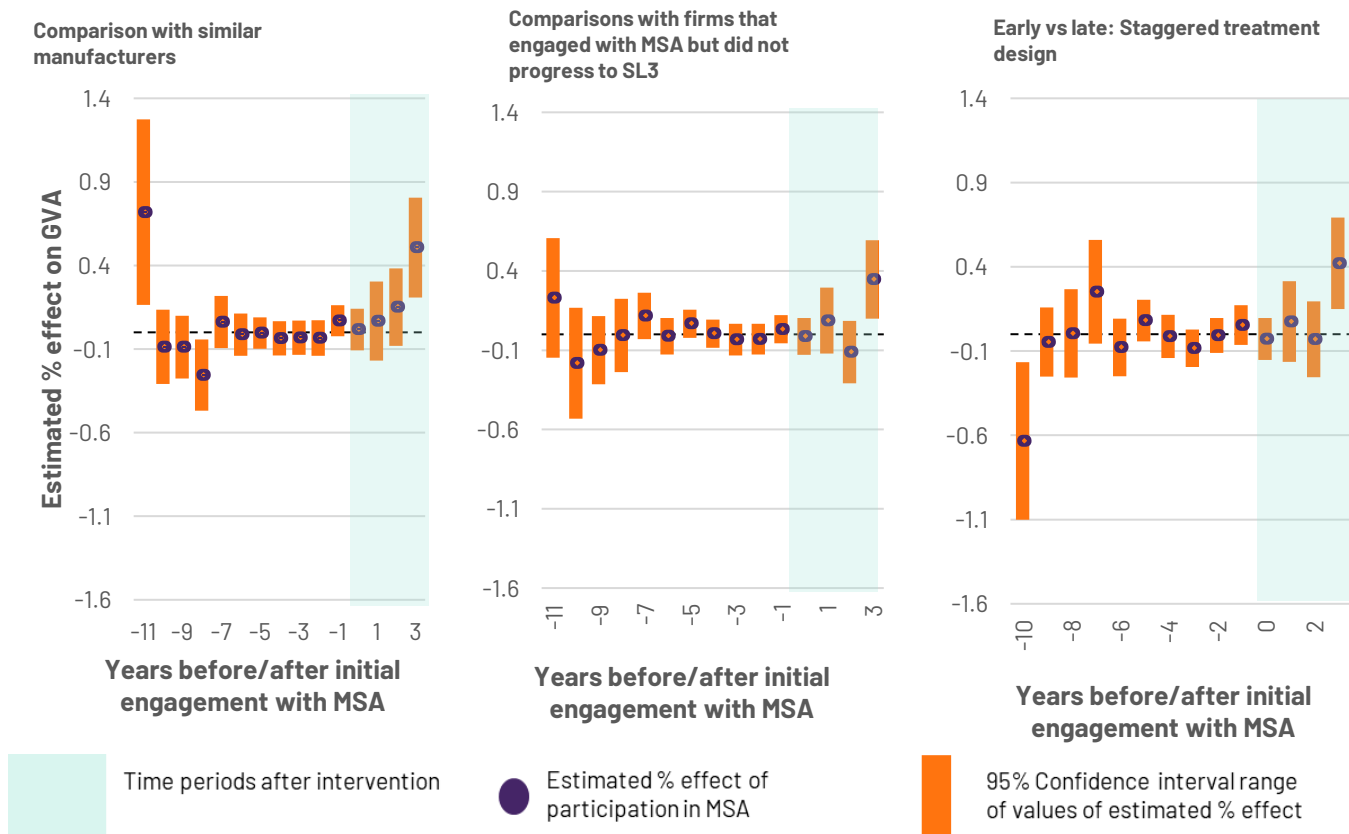
The findings from the econometric analysis indicated that:

- There was no evidence of a ‘step-change’ in the productivity of firms following their participation in Made Smarter Adoption. The estimated average annual effect on GVA and GVA per worker across all post-participation years was not statistically different from zero.
- However, as illustrated in Figure 6.8 and Figure 6.9, the modelling pointed to positive effects on the output (GVA) of participating firms emerging in the third-year post participation. As the programme had no effect on the numbers of workers employed by firms, this was also accompanied by an increase in productivity (GVA per worker).
- This can be seen by the positive estimated effect three years post-participation (and non-negative lower confidence bound, across all three models for both GVA and GVA per worker). As the programme had no statistically significant effects on the growth of firms, this implies that the programme has principally helped to promote greater resource efficiency. This is reinforced by the findings set out in Figure 6.10, which indicates that the programme led to large reductions in the input costs (consumption of intermediate goods and services) in the third-year post participation.
- These results would be consistent with programmes of IDT investment taking some time to be completed and to lead to measurable improvements in business performance. However, these findings are subject to considerable uncertainty and the magnitude of the estimated effects are considered implausibly large:
 - For example, the findings implied a reduction in input consumption of 40 to 50 percent relative to the comparison group. There was no indication from the case studies that effects of this order might have been expected from the IDT investments taken forward by participating firms.
 - Such large effects would also be inconsistent with the findings set out in the previous section in relation to the additionality of investments supported by the programme which indicated that, while participation in Made Smarter Adoption may have been critical in enabling smaller scale and targeted investments in IDTs, these were unlikely to have transformative effects on underlying productivity. At the same time, the grant value was too small to make a material difference to decision making in relation to significant investment programmes (which relevant firms acknowledged would largely have been taken forward in the absence of public funding, albeit at a slower pace).
 - Additionally, the estimated effect on GVA per worker (at 38 to 51 percent depending on the modelling approach) would imply increases in total GVA in excess of £1bn²⁰, which is not considered credible in the context of a programme with total costs of £19.8m.

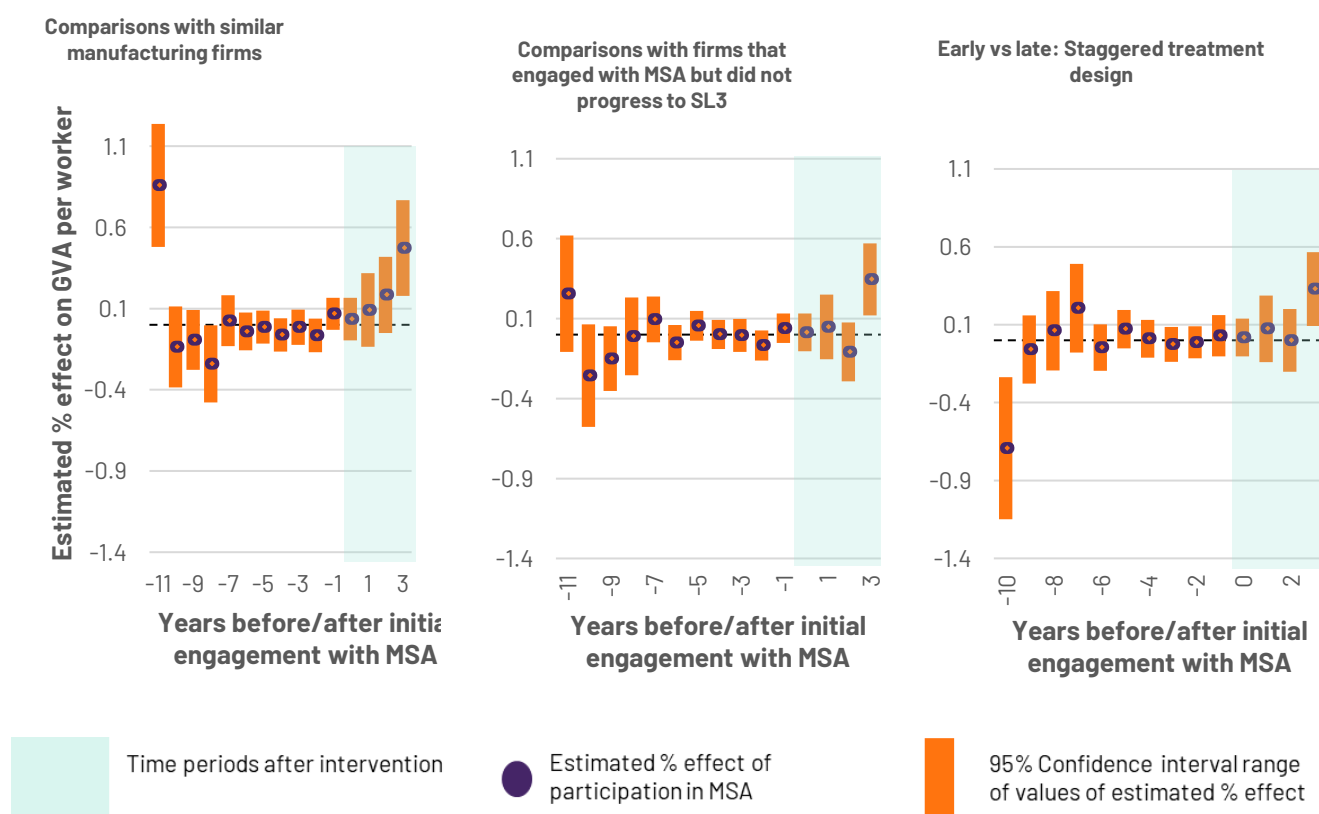
²⁰ Derived by applying the estimated effect on GVA per worker to the average GVA per worker of firms supported by the programme (£74,600), the average number of workers employed (33), and the number of firms supported (1,400).

- This finding could be as a result of a smaller number of firms who reached three time periods after intervention due to the staggered nature of delivery of the programme, with less than 10 percent of firms included in the analysis reaching three years after intervention.
- As such, while these findings provide some positive indications around the potential economic benefits of the programme, further research is needed (with longer time series) to provide greater certainty around the magnitude of the likely future productivity gains associated with the programme.

Figure 6.8: Estimated impact of participation in Made Smarter Adoption on GVA

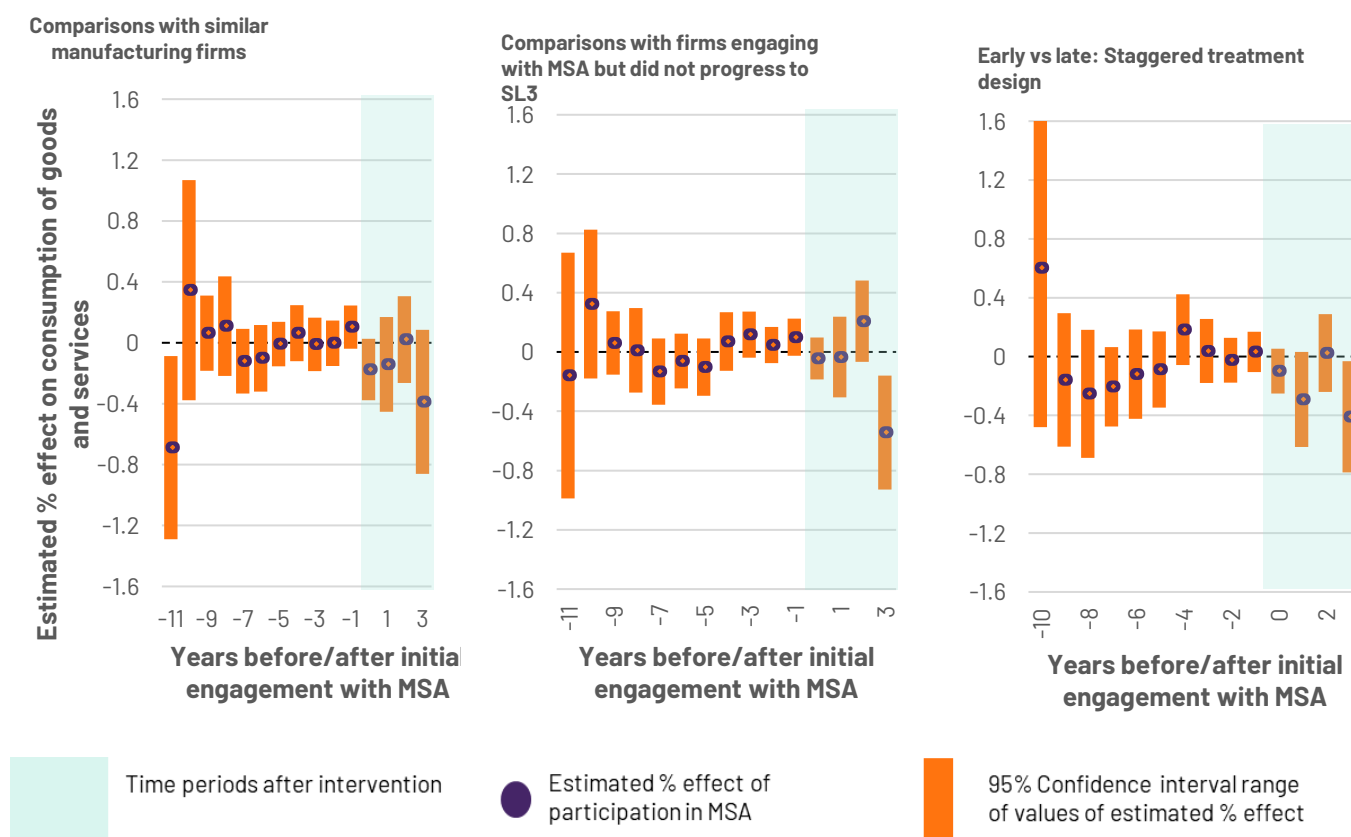


Source: Made Smarter Adoption monitori

Figure 6.9: Estimated impact of participation in Made Smarter Adoption on GVA per worker

Source: Made Smarter Adoption monitoring information, Annual Business Survey (ONS), Ipsos analysis. Effects post-Made Smarter Adoption shaded in blue.

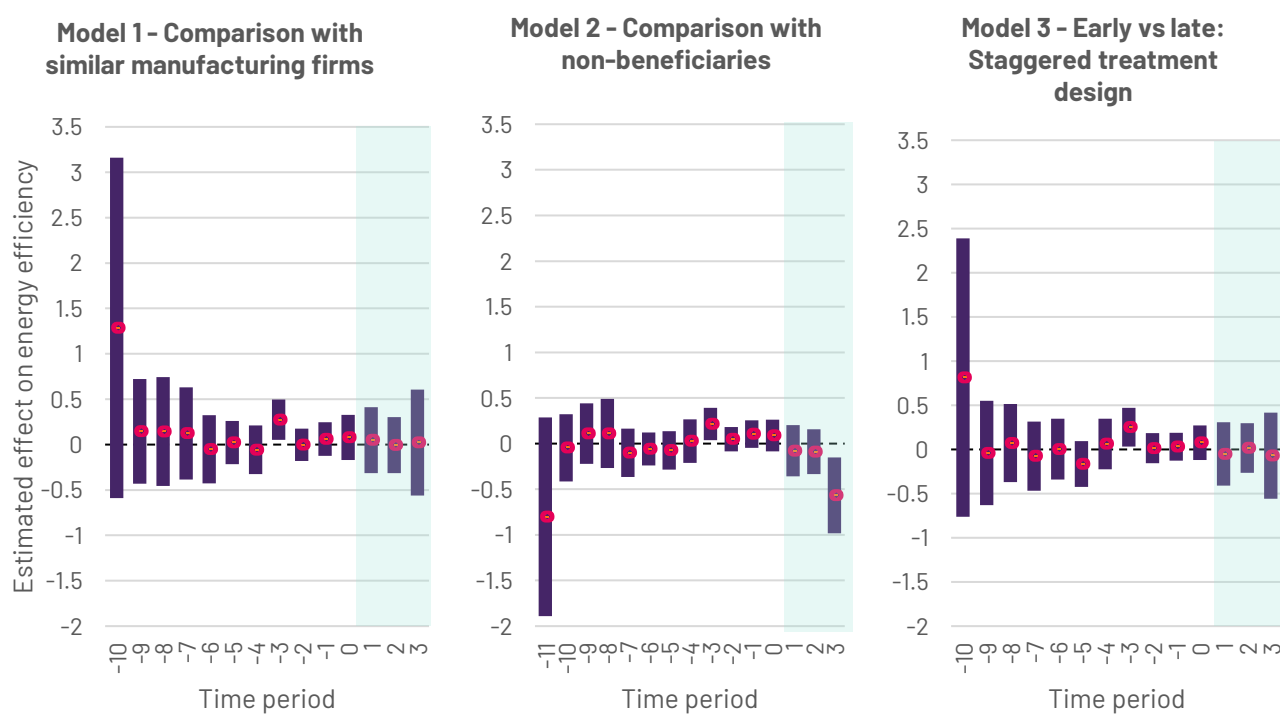
Figure 6.10: Estimated impact of participation in Made Smarter Adoption on consumption of intermediate goods



Source: Made Smarter Adoption monitoring information, Annual Business Survey (ONS), Ipsos analysis. Effects post-Made Smarter Adoption shaded in blue.

6.5 Estimated impacts on energy expenditure

Further analysis has been undertaken to assess the impact of the MSA programme on energy expenditure, utilising data from the Annual Business Survey, which keeps a record of the amount spent on energy for each firm within the sample. The results suggest that in the third year following the start of the programme, MSA beneficiaries experience a statistically significant decrease in energy costs when compared to firms that applied for the scheme but did not proceed. The estimated coefficient indicates a 56% decrease in energy costs. It should be noted, however, that the Annual Business Survey did not record data after 2022; consequently, this finding will require replication in a follow-up analysis. Nevertheless, this suggests that the observed increase in GVA could be primarily driven by cost efficiencies arising from a reduction in production inputs, such as energy.

Figure 6.11: Estimated impact of participation in Made Smarter Adoption on energy expenditure

Source: Made Smarter Adoption monitoring information, Annual Business Survey (ONS), Ipsos analysis. Effects post-Made Smarter Adoption shaded in blue.

7 Conclusions

This chapter sets out the conclusions of the Made Smart Adoption programme impact evaluation. The conclusions aim to answer the key evaluation questions.

7.1 Governance

- **Governance structure:** Evidence collected through the evaluation suggests that the multi-layered governance structure, with regular reporting requirements (monthly and quarterly), provided sufficient oversight to DBT on the regional implementation of the scheme. However, inconsistencies in monitoring data collection across regions, stemming from lack of standardisation in definitions and methodologies, limited comparability across regions.
- **Shared lesson learned:** Regions were able to share useful best practices and lessons learned on the scheme's delivery. However, regional leaders reported a lack of structured meetings, chaired by DBT, for this purpose. As such, communications among delivery regions, despite being rated positively, could have been more frequent and potentially more effective.
- **Programme monitoring:** While KPIs have been established between each region and DBT, defining expectations in relation to the volume of businesses engaged in the programme and the delivery of different types of support made available through Made Smarter Adoption, their definition differed slightly for each region. This did not hinder the programme's monitoring during its delivery, but limited comparability across regions.
- **Regional versus national delivery:** While the regional delivery model was viewed positively with respect to businesses' engagement and building trust among manufacturers, greater standardisation with core programme elements was suggested. Specifically, more standardisation was called for on roadmaps and leadership training, to ensure a consistent service across regions and reduce duplication of effort. This standardisation should focus on key aspects like content, objectives, and delivery format while allowing for some regional flexibility to address specific local needs. Centralising functions like CRM, and specialised advisor support could also improve consistency and create a national pool of specialist advisors able to address niche technical needs that may not be met by regional teams.

7.2 Demand

- **Programme demand:** Promotional activities appear to have been highly effective in raising awareness. The five regions successfully met their targets for engagement with businesses, indicating that the promotional activities reached sufficient volumes of eligible SMEs. This success is attributed to a multi-faceted approach, including digital marketing, tailored campaigns, word-of-mouth referrals, and events. Demand has been sufficient to meet participation targets. Enough businesses, who met the qualifying criteria and were likely to benefit, were interested in the programme and applied.

7.3 Initial diagnostic and roadmaps

- **Clarity of scope:** The initial in-depth assessment and the roadmapping workshop are generally rated positively among Made Smarter Adoption beneficiaries. The initial diagnostic session helped businesses understand their suitability for the programme (i.e. the extent to which they can benefit

from it), while the roadmapping session provided an increased understanding of IDTs or further validation of business needs.

- **Roadmaps' actionability:** In most cases businesses reported being able to effectively implement the actions agreed in the roadmaps. Feedback on these plans was generally positive, and businesses found them clear and actionable.

7.4 Intensive support

- **Accessibility and responsiveness:** Intensive support offered good level of tailoring towards business digital needs. Advisors actively assisted businesses with IDT adoption, grant applications, demonstrating an understanding of their goals as established earlier in the process. Advisor expertise, particularly in guiding businesses towards unexplored opportunities, likely facilitated a more informed and effective integration of digital technologies.
- **Potential misalignment:** However, some inconsistency in advisor expertise reveals a potential misalignment. Some businesses, particularly those requiring niche technological expertise, in some instances flagged the need for more specialised support. This suggests a gap between the identified needs and the assigned advisor's specialisation.
- **Tiered approach:** While businesses value the accessibility, responsiveness, and expertise of advisors, inconsistencies in specialisation and the programme not being designed to continue delivering ongoing support raise challenges for full IDT adoption and integration. This suggests a potential redesign of this service, such that it is not allocated with a fixed number of hours but following a tiered approach based on the digital readiness of the businesses, with businesses earlier in their digital journey able to access intensive support over a longer period of time.

7.5 Workforce development

- **Relevant content:** The Leadership and Management training was designed to equip business leaders with the skills necessary to drive digitalisation. The training successfully covered practical skills and strategies directly applicable to leading digital transformation, such as project management and communication. It also enhanced participants' understanding of Industry 4.0 technologies, enabling more informed decision-making around IDT adoption.
- **Some inconsistencies:** The most significant barriers to the Leadership and Management training for some business leaders was the time commitment required, as well as inconsistency in delivery and lack of tailored content, something that varied across the regions due to differences in delivery. In some regions this training required a significant time commitment from senior employees, making this an especially demanding aspect of the programme. This suggests that a different approach could be taken in some regions to the design of the leadership programme, rethinking the length of time required to complete it and tailoring the content to the businesses' needs.
- **Investment in training:** The quantitative data reveals an increase in IDT-specific training expenditure among participating firms, suggesting that the programme did encourage complementary investments. The fact that average annual spending on IDT-specific training increased substantially (from £2,600 to almost £25,000) after programme participation suggests the programme facilitated investment in workforce development. The data also highlights a reduction in the percentage of firms

reporting no investment in IDT-specific training, indicating that the programme successfully motivated SMEs to start to address their digital skills gaps.

7.6 Grants

- **Due diligence arrangements:** The existing due diligence procedures, which involve financial checks and project viability assessments, appear reasonably effective in mitigating risks like insolvency and ensuring value for money during the grant awarding process.
- **Support for productivity:** While the grant funding has played a role in accelerating the adoption of IDTs, its direct impact on achieving substantial productivity gains, especially for larger-scale digitalisation projects, requires further examination. The fixed grant amount of up to £20,000, while rated positively by businesses of lower digital maturity, might not have significantly influenced the cost-benefit calculations of larger and more digitalised firms, potentially limiting the realisation of substantial productivity improvements. This suggests that a tiered grant system could be explored, to better support more ambitious and potentially transformative digitalisation projects.
- **Additionality of grants:** While the programme undoubtedly acted as a catalyst for IDT adoption, it is important to acknowledge that many participating firms were already inclined towards digitalisation. The programme primarily served to accelerate these pre-existing plans, enabling businesses to implement their digitalisation strategies more rapidly and potentially on a larger scale than initially envisioned. The strength of the impacts of the programme were linked to baseline levels of digital readiness. Firms that were already digitally advanced tended to express scepticism about the programme's relevance to their business. Businesses with limited resources, low digital maturity, and a lack of internal expertise, tended to consider the programme a more important factor in their ability to take forward digitalisation initiatives.

7.7 Outcomes and intended impacts

- **DRL progression:** The survey of participating firms provided a strong indication that participation in the programme improved digital readiness levels considerably. Participating firms consistently progressed to higher (self-reported) digital readiness levels. Firms that made initial engagement with the programme, but did not progress their involvement any further, saw relatively little change in digital readiness – implying that the programme has had an important effect in improving the digital maturity of participating firms.
- **IDT adoption:** Evidence collected through the beneficiary survey as well as the case studies, confirms that Made Smarter Adoption participants implemented some form of new IDT following their participation in the programme. Around 47 percent of survey respondents reported they took forward automation programmes, and a similar proportion (45 percent) took forward digitisation of processes and database/data capture initiatives. IDT implementation projects were largely focused on production and assembly operations.
- **Effects on sales, exports and employment:** While self-reported results from the Made Smarter Adoption beneficiary survey show a positive effect of the participation in the scheme on businesses' performance (i.e. increased turnover, exports and employment), the most robust set of econometric results, did not confirm this pattern. Specifically, when comparing Made Smarter Adoption participant firms with an equivalent group of businesses that applied to the programme but did not go beyond the

initial assessment, the econometric analysis found that participating in Made Smarter Adoption had no statistically significant effect on turnover, employment or the level of exports.

- **Productivity:** There was no evidence of a 'step-change' in the productivity of firms following their participation in Made Smarter Adoption. However, the modelling pointed to positive effects on the output (GVA) of participating firms emerging in the third-year post participation. This was also accompanied by an increase in productivity (GVA per worker), driven by greater resource efficiency. These results would be consistent with programmes of IDT investment taking some time to be completed and to lead to measurable improvements in business performance. However, these findings are subject to considerable uncertainty and the magnitude of the estimated effects are considered implausibly large and further research is needed (with longer time series) to provide greater certainty around the magnitude of the likely productivity gains associated with the programme.

7.8 Recommendations

Recommendation 1: Greater Standardisation: The regional delivery model, while allowing for flexibility, has led to inconsistencies in service delivery. Standardizing core elements like roadmaps and leadership training would ensure a consistent quality of service across regions and reduce duplication of effort. This could include:

- * Define standard content, objectives, and delivery formats for roadmaps and leadership training.
- * Allow for some regional flexibility to address specific local needs.
- * Centralise functions like CRM and advisor support to improve consistency.

Recommendation 2: Creation of a national pool of specialist advisors: Firms sometimes struggle to obtain specialist expertise in areas like AI, automation, or ERP systems. A national pool of specialist advisors could address these niche technical needs, which may not be met by regional teams. Implementation would likely require identification of the key areas of specialist expertise needed, the recruitment and training advisors with these specialisations, and the development of a mechanism for regions to access these advisors on an as-needed basis.

Recommendation 3: Central resources hub: Existing online platforms could provide a valuable resource for businesses, hosting best practices, training materials, case studies, supplier directories, and other relevant information.

Recommendation 4: National CRM System: A national CRM system would improve data collection efficiency and enable more effective monitoring and evaluation of the programme.

Recommendation 5: Tiered support: The current grant amount (up to £20,000) may be insufficient to support transformative digitalization projects. A tiered grant system would allow firms to access larger grants for more ambitious initiatives. Implementation would likely require enhanced mechanisms for judging the level of additionality associated with grant applications relative to current mechanisms.

Recommendation 6: Multiple grant Applications: Allowing firms to make multiple grant applications would also support a continuous digitalisation journey, enabling them to implement IDTs in stages.

Recommendation 7: Exploration of alternative funding mechanisms: Exploring alternative funding mechanisms (or better signposting to existing funding instruments) could help de-risk investment and encourage more ambitious projects.

Recommendation 8: Enhanced focus on workforce development: Persistent skills gaps, particularly in advanced digital skills, hinder the implementation of digitisation initiatives. A greater focus on workforce development is needed. This could include providing more direct support for training, potentially through expanded grant funding or partnerships with training providers, promoting apprenticeships and traineeships in digital skills, as well as collaboration with education and training providers to develop relevant curricula (noting that the re-introduction of digital internships from April 2025 is likely to help address these issues).

Recommendation 9: Tailored support for digitally mature firms: More advanced firms may not benefit as much from general awareness-raising and basic training components. More tailored support is needed for these businesses – such as strategic guidance on integration, data analytics, and advanced training. On-demand access to specialist advisors may also be beneficial.

Recommendation 10: Ongoing support for continuous digital advancement: Participating firms tend to reach a digital maturity ceiling, suggesting a focus on discrete projects rather than continuous advancement. Ongoing support may help encourage a more strategic approach. There may be merits in developing a model for providing ongoing support, potentially through a tiered system based on digital maturity.

Recommendation 11: Skills support: Potentially redesigning the leadership and management programme, such that it provides a “menu” of (potentially online) skills and leadership courses to enable firms to select according to their individual needs.

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