ENDERS ANALYSIS

DIGITAL UK 2015

A report in collaboration with EY Building a better working world
Enders Analysis
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Enders Analysis is a research and advisory firm based in London, specialising in the media, entertainment, mobile and fixed telecoms industries in Europe, with a special focus on new technologies and media. Enders Analysis supplies its subscribers with over 100 reports annually and clients with bespoke projects. For more information see www.endersanalysis.com or contact info@endersanalysis.com.

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EY is a global leader in assurance, tax, transaction and advisory services. E&Y’s Global Media & Entertainment Centre brings together a high-performance worldwide team of media and entertainment professionals with deep technical experience in providing these services.

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Executive summary

This Digital UK 2015 report is a collaborative effort by research partners Enders Analysis and EY. Encapsulating materials in the public domain and proprietary to the partners, it sets out to demonstrate the vibrancy of the UK’s digital economy and its potential for growth:

- 45 million adults use fixed-line broadband and 45 million adult mobile broadband users are predicted by 2020
- £2,000 per head in consumer expenditure on e-commerce in 2013, the highest level in the world
- Share of e-commerce in retail sales (goods only, excluding fuels) of 11% in 2014, up from 6% in 2009, and higher than the 7% share attained by the US; the value of UK internet retail sales in 2014 of £38 billion is double the level of 2009
- 95% of businesses (with 10+ employees) have fixed-line internet access and 64% use mobile broadband, and for sole traders, the engine of UK business creation since 2000, digital is a key input
- Businesses reported e-commerce sales of £556 billion in 2013 to consumers and businesses, growing at an average of 11% annually since 2008 to reach 20% of non-financial business turnover, on a par with the US

Underpinning the UK’s great digital economy story is a strong and evolving infrastructure of both fixed and mobile networks, pioneered by commercial and public investment, strong competition and a healthy regulatory environment. The commitment to achieving widespread provision of reliable connectivity together with the proliferation of premium devices has been fundamental in cultivating a digitally evolved, and indeed evolving, society. Milestones achieved to date include:

- Next Generation Access (NGA) network coverage of 80% of premises by mid-2014, well on the way to meeting the target of 95% by the end of 2017
- Rapid rise in high-speed connections to one-third of connections by the end of 2014 (7.6 million), far ahead of France and Germany
- Average internet connection speed of 11 Mbps in mid-2014, on a par with that attained by the US
- 98% population coverage of 4G by December 2014, despite auctioning the spectrum two years later than France and Germany

In 2015, BT (supported by public funding) and the four mobile network operators are making substantial efforts to fill in not-spots and improve connection speeds in hard-to-reach rural areas.

The most important consumer trend is the rapid embrace of mobile broadband through smartphones and tablets. These devices attracted more time online in the UK than the home computer in 2014 for the first time. By 2020, Enders Analysis predicts a 50% increase in time spent online and three-quarters of this time will be spent on mobile devices. In the UK, there is and will continue to be significant off-loading of mobile data consumption to Wi-Fi due to its cost advantage over mobile data. By 2020, 75% of time spent online will be on fixed-line, including Wi-Fi, and mobile data usage is also expected to rise sharply.
On the business side of the economy:

- ‘Made in the UK’ digital businesses have provided more efficient marketplaces in property, recruitment, used autos, lending and borrowing for consumers and businesses, although not giving rise to exclusive intellectual property (aside from those linked to corporate identity such as logos and trademarks) or exports, probably due to lack of ambition.
- From a societal perspective, the transformation of recruitment to digital processes has produced faster and smoother clearance of the labour market, saving the taxpayers significant sums, and giving rise to incalculable efficiencies for recruiters and jobseekers.
- The ICT sector contributed £79 billion to the UK economy in 2013 (5.2% share of £1.5 trillion in GVA) adding 20,000 businesses and 12,000 jobs since 2008, on the strength of computer programming and related services, while telecommunications has been on a downward trend.
- Digital advertising surged in 2014 to reach revenues of £7.5 billion, making the UK the top advertising market in Europe, ahead of Germany, and is predicted to top £9 billion by 2016, with Google and Facebook driving the segment’s performance on search and display respectively.

The UK’s world-class digital infrastructure and its vast pool of smart connected consumers are unique strengths, and could be converted to leadership on the digital business models of the future. The UK is poised to be among the largest consumer markets outside the US for the sale of wearables and for the Internet of things (IoTs), the machine-to-machine learning which promises to deliver smarter homes and cities through better use of resources impacting air, energy, water, waste and transport. The UK Government is funding the Connected Digital Economy Catapult to encourage tech start-ups. Clusters of universities and tech businesses are a key UK strength and differentiator in the emergence of UK digital businesses of the future.

As important as the tech industry is to the future of the UK, the key message of this report is addressed to the UK’s many existing businesses in other sectors: aspire to be ‘fit for the digital age’, including by adopting flexible working practices, and ready for mobile. This will not only drive value for UK businesses, but if pursued energetically, it will help resolve the UK’s productivity puzzle.

EY states “Digital is a continuous form of disruption to existing (or new) business models, products, services, systems, or experiences, enabled by data and technology across the enterprise”. In practical terms, the advice made available by EY (www.ey.com) is to adopt digital into the core of each and every facet of the enterprise, and engage in a constant cycle of innovation to achieve a sustainable transformation to digital.

Six interrelated areas of focus are:

- Drive innovation into and out of the business
- Disintermediate the customer relationship
- Embed analytics throughout the enterprise
- Invest in the right digital talent
- Export UK digital business models
The digital economy

Overview

The digital economy is the sum total of the activities undertaken by consumers and businesses thanks to the networked economy – the internet – enabled by digital infrastructure. Multiple new forms of business and personal interactions and transactions are enabled by the network from business-to-consumer (B2C), business-to-business (B2B) and consumer-to-consumer (C2C).

It is hard to overstate the transformative effect on UK consumers of access to the networked economy. Spurred by access to e-mail, messaging and the cornucopia offered by the internet, households installed computers in the home, purchased broadband packages and started acquiring the skills to use these technologies. The ‘smarter me’ was born and has flourished ever since.

Today, the number of online activities of the average consumer is a multiple of that from a decade ago. The shift of usage to mobile devices is the central consumer trend and will intensify in the near future, as is detailed in the section below on “Consumer use of the internet”.

There is clearly scope to develop further the demand side of the UK’s digital economy by improving the ICT skills of 25-64 year olds: by 2013, only one-third had good skills. This is slightly better than the US, but not as good as it could be.

The metric that most readily captures the embrace of digital by UK consumers is the amount they purchase from businesses via the internet. The UK emerges as the global leader with close to £2,000 in 2013 per head (59 million internet users) and close to £120 billion for B2C e-commerce sales. This level gives the UK alone a share of almost one third of the entire European e-commerce market.

Value of B2C e-commerce 2013 (£ per head)

[Source: European Ecommerce]
E-commerce relates to transactions. Buying, however, accounts for a tiny share of the activity of consumers on the internet, judging by the time devoted to social networking, messaging, entertainment, obtaining news and knowledge and other activities. Ostensibly free to the user, their economic value is much harder to capture. Indeed, this report takes the position that much of the value to the consumer gained from access to the internet is not measurable at all.

Transformation of retailing due to e-commerce

Consumer e-commerce spend at retail (goods only, excluding services), has recorded rapid growth since 2009 and growth will continue. The value of e-commerce purchases on goods doubled since 2009 to reach £38 billion in 2014, representing 11% of retail sales excluding fuels. By contrast, post-recession offline retail sales growth stuttered until 2014, when consumers returned to the high street to purchase high-value household goods, driven by the UK’s buoyant property market.

Internet retail sales, 2009-14 (£bn)

In relative terms, the 11% share of e-commerce in retail sales excluding fuels seems small in relation to the transformative effect of the internet on buying decisions; in the US, the comparable figure was 7% in 2012. According to omnichannel retailer John Lewis, for whom e-commerce represents 30% of sales, the shopping journey sees consumers researching products online and in shops, mixing and matching purchase channels and delivery options, using mobile apps to mesh online channels with the shop floor. Consumer-facing businesses are facing constant pressure to shift to mobile. Key technology innovation trends for retailers around mobile include repurposed sites, in-store Wi-Fi networks, mobile payments and check-out, and personalised solutions such as leveraging customer data on location.

Mobile traffic overtook desktop traffic for the first time on Christmas Day 2013 and on average over 50% of web traffic now comes from smartphones and tablets. We have also seen a higher growth in conversion on mobile and tablet this year. The popularity of the John Lewis app has been an important part of this shift to purchasing on mobile devices, with customers who use the app shopping more frequently. John Lewis (2014)
B2C and B2B e-commerce

The ONS reports £557 billion in e-commerce sales in 2013, up 16% on their 2012 level:

- Website sales represented 7% of business turnover in 2013 (£193 billion), an increase in the value of sales of 74% (£82 billion) since 2009
- Electronic Data Interchange (EDI) comprised an additional 13% of business turnover in 2013

Total e-commerce sales, by industry sector, 2013 (£bn)

<table>
<thead>
<tr>
<th>Industry Sector</th>
<th>EDI Sales</th>
<th>Website Sales</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wholesale</td>
<td>59.8</td>
<td>158.7</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>15.4</td>
<td>132</td>
</tr>
<tr>
<td>Transport and storage</td>
<td>27.2</td>
<td>25.7</td>
</tr>
<tr>
<td>Information and communication</td>
<td>18.2</td>
<td>23.5</td>
</tr>
<tr>
<td>Retail</td>
<td>5.4</td>
<td>28.7</td>
</tr>
<tr>
<td>Utilities</td>
<td>10</td>
<td>10.8</td>
</tr>
</tbody>
</table>

[Source: ONS]

The manufacturing and wholesale sectors account for most of EDI sales in the UK, which is not surprising given their long and fragmented supply chains, respectively. The main benefit of EDI is replacing manual ordering and fulfilment processes with fully computerised ones that greatly economise on time and smooth supplier interactions. The standardisation of interfaces has brought further efficiencies to the sectors concerned.

The digital economy might then represent 20% of non-financial business sector turnover. B2C and B2B e-commerce sales have risen by two-thirds since 2008 when the estimate was £335 billion, including through the recession, and growth is projected to continue.

With an 18% share of e-commerce in non-financial business turnover in 2012, the UK is in fifth position among the EU. Ireland, with its large manufacturing sector and supply chains, ranks ahead in the share of EDI sales. For the US, the Census Bureau has reported that e-commerce amounted to 19% of the sales of the non-financial business sector in 2012.
Digital search and matching processes

In fact, the impact of the Internet is much broader through, for example, reduced search costs for firms, better access to information or improved search and matching processes in the economy. Hence, the total economic impact of the Internet [...] reaches into virtually all economic activities.\footnote{OECD (2013)}

The search and matching processes we are speaking about are the ordinary processes for buyers and sellers, such as:

- For consumers, looking for a job or a new one, buying goods and services for household or recreational purposes, banking and investment decisions, work and social networking
- For businesses, looking for new hires, buying goods and services as inputs from other businesses, looking for customers, banking and financing decisions, communicating with regulators and shareholders

For the consumer or business buyer of a good or service, internet access greatly reduces the cost of acquiring information on the choice on offer and prices available. This additional knowledge is central for households in obtaining maximum value from their budgets and making more intelligent decisions in many areas such as travel and financial services.
In addition to buying from omnichannel and pure play e-tailers, consumers visit virtual stores and marketplaces like Amazon, eBay or Etsy that attract numerous small suppliers, often sole traders, including those that use re-pricing software to stay competitive on prices. The buyer benefits from more competition among suppliers.

Another value for the consumer is the ‘sharing economy’, where people with surplus goods (mostly second-hand), bedrooms or couches, use the internet to find a buyer or a guest to stay. Marketplaces may charge fees to sellers in a variety of ways, but represent just the tip of the iceberg of the value from such sales to consumers.

Equity and rewards crowd-funding and peer-to-peer lending are relatively newer forms of two-sided marketplaces. Consumers can access to two-sided platforms such as IndieGoGo, which supports both business ideas and personal quests.

Consumer and business financing may also be revolutionised. ‘Made in the UK’ Zopa is the oldest P2P lending platform, promising consumers higher rates on their loans and better financing terms for SMEs than banks deliver. P2P lending sites leverage sources of information on business and consumer credit risk, but do not provide lenders with insurance on their deposits (unlike the regulated banking sector). One could argue that they are able to pick better risks than traditional banks resulting in a lower default rate, although these use the same information sources. Nesta estimate £1.74 billion was raised in 2014 (4% of SME finance) and predict the amount will reach £4.4 billion in 2015.

Another important example is the real estate industry which contributed 9.7% to UK GVA in 2013. The real estate market remains fundamentally an offline one insofar as people may rent holiday accommodation sight unseen but will rarely do so when renting an office or purchasing the home of their dreams. Real estate activities extend to a myriad of sub-markets spanning residential and business premises, displaying a high degree of segmentation to match market preferences.

Pure plays like Airbnb are high profile but their share in sector turnover is low, and regulatory issues of consumer protection in accommodation spaces are being raised. Nevertheless, real estate activities have been dramatically transformed by pure plays such as Rightmove and Zoopla Property Group, which provide a wealth of information for prospective homebuyers and renters at no cost, monetising the service by charging for agent use of their sites, a highly developed sector in the UK.

The intellectual property underlying ‘Made in the UK’ pure plays is not exclusive to them, and can readily be replicated by competitors (i.e. unlike products, which may be patentable). Instead, the main barrier to entry is scale on the consumer side, which tends to favour the first-mover.

Another aspect of ‘Made in the UK’ pure plays is the lack of market expansion outside the UK, leaving their revenue growth tied to the disintermediation of pre-digital advertising solutions. True, many of the search and matching processes consumers and businesses use are essentially national or local in their scope, just as e-commerce is largely a domestic transaction. At the same time, pure plays born in other markets have aggressively expanded to emerging markets. This reliance on the UK market for revenue growth may reflect a lack of ambition on the part of UK pure plays.
Recruitment market transformed

The employment market is the single most important one in terms of the societal and economic value of clearing it. UK taxpayers funded 2.8 million people on Jobseeker’s Allowance in 2013-14.

The comparison between digital and pre-digital options is revealing of the efficiencies realised:

- In 2000, recruiters and their agents placed advertisements and hired employment agencies, jobseekers read advertisements in print media and attended agencies or mobilized local networks, in a painstaking and complex process of information gathering and sifting
- In 2015, businesses list openings on company websites and on recruitment sites that attract pools of jobseekers, and use algorithmic search of standardised online CVs and application forms to narrow their choices

Digital recruitment marketplaces are two-sided networks of jobseekers and recruiters. Although the jobseeker typically seeks exposure to the largest number of potential employers, and conversely, the maturing of online recruitment has favoured local, community, specialist, and aggregator services to the detriment of job boards. The share of recruitment professionals naming LinkedIn as their most effective recruitment tool more than doubled between 2010 and 2013 from 14 to 31% of respondents to the CIPD and Hayes’ annual recruitment survey. This is a reflection of the high level of professionalization of the UK’s workforce, where just under half of employees occupy managerial, professional and associate professional occupations. An identity on LinkedIn is an important way to establish ‘social capital’ for relationships with peers, clients, suppliers and recruiters.

The digital transformation of recruitment has resulted in a massive destruction of value in the newspaper and magazine sector that previously catered to the segment’s advertising needs. The net balance is negative in monetary terms, while society and the economy have gained an altogether more efficient clearing process for the employment market.

Recruitment advertising expenditure by media, current prices (£m)

![Graph showing recruitment advertising expenditure by media, current prices (£m)]

[Source: Enders Analysis estimates based on company data; AA/WARC and IAB/PwC]
Dynamic online advertising

For most businesses and consumers in the UK, Google is the centre of the search and matching processes handling millions of searches daily, and providing AdWord services to many businesses. In relation to the classified sector’s £1 billion in revenues in 2013, search earned £3.9 billion. Enders Analysis predicts strong continuing growth of search revenues in the UK, powered by e-commerce growth. Online display in the UK is also projected to grow strongly, in large part due to Facebook’s 25 million daily users in the UK. Overall digital advertising could reach £9.3 billion by 2016.

Forecast growth of online advertising, 2014-16 (£bn)

The ICT sector tops 5%

The ICT sector contributed £79 billion to the UK economy in 2013, 5.2% of the total. While the trend in the telecommunications sector has been weak, computer programming, consultancy and software has been more dynamic. With such strong demand for services from business, there are widely reported shortages of skilled workers to the segment, leading to a wide-ranging agenda to improve the study of Science, Technology, Engineering and Maths (STEM) subjects.

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</thead>
<tbody>
<tr>
<td>Telecommunications</td>
<td>27.8</td>
<td>27.0</td>
<td>24.9</td>
<td>26.3</td>
<td>26.3</td>
<td>25.7</td>
</tr>
<tr>
<td>Computer programming, consultancy and related activities</td>
<td>36.2</td>
<td>34.4</td>
<td>35.8</td>
<td>37.2</td>
<td>39.7</td>
<td>45.6</td>
</tr>
<tr>
<td>Information service activities</td>
<td>6.2</td>
<td>6.5</td>
<td>6.7</td>
<td>7.3</td>
<td>7.1</td>
<td>8.0</td>
</tr>
<tr>
<td>ICT Total (GVA)</td>
<td>70.2</td>
<td>67.9</td>
<td>67.5</td>
<td>70.8</td>
<td>73.1</td>
<td>79.3</td>
</tr>
<tr>
<td>UK Total (GVA)</td>
<td>1,368.7</td>
<td>1,345.1</td>
<td>1,400.7</td>
<td>1,441.6</td>
<td>1,476.0</td>
<td>1,525.3</td>
</tr>
<tr>
<td>Share of ICT (%)</td>
<td>5.1%</td>
<td>5.1%</td>
<td>4.8%</td>
<td>4.9%</td>
<td>5.0%</td>
<td>5.2%</td>
</tr>
</tbody>
</table>

[Source: ONS]
Infrastructure development

Fixed infrastructure and take-up

UK broadband take-up has increased by an average of 3% per annum over the last five years and now stands at 85% of the adult population. On top of dedicated connections, there were 2 million business broadband connections at the end of 2014.

UK broadband penetration

Internet access is regarded as critical by most of the UK’s sole traders, which often operate on a ‘Small office/home office’ (SOHO) basis. Digital has been a key facilitator for their growth story: between 2000 and early 2014, the number of sole traders has risen by 800,000 to 4 million, representing 91% of total business creation.

A key factor behind the growth of broadband adoption by consumers and businesses is BT’s national fixed line network making broadband accessible to 99% of UK premises, either directly or through alternative network providers via regulated wholesale access. 44% of premises are simultaneously covered by Virgin Media’s cable network, facilitating the choice between either network, and as a result of the level of competition supported by the market structure, 90% of UK premises are able to choose between no less than three providers for their fixed line services.

High speed roll-out

High speed fibre network roll-out has been underway for some time and continues toward nationwide coverage targets. Openreach have committed £2.5 billion to the commercial roll-out (i.e. 19 million premises, roughly two-thirds of the UK total), upgrading the existing copper network via FTTC to provide download speeds of up to 80Mbps. The UK Government’s BDUK initiative is providing a further £1.7 billion of public funding to extend the fibre roll-out so that 95% of UK premises will have access to 24Mbps speeds by the end of 2017, while options for the final 5% are also being trialled. FTTC coverage has thus risen from less than 2% of premises at commercial launch in January 2010 to 68% in under four years, putting the UK ahead of its European peers.
Virgin Media’s fibre and coaxial cable network area, upgraded to enable speeds of up to 152Mbps currently or theoretically up to 1Gbps, is another source of high speed broadband, accessible to 44% of premises. By mid-2014, Next Generation Access (NGA) network coverage extended to just under 80% of UK premises with 35% having the option of either an FTTC or cable network supplier.

High speed share of broadband connections

![Graph showing high speed share of broadband connections in different countries]

High speed defined as a connection with a headline speed of 30Mbps or higher
[Source: Enders Analysis based on national regulators, European Commission]

European FTTx roll-out, EU top 5 markets

![Graph showing percentage of premises passed in different countries]

High speed subscriptions grew 38% in 2014 alone bringing them to a third of the total at the end of 2014. Alongside progress in coverage, this momentum is supported by efforts to migrate customers, most notably Virgin Media’s regular speed upgrades, and technologically savvy subscribers opting for higher tiers than the minimum 30Mbps “high speed” threshold. Broadband performance in the UK is thus increasingly approaching standards otherwise only seen in the US while the share of connections previously only able to access sub-2Mbps speeds (largely in rural areas, representing 14% of UK premises) is gradually reducing.
Mobile infrastructure achievements are no less impressive. Tackling the high fixed cost investment of network roll-out, all four MNOs have engaged network infrastructure sharing agreements to expand capacity for nationwide 3G coverage and, more recently, to facilitate aggressive 4G coverage targets. Through the overlapping networks of the four MNOs (EE, Vodafone, O2 and Three), 97% of the premises are able to access 3G services indoors from at least one operator.\textsuperscript{xvi}
In spite of being the last of the top five European markets to auction 4G spectrum and the second to last to launch a commercial 4G service, the UK is by no means trailing in performance with the leading operator, EE, delivering coverage to 75% of the population in just under two years from launch. Roll-out ambitions going forward are similarly aggressive with all operators looking to achieve 98% population coverage by the end of the year, above current projections in neighbouring markets and swiftly on par with existing 3G roll-outs.

Simultaneously, network upgrades have evolved 3G network capacity to deliver theoretical peak speeds of up to 42Mbps for DC-HSPA+ and 21Mbps for HSPA+, although average actual throughputs are closer to 12Mbps and 6Mbps respectively. At least two of the operators have also initiated LTE-A deployment, although roll-out is still nascent. Nevertheless, the average mobile broadband user experiences speeds on par with, or in the case of 4G, exceeding that of non-high speed fixed broadband.

**Broadband download speeds**

[Source: Enders Analysis based on Ofcom]
Amidst network progress, efforts are also focused on “not-spots”, mainly rural areas. The Government’s Mobile Infrastructure Project has committed £150 million to extend coverage in both population and geographic terms. Vodafone is initiating its Rural Open Sure Signal program in 2014 targeting 3G coverage in 100 rural communities while EE have committed to rolling out 3G and 4G to over 1,500 rural communities over three years starting in 2015. Tackling “partial not-spots”, areas of coverage served by less than all four MNOs to the detriment of subscribers who fall out their respective operators’ range, has also been a priority. A Government consultation last year swiftly led to an agreement for the four MNOs to invest a combined £5 billion to improve geographic voice and text coverage to 90% on an individual operator basis by 2017, effectively halving partial not-spots, and simultaneously improving full coverage (i.e. areas served by all four MNOs) to 85%.xxvii

**Consumer use of the internet**

**Mobility is the prevailing trend**

The computer was overtaken by smartphones in 2012 as the core device to connect to the internet. Three of four UK adults use smartphones and tablet ownership has grown to one in two UK adults in 2014xxxiii. By 2020, Enders Analysis forecasts 82% penetration of smartphones among the 4+ population (effectively near universal reach among adult mobile users) and 63% penetration of tablets.

**Device penetration**

![Device penetration graph](source: Enders Analysis)

The UK mobile base are a tech savvy and data enthusiastic bunch. 93% of smartphone users regularly use data via the handset, and no less than half engage some category of data-consuming activity including downloading of media or gaming content. Consumers increasingly require and are willing to pay for access to connectivity on-the-go.
Device penetration and usage trends\textsuperscript{xxx} will see the PC share of time spent online fall dramatically from 43% in 2014 to a quarter of the total by 2020, with mobile devices accounting for the rest. Despite lower average usage per user, smartphones will account for the largest overall share by a modest margin to tablets, supported by greater device proliferation.
The migration of usage to mobile devices is not synonymous with migration of the same to mobile networks; the average smartphone user consumes 0.9GB of mobile data per month compared to 58GB on a fixed broadband connection. Even accounting for multiple users per broadband connection, the figures confirm a significant amount of offloading to Wi-Fi, supported by the relative cost structures of data consumption over mobile versus fixed networks. As a result, while a 50% increase in total time spent online is expected by 2020, over 75% of this will remain over fixed line networks.

**Share of internet consumption (% of total hours)**

Excludes TV-based and offline app usage  
[Source: Enders Analysis]

**Usage by connectivity type (hours, billion)**

[Source: Enders Analysis]
Consumer segmentation for fibre adoption

Consumer research from EY suggests that attitudes to bundles of telephony, broadband and TV are changing rapidly. 82% of UK households now take some form of bundle package, with one in four subscribing to a package that includes a basic or premium TV service.

While take-up rates are encouraging, attitudes to content and access remain in flux. A majority of consumers value broadband reliability over the speed of their connection, while 4 in 10 respondents do not know the advertised maximum speed of their broadband connection. Meanwhile, only a minority of customers are willing to pay for sports content as part of a TV package.

Further analysis reveals a wide array of consumer needs and attitudes among bundle users. EY has defined six different customer segments, from affluent users that value premium sports content to anti-bundlers that have low interest in new communication technologies. In this light, segmentation has an important role to play in strategy and proposition development as packages become more sophisticated.

Consumer segments for telecoms analysis

![Image of consumer segments](image-url)

Business use of the internet

Business connectivity

The most precise idea of business use of the internet is provided from the ONS survey of businesses on its register with 10 employees or more. This group of 243,000 companies accounted for over 80% of the turnover of the non-financial business sector in 2013, making them a key focus for analysis. In this group of employer companies, 95% access the internet, no change since 2010. Most businesses rely on fixed-line connections, although the share also using mobile broadband has risen rapidly to 64%. The remaining close to 5 million UK businesses include 1 million small employers and 4 million sole traders, most of whom are also connected to the internet by residential or business broadband connections.
In 2013, the most common connection speed for employers with 10+ employees was 2 to 10 Mbps, with 34% of businesses reporting this speed. However, this share is down 13 ppts from the estimate of 47% in 2010 due to the increase in businesses using connection speeds of ten Mbps or more. The largest increase can been seen in businesses subscribing to broadband with a connection speed between 30 and 100 Mbps, which increased from 5% in 2010 to 15% in 2013. The proportion of businesses using superfast broadband, above 100 Mbps, has increased from 5% in 2010 to 8% in 2013.

**Proportion of businesses with Internet access, by maximum contracted connection speed (%)**

Just 24% of UK enterprises with 10+ employees purchased cloud computing services. These in essence are designed to economise on enterprise-specific hardware and software expenditure: Internet as a Service (IaaS) provides remote servers, Software as a Service (SaaS) provides CRM, email, and Platform as a Service (PaaS) supplies file and database storage. These benefits are leveraged mainly by ICT companies, 64% of which purchased cloud-computing solutions, and large companies.

Many companies cite barriers to the purchase of cloud-computing services in the UK, of which the most commonly cited is absence of knowledge or expertise about its benefits to them, cited by 37% of companies. Cost and security are further barriers to adoption (see Annex I). These barriers need to be overcome by suppliers if UK businesses are to make full use of cloud-computing innovations.

**Pervasive use of digital tools**

UK businesses make full use of digital tools. Eight of 10 businesses with 10+ employees maintain a website to establish their identity for customers, suppliers and potential recruits. Only 20% of businesses sell through their website (and only 8% made sales outside the UK). Not surprisingly, the retail sector reports the highest proportion of businesses making website sales (37%), followed by the wholesale sector (32%) and the ICT sector (26%).

Over 50% of UK businesses procure online. This demonstrates the extent to which businesses in all sectors are using the online channel to make better procurement decisions.
The use of social networking by businesses has expanded the scope for interacting with customers, suppliers and potential recruits. In 2013, 42% of businesses used Facebook or LinkedIn. Businesses in consumer-facing sectors such as retail, accommodation and hotels, are more likely to use Facebook while B2B companies such as those in the ICT sector are more likely to use LinkedIn. Across all sectors, 77% of larger businesses (1,000+ employees) used such networks compared with 39% of the smallest businesses (with 10 to 49 employees).

**Big data analytics**

The vast amount of data on connected behaviour represents a huge new pool of potentially exploitable information for new business models through the use of algorithms. xxii Data mining offers the tantalising potential of uncovering correlations that may prove novel and insightful, of which some may concern consumers and require the use of consumer personal data.

The debate over big data and the laws regarding consumer data protection in the UK and in Europe is complex and timely. The law on data protection in the UK is expected to change once the European Union adopts the draft General Data Protection Regulation (GDPR). Currently, EU Member States share a common legislative umbrella in the form of the EU’s 1995 Data Protection Directive, which has bred 28 national regimes for data protection. The Commission has proposed instead a common mandatory regime to harmonise data protection. The draft GDPR is however not considered to be business friendly by TechUK, purporting to represent its members, and the Big Innovation Centre.

*Data is the currency of the smart society. Flows of information are at the core of almost all its benefits. The rise of data is creating countless possibilities, but these will not be realised without a culture of trust and confidence about how data is being used.* Big Innovation Centre (2014)xxii

On the other side of the debate, the Information Commissioner’s Office has made it clear that “the emerging benefits of big data... cannot simply be traded with privacy rights”. xxiii The existing legal framework for data protection in the UK reflects a balance between business access to consumer data and consumer attitudes towards their privacy and the security of personal information. This may help explain why apps offering localised services have proved to be one area of significant innovation, whereby customers opt-in for personalised location-based advertising to obtain augmented services.

**The productivity puzzle**

Despite boasting the highest GDP growth rates in 2013 and 2014 among the G-7, the UK also has the weakest post-recession aggregate labour productivity (output per worker) trend. This is in part a reflection of weak demand growth until recently in the face of which many enterprises engaged in ‘labour hoarding’ xxiv (for reasons that have yet to be fully explained). This flat productivity trend may become a medium-term trend if the scenario of a ‘secular stagnation’ of demand materialises.

Enterprise-level data indicates that the UK has relatively more ‘zombie’ companies than the US, although the 6% share of high-growth companies xxv, which are often start-ups and scale-ups, is about the same. xxvi Resolving the UK’s productivity problem thus resides in the actions to be taken by thousands of companies, often the very largest of them.
Overall, capital expenditure by businesses has been on a weak recovery since 2008-09. In Q3 2014, it was estimated at £44.4 billion, only £2.4 billion higher than its pre-downturn peak in Q2 2008 in current prices. The assets covered are buildings and other structures (new and major repairs to), software, mineral exploration and evaluation, hardware, and plant and other machinery. Software and hardware typically make up 13% of total business capex and has been on a steady trend.

Capex acquisitions by asset (£bn)

Just 11% of UK enterprises with 10+ employees used Enterprise resource planning (ERP) software to manage the business and automate back office functions. While 2 out of 3 large companies have an ERP system, just 7% of employers with 11-49 employees had one in place.

The UK supports enterprise-level investment in plant and machinery through an Annual Investment Allowance (AIA) of up to £500,000. Unlike tangible capital assets, including company fleets, expenditure on enterprise software and other intangibles (computerised information, R&D, design and organisational capital), is not generally counted as eligible for AIA. The UK Government could expand the coverage of the AIA to include software, and cloud-based hardware and software capabilities.

More generally, businesses must think harder about leveraging the power of digital in the UK to drive their productivity growth. The message of this report is addressed to a broad audience: UK businesses should better leverage the digital infrastructure to build out their digital presences and make the transition to mobile. Being ‘fit for the digital age’ is a mindset and could include organization-wide transformation. These might lead to UK businesses that:

− Adopt higher speed broadband and expand the use of mobile broadband by employees
− Repurpose websites to mobile usage
− Seek to address potential export markets
− Realise the benefits of purchasing cloud-based solutions that augment all layers of their capabilities and reduce the risk of obsolescence
Digital business: Realising the potential

Overview

Over the coming decade the UK’s digital economy is poised to go from strength to strength. The core ingredients for success are already in place:

– A complementary fixed and mobile broadband infrastructure has become pervasive
– Consumer adoption of mobile broadband coupled with a hunger for devices has intensified mobile purchasing and adoption of services, including social networking, entertainment and banking
– Most businesses in the UK are leveraging broadband and technology investments to deliver transformation throughout their business, not just in the consumer facing front-office. In so doing transforming their internal processes and their relationships with external stakeholders

Against the backdrop of digital infrastructure and adoption, the conundrum for UK businesses is twofold. Firstly, how to fully exploit the opportunity that digital represents and secondly how to do so in a sustainable way. The former requires a wide-ranging adoption of digital into the core of each and every facet of the enterprise while the latter requires a continuous treadmill of innovation.

Delivering on both fronts will not only drive value for the UK and UK businesses, but if pursued energetically they will help resolve the UK’s productivity puzzle. There are six interrelated areas for businesses to focus on if they are to realise the potential of digital. These are:

– Accelerate digital transformation
– Drive innovation into and out of the business
– Disintermediate the customer relationship
– Embed analytics throughout the enterprise
– Invest in the right digital talent
– Export UK digital business models

The ideas, as laid out in this section, are inspired by advice made available by EY. Further insight is available at www.ey.com.

Accelerate digital transformation

Today’s businesses rely on technology to support nearly all of their critical processes, from manufacturing and logistics, to marketing and customer communications. The ubiquity of digital technologies, and their ability to disrupt business models, products, services and customer experiences, has made the concept of a ‘digital strategy’ an anachronism. The reality is that all business strategies must now be digital. The challenge for organisations is to adopt overarching business strategies that help them maximise competitive advantage in the digital world. This kind of strategy seeks to maximise the business value of all digital assets, from operational and customer data, to the systems and processes needed to derive new insight from them and inform decision making at all levels of the business.
To embrace a business strategy that maximises the opportunities of digital working, strong leadership is needed and technology becomes an enabler, rather than an end in itself. A re-evaluation of how the business currently operates is essential, from the highest levels (board-level decision making), right through to the data and insight used to develop new services and the way the company engages with customers. Digital needs to be at the heart of every element of the business. In many cases, organisations may choose to make significant changes to their organisational structures in order to make the most of digital transformation.

Recent research from EY has identified ‘digital leaders’ who are driving forward the digital agenda and maximising competitive advantage. Based on interviews with 500 executives in media and entertainment companies, EY found that 65% of digital leaders are prepared to prioritise digital transformation over the longevity of legacy products and services compared to 48% of decision makers from other companies. As a result, digital leaders have a much greater ability to adapt to rapidly changing market conditions and customer expectations.

**Recommendations for accelerating digital transformation**

Based on their industry experience and digital capabilities, EY has a number of key recommendations for companies wishing to accelerate their digital transformation initiatives. These are:

1) **Set clear business goals:** Optimise decision making, including how data can be better utilised to inform decisions. Articulate the business goals and challenge whether the organisation is aligned accordingly. Put the right organisational and management structure in place, decide how existing processes can be improved and evolve the culture.

2) **Avoid big-bang implementations:** Adopt an evolutionary approach to technology and have a co-existence strategy for both legacy technologies and legacy business models.

3) **Utilise a component-based approach:** Avoid creating the next legacy organisation by utilising flexible talent and cloud based IT. In 2013, only a quarter of UK businesses had any kind of cloud investments.

4) **‘Right source’ solutions:** The best solutions are likely to come from a varied mix of sources. Collaborations and partnerships will be the lifeblood of many digital developments as businesses look to align with emerging technologies and business models and to scale rapidly.

**Drive innovation into and out of the business:**

A changed business environment necessitates new ideas and new ways of working. It creates a virtuous circle. Consumers, with increasing demands, have raised expectations for product and service evolution and businesses must respond by continuously innovating to compete.

At the same time, traditional approaches to innovation are threatened. Speed and agility have become crucial in a world with an accelerated pace of change and the need for improved time to market. We are all familiar with apps such as Angry Birds, which have been able to reach global audience of 50 million in just 35 days. Another example of an innovative digital company that has grown at a phenomenal pace is Netflix, which was able to scale to over 3 million subscribers in the UK in just three years.
To achieve this kind of agility and compete effectively in a digital environment, companies need to radically change their approach. Instead of focusing on a ‘learn and launch’ approach, companies now need to ‘launch and learn’ to deliver products and win customers at a faster rate.

**The UK – a leading force for digital innovation**

The good news is that the UK remains a hotbed for digital innovation – both in terms of developing new, innovative digital business models, and creating the technology infrastructure and applications required to deliver them.

Digital innovation in the UK is both ‘top down’ and ‘bottom up’. At the grass-roots level, UK companies have embraced new funding models ranging from crowd sourcing start-ups including Indiegogo and Kickstarter to angel investors and venture capital. Success stories such as Hailo, the app for London’s black cabs, illustrate the marriage of bottom-up innovation and access to entrepreneurial funding.

To further encourage this type of digital innovation, a number of business and technology ‘hubs’ have also been founded in the UK. Examples include Silicon Roundabout in East London, a network of innovative technology companies including start-ups and ‘scale ups’, and Level 39, Europe’s largest technology accelerator for finance, retail, cyber security and the creation of connected ‘future cities’. At the same time the UK has embraced a wide range of innovation models including industry specific events such as the Retail Week Hackathon.

Innovation is also being driven by the UK’s leading enterprises, which are constantly striving to implement changes that enhance operational efficiency and value. Tesco Labs is one example of an innovation studio looking at how digital technology might change the UK consumer experience, including the use of wearable technologies and 3D printing.

**Model for digital innovation**

Based on EY’s experience of delivering real-world digital transformation projects, the following model provides a means to maximise the business value of innovation across an enterprise. This breaks down innovation into three key areas vital for creating a lean, effective and competitive organisation:

- **Core innovation:** This focuses on innovations that protect and sustain existing, core business models. Based on these kinds of innovations, organisations can maximise their efficiency of their existing processes, while maximising revenues per customer and improving customer service to minimise churn
- **Adjacent innovation:** This helps organisations to expand existing business models to enhance competitive advantage. One compelling example of this kind of innovation in the UK is the success of HIVE from British Gas, which complements the existing offer by enabling remote control and monitoring of domestic energy services
- **Disruptive innovation:** This happens when companies rethink their existing business strategies to unlock new opportunities, redefine existing market dynamics or create entirely new markets. There are several examples of disruptive innovation in the UK, where companies have fundamentally changed their value proposition and achieved leadership status. The BBC’s development of iPlayer, which now averages over ten million daily downloads, spawned subsequent services such as Sky Go and 4oD xl
Disintermediate the customer relationship

Over more than a decade, digital shifted how businesses and customers interact. The relationship has become much more intimate, and the next decade will not see a slowdown. In the media and entertainment industry alone, 85% of businesses at the forefront of digital transformation make it a current or near term priority to build more direct customer relationships.\textsuperscript{xii}

UK consumers have embraced a change in their relationship with businesses. The use of near ubiquitous smartphones and tablets as well have facilitated greater anytime/anywhere access to an organisation’s full range of products and services.\textsuperscript{xiii} In return consumers provide more feedback, interaction and insights about their behaviour. Consumers utilise their personal, mobile technologies to build more personal and bespoke interactions and the device has become the de facto gateway for access to trusted partners. For example, even when in bricks and mortar stores, 46% of UK millennials use smartphones to enhance their shopping experience, principally for price checking.\textsuperscript{xiii}

Born digital businesses such as Amazon have long established mobile offerings and many traditional UK retailers have joined them at the vanguard. Leaders such as Tesco and John Lewis boast strong mobile propositions. The opportunity is broader than retailing. The vendor no longer acts as the sole intermediary between the manufacturer or producer and the customer. Instead new information sources and endpoints appear along the value chain, prompting new forms of interaction. The producer is gathering insight about how products are sold and utilised and the consumer is providing additional feedback, indirectly or directly through channels such as social media.

The range of mobile services is only likely to expand, further disintermediating traditional customer relationships. The next wave seems likely to be around mobile payments as incumbent financial service players compete with technology solutions such as Apple Pay or mobile operators through their joint venture, Weve. Competitive environments are widening and previously distinct service propositions are coalescing.

<table>
<thead>
<tr>
<th>Mobile services map</th>
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<tbody>
<tr>
<td><strong>Mobile marketing</strong></td>
</tr>
<tr>
<td>- Data analytics</td>
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<tr>
<td>- Service and product advertising and marketing (also location-based)</td>
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<tr>
<td>- Loyalty schemes</td>
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<td>- Offers and promotions</td>
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| Core competency: customer relationship | Core competency: customer experience | Core competencies: financial services, payments processing |
Building the disintermediated relationship

Succeeding in building strong, more direct relationships with end customers will depend on business ability manage the level of trust and intimacy.

- Establish “radical intimacy”: Utilising multiple touch points to build trusted, direct relationships and 360-degree profiles of customers, their preferences and behaviours
- Emphasise the experience: As prices coalesce and product offerings assimilate a key differentiator to building relationships will be around customer experience. Thinking about this in isolation will be misleading and instead an omni-channel approach is necessary
- Close the engagement loop: Set in motion a virtuous circle of customer engagement and innovation. Listen to them, adapt or expand your offerings based on customer input, and re-engage. Recognize this is a journey, especially for companies starting without trusted customer relationships
- Share insights throughout the organisation: Build up the skills, tools and agility to analyse accurately and act rapidly on a growing mountain of customer data. Share customer data and analysis across the organization, with dashboards and other tools delivering the right information to the right people at the right (real) time

Embed analytics throughout the enterprise

In the past, the value within an organisation was determined by simply analysing the balance sheet and making assumptions about the value of intangible assets, from intellectual capital to customer loyalty and future growth potential. To identify new sources of value that exist in an organisation and can be exploited, and to cultivate future opportunities for value creation and protection, many forward-looking companies are turning to big data and analytics. In essence, analytics can enable an organisation to effectively grow, optimise and protect value.

One example of how companies can use data to create value is by analysing customer behaviour and developing products and services that are more closely aligned to their needs. This is allowing companies to move away from the historic paradigm of ‘make and sell’ and adopt a ‘sense and respond’ approach that is far more personal, efficient and cost-effective.

At the same time businesses have the opportunity to create additional value by addressing performance issues to achieve further efficiencies and mitigate risks. With big data analytics, companies can also measure performance more effectively, helping to streamline compliance with changing industry regulations and rules regarding data protection. This is a topical issue for companies in the UK in particular, who now have to report cyber security breaches to regulators and affected customers within 24 hours.

Data analytics: the current state of play

A recent report conducted by EY in conjunction with top research firm Nimbus Ninety found that 32% of respondents admitted to being overwhelmed by data. The fours “V”s that define big data - velocity, volume, variety and veracity - present challenges to many UK businesses.
In addition, the research found that similar businesses are behind larger organisations on the big data adoption curve. While 97% of companies of companies with an annual turnover of more than £2 billion currently have big data strategies in place, this figure drops to 86% of companies in the £100 million to £2 billion category and to 84% for those with annual turnover under £100 million. Critically, while 81% of companies in all categories agree that data should be at the heart of their entire decision making, only 31% have significantly restructured their operations to help do this.

One of the many big data challenges companies face is access to data. While realising the full commercial potential of data analytics may appear to require unfettered access to consumer data, consumers care more than ever about privacy and security issues. The existing legal framework for data protection in the UK reflects this balance. Issues of protection, security and the overall stewardship of personal data remain central to the ecosystem. While the complexity of operating in a decentralized and distributed networked environment poses new challenges, ensuring data security remains crucial.

While executives recognise the need for big data initiatives in general, they also want to understand the potential risks, both financial and reputational, as well as the rewards. As a result, making a compelling business case for big data adoption is central to the success of any digital strategy.

**Supporting digital transformation with big data**

To fully exploit the potential of data, businesses need to embed data analytics throughout the organisation. Successfully achieving this depends on:

- **Aggregating data across the business**: Whether serving a customer, assessing performance or mitigating risk, a single, unified view of data is critical. However, with data residing in multiple locations both inside and outside the business, achieving this unified view can be extremely challenging, especially for customer-centric, omnichannel businesses.

- **Democratising access to data**: To put data at the heart of decisions, organisations need access to all the available data – while ensuring compliance with regulations for privacy and security. This means that, to the greatest possible extent, information silos need to be broken across all functional areas and departments, allowing data to flow freely across the enterprise. EY research shows that only 39% of media and entertainment CFOs believe information is shared effectively around their organisation — and the same percentage say real-time data can be accessed when it is needed. As well as making data available across the business, companies need to provide tools that make data available in a usable format to people in different roles and departments. To fully exploit the value of big data, all decision makers across the organisation must have the skills and tools they need to derive the greatest possible insight from it.

- **Using data to improve forecasting and planning**: Significant cultural change is needed to ensure that companies can harness data for forecasting and planning as well as reporting on current activities. To make accurate future predictions based on current data, businesses must be able to identify meaningful trends and disregard ‘white noise’ in their data.
Invest in the right digital talent

The shift to digital working in all sectors and organisations has increased the demand for a specific set of digital skills. Many enterprises need employees with specific IT or data science skills, as well as developers, communications professionals and others. At the same time demands on employees are rising across the organisations with everyone needing to broaden their range of digital skills and increase their familiarity with new technologies.

Investment from organisations aiming to build these skills is well underway. 64% of media and entertainment executives are recruiting digital talent faster than digital revenue is growing. In a separate survey of UK businesses, 38% of companies are looking to hire people with big data skills, while 21% are retraining their existing technical staff. At the same time, the UK remains the largest outsourcer in Europe, acknowledging the importance of skillsets that lie outside the organisation.

Building a workforce with the right digital skills

Businesses need to adopt a holistic strategy to bolster digital skills across their workforces. Bringing the right digital skills on board can be achieved by:

– **Foster the right organisational culture**: to apply a more digital focus to thinking and behaviour. For example, encouraging the use of collaboration tools and networked working

– **Redesign internal processes**: changing processes and accepted practices throughout the business to move away from manual and analogue process and embed digital efficiencies

– **Refine skill requirements**: Take a wide ranging look at the business needs and ‘skills mapping’ to take stock of existing skills, identify skills gaps and implement effective training/recruitment policies to achieve the most efficient but also flexible mix of talent and skills

– **Improve talent retention**: Consider employee incentives in order to retain and motivate the best talent. Meeting changing employee expectations by providing the best/most flexible working environment and access to the latest technology is critical

– **Future-proof talent modelling**: Acknowledging the rapid pace of change, align the longer-term direction of the business to the talent model to help ensure the best role-fit not only for current but future needs. Embedding this not only into recruitment but also the professional development and training processes is essential

Meeting employee expectations in the digital age:

Changing employee expectations are driving a major shift in workplace environments. At a very basic level, employees expect to have access to the same tools and devices at work that they use in their personal lives, with their phones and tablets becoming their de facto offices. Bring your own device (BYOD) is illustrative of the seamless integration of personal and working technology.

Employers must also understand the shifting behaviours and expectations of digital workers. They are more collaborative and utilise digital technologies to build networks and communities of interest. They also place a premium on their own development, particularly as part of the wider knowledge economy.
All this requires employers to provide a personalised experience for their workers. This comes in the form of the office environment itself and the technology available. However, it also spans contracts, benefits and remuneration, which should be created for each individual employee based on their needs and motivations. While digital workers are accustomed to collaborating virtually, the workplace should not be overlooked. It remains important as a place to engage, collaborate and to socialise, also as a way to develop mentorship and professional relationships and to showcase their skills and capabilities.

**Export UK digital business models**

For many sectors, the UK is an attractive gateway for international investment. In retail and more broadly consumer services, the UK was an early target for inward investment by Amazon and US pure play start-ups. Ever since, the UK has been an important bridge to international markets.

As a consequence, the UK has flourished. The changes in consumer behaviours may be most striking but the transformational impact on fulfilment and distribution services is no less tangible.

Another core value of e-commerce is to expand the scope of suppliers to international sources. Cross-border e-commerce is however low in the UK because most people prefer to buy from domestic suppliers. Barriers to cross-border purchasing by UK residents include language (apart from the US), higher costs of shipping and returns, and difficulties in pursuing consumer complaints. These are also barriers to purchases from UK e-tailers by consumers in continental European countries. English has been an important bridge into the UK for Amazon and US pure plays. In continental Europe instead, each country has its own language and has developed its own B2C e-commerce profile, much less dense than in the UK. Recent changes to the VAT regime for digital media sales to the customer’s destination may lead to re-location of operations out of Luxembourg.

**Oxford analysis suggests that in the UK there has been a particular combination of circumstances: the investment of a few, large, retail firms in multichannel retailing; the early targeting of the UK for inward investment by US pure play start-ups; greatly improved fulfilment and distribution services; and, amongst consumers, a greater comfort with credit card and online payment systems, combined with cumulative effects of experience and word-of-mouth. Not all these conditions prevail in every European market.** Oxford Institute of Retail Analysis (2014)

Of course there are some digital success stories, none more so than WPP, the world’s largest advertising and marketing group. Looking at the companies that have listed on AIM or the LSE since 2009 that are digital in focus, either in B2B or in e-commerce, Asos has chosen an international expansion effort in a fiercely competitive segment of low-priced fashion. Rightmove and Zoopla Property Group remain rooted in the UK; privately-held AutoTrader is the same. Takeaway app JustEat, listed in 2014, is present in 13 markets. Other flotations in 2014 included mobile applications provider Rosslyn Data Technologies Group and crowd-funding platform Vitesse, and prior year listings have included cloud, mobile and big data analytics service companies.

Yet there is hope: the EU has released a cross-border initiative with KPIs for digital adoption and exportability – and the UK is becoming a leader.
In order to facilitate cross-border growth, the EU has set the objective of realising a Digital Single Market (DSM) by 2020 that will link the 28 Member States within a borderless environment. For this to happen, reforms are needed across a number of domains, from data protection to rules governing copyright and telecommunications regulation, while boosting digital skills and learning is also a key concern. In this light the UK is at the forefront of the realisation of the DSM in terms of the soft-target milestones for 2015:

- 50% of UK businesses (with 10+ employees) are procuring online
- 20% of businesses selling through their own website, well short of the 33% target, but comparing favourably with the EU average of 17%
- 8% of businesses selling cross-border through their own websites, compared to 7% on average among EU members

For a long time, the EU has had a Digital Single Market for creative works including music, books and video, promising to remove the barriers that prevent people in other countries from obtaining access to online UK pay-TV and VOD services. This is a clear opportunity to expand UK exports of creative works, noting that the UK is already the leading exporter of such content in the EU28 and there are a number of online channels for UK-originating content to be rented or purchased (iTunes, Google Play, Amazon), in addition to domestic broadcast channels.

There are compelling benefits for UK companies that can increase the ‘exportability’ of their products and services based on digital transformation. Not least the UK is relatively small by global standards the UK market consists of 50 million adult consumers, 25 million households and 5.2 million businesses, a size that places it well behind the US. In order to secure growth in the long term, UK businesses must prioritise new opportunities in overseas markets.

**Making UK models more exportable**

For UK, digital businesses aiming to exploit overseas opportunities, there are a number of issues to consider as the strategy builds:

- **Think, act and do mobile first**: Many overseas markets have embraced mobile. Mobile offers the opportunity to scale fast and embed critical services such as payments easily into the offering. In China, digital shoppers represent 20% of the population – around 270 million - which illustrates current scale and future potential. In early 2015, Google began notifying website of their mobile readiness in preparation for penalising them in search results

- **Embed local solutions**: The behaviours of digital consumers vary so significantly in different markets. In an example from media, in South America, audiences consume on average 6 hours of TV each day, compared to less than half that in China but in China’s highly regulated and censored TV industry 68% of Internet users have shifted to watching online video

- **Be agile as market dynamics shift**: The fast pace of technology evolution has made it challenging for regulators to keep pace with digital innovations. Yet new regulations are emerging: under the EU’s proposed General Data Protection Regulation, businesses can be fined up to €100 million or up to 5% of their annual worldwide, group turnover, whichever is greater
Media and broadcasting: a digital cash cow for UK business

Many organisations operating in mature economies are naturally looking to expand beyond Europe and the United States to create new markets and maximise revenue streams. The large scale millennial populations of countries such as China, India and Brazil and high levels of broadband and smartphone connectivity mean that the opportunities to access new audiences are virtually limitless. Nonetheless, EY analysis also shows that mature markets, which offer the mix of scale, value and importantly business maturity, should never be overlooked.

Focusing on digital media, EY has collected and weighted thirty six different metrics to look specifically at the attractiveness of different markets for investment. It is structured as a cost-benefit analysis, consistent with common methods of market entry assessment and selection. This index scores markets from five to zero. With five being the aspiration of most attractive.

Global opportunities for exportable digital offerings

Digital Media Attractiveness Index

[Source: EY]
Conclusions

For many UK businesses, data-driven decision making, fully automated processes and fully integrated, omnichannel communications are the norm. For many more, however, and especially those from more traditional sectors such as retail, manufacturing and financial services, the move to digital business is still very much a work in progress.

What is clear is that companies who adopt the organisational structures geared to drive digital transformation stand to achieve significant competitive advantages over their peers. By making digital transformation a board room issue and putting new digital governance structures in place, it is possible to set clear goals, mitigate risks, and measure results based on key digital metrics. Escalating digital to the highest levels of the business also helps organisations implement a digital working culture that touches all operational areas and makes relevant data available to decision makers across the business.

Board-level focus also ensures that funding is available for all the skills and infrastructure required to support sustainable digital operations and maximise returns on investments.

Key to every digital transformation is the ability to put data at the heart of decisions. By removing reliance on ‘gut feel’ decision making, UK businesses can improve the speed and quality of their decision making processes. In addition, it becomes possible to react far more quickly to market changes and develop new products and services that are much more closely aligned to the needs and preferences of customers.

While digital transformation is a daunting prospect for most businesses, risk can be minimised in a number of ways. It is advisable, for example, to start small with digital projects, which enables decision makers to demonstrate value and create a strong business case for enterprise-wide activities. In addition, companies should consider using cloud-based and virtualised infrastructure to trial digital projects at very low cost to the organisation – providing a solid proof-of-concept before significant investment is required.

In the 1990s, organisations that moved early to establish a strong web strategy achieved significant commercial and competitive advantages over those who didn’t. Today, an effective business strategy embedded in a digital world can equally mark the difference between success and failure, and waiting to implement a strong digital strategy is likely to bring a heavy cost for businesses.
### Annex I: Business purchase of cloud computing services

#### Proportion of businesses buying cloud computing services, by industry sector, 2013 (%)

<table>
<thead>
<tr>
<th>Service</th>
<th>Email</th>
<th>Office software</th>
<th>Hosting business' database</th>
<th>Storage of files</th>
<th>Finance or accounting software applications</th>
<th>CRM software</th>
<th>Computing capacity to run own software</th>
<th>Bought any cloud computing services</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturing</td>
<td>9</td>
<td>5</td>
<td>7</td>
<td>12</td>
<td>5</td>
<td>3</td>
<td>2</td>
<td>18</td>
</tr>
<tr>
<td>Utilities</td>
<td>13</td>
<td>4</td>
<td>11</td>
<td>27</td>
<td>3</td>
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<td>8</td>
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<td>Construction</td>
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<td>15</td>
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<tr>
<td>Wholesale</td>
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<td>Retail</td>
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<td>6</td>
<td>13</td>
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<td>Transport and storage</td>
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<tr>
<td>Accommodation and food services</td>
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<td>8</td>
<td>12</td>
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<tr>
<td>Information and communication</td>
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<td>39</td>
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</table>

[Source: ONS]

#### Limitations to using cloud computing, by industry sector, 2013 (%)

<table>
<thead>
<tr>
<th>Limitation</th>
<th>Risk of security breach or disclosure</th>
<th>Access problems to data or software</th>
<th>Difficulties unsubscribing or changing provider</th>
<th>Uncertainty about location of data</th>
<th>Uncertainty about law, jurisdiction, dispute resolution</th>
<th>High costs of buying services</th>
<th>Insufficient knowledge or expertise</th>
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</thead>
<tbody>
<tr>
<td>Manufacturing</td>
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<td>Accommodation and food services</td>
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<td>Information and communication</td>
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<td>32</td>
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</tr>
</tbody>
</table>

[Source: ONS]
Assuming that the customer's means of payment is accepted by an external supplier, the importer of goods from the US for example, through a bank or other financial institution, will have to

The service automatically changes the price on items to ensure that retailers are competitive with similar wares sold online.


"Riding the New Wave", January 2015.


The John Lewis Retail Report 2014".

The John Lewis Retail Report 2014, "agoing Digital Leadership, January 2014. 4

"Riding the New Wave", January 2015.

The John Lewis Retail Report 2014", "agoing Digital Leadership, January 2014. 4
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