Platforms for Growth

How new digital technologies can boost productivity in Britain's small businesses

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Executive Summary

Digital technologies and online platforms are an increasingly necessary part of business.

In recent years, however, their impact on the nature of our economy has accelerated markedly.

Many businesses are already reaping the benefits of digitisation – whether automating everyday administrative tasks, or utilising digital technologies to pursue entirely new business ventures. But our research suggests that not all businesses are as digitally adept as they could or should be.

The rise of digital technology comes at a hugely important time for the British economy. Of course, there is the obvious fallout from the Covid-19 pandemic, which all businesses are having to contend with. But longer-term issues persist, chief among them the UK's stagnant productivity figures – which have flatlined since the financial crisis in 2008.

Digital technologies offer solutions to many of these problems. Their consequences, however, go beyond simply boosting economic output. As we discuss in this report, the digitisation of work has given rise to various second order impacts. These include a 'democratisation' of certain sectors – wherein barriers to entry are reduced, better allowing smaller firms to complete with larger incumbents – and an empowerment of demographics which may hitherto have been excluded from traditional channels of enterprise.

The cost of online advertising, for instance, has fallen considerably – meaning many small businesses are for the first time marketing their products to existing and prospective customers in a way which was once the preserve of incumbent, larger firms. Meanwhile, app-based platforms like Uber and Airbnb are disrupting whole sectors – allowing ordinary individuals to monetise assets such as vehicles or flats in a way largely unheard of just a decade or so ago.

As well as this, companies directly involved in developing digital technologies – those used not just in workplaces, but for everyday entertainment or convenience – are becoming an increasingly important part of the British economy. The digital sector employs 1.6 million people, adding £149 billion to the size of the economy in 2018, while boosting Treasury coffers and further elevating Britain's prestige on the international business scene.

There are of course drawbacks and downsides too. But our research, polling and focus groups confirm that from the perspective of those who actually run and own Britain's small businesses, digital technologies are an overwhelming force for good, seen far more as an opportunity than a threat (and, indeed, responsible for helping many of them cope with the impact of the pandemic).

In this report, we seek to understand how digital technologies are already impacting on Britain's small businesses, how they can be used to help us break out of our productivity malaise, and what the Government can do to facilitate this.

SMEs' attitudes to digital technologies and online platforms

In order to investigate small businesses' attitudes towards new digital technologies and online platforms, we commissioned YouGov to poll a nationally representative sample of senior decision makers in small and medium-sized enterprises (SMEs).[1] The full results can be found in an annex at the end of this report, but the most interesting findings are detailed below:

- Google was the single most important digital platform for SMEs which use them (selected by 22 per cent of respondents), followed by Facebook (16 per cent), LinkedIn (15 per cent), Sage (eight per cent), Amazon (six per cent), and Instagram and Xero (both five per cent). But there was a great deal of diversity: in all, more than 35 different platforms were cited as the most important to a business;
- Three-fifths (61 per cent) of SMEs which use digital platforms agreed that they have helped their business to expand – compared to just 12 per cent who disagreed;
- Half (49 per cent) of SMEs agreed that digital platforms have allowed their businesses to compete more effectively against larger brands in their sector – compared to just 18 per cent who disagreed;
- 'Reaching new audiences' was the single main reason why SMEs use digital platforms (chosen by 29 per cent of respondents), followed by 'interacting with customers' (18 per cent), 'handling financial data' (15 per cent) and 'low-cost advertising' (13 per cent);
- Three-fifths (62 per cent) of SMEs agreed that without digital platforms, it would have been harder for them to operate during Covid-19 (and of those agreeing, 54 per cent strongly agreed);
- Perhaps because of this, while most SMEs' impression of digital platforms has remained the same during Covid-19 (60 per cent), a far greater proportion now view digital platforms more favourably (35 per cent) than view them more negatively (four per cent);
- While most SMEs feel they know how to effectively make use of digital platforms to grow and succeed (52 per cent), a fifth still do not (20 per cent);
- Over half (53 per cent) of SMEs disagree that small businesses receive adequate consideration when it comes to government thinking, and this figure rises among the smallest of SMEs (to 59 per cent among microbusinesses). It also rises by a statistically significant amount among SMEs in the North (58 per cent) and Scotland (70 per cent).

In addition to opinion polling, we also commissioned Public First to carry out focus groups among small businesses from Manchester to get a more qualitative understanding of their attitudes towards digital technologies and online platforms. The results of this focus group inform the research and recommendations throughout the report, and a write-up can also be found in an annex at the end of the report.

Policy recommendations

In order to ensure that the UK is capturing the full benefits of new digital technologies, we make the following policy recommendations:

- To keep Britain's tech ecosystem flourishing, the Government should identify new ways to promote investment from institutional investors; liberalise immigration rules for the brightest and

1 Hereafter, senior decision makers at British SMEs is shortened simply to SMEs in reference to any polling results.

best; and seek to use innovative regulatory approaches, such as sandboxes, to permit the 'learning by doing' which many digital businesses require in order to refine their products or services;

- As the economy and workplace become ever more digitised, we support calls for data to be included within the ambit of R&D tax credits which would support Britain's tech start-ups;
- To ensure the UK remains at the forefront of opening up public data to the private sector, the Government and any applicable public bodies should review what other data they are currently sitting on which should be made publicly accessible;
- If the Government is to levy additional taxes on multinational technology firms like the Digital Services Tax, rather than taking unilateral action, it should instead work with the OECD or other global fora to come to an equitable and pro-growth conclusion on how best to do so;
- When regulating the internet and online content as detailed in the Online Harms White Paper, the Government should reject a hyper-precautionary regulatory mindset, and instead seek to develop more targeted policy responses, proportionate to the issue at hand;
- To ensure the nation's workforce is prepared for the jobs of tomorrow, the Government should immediately review why the Apprenticeship Levy is faltering, and redesign it so that employers can invest in the sorts of training that will deliver maximum productivity benefits for their businesses. It should also introduce tax breaks for training that people fund themselves, as is the norm in other countries;
- To deliver the digital infrastructure Britain needs, the Government should liberalise the existing regulations which pertain to mobile infrastructure development, such as allowing 5G masts to be widened without prior approval, or enabling masts to be made taller;
- To protect British consumers and businesses online, the Government needs to develop a comprehensive new cyber security strategy to take effect when the 2016-2021 strategy comes to a close. We echo recommendations that the UK needs a more flexible approach to cyber security – using an appropriate mix of shorter and longer-term programmes to respond more effectively to a wider array of digital threats;
- There are severe uncertainties surrounding the new Future Fund, announced in response to the coronavirus crisis. The Government should ensure that it is able to disburse support in a way which start-ups and investors are willing to accept, and confirm that it is compatible with the EIS and SEIS investment schemes - or else devise alternative support mechanisms for start-up investment, such as making EIS and SEIS more attractive for a temporary period;
- To encourage entrepreneurialism, the £1,000 thresholds on the Trading Allowance and Property Allowance should be raised, at the very least in line with inflation, and escalated as the economy grows;
- To allow for evidence-based policymaking which accurately examines the UK's changing economy, the Government should review how surveys like the Small Business Survey and the Office for National Statistics' E-commerce and ICT activity database are conducted. Government should work with small businesses and digital technology bodies to ensure that the right questions are being asked, to understand what problems small businesses face in this area.

Chapter I – Introduction

Digital technologies have revolutionised the world around us.

In just about every corner of our lives, internet-enabled gadgets, apps and similar have brought convenience, entertainment and other benefits. Technology companies are among some of the most recognisable brands in the modern economy.[2] Valuations in the multiple billions or even trillions of dollars are perhaps the most telling testimony of their worth and importance to society.[3]

The workplace has arguably been the area most impacted by the rise and proliferation of digital technologies. Stunning strides in hardware and software alike have permitted us to carry out our jobs more effectively, or pursue entirely new business ventures.

Selling platforms – from the likes of Facebook Marketplace to eBay – have allowed businesses large and small to connect with customers in ways scarcely imaginable even just a couple of decades prior. Search engines such as Google, and its affiliated programmes like Maps, mean companies must now consider their online presence as much as their physical one – if they still feel the need to have a traditional 'bricks and motor' presence at all. And other apps, for example Instagram, have disrupted whole sectors within the business world, such as advertising, often to the benefit of both smaller outfits and customers in general.

The tragedy of Covid-19, which ground much of the global economy to a halt in early 2020, showed just how important digital technologies now are to businesses – and will continue to be going forward, even as lockdown measures unwind. Without such platforms, which enabled many businesses to transition to the new circumstances they found themselves in, the economic fallout would have been made markedly worse – while those which already were digitised were better placed to survive.

Whether it was fine dining restaurants pivoting towards home deliveries facilitated by apps like Deliveroo, or videoconferencing software such as Zoom enabling all sorts of businesses to continue engaging with clients, digital technologies have permitted at least a portion of the economy to persist in the face of adversity – ensuring that as many people as possible could remain gainfully employed.

This is more than just conjecture – in our polling of senior decision makers in British SMEs, more than three-fifths (61 per cent) agreed that it would have been harder for their businesses to operate in their absence during the pandemic (and of those agreeing, 54 per cent strongly agreed). This will in part explain why 35 per cent now have a more positive impression of digital platforms in contrast to before Covid-19, compared to a mere four percent who now have a worse impression.

While the adoption of digital technologies has been a gradual process, more and more they are becoming a common and necessary fact of everyday business. It would be unthinkable for many companies

2 YouGov, "YouGov BrandIndex". Available from: https://www.brandindex.com/ranking/2019-buzz.

3 The Economist, "Mirror worlds: The data economy". Available from: https://www.economist.com/printedition/specialreports.

to do without computers, or websites, or digital support of some other kind – and all of these developments have been decades in the making.

But it seems we are now living in an era of particularly rapid technological change. Digitisation has transformed the interface of commerce, with conventional notions of enterprise often a thing of pure nostalgia. Technology companies are beginning to master phenomena like artificial intelligence, algorithms and big data, in turn allowing businesses to deliver tailored and improved user experiences. Smartphones have had a significant and qualitative impact on how we consume online services. It is easy to forget that the likes of Facebook and Twitter are still only 16 and 14 years old respectively, while others like Uber, Monzo, and Deliveroo are all even younger.

Simultaneously, digital usage is becoming ever more ubiquitous. Nine in ten UK adults now access the internet on an at least weekly basis, with virtually everyone aged 16 to 44 using it on a daily basis.[4] Meanwhile, 'on the go' internet usage is also skyrocketing. In 2019, 84 per cent of adults used smartphones, laptops, and tablets to connect to the online world while outside of their homes,[5] and spent on average 3.5 hours on the internet each day, according to Ofcom's latest *Online Nation* report.[6]

The Centre for Policy Studies has always maintained a deep interest in examining how businesses operate. Ideally, this is to understand how governments can ensure they are providing the conditions necessary to allow private businesses – the engines of economic growth and wealth creation – to thrive, and to provide the benefits they so readily do to consumers.

New developments – such as those plainly evident with digital technologies – should be embraced and allowed to flourish. This is not to say that policymakers should not give careful consideration to any potential downsides such trends might pose. But we begin this research from a position of optimism about the rise of technology – and a determination to be led by the data when it comes to its impact on Britain's SMEs.

Small business is big business

Businesses come in all shapes and sizes. In the UK, they are typically broken down into one of two categories – large businesses, or small and medium-sized enterprises (SMEs).[7] Within the SME bracket, there are micro businesses (0-9 employees), small businesses (10-49 employees) and medium businesses (50-249 employees).[8] A large business, it follows, is defined as any company which employs 250 or more people.[9]

As can be seen in Chart 1, at the start of 2019, SMEs accounted for a staggering 99.8 per cent of all businesses in the UK.[10] Of this, 99.2 per cent were micro and small businesses.[11]

4 Office for National Statistics, "Internet access – households and individuals, Great Britain: 2019". Available from: https://www.ons.gov.uk/peoplepopulationandcommunity/householdcharacteristics/homeinternetandsocialmediausage/bulletins/internetaccesshouseholdsandindividuals/2019.

5 Ibid.

6 Ofcom, "Online Nation: 2020 report". Available from: https://www.ofcom.org.uk/__data/assets/pdf_file/0027/196407/online-nation-2020-report.pdf.

7 House of Commons Library, "Business statistics". Available from: https://researchbriefings.parliament.uk/ResearchBriefing/Summary/SN06152.

8 Ibid.

9 Ibid.

10 Department for Business, Energy and Industrial Strategy, "Business population estimates for the UK and the regions". Available from: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/852919/Business_Population_Estimates_for_the_UK_and_regions_-_2019_Statistical_Release.pdf.

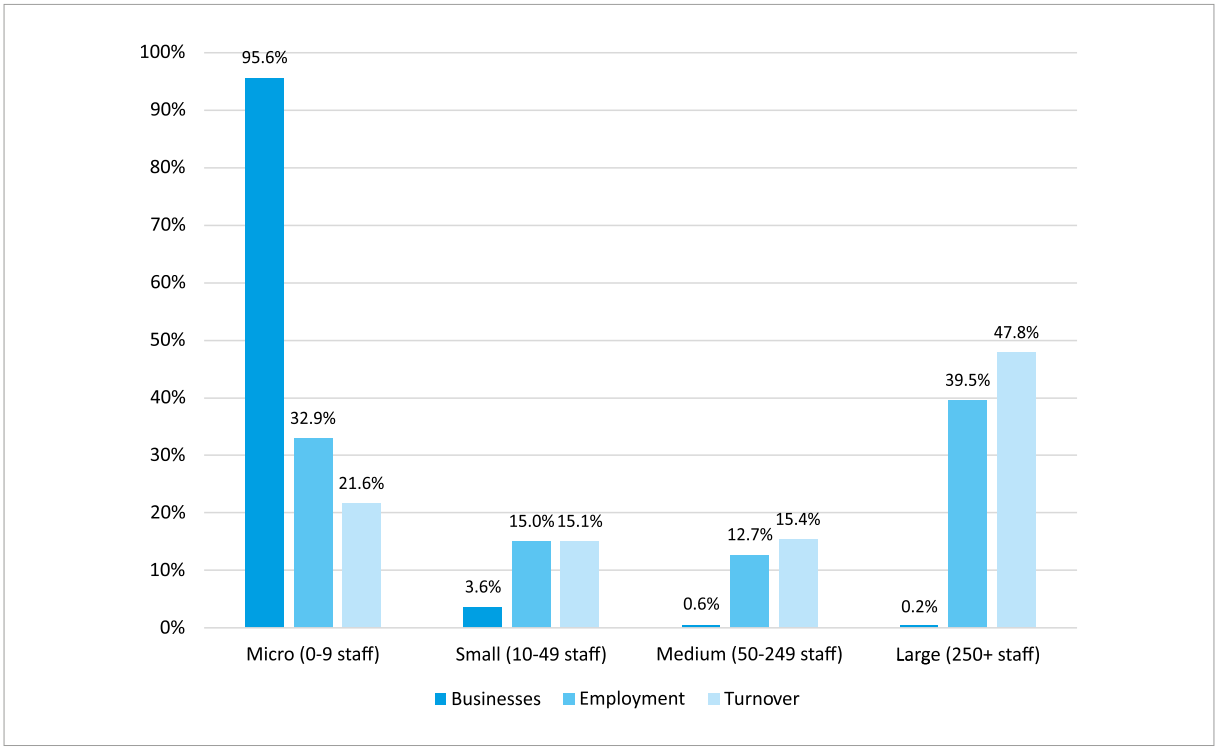
11 Ibid.

Employment is skewed towards SMEs as well. With 16.63 million employees at the start of 2019, SMEs were the place of work for 60.5 per cent of the population – with large businesses employing the remaining 39.5 per cent.[12]

In terms of turnover, the scales are a little more evenly balanced, but even here SMEs can claim a small majority of the aggregate figure. At the start of 2019, SMEs generated 52.2 per cent of turnover, while large businesses created 47.8 per cent.[13]

In short, small businesses are, in fact, very much big business. Accordingly, should the Government fail to give the needs of small businesses due recognition, the consequences could reverberate around the nation's economy – patently the last thing the country needs right now. And it goes without saying that many big businesses were once small businesses themselves, striving to grow and take on more staff. The UK can scarcely hope to play host to globally significant enterprises without first supporting those smaller businesses with ambitions to expand.

Chart 1. Share of businesses in the UK by size (2019)



Source: Department for Business, Energy and Industrial Strategy, "Business population estimates for the UK and the regions".

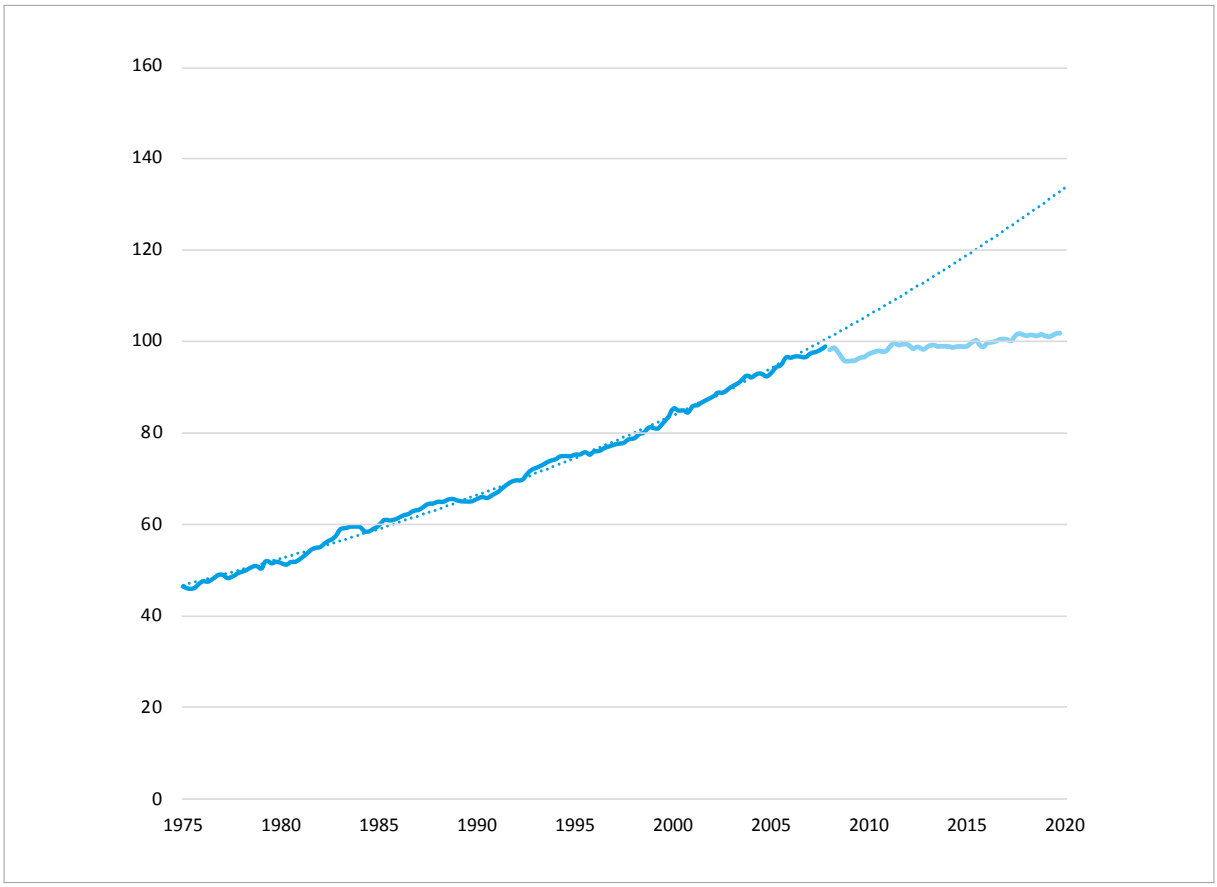
The importance of small businesses can also be seen in what one might perceive as a particularly worrying facet of the British economy – an alarmingly lacklustre recent rate of productivity growth. As can be seen from Chart 2, from 1975 up to 2008, productivity was increasing at a reasonably healthy rate – a little over 2.3 per cent per annum.[14]

12 Ibid.

13 Ibid.

14 Office for National Statistics, "Labour productivity time series". Available from: https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/labourproductivity/datasets/labourproductivity.

Chart 2. Output per hour (100 = 2016)



Source: Office for National Statistics, "Labour productivity time series".

The financial crisis halted this stable growth, as markets across the world plunged into recession and struggled to robustly recover in the years after. Average annual productivity growth virtually flatlined, amounting to a meagre 0.3 per cent per annum on average since the crash.[15] So astounding was this figure that it was named the UK Statistic of the Decade by the Royal Statistical Society at the end of 2019.[16]

The trend line in Chart 2 indicates that if productivity had continued to grow year on year at the rates seen from 1975 up to the crash, it would now be around 25 per cent higher than is actually the case. This represents an enormous economic opportunity cost, and cannot be under-emphasised by politicians and policy makers seeking to increase prosperity in the UK.

British labour productivity also fares badly when compared to other countries, as illustrated by Chart 3. In 2018, Britain ranked 15th out of 36 OECD members, with each hour of labour equating to $58.39 of Gross Domestic Product (GDP), only slightly above the OECD average.[17] Leading the pack was Ireland ($99.71 per hour worked), while Germany ($66.45), France ($68.02), the USA ($70.78), and Belgium ($71.74) all boasted substantially higher labour productivity figures than the UK.[18]

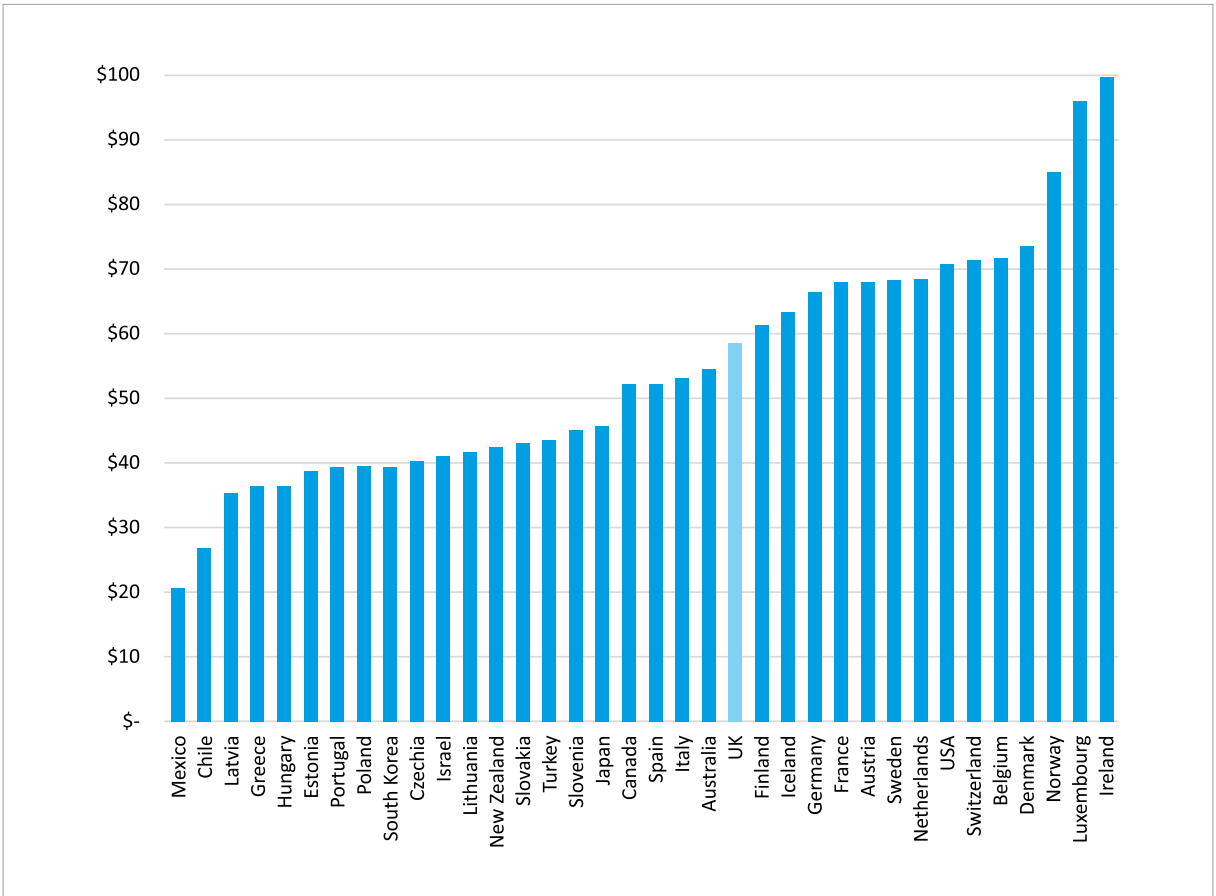
15 Ibid.

16 Royal Statistical Society, "RSS announces statistic of the decade". Available from: https://www.statslife.org.uk/news/4398-rss-announces-statistics-of-the-decade.

17 OECD, "GDP per hour worked". Available from: https://data.oecd.org/lprdty/gdp-per-hour-worked.htm.

18 Ibid.

Chart 3. Output per hour (OECD countries, 2018)



Source: OECD, "GDP per hour worked".

Productivity is one of the single most important economic metrics. Fundamentally, it represents how efficiently an economy produces goods and services, or how much an economy can produce for any given bundle of inputs – capital, labour and resources.[19] As "[c]onsumption is the sole end and purpose of all production", the more efficiently an economy can produce, the more it can consume.[20] And, the more it can consume, the more readily it can enjoy better living standards.[21]

Increasing productivity is also strongly correlated with higher wages and other forms of worker remuneration.[22] As some have commented, it tacitly inspires confidence in the liberal, market-based economic system that we are fortunate to live under, while also keeping taxes low and affording decent returns for savers and pensioners.[23]

19 Institute of Directors, "Lifting the Long Tail: The productivity challenge through the eyes of small business leaders". Available from: https://www.iod.com/Portals/0/PDFs/Campaigns%20and%20Reports/Economy/Lifting-the-long-tail.pdf?ver=2018-10-10-101825-427.

20 Adam Smith, "An Inquiry into the Nature and Causes of the Wealth of Nations". Available from: https://www.ibiblio.org/ml/libri/s/SmithA__WealthNations__p.pdf.

21 Adam Thierer, "Permissionless Innovation: The Continuing Case for Comprehensive Technological Freedom: Revised and Expanded Edition". Available from: https://www.mercatus.org/system/files/Thierer-Permissionless-revised.pdf.

22 Richard G. Anderson, "How Well Do Wages Follow Productivity Growth?". Available from: https://files.stlouisfed.org/files/htdocs/publications/es/07/ES0707.pdf.

23 Sam Bowman and Stian Westlake, "Reviving Economic Thinking on the Right". Available from https://revivingeconomicthinking.com/full-report/.

Put simply, productivity matters – indeed, if the Government was to limit itself any one economic objective, keeping productivity increasing at an at least steady rate would hardly be the worst place to start.

Productivity gains are important in all businesses. But where small businesses come into this equation is that, relative to larger firms, they are typically less productive – and often remarkably so.[24] Many speak of Britain's 'long tail' of unproductive small businesses, which fail to generate the same productivity figures as their larger counterparts.[25]

Table 1. Productivity per worker by firm size (2017)

Firm size	Mean average	Median average
Micro (1-9)	£43,400	£24,000
Small (10-49)	£45,400	£29,400
Medium (50-99)	£53,000	£35,000
Medium (100-249)	£53,400	£36,700
Large (250-999)	£56,600	£37,000
Large (1,000+)	£45,500	£27,500

Source: Office for National Statistics, "Understanding firms in the bottom 10% of the labour productivity distribution in Great Britain: "the laggards", 2003 to 2015".

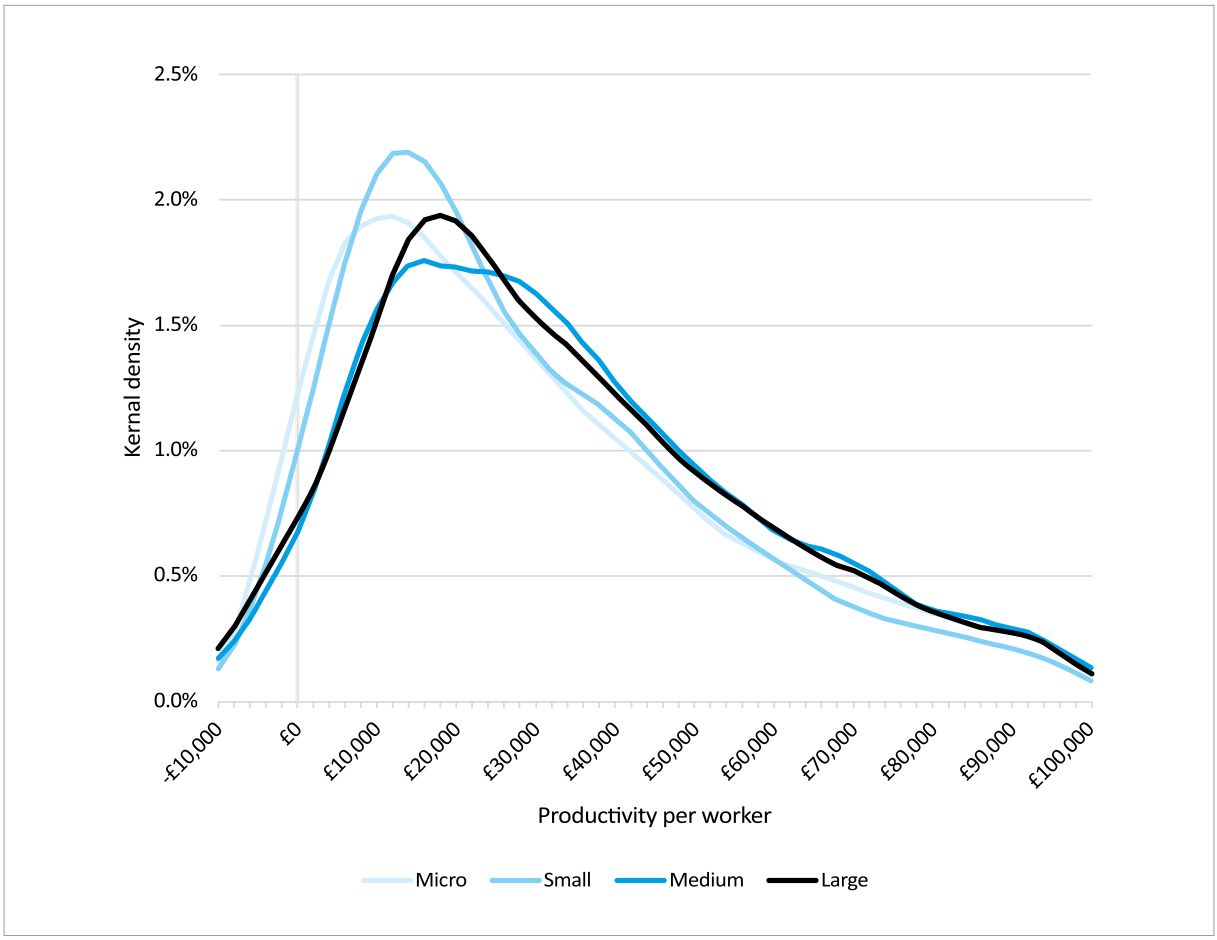
Analysis from the Office for National Statistics bears this rather damning theory out, with small firms overrepresented in the bottom decile of the labour productivity distribution.[26] Table 1 shows that businesses with between 250 and 999 employees are more productive on average than all types of SMEs – while Chart 4 demonstrates this same difference in graphical form.

24 House of Commons Business, Energy and Industrial Strategy Select Committee, "Small businesses and productivity". Available from: https://publications.parliament.uk/pa/cm201719/cmselect/cmbeis/807/807.pdf

25 Institute of Directors, "Lifting the Long Tail: The productivity challenge through the eyes of small business leaders". Available from: https://www.iod.com/Portals/0/PDFs/Campaigns%20and%20Reports/Economy/Lifting-the-long-tail.pdf?ver=2018-10-10-101825-427.

26 Office for National Statistics, "Understanding firms in the bottom 10% of the labour productivity distribution in Great Britain: "the laggards", 2003 to 2015". Available from: https://www.ons.gov.uk/economy/economicoutputandproductivity/productivitymeasures/articles/understandingfirmsinthebottom10ofthelabourproductivitydistributioningreatbritain/jantomar2017#results.

Chart 4. Distribution of firm level productivity (2015)



Source: Office for National Statistics, "Understanding firms in the bottom 10% of the labour productivity distribution in Great Britain: "the laggards", 2003 to 2015".

Productivity does, admittedly, drop off in firms with 1,000 or more employees – but this is likely explained away by the industries in which these firms can be found, such as retail and hospitality, which will have a sizeable proportion of their employees earning the National Living Wage or just over.[27]

So, if the UK is to get back to what one might regard as its normal rate of output growth, targeting productivity improvements within small businesses could be a particularly prudent strategy.

Of course, this will not work for each and every small firm – some may be contented with how they operate already, or be inherently limited in the extent to which they can meaningfully improve their productivity.[28] Take, for instance, a local hairdresser – there are only so many haircuts they can complete each hour, and it would seem unlikely that any new-fangled gadget will change this. They are also constrained to selling their services only to individuals in their immediate vicinity.

27 Office for National Statistics, "EARN03: Average weekly earnings by industry". Available from: https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/earningsandworkinghours/datasets/averageweeklyearningsbyindustryearn03.

28 Malcolm Prowle and Mike Lucas, "Improving productivity in UK small-medium sized enterprises: a research study". Available from: https://www.glos.ac.uk/news/PublishingImages/201703/Improving%20Productivity%20in%20UK%20SME%20Mar%2017.pdf.

But equally, there can be no doubt that a mass of firms exist in the British economy which have both the capacity and the desire to improve their productivity. Consider, instead of a hairdresser, a small but ambitious shoemaker. Rather than relying on the same old equipment, they might use novel software to improve the designing process, or invest in better capital equipment to churn out more products, or use social media to advertise their wares to more people, or tap into foreign markets and export across the globe, taking payments electronically. Here, quite substantial productivity gains stand to be made – and, in truth, this is probably where most of the attention from the Government ought to be focused when it comes to attempts to boost national economic productivity.

Research focus and methodologies

In this research, we explore how small businesses have been, are being, and stand to be impacted by the rise of digital technologies and online platforms. To do so, we have utilised a range of different research methodologies – from pure desk-based research, to meeting first-hand with companies and individuals utilising digital technologies.

We have also commissioned original opinion polling from YouGov, and worked with Public First to convene small business owners and managers in Manchester to gauge their thoughts and perceptions with regards to digital technologies in general – providing both a qualitative and quantitative element to the research.

The following four chapters in this report will consider, in sequence:

- How small businesses are making use of digital technologies and online platforms;
- How digital technologies and online platforms are enabling a new generation of capitalists and enterprise;
- How to support the digitisation of small businesses and the British economy at large;
- The importance of the technology ecosystem in the UK.

Interspersed throughout the report are a number of actionable policy recommendations which we believe can ensure that digital technologies remain an overwhelming force for good within the workplace. These explore how the benefits of digital technologies can be realised particularly for Britain's small businesses and their consumers, and allow the country's ecosystem of small businesses to compete, grow, and generate wealth and prosperity.

Chapter II – How small business make use of tech platforms

In this chapter, we examine some of the main ways in which small businesses are making use of new technology platforms in their everyday operations, and the impacts that is having both on those firms and the markets they operate in.

Advertising

From time immemorial, businesses have used advertising to inform and persuade their existing or potential customers. In some markets, advertising is such a critical function that businesses will plough vast sums into shifting the dial in terms of market share, even if just fractionally. In total, an estimated £23.6 billion was spent on advertising in the UK in 2018.[29]

As a consequence of this, some see advertising as a particularly onerous barrier to entry for relatively smaller firms to clear. Without large budgets or specialised advertising divisions, SMEs may struggle to justify spending what resources they do have on buying advertising space. As a result, they are less able to capture the attention of customers, regardless of whether or not their product offering is better than that of larger incumbents in their sector.

However, various digital platforms have helped 'democratise' the advertising industry of late, allowing smaller firms to stand side by side with larger, more established brands. Consider, for instance, how many small businesses use Instagram as a means to display their products. A well-taken photograph, coupled with some well-chosen hashtags, might make all the difference in attracting a new customer – or convincing an existing one to return.

During our research, we heard from multiple businesses who use platforms like Instagram as a key method of displaying products and disseminating information about their business in a way which is economically efficient. Should they wish to, they can pay for the privilege of promoting their content to a wider audience, but it is also possible to curate a mass of followers, and push adverts in all but name, to potential customers effectively for free.

Indeed, data suggests that advertising is something which SMEs are increasingly making use of. Research from the Advertising Association found that 42 per cent of SMEs advertised in 2017, up from 30 per cent in 2013, and that much of this growth can be attributed to the proliferation of digital platforms in the UK.[30] Even more recent research, carried out this year, shows that 60 per cent of British SMEs have used paid advertising in the previous 12

29 Advertising Association, "UK Advertising's Digital Revolution". Available from: https://www.adassoc.org.uk/wp-content/uploads/2019/06/Ad-Pays-7-UK-Advertisings-Digital-Revolution-compressed.pdf.

30 Ibid.

31 Internet Advertising Bureau, "Digital advertising crucial to SMEs' recovery". Available from: https://www.iabuk.com/news-article/digital-advertising-crucial-smes-recovery.

months.[31] In our own polling, some 13 per cent of SMEs which make use of digital platforms said that low-cost advertising was the number one reason why they did so, while a further 29 per cent said their most important function was helping to reach new audiences – which advertising may obviously play a part in.

Prior to the advent of digital technologies with advertising functionality, the usual way for a small business to spread its message would have been to broadcast commercials on the radio or television, or, more likely, take out advertising space in a newspaper. Yet compared to digital advertising, the latter is relatively more expensive for what a business gets back in return – with research finding that $3 of digital advertising has roughly the same impact as $5 of print advertising.[32] In addition, between 2010 and 2019, the cost of internet advertising fell by 42 per cent, while the cost of advertising rose by five per cent in periodicals and newspapers, by six per cent on television, and by one per cent on radio.[33]

The internet, therefore, is reducing the costs of advertising – in turn removing, or at least lowering, barriers to competition for small firms relative to larger ones.

But the story does not stop there. Digital technologies are changing the very nature of advertising itself. In times gone by, many adverts would be shown to people for whom the product being advertised would have had very little relevance at all. As types of media proliferated and specialised, advertisers could begin to target different adverts to different markets – for instance, highbrow products would be advertised in highbrow newspapers, or bookmakers might run advertising during sports programmes.

Digitisation of media allowed this targeting to be taken to the next level. Online advertising which harnesses the power of data profiling, for example, means that advertising can become markedly more 'efficient' in ensuring that adverts are directed solely, or at least largely, at those audiences which businesses want to reach. This tailoring process effectively makes advertising cheaper for small businesses, because the likelihood that businesses will being paying for adverts that will be viewed by individuals not interested in them is markedly reduced.

Case study. Kings Barber Club – cutting through with effective and economic advertising

A year after the financial crisis, Adam Choudhry decided to set up the Kings Barber Club in Birmingham.[34] It has since flourished, with 14 other outlets across the Midlands, and is now the UK's largest chain of independently owned barber shops, employing 60 people.[35]

Initially, Adam tried to spread awareness through traditional means like handing out leaflets. But, noticing the rise of smartphones and social media, he soon switched to using Facebook to get noticed – and has since branched out to Instagram, showcasing the business to thousands of followers with each post.

32 Michael Mandel, "The Declining Cost of Advertising: Policy Implications". Available from: https://www.progressivepolicy.org/wp-content/uploads/2019/07/Advertising2019_Mandel.pdf.

33 Ibid.

34 Kings Barber Club, "About us". Available from: https://www.kingsbarberclub.co.uk/about-us-1.

35 Private communication.

After building a page for the business, Kings Barber Club could make use of tools like Facebook's Ads Manager, targeting advertisements to a specific demographic. Today, Facebook remains Adam's sole advertising channel, and he has no plans to slow down – hoping to double the business' size in three years, relying entirely on Facebook as its marketing platform.[36]

Certainly, some have voiced concerns about the way in which some large digital platforms ostensibly abuse their market power in the digital advertising space.[37] For instance, the extent to which digital platforms should be able to prioritise advertisements of their own products – as opposed to their competitors' – is frequently debated. The Competition and Markets Authority recently published the findings of a major study of the online advertising market.[38] It concluded that while Facebook and Google provided valuable services, and had grown by offering a superior product, the companies were now protected by incumbency advantages which mean potential rivals can no longer compete on equal terms.

On the other hand, one might reasonably argue that a technology company like Facebook, or Twitter, or Google, is perfectly within its rights to decide how their business is run, and reap the consequences – positive or negative – accordingly. It is also worth taking a moment to appreciate that without advertisements, and the revenues which digital platforms derive from them, many of the websites we all find most useful could not exist in the form they currently do.[39]

Sales and growth

The principal purpose of advertising is, of course, to drive sales. Indeed, this is another facet of business life which has been radically transformed by technology platforms – such as PayPal. Data suggests British consumers have a growing appetite for completing sales online, with one survey finding that more than four in five had made an online purchase in the month prior.[40] According to Ofcom, 96 per cent of the online adult population visited an e-commerce site in September 2019, with visitors spending an average of over 14 minutes a day on such sites.[41]

The most popular e-commerce site in the UK in September 2019 was Amazon, followed by eBay, Argos, and Samsung.[42] Averaged on a daily basis, the typical online UK adult spent 3 minutes 24 seconds a day on Amazon in September 2019, a 27 per cent increase compared to the same time period the year prior.[43]

As illustrated in Chart 5, the value of e-commerce sales in the UK non-financial sector in 2018, totalled £688 billion – an increase of £106 billion, or fully 18 per cent,

36 Ibid.

37 Luigi Zingales and Filippo Maria Lancieri, "Stigler Committee on Digital Platforms: Policy Brief". Available from: https://research.chicagobooth.edu/-/media/research/stigler/pdfs/policy-brief---digital-platforms---stigler-center.pdf.

38 Competition and Markets Authority, "Online platforms and digital advertising: Market study final report". Available from: https://assets.publishing.service.gov.uk/media/5efc57ed3a6f4023d242ed56/Final_report_1_July_2020_.pdf.

39 Christopher Mims, "Hats Off to Web Advertising. No, Really". Available from: https://www.wsj.com/articles/where-would-we-be-without-internet-ads-1436120809.

40 Hootsuite, "The Global State of Digital 2020". Available from: https://hootsuite.com/pages/digital-2020.

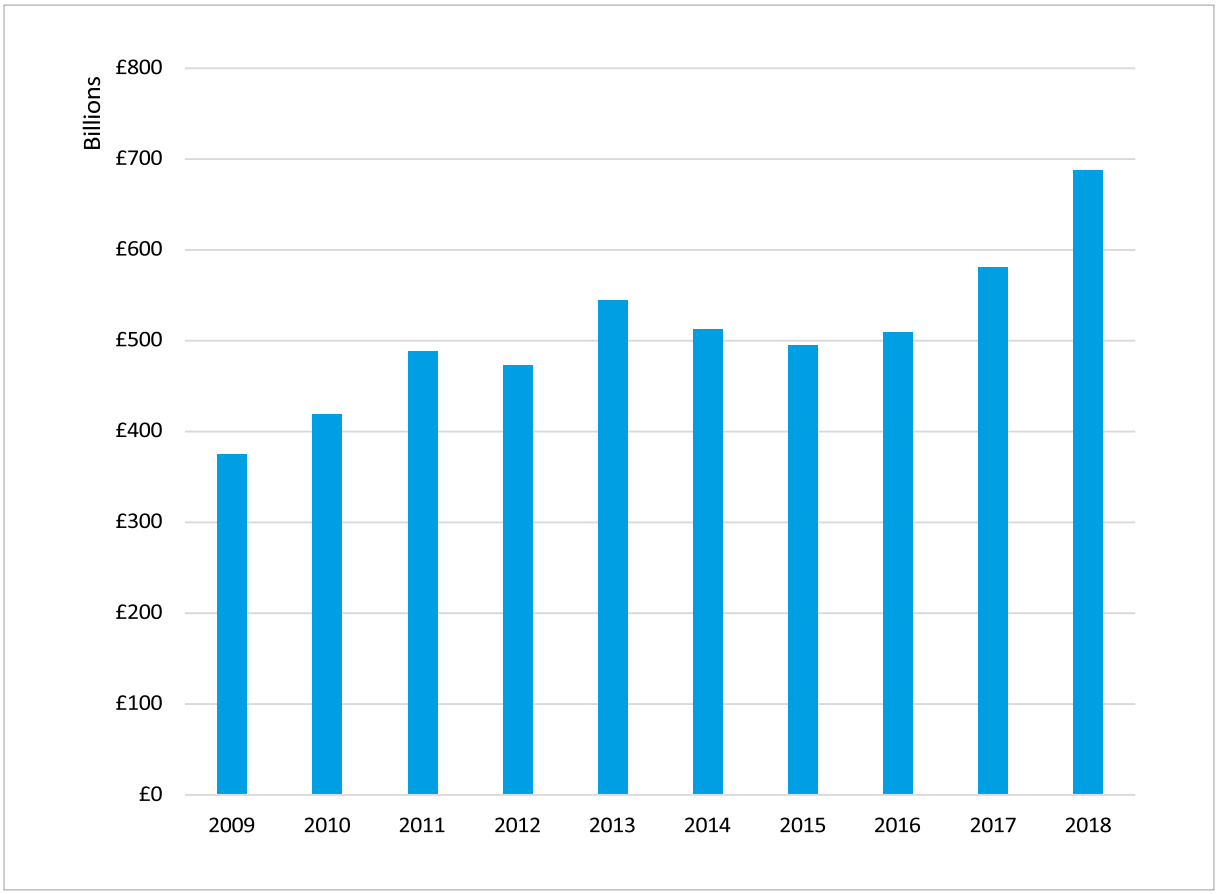
41 Ofcom, "Online Nation: 2020 report". Available from: https://www.ofcom.org.uk/___data/assets/pdf_file/0027/196407/online-nation-2020-report.pdf.

42 Ibid.

43 Ibid.; Ofcom, "Online Nation: 2019 report". Available from: https://www.ofcom.org.uk/___data/assets/pdf_file/0025/149146/online-nation-report.pdf.

compared to the year prior.[44] Compared to 2009, the difference was £313.3 billion, or nearly 60 per cent.[45] While these figures apply to all businesses in the UK – large and small – further data indicates that even the smallest of businesses have witnessed similar margins of e-commerce growth, year on year.[46]

Chart 5. Value of UK e-commerce sales (2009-2018)



Source: Office for National Statistics, "E-commerce and ICT activity, UK: 2018".

Perhaps as is to be expected, e-commerce sales now also take up an increasingly large proportion of total sales. In 2018, e-commerce accounted for 20.5 per cent of all business turnover in businesses with over ten employees, up from 16.5 per cent in 2009.[47] In addition, data suggests more businesses as a proportion of the whole business community are now making e-commerce sales.[48]

In sum, more and more of us are now shopping online. In 2019, 82 per cent of adults bought goods or services online, up from 53 per cent in 2008, when the Office for National Statistics first started recording

44 Office for National Statistics, "E-commerce and ICT activity, UK: 2018". Available from: https://www.ons.gov.uk/businessindustryandtrade/itandinternetindustry/bulletins/ecommerceandictactivity/2018#main-points.

45 Ibid.

46 Ibid.

47 Ibid.

48 Ibid.

data on internet purchases.[49] Those in the age brackets 16-24 and 25-34 were the most likely to have shopped online (97 per cent), but even among those aged 65 or above, more than half (54 per cent) used the internet to buy something in 2019.[50]

But digital technologies do not just help to increase sales by better connecting British SMEs to British customers, they also bolster and facilitate exports. Amazon, for instance, claims that SMEs using its platform achieved total export sales in excess of £2 billion in 2018.[51] According to recent data from the Federation of Small Businesses, a fifth of small businesses which either import or export use online platforms like Facebook or Booking.com to do so.[52] Meanwhile, a 2019 paper from the Mercatus Center at George Mason University found that Australian firms with a presence on Facebook show a greater tendency to export – a finding which holds true across all industries, and is especially evident in smaller firms.[53]

From a productivity perspective, this should be particularly encouraging – as exports, especially goods exports, are typically seen as a key driver of productivity gains.[54]

It is almost a truism to state that increasing volumes of sales allow businesses to grow. But research from McKinsey casts further light onto this, showing that SMEs with what they defined as a 'strong web presence' grew more than twice as quickly as those with minimal or no presence, and that SMEs which took advantage of the internet created double the amount of jobs compared to firms which did not.[55]

As much of the world locked down in order to stave off the threat of Covid-19, the importance of online sales only increased. Recent survey data from the Office for National Statistics shows how almost a third of small businesses have reported an increase in online sales – a telling figure, not least against an economic backdrop of business closures, consumer uncertainty, and supply chain issues.[56]

Digitising operations

Businesses do not adopt technologies for no apparent reason. They do so knowing – or, at the very least hoping – that it will allow them to increase productivity, boost their profit margins, or expand their market share. Often, technological adoption is not necessarily a conscious decision as such, but rather something which is just the natural thing do to. As personal computers and the internet became more ubiquitous, for instance, it simply made sense for businesses of all kinds to use them to replace paper-based systems.

49 Office for National Statistics, "Internet access – households and individuals, Great Britain: 2019". Available from: https://www.ons.gov.uk/peoplepopulationandcommunity/householdcharacteristics/homeinternetandsocialmediausage/bulletins/internetaccesshouseholdsandindividuals/2019#links-to-related-statistics.

50 Ibid.

51 Amazon, "Amazon's Economic Impact in the UK". Available from: https://blog.aboutamazon.co.uk/jobs-and-investment/amazons-economic-impact-in-the-uk.

52 Federation of Small Businesses, "Destination Digital: How small firms can unlock the benefits of global e-commerce". Available from: https://www.fsb.org.uk/resources-page/destination-digital-report-pdf.html.

53 Christine A. McDaniel and Danielle Parks, "Business on Facebook and Propensity to Export: Australia". Available from: https://www.mercatus.org/system/files/mcdaniel__and__parks__-__policy__brief__-__digital__platforms__small-__and__medium-sized__businesses__-__v1.pdf.

54 Matt Whearty, "How do cities trade with the world? An analysis of the export profile of Britain's cities". Available from: https://www.centreforcities.org/wp-content/uploads/2019/04/2019-05-02-How-cities-trade-with-the-world.pdf; David Atkin, Amit K. Khandelwal and Adam Osman, "Exporting and Firm Performance: Evidence from a Randomized Experiment". Available from: https://academic.oup.com/qje/article/132/2/551/3002609#sec7.

55 McKinsey, "Internet matters: The Net's sweeping impact on growth, jobs, and prosperity". Available from: https://www.mckinsey.com/~/media/McKinsey/Industries/Technology%20Media%20and%20Telecommunications/High%20Tech/Our%20Insights/Internet%20matters/MGI__internet__matters__full__report.ashx.

56 Office for National Statistics, "Business Impact of Covid-19 Survey (BICS) results". Available from: https://www.ons.gov.uk/economy/economicoutputandproductivity/output/datasets/businessimpactofcovid19surveybicsresults.

Fundamentally, a firm which does not keep up with the times when it comes to the adoption of digital technologies runs a risk of losing competitiveness relative to its counterparts. On the other side of the same coin, therefore, technologies can equally offer several different benefits, should businesses wish to take them.

More than just improving performance, the digitisation of various functions of business allows firms to cut back on significant expenses. Research has found that SMEs could reduce their cost base by 20 per cent just by digitising back-office operations.[57] Akin to how larger firms might outsource entire branches of their business, the advent of digital technology means SMEs are in a much better position to outsource the handling of different operations, such as accounting or sales, which allows them to concentrate fully on developing and selling their products.

Small businesses have benefitted from digital technologies in many different and overlapping ways. Indeed, when we polled SMEs about whether digital platforms have helped their business to expand, 61 per cent agreed (with over two-fifths of those agreeing stating they strongly agree), and just 13 per cent disagreed.

While there is no single straightforward way to exhaustively assess exactly how digital technologies have helped small businesses, based upon conversations we have had during the research, we have arrived at the following taxonomy: customer relationship management systems; digital accounting software; human resources software; project management software; and enterprise resource planning systems. We shall take each of these in turn.

Customer relationship management systems

Customer relationship management (CRM) systems are one of the most important tools a small firm can call upon in order to improve its performance, and exemplify how digitisation can benefit a business. CRM systems typically store data on previous customers, which allows firms to more easily maintain a business relationship with them. In practical terms, this might mean a small business registering when a customer bought something from them, coupled with their relevant details, thus allowing the business to follow up with further marketing that customer might find useful in the future.

Some CRM systems might also have functionalities to allow customers to be analysed in terms of location, purchasing preferences, or demographic – information which businesses can use to tailor their product offering, and maximise sales accordingly. Importantly, this could allow small businesses to make more informed decisions about their growth ambitions, or stand a better chance of successfully executing any strategies they might have to expand.

By allowing businesses to collect and store data on customers, CRM systems permit businesses to commodify valuable information (such as sales leads) themselves, rather than leaving that down to individual employees. This can minimise disruption when, say, a staff member leaves the company or is absent for some other reason – such as illness or parental leave – thereby allowing firms to provide a continuity of service to customers, and ensure that they can better retain existing business.

57 Booz&co., ""This Is for Everyone": The Case for Universal Digitisation". Available from: http://i.co.uk/wp-content/uploads/2012/11/The__Booz__Report__Nov2012.pdf.

Ultimately, CRM systems are proven to boost sales, with recent analysis from the Enterprise Research Council finding that employees in micro-sized firms which invested in CRM systems experienced an increase in sales of 18.4 per cent over three years.[58]

Digital accounting software

Digital accounting software refers to programmes which help businesses to electronically store, handle and analyse financial data. Depending on the software in question, digital accounting allows businesses to more rapidly process important information relating to payments they have received or owe – including, perhaps most importantly, with regards to various different taxes. Some digital accounting software also helps businesses with regards to managing cashflow and issuing invoices.

Prior to the emergence of digital accounting software, businesses might have had to rely on expensive external accountants to file taxes, or devote considerable amounts of their own time to staying on top of money that they were owed by clients. Indeed, research from the Federation of Small Businesses found that the average UK small business spends as much as £5,000 and three working weeks each year dealing with tax compliance alone – illustrating just how much of a burden it can be.[59]

Since April 2019, most UK businesses above the VAT threshold have had to maintain digital tax records, and submit their VAT return using compatible software – as part of a drive within Government known as the Making Tax Digital programme. Thus, for liable firms at least, digital accounting software is not just a nice-to-have, but a very necessary part of their business.[60]

Beyond being a Government requirement in some instances, sometimes larger firms will also demand of smaller firms that they engage with use digital accounting software to process services or contracts, meaning that it is an increasingly imperative tool for businesses seeking to land lucrative partnerships with larger firms.

Finally, it would be remiss not to mention how digital accounting software could end the blight of late payments – which can make or break a small business. According to Xero's *State of Late Payments 2019* report, on any given day in February 2019, the average UK small business was owed £23,360 in late payments, a 17 per cent rise on the previous year.[61] Digital accounting software intuitively helps businesses to ensure payments get out of the door on time, and to where they need to be, helping oil the wheels of the British economy, and reduce time spent by other businesses chasing up invoices.

Human resources software

Just as digital accounting software allows businesses to better manage their finances, human resources (HR) software lets them better manage their workforce. HR software can assist in terms of improving employee administration – such as calculating holiday entitlements, working out timesheets, or communicating important information like health and safety training notices and so forth.

58 Enterprise Research Centre, "State of Small Business Britain Report 2018". Available from: https://www.enterpriseresearch.ac.uk/wp-content/uploads/2018/06/SSBB-Report-2018-final.pdf.

59 Federation of Small Businesses, "FSB launches report into UK taxation rates". Available from: https://firstvoice.fsb.org.uk/first-voice/fsb-launches-report-into-uk-taxation-rates.html.

60 HM Revenue and Customs, "Overview of Making Tax Digital". Available from: https://www.gov.uk/government/publications/making-tax-digital/overview-of-making-tax-digital.

61 Xero, "The State of Late Payments: The effects on businesses and their owners in 2019". Available from: https://www.xero.com/content/dam/xero/pdf/state-of-late-payments/State-of-late-payments__report__2019.pdf.

This obviously helps businesses by economising on the amount of time devoted to handling administrative functions. But it also helps in a broader sense – many HR software companies note how using their products can bolster employee retention, or increase productivity by quickly having details to hand about who's who in a firm. HR software might also be able to track employee performance, which allows businesses to focus on identifying not only those areas where they are especially successful, but also where they need to improve.

In the UK, SMEs are exempt from rules which require firms to publicise gender pay gaps,[62] but HR software would allow smaller businesses to do so more easily if they were ever required to start reporting such data – or indeed if they had to start reporting ethnicity pay gaps, as the Government consulted on in early 2019.[63]

Finally, another key area where HR software can assist businesses is in terms of recruitment. Firms digitising their hiring processes can more easily sift through applications, allowing them to better identify promising candidates. They may also be able to retain details of individuals, something which would be particularly useful for seasonal businesses that do not retain staff year-round, such as those in the agricultural or tourism sectors.

Project management software

Project management software aims to ameliorate processes that track how work projects are progressing – with programmes like Trello and Microsoft Project being leading examples. At its most rudimentary, project management software might simply resemble a digitised 'to do' list, but increasingly developers of project management software are adding functionalities to allow businesses to better prioritise and optimise work streams.

As with all of the above technologies, project management software enables businesses to be more efficient and productive, whether by automating tasks (for instance, sending reminders of things a business needs to do, such as to chase invoices), increasing workforce flexibility (for instance, by allowing all employees to view how a project is progressing, wherever they may be based), and generally making life easier (for instance, dispensing with paper-based systems which may be prone to getting lost, or other errors).

The utility of project management systems will vary from business to business. A local shop with only a small staff will probably derive some value from using software to maintain a digital, rather than physical, record of things they need to, but the benefits might end not long after that. A more dynamic business that deals with complex processes, perhaps with a hundred or so employees, who are not necessarily all located in the same place, including sub-teams which will be working on the same projects, will probably find project management software much more useful – if not critical to ensuring that their business can function smoothly and properly.

As the rise of the intangible economy continues apace,[64] coupled with trends like a greater tendency to work remotely[65] –

62 Advisory, Conciliation and Arbitration Service and the Government Equalities Office, "Gender pay gap reporting: overview". Available from: https://www.gov.uk/guidance/gender-pay-gap-reporting-overview.

63 Department for Business, Energy and Industrial Strategy, "Ethnicity Pay Reporting: Government Consultation". Available from: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/747546/ethnicity-pay-reporting-consultation.pdf.

64 Jonathan Haskel, "Capitalism without capital: the rise of the intangible economy". Available from: https://voxeu.org/content/capitalism-without-capital-rise-intangible-economy.

65 Office for National Statistics, "Homeworkers by UK region, 2008 compared to 2018". Available from: https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/adhocs/009913homeworkersbyukregion2008comparedto2018.

something exacerbated by the fallout of the Covid-19 pandemic – it is likely that project management software will become an ever more crucial facet of everyday life for many small businesses in Britain.

Enterprise resource planning systems
As with the other technologies discussed above, enterprise resource planning (ERP) systems do not have one succinct or universally agreed definition. But at their most basic, ERP systems help businesses to integrate various parts of their business to ensure they can stay on top of processes and tasks.[66]

They may provide transparent information about current stock and orders in real time, to help businesses manage inventories. Or, ERP systems may permit firms to better quantify the performance of different parts of their business, allowing senior managers to assess where their strengths and weaknesses lie.

Indeed, in a way, ERP systems combine many of the elements of CRM systems, HR software, digital accounting software, and project management software – enabling individuals to clearly and efficiently manage their businesses in a more holistic way, by clearly and systematically presenting company information among other things.

Cloud computing

The different types of digital technologies detailed above capture a reasonably broad span of the existing support for businesses. But some others will not fit neatly into our taxonomy, and warrant closer inspection in their own right. One such technological development – perhaps the single most important – is what is referred to as cloud computing.

Definitions of what cloud computing is, exactly, vary – but Amazon Web Services provides a succinct explanation:

> *Cloud computing is the on-demand delivery of IT resources over the Internet with pay-as-you-go pricing. Instead of buying, owning, and maintaining physical data [centres] and servers, you can access technology services, such as computing power, storage, and databases, on an as-needed basis from a cloud provider.*[67]

Plenty of different companies now offer cloud computing services for personal and business use. Google Cloud, for instance, is a comprehensive suite of digital amenities which many will be familiar with – from functions like Gmail to Google Calendar, as well as videoconferencing software and online data storage.[68]

In the right hands, these services are incredibly useful to businesses of all shapes and sizes – certainly, it is hard to imagine any business which would not benefit from having the ability to connect with others, manage their time more effectively, and store and analyse data digitally. Cloud computing also offers an invaluable benefit of automatically being able to scale your business as demand increases, especially if you are selling digital goods rather than physical.

Indeed, various studies on the economic benefit of Google Cloud show exactly that – with one study estimating that the productivity benefits in the UK alone stand

66 Be the Business, "Introduction to Enterprise Resource Planning systems". Available from: https://bethebusiness.tools/find-right-technology-you/introduction-enterprise-resource-planning-systems/.

67 Amazon Web Services, "What is cloud computing?" Available from: https://aws.amazon.com/what-is-cloud-computing/.

68 Google, "Solve more with Google Cloud". Available from: https://cloud.google.com/.

at between $420 million and $1.2 billion.[69] A paper from Deloitte that mapped out the benefits of Google Cloud onto an illustrative small business of 20 staff with a $1 million annual turnover found that Google Cloud could generate $50,000 in extra revenue, while saving $3,800 on IT capex, and freeing up the time of one whole employee who could then be deployed to do other, more productive work.[70]

Looking at how smaller firms in particular make use of cloud technologies, and how they benefit from them, another paper from Deloitte found similarly impressive results.[71] In terms of accessing new markets (and thus revenue streams), 77 per cent of SMEs believe cloud technologies facilitate this.[72] As for scaling up, fully 85 per cent of SMEs agreed that cloud technologies allow them to do this faster – with higher results recorded among the fastest growing companies.[73] Ultimately, SMEs which use an above average number of cloud services in their operations are found to grow 26 per cent faster than those which use no cloud tools, and are more profitable by 21 per cent on average.[74]

In the UK, 58 per cent of SMEs reportedly use cloud computing – an encouraging figure, in the sense that it outranks usage among Spanish (50 per cent), French (47 per cent), and German (44 per cent) equivalents, but also potentially concerning in that it is not higher.[75]

69 Deloitte, "Economic and social impacts of Google Cloud". Available from: https://www2.deloitte.com/content/dam/Deloitte/es/Documents/tecnologia/Deloitte__ES__tecnologia__economic-and-social-impacts-of-google-cloud.pdf.

70 Ibid.

71 Deloitte, "Small business, big technology: How the cloud enables rapid growth in SMBs". Available from: https://www2.deloitte.com/content/dam/Deloitte/global/Documents/Technology-Media-Telecommunications/gx-tmt-small-business-big-technology.pdf.

72 Ibid.

73 Ibid.

74 Ibid.

75 British Business Bank, "Going Digital: The Challenges Facing European SMEs". Available from: https://www.british-business-bank.co.uk/wp-content/uploads/2019/11/going-digital-the-challenges-facing-european-smes-european-sme-survey-2019__2.pdf.

Chapter III – Tech platforms are enabling a new generation of capitalists

In the previous chapter, we saw how digital tools are equipping firms to more adeptly operate in the online business environment – allowing them to boost productivity, reach new customers, better manage administrative tasks, and close on more sales.

Typically, these benefits will be captured by existing firms, which are simply pivoting away from traditional conceptions of business, and into the digital era.

Technology, however, is not just assisting already established businesses. It is also helping to enable the creation of a new generation of capitalists who are directly engaging in the economy, or at least more directly than may be conventionally understood. As we shall see, the technological developments driving this are not only allowing private individuals to capitalise financially on their talents and services, but are also having a marked impact on the make-up and competitiveness of many markets.

This question of competition here is particularly pertinent for the purposes of this report, which seeks in part to understand how productivity can be boosted within the UK's small business community. There is a strong body of empirical evidence on how competition and productivity are intimately linked, with many key insights finding that the former drives growth in the latter.[76]

The theory should be quite intuitive – in competitive markets, firms have an inducement to produce more from the same bundle of resources, so as to provide goods and services at a more competitive rate than their rivals. Incidentally, other benefits also arise, such as an incentive to not only produce more (which bolsters productivity), but also to produce 'better', for instance refining their product offering, developing new and innovative goods and services, which can then go on to increase productivity further. In practical terms, the camera in your smartphone would not be as good as it is today were it not for Apple, Samsung, Sony and others constantly trying to one-up their rivals year after year after year.

Tech facilitating flexible working

New technology platforms have demonstrably empowered individuals to participate in the market economy in ways which may have been unimaginable just a decade or so ago. This trend has generally been termed the gig economy, whereby people sell their time or services on an ad hoc basis via a smartphone app.

76 Competition and Markets Authority, "Productivity and competition". Available from: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/443448/Productivity_and_competition_report.pdf.

Gig work has split opinions in the UK and elsewhere, with its opponents believing that it "shows that working people are battling to make ends meet".[77] A more accurate representation, however, would be that platforms generally allow individuals to voluntarily opt for a different style of working, choosing where and when they wish to work. Indeed, Government analysis backs this view up – with the majority of gig workers reporting that they are either fairly or very satisfied with their work.[78] Moreover, two-thirds of respondents reported making only up to five per cent of their annual income through gig working, indicating that for a qualified majority of individuals, gig work simply complements other income streams available to them.[79]

One of the more interesting dynamics about the emergence of the gig economy, enabled largely by massive technology platforms, is how it offers individuals many of the benefits of working as their own boss with few, if any, of the downsides. Before the rise of Uber, for instance, a taxi driver might have had to set up their own business, invest in marketing, manage any backroom operations, among countless other burdensome things. Indeed, the taxi market is particularly uncompetitive, and is one which epitomises the sort of rent-seeking which erodes consumer welfare.[80]

While the fixed costs noted above may seem trivial, they can very often represent significant barriers to entry. In turn, they give rise to market ossification, whereby traditional incumbents are allowed to dominate, which not only reduces consumer welfare but also limits the opportunities for private individuals to participate in the economy. Nowadays, however, and to continue with the taxi example, virtually anyone with a car, a smartphone and a licence and a DBS check can register as a driver and begin working for themselves – earning money and providing a valuable service to many others.

This removal of barriers to entry can be observed in an increasing array of markets, and would be inconceivable in the absence of new digital platforms. It would also be remiss not to mention here that reducing the power of incumbents, and injecting competition into markets, provides the conditions necessary to ensure productivity increases.

Case study. Airbnb – turning property owners into hoteliers

Familiar to holidaymakers the world over, Airbnb is a peer to peer room rental network. The concept is simple – anyone with a spare room, or entire property, can use Airbnb as a platform on which to advertise it, and effectively become a small-scale hotelier overnight.

Primarily, the service has obvious advantages for tourists – who can benefit from finding cheap and interesting places to stay. But, of course, hosts profit too. In the UK,

77 Trades Union Congress, "UK's gig economy workforce has doubles since 2016, TUC and FEBS-backed research shows". Available from: https://www.tuc.org.uk/news/uks-gig-economy-workforce-has-doubled-2016-tuc-and-feps-backed-research-shows.

78 Department for Business, Energy and Industrial Strategy, "The characteristics of those in the gig economy". Available from: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/687553/The_characteristics_of_those_in_the_gig_economy.pdf.

79 Ibid.

80 Kristian Niemietz and Diego Zuluaga, "Hire Authoritiy: Turning statutory regulation into private regulation for the UK's taxi industry". Available from: https://iea.org.uk/wp-content/uploads/2016/11/Hire-Authority-PDF.pdf.

the average host earns £3,100 from Airbnb a year[81] – while globally, over half of hosts are defined as being 'low to moderate' income, with a similar amount stating that the money they derive from Airbnb helps them stay in their own home.[82]

Airbnb was founded in 2008 and has quickly grown to the point where it is now one of the world's most recognisable brands. It is currently valued at around $18 billion, and attained unicorn status in 2011.[83] Beyond these impressive figures, it has fundamentally disrupted the hotels industry – providing massive consumer welfare increases, plus lucrative opportunities for individuals to capitalise on their assets in a convenient, safe, and efficient way.

Tech fostering digital merchants

The ways in which new digital technologies are enabling just about anybody to directly participate in enterprise are by no means limited to the gig economy. Countless different e-commerce platforms, such as eBay, Facebook Marketplace, and Amazon, provide opportunities to individuals to get a foothold in the world of trade. In 2019, figures released by the online auction giant eBay showed that 1,300 people from the UK became 'eBay millionaires' in the preceding 12 months, turning over £1 million in revenue from sales on the site alone.[84]

The reasons why online selling platforms help small businesses are multifarious. For a start, one can witness many of the same positive features with regards to lowering barriers to entry in the more established commercial sphere as one can in the gig economy setting.

A small business which trades online might be able to dispense with the need for a physical presence on a high street. Already, this represents a huge saving – in many cities across the UK, businesses might have to fork out thousands of pounds per square meter of retail space each year just to have an outlet in which to sell their goods and services. In the digital age, however, a small business could be based out of a home office with some limited warehousing, while still fulfilling the same number of orders and sales.

Again, what the digitisation of trade fundamentally achieves is a reduction in barriers to entry. When having a bricks and motor presence out in the 'real world' becomes less of a necessity, more and more individuals can set up shop and participate in the economy. The increase in competition which should follow will drives prices down, and consumer welfare and productivity up.

Of course, while the internet confers the opportunity for many more small businesses to start up than the case would be otherwise, that is not to say that these businesses will only ever operate online. Those which are best able to capture the benefits from digital commerce, and grow their business into a successful and respected brand,

81 Airbnb, "Airbnb UK Insights Report". Available from: https://www.airbnbcitizen.com/wp-content/uploads/2018/10/AirbnbUKInsightsReport__2018.pdf.

82 Airbnb, "The Economic Impacts of Home Sharing in cities around the world". Available from: https://www.airbnb.co.uk/economic-impact.

83 CB Insights, "The Global Unicorn Club: Current Private Companies Valued At $1B+". Available from: https://www.cbinsights.com/research-unicorn-companies.

84 Tamebay, "2019 eBay Millionaires soar 18% to hit 10 year high". Available from: https://tamebay.com/2019/06/2019-ebay-millionaires-soar-18-to-hit-10-year-high.html.

may wish to jump from the online world into the physical one. Alternatively, for certain businesses, the internet may be a useful crucible in which to test, market and refine their product before it goes mainstream, and other retailers wish to stock it.

Much coverage of this sector focuses on the extent to which the increases in value created by only sales are captured by the platforms themselves. But our polling data shows that SMEs still overwhelmingly consider such trends a positive rather than a negative. There are, as mentioned above, issues around competition, transparency, and control small businesses have when using online platforms. But there is no question that these new marketing and distribution channels have been extremely useful to all manner of companies and entrepreneurs.

Case study. The Woodland Gift Company – the crafting of a flourishing online business

In 2018, Charlotte Appleton founded The Woodland Gift Company, after friends urged her to start selling the gifts and jewellery she would make as presents for them.[85]

Using Facebook, Charlotte set up shop, and proceeded to build her brand almost entirely on the digital platform.

Since launching her own website, Charlotte estimates that nine-tenths of The Woodland Gift Company's website traffic and sales come through Facebook.[86] Also, using Facebook has allowed Charlotte to better market and develop the business. Analytics were critical to understanding demographic information about her customer base. Facebook let Charlotte know that her average customer was 40 years old, which in turn led to a redesign of The Woodland Gift Company's website so that it was as user friendly as possible for less internet-savvy buyers.[87]

Thankfully, the UK already has a relatively favourable business environment in which to start trading. Owing to years of targeted corporate tax cuts and the removal of restrictive regulations, coupled with a legal framework broadly supportive of things like property rights and contracts, Britain is one of the best places in the world to run a business. According to the World Bank's most recent *Doing Business* rankings, the UK comes out eighth overall.[88] On some constituent metrics, however, it falls down the rankings – for 'paying taxes', for instance, it is a rather dispiriting 27th.[89]

Certainly, the Government could do better in this regard. One interesting development of late, however, has been the introduction of two tax breaks, called the Trading Allowance and the Property Allowance.[90]

85 The Woodland Gift Company, "Our story". Available from: https://www.thewoodlandgiftcompany.com/about.

86 Private communication.

87 Ibid.

88 World Bank, "Doing Business: Economy rankings". Available from: https://www.doingbusiness.org/en/rankings.

89 Ibid.

90 HM Revenue and Customs, "Tax-free allowances on property and trading income". Available from: https://www.gov.uk/guidance/tax-free-allowances-on-property-and-trading-income#property.

Since tax year 2017/18, the Trading Allowance has permitted individuals to earn up to £1,000 in discretionary income without paying tax on it, or even informing HM Revenue and Customs (HMRC).[91] This could be income derived from casual services, such as babysitting or gardening, or leasing out equipment, or freelancing in some other capacity.

The Property Allowance works in much the same way – up to £1,000 can be earned from property or land before HMRC needs to be informed or any tax needs to be paid.[92]

As discussed, digital technologies have helped empower many individuals to engage in commerce in a way hardly imaginable even just a few years ago. Incidentally, many examples of income derived from this engagement will be covered by the Trading Allowance and the Property Allowance – whether it is somebody selling their carpentry services on TaskRabbit putting together flatpack furniture, or somebody renting a room in their home on Airbnb to a holidaymaker.

These tax breaks clearly encourage entrepreneurial activity. By creating a marginal tax rate of zero on anything earned up to £1,000, they incentivise individuals to monetise their assets, and create more productive economic activity. More than just incentivising people to trade by allowing them to enjoy the full fruits of their labour, perhaps the key benefit is that individuals do not have to deal with the process of declaring any income to HMRC, which some may find confusing or daunting, and therefore not worth their time to bother with at all.

The £1,000 limits on the Trading Allowance and Property Allowance have remained the same since their introduction. We recommend that the Treasury considers raising these thresholds, at the very least in line with inflation, and continues to escalate them as the economy grows.

Tech enabling the modern investor

Not long ago, the archetypal image of an investor might have been an affluent individual from the upper echelons of society. That may now be changing, thanks to a new breed of digital investment platforms which are enabling more and more people to take the plunge into the world of stocks and shares – and potentially profiting handsomely as a result.

New digital platforms, like Revolut or eToro, are disrupting the investment market – increasing competition, and opening it up to fresh audiences. Often optimised for smartphone use, these novel investment platforms seek to undercut established companies which sting investors with hefty broker fees or commission charges.[93]

Some such disruptive companies may make use of so-called 'robo-advisers' – algorithms which allow virtually anybody to access a diversified investment portfolio, perhaps tailored to specific needs or preferences.[94] Robo-advisers follow the classic digitisation playbook – automate

91 Ibid.

92 Ibid.

93 Nicholas Megaw, "Revolut launches commission-free share trading". Available from: https://www.ft.com/content/a50349ae-b3ac-11e9-bec9-fdcab53d6959.

94 Juergen Braunstein and Marion Laboure, "Democratising finance: The digital wealth management revolution". Available from: https://voxeu.org/article/digital-wealth-management-revolution.

processes, exploit economies and scale, and operate at near zero-marginal cost.[95] Consequently, they have the potential to lower the cost of investing and trading, bringing it into reach to hitherto excluded groups, such as younger people.[96]

Digital investment platforms also help minimise the inertia which stops certain individuals from investing, so could also perform a democratisation function – in a similar vein to digital advertising, discussed above.

95 KPMG, "Robo advising: Catching up and getting ahead". Available from: https://home.kpmg/content/dam/kpmg/pdf/2016/07/Robo-Advising-Catching-Up-And-Getting-Ahead.pdf.

96 Kate Beioley, "Free trading apps – investment freedom or false economy?". Available from: https://www.ft.com/content/8be69c5e-5f6b-11e9-b285-3acd5d43599e.

Chapter IV – Supporting the digitisation of small businesses

The chapters above show the various ways in which adoption of digital technologies can help small businesses and entrepreneurially minded individuals.

Given the likely benefits to the economy, it is obviously desirable to foster their take-up further. Moreover, data suggest that the UK could be doing better than it is – according to the European Union's *Digital Economy and Society Index 2020*, the UK ranks 8th in terms of the integration of digital technologies among businesses.[97]

Of course, if a small business or individual wishes to turn down the potential gains which stand to be made by adopting online software and digital technologies, they have every right to do so.

But equally, there are things the Government can and should do in order to facilitate greater digitisation, without 'picking winners'.

The fact that 40 per cent of SMEs in the UK regard digitisation as a 'top priority' there is no shortage of appetite on the business side of the equation.[98] Already, we have discussed increasing the tax breaks in the shape of the Trading Allowance and Property Allowance to encourage small-scale entrepreneurialism, but we shall now consider how else the Government might be able to help improve digital adoption in the UK specifically among small businesses.

Encourage more investment in R&D

After the election of the current Government, a considerable amount of attention was focused on the desire to boost the amount of research and development (R&D) which is carried out in the UK.[99] Recently, the Government published the UK *Research and Development Roadmap*, which built upon the positive rhetoric, and hopefully sets the nation on a pathway to a more innovative future.[100]

This is for good reason. As illustrated by Chart 6, the UK lags well behind other comparable economies in terms of R&D spend. Among G7 nations, in 2018, the UK spent 1.7 per cent of GDP on R&D, behind France (2.2 per cent), the USA (2.8 per cent), Germany (3.1 per cent) and Japan (3.3 per cent).[101] In 2018, the average spend on R&D in OECD economies was 2.4 per cent of GDP – about a third higher than the UK.[102]

97 European Union, "Digital Economy and Society Index 2020". Available from: https://ec.europa.eu/digital-single-market/en/desi.

98 Ibid.

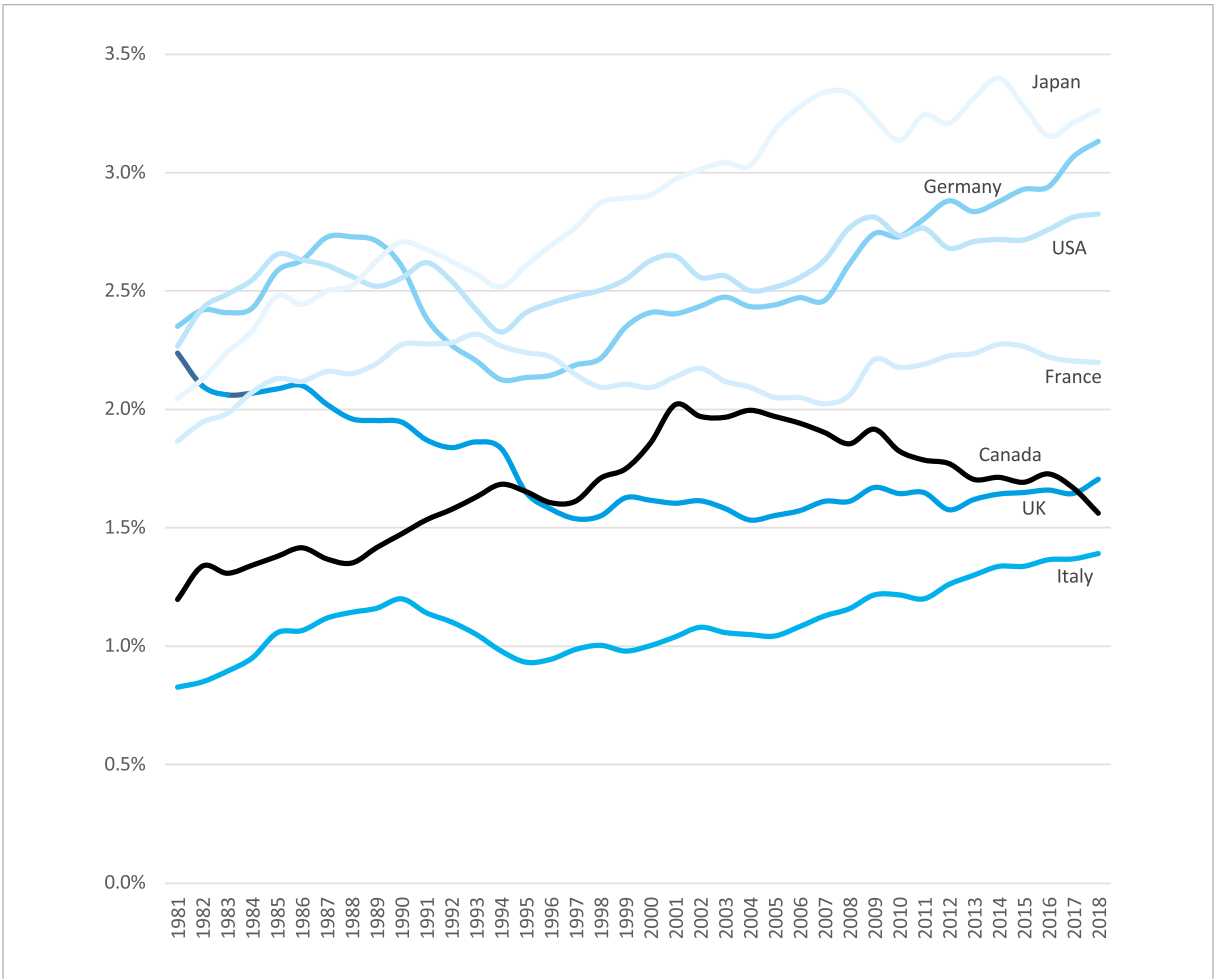
99 Clive Cookson, "Science world hails Boris Johnson's post-Brexit bid to boost R&D". Available from: https://www.ft.com/content/a9f55188-28d1-11ea-9305-4234e74b0ef3; UK Research and Innovation, "Increasing the UK's investment in R&D to 2.4% of GDP". Available from: https://www.ukri.org/about-us/increasing-investment-in-r-d-to-2-4-of-gdp/.

100 HM Government, "UK Research and Development Roadmap". Available from: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/896799/UK_Research_and_Development_Roadmap.pdf.

101 OECD, "Gross domestic spending on R&D". Available from: https://data.oecd.org/rd/gross-domestic-spending-on-r-d.htm.

102 Ibid.

Chart 6. Investment in R&D (G7 economies, 1981-2018)



Source: OECD, "Gross domestic spending on R&D".[103]

Spending on R&D is important, as it represents investment in, for instance, designing new processes or products which will fundamentally drive productivity increases, and therefore long-run growth in the economy.[104] Without R&D, economies become stagnant, while rivals pull away – and capture the rewards of higher wages and increased living standards.[105] While in the short-term governments might prioritise a range of economic goals, as the Niskanen Center's Brink Lindsey notes, "[t]he long-term future of economic growth hinges ultimately on innovation".[106]

Already, the Government has policies in place to incentivise private investment into R&D. The R&D tax credit, for instance, rebates spending on a range of activities, aimed at innovation within fields of science and technology.[107]

103 No UK data for years 1982 and 1984.

104 Royal Society, "Investing in UK R&D". Available from: https://royalsociety.org/-/media/policy/projects/investing-in-uk-r-and-d/2019/investing-in-UK-r-and-d-may-2019.pdf.

105 Department for Business, Innovation and Skills, "Innovation, Research And Growth". Available from: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/293635/bis-14-p188-innovation-report-2014-revised.pdf.

106 Brink Lindsey, "Why Growth Is Getting Harder". Available from: https://www.cato.org/sites/cato.org/files/pubs/pdf/pa737_web_1.pdf.

107 HM Revenue and Customs, "Claiming Research and Development tax reliefs". Available from: https://www.gov.uk/guidance/corporation-tax-research-and-development-rd-relief.

Recently, various different groups in the entrepreneurship and technology sectors have been calling for data to be classified as a product which is eligible to be claimed for under R&D tax credits.[108]

We support calls for data to be included within the remit of the R&D tax credit, to allow businesses to more readily harness the benefits of incorporating data into their everyday operations, and to support those companies whose business is founded on data analysis.

If the Treasury believes such a policy would be too much of a tax giveaway, it could at least consider granting it to firms which fall below a certain revenue threshold - so as to ensure the smallest start-ups can still benefit from it.

Reform the Apprenticeship Levy

The rise of the digital economy will inevitably have profound consequences for the sorts of skills demanded by employers. To be sure, apps, other software, and digital technologies will render some jobs redundant, in a gale of Schumpeterian 'creative destruction'.[109] This is the price to be paid for an improving economy, and is no different to the industrial revolutions of the past – where, for instance, mechanisation replaced manual labour.

But that will probably be of little solace to a worker laid off and struggling to find work in their new circumstances. Some may regard this as a necessary evil – and, to make clear, it certainly benefits society at large – but the Government is obviously eager to ensure that workers find new jobs as quickly as possible, and indeed that they have the appropriate skills to maximise their own and their firms' productivity.

This view is embodied in policies like the Apprenticeship Levy, which seeks to boost the provision of apprenticeships. It does so by charging employers with a wage bill of over £3 million per annum a levy of 0.5 per cent, the proceeds of which go into a spending account for that employer to draw down in order to pay for apprenticeship training and assessment.[110]

The effectiveness of the Apprenticeship Levy is hotly contested.[111] The most damning indictment is perhaps the fact that in the 12 months prior to its introduction, 564,000 learners started an apprenticeship, but this fell to 364,000 starts in the 12 months after it was brought in.[112]

Criticism has also centred on the complexity of the levy (for example, how to access the funds), its inflexibility (for example, what the funds can be used for), and the way it is designed (for example, 20 per cent of an apprentices' paid hours has to be spent on off-the-job training). Without doubt, the Apprenticeship Levy could be improved.[113]

Previously, the Centre for Policy Studies has recommended substantially broadening the types of training which can qualify for Apprenticeship Levy funds to be spent on, perhaps even reforming the Levy into a more general 'Skills Levy'.[114] ***To ensure the nation's workforce is prepared for the***

108 The Entrepreneurs Network and Coadec, "The Startup Manifesto". Available from: https://coadec.com/wp-content/uploads/2019/12/Manifesto-v6.pdf.

109 Joseph Schumpeter, "Capitalism, Socialism and Democracy". Available from: https://eet.pixel-online.org/files/etranslation/original/Schumpeter,%20Capitalism,%20Socialism%20and%20Democracy.pdf.

110 House of Commons Library, "Apprenticeships and skills policy in England". Available from: http://researchbriefings.files.parliament.uk/documents/SN03052/SN03052.pdf.

111 House of Commons Library, "Effectiveness of the apprenticeship levy". Available from: http://researchbriefings.files.parliament.uk/documents/CDP-2020-0024/CDP-2020-0024.pdf.

112 Ibid.

113 Ibid.

114 Sajid Javid and the Centre for Policy Studies, "After the Virus: A plan for restoring growth". Available from: https://www.cps.org.uk/files/reports/original/200623000907-CPSAFTERTHEVIRUS1.pdf.

jobs of tomorrow, the Government should immediately review why the Apprenticeship Levy is faltering, and redesign it so that employers can invest in the sorts of training that will deliver maximum productivity benefits for their businesses.

In addition, the Government should examine how state-funded skills provision is – or is not – equipping the workforce with the competencies necessary to prosper in an ever more digitised economy. According to our polling of SMEs, a fifth of senior decision makers disagreed that their business knows how to make use of digital platforms effectively to grow and succeed. Making inroads into that chunk of the nation's small businesses, therefore, could help boost productivity, earnings and employment.

This is not just about fixing apprenticeships. In recent years, various groups have been campaigning for the Treasury to give tax breaks for employees and the self-employed when they fund their own training.[115] This would not be a hugely radical policy change – already, employers can receive tax relief when they fund employee training, and the self-employed can deduct the costs of training against income when it maintains or updates their existing skills.[116] But not, rather confusingly, when it introduces new skills.[117]

A study of 30 OECD countries found that more than two-thirds provided a tax deduction for work-related training – demonstrating how much of an outlier the UK is in this regard.[118]

In 2018, the Treasury and HMRC consulted on changing the taxation of self-funded work-related training, but concluded that it would not extend existing tax reliefs for employees, the self-employed, or for retraining.[119]

As Sam Dumitriu of The Entrepreneurs Network notes, the status quo forces employees wanting to upskill themselves to do so at a tax disadvantage – and doubtlessly discourages the sort of positive, entrepreneurial, proactive behaviour the Government should want workers to be engaging in, to adapt to new opportunities and take it upon themselves to boost their productivity.[120]

Given the inability to claim tax relief on training which actively adds skills to a worker, one could reasonably argue this especially disadvantages digital upskilling – which workers, especially older ones, might never have had any formal training in.

We believe the decision to not grant tax breaks for self-funded training was a mistake, and that the Treasury – in light of its new focus on improving productivity – should reconsider its initial verdict, better allowing workers to equip themselves with the skills of the future, such as those necessary in a digitised economy.

Planning for the next generation of digital infrastructure

As the economy steadily moves online, ensuring that the UK has an adequate digital infrastructure becomes just as

115 Sam Dumitriu, "Management Matters". Available from: https://static1.squarespace.com/static/58ed40453a04116f46e8d99b/t/5c460447575d1f15a98d57ef/1548092495664/Management+Matters+-+Business+Stay-Up.pdf.

116 Ibid.

117 Ibid.

118 OECD, "Taxation and skills". Available from: https://read.oecd-ilibrary.org/taxation/taxation-and-skills_9789264269385-en#page1.

119 HM Treasury, "Taxation of self-funded work-related training". Available from: https://www.gov.uk/government/consultations/taxation-of-self-funded-work-related-training.

120 Sam Dumitriu, "Management Matters". Available from: https://static1.squarespace.com/static/58ed40453a04116f46e8d99b/t/5c460447575d1f15a98d57ef/1548092495664/Management+Matters+-+Business+Stay-Up.pdf.

important as conventional notions of physical infrastructure – like roads and railways. Reliable and quick internet coverage, for instance, is integral if the economy is to capture the opportunities presented to businesses and individuals of workplace digitisation.

One of the latest developments in wireless communications technology is known as 5G. The main benefits of 5G are increased speed (roughly 10-20 times faster than 4G), lower latency (the lag between command and corresponding action), and higher capacity (meaning more devices can connect to a network simultaneously while speeds are maintained at any one time).[121]

To its credit, the Government has been a largely enthusiastic supporter of the rollout of 5G. In the Department for Digital, Culture, Media and Sport's *Future Telecoms Infrastructure Review*, the then Secretary of State, Jeremy Wright, wrote of the Government's intention to "be a world leader in 5G", and stated its desire for a "majority of the population to have 5G coverage by 2027".[122] This is a commendable target, and, if achieved, will doubtlessly energise British businesses, while also providing a host of other economic and social benefits.

It has, however, been pointed out that existing planning laws could prevent, or at least slow down, the rollout of a comprehensive 5G infrastructure. In response to this, last year, the Ministry for Housing, Communities and Local Government and the Department for Digital, Culture, Media and Sport jointly opened a consultation into the development of assets necessary for 5G.[123]

At the time of writing, the consultation feedback is still being analysed – but we believe that the Government should liberalise the existing regulations pertaining to mobile infrastructure development, such as allowing masts to be widened without prior approval, or enabling masts to be taller (which, incidentally, could result in fewer masts being necessary).

Combatting cybercrime

While business conducted over the internet may seem to take place in the abstract, the firms and customers behind those virtual transactions are very much real. Just as we expect the authorities to keep us safe when we are shopping or going about our work in the material world, so too do we expect them to root out crime online.

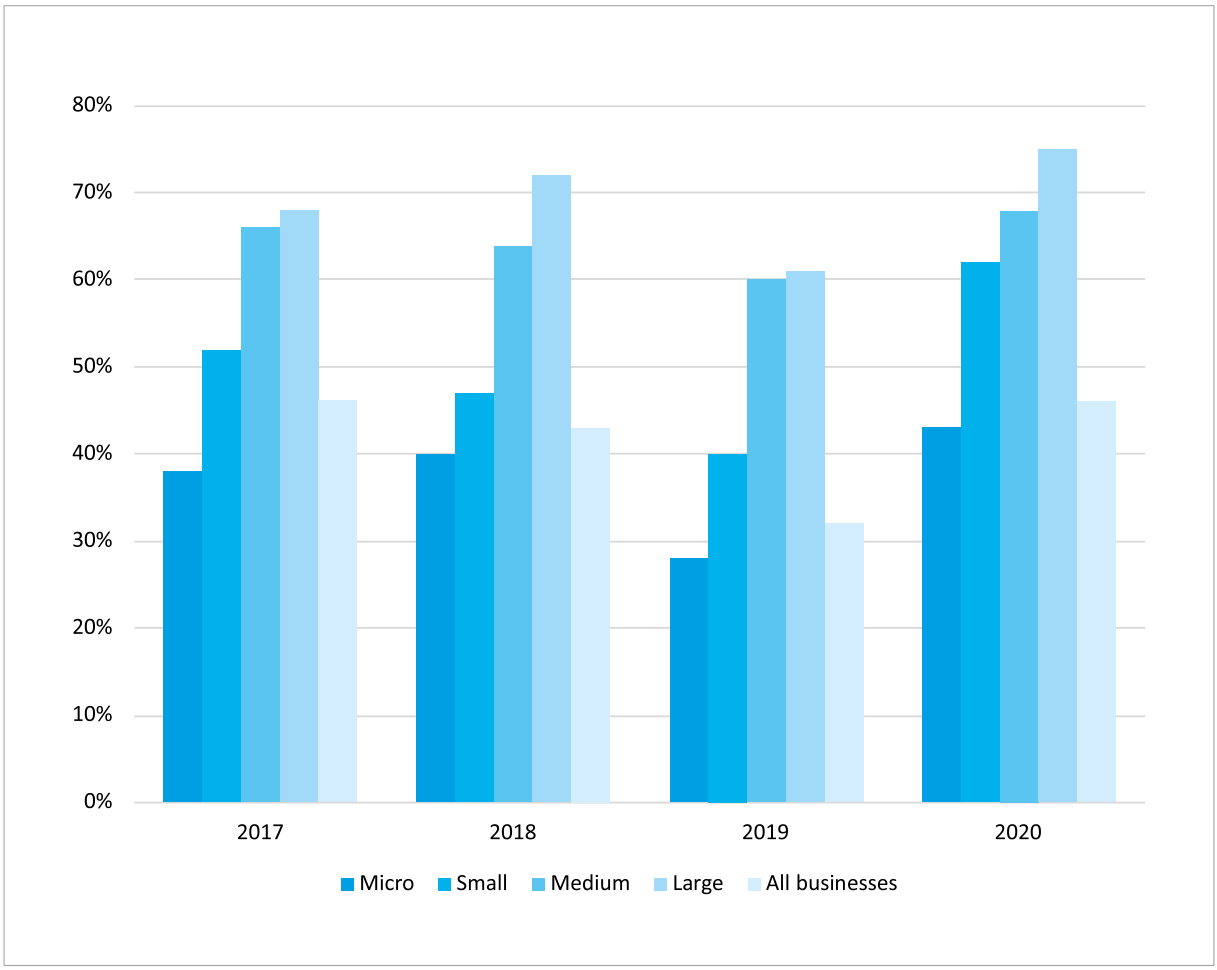
As illustrated by Chart 7, while larger businesses are – perhaps understandably – more likely to suffer cyber-attacks, smaller businesses are by no means ignored by online criminals.

121 Parliamentary Office of Science and Technology, "5G technology". Available from: https://post.parliament.uk/research-briefings/post-pb-0032/.

122 Department for Digital, Culture, Media and Sport, "Future Telecoms Infrastructure Review". Available from: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/732496/Future_Telecoms_Infrastructure_Review.pdf.

123 Ministry for Housing, Communities and Local Government and the Department for Digital, Culture, Media and Sport, "Proposed reforms to permitted development rights to support the deployment of 5G and extend mobile coverage". Available from: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/827162/Proposed_reforms_to_permitted_development_rights_to_support_the_deployment_of_5G_consultation.pdf.

Chart 7. Proportion of businesses which suffered cyber-attacks in previous 12 months



Source: Department for Digital, Culture, Media and Sport, "Cyber Security Breaches Survey".

The direct impacts of such attacks are significant. For micro and small businesses alone, the average annual cost of lost data or assets after breaches came to £3,110.[124] This is up from £2,070 in 2017, a rise of more than 50 per cent.[125] In addition, 20 per cent of micro and small businesses reported losing staff time to dealing with breaches, and 26 per cent felt they had to introduce new measures to prevent future attacks.[126]

124 Department for Digital, Culture, Media and Sport, "Cyber Security Breaches Survey 2020: UK Micro and Small Business Trends". Available from: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/875797/MicroSmall_Business_trends_infographic_CSBS_2020.pdf.

125 Department for Culture, Media and Sport, "Cyber security breaches survey 2017". Available from: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/609186/Cyber_Security_Breaches_Survey_2017_main_report_PUBLIC.pdf.

126 Department for Digital, Culture, Media and Sport, "Cyber Security Breaches Survey 2020: UK Micro and Small Business Trends". Available from: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/875797/MicroSmall_Business_trends_infographic_CSBS_2020.pdf.

Already, the Government has taken several steps to increase online security for individuals, public services and businesses. In 2011, the *UK Cyber Security Strategy* was published,[127] which was followed up by the National *Cyber Security Strategy 2016-2021*.[128] The latter established the National Cyber Security Centre – a part of GCHQ dedicated to thwarting national and global cybercrime.[129]

With a particular focus on small businesses, the National Cyber Security Centre has developed a number of resources to help such businesses safeguard themselves against cybercrime. For instance, there is the free Small Business Guide – which details simple steps small businesses can take to, for example, safeguard data and avoid phishing attacks[130] – and Cyber Essentials scheme – an initiative which seeks to certify the online security of a business, to, for example, reassure customers that their digital systems are adequately secure, and allow businesses to secure certain government contracts.[131]

As the UK begins to look towards 2021, the end date for the current *National Cyber Security Strategy*, it should consider what measures it can take to ensure the online safety of businesses operating in the UK is as strong as it can be. ***First and foremost, this should mean having a comprehensive new strategy which takes effect when the 2016-2021 one comes to a close – which learns from any mistakes made previously, such as those highlighted by the Public Accounts Committee in their 2019 review of cyber security policy.***[132]

But other amendments could be worth taking into account. As we have noted already in this report, the world of digital platforms and online activity is an ever-changing landscape. Few could confidently predict how we will interact online five years hence, and Government policy making should be aware of this.

Therefore, we echo the thoughts of the National Audit Office, who, when assessing the 2016-2021 strategy, recommended that the Cabinet Office should consider a more flexible approach to cyber security – using a mixture of shorter programmes which can be more responsive to changing risks, as well as identifying longer-term investment in other areas, such as skills, to reduce threats.[133]

Expanding the official evidence base

Without reliable, up to date and comprehensive evidence, effective policy making in any area is naturally going to be more difficult. Certainly, this is something which we have noted even during the researching of this report. Official government data on small businesses and technological adoption is sparse at best, which makes it more challenging to accurately understand this aspect of the economy – and devise solutions to any

127 Cabinet Office, "The UK Cyber Security Strategy: Protecting and promoting the UK in a digital world". Available from: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/60961/uk-cyber-security-strategy-final.pdf.

128 HM Government, "National Cyber Security Strategy 2016-2021". Available from: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/567242/national_cyber_security_strategy_2016.pdf.

129 National Cyber Security Centre, "About the NCSC". Available from: https://www.ncsc.gov.uk/section/about-ncsc/what-we-do.

130 National Cyber Security Centre, "Small Business Guide: Cyber Security". Available from: https://www.ncsc.gov.uk/collection/small-business-guide.

131 National Cyber Security Centre, "Cyber Essentials". Available from: https://www.ncsc.gov.uk/cyberessentials/overview.

132 House of Commons Committee of Public Accounts, "Cyber security in the UK". Available from: https://publications.parliament.uk/pa/cm201719/cmselect/cmpubacc/1745/1745.pdf.

133 National Audit Office, "Progress of the 2016-2021 National Cyber Security Programme". Available from: https://www.nao.org.uk/wp-content/uploads/2019/03/Progress-of-the-2016-2021-National-Cyber-Security-Programme.pdf.

problems. It might also explain why, when we polled SMEs, we found that over half (53 per cent) disagreed that small businesses receive adequate consideration when it comes to government thinking. Tellingly, this sentiment of being ignored by government is more pronounced amid the smallest of businesses (rising to nearly three-fifths among micro businesses of up to ten employees).

Another interesting dynamic is how results vary by region. The number of SMEs who feel that smaller businesses do not receive adequate attention in terms of government thinking rises by a statistically significant margin in both the North (58 per cent) and Scotland (70 per cent). Thus, if the Government really is keen to make good on its commitment to 'level up' the UK economy, it should take these findings not just as a warning, but also an indicator of where it might wish to focus its efforts.[134]

To its credit, the Office for National Statistics has since 2011 recorded data on certain aspects of 'E-commerce and ICT activity'.[135] Its 2018 dataset – the most recent year available – includes information on the volume and share of sales made online, on the proportion of businesses with websites and other online presences (such as social media), and on ICT security incidents.[136]

The Government itself also compiles statistics on small businesses, some of which touch on the use of different technologies. The Department for Business, Energy and Industrial Strategy, for example, has published the Small Business Survey on an annual basis since 2014, and on a biennial basis from 2010 prior to that.[137] In the 2019 Survey, published in June 2020, one cohort of small businesses sampled were asked a handful of questions relating to whether they used web-based software to sell to customers (49 per cent reporting yes), digital accounting software (85 per cent reporting yes), or HR management software (16 per cent reporting yes).[138]

Of course, it is welcome that the Government and its agencies record at least some data on technological adoption, and try to achieve a certain level of granularity with regards to how results vary in accordance to the size of businesses surveyed. But despite this, the data could be more comprehensive, and go into further detail, particularly with regards to technological adoption – which, as we have shown throughout this report, is becoming an ever more important part of the economy at an ever increasingly rapid rate.

In order to ensure that the Government has the best possible evidence base with which to inform future policy making, surveys like the Small Business Survey and the Office for National Statistics' E-commerce and ICT activity database should be updated and refined. Government should work with small businesses and small business representatives to ensure that the right questions are being asked, which specifically seek to understand what problems small businesses face in this area.

134 Boris Johnson, "Boris Johnson's first speech as Prime Minister: 24 July 2019". Available from: https://www.gov.uk/government/speeches/boris-johnsons-first-speech-as-prime-minister-24-july-2019.

135 Office for National Statistics, "E-commerce and ICT activity". Available from: https://www.ons.gov.uk/businessindustryandtrade/itandinternetindustry/datasets/ictactivityofukbusinessesecommerceandictactivity.

136 Office for National Statistics, "E-commerce and ICT activity, 2018". Available from: https://www.ons.gov.uk/file?uri=%2fbusinessindustryandtrade%2fitandinternetindustry%2fdatasets%2fictactivityofukbusinessesecommerceandictactivity%2f2018/ecomtable2018.xlsx.

137 Department for Business, Energy and Industrial Strategy and the Department for Business, Skills and Innovation, "Small Business Survey Reports". Available from: https://www.gov.uk/government/collections/small-business-survey-reports.

138 Department for Business, Energy and Industrial Strategy, "Small Business Survey 2019: businesses with employees: Longitudinal Small Business Survey 2019: SME employers – data – cohort C". Available from: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/889126/LSBS_2019_employers_data_cohort_C.xlsx.

Chapter V – The importance of the UK tech ecosystem

Before small businesses can make use of different digital technologies, those platforms and applications first have to be designed, developed and tested.

And the UK is a particularly good place in which to do just that.

The UK boasts a flourishing technology ecosystem, which can be evidenced across a number of different metrics. According to Tech Nation, an industry body for British technology firms, £10.1 billion was invested in UK tech in 2019, the most for any single country after the USA and China.[139] Of the top 20 cities for tech investment in Europe, the UK boasts five – including the fastest-growing tech cluster in Europe, Manchester, which saw investment grow from £48 million in 2018 to £181 million in 2019, a rise of 277 per cent.[140]

As illustrated in Chart 8, statistics from the Department for Digital, Culture, Media and Sport show that the 'digital sector' contributes hundreds of billions towards UK gross value added statistics. In 2018 – the most recent year for which data is available – a not inconsiderable 7.7 per cent of total UK GVA came from the digital sector alone. In other words, the digital economy is worth more than £400 million to the UK economy each and every day. And of course this is without counting the many spillover benefits of the sector to other parts of the economy, as discussed at length above.

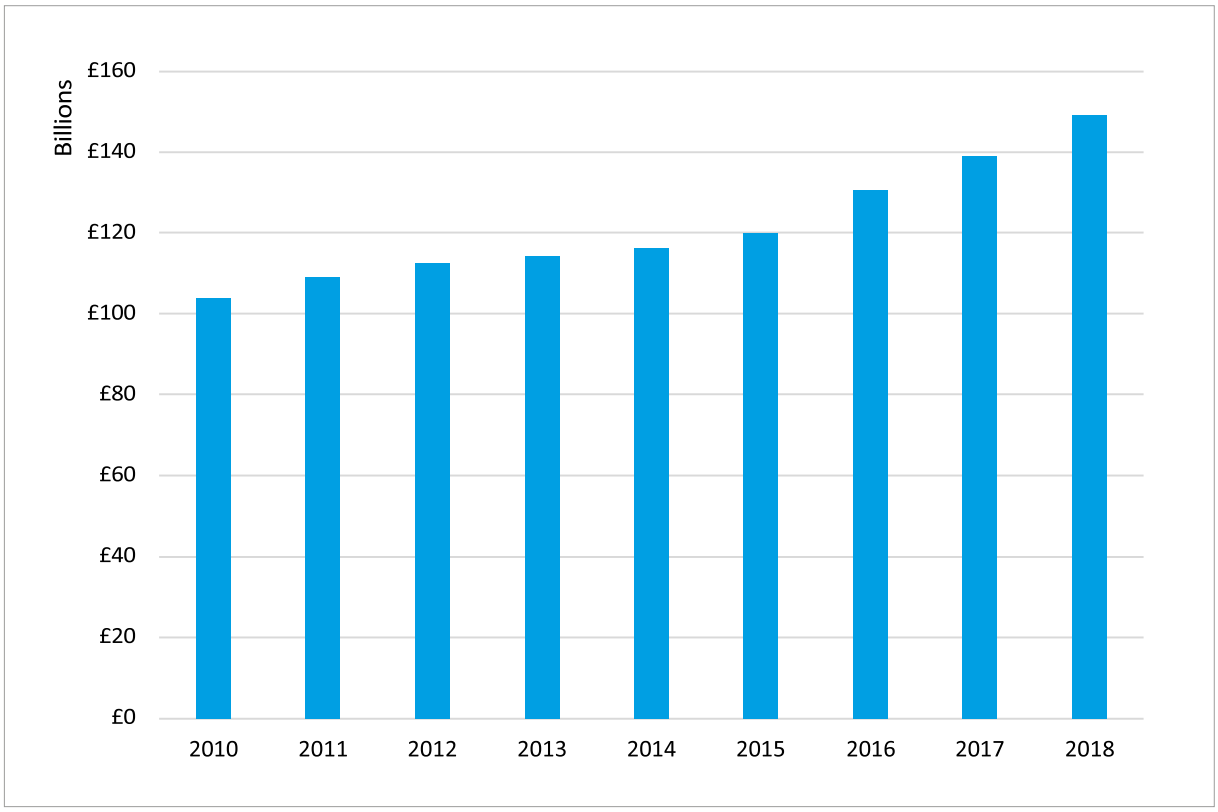
139 Tech Nation, "UK tech for a changing world". Available from: https://technation.io/wp-content/uploads/2020/03/Tech-Nation-Report-2020-UK-Tech-For-A-Changing-World-v1__0.pdf.

140 Ibid.

141 Department for Digital, Culture, Media and Sport, "DCMS Sector Economic Estimates 2018 (provisional): Gross Value Added". Available from: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/863632/DCMS_Sectors_Economic_Estimates_GVA_2018.pdf.

142 Department for Digital, Culture, Media and Sport, "Digital sector worth more than £400 million a day to UK economy". Available from: https://www.gov.uk/government/news/digital-sector-worth-more-than-400-million-a-day-to-uk-economy.

Chart 8. Digital sector GVA contribution (2010-2018)



Source: Department for Digital, Culture, Media and Sport, "DCMS Sector Economic Estimates 2018 (provisional): Gross Value Added".

In a previous report by the Centre for Policy Studies, *Herding Unicorns*, we showed that the UK has long punched above its weight in terms of the number of unicorn companies – unlisted tech firms with valuations of more than £1 billion – which have established themselves in Britain. It also has a broadly conducive environment for start-ups of all kinds, and in particular technology focused ones.[143] Since that report was published, yet more British companies have ascertained unicorn status – with one recent estimate from Beauhurst putting the total figure at 17, or more if one includes exited unicorns or acquisitions such as Deepmind, which was well on its way to a £1 billion valuation before being acquired by Google in 2014.[144]

In terms of the number of jobs directly associated with the digital sector, the total last year stood at 1,557,000 – an increase of 52,000 compared to the year prior.[145] As a percentage of all employment, nearly five per cent of all jobs in the UK are found in the digital sector.[146]

Geographically, nearly half of all jobs in the digital sector are found in London

143 Centre for Policy Studies, "Herding Unicorns: How Britain can create and support the high-growth tech companies of the future". Available from: https://www.cps.org.uk/files/reports/original/190301101443-CPSHerdingUnicornsFINAL.pdf.

144 Beauhurst, "UK Startup Unicorns: The complete List 2020". Available from: https://about.beauhurst.com/blog/uk-startup-unicorns/.

145 Department for Digital, Culture, Media and Sport, "DCMS Sectors Economic Estimates 2019: Employment". Available from: https://www.gov.uk/government/statistics/dcms-sectors-economic-estimates-2019-employment.

146 Ibid.

and the South East.[147] But promising tech clusters are found all over the UK, whether in Manchester or places like Leeds or Edinburgh. Indeed, when one accounts for the number of total jobs in each region, the digital sector accounts for around 2.5 to 3.5 per cent of jobs in most regions of the UK.[148] These figures may appear small, but as a percentage of millions of people in each region, they represent a considerable number of jobs.

Not only is the digital sector a significant source of jobs, but it is also a significant source of well-paying jobs. Median annual earnings in the digital sector are £36,300 – fully 51.3 per cent greater than the median average for all forms of employment.[149] When the Government talks of its desire to create a "high-wage" economy, these are exactly the sorts of jobs, and salaries, it should have in mind.[150]

The success of Britain's thriving digital technology sector is no happy accident. It can be explained by countless different factors, but perhaps the three most important are: a mature funding landscape which can provide businesses with the finance they need while they develop their product offering; an immigration system which allows the world's brightest and best to offer their talents to fledging companies, or set up ones of their own; or a general business environment which promotes entrepreneurship, profit making, and job creation.

However, improvement could be made on all three of these variables. Identifying new ways to promote investment from institutional investors, for instance, would help to ensure that start-ups are getting the capital they need to survive and scale. Liberalising rules around who can come into the country would mean that the UK is not shutting the door on anyone whose business idea or skillset could go on to create wealth and generate further employment. Innovation in regulatory approaches, such as experimenting with regulatory sandboxes, could permit the 'learning by doing' which many digital businesses require in order to refine their products or services so that they are as helpful as possible for others to make use of.

Finance, in particular, has always been critical for tech start-ups, but especially so now in the unstable economic climate which we find ourselves.

To ensure that the UK's start-up community would not be decimated by the economic effects of Covid-19, the Government – after much pressure – set up the Future Fund.[151] This is a £500 million fund which provides high-growth UK-based companies with convertible loans of between £125,000 and £5 million.[152] Yet the Future Fund has not been met with universal approval.[153] One of the key criticisms is that accessing support from the Future Fund freezes start-ups out from other schemes – not least the Enterprise

147 Ibid.

148 Ibid.; Office for National Statistics, "HI00 Regional labour market: Headline Labour Force Survey indicators for all regions". Available from: https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/datasets/headlinelabourforcesurveyindicatorsforallregionshi00.

149 Department for Digital, Culture, Media and Sport, "DCMS Sectors Economic Estimates 2018 (Provisional): Earnings". Available from: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/829082/Digital_Sector_Economic_Estimates_Earnings_-_2018__Provisional_.pdf.

150 The Conservative and Unionist Party, "Get Brexit Done: Unleash Britain's Potential". Available from: https://assets-global.website-files.com/5da42e2cae7ebd3f8bde353c/5dda924905da587992a064ba_Conservative%202019%20Manifesto.pdf.

151 HM Treasury, "Future Fund launches today". Available from: https://www.gov.uk/government/news/future-fund-launches-today.

152 Ibid.

153 Anthony Rose, "The government's Future Fund won't help UK startups". Available from: https://seedlegals.com/resources/the-governments-future-fund-wont-help-uk-startups/.

Investment Scheme (EIS) and Seed Enterprise Investment Scheme (SEIS), which provide tax relief on investments in early-stage businesses.[154]

As such, we recommend the Government explores as a matter of urgency how to ensure that the Future Fund is able to disburse support in a way which start-ups and investors are willing to accept. For example, the Government could confirm compatibility between accessing the Future Fund and future support under EIS and SEIS. Alternatively, it could devise other support mechanisms for start-up investment, or make existing ones more favourable, perhaps by simply making EIS and SEIS much more attractive to investors for a time-limited period.

Perhaps by virtue of digital technologies' rapid rise to prominence and success, some eminent figures have demonstrated an appetite to check and regulate that growth. A villainising of technology companies has permeated throughout the political discourse of late, manifesting itself in arguments about the apparent need to break up technology giants into their constituent parts, or the imposition of new taxes levied on platforms.[155] But such an approach risks suffocating the development of the UK's digital sector (or simply offshoring it to other economies), as well as damaging the growth prospects of other businesses in the UK.

The epitome of the political turn against large technology companies is the Digital Services Tax (DST).[156] First formally mooted by the then Chancellor, Philip Hammond, in the 2018 Budget, the DST is tax on the revenues of search engines, social media services and online marketplaces which derive value from UK users.[157] In the 2020 Budget, the current Chancellor, Rishi Sunak, confirmed that the DST would be levied at two per cent of revenues earned from April 2020.[158]

Besides clearly being a protectionist measure, aimed squarely at punishing American technology firms, the DST is a poorly designed instrument to raise any meaningful amount of tax. This is because the DST is a tax on revenue, which is widely recognised to be a particularly damaging way to generate tax receipts. For instance, a less profitable (or even unprofitable) business, albeit one which sees large revenues, could face a far higher marginal rate of tax than a highly profitable business with small revenues.[159] Amazon, for example, has paid little tax largely because it has tended to invest its formidable revenues in further expansion, meaning that there are few profits to actually tax.

Taxing revenue rather than profit creates perverse business incentives, and has been shown to lead to lower overall economic growth in the long

154 Angharad Carrick, "£500m Future Fund launch mired by fears startups will miss out". Available from: https://www.cityam.com/500m-future-fund-launch-mired-by-fears-startups-will-miss-out/.

155 Kate Devlin, "Big tech companies risk being broken up, John McDonnell warns". Available from: https://www.thetimes.co.uk/article/election-2019-big-tech-companies-risk-being-broken-up-mcdonnell-warns-2pcrdk2m8; Lizzy Buchan, "Labour considers 'Amazon tax' for online retailers to aid struggling high street shops". Available from: https://www.independent.co.uk/news/uk/politics/labour-amazon-tax-online-retail-high-street-shops-mothercare-corbyn-long-bailey-a8720436.html.

156 HM Revenue and Customs, "Digital Services Tax". Available from: https://www.gov.uk/government/publications/introduction-of-the-digital-services-tax/digital-services-tax.

157 HM Treasury, "Budget 2018". Available from: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/752202/Budget_2018_red_web.pdf.

158 HM Treasury, "Budget 2020: Delivering on our promises to the British people". Available from: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/871799/Budget_2020_Web_Accessible_Complete.pdf.

159 Elke Asen, "FAQ on Digital Services Taxes and the OECD's BEPS Project". Available from: https://taxfoundation.org/oecd-beps-digital-tax/#6.

run.[160] To be sure, the DST has certain provisions to prevent against this – known as the 'safe harbour' clause – but it is still fundamentally a tax intimately linked to turnover.[161]

If the Government is to levy additional taxes on multinational technology firms like the DST, rather than taking unilateral action, it should instead work with the OECD or other global fora to come to an equitable and pro-growth conclusion on how best to do so.

This multilateral approach should lead to better tax policy making, which adheres to recognised principles of simplicity, transparency, neutrality and stability.[162] From the UK's self-interested perspective, it would also diminish any risk of the UK souring its relationship its largest trading partner, the USA, at a time when striking trade deals with such economies is of paramount urgency.

New regulations, as well as taxes, also threaten to stifle the development of the digital sector. The Information Commissioner's Office, for example, recently closed a consultation on the *Age Appropriate Design Code* – a code of practice for online services likely to be accessed by children.[163] The draft Code has been widely criticised by those in the technology sector. A charitable reading might be that the Code is simply trying to protect children from potential harms they might encounter on the internet. But, as with so many other regulations, the exact drafting risks doing so at an inordinate cost. A particular bone of contention is that the Code applies to any organisation providing online content which is "likely to be accessed by children in the UK", but the breadth of what that means is significant while also being rather vague.[164] A recent letter submitted to the Information Commissioner put it succinctly:

> *In practice, it is not a code covering what is likely to be accessed by children, but instead is a code covering anything that could possibly be accessed by children.*[165]

The implications of an online content provider or digital start-up having to ensure that their services comply with the Code could be prohibitive. Effectively enforcing age-gating – where individuals have to prove they are above a certain age before accessing online content – would be exceedingly expensive for all digital platforms, but would be particularly so for start-ups or would-be firms that want to enter the market. There might also be privacy concerns about handing over data necessary to carry out age-gating.[166]

Similar concerns have been raised over the Government's *Online Harms White Paper*, which seeks to shield internet users from illegal and harmful content. Of course, few would disagree with the overall ambition of the White Paper, but some in the industry are anxious that it also casts its net too wide – in a manner which jeopardises

160 Daniel Bunn, Elke Asen and Cristina Enache, "Digital Taxation Around the World". Available from: https://files.taxfoundation.org/20200610094652/Digital-Taxation-Around-the-World1.pdf.

161 HM Revenue and Customs, "Introduction of the new Digital Services Tax". Available from: https://www.gov.uk/government/publications/introduction-of-the-new-digital-services-tax/introduction-of-the-new-digital-services-tax.

162 Daniel Bunn, Elke Asen and Cristina Enache, "Digital Taxation Around the World". Available from: https://files.taxfoundation.org/20200610094652/Digital-Taxation-Around-the-World1.pdf.

163 Information Commissioner's Office, "Age appropriate design: a code of practice for online services". Available from: https://ico.org.uk/about-the-ico/ico-and-stakeholder-consultations/age-appropriate-design-a-code-of-practice-for-online-services/.

164 Ibid.; Heather Burns, "Just how bad is the ICO's draft age appropriate design code". Available from: https://webdevlaw.uk/2019/06/04/just-how-bad-is-the-icos-draft-age-appropriate-design-code/.

165 Dom Hallas and Lenard Koschwitz, "Open Letter on the Age Appropriate Design Code". Available from: https://docs.google.com/document/d/18mYZ2DIarRSU7__axqiRUqoQS5__zXxO3goSKSddNbtQE/edit.

166 Ibid.

perfectly legal and acceptable online content through an overarching duty of care. Not only that, some have noted how its implementation could entrench the interests of the largest digital providers, as they will be the only actors in the market who have the resources necessary to comply with the regulations it would impose.[167]

In terms of advertising, too, the Information Commissioner's Office recently closed a consultation on introducing formal regulations on direct marking.[168] This would place new responsibilities on organisations which engage in direct marketing – covering commercial businesses, charities, campaigning groups and political parties.[169] From conversations we had during our research, we heard of how there are various worries about the draft code of regulations, ranging from it being too prescriptive in parts, to too vague in others.[170] There are particular concerns among charities, which of course rely quite heavily on directly marketing their campaigns to individuals to raise money and awareness.

When regulating the internet and online content, the Government must appreciate the potential complications which even well-intentioned regulations pose. A hyper-precautionary regulatory mindset, which seeks to prevent any possible infraction from occurring, risks taking a sledgehammer to crack a nut – and could in fact lead to a far worse state of affairs than before.

The Government could do much more than just stopping hurting the digital sector through punitive taxes and restrictive regulations, however. In fact, there are things it can do to actively support technology companies – allowing them to develop helpful services for everyone in society, not least small businesses, to make use of. Chief among these is how open the Government, as well as other public sector agencies and regulators, is with any data that it holds.

Analogies of 'data as the new oil' may be facile, but data is undoubtedly an increasingly valuable resource for businesses.[171] In 2016, a report published by the Centre for Economics and Business Research estimated the value of big data to be worth £40 billion, or two per cent of GDP.[172] In turn, whole businesses can be built off the back of analysing data and putting it to good use.

Already, the UK scores very favourably in terms of how open it is with its public data. Figures from the Open Data Barometer show that the UK is joint first – alongside Canada – with respect to the overall prevalence of open data initiatives.[173] According to the Department for Digital, Culture, Media and Sport, 40,000 official government datasets have been made available for everyone – not least researchers, academics, and entrepreneurs and small businesses – to freely access.[174]

167 Julian Harris, "The government must pause for thought before pushing ahead with "online harms" regulations". Available from: https://www.cityam.com/government-must-pause-thought-before-pushing-ahead-online/.

168 Information Commissioner's Office, "Direct marketing code of practice: Draft code for consultation". Available from: https://ico.org.uk/media/2616882/direct-marketing-code-draft-guidance.pdf.

169 Ibid.

170 Information Commissioner's Office, "Responses to the call for views on the direct marketing code of practice". Available from: https://ico.org.uk/about-the-ico/responses-to-the-call-for-views-on-the-direct-marketing-code-of-practice/.

171 Alec Stapp, "Why Data Is Not the New Oil". Available from: https://truthonthemarket.com/2019/10/08/why-data-is-not-the-new-oil/.

172 Centre for Economics and Business Research, "The Value of Big Data and the Internet of Things to the UK Economy". Available from: https://www.sas.com/content/dam/SAS/en_gb/doc/analystreport/cebr-value-of-big-data.pdf.

173 World Wide Web Foundation, "The Open Data Barometer". Available from: https://opendatabarometer.org/?_year=2017&indicator=ODB.

174 Department for Digital, Culture, Media and Sport, "Data – unlocking the power of data in the UK economy and improving public confidence in its use". Available from: https://www.gov.uk/government/publications/uk-digital-strategy/7-data-unlocking-the-power-of-data-in-the-uk-economy-and-improving-public-confidence-in-its-use#fn:5.

Case study. Citymapper – creating value from open data.

Citymapper is a smartphone app which is depended upon by millions each day in the UK, and many more in cities around the world. By using publicly open data, it is able to help plot quick and efficient journeys across a range of different modes of transport.

It also provides extra useful information to commuters, such as how much a journey will cost, if they might expect to encounter any disruption, or – if they are walking or cycling – how many calories they can hope to burn off.

Citymapper took off in 2012 after data was released by the Greater London Authority and central government,[175] and was reportedly valued at £250 million after its latest funding round.[176] Apps like Citymapper show just how valuable publicly held data is – at its best, data can be responsible for launching entire businesses which provide huge utility to individuals, and indeed other firms.

Despite the UK's current good record vis-à-vis opening up public data, more can still be done. For example, previous Centre for Policy Studies research found that some entrepreneurs in the sector worried about a reversal of the promising direction of travel.[177]

To keep the UK at the forefront of opening up public data to the private sector, the Government and any applicable public bodies should review what data they are currently sitting on which could be suitable to be made publicly accessible, in order to permit the development of new socially useful applications and software services.

As we have pointed out throughout this report, novel technologies which have come to the fore in recent years have been a blessing for the economy, allowing businesses to become more productive, and us to become richer.

Digitisation is only going to become ever more integral to the success of all businesses in the UK, not least the smallest outfits. To pull up the drawbridge on the sector which provides the platforms, the software, and all of the other technological boons which businesses are increasingly making use of would be disastrous for the economy. Equally, to open up resources for businesses to utilise – like government data – could stimulate the digital sector, and ensure that it can be as dynamic and world-beating as it has been in the past.

Covid-19 only underscores this the importance of this, in two broad respects. First, we need to look to all sectors of the economy to get growth going again, and keep people in employment. But second, as we transition to a socially distanced world for the foreseeable future, digital technologies will be critical if businesses are to continue to trade with consumers, connect with each other, and remain operating in as normal a way as is currently possible.

175 Ibid.

176 Edward Thicknesse, "Citymapper appoints advisers amid takeover interest". Available from: https://www.cityam.com/citymapper-appoints-advisers-amid-takeover-interest/.

177 Centre for Policy Studies, "Herding Unicorns: How Britain can create and support the high-growth tech companies of the future". Available from: https://www.cps.org.uk/files/reports/original/190301101443-CPSHerdingUnicornsFINAL.pdf.

Boris Johnson was a champion for London's digital economy during his time as the city's Mayor – now is the moment to champion the digital economy across the whole of the UK, allowing businesses involved with it to stand tall and unencumbered on the global stage.

Failure to do so risks missing out on jobs, growth, and tax receipts – as well as all of the less tangible benefits felt by the business community as a whole when promising and useful applications fail to come to market.

Chapter VI – Conclusion

New technologies are revolutionising each and every part of the UK economy.

Quite often, this process completely unnoticeable. In other instances, businesses are actively utilising technological solutions to overcome challenges, or exploit opportunities. As we have shown, the digitisation of work allows businesses of all kinds to operate more efficiently, generating additional revenue, and spending less of it on traditional expenses.

But as our research has also shown, the advent of a new digital era has brought impacts much more profound than simply expediting the process of selling goods to consumers. In many sectors and functions of business, new technologies are disrupting entire markets as they obliterate barriers to entry, or allow small firms to compete head to head with established giants.

One of the key arguments of this paper, drawing on our own research and the findings of our opinion work, is that this democratisation of the business world ought to be regarded as a positive development, one which bolsters the small business community and, most importantly, consumer welfare. It can also help address Britain's crippling productivity problems, especially among the 'long tail' of SMEs that are not fulfilling their growth potential.

More than just aiding existing small businesses, digital technologies are also creating swathes of fledgling traders – as private individuals make use of them to participate in the economy in ways more direct than might be the case otherwise. Countless digital platforms in an array of different markets are helping people to capitalise on their talents and entrepreneurialism, while also disrupting ossified sectors, from personal transport to accommodation.

Demand for such technologies has, in turn, created a blossoming technological ecosystem. Businesses in the digital sector can be found spread around the whole of the UK, generating vast sums of wealth and jobs – and occupying an increasingly sizeable fraction of the whole economy.

In the debate around digital technologies, there is a tendency from some quarters to create a narrative of opposition – of internet giants crushing small businesses. This is a false dichotomy, and one divorced from realities of everyday commerce. Through this report, we have explained how digital platforms are assisting businesses, and small businesses in particular – enabling the UK economy to be as dynamic and productive as possible.

Annex I. Opinion polling

Between June 15 and June 22, 2020, YouGov carried out the following polling work to a statistically representative sample of 1,005 senior decision makers in British small and medium-sized enterprises.

Q1. For the following question, by 'digital platforms', we mean a web based platform which is used to present content. For example, social media companies (e.g. Facebook, Twitter etc.), cloud service providers (e.g. Amazon Web Services, Google, etc.), digital software (e.g. Sage, Xero, Salesforce, etc.), and online sales platforms (e.g. Amazon, eBay, Booking.com etc.).Which ONE, if any, of the following digital platforms is the most important for your business? (If your business does not use any digital platforms please select the 'Not applicable' option)

	Total	Micro	Small	Medium
Unweighted base	1005	571	265	169
Base: All SME senior decision makers	1005	543	252	210
Facebook	128	69	32	26
Twitter	34	17	11	6
Instagram	41	20	10	11
Amazon (i.e. as a cloud service provider or sales platform)	50	25	15	10
Google	175	100	32	42
LinkedIn	119	50	39	30
Sage	65	19	30	17
Xero	42	22	17	2
Salesforce	16	1	5	10
eBay	29	21	4	4
Other	58	42	11	5
Don't know	28	11	11	6
Not applicable - my business does not use any digital platforms	220	146	35	39

Q2.1. To what extent do you agree or disagree with the following statement? "My business' use of technology and digital platforms has allowed it to expand".

	Total	Micro	Small	Medium
Unweighted base	781	416	228	137
Base: All SME senior decision makers whose business uses digital platforms	785	397	217	171
Strongly agree	203	105	46	53
Tend to agree	271	137	76	58
Neither agree nor disagree	195	97	57	41
Tend to disagree	67	30	27	10
Strongly disagree	29	18	7	5
Don't know	19	9	5	5

Q2.2. To what extent do you agree or disagree with the following statement? "My business' use of digital platforms has allowed it to compete more effectively with larger brands in our sector".

	Total	Micro	Small	Medium
Unweighted base	781	416	228	137
Base: All SME senior decision makers whose business uses digital platforms	785	397	217	171
Strongly agree	149	71	39	39
Tend to agree	238	116	62	61
Neither agree nor disagree	231	119	66	45
Tend to disagree	95	46	32	16
Strongly disagree	39	23	11	4
Don't know	34	22	6	6

Q3. Which one, if any, of the following is the main reason why your business uses digital platforms?

	Total	Micro	Small	Medium
Unweighted base	781	416	228	137
Base: All SME senior decision makers whose business uses digital platforms	785	397	217	171
Low-cost advertising	104	53	33	17
Reaching new audiences	227	123	62	43
Interacting with customers	142	90	26	27
Completing sales	54	31	12	11
Handling financial data (e.g. payroll and taxes)	117	44	47	26
Improving human resources management	16	1	6	10
Streamlining project management	32	6	10	15
Other	63	34	16	13
Don't know	30	15	5	10

Q4. Thinking about any negative experiences your business may have experienced when using digital platforms, which, if any, of the following has your business ever experienced? (Please select all that apply)

	Total	Micro	Small	Medium
Unweighted base	781	416	228	137
Base: All SME senior decision makers	785	397	217	171
Cybercrime (e.g. phishing scams etc.)	97	36	29	31
Additional business expenses (e.g. cost of using digital platform)	201	101	62	39
Lost revenue (e.g. digital platform crashing leading to lost sales etc.)	59	23	17	19
Time consumption (e.g. keeping the digital platform updated, training, etc.)	280	148	71	61
Problems around handling data securely (e.g. company and customer data)	73	21	23	29
Malicious attacks (e.g. hacking of company/customer information)	78	27	19	31
Other	30	17	9	5
Don't know/ can't recall	76	31	25	19
Not applicable - my business has had no negative experiences with digital platforms	241	142	65	35

Q5. From a business perspective, is your impression towards digital platforms more or less positive since the Coronavirus outbreak or has it remained the same?

	Total	Micro	Small	Medium
Unweighted base	781	416	228	137
Base: All SME senior decision makers	1005	543	252	210
Much more positive	107	41	29	37
A little more positive	248	113	72	63
About the same	607	357	142	108
A little more negative	20	14	4	2
Much more negative	22	18	5	-

Q6.1. To what extent do you agree or disagree with the following statement? "Without digital platforms, it would have been harder for my business to operate during the coronavirus outbreak".

	Total	Micro	Small	Medium
Unweighted base	781	416	228	137
Base: All SME senior decision makers	785	397	217	171
Strongly agree	265	138	67	61
Tend to agree	223	111	59	53
Neither agree nor disagree	152	77	41	34
Tend to disagree	84	45	27	12
Strongly disagree	45	18	19	8
Don't know	17	9	5	4

Q6.2. To what extent do you agree or disagree with the following statement? "My business knows how to effectively make use of digital platforms to grow and succeed".

	Total	Micro	Small	Medium
Unweighted base	781	416	228	137
Base: All SME senior decision makers	1005	543	252	210
Strongly agree	164	76	39	49
Tend to agree	355	186	100	69
Neither agree nor disagree	252	146	57	48
Tend to disagree	147	82	33	32
Strongly disagree	54	31	16	7
Don't know	33	22	7	5

Q6.3 To what extent do you agree or disagree with the following statement? "I feel I am sufficiently skilled to get the most out of digital platforms when it comes to helping my business".

	Total	Micro	Small	Medium
Unweighted base	781	416	228	137
Base: All SME senior decision makers	1005	543	252	210
Strongly agree	139	71	30	39
Tend to agree	357	188	101	68
Neither agree nor disagree	218	116	54	48
Tend to disagree	192	107	46	39
Strongly disagree	65	41	13	11
Don't know	34	20	9	5

Q6.4. To what extent do you agree or disagree with the following statement? "Small businesses receive adequate consideration when it comes to government thinking – i.e. relative to bigger businesses".

	Total	Micro	Small	Medium
Unweighted base	781	416	228	137
Base: All SME senior decision makers	1005	543	252	210
Strongly agree	46	13	10	24
Tend to agree	148	62	39	47
Neither agree nor disagree	212	112	56	44
Tend to disagree	325	175	96	53
Strongly disagree	211	146	38	27
Don't know	63	35	13	15

Annex II. Focus group

Public First SME round-table for the CPS – final report

Background

Public First (PF) was asked by the Centre for Policy Studies to convene a focus group to discuss the relationship owners and managers in SMEs have with the internet, and the services that tech providers offer them.

The group, which centred on Greater Manchester, was as diverse as the SME sector itself. It included:

- two family businesses, an officer furniture distributor and a dental practice;
- a mid-manager in a small law firm;
- two sales managers, one from a merchandise manufacturer and another from a chemical goods-producer;
- and the director and owner of a medium sized recruitment business.

This was the rich tapestry of Britain's SME economy all in one place and they displayed wildly different levels of ambition and business acumen. They had very different approaches to – and dependencies on – digital services. While they may have very different businesses in scale and ambition, one thing that tied them together was that they did not think deeply about the internet. They saw the internet as a tool, that could be bought or not bought depending on cost and depending on effectiveness. These were real businesses in the real world, about as far away from the disruption, unicorns and start-ups of Silicon Roundabout as it is possible to be.

This was a group who were interested in what the internet and its digital services could do for their businesses, and who probably had neither the time nor inclination to worry too much about the impact of Big Tech on the market.

Current lockdown context

Due to their different scales and different contexts, they of course had very different experiences of how lockdown had affected their revenues and trading.

This ranged from the manufacturer of chemical products, for whom, unsurprisingly, Covid-19 had represented a vast opportunity, with both sales and output soaring, and the recruiter who had had to put nearly 90 per cent of his staff on furlough, and who was worried about his disappearing reserves. Apart from the dental practice and the recruitment business, which had all but ceased trading over lockdown, the other four businesses were evidently proud of the way they had innovated in the crisis.

"I furloughed 43 of my 50 staff. I had no choice. I did top up the 80 per cent to begin with but I just can't do that anymore. No-one is hiring." – recruitment business owner

"We've been ridiculously busy working shifts through the night – we've really had to evolve our working methods. It's been quite exciting." – sales manager for chemical products manager

"We've had to diversify our product range. We've been completely out our comfort zone." – sales manager for merchandise manufacturer

"We've been moving to agile working very quickly. We've developed a whole new series of webinars to stay in touch with our clients." – middle-manager at medium-sized law firm

"We've been trying to drive traffic to the website. Facebook marketing. We've been trying anything to keep the orders coming in." – Office furniture distributor

In line with other focus groups PF has carried out in recent weeks, none displayed any particular concern about their businesses and the wider economy once lockdown is fully relaxed. This is very likely to be down to the cushioning effect of furlough.

Key findings

There was a general agreement that **businesses had been changed by the internet, social media and aligned digital services.** However, there was a sense that the internet had changed the operations side of the business, but not the core. Dentists still need patients, recruiters still need to pick up the phone, furniture still needed to be packed in a van and sent to customers.

"Making a booking, making a payment, attending a seminar, it's all just done in one click. Before you'd need someone to take the booking, to write a cheque." – middle manager at law firm

"All our back-end stuff is in the cloud-based now. But lead-generation is still all about the human contact." – recruitment business-owner

All six companies accessed digital services to a lesser or greater degree. More perhaps than they realised – there was a resistance to see their businesses as transformed, and more a desire to see digital services as a tool that would make them more efficient. But when we dug a bit deeper, there was a lot more innovation than they themselves seemed to recognise.

"Now everything is online, including our server. 90 per cent of our business practice is online. It makes us more streamlined. We can generate leads at a click of a button." – recruitment business owner

"All our catalogues are online. Or the visualisations for a clients are generated automatically on our website. We can show our products in 3D rather than visit our clients." – merchandise sales manager

"All the accounts are done online, all our catalogues are online. Our staff use an app to book their holiday. We even have an online chat facility on our site to talk to clients. We've thrown more money at online advertising due to lockdown." – office furniture distributor

"We've had to invest a lot to keep up with competitors – but it's been worth it. It's completely different now. Clients have their own log-on to access their personal stuff. It's saved everyone time and money." – middle-manager at law firm

There was complete agreement that digital services made them more productive.

"One of the processes that used to take one person a whole day to do is now completely automated for the first time in 40 years." – office furniture distributor

"We're able to network everywhere – we can talk to people around the world. It's amazing, really all the things that technology can do." – chemical products sales manager

"In our business we bill by time, so the more time we save on admin, the more time we can charge for." – middle manager at law firm

There was general agreement that the development of digital services had allowed smaller companies like their own to compete more equally with the large players in their market, but if you do not keep up you will be left behind. As a result there was also concern about the up-front cost of investing in digital – from online databases to social media advertising – and

some questioned whether that would be a deterrent to completely new entrants.

"The cost of investment if you want to keep up with the larger law firms is rather extreme, but you do see the benefits for sure." – middle-manager at law firm

"We have to keep innovating. We have to investing in the internet to keep up with the big boys. If you don't, you just get swallowed up, like what happened with some of the oldschool firms." – recruitment company owner

"Now we have all our catalogues online we can compete with the big guys. But it would be really hard to enter the market. You'd need a lot more financial up-front." – office furniture distributor

"In the next few years, many of the smallest distributors will go bust." – merchandise sales manager

"There are customers who will want us to match the prices of the big online players and sometimes we can't. But when they do leave us, they'll get a bad service and they come back." – office furniture distributor

The group was **less sure of their ability to make use of digital firms' online advertising and marketing opportunities;** the group was much more comfortable and a lot more enthusiastic about back-end services such as payroll and HR.

"We have a lot more we could do with digital advertising now we have our website up and running. We have moved away from the yellow pages but if we were do it properly we would need to outsource it." – office furniture distributor

"There is certainly a lot more we could do, but this is a family-run business. At the stage we're at, it's still a big deal just to go on Facebook." – dental practice manager

"We have to be careful with this and manage the spend. You can spend a lot and not really get anything. But we don't rely massively on it." – recruitment company owner

But there was almost no sense that there was a skills gap. Even when pushed, the group largely said that their new, younger hires were capable of coping with the digital challenges that they faced.

They also resisted, even when pushed, the idea that the government could do more to support them with digital innovation.

"We run an apprenticeship scheme and many of the young people we hire know more about our online systems than we do." – chemical products sales manager

"Everyone we hire has a good understanding of digital and tech these days." – middle manager at law firm

"There is a role for government in ensuring that everyone reaches a level of digital-savvy but beyond that, where do you draw the line? Could the government really stretch to support all these many businesses with training? They should concentrate on schools and university." – recruitment company boss

"The young ones who come in know what to do." – merchandise sales manager

They see their relationship with the big tech sector as purely transactional and they were keen to have more support and interaction with the large digital firms. There was a general sense that the more you spent, the more support you received. Interesting, however, not many among the group took issue with this: it was just the way of the world.

"If you spend a lot more, you get an account manager, and you get nurtured." – law firm middle manager

"Even if you are very, very loyal to these companies, you have to be big, big spenders before they take notice of you." – office furniture distributor

"In our case we do get a lot of support, but we spend a lot of volume with them. If you spend little, you get very little back. If you spend 10k, they know about you." – recruitment company boss

But the four companies that kept trading through lockdown agreed that the internet, and internet and digital services had made this much easier.

"We've really enjoyed this time. We have really grown and that would not have been possible." – chemical products sales manager

"We've been able to diversify in a way that would not have been possible before – and we've been able to connect during this horrible time with customers and distributors." – merchandise sales manager

In summary

Beyond London, beyond the start-ups and tech companies found in city centres, there is a lot of quiet, unremarkable transformation going on in small businesses, often driven by the digital revolution. SMEs have been quicker to adapt than they themselves seem to realise and are using tech to compete and/or keep up with the big players in their field.

That being said, many do not take advantage of the full potential of online – especially in the space of digital marketing and lead-generation, mainly due to a perception that the cost is hight and the returns can be small. As a result, it is safe to say that there is skills gap in this space that is limiting these companies and their growth, but the SMEs don't seem to recognise it.

There is more amity towards the digital service providers due to the Covid lock-down, but there is no doubt that many SMEs with small margins find the costs associated with some services eye-watering – and they find the big tech firms a bit frighteningly large to try to deal with. These small businesses are very open to much more personal support from the big tech firms – and specifically the prospect of training that might help them manage risk, exploit opportunities and generally encourage.

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