BSG
Broadband
Stakeholder
Group

Capitalising on Connectivity

Realising the benefits of broadband for UK Small and Medium Sized Enterprises

March 2014

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Executive Summary

Despite estimates that increasing the digital capabilities of the UK's Small and Medium Sized Enterprises (SMEs) can unlock economic returns of £18.8 billion[1], evidence tells us that SMEs are not capitalising as best they might on this lever for economic growth. [2]

This report considers current data on SME engagement with connectivity, policy initiatives to support SME use of broadband and technology, alongside new Broadband Stakeholder Group (BSG) research.

It makes five recommendations regarding how to better understand SME use of technology and incentivise further take-up and exploitation of connectivity:

1. **Government should expand the evidence base on SME broadband use**.
   The BSG recommends it does this by adding more detailed questions about SME online activity to the Department for Business, Innovation and Skills' biannual Small Business Survey.

2. **Policy makers should have access to better information on how to persuade SMEs of the benefits of being active online.**
   The BSG recommends an online platform is established to highlight case studies of effective SME engagement. The BSG is looking to facilitate such a platform, working with organisations such as Go ON UK.

3. **Industry and government need to better understand the requirements of SMEs for broadband in terms of bandwidth and other characteristics.**
   The BSG will be exploring this issue further as an input to the government's Digital Communications Infrastructure Strategy.

4. **The Department for Culture, Media and Sport should strengthen central resource within Broadband Delivery UK to assist local authorities with demand stimulation activity.**
   The BSG believes this will help unlock benefits from £1.7bn of public investment in broadband infrastructure.[3]

5. **Government should look to drive SME usage and uptake through its engagement with SMEs via government services and transactions.**

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[1] *The Case for Universal Digitisation*, Booz & Co and Go ON UK, November 2012 http://www.go-on.co.uk/files/2113/5237/0908/The_Booz_Report_Nov2012.pdf

[2] *The Digital Imperative,* Federation of Small Businesses and Intellect (now techUK), May 2013 http://www.fsb.org.uk/frontpage/assets/fsb-intellect-april13.pdf. *Britain's Digital Opportunity,* Lloyds Banking Group, February 2013 http://businesshelp.lloydstsbbusiness.com/news/helping-your-business-click/.

[3] https://www.gov.uk/government/news/250m-boost-taking-superfast-broadband-further-and-faster--251

Whether it be statutory obligations such as RTE Pay-As-You-Earn submissions through the HMRC portal, or incentivised transactions such as money off for submitting VAT returns online, the range of ways that SMEs interact with government can be thought of as having the potential to increase what they are doing online. The BSG urges government to give this further consideration.

Whilst tackling infrastructure issues is costly and time-consuming, understanding usage of infrastructure and communicating the benefits of doing more online is arguably even more challenging.

Given the high importance of capturing the economic benefits from both private and public investment in broadband, we hope this report is a useful input, building on existing initiatives to ensure the UK's SMEs really do capitalise on the connectivity available to them.

1. Introduction

"Small businesses and entrepreneurs are the lifeblood of the British economy"

Prime Minister David Cameron MP, 2012[4]

"Superfast broadband is a key business growth enabler"

The Plan for Growth, HM Treasury and Department for Business, Innovation and Skills, 2011[5]

The current government often points to the UK's Small and Medium Sized Enterprises (SMEs) as the key to unlocking UK growth in a prolonged period of economic uncertainty. With the government's broadband speed and coverage targets firmly in delivery stage[6], and significant private sector investment across fixed and mobile broadband in recent years, there are significant potential economic returns to be realised if SMEs could be persuaded to make full use of broadband and its wide range of benefits.[7]

Advancing our infrastructure assets, however, is only one step in unlocking the economic potential that comes from the digital revolution. For our SMEs, it is not simply a case of better broadband equalling better business outcomes. The relationship between connectivity and business performance is nuanced and filtered through other variables such as skills, innovation, business model type, access to markets and more. To put it another way, **non-infrastructure factors are as crucial as infrastructure factors in understanding how to help SMEs exploit the benefits of increased broadband connectivity**. Indeed, as McKinsey stated in their report *Internet Matters:* "Once countries pass a quality and penetration milepost – as most developed countries have – infrastructure is no longer a differentiating component".[8]

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[4] Business in You launch, January 2012 http://www.smallbusiness.co.uk/news/outlook/1687118/cameron-launches-entrepreneurship-campaign.thtml

[5] *The Plan for Growth,* HM Treasury and Department for Business, Innovation and Skills, March 2011, retrieved from http://cdn.hm-treasury.gov.uk/2011budget_growth.pdf

[6] 95% coverage of superfast speeds (>24 Mbps) by 2017, as stated in *Building Britain's Future*, June 2013 https://www.gov.uk/government/publications/investing-in-britains-future

[7] SQW have stated that over the 2009 to 2024 period, Broadband Delivery UK (BDUK) interventions are projected to return approximately £20 in net economic impact for every £1 of public investment, see https://www.gov.uk/government/publications/uk-broadband-impact-study—2

[8] Internet Matters: The web's sweeping impact on growth, jobs and prosperity, McKinsey, May 2011 retrieved from http://www.mckinsey.com/insights/high_tech_telecoms_internet/internet_matters

The benefits that come from increased connectivity have the potential to pervade every level of business operations, ranging from improved productivity to broadened access to customers through to better tailored products and services. This report, therefore, has been produced as part of the BSG's remit to advance thinking and policy on broadband issues, with the aim of:

- analysing existing research and policy on SMEs and connectivity;
- sharing findings of new qualitative BSG research with 16 SMEs on their broadband use and business ambitions;
- providing recommendations on how government and industry can better support SMEs in overcoming the barriers to exploiting better connectivity; and
- indicating where further evidence and understanding is needed to help SMEs capitalise on significant public and private infrastructure investment to date, to the benefit of both SMEs and UK plc.

We believe this report to be timely in the context of the wider policy and political backdrop. Less than 18 months out from an election, we already see issues of digital inclusion for citizens and consumers attracting political interest, and the parallel for SMEs has been reflected in the ongoing campaigning of such organisations as the Federation of Small Businesses and Go ON UK. Similarly, many of the BDUK rural projects are now turning from delivery to the stimulation of demand where local authorities look to generate a return on significant project undertakings to the benefit of local economies. With the government's Digital Inclusion strategy due for publication in early 2014, we will also see further efforts from central government to act as a stimulant for encouraging SMEs to do more online. It is early 2014?

It is important to note at this stage that this report is not looking to answer important questions relating to infrastructure provision for SMEs, and we acknowledge the useful and ongoing dialogue on the higher bandwidth demands that many, especially rural, SMEs have. Rather, in this report we are looking to see where developed infrastructure provision does exist, how is it that our SMEs can best capitalise on the benefits that connectivity can bring.

This report first considers **the relationship between the UK's SME population and connectivity**, looking at their profile, the business broadband market and the way in which factors for business growth can have a relationship with broadband connectivity. Section 2 provides **an overview of evidence on the benefits of connectivity for SMEs**, identifying untapped potential for the UK, looking at the correlation between the notion of 'digital maturity' and business performance.

The following section then turns to **the role of public policy**, and gives an analysis of the role played by the state and other initiatives in encouraging SMEs of various types to take advantage of the business benefits that come from broadband-enabled applications. Section 5 gives an overview of recent research and literature in this area, concluding that there is **a gap in understanding about what SMEs are doing online and why**.

In section 6, the BSG offers **new research and analysis from deep dive interviews with 16 SMEs**, drawing out a number of findings across usage of broadband and broadband-enabled applications. It highlights the importance for SMEs of all types of understanding the benefits of a broadband-enabled application in relation to the time and cost investment alongside disruption to existing business processes. The final section then considers **the link between these benefits and uses, and the pathways by which SMEs come to understand and ultimately take up these benefits,** before setting out five recommendations.

Recommendations one to three are focussed on improving the evidence base to inform continued analysis in this area, and recommendations four to five are targeted at the current opportunities afforded by government policy:

1. **Government should expand the evidence base on SME broadband use.**

   Identifying key trends in what SMEs are doing online by SME characteristic is invaluable in understanding policy in this area. We believe that making a number of additions to the biannual Small Business Survey conducted by the Department of Business, Innovation and Skills, policy-makers will be better placed to understand the complex relationship between SME performance and exploitation of broadband connectivity.

   The 2012 survey covered basic questions on whether a business has broadband, pays taxes online, has a website and sells through a website. We believe the Department for Business, Innovation and Skills should amend areas of its 2014 survey to incorporate further questions on what SMEs are doing online and why, and how this corresponds to aspirations for growth. We believe that this list of current uses can be populated further to incorporate more sophisticated uses of broadband for financial activities, social media and online advertising, use of cloud computing, online training, video conferencing and other areas covered in the course of this report. Similarly, we believe further questions can be added to survey how SMEs perceive broadband-enabled benefits as part of their broader plans for growth, and should be a dimension to most questions on small business activity including innovation, exporting and interactions with government. The survey should also give consideration to how increased mobile broadband connectivity is helping a growing number of SMEs, particularly as tablet and smart phone use can alter the way businesses operate.

2. **Policy makers should have access to better information on how to persuade SMEs of the benefits of being active online.**

   Given the growing number of case studies of business benefit, we believe that **an online platform detailing case studies of effective SME engagement would be useful for policy makers and wider stakeholders**. The BSG is looking to facilitate such a platform, and is currently assessing viability with a number of organisations such as Go ON UK.

3. **Industry and Government need to better understand the requirements of SMEs for broadband in terms of bandwidth and other characteristics.**

Improved evidence on what SMEs are doing online and why will aid policy-makers in understanding current demand. Nonetheless, given the structural lag in digital maturity, we may also wish to assess what future and fully-utilised demand for SMEs might be. We believe that there is **scope to better understand requirements of SMEs for broadband in terms of bandwidth and other characteristics** (both now and for the future, for both fixed and mobile broadband connectivity). This is an area which the BSG will develop as part of its 2014 work programme and as an input to the government's Digital Communications Infrastructure Strategy.

4. **The Department for Culture, Media and Sport should strengthen central resource within Broadband Delivery UK to assist local authorities with demand stimulation activity.**

Currently local authorities are responsible for the stimulation components of their BDUK funding, but it is imperative that this is perceived as being equally important as the physical delivery of infrastructure on the ground given the nature of these large scale projects. The delivery on the ground of these new networks presents a unique opportunity for selling the benefits to SMEs, and there are positive lessons to be learnt from more advanced projects such as Superfast North Yorkshire and Superfast Cornwall. Whilst of course local authorities have an obvious motivation in ensuring take-up and use of broadband is positive, we believe that strengthening the central resource and advice given by DCMS and BDUK will help convert the substantial investment made by public and private sector into greater economic returns for SMEs.

5. **Government should look to drive SME usage and uptake through its engagement with SMEs via government services and transactions.**

As has been acknowledged in the work of the Government Digital Service (GDS), government departments across Whitehall have a significant role to play in stimulating the online activities of SMEs in a positive way. Whether it be statutory obligations such as RTE Pay-As-You-Earn submissions through the HMRC portal, or incentivised transactions such as money off for submitting VAT returns online, there are a range of ways that SME interaction with government can increase online activity.

We hope that this report is a useful addition to research and analysis on SME connectivity, and in doing so the BSG hopes to make a contribution toward the wider debate in unlocking the significant economic potential that comes with improved national digital infrastructure.

2. UK SMEs and connectivity

There is no doubt that broadband connectivity is hugely important to the majority of UK SMEs. The potential to get online and access information and to buy and sell products and services is now a necessity for businesses of all sizes. Broadband has also had a transformative affect on commerce and industry globally. Here we set out the essentials for a policy debate on SMEs and connectivity, and have structured this section around the elements of Figure 1 below. These outline the range of factors affecting SMEs and connectivity, beginning with the profile of UK SMEs, before examining how they are exploiting connectivity, and then the broader factors affecting SME growth through connectivity.

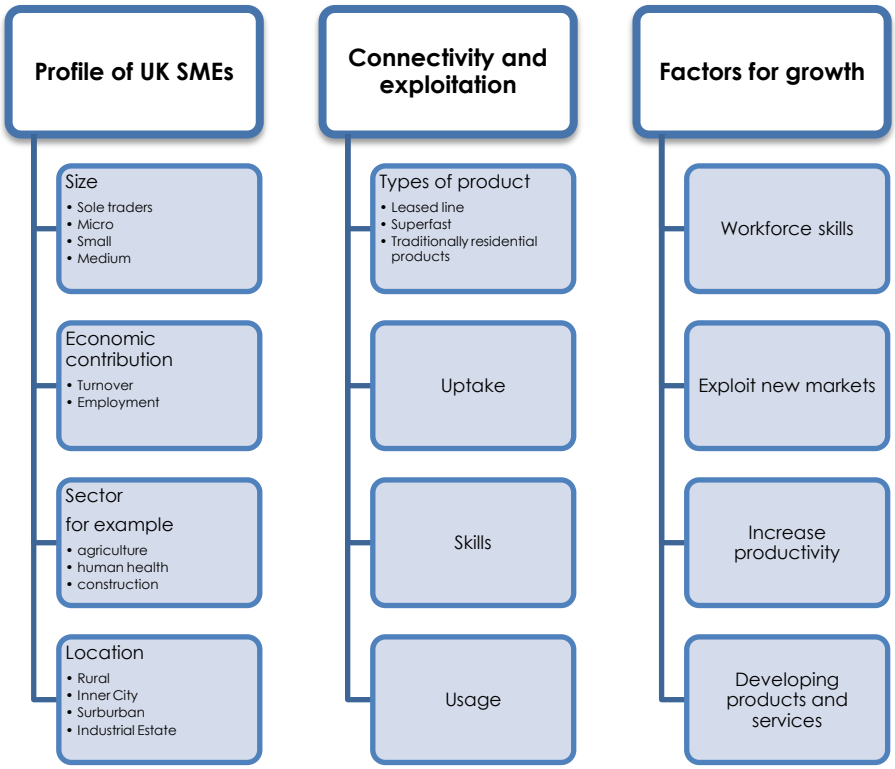

Figure 1 – the building blocks of the policy debate on SMEs and connectivity

The profile of UK SMEs

There were an estimated 4.9 million private sector businesses in the UK at the start of 2013. 99.9% of these are SMEs, employing an estimated 14.4 million people and representing 59.3% of private sector employment. This group have an estimated combined annual turnover of £1,600 billion, and accounts for 48.1% of private sector turnover.[9] SMEs should not be treated as a homogenous entity, however, and have varying needs and priorities reflecting differences in size, economic contribution, sector, location and more.

[9] Business Population Estimates 2013 from the Department of Business, Innovation and Skills, retrieved from https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/252175/13-92-business-population-estimate-2013-stats-release-4.pdf

SMEs are generally defined as those with fewer than 250 employees and annual turnover of less than £25m. Whilst there is no single standard definition of what constitutes small or medium sized business, the following descriptions are used by the Department of Business, Innovation and Skills:

- a micro business is one with fewer than 10 employees
- a small business is one with fewer than 50 employees
- a medium sized enterprise is one with fewer than 250 employees

The contribution of SMEs to the UK economy in terms of employment and turnover varies across size and sector, as the Figures 2 and 3 below demonstrate – with SMEs having a particularly significant share of turnover in the agriculture, construction, real estate and human health sectors.

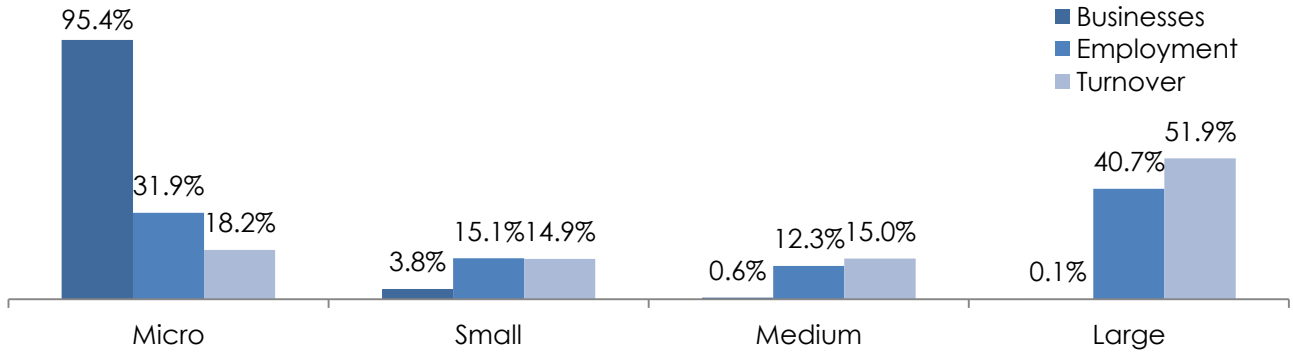

Figure 2 – Contribution of micro, small, medium and large firms by economic contribution by number of businesses, employment and turnover. Source: Department for Business, Innovation and Skills

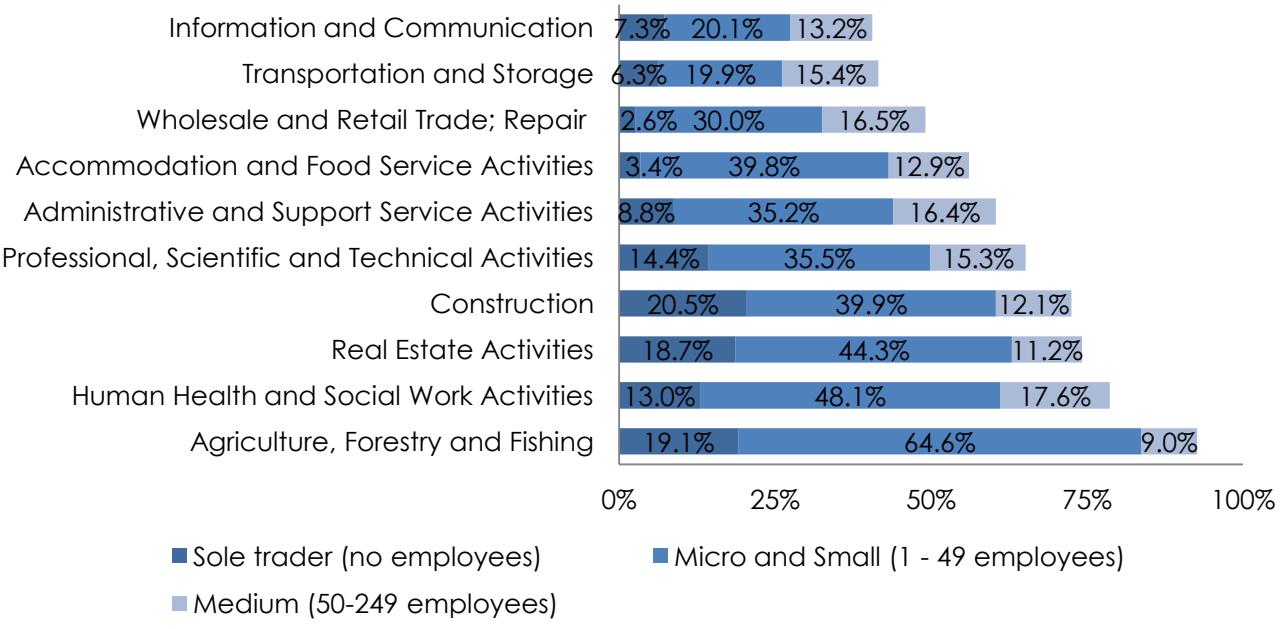

Figure 3 – Contribution of SMEs by turnover across sectors by size. Source: Department for Business, Innovation and Skills

SME connectivity and capability

92% of SMEs have Internet access, and 71% have their own website[10]. In 2012, broadband was accessed by 97% of small and 98% of medium-sized businesses, but only by 90% of micros (up from 85% in 2010). However, there is not yet sufficient publically available data to understand the speeds of connectivity taken up by these SMEs. By sector, SMEs in manufacturing (94%), information/communications (99%) and business services (98%) were the most likely to have broadband. Those in transport, retail and distribution (85%) were the least likely to have it.

There are a number of options available to SMEs in accessing broadband, including leased line services from providers such as BT and Virgin Media. Ofcom's recent Business Market Connectivity Review[11] stated that the demand for leased lines bandwidth has increased steadily in the last few years, driven by sustained increases in both the penetration and the speed of business and consumer data services.

There is also anecdotal evidence that, whilst there have always been home-based enterprises, there are a growing number of micro and small firms that are utilising benefits of traditionally residential products, particularly as superfast services rollout across the country. These developments pose a question as to what type of connectivity different types of SMEs require. However, there is currently insufficient evidence at a national level on both SMEs' requirements and how both higher-speed residential and more traditional business broadband products can meet these needs. This is an area we will return to in latter sections of this report.

Current business broadband products can also include a number of additional features or 'wraparounds' which make these products distinct from those targeted at the consumer market, and aim to assist SMEs to better harness the benefits of being online in a tailored way. To give just a few examples, the *BTnet Leased Line*[12] product offers additional DDOS monitoring and domain names as part of its offering. Similarly, BT's *Advanced Support Package* offers 'BT prompt care and Tech Heads' to cover IT support needs of the business.[13] TalkTalk's *Complete* products have free premises moves and the 'Worksafe' security solution as part of the offering.[14]

Ofcom's ongoing work around the Business Connectivity Market Review promises to offer further insights in to the state of competition in the provision of leased-line services in the UK, amongst other areas.

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[10] Small Business Survey 2012: SME Employers, BMG Research for the Department for Business, Innovation and Skills, March 2013 retrieved from https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/155889/bis-13-p74-small-business-survey-2012-sme-employers.pdf

[11] http://stakeholders.ofcom.org.uk/consultations/business-connectivity-mr/final-statement/

[12] http://business.bt.com/broadband-and-internet/e2/

[13] http://business.bt.com/broadband-and-internet/e2/

[14] http://www.talktalkbusiness.co.uk/products-and-services/connectivity-networking/business-broadband/

Turning to how connectivity is used by SMEs, a 2013 report from Lloyds Banking Group's suggested that over a third do not have a website[15]. Some suggest caution from such statistics however, and question the question whether it is always a necessary investment and requirement for SMEs to have a website, and therefore if this is the best measure of digital maturity across all SMEs.

Booz & Co and Go ON UK report that SMEs consider only 35% of their employees to be digitally savvy and 24% of SMEs say their employees do not have basic IT user skills[16]. This skills issue is replicated at senior manager level, with 43% of SME owners and managers described as 'not comfortable' using technology. A figure regularly cited by Go ON UK is that just 14% of businesses transact online[17].

Factors for SME growth

There a number of important factors driving SME growth. One regularly cited by commentators, including the Department of Business, Innovation and Skills is sufficient access to finance[18]. But others are potentially more important and relate more closely to the digital operations of an SME.

In the BIS Small Business Survey 2012, SMEs were asked how they believed they could achieve growth in the following 12 months. There are a number of responses here that demonstrate where exploitation of broadband connectivity might play a catalytic role:

- Increasing skills of the workforce (74%, rising to 79% for Business Services)
- Increase turnover by exploiting new markets (69%, rising to 89% for Info/Comms)
- Reduce costs by increasing productivity of workers (65%)
- Develop and launch new products/ services (65%, rising to 91% for Info/Comms)[19]

Connectivity and digital capability can play a significant role in each of these, taking digital skills, online training, international online transactions, and worker productivity through technology adoption, product and service innovations, as just a short list of examples.

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[15] *Britain's Digital Opportunity,* Lloyds Banking Group, February 2013 http://businesshelp.lloydstsbbusiness.com/assets/pdf/Britains-Digital-Opportunity.pdf

[16] *The Case for Universal Digitisation*, Booz & Co and Go ON UK November 2012 http://www.go-on.co.uk/files/2113/5237/0908/The_Booz_Report_Nov2012.pdf

[17] *The Case for Universal Digitisation*, Booz & Co and Go ON UK November 2012 http://www.go-on.co.uk/files/2113/5237/0908/The_Booz_Report_Nov2012.pdf

[18] For example see Department of Business, Innovation and Skills on Business growth and finance performance at https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/32223/11-1415-business-growth-finance-performance-in-recession.pdf and recent launch of the Small Business Bank initiative.

[19] *Small Business Survey 2012: SME Employers*, BMG Research for the Department for Business, Innovation and Skills, March 2013 retrieved from https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/155889/bis-13-p74-small-business-survey-2012-sme-employers.pdf

There is a complex relationship between SME growth and connectivity, with many SMEs across sectors and industries aspiring to grow through connectivity and increased bandwidth. We will return to the connection between SME's strategies, connectivity and growth later in this report. In the next section, we focus in more detail on the specific applications achievable through broadband connectivity.

3. Benefits of broadband-enabled applications in business use

The digital revolution has meant the possibility of change at every level of business operation, and this holds for the UK's diverse SME population. Broadband enables a range of applications and uses that can assist SMEs in a number of different ways, harnessing benefits from productivity gains to increased market intelligence, from an expanded customer base to more competitive supplier relationships. This extends through to innovations in products and services that would not be possible without digital connectivity.

The following table provides an overview of the range of business benefits that can be brought about via broadband enabled applications:

Application Type	Example providers	Business Benefits	Bandwidth Requirements
Email	Office 365 for Small Business, Google Apps for Business, FastMail, Zoho	Used for internal and external communications, marketing and coordinating with business partners, suppliers and customers. Some common advantages of business email over traditional mail or telephone communications are cost reductions, lower overhead and speed.	0.6 Mbps per very heavy user[20]
Website - browsing	Various	Informational gains and liaison with suppliers	Web browsing has a 'bursty' nature when used[21] and previous BSG work has stated that the web page viewer is likely to require a maximum of 2MB as the maximum required pre-caching page weight for above-the-fold content, and assumed bandwidth must be provided to download this in 3 seconds
Website - hosting	Yahoo! Web Hosting, HostGator, BT, Comcast	Often cheaper than print advertising, always 'open for business', allows market expansion and diversification of revenue streams. A list of benefits is potentially long but also extends to market expansion, improving credibility, and building better information on customer and potential customer interests.	Varies depending on hosting provider and often separate to main broadband package so separated out from on site business needs
VoIP	Cisco, Skype (for voice only),	VoIP over telephony for calls is often cited as being more cost effective,	Require 100 Kbps or less[22]

[20] average across a number of similar estimates

[21] see BSG report *Domestic demand for bandwidth: An approach to forecasting requirements for the period 2013-2023* at http://www.broadbanduk.org/forecastingdomesticdemand

[22] see BSG report *Domestic demand for bandwidth: An approach to forecasting requirements for the period 2013-2023* at http://www.broadbanduk.org/forecastingdomesticdemand

	GoogleTalk	and have a degree of flexibility and scalability as VoIP calls can share the data network bandwidth. VoIP is also able to integrate with other technology applications in the working environment, and often mean that the worker does not have to physically be in the office.	
Video Conferencing	Polycom, Skype, Google Hangouts, iChat	Reduced travel costs, improved hiring process, increased productivity across dispersed workforces and teams	A HD quality Skype video call requires 1.2Mbps with 1.5Mbps recommended. [23]Apple iChat requires up to 900 kbps for 'best' quality. [24] A recent BSG report assumed an average initial requirement of 1.5 Mbps for HD video calls (upstream and downstream).[25]
Online transactions / eInvoicing	PayPal, Sage, Intuit	Easy Record Keeping, flexibility for customers, one-click payments	A range depending on service and function. A particularly high case is QuickBooks who recommend a bandwidth of more than 40 Mbps[26] for one of their products.
Business Banking	Lloyds, TSB, NatWest, Barclays	Easier access to company finances, including through real-time balances and transactions on business accounts.	Mostly equivalent to online browsing (see above)
Online advertising	Google AdWords, Facebook, news/content outlets	Wider coverage, better targeted audiences, can be more cost effective than print equivalents, often with ability to track and measure conversion. Many cite the benefits of easier audience engagement and brand management.	Requires bandwidth capacity from the target audience
Social media	Facebook, Twitter, LinkedIn	Reduction of marketing costs and informing a more targeted customer base, increased customer service potential, improve SEO rankings and brand management	Mostly equivalent to online browsing (see above)
Cloud computing	Dropbox, GoogleDocs, Apple Cloud	Flexible, encourages collaboration, works from any location, allows for document control and increased security	There is a divergence of figures available here given the wide range of types of product and service available. Drago et al. cite et al state 1.26Mbps for download and 0.54Mbps for upload. WIK suggests

[23] https://support.skype.com/en/faq/FA1417/how-much-bandwidth-does-skype-need

[24] http://support.apple.com/kb/HT2020

[25] *Domestic demand for bandwidth: An approach to forecasting requirements for the period 2013-2023* at http://www.broadbanduk.org/forecastingdomesticdemand

[26] http://support.quickbooks.intuit.com/support/articles/SLN65019

			speeds of up to 100 Mpbs may be required. [27]See our recent bandwidth study for further details.[28]
Customer and Supplier Relationship Management	SalesLogix, Salesforce, Capsule, Tactile	Ability to track tasks and manage workforce contact with customers in real time, integration with social media and mobile platforms	Typically through web browsing / local server data
E-courses / online training	eLearn, Reed	Flexible around needs and time constraints of the employee, can be more competitively priced	Typically through web browsing
Electronic delivery of services	n/a	Flexibility for customers, efficiency gains, reduction of overheads	Depends on type of product or service offering by that SME
Home working / VPN	Cisco, Citrix	Higher productivity and ability to work uninterrupted, especially on project based work. Reduced overheads in the office (and office facilities can therefore go further), and allows employees flexibility which can increase morale. VPNs do not limit the remote user by their bandwidth capacity as they are running off the company's connection	Citrix recommends around 2Mbps for one recent version[29]

Figure 4 – Range of business benefits for SMEs by application type

As Figure 4 demonstrates, broadband-enabled applications provide a range of benefits to businesses, and, as SMEs do more online, they can increase productivity through dealing with suppliers online, transacting online, cloud-computing, and more. The rewards that come from such uses and applications are often dependent on the unique conditions and market position of that business. While the overall rewards may be clear, what can be less apparent for SMEs is what specific use and associated application a SME should take up. How can a business owner decide in advance that the benefits of a specific application or use will be worth the time commitment and cost of operational changes? As one small business said to us in the course of this work: '*how are we supposed to know what we don't know, and how do I know if it's for me?*'

Many more basic uses and applications are now perceived as 'no-brainers' for a majority of UK SMEs – using email for efficient communications with employees, customers and suppliers being a battle already won with all but a tiny minority of SMEs. However, many of the more sophisticated and mature broadband uses and associated applications require

[27] www.wik-consult.com/uploads/media/High_Speed_Broadband.pdf

[28] *Domestic demand for bandwidth: An approach to forecasting requirements for the period 2013-2023* at http://www.broadbanduk.org/forecastingdomesticdemand

[29] http://blogs.citrix.com/2013/08/27/get-up-to-speed-on-xendesktop-bandwidth-requirements/

skillsets that may not be available in-house without a significant time or resource commitment – commitments which may be beyond the reasonable day-to-day investment of an SME. This is particularly pertinent for micro and small business owners where time constraints are amongst the biggest burden facing them on a daily basis. Other uses, however, may not be directly applicable within the context of that business: whilst consumers in the household may revel in video streaming for example, for most business users it may be something they would instead look to minimise.

The notion of Digital Maturity

The potential benefits of connectivity for SMEs range from the basic to the more advanced, and this has given rise to the concept of *digital maturity* to describe firms' different levels of sophistication in exploiting the benefits of being online. Many of the more complex applications from Figure 4 can be mapped and described on a scale, ranging from a relatively low level of digital maturity for those firms using relatively few of the applications, through to a high level of digital maturity from those firms utilising a wide range of the applications.

One important outcome of a digital maturity scale is that it allows performance comparison between firms of differing levels of digital maturity. Figure 5, taken from Lloyds Banking Group[30] data, makes a compelling case that those that do more with their broadband connectivity in turn reap business rewards, with 45% of 'digitally mature' SMEs filing an improvement in business performance over a year period, compared to only 13%of offline SMEs:

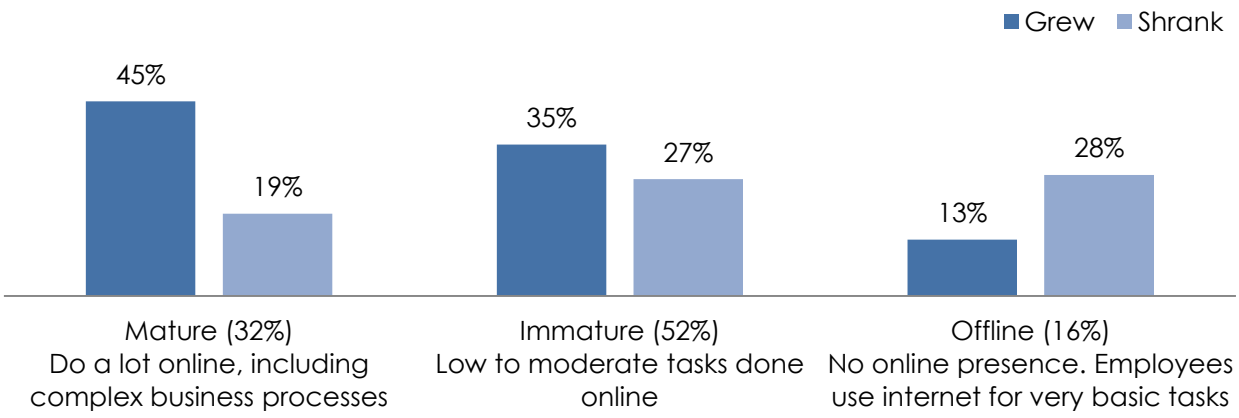


Figure 5 – Business performance of SMEs. Source: Lloyds Banking Group

[30] Lloyds Banking Group, *Britain's Digital Opportunity; a study of digital maturity within Britain's businesses and charities* retrieved from http://businesshelp.lloydstsbbusiness.com/news/helping-your-business-click/

In their recent *Britain's Digital Opportunity* report[31], Lloyds Banking Group set out in detail a range of categories for firms' digital maturity:

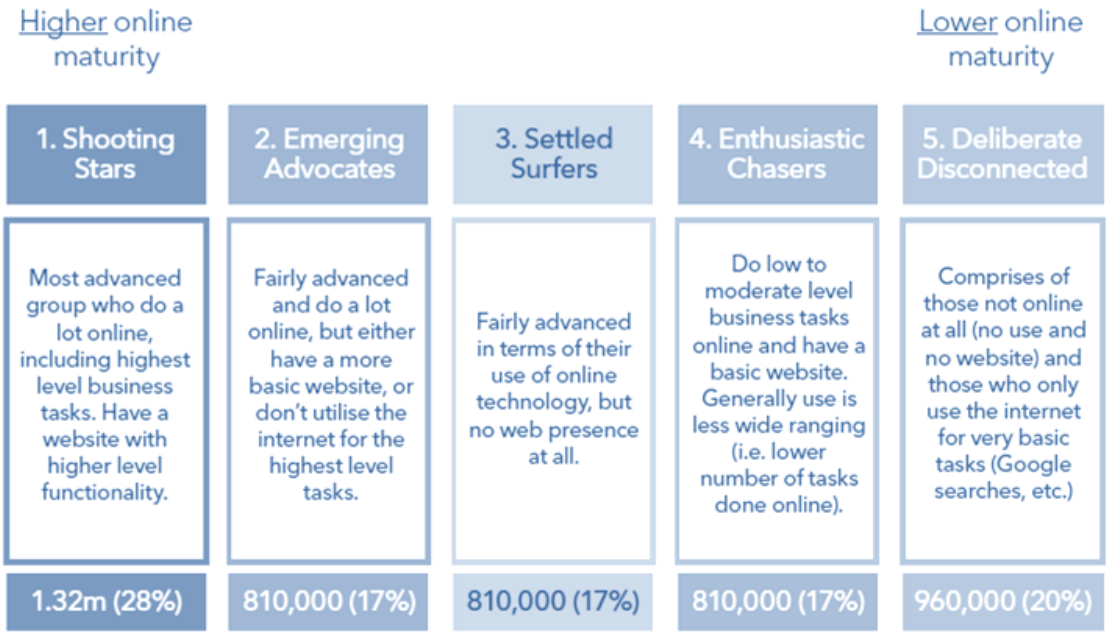


Figure 6 – Summary of digital maturity segments. Source: Lloyds Banking Group

The split of firms across five categories of shooting stars, emerging advocates, settled surfers, enthusiastic chasers and deliberately disconnected raises a number of interesting questions for those looking to consider how benefits of doing more online get exploited in practise. What causes shooting stars to do so much more with their connectivity, and why do enthusiastic chasers find themselves stuck on a limited number of basic tasks?

The Department for Business, Innovation and Skills reports an increase in broadband access by SMEs[32], whilst also reporting that elements that contribute to firm growth, such as product/service innovation and exporting, have shown some decline. Whilst a number of macro-economic issues at play must be acknowledged (such as access to finance, an economic downturn and so on), an examination of the level of digital maturity of UK SMEs strongly suggests that the right set of policies for broadband and connectivity, could provide a crucial boost in performance for the UK's SMEs. The next section therefore examines the current range of public policies and initiatives looking to provide that catalytic effect.

[31] Lloyds Banking Group, *Britain's Digital Opportunity; a study of digital maturity within Britain's businesses and charities* retrieved from http://businesshelp.lloydstsbbusiness.com/news/helping-your-business-click/

[32] Department for Business, Innovation and Skills, Small Business Survey https://www.gov.uk/government/collections/small-business-survey-reports

4. The role of public policy in connectivity and use

SMEs are increasingly connected and increasingly seeing the benefits of that connectivity. However, as evidence from Lloyds Banking Group and others has shown, the level of maturity through which SMEs harness the benefits lags the potential benefits available to them. In order to maximise achievement of the benefits of connectivity for SMEs, government and industry have an important role to play. As concluded in the previous section, in joining up factors for SME growth with the benefits of doing more with connectivity, the right policies can help accelerate the adoption of practices that would see potentially substantial economic rewards.

With the responsibility for the telecommunications brief resting with the Department for Culture, Media and Sport (DCMS), and the remit of SMEs and growth apportioned to the Department of Business, Innovation and Skills (BIS), government has to co-ordinate its efforts for bringing together the potential of SMEs to exploit the benefits of connectivity and broadband. Central government departments have a number of significant policies and initiatives which have the potential to strengthen this link. The major thrust of central government policy and funding to-date has been on infrastructure, focused on achieving superfast access to 95% of the country by 2017 via the Rural Programme in Broadband Delivery UK (BDUK), located within DCMS[33]. This programme has a number of demand stimulation components built in as part of the awarded contracts, but its driving focus has been on infrastructure provision. BDUK is also overseeing the 'Super Connected Cities Programme' (also known as the Urban Broadband Fund) which has a component specifically targeted at SMEs in 22 UK cities, with results of its effect to be shown over the coming year (see Figure 7 and subsequent table for further detail).

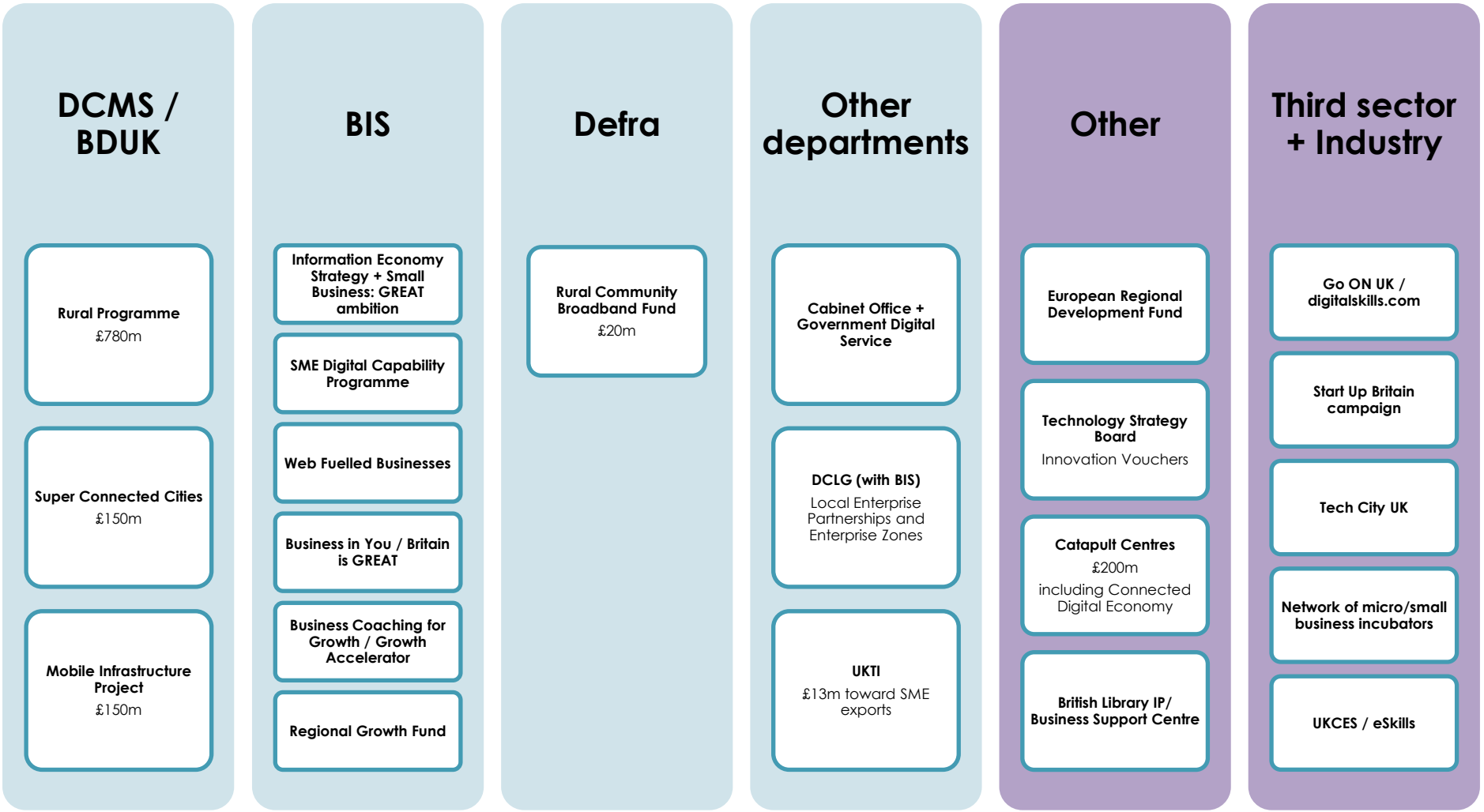
This section provides an overview of the government initiatives that are in some part aimed at supporting SMEs in realising the economic benefits of increased connectivity. Some initiatives have a clear direct link to this agenda, while others are raised here to trigger debate on whether they *should* include greater consideration of SMEs and connectivity. This includes new initiatives from the Department of Business, Innovation and Skills which have been brought in to focus by the 2013 Information Economy Strategy. This section will first detail national policy and initiatives, before providing an overview of the devolved administrations, and concludes with a number of insights and lessons from the current policy landscape.

National policy and initiatives

The following diagram provides an overview of the current initiatives across government and non-departmental public bodies that could have some impact upon SMEs and/or benefits of improved connectivity and bandwidth:

[33] For further detail see https://www.gov.uk/broadband-delivery-uk#rural-programme

Figure 7 – Overview of current government policy and initiatives relating to SMEs and connectivity



The following table provides further details on the initiatives mapped out in the following table:

Department / Body	Initiative	Policy focus	Timescale	Detail	Likely impact on SMEs and connectivity?
DCMS / BDUK	Rural Programme	Infrastructure	To 2017	£780 million has been allocated to stimulate commercial investment to roll out 95% target superfast broadband in rural communities[34]. This is made up of £530 announced in 2010, followed by £250m to extend from 90% to 95% in July 2013.	High
DCMS / BDUK	Super Connected Cities (Urban Broadband Fund)	Infrastructure and non-infrastructure	Currently live. Runs to March 2015	Designed to "drive growth with a particular focus on SMEs and strategic employment zone", £150m has been allocated across 22 cities to be implemented by March 2015. This includes the Vouchers scheme amongst other initiatives include public Wi-Fi provision. [35]	High
DCMS / BDUK	Mobile Infrastructure Project	Infrastructure	In delivery phase	A £150 million contract awarded to Arqiva to improve mobile voice coverage in areas where coverage is poor or non-existent.[36]	Low
BIS	Information Economy Strategy	Non-infrastructure	Current	Government announced in the Information Economy Strategy that, amongst other areas, it would work with an industry-led programme to help 1.6 million SMEs gain digital skills (see Go ON work below).[37]	Medium
BIS / UKTI	Small Business: GREAT ambition	Non-infrastructure	Current	Included a commitment to enable businesses to use the internet to trade internationally, including the new Click: Connect: Sell programme which aims to support 7000 SMEs over 2014-2015.[38]	Medium

[34] https://www.gov.uk/broadband-delivery-uk#rural-programme
[35] https://www.connectionvouchers.co.uk/superconnected-cities/
[36] https://www.gov.uk/government/policies/making-it-easier-for-the-communications-and-telecoms-industries-to-grow-while-protecting-the-interests-of-citizens/supporting-pages/improving-mobile-coverage
[37] https://www.gov.uk/government/publications/information-economy-strategy
[38] https://www.gov.uk/government/publications/small-business-commitment

BIS	Web-Fuelled Business	Non-infrastructure	First wave early 2012 - now ended.	Taught web exploitation skills to 3,500 SMEs across England through the new Web Fuelled Business initiative, covering how to use the web to accelerate growth, get new customers and save money.[39] The successor to this policy initiative now lies with the digitalskills.com initiative, as detailed on the following page.	Medium
BIS	Growth Hubs	Non-infrastructure	Will roll out across England during 2014 and 2015.	Business support at the local level will be brought together through Growth Hubs – a single place that businesses can go to get help. This will improve the coordination of support provided by local public and private sector partners, creating a "more streamlined and coherent offer for businesses, based around local needs. Where Government provides funding for these services it will be conditional on Growth Hubs cutting duplication and closing under-performing local schemes." [40]	Medium
BIS	Growth Vouchers Programme	Non-infrastructure	Until 2015	This government programme helps small businesses get expert advice on finance and cash flow, recruiting and developing staff, improving leadership and management skills, marketing, attracting and keeping customers, and making the most of digital technology. [41]	Low
BIS	Business Coaching for Growth	Other – with connection to non-infrastructure	Ran throughout 2012.	Consortium lead by Grant Thornton – targeted at 'gazelles', those high growth firms that grow head count by 20% or more 3 years in a row. Successor to business link and RDA programmes - 10,000 SME businesses a year with coaches and element of focus on online activities[42]. Now subsumed in to the Growth Accelerator programme (see below).	Low
BIS	Growth Accelerator	Non-infrastructure		An England-wide programme to help small businesses with potential for rapid and sustainable growth achieve their ambition; providing professional business advice and coaching it will help up to 26,000	Medium

[39] http://www.webfuelledbusiness.com/
[40] https://www.gov.uk/government/publications/information-economy-strategy
[41] https://www.gov.uk/apply-growth-vouchers
[42] www.businessgrowth.uk.com

				small businesses overcome the barriers to growth.[43]	
BIS	Regional Growth Fund	Other – with connection to both infrastructure and non-infrastructure	From 2011 to 2016. Bids now closed	£2.6 billion fund operating across England supporting projects and programmes that lever private sector investment to create economic growth and sustainable employment.[44] The Regional Growth Fund provided funds for the Growth Hubs as detailed previously in this table.	Low
Defra	Rural Community Broadband Fund (RCBF)	Infrastructure and Non-infrastructure	Ongoing – funding allocated in 2013.	£20m aimed at the hardest-to-reach areas and to encourage innovative solutions outside of 95% superfast target.[45]	Medium
Cabinet Office	Government Digital Service	Other – with connection to non-infrastructure	Ongoing	"Transforming the provision of government digital services"[46] - A digital inclusion strategy will be published in early 2014 which will include some focus on how government services can best work to the benefit of SMEs.	High
DCLG	Enterprise Zones	Other – with connection to both infrastructure and non-infrastructure	Ongoing	Created 24 enterprise zones across England since 2010, defined as having superfast broadband built into their 'Business-ready infrastructure'[47]	Medium
UKTI	SME Export Programmes / Open to Export	Other – with connection to non-infrastructure	Ongoing	Various programmes to help SMEs export – including recent £13m allocation. Open to Export, operated by UKTI and supported by Hibu, is a community driven service for small and medium sized businesses, looking for help and support in exporting from the UK. [48]	Low
Technology Strategy Board	Innovation Vouchers	Other – with connection to non-infrastructure	Ongoing	Grants of up to £5000 which aim to stimulate a company to explore bringing new knowledge into the business, adding to its ability to	Low

[43] http://www.growthaccelerator.com
[44] https://www.gov.uk/regional-growth-fund-a-guide-for-small-and-medium-enterprises-smes
[45] http://rdpenetwork.defra.gov.uk/funding-sources/rural-community-broadband-fund
[46] https://www.gov.uk/government/policy-teams/government-digital-service
[47] https://www.gov.uk/government/news/enterprise-zone-activity-to-sky-rocket-with-100-million-for-building
[48] http://opentoexport.com/

				develop innovative products, processes and services.[49]	
Technology Strategy Board led Catapults	Connected Digital Economy (CDE)	Other – with connection to non-infrastructure	Launched Spring 2013	The CDE Catapult aims to 'encourage new and sustainable ways for digital media and content providers to generate value from their products, help to find ways for whole business sectors to embrace digital services, and help business to take advantage of the way information is becoming available in the digital domain.' The CDE Catapult has a commitment to SMEs written into its constitution – principally aimed at Old Street Roundabout tech cluster.[50]	Low
British Library	IP / Business Support Centre	Other – with connection to non-infrastructure	Ongoing	Launched in March 2006, it supports entrepreneurs, inventors and small businesses in launching and developing a business through mentoring, advice and workshop programmes.[51]	Low
Other	Go ON UK + digitalskills.com	Non-infrastructure	Launched in April 2012, ongoing	The successor to Race Online, Go ON is guided by Baroness Martha Lane Fox. Its objectives are to provide an impartial, expert view of the nation's digital status, a perspective on what's best for British digital capability as a whole and to galvanise action to build skills for individuals, SMEs and charities.[52] In September 2013, Go ON launched digitalskills.com, a website that houses learning resources and digital tools to boost people's digital capabilities and act as umbrella for resources for SMEs, individuals and charities.	High
Other	Start-up Britain Campaign	Non-infrastructure	Launched in March 2011	A national campaign led by entrepreneurs. Have an Enterprise Calendar which has included Marketing and Tech4StartUp Britain Weeks, providing a week's worth of free events for start-ups and growing businesses.[53]	Medium
Other	Tech City UK	Non-	Ongoing	Aim is to help Tech City become Europe's centre of innovation and	Medium

[49] https://vouchers.innovateuk.org/
[50] https://www.catapult.org.uk/connected-digital-economy
[51] http://www.bl.uk/bipc/
[52] http://www.go-on.co.uk/
[53] http://www.startupbritain.co/

		infrastructure		the location of choice for tech and digital companies and investors. Received £50m investment from government.[54]	
eSkills UK	Enterprise IT Guide	Non-infrastructure	Ongoing	Provides guides for businesses of varying sizes guides which cover areas from 'choosing your first computer' to 'cloud computing'. They state that 'growth in the UK economy is so dependent on the success of small businesses' as part of their mission.[55]	Medium

The Devolved Administrations

There are a number of initiatives across the UK's devolved administrations, many of which draw upon the funds allocated to BDUK, DCMS and Defra but this sub-section will draw attention to a number of initiatives which have been lead by the Scottish, Welsh and Northern Irish governments.

In Scotland, the Scottish Enterprise Business Gateway has three programmes designed to help businesses get off the ground - High Growth Start Up support, the Proof of Concept Programme and Enterprise Fellowships, which all offer advice pertinent to digital capacity across the life of a small business. Highland and Islands Enterprise promotes the benefits of the £146m investment in fibre broadband and highlights the benefits in its individual programmes of mentoring and resource. Scotland's "Demonstrating Digital" aims to promote local products and "Think Digital First" is aimed at raising digital participation for both businesses and individuals to increase demand for services.[56]

In Wales, the "Delivering a Digital Wales" scheme aims for 96% of businesses to have access to fibre by end of 2015. The Broadband Support Scheme provides support for the purchase of broadband solutions targeted at SMEs, which has benefitted from funding at European level.

Northern Ireland similarly has a number of initiatives targeted in this area. "Invest Northern Ireland" and the Northern Ireland Broadband Fund, which have both benefitted from European ERDF funding, has a rural focus, and offers financial support to organisations undertaking broadband technology trials or offering solutions for the delivery of high speed services. The NI Business Info online portal offers practical advice on IT and eCommerce skills[57].

[54] http://techcity.io/
[55] https://www.e-skills.com/using-it/enterprise-it-guide/
[56] *Delivering a step change in broadband speeds* http://www.Scotland.gov.uk
[57] http://www.nibusinessinfo.co.uk/content/it-e-commerce

Lessons from current policy

This section has mapped the national and devolved initiatives that have the potential to bring together policy on broadband connectivity and an SME's position to exploit the benefits of advancing digital maturity.

The policy table demonstrates that the majority of funding and policy has focused on infrastructure. This initial focus on infrastructure provision is not to be criticised and presents a great opportunity as many projects near completion of their delivery phase.

However, there is now a unique opportunity to give greater prominence to demand stimulation for and adoption of use of this infrastructure, bringing the respective focuses of DCMS and BIS together in a more prominent way for the benefit of SMEs and UK plc as a whole. The timing here is to be regarded as an opportunity, as there is an emerging emphasis from the Department of Business, Innovation and Skills looking at SME use of connectivity from a business support perspective, as indicated by elements of the Information Economy Strategy.

The efforts of the new online portal digitalskills.com[58], led by Go ON UK and its partners (including BSG executive members BBC, EE and TalkTalk), are to be welcomed in furthering the materials available for SMEs, individuals and charities to do more online. An 'umbrella approach' has many merits in attempting to bring together a range of resources. However, as the previous section and new BSG research in Section 6 bears out, SMEs are a diverse and varied group, and what would motivate one SME to see a potential benefit as business critical would not hold for all SMEs. Accordingly, we believe that by better tailoring and marketing the benefits by SME characteristics through this portal, SMEs will be able to identify potential benefits with greater ease. We hope that later iterations of the site, in line with the ongoing work from Lloyds Banking Group on its digital maturity index, will provide more tailored insights for a range of specific business contexts.

The role of public policy and initiatives such as Go ON UK play an important role as potential 'pathways' by which SMEs understand and evaluate the benefits of broadband-enabled applications and uses, and are part of a bigger picture for each SME in receiving information on what benefits to pursue and why. This is an area that we will return to in Section 7, drawing on the insights from our first hand research with SMEs laid out in Section 6.

[58] www.digitalskills.com was launched October 2013 in beta version

5. Lessons from previous research

A range of organisations and institutions have examined different aspects of the debate around broadband and connectivity. A selection of publications from recent years, along with their key findings and recommendations, is summarised in the table below, grouped by their primary focus:

Primary Focus	Organisation	Title	Date	Detail and headline findings
Digital Infrastructure	Federation of Small Businesses	Missing Links: revitalising our rural economy[59]	May 2012	Called for the delivery of high speed broadband (20Mbps) to 98 per cent of rural communities and businesses by 2015. Also urged that the spectrum auction allow small rural businesses to benefit from a full range of 4G services.
Digital Infrastructure	SQW report for DCMS	Impact of broadband[60]	November 2013	Key findings on the impact of the government's broadband investment included that there is a net return of £20 for every £1 spent by 2024 on the government's broadband programme. The report highlights benefits to be shared across the UK, helping the rebalancing of the UK economy.
Digital infrastructure / Experiences of SMEs	Institute of Directors	Regular *Infrastructure for Business* surveys[61]	Last edition in February 2013	Surveyed over 1,100 businesses - satisfaction rates with broadband speeds are significantly lower for their members who conduct business in rural areas. 83% of firms believed faster speeds would increase productivity (with the number jumping to 88% for rural-only businesses).
Potential of internet economy / use of technology	SQW	UK Broadband Impact Study: Literature Review[62]	February 2013	The extent of benefits realisation was dependent on managerial culture and skills, and on the regulatory environment.
Potential of internet economy / use of technology	Federation of Small Businesses and Intellect[63]	The Digital Imperative[64]	May 2013	This joint report highlighted that enabling e-commerce, new ways of marketing or improving the efficiency of internal processes. Technology here offers small businesses ways to boost their performance.
Potential of the internet economy / digital infrastructure	Nesta	Free to Grow? Assessing the barriers faced by actual and potential high growth firms[65]	Nov 2011	This report looked across a wide variety of variables contributing toward firm growth, only 0.4% of high growth and potential high growth firms. Cited broadband infrastructure as an issue.

[59] http://www.fsb.org.uk/policy/assets/rural_report_web_final_proof.pdf
[60] https://www.gov.uk/government/news/the-benefits-of-broadband
[61] http://www.iod.com/Influencing/Press-Office/press-releases/new-iod-poll-faster-broadband
[62] https://www.gov.uk/government/publications/uk-broadband-impact-study
[63] now techUK as of November 2013
[64] http://www.fsb.org.uk/frontpage/assets/fsb-intellect-april13.pdf
[65] http://www.nesta.org.uk/publications/free-grow-assessing-barriers-faced-actual-and-potential-high-growth-firms

Potential of internet economy / use of technology	Policy Exchange	The Superfast and the Furious[66]	January 2013	Whilst principally targeted at the consumer market and universality, polling showed that "Small Businesses rank communications second only to major roads when asked to prioritise different areas for infrastructure improvements".
Potential of the internet economy	CBI & KPMG	Connect More[67]	September 2013	Four fifths of firms consider faster and more reliable fixed-line (85%) and mobile broadband (84%) as critical to their success. The report also suggested that more needs to be done to increase the awareness and take-up of digital – the UK economy could benefit to the tune of £18 billion a year if more of the firms sold and marketed online.
Potential of the internet economy / use of technology / Digital maturity	Lloyds Banking Group	Britain's Digital Opportunity[68]	February 2013	SMEs reporting frequent use of the internet were more than twice as likely as those who used it less often to have recorded an increase in turnover over the last two years. It was recommended that encouraging small businesses to build their online capability therefore has the potential to be advantageous both for the SMEs themselves and the economy as a whole.
Digital maturity / potential of the internet economy / use of technology	Go ON UK / Booz and Co	This is for everyone: The Case for Universal Digitisation[69]	Nov 2012	Report stated that two thirds of SMEs have little or no online presence to 'unlock the value of digital foundations'. Only 14% UK SMEs in the UK sell online. Digital technology can enable SMEs to unlock as much as £18.8 billion in incremental revenue. Digitisation can channel scarce resources (can reduce cost base by up to 20% through digitisation) and help businesses expand more effectively. Digitisation of SMEs can lead to innovation in the service sector. 25% of SMEs say that a lack of basic digital awareness and skills holds them back.
Experiences of SMEs	BT TSO and Plymouth University	SME Benefits and Business Opportunities and Superfast Broadband: Opportunities with the Virtuous Circle of Connectivity[70]	November 2013	This report stated that superfast broadband was serving SMEs well and has become a critical enabler for many. SMEs need reliable broadband to compete in an increasingly connected world and adoption drivers are mostly related to this and a desire to grow.
Experiences of SMEs	SERIO at Plymouth University	Superfast Cornwall research into the impacts of	November 2013	After 12 months, 83% of SMEs surveyed (where superfast broadband had rolled out in Cornwall) were saving time and money due to the faster

[66] http://www.policyexchange.org.uk/publications/category/item/the-superfast-and-the-furious-priorities-for-the-future-of-uk-broadband-policy
[67] http://www.cbi.org.uk/media-centre/press-releases/2013/09/faltering-speed-of-delivery-on-infrastructure-could-undermine-efforts-to-secure-the-recovery/
[68] http://businesshelp.lloydstsbbusiness.com/news/helping-your-business-click/
[69] http://www.go-on.co.uk/files/2113/5237/0908/The_Booz_Report_Nov2012.pdf
[70] http://www.superfastcornwall.org/assets/file/SFC_research_doc.pdf

	and Buckman Associates	superfast broadband[71]		speeds and innovative services that superfast broadband enables. 58% SMEs surveyed said their business is growing because of the new technology, whilst more than a quarter have either created or safeguarded jobs as a direct result of the efficiency and innovation that superfast broadband encourages.
Experiences of SMEs	Forum of Private Business	Small business and technology[72]	February 2013	Broadband speed is identified as a key issue for one in four businesses when asked what support they needed to make technology work more effectively.
Experiences of SMEs	TalkTalk and economia	Geared for Growth: What makes companies grow?[73]	April 2013	Two thirds SMEs were expecting to grow in year ahead, despite economic climate. One in 10 business owners set growth as their number one goal. Healthcare, business and financial services and the media were the most ambitious industry sectors - classified by the report as 'Thrivers' - determined to make 2013 a success, despite external factors.

As this table summarises, there have been five main focuses of recent research around digital infrastructure, the potential of the internet economy, use of technology, digital maturity, and the experiences of SMEs.

Recent outputs on digital infrastructure have broadly focused on the provision of more reliable and faster connectivity, particularly in rural areas. This is a valid concern, and one which is part of an ongoing debate on the government's 95% superfast targets and the ways in which infrastructure can reach the final 5%. There is also a degree of debate on whether superfast broadband (that is, speeds greater than 24Mbps) will be sufficient for business needs, and on the wider regulatory and competition environment for different types of network build. This is echoed in varying degrees in those publications that have polled SMEs on their concerns and experiences, including in work from the Federation for Small Businesses, the Forum of Private Business and the Institute of Directors.

On the potential of the internet economy and SME use of technology, there are a number of areas highlighted. Firstly, there appears to be consensus that technology offers SMEs many ways to boost their performance. However, in realising these benefits there are a number of solutions offered up. SQW apportions realisation of benefits to be dependent on managerial culture and skills, but – as our research later shows – this is but part of the bigger picture. Initial findings from Plymouth University and BT on the impact of Superfast Cornwall on SMEs concluded that the adoption of new applications are mostly related to the SME culture and a desire to grow. When one takes this on board alongside insights from Lloyds

[71] http://www.superfastcornwall.org/about-sfc/research-innovation/superfastimpact

[72] http://www.fpb.org/news/2592/New_study_reveals_many_small_businesses_still_unaware_of_impending_RTI_changes.htm

[73] http://www.talktalkbusiness.co.uk/industry-insight/white-paper-listing/geared-for-growth/

Banking Group and Booz & Co on digital maturity and skills provision, we can see that those more progressive 'shooting stars' will continue to be well placed, but that lower maturity and lower skilled SMEs are at great risk of being further left behind.

The lessons from previous research

In recent months we have seen a growing level of analysis on the economic case for getting SMEs online and how they can harness the benefits, as reflected by multiple pieces of work including BT's Superfast Cornwall studies and the joint work by the Federation of Small Businesses and techUK.

We welcome these research pieces in aiding understanding of the potential of the internet economy and use of technology for UK SMEs, but we believe that more can be added to the depth of understanding at the level of the SME. We believe, therefore, that there is a significant gap in current research and analysis, as follows:

1. What are SMEs actually doing with their broadband connection, and why?
2. What are SME perceptions towards taking up or not taking up certain broadband enabled benefits, and why?

In the next section, the BSG shares new research which represents a fresh attempt to better understand the underlying perceptions and motivations for SMEs to do more with their broadband connectivity, looking across the urban-rural divide and across those who are have higher and lower digital maturity.

6. Listening to SMEs

In order to better understand what SMEs are doing online and why, the BSG undertook a number of deep-dive interviews with 16 SMEs in summer 2013. The objective of this research was two-fold, and aimed to:

1. Gain further understanding on what SMEs are or are not doing with their broadband connection; and
2. Gain insight on the *perceptions* of the benefits of broadband-enabled uses and applications, and their place as part of day to day and future business operations.

In looking at these two areas, the BSG aimed to provide new evidence to inform the debate where to date there has been somewhat of a gap.

Methodology

We conducted deep-dive interviews with 16 SMEs, sourced across two parameters. Firstly, we wanted to look at how **low versus high digital maturity firms** (as detailed in Section 3) differed in their approach to broadband-enabled applications. Secondly, we wanted to look **across the urban-rural divide**, and see if there were significant differences in SME approach. In selecting the areas for consideration, we wanted to ensure that there was high minimum broadband availability in the areas chose (greater than 24 Mbps service availability) so that we could evaluate use and uptake increase where superfast services are avaiable. Accordingly, we picked the two locations of Rural North Yorkshire and central Newcastle as two areas which fulfilled these criteria (see figures 8 & 9 for further detail).

Figure 8 – Broadband in Rural North Yorkshire

Rural North Yorkshire is the home of Superfast North Yorkshire, an initiative to bring 90% of homes and businesses access to superfast broadband with speeds of up to 80Mbps. Superfast North Yorkshire was created in July 2012 following the signing of the contract between North Yorkshire County Council and BT, which has FTTC broadband investment in the county expected to reach around £70 million. Ainderby Steeple was the home of the first superfast switch on in December 2012, and home to two of the SMEs interviewed as part of this research.

North Yorkshire is the first county in the UK successfully to deploy Broadband Delivery UK (BDUK) funds. The Superfast North Yorkshire project is also part financed by the European Regional Development Fund Programme which has built in to its contract a number of SME business support initiatives, with substantial liaison and outreach with local businesses conducted by BE Group. This includes the provision of 12 hours support to 1050 businesses, and to measure the performance of 2100 businesses to evidence £26m increase in GVA.

www.superfastnorthyorkshire.com

Figure 9 – Broadband in Newcastle

Newcastle City Council has been a beneficiary of the BDUK Rural Programme and is one of the 22 Super Connected Cities. Newcastle City Council has also commissioned a business support programme funded by ERDF and will offer a programme of events, beginning in February 2014, to raise the awareness to businesses of the benefits of NGA broadband. The 'Go Digital Newcastle' brand brings these funding streams together.

However, given the dense and urban nature of the city, there were pockets of superfast connectivity where there had been a prior strong commercial case for network investment. It was in these parts of the city where we spoke to SMEs as part of this work in summer 2013, and we were able to survey reactions to take up and use of those packages to date.

Newcastle, at the heart of the North East of England, was also home to the launch of Go ON UK's digitalskills.com in September 2013, and has pledged to reduce the number of people in the North East's without basic digital skills by 25%. Newcastle has also benefitted from the rollout of 4G mobile services, and at the time of this study EE had gone live with 4G products.

The research followed a "2x2 matrix" approach to sourcing the SMEs, identifying 4 SMEs which fell into each of the four categories as detailed in Figure 10, below[74].

	Lower digital maturity	Higher digital maturity
Rural North Yorkshire	*Group 1* *(4 SMEs)*	*Group 2* *(4 SMEs)*
Newcastle	*Group 3* *(4 SMEs)*	*Group 4* *(4 SMEs)*

Figure 10: The 2x2 matrix approach to SME sampling

The Interviews

The deep-dive interviews were based on a semi-structured questionnaire conducted face to face with an appointed 'key business decision-maker' and lasting 1-2 hours per business. This was complemented by follow up data requests where further analysis was required. The questionnaire was composed of five sections[75]:

1. Broadband products currently used and paid for
2. Views on upgrading and contract review
3. Current, previous and future use of broadband
4. Application use and perceived benefits
5. Role of connectivity in future plans for growth

A cross cutting theme to the questions was the route by which the small and medium sized business got information that underpinned their current choices on broadband package, and the applications enabled by their connectivity. We also wanted to understand the role of different technologies in the business's connectivity set-up, looking across fixed and

[74] Half of the SMEs were surveyed were sourced through cold calling the firms, and half were sourced through intermediary bodies including local authorities, business support companies and other organisations. We are grateful to the relevant local authorities, BE Group, LEPs and techUK for assisting us in sourcing these SMEs.
[75] see Appendix A for the full interview questions

mobile products, and also enquiring whether the advent of 4G products would have an effect on the business. In order to allow the participants to be fully open and candid regarding their business operations, we agreed that the results of the interviews would be anonymised.

The SMEs interviewed represented a spread across the 2x2 matrix in terms of size, age and sector focus. SMEs interviewed ranged from a tourism distribution company, a photography company, a PR company, an engineering firm, a health data company, and an IT software and services provider, amongst others. Figure 12 details the SMEs involved in the study (with an allocated number identifier used in the following results and analysis).

As Figure 11 demonstrates, the sample of SMEs captured a breadth and range of SMEs from the sole trader and micro firm, through to medium sized companies.

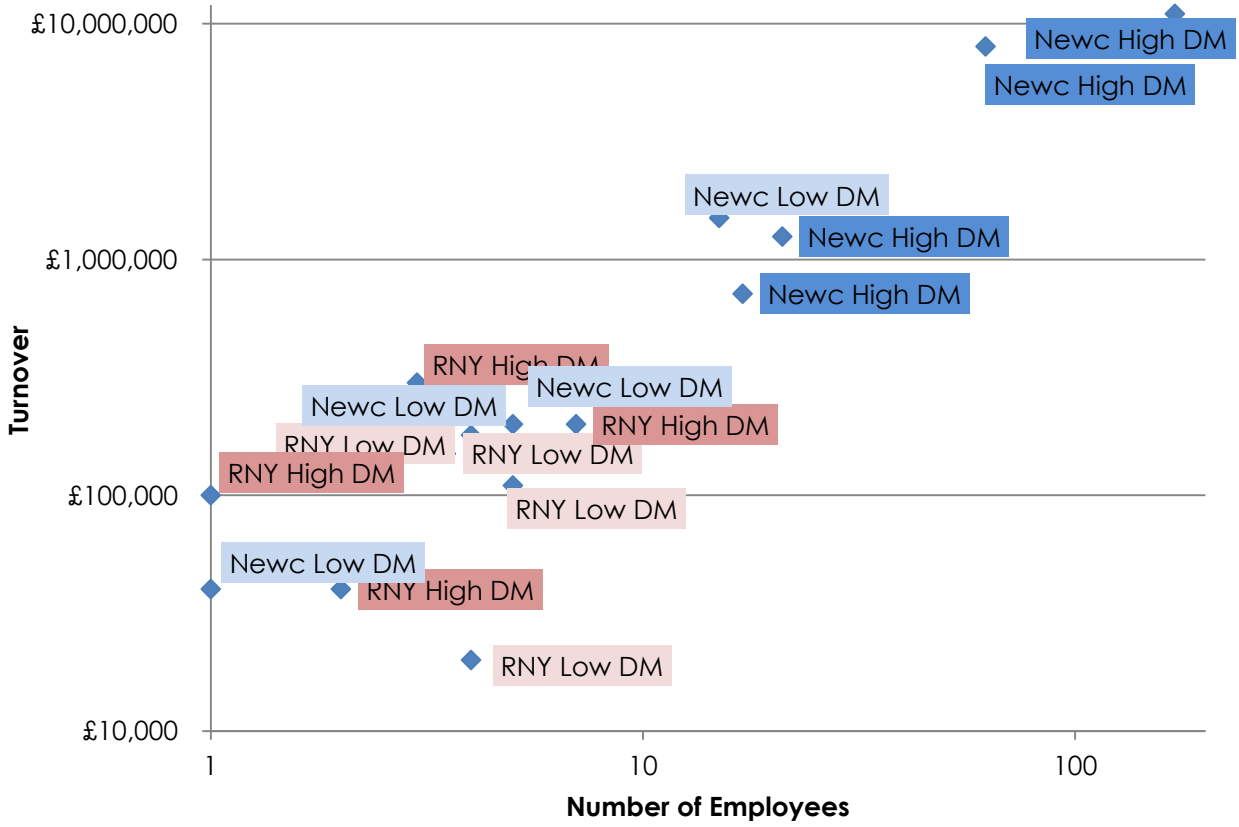


Figure 11 – Graph showing spread of sourced SMEs by size and turnover[76]

Rather than attempting to show a correlative pattern, Figure 11 aims to show visually the range of SMEs that were interviewed. Whilst it does appear that that there is a strong correlation between size and digital maturity in the Newcastle group (a relationship almost absent from the rural group), the sample size is too small to make such conclusions and the value of this data is in its pairing with the qualitative results laid out in this chapter.

[76] Newc = Newcastle. RNY = Rural North Yorkshire. Note that the axes of this graph use a logarithmic scale for presentational purposes.

	Company #	Size	Turnover p.a.	Company formed	Sector	Further detail
Group 1 Rural North Yorkshire, Low Digital Maturity	#1	Micro - 3 FT, 1 PT	£150,000	2011	Drinks Production	Brewery producing wholesale barrels principally in the North East, predicting 50% growth per year for next few years.
	#2	Micro - 5 FT	£110,000	1999	Tourism	Leaflet distribution company working with tourist attractions in the North East.
	#3	Micro - 4 FT	Not supplied	2005	Business Facilities	High-end office space in the grounds of an estate. A superfast connection allowed them to attract businesses where they had been struggling. House accountants, architects, events imports and more.
	#4	Micro - 4 PT, consultant model	Not supplied	2010	Consultancy	Business support tailored to improve sales, profit and all aspects of business. Unique in that they rely on networks and have fairly low digital presence themselves.
Group 2 Rural North Yorkshire High Digital Maturity	#5	Sole Trader	£100,000	2009	Photographer	Weddings, commercial and PR photography.
	#6	Micro - 2 PT	£40,000	2012	Event services	Newly founded start up focusing on wedding and other total event management packages. Smallest of SMEs that we spoke to.
	#7	Micro - 5 FT with 3 associates	£200,000	2009	IT and creative	A web & creative agency. The co-founder also played a major role in getting a superfast connection into the estate office space he works in.
	#8	Micro – 4 FT	£180,000	1992	Design / Marketing	Print and online marketing solutions provider for the business conferencing and exhibitions industry.
Group 3 Newcastle Low Digital Maturity	#9	Micro - 3 FT, 1 PT	£200,000	1998	PR / Marketing	Marketing and PR services, including a focus on the construction industry. Hit by the recession, and main business focus is on survival.
	#10	Small – 15 FT	£1,500,000	1983	Engineering	Fuel injection specialists with international client base.
	#11	Sole Trader	Not supplied	2012	Education / IT	Education solutions provider – significant international sales through UKTI.
	#12	Micro – 5 FT	£200,000	2006	Retail	Hairdressing salon based in North Newcastle.
Group 4 Newcastle High Digital Maturity	#13	Small - 17 FT (with 2 based remotely)	£715,000	2005	Education	Software provider for the education sector. Looking to surpass £1m mark - their products help schools and colleges with financial transparency.
	#14	Small - 21 FT (with 2 based remotely)	£1,250,000	2000	IT	IT consultancy and support service. 3 offices and now at a steady size.
	#15	Medium - 170 FT with 50 working remotely	£11,000,000	1984	IT	Software and IT solutions for the housing industry. Largest of the businesses spoken to.
	#16	Medium - 62 FT	£8,000,000	2009	Health	Application providers of evidence-based health informatics to NHS bodies. A university spin out.

Figure 12 – Overview of SMEs interviewed in research

The Results

We have structured the results from this research around the following areas:

- Current uses of broadband
- Perceived benefits of various uses and application types
- Anticipated business growth, and role of broadband
- External sources of help and advice
- Related issues including skills, security and infrastructure upgrades

Current uses of broadband

Figure 13 details the exploitation levels of broadband-enabled uses (as identified in section 3) and the headline findings are as follows:

- Firstly, the use of Voice over Internet Protocol (**VoIP**) for the delivery of voice communications and multimedia sessions over Internet was **not utilised by seven out of eight 'low digital maturity' SMEs**, which applied across the urban-rural divide.

- All **high digital maturity firms in Newcastle demonstrated very high exploitation of benefits across email, VoIP, web functionality, online advertising and social media**.

- Whilst the rural high digital maturity SMEs did not exploit as well as urban firms in these areas, **rural SMEs were on a par with their urban counterparts on electronic delivery of services, cloud computing, customer relationship management and supplier relationship management**.

- **Online transactions were unused by any of the low digital maturity firms** spoken to, and notably also mostly unused by the sample of rural high digital maturity companies.

- **Applications which involve communications and reaching out through digital** (such as social media and web advertising) **could be exploited more by lower maturity SMEs across the urban-rural divide**.

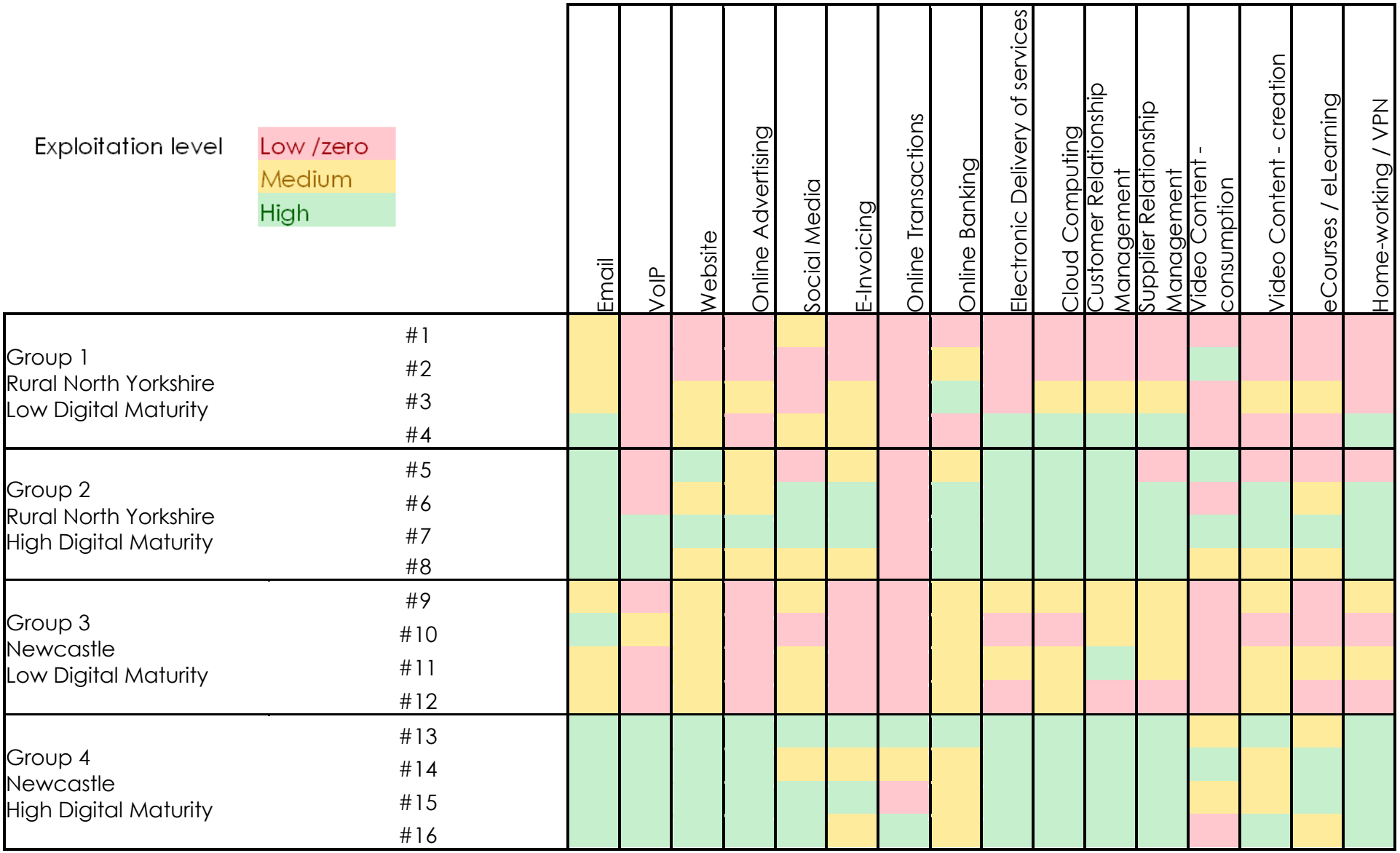
- **Applications which involve productivity efficiencies** (such home working and VPN) **were well used by high digital maturity firms** across the urban-rural divide.

- **Lower digital maturity firms perform less well on conducting business online** (such as through online transaction, web-based purchasing)

- **Lastly, viewing video content as part of day to day operations was absent from all urban low digital maturity SMEs**.

The following sections draw out a range of insights and perceptions from SMEs interviewed on their attitudes to various application uses and perceived benefits.

Figure 13 – Overview of broadband-enabled uses and exploitation level by SME



Insights on perceived benefits of various uses and application types

Websites

All SMEs interviewed had a website in some form, with two of the lower maturity SMEs having the most basic functionality. Unsurprisingly, higher maturity SMEs had an advanced set up of their website operations. Newcastle SMEs were on the whole more ambitious than their rural counterparts. Several low digital maturity SMEs did not see their website as an integrated part of their wider business operations, and saw it more as a 'static shop window' rather than a more dynamic business generator. In several of these instances they believed that their customers would not benefit from an improved website.

	Low Digital Maturity	High Digital Maturity
Rural North Yorkshire	"Solely for information – it's fit for purpose" (#1) "I suppose our website could do with a refresh – but **I don't want any gimmicks. It's not going to get us business** – that's not how our customers work" (#2)	"As a new company **its essential that we get the website right**. I want to keep it simple yet effective" (#6)
Newcastle	"We got advised to change our website in 2008 – I feel we lost our personality and unique aspects in what were suggested. **If time and money permitted it would be good to revamp** it again" (#9) "We use our broadband package to host our email and website – it's all in one place" (#10)	"**We want to go further** – we are planning to separate our corporate site and eTransactions portal" (#16) "We use the web site as communication channel to current and future customers. **It's all driven from a marketing angle**." (#16)

Social media and online advertising

There was a clear divide between low and high digital maturity SMEs on those which saw benefits in social media and online advertising. The majority of low maturity SMEs saw no or very few benefits through these channels, and were unable to see how it could be a driver of new or renewed business.

	Low Digital Maturity	High Digital Maturity
Rural North Yorkshire	"I guess using Facebook has replaced traditional media – I have got a bit of interest when I've run the odd competition for a beer festival. **I wouldn't pay for it** though." (#1) "I use it to keep an eye on our competitors but find it frivolous and don't think it's for us. **Will never get us business**." (#2)	"I don't want to pay for SEO and ads – **I can do this better myself** and the only cost is my time" (#6) "Social media has to happen because it would be odd if we weren't there – is **never going to get us new business though**" (#7)
Newcastle	"Online advertising **isn't relevant to us because of the way we've always won work.** I do tweet but I think that's because everyone else does these days" (#9) "All **our clients are about the old boys' network** – not much point of social media for us." (#10)	"Did an SEO campaign a year ago - Using **better tags and metadata was hugely effective** with knock on affect for sales" (#16)

eInvoicing, web-based transactions, online banking

The majority of high digital maturity SMEs interview saw benefits in various elements of the financial life of the business being conducted online. Lower maturity SMEs were very cautious on the whole, citing reasons which included difficulty in implementing alongside current processes, the behaviour of customers and security as major concerns. This cut across the rural-urban divide.

	Low Digital Maturity	High Digital Maturity
Rural North Yorkshire	"I looked into selling online to general public but **I would need to change our working model in a way that would not be beneficial**" (#1) "**Paper invoices work best for my customers**" (#1) "I'm dubious about payments online – I **don't want that information flying around**" (#2)	"Am getting **PayPal up on our new site – it's been great on my previous ventures and I'll use again**" (#6)
Newcastle	"**We can't sell on the website – that's not how our business works.** It's about looking at the problem and giving an estimate." (#10) "When we changed our accounting software **we moved over to emailing invoices – our customers like that**" (#10)	"We will continue to use PayPal – it's trusted and secure" (#16) "Our finance team are probably behind the curve on this – **they still do paper invoices**" (#16) "I'd love to do online transactions – **it's our clients in local authorities that can't handle it!**" (#13)

Cloud computing & VPN

Cloud computing and solutions which enable remote working were broadly well utilised across the high digital maturity SMEs. A number of lower digital maturity SMEs were beginning to experiment with cloud based file storage, in multiple cases on the recommendation of clients and their immediate network.

	Low Digital Maturity	High Digital Maturity
Rural North Yorkshire	"Not considered anything like that – **we just save it all on our own computers and email it if we need to share it**" (#2) "A number of our tenants are using Google Drive as default" (#3)	"I love doing everything on GoogleDocs – **it's all on there, we both update everything on the go**" (#6) "One remote worker had real difficulty accessing our CRM and cloud storage before he got superfast – his ability to work has now changed dramatically" (#7)
Newcastle	"**We started using DropBox as a client suggested it** – it's great." (#9) "Using online storage is great – we got burgled a view years ago **and losing everything on the server was incredibly disruptive**" (#9)	"**VPN is critical.** Every day we have a large number of customer sites that their employees will need to access without fail." (#15) "Cloud services will be a key part of our business offering. More clients want us to design SaaS solutions" (#14) "**Great that the receptionist can work from home on the VoIP and VPN** – great flexibility" (#14)

Anticipated business growth, and role of broadband

Part of the interview involved asking the SMEs about their perceptions of growth, and if they felt broadband connectivity had a part to play. For just over half of the participants, the outlook was bright. Of the 16 SMEs interviewed, nine of the 16 predicted growth over the next three years. All four high digital maturity firms in Newcastle predicted growth, two of which saw an upgrade to their broadband connection as essential to that growth and future operations.

However, seven of the 16 SMEs were not growth-oriented, believing they would keep steady or shrink in the following year. Five of the eight low digital maturity companies said that their main focus was on keeping turnover constant (i.e. not on growth), and two of those firms used the phrase 'surviving'.

The table below provide key quotes from the case studies, illustrating the role interviews saw connectivity playing in their future business growth:

	Low Digital Maturity	High Digital Maturity
Rural North Yorkshire	"**Want to grow 50% each year** for next few years, am already on track" (#1)	"Our client base has grown and will continue to grow because people are getting faster connections and want to make the most of what that brings – that's great for a company like us where **we want people to move from print to digital**" (#8)
Newcastle	"We **just want to survive**" (#9) "Keeping up with the technology we are servicing is the main challenge – we are **pretty steady** in terms of size" (#10)	"The **Big Data movement represents a fantastic opportunity** for us. Although we don't believe that the bandwidth needed will be that much more" (#16) "I want **1 million parents using schools' portals to our products – their connection and digital skills is a key part** of that" (#13)

External sources of information

We also asked the SMEs where they currently get help and advice on what they could do with technology and their broadband connection. The high digital maturity companies were on the whole very confident on their sources of information, and those SMEs that were larger in size believed their organisational structure meant they could assess any new opportunities available. The lower digital maturity SMEs were less unified in their responses and felt they were constrained by time and resource in seeking out advice on how to assess the benefits of being online. Select quotes are as follows:

	Low Digital Maturity	High Digital Maturity
Rural North Yorkshire	"I'm working **with Sheffield Hallam University on getting some techie students** to sort out my processes as a project" (#1) "I'm going along to the **Business Centre sessions on social media and keep an eye on what's happening** if I have the time" (#1)	"**A business support class wouldn't help me** – getting customers is the problem" (#6)
Newcastle	"I **always look at the Chambers Mag** to see where I can develop new knowledge and new contacts. If the council ran a social media session I would go – but principally just to make contacts" (#9) "I **just ask our IT contractor** for advice – I wouldn't think of asking anyone else for help" (#10) "**Support from UKTI has been indescribably crucial** for helping me access new international markets. I cannot praise my liaison person there highly enough and I'll continue working with them." (#11)	"**Best thing government can do to help is start taking seriously the advice that businesses like us offer**" (#13)

Other insights

There were a number of related issues that arose in the course of the interviews, particularly on skills, security and infrastructure upgrades. One area of recurring interest was the rollout of 4G services as beneficial particularly for high digital maturity firms with employees which regularly work remotely. Some instructive quotes on these areas have been drawn out in the following table.

	Low Digital Maturity	High Digital Maturity
Rural North Yorkshire	"I expect all staff to come with good skills in IT – I've been burnt in the past" (#1) "One user got a virus and everyone was affected – I wish we'd thought further about security of many users downloading on a line like that" (#3)	
Newcastle	"Some of the businesses we work with in Northumberland have real problems with their internet connection" (#9) "**I've tried doing courses on Coursera which has helped me understand new areas for my business**" (#11) "If there was **a way that the council could help me get something better in my business I would certainly check it out**" (#12)	"Concerned that future government **legislation on data management and how broadband carries that data will effect our ability to process and provide services**" (#16) "**4G will be of huge benefit to our remote workers** – we are testing but I have high hopes" (#15) "Graduates aren't coming out with the skills levels we need them to have **– I'd rather employ the 15 year old geek** on their PC" (#16)

Conclusions from research

On the whole, where SMEs were ranked as low digital maturity, it was not clear to key business decision makers where doing more online would be beneficial for their business. There is clear importance placed on selling the benefits of broadband-enabled uses and understanding the cost and time burdens. These were a key area for SMEs in aiding decision-making on exploitation of benefits and on whether or not to implement a new use or applications in that business.

There was a recurring opinion amongst lower digital maturity SMEs that their customer base had no need or desire for them to do more with their digital capability. In several cases, this was in spite of more successful competitors often adopting more online-based applications than their own business. This point was illuminated by a tourism promotion company that saw no role for social media and online advertising in their activities, despite the adoption of these areas by direct competitors which had grown in previous years where they had been in decline.

In multiple cases, this reluctance to adopt broadband-enabled applications was underpinned by fears of time burden and disruptive impact on current and established internal processes that the deployment of new applications would bring. There was a strong degree of interest in how the role of mobile broadband was becoming transformative for remote workers, particularly for people in sales roles, where the benefits were understood but had previously been unavailable for exploitation due to previous infrastructure limits. This is particularly pertinent for the rollout of 4G and had resonance with all high digital maturity firms that were interviewed in Newcastle.

There were a number of cases where a particular application was not relevant for that SME, and understanding that relevance could go some way in helping add nuance to statistics such as "X% do Y online". Whilst these statistics are useful, they do not always tell the story from the perspective of the firm, both in terms of non-adoption and in the degrees of more sophisticated exploitation.

Across the board, where new uses and applications had been taken up, the SME decision maker had a clear understanding of its benefits after sustained adoption. However, there was often a mix of views on 'the benefits sold themselves' beforehand to 'it was a leap of faith'. Key to this point is the mixture of formal and informal pathways by which SMEs receive their information on the benefits of adopting a new broadband-enabled application, and their key role in affecting business decisions, an issue that we will cover in Section 7.

7. On benefits, uses and pathways

The relationship between perceived benefits and actual use of broadband-enabled applications was significant for SMEs in doing more online. The key driver to this was the pathways through which the SME received or asked for information on those benefits.

A major component here is that those who have chosen to adopt a certain application or use and integrate that into their business operations have had better information about that application from their networks. In some instances this was described as 'a no-brainer', and in others it was 'a leap of faith'.

We shared the findings of our research in a half day workshop with nearly 50 key individuals from across government and industry in November 2013. The aim of the workshop was to understand what various stakeholders were doing that would have an impact on SMEs similar to the ones interviewed, and to facilitate an environment in which different initiatives could learn from each other.

As borne out by our research and the insights of workshop participants, the pathways that affect SMEs decisions to take up various business benefits are diverse and vary from SME to SME. These can range from customers to supply chains, to the role of both central and local government initiatives, to wider networks and organisations such as local chambers of commerce and the Federation for Small Businesses, as illustrated in Figure 14.

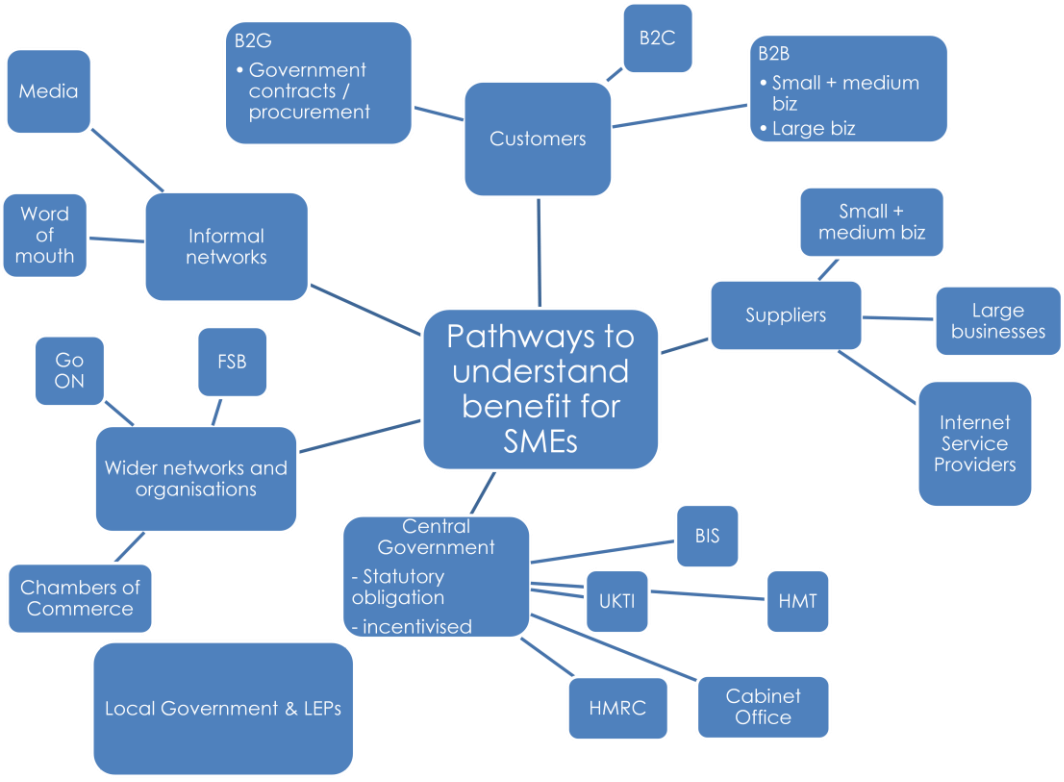


Figure 14 – Overview of pathways by which SMEs understand benefits of broadband-enabled uses

In line with developing this understanding of multiple pathways, we used the findings from BSG research to introduce a model by which policy-makers and industry can understand how SMEs achieve an 'adoption tipping point' to realising business benefits from doing more online (Figure 15). Taken as a group, these external pathways are messengers of the perceived benefits and perceived ease of use on a particular use and associated application. These messages affect the SME's attitude towards use, and in turn their behavioural intention to use. It is the latter here which is the final trigger for actual sustained use and adoption.

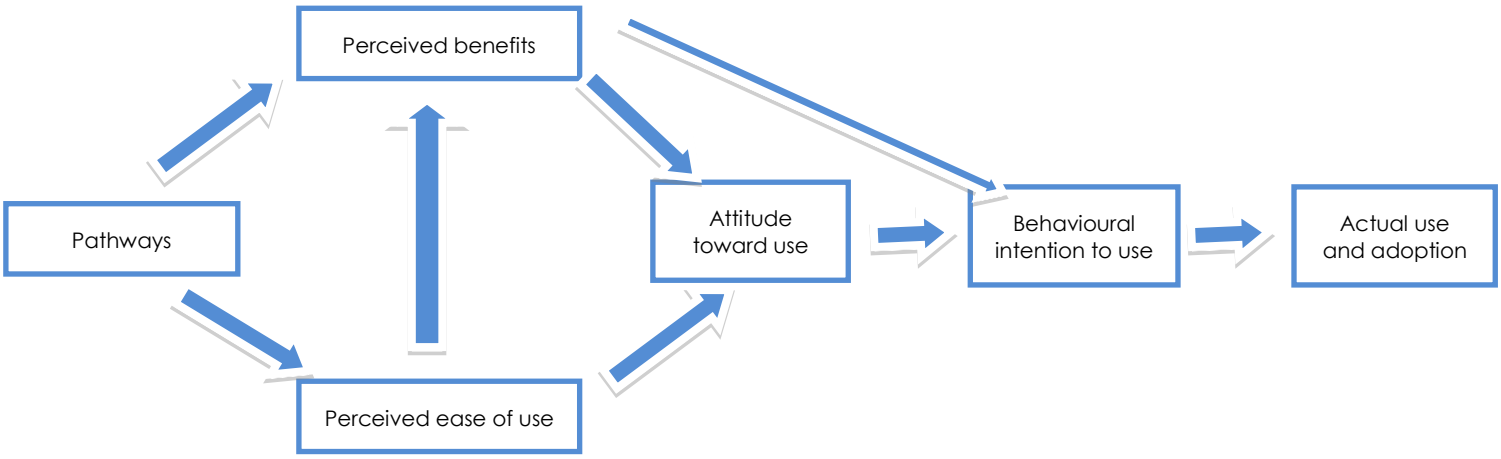


Figure 15 – Route to adoption of new broadband-enabled applications

Throughout this report we have raised the importance of understanding the applicability of benefits from the level of the SME in their specific business context. Running alongside this is the catalytic role of pathways in actual use and adoption. If pathways can better tailor their messaging on benefits to the specific context of an SME, therefore, there are significant gains to be made.

Taken together, these two insights build up a picture of 'network effects' for SMEs, as where more businesses see the benefit, so in turn pathways relay better information and have an effect on the wider environment for use and adoption across the SME community. This is a difficult area to evidence, but it plays strongly to established theories on network externalities and business theory. There may be cause to argue that, given the divergence in digital maturity in the UK, these network effects are not happening as quickly as they need to in order to assist the performance of those performing less well, and that there is a case for accelerating informational dissemination in order to keep a globally competitive UK SME population.

Some argue that 'shooting stars' will always be the early adopters and innovators, and therefore not applicable for targeted intervention, and similarly that the 'deliberately disconnected' will always be harder to shift in their behaviours. Accordingly it may be argued that targeting any coordinated action from various pathways on the 'middle 51%' (see Figure 16) has the most potential to see substantial returns from broadband-enabled benefits.

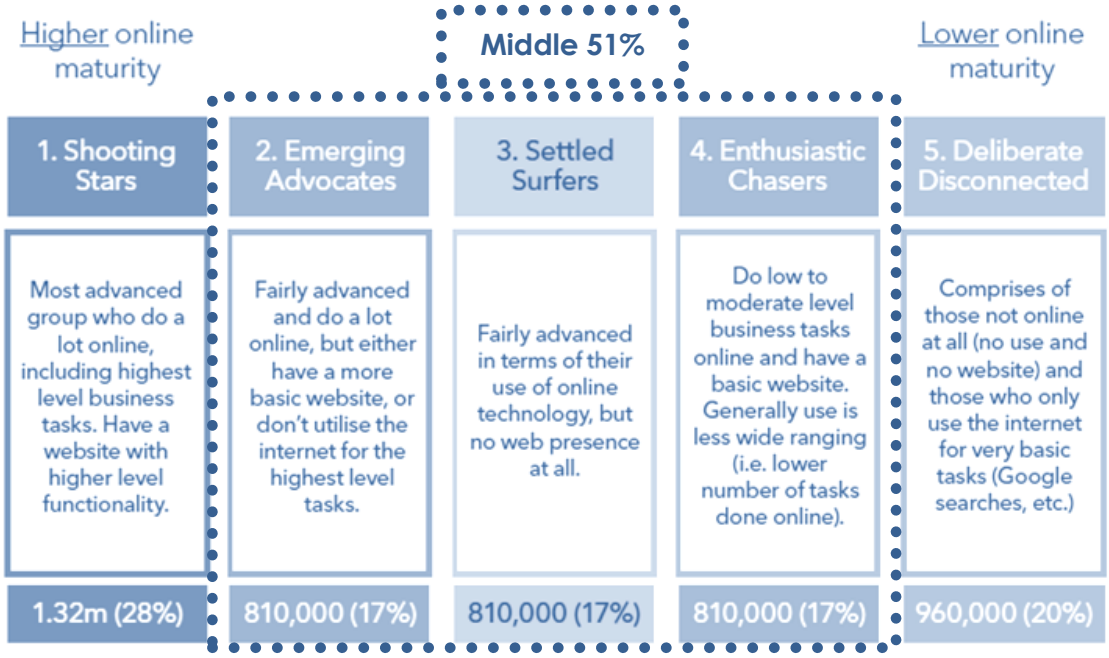


Figure 16 – The middle 51% Source: adapted from Lloyds Banking Group

Drawing on wider research and the findings from BSG research, this section has made the case for a comprehensive understanding of three complex and interconnected themes – pathways, adoption routes and network effects – as crucial for finding new solutions on how to accelerate adoption of broadband-enabled applications. Through richer insight of these three areas, policy-makers, industry and others can develop new ways in which the benefits of broadband can be realised right across the UK's SMEs.

In the next and final section, conclusions will be drawn which hope to improve the evidence base which can inform this richer insight, before turning to a number of policy recommendations.

8. Conclusions

Helping SMEs do more with their broadband connectivity represents a huge opportunity for the UK. Broadband-enabled applications and uses have the potential to pervade every level of business operations to positive effect, and yet even where advanced digital infrastructure exists there can be a significant lag in the taking up of those benefits from some SMEs. Non-infrastructure factors are as crucial as infrastructure in understanding how to help SMEs exploit the benefits of increased broadband connectivity. Although the general perception that addressing infrastructure issues is a costly and time-consuming policy challenge is true, understanding and changing behaviour and attitudes of individuals and businesses is arguably even more difficult to address. As such it is imperative to understand the issue as fully as possible and ensure the public and private sector is as aligned as possible in addressing the important issues of take-up and exploitation of broadband and connectivity. Our conclusions and recommendations are set out with this in mind.

In this report, we have brought together a range of insights from recent research and policy initiatives and identified a significant gap in understanding about what SMEs are doing online and why, and the importance of understanding perceptions at the level of the SME itself.

Our in-depth interviews – with 16 SMEs at different ends of digital maturity – show that there can be no single answer to getting SMEs doing more with their broadband connectivity. Instead, tailored approaches across benefits, sector, location and more are needed to help businesses understand the commercial opportunities afforded by adopting potentially disruptive applications, particularly when competing against the time and resource constraints in the smaller business environment. Understanding the 'benefit sell' at the level of the SME is crucial not just for those selling broadband-enabled products and services, but for policy-makers too. As detailed in Section 7, it is through a more nuanced understanding of pathways, adoption routes and network effects that will enable our local and national policy makers to aid our SME base and improve take-up and exploitation rates.

The BSG now makes five recommendations that we believe will help inform how to ensure SMEs are exploiting the benefits of broadband-enabled uses. Recommendations one to three are focussed on improving the evidence base to inform continued analysis in this area. Recommendations four and five are targeted at the current opportunities afforded by delivery on the ground of BDUK projects and other government policy, and the time is ripe to capitalise on these potential gains for SMEs. The recommendations are as follows:

1. **Government should expand the evidence base on SME broadband use.**

Firstly, there is scope to **expand the evidence base via the biannual Small Business Survey[77] conducted by the Department of Business, Innovation and Skills**. The 2012 survey covered basic questions on whether a business has broadband, pays taxes online, has a website and sells through a website. We believe the Department for Business, Innovation and Skills should amend areas of its 2014 survey to incorporate further questions on what SMEs are doing online and why, and how this corresponds to aspirations for growth. We believe that this list of current uses can be populated further to incorporate more sophisticated uses of broadband for financial activities, social media and online advertising, use of cloud computing, online training, video conferencing and other areas covered in the course of this report. Similarly, we believe further questions can be added to survey how SMEs perceive broadband-enabled benefits as part of their broader plans for growth, and should be a dimension to most questions on small business activity including innovation, exporting and interactions with government. The survey should also give consideration to how increased mobile broadband connectivity is helping a growing number of SMEs, particularly as tablet and smart phone use can alter the way businesses operate.

2. **Policy makers should have access to better information on how to persuade SMEs of the benefits of being active online.**

Given the growing number of case studies of business benefit (as highlighted in our workshop with senior figures in November 2013) we believe that **an online platform detailing case studies of effective SME engagement would be useful for policy makers and wider stakeholders**. The BSG is looking to facilitate such a platform, and is currently assessing viability with a number of organisations such as GO On UK.

3. **Industry and Government need to better understand the requirements of SMEs for broadband in terms of bandwidth and other characteristics.**

Improved evidence on what SMEs are doing online and why will aid policy-makers in understanding current demand. Nonetheless, given the structural lag in digital maturity, we may also wish to assess what future and fully-utilised demand for SMEs might be. We believe that there is **scope to better understand requirements of SMEs for broadband in terms of bandwidth and other characteristics** (both now and for the future for both fixed and mobile broadband connectivity). This is an area which the BSG will develop as part of its 2014 work programme and as an input to the government's Digital Communications Infrastructure Strategy.

[77] Note that the Small Business Survey covers businesses up to 250 employees and so includes medium-sized businesses

4. **The Department for Culture, Media and Sport should strengthen central resource within Broadband Delivery UK to assist local authorities with demand stimulation activity.**

Currently local authorities are responsible for the stimulation components of their BDUK funding, but it is imperative that this is perceived as being equally important as the physical delivery of infrastructure on the ground given the nature of these large scale projects. The delivery on the ground of these new networks presents a unique opportunity for selling the benefits to SMEs, and there are positive lessons to be learnt from more advanced projects such as Superfast North Yorkshire and Superfast Cornwall. Whilst of course local authorities have an obvious motivation in ensuring take-up and use of broadband is positive, we believe that strengthening the central resource and advice given by DCMS and BDUK will help convert the substantial investment made by public and private sector in to economic returns for SMEs as key drivers of the UK economy.

5. **Government should look to drive SME usage and uptake through its engagement with SMEs via government services and transactions.**

Finally, we believe that there is **an opportunity for government itself to act as a driver for increasing uptake through its public services for SMEs across a range of departments**, as has been acknowledged in the work of the Government Digital Service (GDS). Departments outside of DCMS, BIS and GDS also have a role to play in stimulating the online activities of SMEs in a positive way. Whether it be statutory obligations such as RTE Pay-As-You-Earn submissions through the HMRC portal, or incentivised transactions such as money off for submitting VAT returns online, the range of ways that SMEs interact with government can be thought of as having the potential to increase what they are doing online. Design and usability is a key consideration here, and we look forward to the forthcoming Digital Inclusion Strategy from the Cabinet office in seeing its recommendations for SME interaction with government. To assist in furthering this area the BSG is pleased to continue to provide a neutral and informed environment to support this debate in 2014.

We hope that this report is a useful addition to research and analysis on SMEs and connectivity, and in doing so the BSG hopes to make a contribution towards the wider debate about helping UK Plc to unlock the significant economic potential that comes with improved national digital infrastructure.

Annex: Interview structure

The following questions constituted the 1-2 hour semi-structured interview with 16 small or medium sized businesses by the Broadband Stakeholder Group over July and August 2013.

Introductory section

- Can you give us a brief description of your business?
- What sector would you consider yourself to work in?
- How many employees does the business currently employ?
- What is your annual turnover?
- How long has your company existed?

A. *What products do you currently use/pay for?*

- Please outline the broadband service you have (including monthly cost, provider, speed and other qualities/components of the product)
- Why do you have/did you choose this product?
- When did you last upgrade/review your chosen broadband product?
- What role does mobile and mobile broadband play as part of this mix?

B. *Current use of broadband*

- What do you think your main uses of broadband are?
- How does this compare with 1 year/5 year/10 years ago?
- How do you anticipate your use changing within 1 year/5 years/10 years?
- Do you know how much bandwidth you consume overall/at peak times or what your monthly data use is?
- Do you know/what are your most bandwidth-intensive uses?
- Do you experience any connection/bandwidth limitation uses?
- Do you think your connection type is sufficient for future use ambitions/needs?

C. *Upgrade decisions*

- Have you upgraded or changed provider recently or not? Outline reason for changing/upgrading or not doing so/exploring so. Did you have recourse to any business support/resources in making upgrade decisions?
- If you have upgraded please outline what you do now that you didn't before and what benefits this has resulted in
- Do you make use of the following online applications and services? If not, please explain why and offer a view as to whether this is because you believe your broadband connection will not support such an application or other reason as to why you would not use it:

Email	Cloud computing	E-invoicing
Website	Banking	Electronic delivery of services
Online transactions	Supplier relationship management	Video Conferencing
Online advertising	Video content (creation or consumption)	Home working
Social media	E-courses/ e-learning	VPN

D. *Broadband/connectivity and your business model/plans for growth*

- What are your ambitions for the future of your business?
- What role do you see broadband and the internet playing in the future of your business?
- How do different parts of your business use broadband and online services differently? Who are the biggest users and why?
- Which parts of the business use broadband and online services most effectively and which less so? Why do those that use it more do so?
- What do you think are the opportunities for use of broadband and technology in building/operating your business?
- What are the main barriers to securing these opportunities and benefits?
- What help/support do you think your business needs to take up those opportunities?

About the Broadband Stakeholder Group

The Broadband Stakeholder Group (BSG) is the UK government's leading advisory group on broadband.

It provides a neutral forum for organisations across the converging broadband value-chain to discuss and resolve key policy, regulatory and commercial issues, with the ultimate aim of helping to create a strong and competitive UK knowledge economy.

The BSG's network includes telecoms operators, manufacturers, investors, ISPs, mobile network operators, broadcasters, new media companies, content producers and rights holders, as well as central and local government, devolved administrations, Ofcom and others.

The BSG is based in the offices of techUK, the trade body for the ICT, telecommunications and electronics industry.

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