

# The role of digital transformation in accelerating the UK's rebound from Covid-19

Part Two – Changing how Britain works

#### A report for Virgin Media Business

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#### **Executive Summary**



- In 2020, GDP contracted by almost 10%, marking the largest recorded annual fall in UK GDP.
- Whilst Cebr's macro models predicts GDP to return to current level in 2022 and get back to a fully recovered growth trajectory by 2025, the evolution of Covid-19 pandemic and of the associated restrictions imposed by governments are largely unknown.
- Covid-19 also led to a significant acceleration in digital technology adoption across organisations, estimated by organisations' decision-makers to be of approximately 3 years.
- Cebr's Covid-accelerated Digital Transformation (CADT) model shows that the digital transformation driven by Covid-19 can accelerate the UK's rebound from Covid-19, driving up to a £76bn boost to the UK economy throughout the recovery period 2021-2025 and up to £236bn boost by 2040.
- Drawing on primary research data, this study finds that key digital transformations implemented during Covid-19 working policies, digital delivery of services and use of big data - are set to shape the future of UK organisations.
- Whilst some barriers to their full implementation still exist, the associated potential benefits are found to be large.
- The benefits of remote working, as the digital transformation that mostly affected organisations in the UK, are large and varied. This study finds that flexible working can:
  - Be a socially inclusive policy, supporting employment opportunities for otherwise 'locked out' individuals;
  - Help the UK addressing the "productivity puzzle";
  - Drive significant environmental benefits;
  - Improve individuals' health with important implications for the UK public health system;
  - Contribute to the UK's levelling up agenda, by supporting regional economies; and
  - Enable individuals to do activities the public sector would otherwise bear the cost of.

#### Overview of the study

- The Centre for Economics and Business Research (Cebr) is pleased to present this report to Virgin Media Business (VMB), in which we look at the role of digital transformation in accelerating the UK's rebound from Covid-19 and in creating a wide variety of benefits for organisations, employees and the wider society.
- This report follows 'The role of digital transformation on the UK economy' Cebr report presented to VMB in January 2021, which estimated the economic impact of digital acceleration in the UK through Cebr's CADT model.
- This report builds on the previous study, investigating the economic impact of digital transformation using more robust and upto-date information collected through primary research - specifically:
  - An 'organisations' decision-makers survey', which sought to understand recent patterns in digital transformation in terms of working policies, digital delivery of services and use of big data, drawing on responses from individuals with decision-making responsibility within their organisation.
  - An 'employee & society survey', which sought to understand how employees' personal and professional life is affected by flexible working.
- A more comprehensive description of the two surveys is outlined in the Appendix.

#### Overview of the study



- The report is broken down into four different modules:
  - 1) Module 1 The Economy, which assesses the impact of digital transformation on the UK-wide economy and six sectors of interest through Cebr's CADT model. The model was updated replacing the assumptions with more robust and up-to-date information directly drawn on the 'organisations' decision-makers survey'.
  - 2) Module 2 Organisations, which summarizes the primary data collected through the 'organisations' decision-makers survey' into a set of insightful findings.
  - 3) Module 3 Employees, which summarises the primary data collected through the 'employee & society survey' into a set of insightful findings.
  - 4) Module 4 Society, which uses the insights from the 'employee & society survey' to assess the societal benefits that could be unlocked through a wide-spread adoption of flexible working policies.



### Module 1: The Economy

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### In 2020, GDP contracted by almost 10%, marking the largest recorded annual fall in UK GDP

- The UK economy is facing a significant economic downturn, as a consequence of the imposed restrictions to fight the spread of Covid-19 pandemic.
- In 2020, GDP contracted by almost 10%, marking the largest recorded annual fall in UK GDP.
- Cebr's in-house macro model (as of June 2021) produces a long term forecast of UK GDP. Cebr's macro models predicts GDP to return to current level in 2022 and get back to a fully recovered growth trajectory by 2025.
- Under this baseline scenario, UK GDP is estimated to be approximately £2,707bn by 2025. By 2030, GDP is expected to grow to approximately £3,014bn and by 2040 it is estimated to be approximately £3,615bn.
- Whilst the model was updated in June 2021 using the most upto-date assumptions, uncertainty around the shape of UK recovery exists as the pandemic and the related government responses are largely unpredictable.





Recovery Baseline GDP

Source: ONS, Cebr analysis

# Covid-19 led to an unprecedented shift in the use of digital technologies across the world

- Whilst many economies, including the UK, are experiencing an ongoing global economic recession in direct result of the pandemic, Covid-19 also led to an unprecedented shift in the use of digital technologies across the world.
- In a previous report for VMB 'The role of digital transformation on the UK economy', Cebr estimated a potential £232bn boost across the UK economy by 2040 driven by increased investment in digital transformation. The following three business transformations were identified as key drivers:
  - Flexible working;
  - Digital delivery of services; and
  - The creation of larger and richer training sets for machine learning (or use of big data).
- In this report, Cebr revises the assumptions that shaped the previous research, drawing on the most up-to-date information about UK organisations' decisions in relation to technology adoption. The research draws on a survey of 502 business decision-makers across the UK economy, which offers an accurate 'on the ground' picture concerning digital transformation across different organisations, roles, sectors and regions. Updated modelling assumptions include:
  - Organisations' increased level of investments in technology; and
  - The rate of technology adoption acceleration across UK organisations, as driven by the need for up-to date technology.
- Using a more recent macro model forecast (June 2021) adds a further degree of robustness to the research findings in relation to shorter term predictions.
- In addition to UK-wide estimations, the analysis focuses on six sectors of interest: construction, education, health, professional services, public administration & defence, retail.

#### Covid-19 has intensified the need for up-to-date technology

- Decision-makers across UK organisations believe that adopting the most up-to-date technology was more than "quite important" before Covid-19.
- Nevertheless, it became increasingly important throughout the pandemic and is set to keep this higher prominence in the future.
- Decision-makers working for public administration & defence organisations experience the biggest change, reporting a 30% increase in the importance of technology adoption.



#### Importance of adopting the most up-to-date technology on a scale from 0 to 10.

Source: Opinium survey, Cebr analysis

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## Organisations have reacted to new needs by increasing their technology / digital / IT spend in 2020/2021





- Decision-makers think that their organisations will increase technology / digital / IT spend in 2020/2021 by an average of 18%, compared to 2019.
- Focusing on specific technologies, decision-makers report collaboration tools as the biggest additional investment. Arguably, this result is driven by the need to enable individuals to efficiently work more flexibly.



Percentage increase in organisations' spending on specific technologies in 2020/21, compared to 2019.

Source: Opinium survey, Cebr analysis

#### There is a large consensus amongst decision-makers that Covid-19 has accelerated the use of technology

- More than two third (68%) of decision-makers state that Covid-19 has accelerated the use of technology across their organisations. This statistics is significantly higher for companies located in Northern Ireland (88%).
- In the next slide, we note that technology adoption acceleration is faster for :
  - Bigger organisations, which arguably have more resources to implement changes. Some of the change areas analysed require investment with high fixed costs, which is more feasible and efficient in larger firms.
  - Sectors at the forefront of the pandemic e.g. health and public administration & defence.



#### Has Covid accelerated the use of technology across organisations?

Source: Opinium survey, Cebr analysis

Has Covid accelerated the use of technology across organisations? Results reported by location of organisation's sites/offices.



■ Yes ■ No ■ Not sure

Source: Opinium survey, Cebr analysis

## On average, Covid-19 has accelerated the use of technology across organisations by 3 years



Average number of years of technology adoption acceleration, for the UK

Average number of years of technology adoption acceleration, by sector of interest.



Source: Opinium survey, Cebr analysis

Source: Opinium survey, Cebr analysis

## Digital transformation is set to accelerate UK's rebound from Covid-19 and drive up to a £236bn boost by 2040

- Drawing on more robust and up-to-date assumptions, Cebr's CADT model shows that digital transformation can accelerate the UK's rebound from Covid-19, driving up to a £76bn boost to the UK economy throughout the recovery period 2021-2025 and up to £236bn boost by 2040. These figures compare with £74bn and £232bn respectively, found in our previous report.
- Cebr's in-house macro model (as of June 2021) is used as baseline scenario, against which the Digital Transformation uplift is calculated.
- The CADT model assumes an increased investment in technology, leading to an acceleration in technology adoption of 3 years across all UK organisations. Modelling assumptions were taken from the 'organisations' decision-makers survey'.
- Some of the associated economic uplift will be realised as a result of investment increasing the capital available to workers and allowing them to work more productively.

#### Digital transformation uplift to UK GDP.

	2025	2030	2040
UK economy, real £bn (2020 prices)	76	133	236
UK economy, %	2.8	4.4	6.5

#### UK GDP, 2015-2040.



Source: Cebr analysis

#### Digital transformation can drive up to a £4bn boost to the UK construction sector by 2040

- The CADT model shows that digital transformation can drive up to • a £4bn boost to the UK construction sector by 2040. We estimate the size of the construction sector to be approximately £178bn in 2040, or a modest 2.1% higher than the counterfactual baseline.
- Decision-makers working in this sector stated that their • organisations:
  - Will spend on average 14% more on technology / digital / IT in 2020/2021 as compared to 2019; and
  - Have accelerated technology adoption by 2.6 years on average during Covid-19.
- Amongst the sectors of interest, construction was found to have the lowest rate of technology acceleration during Covid-19. This confirms our findings from the literature review, which outline the construction sector as a slow adopter of digital transformation.

#### Digital transformation uplift to construction sector GVA.

	2025	2030	2040
UK construction sector, real £bn (2020 prices)	1.3	2.2	3.7
UK construction sector, %	0.8	1.3	2.1
		Sc	ource: Cebr analysis





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2021

## Digital transformation can drive up to a £10bn boost to the UK education sector by 2040

- The CADT model shows that digital transformation can drive up to a £10bn boost to the UK education sector by 2040. We estimate the size of the education sector to be approximately £157bn in 2040, or 7% higher than the counterfactual baseline.
- Decision-makers working in this sector stated that their organisations:
  - Will spend on average 24% more on technology / digital / IT in 2020/2021 as compared to 2019; and
  - Have accelerated technology adoption by 2.9 years on average during Covid-19.
- Whilst in the past education was not the fastest technology adopter, the sector is expected to experience faster and more radical digital transformations going forward. This is demonstrated by the significant increase in digital spend by organisations in this sector and the changes that the sector underwent during Covid-19, e.g. online education due to schools forced to close.

#### Digital transformation uplift to education sector GVA.

	2025	2030	2040
UK education sector, real £bn (2020 prices)	2.2	6.7	9.9
UK education sector, %	1.6	4.8	6.8
		Sc	ource: Cebr analysis



UK education sector GVA, 2015-2040.

### Digital transformation can drive up to a £53bn boost to the UK health sector by 2040

- The CADT model shows that digital transformation can drive up to a £53bn boost to the UK health sector by 2040. We estimate the size of the health sector to be approximately £384bn in 2040, or a significant 16% higher than the counterfactual baseline.
- Decision-makers working in this sector stated that their organisations:
  - Will spend on average 17% more on technology / digital / IT in 2020/2021 as compared to 2019; and
  - Have accelerated technology adoption by 4.6 years on average during Covid-19.
- The pace of technology transformation was the fastest in the health sector during Covid-19. For a sector that more than any one else is at the forefront of the pandemic, digital transformation has been critical in meeting the public health needs driven by the global health crisis.

#### Digital transformation uplift to health sector GVA.

	2025	2030	2040
UK health sector, real £bn (2020 prices)	6.4	30.1	53.0
UK health sector, %	3.0	12.2	16.0



#### UK health sector GVA, 2015-2040.

Source: Cebr analysis

## Digital transformation can drive up to a £19bn boost to the UK professional services sector by 2040

- The CADT model shows that digital transformation can drive up to a £19bn boost to the UK professional services sector by 2040. We estimate the size of the professional services sector to be approximately £482bn in 2040, or 4% higher than the counterfactual baseline.
- Decision-makers working in this sector stated that their organisations:
  - Will spend on average 17% more on technology / digital / IT in 2020/2021 as compared to 2019; and
  - Have accelerated technology adoption by on average 2.6 years during Covid-19.
- The professional services sector has a 'high' current level of digital transformation adoption. Due to the shape of technology adoption curve, sectors with higher level of current adoption gets a lower impact from further technological transformation.

#### Digital transformation uplift to professional services sector GVA.

	2025	2030	2040
UK professional services sector, real £bn (2020 prices)	8.5	9.8	18.7
UK professional services sector, %	3.2	3.0	4.0
		Sc	ource: Cebr analysis





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## Digital transformation can drive up to a £37bn boost to the UK public administration & defence sector by 2040

- The CADT model shows that digital transformation can drive up to a £37bn boost to the UK public administration & defence sector by 2040. We estimate the size of the public administration & defence sector to be approximately £164bn in 2040, or a significant 29% higher than the counterfactual baseline.
- Decision-makers working in this sector stated that their organisations:
  - Will spend on average 22% more on technology / digital / IT in 2020/2021 as compared to 2019; and
  - Have accelerated technology adoption by on average 4 years during Covid-19.
- Above the average rate of technology transformation is set to enable the public sector to meet demand for digital government services, driving significant benefits for the economy.

#### Digital transformation uplift to public administration and defence sector GVA.

	2025	2030	2040
UK public administration & defence, real £bn (2020 prices)	4.8	16.4	36.9
UK public administration & defence, %	3.8	13.0	29.1





Source: ONS, Cebr analysis

Source: Cebr analysis

### Digital transformation can drive up to a £21bn boost to the UK retail sector by 2040

- The CADT model shows that digital transformation can drive up to a £21bn boost to the UK retail sector by 2040. We estimate the size of the retail sector to be approximately £406bn in 2040, or 5% higher than the counterfactual baseline.
- Decision-makers working in this sector stated that their organisations:
  - Will spend on average 13% more on technology / digital / IT in 2020/2021 as compared to 2019; and
  - Have accelerated technology adoption by on average 2.7 years during Covid-19.
- As professional services, the retail sector was found to have a 'high' current level of digital transformation adoption. As such, it is expected to get a relatively lower impact from further technological transformation.

#### Digital transformation uplift to retail sector GVA.

	2025	2030	2040
UK retail sector, real £bn (2020 prices)	9.6	10.8	20.9
UK retail sector, %	3.2	3.3	5.4





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#### Module 2: Organisations

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## Organisations across the survey sample have not been negatively impacted by Covid-19

- Decision-makers report that key organisations' metrics have not been negatively impacted by Covid-19. Note that these are the results from our entire sample, with greater weight therefore placed on the key sectors of interest and less weight placed on sectors more severely hit by the crisis e.g. hospitality. As such, these results are fully representative of the UK economy, which as we previously noted is experiencing a significant economic downturn.
- Interviewees think that customer satisfaction is the metric that improved the most, increasing by 5% on average across organisations. This result is driven by public administration & defence and health sectors, which registered an improvement of 6% and 7% respectively. Arguably, digital delivery of public and medical services underpins this result.
- Improvement in employee metrics, such as satisfaction and productivity, could be a result of a more wide-spread flexible working culture.
- In order to draw a more accurate picture of the relationship between flexible working and employees' performance and personal/professional well-being, we have covered these topics in our 'consumer & society survey'.
- Greater costs could be represented by additional investments in new technologies, outlined in Module 1 of this report.



Key organisations' metrics in 2020/2021 compared to 2019 across organisations.

Increased No change Decreased

#### Average increase, %.

Turnover	Costs	Employee turnover	Productivity	Attrition rate	Employee satisfaction	Customer satisfaction
2.2	3.5	2.8	3.4	3	3.6	4.9

Source: Opinium survey, Cebr analysis

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## Technology-related changes in working policies were largely implemented by UK organisations

- We interrogated decision-makers about which areas between working policies, digital delivery of services and use of big data, experienced technology-related changes.
- Focusing on the six sectors of interest:
  - Construction and Retail experience a balanced evolution in the three key areas of changes;
  - Changes in working policies and digital delivery of services are predominant in the Education sector. Closure of schools and imposition of online education forced fast transformations in these areas;
  - Amongst the six sectors, **Health** experience one of the biggest changes in the digital delivery of services. Online/telephone GP appointments or digital medical prescriptions are examples of that;
  - Public administration & Defence is the sector most interested by changes in working policies. Arguably, public sector is an office jobs intensive sector and, as such, a large proportion of employees could switch to remote working at the height of Covid-19.

Areas that experienced a change during Covid-19 across the UK economy and the six sectors of interest.



Source: Opinium survey, Cebr analysis

### Organisations in our sample with offices/sites in NI are more prone to adopt changes, relative to those across the rest of the UK

- Northern Ireland (NI) is the region were technology acceleration was most wide-spread according to interviewed decision-makers.
  - 71% of organisations implemented some changes in working policies compared to 55% of companies across the UK / 71% across UK large organisations.
  - 71% implemented changes in the digital delivery of services compared with 50% of companies across the UK / 63% across UK large organisations.
  - 50% implemented changes in the use of big data compared with 33% across the UK / 44% across UK large organisations.



Percentage of organisations in NI that implemented technology-related changes.

Source: Opinium survey, Cebr analysis

### In Northern Ireland, large firms were overrepresented within our survey sample, but this alone cannot explain the findings

- This result is (at least explained by the high proportion of large organisations in our NI sub-sample (58% vs UK average 23%). As previously noted, larger organisations have been more active in implementing changes.
- However even when adjusting for the potential overweighting of large organisation within the Northern Irish sample, the implementation of technology-related changes is still greater than the UK average. Northern Irish firms across our sample have implemented changes in working policies at the same rate as the average for large firms across the UK, and have implemented the digital delivery of services and the use of big data at a higher rate.





#### Large organisations (250 employees or more)

- Small organisations (10-49 employees)
- Medium-size organisations (50-249 employees)





Source: Opinium survey, Cebr analysis

Source: Opinium survey, Cebr analysis

### The evidence suggests Northern Irish firms may have started with a slightly lower baseline level of technology than in the UK

- One potential explanation for the stronger rate of digital adoption in Northern Ireland, is that firms were starting from a lower pre-Covid baseline.
- To test this hypothesis, we compare the pre-Covid level of technological development across a range of metrics for Northern Ireland, the UK and the average for all UK large firms.
- Given the general overweighting of large Northern Irish firms within our Northern Irish sample, if there were similar levels of technological development pre-Covid, we would expect the Northern Irish results to be closer to those for the average for all UK large firms.
- Instead, average levels of technological development are closer to the average for the UK. Across all metrics, Northern Irish firms report an average level of pre-Covid development of 6.2 – closer to the UK average (6.0) than that for solely large firms (6.7).
- While the evidence is not strong and further research would be ideal, this does provide support for the hypothesis and would also offer an intuitive explanation for the greater Northern Irish level of technology-related changes over the Covid period.



Percentage of organisations in NI that implemented technology-related changes.

Source: Opinium survey, Cebr analysis

## Adoption of specific technologies and/or policies related to ways of working has particularly increased throughout Covid-19

#### How well developed were/are these technologies/or policies across organisations.



Source: Opinium survey, Cebr analysis

2021

## Changes in working policies are set to stay in the majority of organisations

- Changes in working policies are the most popular across organisations.
- On whether these changes will be made permanent:
  - A large majority of decision-makers (69%) believe that changes in working policies will be made permanent by their organisation;
  - Only 12% of respondents do not think that changes will be made permanent; and
  - 19% of respondents are unsure about the evolution of working policies in their organisation.
- Employees' demand because of improved work/life balance of employees is the first reason to be mentioned by decision-makers. Results from the 'consumer & society survey' confirm this statement, as shown in Module 3 of this report.
- 12% of respondents who do not think that changes will be made permanent mention need of in-person collaboration and no improvements from changes as key reasons.



Key reasons for making the change in working policies permanent across organisations.

Source: Opinium survey, Cebr analysis

## Whilst remote working is expected to be more common than pre-Covid, office-based work is set to remain predominant

Office usage policies across organisations before Covid-19, at the height of Covid-19, last week (as of July 2021) and after that all Covid-19 related restrictions will be lifted.



Source: Opinium survey, Cebr analysis

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### The need for employees to be physically at the company site/office continues to be partially present

- According to the survey results, about half (53%) of UK organisations had a flexible working policy in 2019. This has increased during the past 18 months, as the introduction of remote working was forced by the imposition of restrictions to fight the pandemic.
- The average number of days workforce works remotely passed from an average of 1.4 to 3.3 at the height of Covid-19. Going forward, decision-makers expect employees to work remotely about half of the week (2.3 days).
- The need for employees to be physically at the company site/office continues to be overly present across organisations (19% of the total 502 respondents). Construction and education are the sectors that more experience this barrier, with 35% and 28% of responses respectively.
- Also additional cost and hampered company culture are mentioned amongst the most important barriers. Decision-makers in retail stressed the difficulty to maintain the company culture (18% of responses).
- However as the previous slide demonstrated, these barriers are unlikely to be sufficient for firms to fully return to the pre-Covid status quo. Instead, a hybrid approach, representing something between the peak-Covid level of remote working and the pre-Covid level is expected.

#### Other/ None of the above Lack of company's trust Cost of employees' training to use IT equipment at home Unable to provide the right customer experience Lack of employees' engagement with company's values and objectives Unreliable broadband connection at employees' homeplace Employee's lack of confidence with remote working technologies (hardware/software) Type of jobs benefitting from interactions and collaboration with colleagues in the office Difficult to maintain company culture Cost of IT equipment Employees need to be physically at the company site/office to perform their job 10 20 40 50

Barriers to introduce flexible working policy across organisations.

Source: Opinium survey, Cebr analysis

Number of responses

## Improvement in service quality and experience is decisive for organisations to keep changes in digital delivery

- Digital delivery of services was the second most mentioned area of technological transformation by organisations.
- On whether these changes will be made permanent:
  - A large majority (77%) of decision-makers believe that changes in digital delivery of services will be made permanent by their organisation.
  - Only 8% of respondents do not think that changes will be made permanent.
  - 15% of respondents are unsure about the evolution of digital delivery of services in their organisation.
- The first most reported reason for making these changes permanent is the improvement in service quality and experience through digitalisation, ecommerce, contact centre and access to new markets.
- Whilst digital delivery of services enables organisations to reach new customers irrespective of their location, the need of in-person collaboration might prevent some organisations from making the changes permanent.

#### Key reasons for making the change in digital delivery of services permanent across organisations.



Source: Opinium survey, Cebr analysis

## Digitalisation has helped organisations to reach a wider spectrum of customers

Customers' location before Covid-19, at the height of Covid-19, last week (as of July 2021) and after all Covid-19 related restrictions have been lifted.



Source: Opinium survey, Cebr analysis

### The retail sector expects to have a more balanced customers mix after all Covid-19 restrictions have been lifted





Source: Opinium survey, Cebr analysis

## Whilst the use of big data has the potential to offer significant benefits to organisations, it requires staff training and buy-in

- Although to a lesser extent than other technological transformations, the use of big data has evolved across organisations.
- Of those organisations that report a change in this area:
  - A large majority (72%) of decision-makers believe that changes in the use of big data will be made permanent by their organisation;
  - 14% of respondents do not think that changes will be made permanent; and
  - 13% of respondents are unsure about the evolution of the use of big data in their organisation.
- Reasons for making these changes permanent are relatively spread out. As additional interpretation, changes in this area are complex and costly to implement. Once they have been successfully adopted, an organisation has a strong incentive to keep them in place.
- Staff preference for older practices and the required learning curve to a meaningful utilisation of big data might induce some organisations to remove changes in this area.



Key reasons for making the change in the use of big data permanent across organisations.

Source: Opinium survey, Cebr analysis

## Looking forward, organisations believe that the technological transformation brought in by Covid-19 will have a positive impact

- Covid-19 has accelerated technological adoption across UK organisations and this will have an impact on the future. In addition to the economic benefits estimated through Cebr's CADT model, we are interested in decision-makers' views.
- Looking into a 2 years horizon, decision-makers think that Covid-19 will have significantly changed the way their organisation works (on average 6.5 on a scale 0-10).
- Amongst the sectors of interest, those foreseeing a biggest change are health and education. The health sector is also the most confident about the positive impact of these changes.
- Overall, the impact of changes brought by Covid-19 in the way organisations work is found to be positive across the whole economy, as reported by 63% of respondents.
- Public administration & defence, followed by retail and education, are slightly less confident.



How positive/negative the impact of changes brought by Covid-19 in the way organisations work are.

Source: Opinium survey, Cebr analysis



### Module 3: Employees

2021

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## Employees who can do their job remotely would like to work remotely an average of 3 days a week

- Before Covid-19, almost 50% of employees were never working remotely, while only 10% were always working remotely
- The situation was reversed during Covid, when only 12% were never working remotely and 51% were working from home everyday.
- Employees believe that working remotely will be more accessible in the future and after Covid-19 only 23% of people think they will never work remotely; approximately half of what it was pre-Covid-19. Going forward, employees expect to work remotely 2.5 days per week.
- Employees were separately asked how often they would work remotely if they had the choice. They report an average of 2.8 days/week. However as seen in Module 2, decision-makers expect employees to work remotely about half of the week (2.3 days).
- Employees working in professional services experienced the most substantial change moving from 1 day of remote working before Covid-19 to almost full remote working at the height of Covid-19. Going forward, they expect to be the sector where remote working is more common, with 3 days/week worked remotely.
- While there is still a small disparity in employer/employee expectations for the extent of future remote working, these are relatively closely aligned and suggest a future arrangement very different to pre-Covid.
- A future where the proportion of time spent working remotely aligns better with employees' preference could lead to increased employees' satisfaction and engagement with their organisations, improving morale without likely affecting hours worked.



On average, how many days did/do you work remotely?

Source: Opinium survey, Cebr analysis
## Remote working improves employees' work-life balance

- The cost of commuting, in terms of monetary value and time, is the most frequently mentioned reason for wanting to work remotely, followed by improved work-life balance
- Employees feel that working remotely offer them several advantages in both the professional and the personal sphere.
- Just below one third (29%) of employees feel more productive when working remotely. This could be explained by a variety of factors, such as lesser distractions, more independence and lack of commute.
- 27% feel that working remotely offers them greater opportunities to spend time doing the activities that they prefer, including relaxing, caring for others and exercising.
- Finally, remote working plays an important role as inclusive policy for employees with different needs, and in particular for people with disabilities, parents with dependent children and people with caring responsibilities. More detailed analysis on the economic benefits associated with the inclusiveness of remote working are presented in the next slides.

Main reasons for employees to wanting to work remotely.



Source: Opinium survey, Cebr analysis

# Flexible working can be a socially inclusive policy, supporting employment opportunities for otherwise 'locked out' individuals

- Across our entire sample, 45% of respondents who are currently out of a job, indicated that they would be more inclined to take a job with remote working.
- Within this, we further focus on three groups, for whom it is hypothesised that remote working may have disproportionate benefits, in terms of labour market access. These are parents, those with disabilities and carers. For differing reasons, each may find it difficult to commute to work, or spend an entire day away from home.
- Our survey results show that for parents and carers, flexible working can bring greater than average labour market opportunities, although this is not the case for those with disabilities.
- Across the UK, these results imply that flexible working could lead 3.8 million currently out of work individuals to be more inclined to take a job with remote working.[1]
- 1.2 million of these are parents, 1.5 million have a disability and 0.5 million are carers.



Share of currently out of work respondents who would be more inclined to take a job with remote working.

Source: Opinium survey, Cebr analysis

### By age, those between 35 and 54 are most likely to benefit

- Of those who are out of work, individuals between the ages of 35 and 54 are most inclined to take up a job with remote remoting. 47% of those in this age bracket are more inclined to take up a job offering remote working, compared to 43% for both the 18-34 and 55+ age brackets.
- Considering also the previous slide, this is likely driven by the concentration of parents in this age bracket for whom remote working is advantageous.
- 18-34 year-olds who are out of work are most unsure about their views. As will be seen, this may well be driven by concerns about career development, in the absence of inperson interactions.
- Across all age brackets, the most selected answer is that out of work individuals are more inclined to take up a remote opportunity.

People not in employment more inclined to take up a job offering remote working, by age group.



■ Not more inclined to take up remote job opportunity

Unsure

Source: Opinium survey, Cebr analysis

# Nearly half of the UK's 8.6 million part-time workers would increase their hours if they could primarily work remotely

- Of the UK's total workforce, just over a quarter (26%, or 8.6 million total employees) work part-time.
- Of these, our survey responses indicate that 43% would choose to increase their hours, if they could work remotely.
- Based on the average increase in hours worked implied by the figure on the right, on average part-time workers would choose to increase their hours by 5.1 hours per week.
- For parents, this figure is 5.3 hours, those with a disability 5.0 hours and carers 6.8 hours.
- Considering also the share of employees who can feasibly work remotely, this could lead to an increase in hours worked of 1.27 billion hours annually. This is equivalent to an extra 631,000 full-time employees entering the workforce.

### Preferences of part-time employees to change their hours, if presented with a flexible working alternative.

Yes – full time

- Yes more than 8 extra hours a week (but still not full-time)
- Yes up to 8 extra hours a week
- No I would not work more hours. However, I could better control my hours
- No I don't like the thought of remote working
- No other reason

Don't know / not sure



### By age group, younger part-time workers are significantly more inclined to work more hours if working partly remotely

- When breaking down the part-time worker survey respondents by age, the sample sizes do get smaller. However given the very clear trend present in our findings, it is clear that younger part-time workers have a greater preference to increase their hours if presented with a flexible working alternative.
- Of those aged between 18 and 34, 56% of respondents stated they would increase their hours if presented with a flexible alternative. This falls slightly to 52% for the 35-54 age bracket and significantly for those over 55 (20%).
- Considering this, and the prior slide presenting similar analysis for out of work individuals, the evidence suggests that flexible working is more beneficial for unemployed, or underemployed, younger and middleaged employees.





Part-time workers who are unsure

Source: Opinium survey, Cebr analysis

# This increased part-time work could boost UK GDP by 2.4%

- Considering the potential increase in hours worked by part-time workers if offered a remote working solution, alongside average output per hour worked across the economy[1], we can estimate the additional GVA supported as a result of this increase.
- Across the economy, a potential annual boost to GDP of £48.3 bn is possible – equivalent to 2.4% of 2019 GDP.
- Of this, 43% (20.8bn) is estimated to be possible from part-time parents increasing their hours, 15% (£7.1bn) from disabled workers and 12% (£5.7bn) from part-time carers.

Increase in GVA attributable to increased hours worked by part-time workers, £m, 2019 prices.



Source: Opinium survey, ONS, Cebr analysis

[1] Here, we considered whether it was more appropriate to use the average output per worker for solely part-time workers, or the average across the economy. While part-time workers do disproportionately work in lower productivity sectors such as retail and hospitality, it is unlikely to be these employees who can feasibly work remotely. We have therefore assumed that the part-time workers who can feasibly work remotely are more likely to be in industries more representative of the wider economy, than solely those in which part-time workers as a collective work.

2021

# Flexible working could enable part-time workers to earn £3.6k/year of extra-income

- Considering the potential increase in hours worked by part-time workers if offered a remote working solution, alongside median hourly earning, we can estimate the extra income that part-time workers could earn.
- Part-time workers that are informal carers would benefit the most from a remote working solution as they could work up to 7 additional hours per week and earn an additional £4.8k per year.





2021

## Professional and personal benefits of in-person interactions at work is the biggest barrier to remote working

Barriers to remote working perceived by employees.

- We asked all employees who could possibly work remotely to select up to three barriers to working from home.
- Individuals benefitting from in-person interactions with colleagues (i.e. better knowledge sharing and ability to work in team) is the most popular answer amongst respondents (27%). Personal interactions not only improve team efficiencies and spread of information, they also foster individual performance for some people.
- Importantly, 24% of workers do not see any barriers amongst those identified in the survey.



Source: Opinium survey, Cebr analysis

## Younger people tend to perceive more barriers to remote working, with career development the most significant

- While we previously presented evidence that younger part-time workers would likely benefit from a shift to more remote working, collectively those in the 18-34 age bracket report the most significant perceived barriers.
- Only 14% of young remote workers report no perceived barriers, compared to 30% and 34% for 35-54 and 55+ respectively. The most significant perceived barrier in within the 18-34 bracket is job and career development suffering from a lack of in-person interactions.
- Significantly more younger workers also report concerns over career progression, relative to the two older groups. Intuitively this makes sense, with younger workers having the most future career development still at stake. Alleviating this concern and ensuring this perceived barrier does not become a reality, will be key for employers moving forwards.
- While it may be hypothesised that older non-digital native workers may disproportionately struggle with increased technological utilisation, this is interestingly not borne out in our data. Just 10% of 55+ employees report this as a potential barrier, compared to 16% of 18-34 employees and an average of 12% across the entire sample.



■ 55+ ■ 35 - 54 ■ 18 - 34

Source: Opinium survey, Cebr analysis

Barriers to remote working perceived by employees, by age group.

# The impacts of remote working are considered largely positive by employees

- Overall, the impact of remote working is considered largely positive by workers, as **both professional and personal performances are expected to benefit from this working policy.**
- Amongst the different metrics, work-life balance and personal finances are the most positively impacted by remote working. The lack of commute leads to significant benefits, contributing to improved personal finances and work-life balance.
- Whilst people's professional and personal life is benefitting from remote working, almost 30% of employees fear a negative impact on professional development. Employers understanding this concern and considering solutions will be important in the future attractiveness of remote working.



Share of people with at least partial access to remote working, reporting positive/negative impacts on various metrics.

# Employees' feelings towards remote working are largely positive

- Workers with at least partial access to remote working were asked how they feel about remote working, presenting them with a list of adjectives. Positive feelings largely outweigh negative feelings.
- Of the most significant results:
  - 36% of employees feel more productive whilst only 7% fell less so.
  - 34% of employees feel more in control compared to 8% feeling less in control.
  - 26% and 27% of employees feel more trusted and empowered respectively.
  - Employees feel more focused at home on the whole with 20% feeling less distracted and 11% feeling more distracted.
  - The most negative feeling towards working from home is feeling disconnected and lonely with 16% and 15% responding feeling this way respectively.



Employees' feelings towards remote working.

Source: Opinium survey, Cebr analysis

# Remote working policies could play a significant role in addressing UK's subdued productivity

- As increased productivity is a popular theme when discussing the benefits of remote working, employees were asked to quantify the amount of additional work done, if any, in a day where they work remotely as compared to a day in the office.
- Just under half (47%) of employees who could feasibly do their job remotely think that they can get some or a lot more done when working remotely. These employees do on average 2 hours of additional work per day.
- Whilst these results need to be interpreted cautiously as they are self-reported by employees and, as such, could embed an element of optimism bias, evidence points out to large potential gains from remote working.
- Economic benefits from increased productivity driven by flexible working are captured by the CADT model. While we would certainly expect labour productivity (output/worker) to increase, quantifying the extent to which increases in output are a function of an increased labour stock or more productive workers is challenging.
- Classical economic theory suggests that at least some share of the increased output will be supported by increased productivity, but the exact value is as much as function of broader social policies (e.g. retirement ages and net migration).
- This is a particularly important issue given broader macroeconomic contexts. Unlike both their own productivity pre-financial crisis and the experience of other major developed economies since, the UK's productivity (as measured by output per worker) has been relatively flat since 2008. Policies which 'unlock' productivity growth are therefore of particular value.



Do you believe that you get more work done than you would at your workplace or your home?

Source: Opinium survey, Cebr analysis

### Cebr

# Respondents resoundingly confirm the large and wide benefits of remote working

- Workers with at least partial access to remote working were asked whether they agree or not with a series of statements outlining the benefits of remote working.
- Respondents resoundingly agree with all the statements, confirming the large and wide benefits of remote working already outlined in this report.
- Employees confirm that lower costs and better work-life balance are at the forefront of the benefits generated by remote working.
- Another benefits strongly supported by respondents is the work flexibility created by remote working. Individuals feel enabled to work to the timeframe and pace that best suit them, enabling them to have space for personal commitments.
- The least supported statement is about remote working as enabler of collaboration with colleagues and customers. The need of interactions comes out again as a barrier to remote working.

#### Statements about remote working.

- Remote working enables customer service teams to do a better job
  - Remote working would enable me to save money
  - Remote working enables me to build my workday around other commitments
  - Remote working enables me to work to a timeframe / speed that suits me
- Remote working enables me to collaborate easier with colleagues and customers
  - Remote working enables me to be more productive
- Remote working enables better concentration on work due to fewer distractions
- Remote working allows for a better work / life balance
- Remote working enables me to get more work done because less time is wasted commuting / travelling



Agree Disagree

Source: Opinium survey, Cebr analysis

# Workers would get an average of 2 hours a day of additional leisure time thanks to the possibility to work remotely

- The additional available time to do the things that people enjoy, such as staying with family and travelling, came out as one of the main reasons for wanting to work remotely.
- On average, by working remotely workers save an additional 2 hours per day. This can be interpreted as a combination of being more productive, time saved through not travelling into work and less distractions.
- On how employees use or would use this additional time:
  - Relaxing (46%), which is the most common answer, can drive significant mental and physical health benefits to individuals;
  - Exercising is the next most popular choice with 41% of responses. The potential impact of more time dedicated to exercising on individual physical health and on the UK public health system are assessed in Module 4.
  - Spending time with family, pursuing hobbies and cooking are other preferred leisure activities.

Number of respondents reporting they would choose particular activities if remote working allows more leisure time.



Source: Opinium survey, Cebr analysis

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### Long-term success of flexible working much depends on employers investing in IT equipment and making policies clear

- All those capable of working remotely were asked what employers should do to make flexible working a sustainable long-term option for organisations.
- The most popular response (46%) is for organisations to provide staff with the right IT equipment to work from home. As observed in Module 2, decision-makers mention the cost of equipment as a significant barrier for organisations to introduce flexible working policies.
- An effort towards more clear and up-to-date flexible working policies across organisation is also recommended by employees.
- To conclude, employees are more satisfied working remotely. The success of remote working is based on employers providing the right IT equipment (allowing the realisation of potential productivity gains) and clearly outlining the organisations' attitude towards flexible working.
- It is notable that the cost of IT equipment is also expressed as a significant barrier to remote working for employers. Present in both the decision-makers' and employees' survey, this represents a significant risk factor, which could undermine the realisation of the wide-ranging benefits assessed throughout this report.



50

What employers should do to ensure flexible working can succeed permanently.

Update or change the flexible working policy Employers being very clear about their hybrid working... Employees are provided with the right IT equipment

Source: Opinium survey. Cebr analysis

Number of responses

261

261

300

328

350

Ceb

2021



## Module 4: Society

Cebr

# Reduced commuting could support significant environmental benefits

- With 65% of commuting trips taking place by car or taxi in 2019, travelling an estimated 56 billion miles, commuting has significant environmental costs. Only 15% of trips take place by transport modes with no environmental footprint (walking or cycling).
- However 61% of employees believe their job could at least partially be done remotely. This is equivalent to almost 20 million people across the UK.
- If these individuals worked even one extra day per week remotely, this would save over 1.2 billion car/taxi trips annually, and 382 million combined bus and rail/light rail trips.
- Considering the net effect across all transport modes, this would reduce emission by 3.1 million tonnes of CO2e. This would be equivalent to a 0.7% reduction on the UK's total greenhouse gas emissions in 2019.
- Valued using recommended carbon values from the DfT's transport analysis guidance (TAG), this reduction in emissions would be worth £219m per annum. These values reflect the costs required to limit global temperature increases to 2 degrees centigrade above pre-industrial levels

Environmental impact of reduced commuting, if potential remote workers worked one additional day per week from home.

	Reduction in commuting trips (million)	Reduction in Reduction in distance travelled emissions (million (million miles) tCO2e)		Value of reduced emissions (£m)	
Car	1,211	10,424	2.60	181	
Taxi	16	79	0.02	1	
Motorcycle	17	136	0.02	3	
Bus	153	1,007	0.17	12	
Rail/Light rail	229	5,329	0.30	21	
Walk	211	143	0.00	0	
Cycle	68	223	0.00	0	
Total	1,905	17,340	3.11	219	

Source: Opinium survey, DfT, BEIS, ORR, Cebr analysis

## With flexible working, 41% of people would use additional leisure time for exercise, reducing national physical inactivity levels

- The UK government advises that adults do at least 150 minutes of physical activity, but as of 2018/19, 37% (nearly 20 million people) do not meet this target. This creates an 'exercise shortfall' of 256 million hours,
- However with flexible working, 41% of people estimate that they would use some of their additional time on exercise.
- Considering the other activities that were also chosen and therefore the likely share of time on exercise, flexible working could lead to 21 more net minutes of exercise per day, for the 19.8 million people who can do at least part of their job remotely. This considers the increase in physical activity supported by additional leisure time, netted off against the reduction in active travel while commuting.
- If these individuals worked even one day per week remotely more, assuming that the additional exercise is distributed evenly amongst those who currently do and do not exercise sufficiently[1],this would reduce the UK's level of adult physical inactivity by 84 million hours (33%).



Annual physical activity shortfall amongst UK adults, million hours, 2019.

Source: Opinium survey, Sport England, ONS, Cebr analysis

[1] Ideally, we would have data on current exercise levels, to ascertain the extent to which those who say they would exercise more, are those who do not currently exercise sufficiently. It is possible that those who already are keen exercisers are disproportionately captured, within the 41% who say they would exercise more if working remotely. Alternatively, it may be the case that those who do not exercise sufficiently have a greater incentive to exercise more and are more likely to choose to undertake additional exercise. This would be an interesting area for future exploration

#### Ceb

# This reduction in physical inactivity can bring significant health benefits

- Physical inactivity is one of the most severe risk factors to people's health and wellbeing. It is associated with several of the most severe non-communicable diseases (including CHD, Type II diabetes, breast cancer and colorectal cancer) and via these, in 2015 was estimated to cost the European economy over €80 billion per year.
- A potential 33% reduction in physical inactivity, can have significant impacts on health, preventing 79,000 cases of CHD, 192,000 of Type II diabetes, and a combined 20,000 of breast and colorectal cancer.
- Based on estimated 2019 NHS treatment costs, this would save the NHS a combined £1.0 billion per annum.

	Coronary Heart Disease	Type II diabetes	Breast cancer	Colorectal cancer	All-cause mortality
Cases	2,300,000	4,527,555	208,944	127,675	529,553
Cases attributable to inactivity	241,500	588,582	37,401	23,875	89,494
Estimated reduction in cases through a 33% reduction in inactivity	78,852	192,178	12,212	7,796	29,221
NHS current spend on ailment (£ million)	12,994	8,538	1,831	1,588	0
Savings to NHS given 33% reduction in inactivity (£ million)	445	362	107	97	0

### Benefits associated with a reduction in physical inactivity, 2019.

Source: Opinium survey, Sport England, ONS, Diabetes UK, British Heart Foundation, European Commission, NCBI, Cebr analysis

#### Ceb

# Supporting this, people report taking less sick leave during the pandemic

- On average, the number of self-reported sick days taken fell during the Covid-19 pandemic from 2.2 to 1.9.
- This fall especially notable, as it occurred during a pandemic, when general sickness levels may have been expected to increase.
- We would caution against treating these values solely at face value – in absolute terms the ONS' survey of sickness absence rates in the workplace reports higher levels of illness.[1] However the trend of a fall in 2020 is consistent with our Opinium survey results.
- It would be wrong to attribute this decline solely to remote working supporting healthier lifestyles. During national lockdowns less person-to-person contact occurs, naturally reducing the chances of any disease transmission. Nevertheless, this is more positive supporting evidence



Self-reported number of days of sick leave taken pre-Covid and during the pandemic as share of total sample.

Before Covid-19 During Covid-19

Source: Opinium survey, Cebr analysis

# While a significant majority report that remote working has positive impacts on their physical and mental health

- By a wide variety of metrics, remote working is viewed favourably by employees.
- Of those who answered either positively or negatively, 79% report positive impacts on their physical health and 82% positive impacts on their mental health.
- Note that those who replied that remote working had neither positive nor negative impacts, or they did not know the impact, have been excluded from this analysis.



Share of people reporting positive/negative impacts of remote working on health metrics.

Ceb

Source: Opinium survey, Cebr analysis

## Remote working could unlock more than 200 million hours of care, potentially saving the NHS £3.1bn per annum

- As shown in Module 2, on average employees get 2 hours a day of additional leisure time thanks to the possibility to work remotely.
- Survey respondents self-report that they would spend part of this leisure time doing activities the public sector would otherwise bear the cost of e.g. offering unpaid care to family and friends.
- Looking at the average time that non-parents[1] would dedicate to caring for family members, we estimate that approximately 211 million hours of care could be unlocked by remote working.
- Assuming the 'unlocked hours of care' would replace formal health support, flexible working could save the NHS £3.1bn per annum.
- This figure does not include the additional hours of volunteering (282 millions), which arguably could replace hours of public sector work but have not been included to avoid overestimations.

#### Cebr

## Remote working could enable people to have more freedom on where to live

- Of the people in employment working remotely all or most of the time, 36% have moved / will be moving or have considered moving house due to the freedom allowed by their work. Of those who are not currently working remotely, 43% would consider moving house if they had the possibility to work remotely.
- Workers mentioned the willingness to have more space, followed by change in lifestyle and living in a more rural areas as main reason for moving or wanting to move house.
- These reasons suggest a likely movement from high-density and generally more expensive urban areas to more decentralised areas of the country.
- Movements from urban to rural areas could contribute to a reallocation of human and capital resources across the UK, creating significant benefits to local economies.

Reasons why employees would consider moving house.



Source: Opinium survey, Cebr analysis

# Regional movements enabled by remote working could significantly contribute to the UK's levelling-up agenda

- By asking employees where they would want to move, we were able to compute potential net movements across the UK.
  Potential net movements of employees across UK regions, people (thousands).
- As shown by the chart,
  - London and the South East would be the regions losing more residents; while
  - Wales and Scotland are the preferred destinations for workers wanting to move.
  - Norther Ireland could also see significant net migration, with a potential net movement of 70,000 employees.
- We would caution against placing too much weight on these results in absolute terms – it is much easier to declare an *interest* in moving region than actually committing to this. The modelling is based on declared interests in moving region, without a fixed timeframe in place and changes are likely to be more long-term.



Source: Opinium survey, BRES, Cebr analysis

# Regional movements enabled by remote working could significantly contribute to the UK's levelling-up agenda

- Assuming workers moving outside London and the South East would keep their current job with the same salary, a remote working revolution could boost regional economies by as much as £33.3bn in earnings available for local consumption. As outlined in the previous slide, the modelling is based on declared interests in moving region, without a fixed timeframe in place and changes are likely to be more long-term.
- Notably, the nations of Scotland, Wales and Northern Ireland would be expected to benefit, at the expense of England.
- Whilst local spending is set to rebalance regional economies, the redistribution of workers across the country could further support regional economies by fostering living standards and local salaries.
- Regional movements enabled by remote working could result in a talent and skills boost for regional economies, **significantly contributing to the UK's levelling-up agenda**.



-20.000

-10.000

#### Potential net movements of earnings across UK regions, million £ (2020 prices).

-40.000

-30.000

Source: Opinium survey, BRES, Cebr analysis

10.000



## Summary findings for key areas of interest

### Organisations in our sample with offices/sites in NI are more prone to adopt changes, relative to those across the rest of the UK

100%

90%

80%

70%

60%

50%

40%

30%

20%

10%

0%

- Northern Ireland (NI) is the region were technology acceleration was most wide-spread according to interviewed decision-makers.
  - 71% of organisations implemented some changes in working policies compared to 55% of companies across the UK / 71% across UK large organisations.
  - 71% implemented changes in the digital delivery of services compared with 50% of companies across the UK / 63% across UK large organisations.
  - 50% implemented changes in the use of big data compared with 33% across the UK / 44% across UK large organisations.
- Larger organisations have been more active in implementing changes, and this result is partially explained by the high proportion of large organisations in our NI sub-sample (58% vs UK average 23%). However this alone cannot provide a full explanation.
- Northern Irish firms in our sub-sample (including all large and SME organisations) have implemented changes in working policies at the same rate as the average for large firms across the UK, and have implemented the digital delivery of services and the use of big data at a higher rate.
- There is some evidence that Northern Irish firms may have started with a lower pre-Covid level of technological readiness, which may partially have necessitated a stronger level of adoption over the last year and a half.



Percentage of organisations that implemented technology-related changes.

Source: Opinium survey, Cebr analysis

# Covid-19 has accelerated technological adoption the most in the health sector

- The health sector experienced one of the biggest changes in the digital delivery of service. Key examples include online/telephone GP appointments and digital medical prescriptions.
- These changes are viewed positively by both organisations and customers:
  - 75% of respondents replied that the impact of changes in the way organisations work are positive.
  - As reported by our survey, customer satisfaction increased by 7%.
- Decision-makers working in the health sector stated that their organisations:
  - Will spend on average 17% more on technology / digital / IT in 2020/2021 as compared to 2019; and
  - Have accelerated technology adoption by 4.6 years on average during Covid-19. This is the most out of the six considered sectors unsurprising perhaps for a sector more than any other directly impacted by changing public health needs.
- Our CADT model shows that digital transformation can drive up to a £53bn boost to the UK health sector by 2040. We estimate the size of the health sector to be approximately £384bn in 2040, or a significant 16% higher than the counterfactual baseline.

#### UK health sector GVA, 2015-2040.



Source: ONS, Cebr analysis

# Digital transformation could provide a £10bn boost to the UK education sector by 2040

- Closure of schools and imposition of online education forced fast transformations in these areas. In particular, changing working policies and the digital delivery of services are reported as the most significant areas of change.
- Whilst in the past education was not the fastest technology adopter, the sector is expected to experience faster and more radical digital transformations going forward. This is demonstrated by the significant increase in digital spend by organisations in this sector and the accelerated digital investment (on average by just under 3 years).
- The CADT model shows that digital transformation can drive up to a £10bn boost to the UK education sector by 2040. We estimate the size of the education sector to be approximately £157bn in 2040, or 7% higher than the counterfactual baseline.
- Decision-makers working in this sector stated that their organisations:
  - Will spend on average 24% more on technology / digital / IT in 2020/2021 as compared to 2019; and
  - Have accelerated technology adoption by 2.9 years on average during Covid-19.
- The need for employees to be physically at workplaces continues to act as barrier to remote working, with 28% of respondents in the sector reporting this as a barrier.

#### UK education sector GVA, 2015-2040.



Source: ONS, Cebr analysis

## Government organisations have accelerated their adoption of technology more rapidly than the private sector

- As reported by government decision-makers in our survey, the importance of adopting the most up-to-date technology increased by more than the UK average (albeit from a lower baseline), during the Covid-19 pandemic.
- This is likely due to the necessity of immediately ensuring essential services continued to run, however the rate of reported increased adoption is notable. Government is often considered less efficient at adapting to changes than the private sector, however in this case the evidence suggests that the importance of rapid digital adoption means that has not been the case.
- Supporting this, 78% of government decision-makers report that Covid-19 has accelerated their adoption of technology, compared to an average of 68% across the UK. The average years of acceleration in technological adoption (4) is also slightly greater than average.
- Considering which of these are expected to have the greatest potential to improve the industry, flexible working policies, an improved online presence and stronger digital customer engagement were all frequent answers.



Importance of adopting the most up-to-date technology (0 to 10 scale).

Source: Opinium survey, Cebr analysis

# Professional services have high current levels of technological adoption, but moderate further gains are anticipated

- The professional services sector has a 'high' current level of digital transformation adoption. Due to the shape of technology adoption curve, sectors with higher level of current adoption gets a lower impact from further technological transformation.
- Despite this, 76% of respondents stated that Covid-19 had accelerated the use of technology.
- As with the education sector, changing working policies and the digital delivery of services are reported as the most significant areas of change.
- The CADT model shows that digital transformation can drive up to a £19bn boost to the UK professional services sector by 2040. We estimate the size of the professional services sector to be approximately £482bn in 2040, or 4% higher than the counterfactual baseline.
- Decision-makers working in this sector stated that their organisations:
  - Will spend on average 17% more on technology / digital / IT in 2020/2021 as compared to 2019; and
  - Have accelerated technology adoption by on average 2.6 years during Covid-19.



UK professional services sector GVA, 2015-2040.

Source: ONS, Cebr analysis

# Specific analysis in the justice sector is difficult, however we estimate significant gains are likely

- The CADT model shows that digital transformation can drive up to a £37bn boost to the UK public administration & defence sector by 2040, equivalent to growth of 29% relative to the counterfactual baseline.
- As defined by VMB, the justice sub-sector falls within the public administration and defence sector. It covers all organisations within the 'Justice and judicial activities' SIC code, alongside additional organisations with "POLICE", "CONSTABULARY", "MINISTRY OF JUSTICE", "JUSTICE", "PROBATION", "PRISON" within their organisation name.
- Our survey data does not have organisation names, so a formal matching process is not feasible. However by considering the subsectors within which organisations with these names would likely fall, we can create a smaller sample of potential justice organisations (although we cannot know for certain whether these fit the justice definition above). Of these organisations:
  - A 17% increase in the importance of adopting the most up-to-date technology is reported, compared to 29% for the wider public administration sector and 17% for the broader economy.
  - 67% of firms report that Covid has accelerated their use of technology, compared to 71% for the wider public administration & defence sector and 68% for the broader economy.
  - Of those potential justice sector firms who reported an accelerated rate of technological adoption, the average increase was 5.3 years greater than that of either the public administration and defence sector or the wider economy.
- Given the small sample sizes and the imperfect matching, we would caution against placing too much weight on these results. However on the balance of evidence, it seems likely that the growth in the justice sector as a result of digital transformation by 2040, is likely between the 7% for the UK economy and the 29% for public administration and defence.

# Changes in working policies and digital delivery of services were implemented by 67% of organisations in the justice sector

- Focusing on the Justice sector (as a sub-sector of public administration and defence):
  - 67% of organisations implemented some changes in working policies compared to 55% of companies across the UK.
  - 67% implemented changes in the digital delivery of services compared with 50% of companies across the UK.
  - 33% implemented changes in the use of big data compared with 33% across the UK.
- Due to the small sample size, we present these results as purely indicative and advise against using them as conclusive.





Source: Opinium survey, Cebr analysis



# Annex 1: Primary research

### Primary research

- This research was informed by primary research, which was designed by Cebr in collaboration with VMB and undertook by Opinium.
- The 'organisations' decision-makers survey' was conducted between the 1st of July 2021 and the 10th of July 2021. A description of the sample is set out below.
  - 502 business decisionmakers who work for micro, small, medium and large sized organisations;
  - Of which 301 in the Education, Health, Public admin and defence, Professional Services, Retail or Construction sectors; and
  - 201 in other sectors.
- The 'employee & society survey' was conducted between the 13th of July 2021 and the 17th of July 2021. The sample is made up of 2000 consumers weighted to be nationally representative





### Annex 2: Additional data cuts requested by VMB
### Importance of adopting the most up-to-date technology on a scale from 0 to 10

Importance of adopting the most up-to-date technology on a scale from 0 to 10. Results are reported by organisations' sector of activity.

	Before Covid-19	Height of Covid-19	Last week (as of July 2021)	After all Covid-19 restrictions have been lifted
Construction	5.7	6.7	6.5	6.6
Retail	5.9	6.5	6.4	6.7
Professional services	6	6.9	6.8	7.1
Public administration & defence	5.4	7.2	6.6	7
Education	5.6	6.9	6.7	6.5
Health	5.8	6.7	6.7	6.6

Source: Opinium survey, Cebr analysis

# Has Covid accelerated the use of technology across organisations? Results reported by location of organisation's sites/offices

Has Covid accelerated the use of technology across organisations? Results reported by location of organisation's sites/offices.

	Scotland	Northern Ireland	Wales	North East	North West	Yorkshire and the Humber	West Midlands	East Midlands	South West	South East	East of England	London	Internation al
S	71%	88%	68%	71%	74%	73%	75%	77%	76%	71%	72%	74%	75%
)	25%	8%	24%	26%	21%	24%	14%	17%	24%	28%	25%	25%	19%
ot sure	4%	4%	8%	3%	6%	4%	11%	6%	0%	2%	4%	2%	6%

Source: Opinium survey, Cebr analysis

#### Average number of days workforce works remotely by sector

Average number of days workforce works remotely by sector, as reported by decision-makers across the six sectors of interest.

	Before Covid-19	Height of Covid-19	Last week (as of July 2021)	After all Covid-19 restrictions have been lifted
Construction	1.7	3.3	2.7	2.5
Retail	1.1	2.9	2.4	1.8
Professional services	1.5	4	3.2	2.5
Public administration & defence	1.4	3.1	2.7	1.7
Education	0.9	2.8	1.5	1.3
Health	1.3	2.9	2.4	2.7

Source: Opinium survey, Cebr analysis

#### Customer mix across the six sectors of interest

Customers' location before Covid-19, at the height of Covid-19, last week (as of July 2021) and after all Covid-19 related restrictions have been lifted. Results are reported by sector of activity.

	Customer mix	Before Covid-19	Height of Covid-19	Last week (as of July 2021)	After all Covid-19 restrictions have been lifted
	Local	31%	12%	28%	22%
	Regional	36%	22%	30%	30%
Construction	National	20%	16%	18%	21%
	International	3%	8%	3%	6%
	Not sure	2%	0%	2%	3%
	Local	42%	36%	32%	29%
	Regional	20%	30%	25%	24%
Retail	National	23%	21%	30%	25%
	International	13%	12%	12%	20%
	Not sure	1%	1%	1%	2%
	Local	32%	29%	26%	24%
	Regional	28%	28%	26%	22%
Professional services	National	37%	37%	39%	32%
	International	26%	24%	24%	29%
	Not sure	3%	2%	3%	5%
	Local	9%	7%	6%	8%
	Regional	3%	6%	3%	4%
Public administration & defence	National	4%	5%	4%	3%
	International	1%	0%	3%	2%
	Not sure	1%	1%	1%	1%
	Local	49%	41%	34%	41%
	Regional	20%	28%	24%	16%
Education	National	13%	17%	20%	15%
	International	10%	8%	9%	10%
	Not sure	2%	2%	2%	2%
	Local	31%	20%	15%	17%
	Regional	10%	23%	10%	13%
Health	National	10%	12%	24%	10%
	International	4%	5%	5%	11%
	Not sure	3%	3%	3%	3%

Source: Opinium survey, Cebr analysis

#### People working in professional services expect to work from home 3 times more than before Covid-19

On average, how many days did/do you work remotely? Responses are presented by sector of activity.



Source: Opinium survey, Cebr analysis

Ceb

Last week

#### Barriers to remote working perceived by employees (by age group)

Barriers to remote working perceived by employees. Results are reported by age group.

	18 - 34	35 - 54	55+
I believe that my job and career development benefits from interactions with colleagues in the office	34%	22%	21%
To perform well at work, I need personal interactions with my colleagues	23%	21%	25%
The company culture is out-dated and would not like the idea of remote working	20%	17%	14%
I would be worried about my career progression	22%	16%	10%
I would feel disengaged with my company's values and objectives	14%	12%	15%
I would lack confidence with remote working technologies (hardware/software)	16%	9%	10%
Where I live, I have a poor broadband connection	13%	7%	7%
Other	2%	3%	2%
None of the above	14%	30%	34%
Don't know/not sure	10%	6%	6%

Source: Opinium survey, Cebr analysis

### Increase in productivity, employee satisfaction and customer satisfaction by sector

Key organisations' metrics in 2020/2021 compared to 2019. Results are reported by organisations' sector of activity.



Source: Opinium survey, Cebr analysis

# The majority of decision-makers across the six sectors of interest believe that the impact of changes brought by Covid-19 is positive

How positive/negative the impact of changes brought by Covid-19 in the way organisations work are. Results are reported by organisations' sector of activity.

	Positive	Negative	Too early to say
Construction	64%	17%	19%
Retail	55%	20%	24%
Professional services	65%	5%	30%
Public administration & defence	50%	0%	50%
Education	53%	24%	22%
Health	75%	10%	15%

Source: Opinium survey, Cebr analysis

### Percentage increase/decrease in spending on specific technologies by sector

Percentage increase/decrease in organisations' spending on specific technologies in 2020/21, compared to 2019. Results are reported by organisations' sector of activity.

	Construction	Retail	Professional services	Public administration & defence	Education	Health
Analytics and insight	5.9	9.4	13	-5.4	8.1	12.8
Automation	3.9	6.3	8.5	4.6	5.7	15.6
Cloud services	9.4	5.9	13.9	4.7	7.8	13.3
Collaboration tools e.g. Teams, Zoom, etc.	10	8.1	18.1	19.7	10.5	14.7
Customer experience e.g. website enhancement, customer management technologies	3.4	9.6	7.4	10	7.6	13.3
Cybersecurity	4.6	6.6	10.3	2.9	6.1	7.2
Digital and contactless payment	3.2	6	7.7	3.1	6.5	15.6
Ecommerce technologies	2.9	7.3	4.3	1.7	4.9	10.6
IT equipment	6.5	5.7	8.7	6.2	9.3	14.3
Machine Learning	3	7.4	7.1	22.4	4.9	10.7
Online marketing	7.3	6.9	3.5	-4.5	9.2	6.8

## Key reasons for making the change in working policies permanent by sector

Key reasons for making the change in digital delivery of services permanent. Results are presented by organisations' sector of activity.

	Construction	Retail	Professional services	Public administration & defence	Education	Health
Top three reasons for making the change in working policies permanent	<ul> <li>Organisation decision making</li> <li>Employees' demand because of an improved work/life balance</li> <li>Improved service quality service and experience e.g. digitalising, ecommerce, contact centre, new markets</li> <li>Lower total fixed costs e.g. offices/sites rent</li> </ul>	<ul> <li>Organisation decision making</li> <li>Improved service quality service and experience e.g. digitalising, ecommerce, contact centre, new markets</li> <li>More sustainable proposition (aligned to UK's environmental agenda)</li> </ul>	<ul> <li>Improved service quality service and experience e.g. digitalising, ecommerce, contact centre, new markets</li> <li>Employees' demand because of an improved work/life balance</li> <li>Lower total fixed costs e.g. offices/sites rent</li> </ul>	<ul> <li>Lower total fixed costs e.g. offices/sites rent</li> <li>Employees' demand because of an improved work/life balance</li> <li>Organisation decision making</li> </ul>	<ul> <li>Employees' demand because of an improved work/life balance</li> <li>Organisation decision making</li> <li>Employees' demand because of increased productivity</li> </ul>	<ul> <li>Employees' demand because of an improved work/life balance</li> <li>Improved service quality service and experience e.g. digitalising, ecommerce, contact centre, new markets</li> <li>Employees' demand because of increased productivity</li> </ul>

**Note**: In some instances, more than three reasons have been included. This is due to options in the top three positions scoring the same number of responses.

Source: Opinium survey, Cebr analysis

## Key reasons for making the change in digital delivery of services permanent by sector

Key reasons for making the change in digital delivery of services permanent. Results are presented by organisations' sector of activity.

	Construction	Retail	Professional services	Public administration & defence	Education	Health
Top three reasons for making the change in digital delivery of services permanent	<ul> <li>Organisation decision making</li> <li>More sustainable proposition (aligned to UK's environmental agenda)</li> <li>Employees' demand because of increased productivity</li> </ul>	<ul> <li>More sustainable proposition (aligned to UK's environmental agenda)</li> <li>Improved service quality service and experience e.g. digitalising, ecommerce, contact centre, new markets</li> <li>Organisation decision making</li> <li>Employees' demand because of an improved work/life balance</li> <li>Customer demand e.g. next-day delivery, real- time interactions</li> <li>Realtime data intelligence &amp; insight</li> </ul>	<ul> <li>Improved service quality service and experience e.g. digitalising, ecommerce, contact centre, new markets.</li> <li>Organisation decision making</li> <li>Lower total fixed costs e.g. offices/sites rent</li> </ul>	<ul> <li>Lower total fixed costs e.g. offices/sites rent</li> <li>Organisation decision making</li> <li>Employees' demand because of an improved work/life balance</li> </ul>	<ul> <li>Improved service quality service and experience e.g. digitalising, ecommerce, contact centre, new markets</li> <li>Customer demand e.g. next-day delivery, real- time interactions</li> <li>More sustainable proposition (aligned to UK's environmental agenda)</li> </ul>	<ul> <li>Organisation decision making</li> <li>Improved service quality service and experience e.g. digitalising, ecommerce, contact centre, new markets</li> <li>Realtime data intelligence &amp; insight</li> </ul>

**Note**: In some instances, more than three reasons have been included. This is due to options in the top three positions scoring the same number of responses.

Source: Opinium survey, Cebr analysis

### Key reasons for making the change in the use of big data permanent by sector

Key reasons for making the change in the use of big data permanent. Results are presented by organisations' sector of activity.

	Construction	Retail	Professional services	Public administration & defence	Education	Health
Top three reasons for making the change in the use of big data permanent	<ul> <li>Employees' demand because of increased productivity</li> <li>Realtime data intelligence &amp; insight</li> <li>Organisation decision making</li> <li>More sustainable proposition (aligned to UK's environmental agenda)</li> <li>Employees' demand because of an improved work/life balance</li> </ul>	<ul> <li>Realtime data intelligence &amp; insight</li> <li>Organisation decision making</li> <li>More sustainable proposition (aligned to UK's environmental agenda)</li> <li>Improved service quality service and experience e.g. digitalising, ecommerce, contact centre, new markets</li> <li>Lower total fixed costs e.g. offices/sites rent</li> </ul>	<ul> <li>Realtime data intelligence &amp; insight</li> <li>Improved service quality service and experience e.g. digitalising, ecommerce, contact centre, new markets</li> <li>Organisation decision making</li> </ul>	<ul> <li>Realtime data intelligence &amp; insight</li> <li>Improved service quality service and experience e.g. digitalising, ecommerce, contact centre, new markets</li> <li>Employees' demand because of increased productivity</li> </ul>	<ul> <li>Organisation decision making</li> <li>Customer demand e.g. next-day delivery, real- time interactions</li> <li>More sustainable proposition (aligned to UK's environmental agenda)</li> </ul>	<ul> <li>Improved service quality service and experience e.g. digitalising, ecommerce, contact centre, new markets</li> <li>Employees' demand because of increased productivity</li> <li>Lower total fixed costs e.g. offices/sites rent</li> </ul>

**Note**: In some instances, more than three reasons have been included. This is due to options in the top three positions scoring the same number of responses.

Source: Opinium survey, Cebr analysis

## Difference in employers and employees' expectation of days working from home after all Covid-19 restrictions have been lifted

Difference in employers and employees' expectations of days working from home after all Covid-19 restrictions have been lifted. Results are reported by sector.



Source: Opinium survey, Cebr analysis

#### Organisations with sites/offices in Northern Ireland and East Midlands have reported the biggest shift in technology adoption

Thinking about your organisation, by how many years has Covid-19 accelerated the use of technology? Results are reported by organisations' sites/offices location.



Source: Opinium survey, Cebr analysis

2021

## Employees across the UK expect to work from home at least 2 days/week after that all the Covid-19 restrictions have been lifted

#### On average, how many days did/do you work remotely?



Source: Opinium survey, Cebr analysis

2021

### Employees in London get almost 3 additional hours of leisure time per day when working from home

Additional hours of leisure time employees get during a typical day that they work from home compared to a day in the office. Results are reported by employees' location.



Source: Opinium survey, Cebr analysis

### Increase in productivity, employee satisfaction and customer satisfaction by size

Key organisations' metrics in 2020/2021 compared to 2019. Results are reported by organisations' size.



Source: Opinium survey, Cebr analysis

#### Looking forward, bigger organisations are more confident that the technological transformation brought in by Covid-19 will have a positive impact

How positive/negative the impact of changes brought by Covid-19 in the way organisations work are. Results are reported by organisations' size.



Source: Opinium survey, Cebr analysis

#### Professional services organisations by size

Sample composition: organisations in professional services split by size category.



Source: Opinium survey, Cebr analysis

#### Ceb

#### Larger organisations have significantly increased their budget on digital technologies

Percentage increase in organisations' spending on specific technologies in 2020/21, compared to 2019. Results are presented by organisations' size.

	Micro organisations	Small organisations	Medium-size organisations	Large organisations
Collaboration tools e.g. Teams, Zoom, etc.	5	8.4	16.1	18.5
IT equipment	0.3	8.2	12.2	11.4
Customer experience e.g. website enhancement, customer management technologies	7.1	7.4	10	12.2
Digital and contactless payment	5.3	5.8	10.3	13.1
Ecommerce technologies	2.3	4.9	9.3	9.2
Online marketing	6.4	3.7	10.3	13.2
Cybersecurity	3.9	5.8	10.9	11.9
Cloud services	1.2	8.3	13.3	13.8
Automation	3.1	6.9	10.6	11.5
Analytics and insight	3.1	9	10.5	13.8
Machine Learning	0.8	6.8	8.4	16.1

#### Key reasons for making the change in working policies permanent by size

Key reasons for making the change in working policies permanent. Results are presented by organisations' size.

	Micro organisations	Small organisations	Medium-size organisations	Large organisations
Top three reasons for making the change in working policies permanent	<ul> <li>Employees' demand because of an improved work/life balance</li> <li>Improved service quality service and experience e.g. digitalising, ecommerce, contact centre, new markets</li> <li>More sustainable proposition (aligned to UK's environmental agenda)</li> </ul>	<ul> <li>Organisation decision making</li> <li>Improved service quality service and experience e.g. digitalising, ecommerce, contact centre, new markets</li> <li>Employees' demand because of an improved work/life balance</li> <li>More sustainable proposition (aligned to UK's environmental agenda)</li> </ul>	<ul> <li>Employees' demand because of an improved work/life balance</li> <li>Organisation decision making</li> <li>Lower total fixed costs e.g. offices/sites rent</li> </ul>	<ul> <li>Employees' demand because of an improved work/life balance</li> <li>Improved service quality service and experience e.g. digitalising, ecommerce, contact centre, new markets</li> <li>Employees' demand because of increased productivity</li> </ul>

**Note**: In some instances, more than three reasons have been included. This is due to options in the top three positions scoring the same number of responses.

Source: Opinium survey, Cebr analysis

## Key reasons for making the change in digital delivery of services permanent by size

Key reasons for making the change in digital delivery of services permanent. Results are presented by organisations' size.

	Micro organisations	Small organisations	Medium-size organisations	Large organisations
Top three reasons for making the change in digital delivery of services permanent	<ul> <li>Lower total fixed costs e.g. offices/sites rent</li> <li>Organisation decision making</li> <li>Improved service quality service and experience e.g. digitalising, ecommerce, contact centre, new markets</li> <li>Customer demand e.g. next-day delivery, real-time interactions</li> </ul>	<ul> <li>Improved service quality service and experience e.g. digitalising, ecommerce, contact centre, new markets</li> <li>Lower total fixed costs e.g. offices/sites rent</li> <li>Organisation decision making</li> <li>Employees' demand because of increased productivity</li> </ul>	<ul> <li>Improved service quality service and experience e.g. digitalising, ecommerce, contact centre, new markets</li> <li>Organisation decision making</li> <li>More sustainable proposition (aligned to UK's environmental agenda)</li> </ul>	<ul> <li>Improved service quality service and experience e.g. digitalising, ecommerce, contact centre, new markets</li> <li>Employees' demand because of an improved work/life balance</li> <li>More sustainable proposition (aligned to UK's environmental agenda)</li> <li>Lower total fixed costs e.g. offices/sites rent</li> </ul>

**Note**: In some instances, more than three reasons have been included. This is due to options in the top three positions scoring the same number of responses.

Source: Opinium survey, Cebr analysis

## Key reasons for making the change in the use of big data permanent by size

Key reasons for making the change in the use of big data permanent. Results are presented by organisations' size.

	Micro organisations	Small organisations	Medium-size organisations	Large organisations
Top three reasons for making the change in the use of big data permanent	<ul> <li>Organisation decision making</li> <li>Realtime data intelligence &amp; insight</li> <li>Employees' demand because of increased productivity</li> <li>Improved service quality service and experience e.g. digitalising, ecommerce, contact centre, new markets</li> <li>Customer demand e.g. next-day delivery, real-time interactions</li> </ul>	<ul> <li>Realtime data intelligence &amp; insight</li> <li>Organisation decision making</li> <li>Employees' demand because of increased productivity</li> <li>Improved service quality service and experience e.g. digitalising, ecommerce, contact centre, new markets</li> </ul>	<ul> <li>Organisation decision making</li> <li>Realtime data intelligence &amp; insight</li> <li>Customer demand e.g. next-day delivery, real-time interactions</li> </ul>	<ul> <li>Employees' demand because of increased productivity</li> <li>Improved service quality service and experience e.g. digitalising, ecommerce, contact centre, new markets</li> <li>Lower total fixed costs e.g. offices/sites rent</li> </ul>

**Note**: In some instances, more than three reasons have been included. This is due to options in the top three positions scoring the same number of responses.

Source: Opinium survey, Cebr analysis

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