Digital State of the Region

Final Report to the East of England Development Agency

5 April 2007

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Executive Summary

1. This report, commissioned by the East of England Development Agency in March 2007, presents analysis on the current digital state of the region.

Key messages

Broadband and mobile coverage

2. **The region has excellent first generation broadband coverage**. This improved significantly over the period 2003 to 2005, and first generation broadband is now available to c. 99.8% of the region.

3. **However, a new – more persistent – broadband divide is likely to open up in the East of England over the next few years**: while about 50% of the region will be able to purchase affordable services of 50Mbit/s or more, c. 20% of the region will only have a choice of services of below 5Mbit/s.

4. **Furthermore, some first generation ADSL notspots remain** in both urban and rural areas in the East of England**.** Roughly 5,000 premises in the region do not yet have the option of an affordable broadband service – though half of this should be addressed by summer 2007, through the TPON overlay in Peterborough.

5. **2G mobile phone coverage is very high** across the region**. 3G coverage is in line with national average levels,** and is better closest to London and urban conurbations.

Business and residential ICT take-up

6. Survey findings generally suggest that **the region's businesses have ICT adoption levels broadly in line with national averages.** The region's adoption levels are neither particularly poor, nor particularly good, relative to other parts of the UK.

7. **The barriers to adoption facing the region's businesses are similar to those facing businesses elsewhere:** concern over the costs, lack of time to assess what the firm should invest in, uncertainty over the benefits, and concerns on security are the most frequently cited barriers.

8. The most frequently cited influences on business ICT investments are discussions with customers, friends or relatives and non-ICT suppliers, suggesting that **word of mouth** influences are very important.

9. In contrast to business use, **ICT use in the home is above average** relative to use in other regions. Home computer ownership in the region is higher than in the UK, and the region is well placed in terms of residential broadband access and internet take-up.

10. However, **there is a clear digital divide** which is of some concern**:** the difference in internet use between ABC1 and C2DE socio-economic groups is very pronounced in the East of England**.**

Skills supply and demand analysis

11. **IT skills are very important to the regional economy.** E-skills estimated in their Regional Skills Gap Analysis (2005) that 73% of the region's 2.6 million workforce use IT in their day to day work.

12. The e-skills Regional Skills Gap Analysis results predicts that **the number of jobs requiring ICT skills is set to increase as the number requiring no ICT skills declines**. Around a quarter of businesses in the East of England are of the view that the ICT skills of their workforce are inadequate. E-skills estimate 29% of the workforce will need upskilling to levels 2 and 3 by 2008.

13. **Training provision (including private training) within the region is concentrated in the south, around London.** In terms of its further education supply, the region has 45 FE colleges and four ICT Centres of Vocational Excellence. Indicators show that the region's performance in ICT subjects is average in terms of GCSE and A-Level success rates.

The supply sector

14. Overall, the concentration of IT sector businesses and employment in the region is in line with the England average. The greatest, above average, concentrations of companies and employees are in Hertfordshire, Cambridgeshire and Bedfordshire. **Areas least covered by ICT supply services are Norfolk and Suffolk and some of the smaller unitary authorities.**

15. Trends show that within the region there has been a loss of employment in this sector since 2003 which has hit Essex, Suffolk, Cambridgeshire and Peterborough most severely, but at the same time the sector grew in Hertfordshire.

Closing remarks

16. This report has drawn on a number of different sources to provide an overview of coverage, take-up levels and trends in the East of England. In doing so, it has found a number of areas where data is limited or recent statistics are not available. Most importantly, there is a dearth of information on ICT and internet usage by businesses within the region by location, size and sector. Also, limited data is available on supplier services – in terms of their support and assessments of their quality.

17. This gap could be filled by a regional survey, as has been undertaken by some other regions and nations (e.g. the annual Scottish E-Business Survey). Ideally, a UK-wide survey, with sufficiently large samples in each region and nation, would enable EEDA, partner RDAs and devolved administrations to compare data.

18. Although considerable progress has been made against the priorities of the RES's RG7 (Information Society) goal, needs are changing and new challenges are arising. There is an

increasing body of evidence regarding the very substantial contribution that business use of ICT makes to economic growth. The European Commission estimates that **ICT accounted for nearly 50% of the EU's productivity growth** in the period 2000-2004. It is difficult to envisage what other areas will have this degree of influence on the East of England's future economic growth, and this makes RG7 ever more important.

1: Introduction

1.1 This report, commissioned by the East of England Development Agency (EEDA) in March 2007, presents analysis on the current digital state of the region.

1.2 Within the current Regional Economy Strategy (RES) for the East of England there is a goal (RG7) for the region to become 'A Leading Information Society'. Under this goal there are four priorities:

- promoting the use of network based technologies among businesses, organisations and individuals
- ensuring that the capacity and coverage of our data communications infrastructure keeps pace with the needs of a knowledge economy
- improving the skills and ability of people to make effective use of ICT
- supporting growth in the supply of network based technologies and the development of digital content.

1.3 The Regional ICT Strategy, published in June 2006, sets out a number of actions in pursuit of these objectives. EEDA's State of the Regional Economy report published in October 2006 reported on progress against the regional economic strategy goals and priorities and assessed the state of the regional economy.

1.4 This study has brought together evidence to demonstrate the region's progress in this area. In most cases it has been possible to obtain recent regional level data from published sources. However, where regional level evidence is unavailable, national level data has been used to provide an indication of trends. We are grateful to BT and Virgin Media for supplying data for the purposes of this report, and to Ofcom and the Community Broadband Network for permission to reproduce published maps.

1.5 Our report is structured as follows:

- section 2 summarises the current state of broadband availability and mobile network coverage in the region, and offers some indicative projections for next generation broadband coverage and references supply-related quality issues identified from national research
- section 3 provides information on current levels of ICT usage by businesses and residents in the East of England
- section 4 describes the take up of further education opportunities in the region, with some analysis of ICT student characteristics
- section 5 presents data on the region's IT sector.

1.6 There are two annexes:

- Annex A provides additional breakdown information on the region's IT sector, from the Annual Business Inquiry
- Annex B provides additional information on the regional performance in Further Education in the area of ICT, from SQW's analysis of LSC Individual Learner Records.

2: Telecommunications infrastructure

First generation broadband availability

2.1 With first generation broadband now available to nearly 100% of the East of England population, the region has performed well in its strategic intention to enable broadband connectivity throughout the East of England.

2.2 For comparison, Table 2-1 shows the availability of broadband services in the East of England versus that in various countries as of the third quarter of 2005. In terms of *extensiveness* of the broadband market, the East of England (together with the other regions and nations of the UK) boasts a position which has been literally world-leading.

Table 2-1: Affordable broadband availability in the East of England and selected countries at Q3 2005

	Population coverage
UK (and East of England)	99.7%
South Korea	97%
Japan	96%
France	95%
US	94%
Germany	91%
Sweden	90%
Italy	90%
Canada	89%
Australia	85%
Ireland	81%

Source: UK Broadband Status Report: Covering the Period April 2005 – September 2005, Ovum January 2006

2.3 Whilst there are pockets of other technologies in the region, the broadband market is dominated by three categories of service:

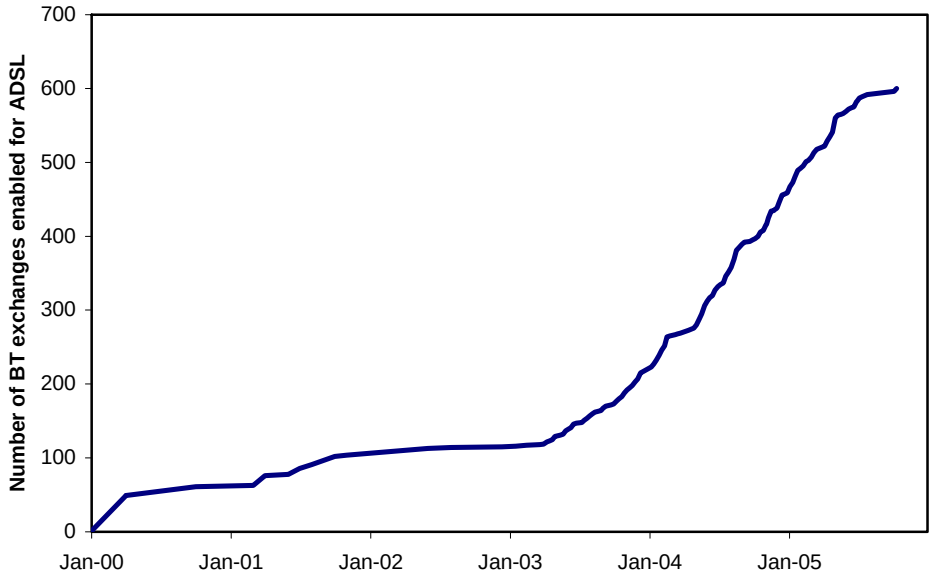
- services offered by Internet Service Providers (ISPs) using BT's wholesale ADSL services
- ADSL services offered by ISPs using 'unbundled local loops'
- cable broadband services.

2.4 We discuss each of these below.

BT Wholesale ADSL

2.5 Hundreds of ISPs use BT's wholesale ADSL services, and this form of provision currently has the largest market share nationally. As shown in Figure 2 -1 below, rapid progress was made in enabling exchanges for such services in 2003 to 2005, such that almost every exchange in the region was enabled by the end of 2005.

Figure 2 -1: East of England exchanges enabled for ADSL service



Source: SQW analysis of data from Samknows.com, 2007

2.6 This has resulted in broadband coverage in the region catching up with UK national coverage levels, which are now nearly 100%, as shown in Table 2-2.

Table 2-2: BT wholesale ADSL service availability in the East of England vs UK (% of population served by an enabled exchange)

	East of England	UK
2003	73	78
2004	85	89
2005	99.8	99.7
2006	99.99	99.97

Source: BT, 2007

Unbundled local loops

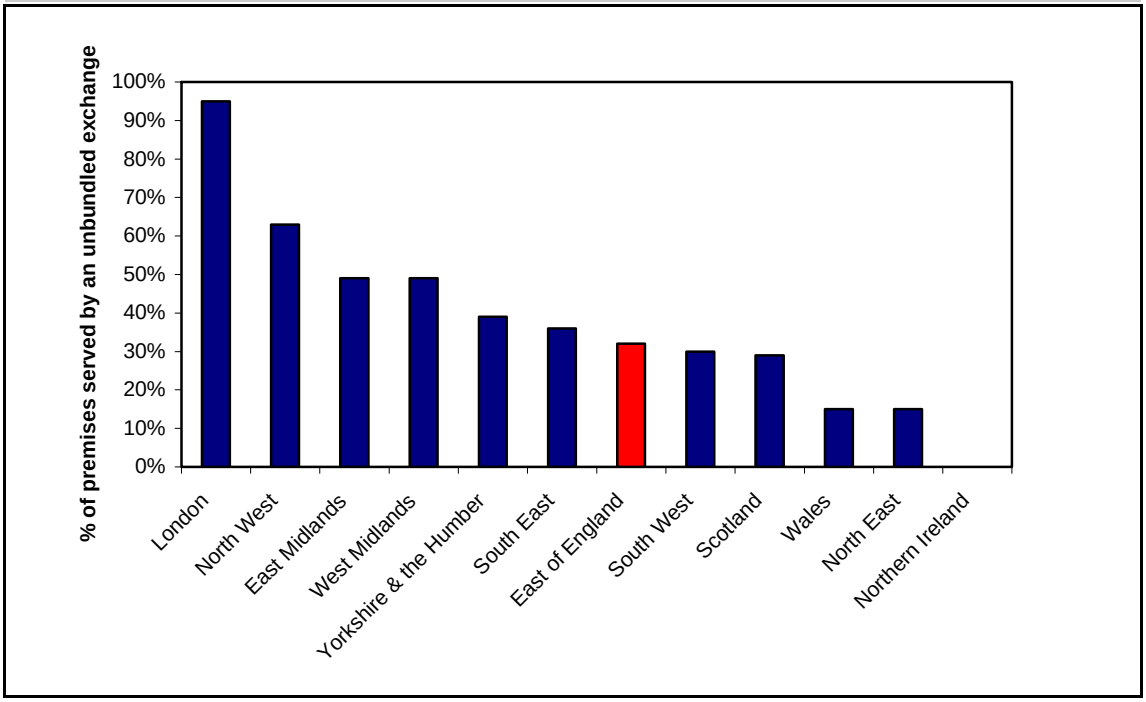
2.7 Local loop unbundling (LLU) is a very important development in the UK's broadband market. It is a mechanism by which telcos/ISPs can use their own equipment on either end of the copper wire in BT's access network, without taking the full wholesale ADSL service. In this way, LLU operators have greater flexibility over product features and pricing than is the case for those taking BT's wholesale ADSL services. This competition has stimulated increased innovation in the market, with operators such as Bulldog and Easynet being the first

ISPs to offer 'up to 8Mbit/s' services in the UK, and Be being the first ISP to offer an 'up to 24Mbit/s' service, using ADSL2+ technology.

2.8 As far as consumers are concerned, therefore, the more competition there is from LLU operators, the better.

2.9 Figure 2-2 shows that, as of January 2006, the East of England lagged most other UK regions and nations in terms of LLU availability, with only 32% of premises having the choice of an LLU operator, as opposed to the 44% average for the UK.

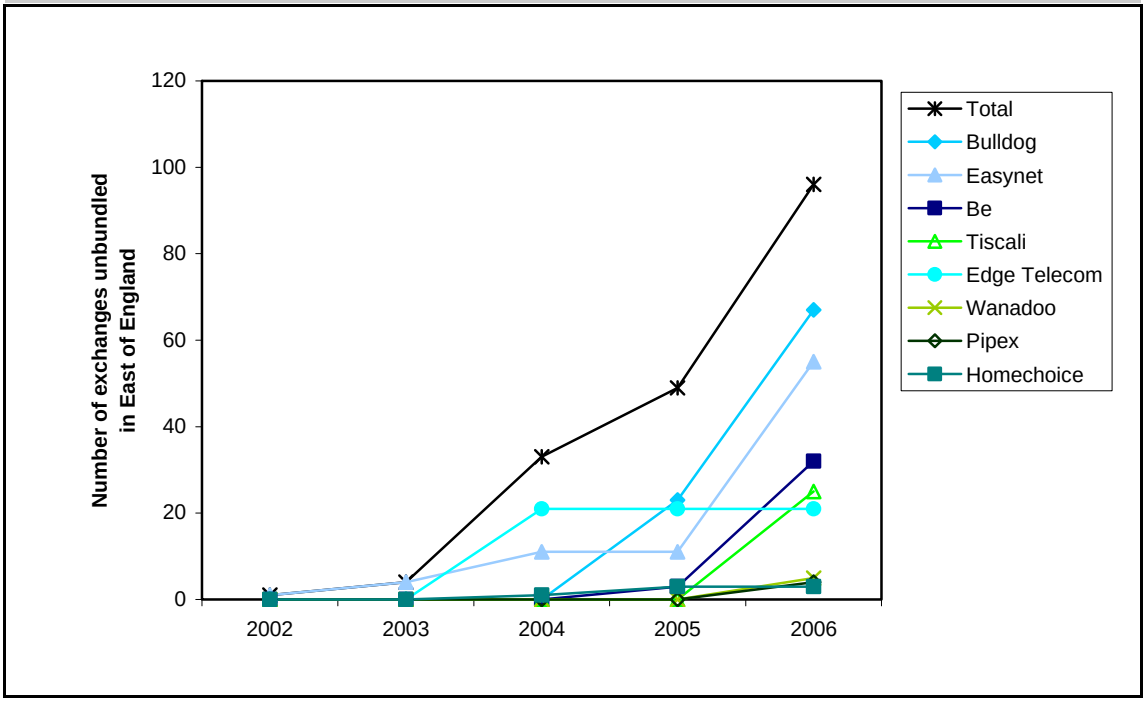
Figure 2-2: Percentage of premises served by an unbundled exchange, as of January 2006



Source: Ofcom Communications Market – Nations and Regions report, 2006

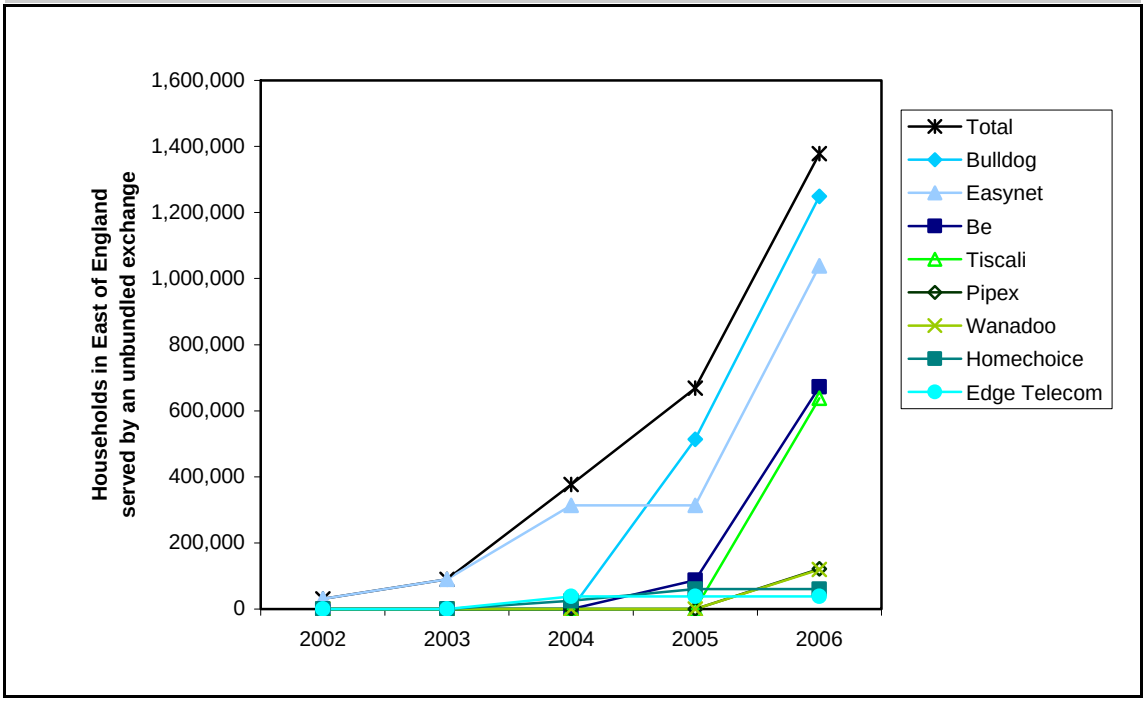
2.10 However, Figure 2-3 and Figure 2-4 below demonstrate that significant progress has been made in the region's LLU market over the last year. We estimate that, as of the end of 2006, something in the order of 1.4 million (58%) of the region's homes are now served by the 96 exchanges that have at least one LLU operator. Note, though, that these figures do not include exchanges unbundled by Talk Talk (owned by Carphone Warehouse), for which we do not have information regarding the dates of each exchange being unbundled. From Samknows.com, we understand that Talk Talk is in the process of unbundling 121 exchanges in the region.

Figure 2-3: Numbers of unbundled exchanges in the East of England, by LLU operator



Source: SQW analysis of data from Samknows.com

Figure 2-4: Households in East of England served by an unbundled exchange, by LLU operator



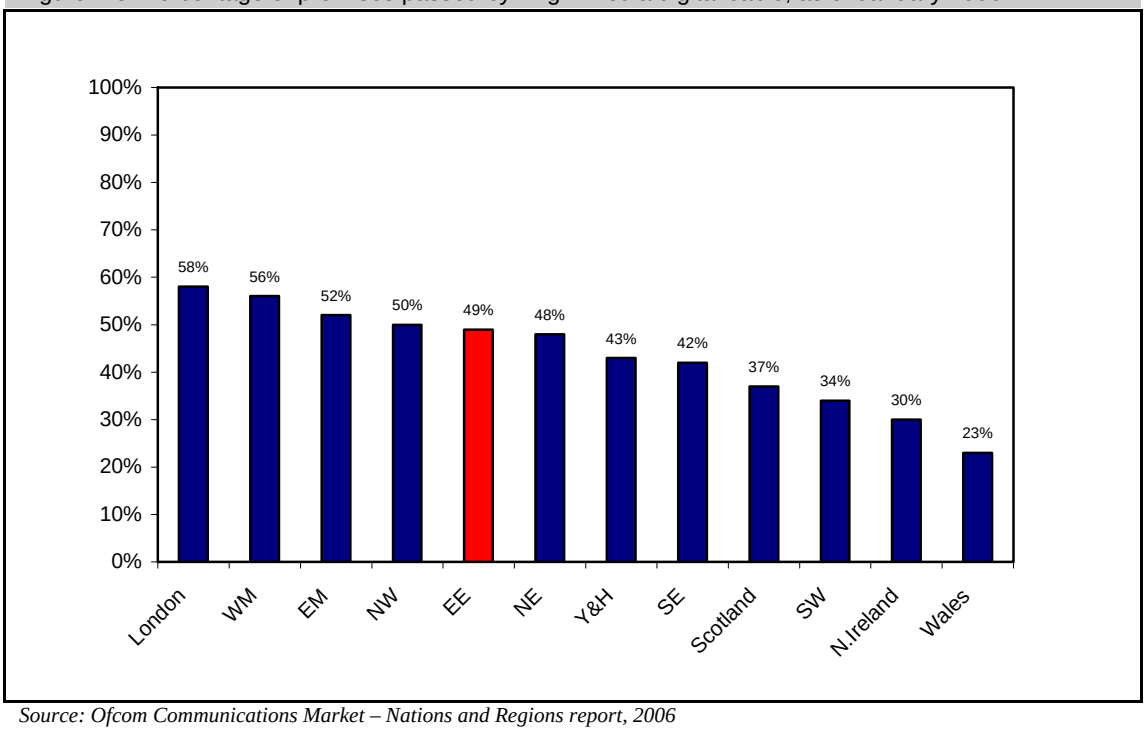
Source: SQW analysis of data from Samknows.com

Cable broadband

2.11 Cable broadband services are offered in the region by Virgin Media (formerly ntl: Telewest). According to Ofcom, 49% of premises in the East of England are passed by ntl or Telewest digital cable, as of January 2006 (we would not expect this to have changed substantially in the last year, as Virgin Media is concentrating on selling to homes already passed by its cables, rather than expanding its cable coverage). This is slightly above the UK average of

45%, and puts the East of England in a substantially better position than most other regions and nations (see Figure 2-5).

Figure 2-5: Percentage of premises passed by Virgin Media digital cable, as of January 2006



Source: Ofcom Communications Market – Nations and Regions report, 2006

Notspots

2.12 Although, the vast majority of the region is covered by some level of broadband, a few areas remain unable to access affordable broadband services. It is difficult to obtain authoritative information on 'notspots' – partly because such information is considered commercially sensitive by providers, and partly because the actual availability of ADSL broadband on a borderline BT line can only be known for certain when an order is placed, and when installation has been attempted.

2.13 One useful reference source is the report on 'Notspots: A Study of Britain's Broadband-Free Area' by the Community Broadband Network (2006). This was based on research from an online survey of notspots throughout Great Britain. The survey was promoted through the national media and press but ultimately was reliant on individuals finding out about the survey and reporting problems in their areas. It uncovered 1,200 notspots, of which 9% were in the East of England.

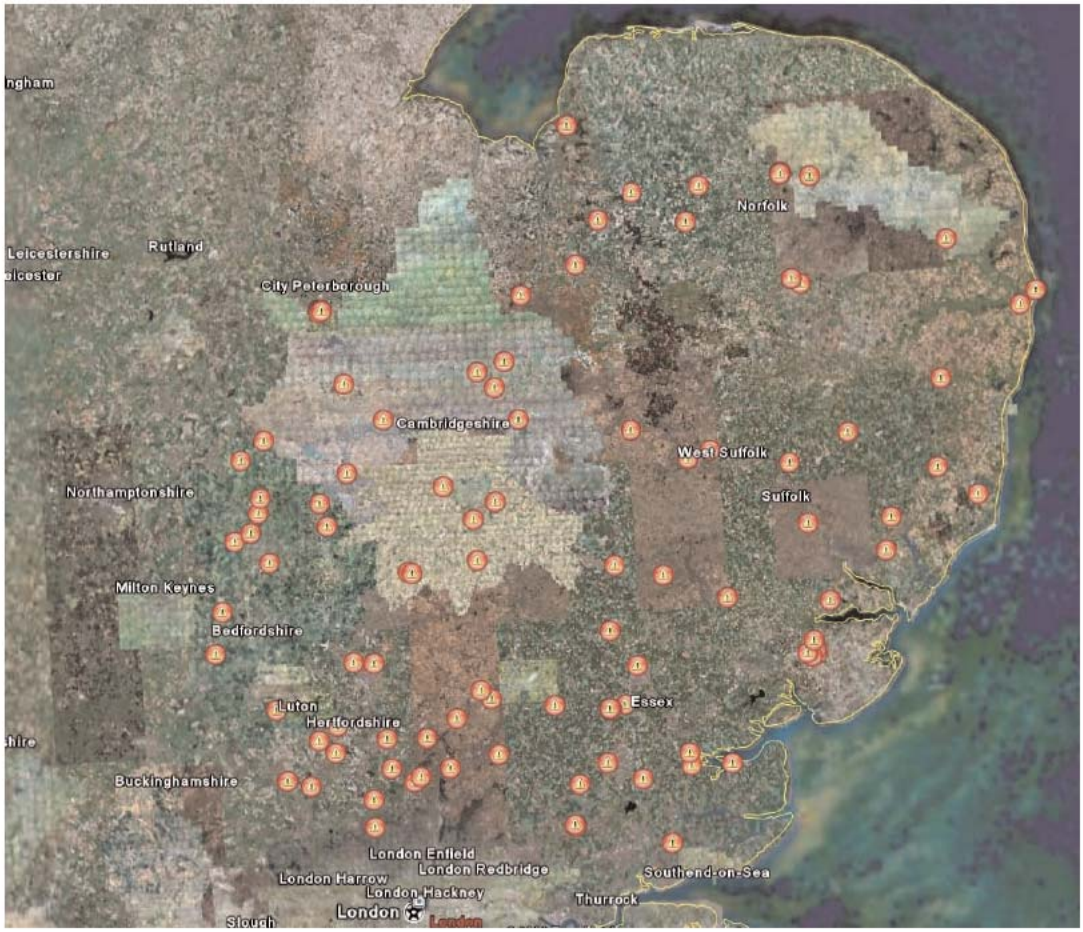
2.14 The report identified four core reasons which are often given for not being able to receive a reliable ADSL service. These are:

- distance from the exchange
- the quality of the wires
- line sharing

- fibre-optic cables in the local loop (TPON - Telephony over Passive Optical Networks).

2.15 The map below (Figure 2-6) shows notspots dotted across the East of England region.

Figure 2-6: Map of notspots in the East of England



Source: 'Notspots: A Study of Britain's Broadband-Free Area' (Community Broadband Network Ltd, 2006): appendices: Regional Maps. Reproduced with permission.

2.16 The above map illustrates the difficulties in addressing the notspot issue because the problem is widely dispersed across the region. Furthermore, the issue is inherently variable: as broadband penetration levels increase, more clusters of unserved demand will emerge over the next few years; however, BT's rollout of ADSL2+ services will alleviate the situation somewhat as the technology has slightly longer reach then standard ADSL.

2.17 Reasons for lack of service availability are provided in the CBN report. Some reasons are considered transient and others persistent. For example, fibre-optic cables are considered transient because fibre will be the basis of future provision, and BT is laying copper cables alongside cable in some areas to overcome the limitation. Whereas, line length and quality are persistent and expensive to resolve. According to the report, 80% of notspots fall into the persistent category.

2.18 At a national level, the most frequent reason for lack of service (49%) was living too far from a telephone exchange. In the East of England, the main reasons were: line length (49%), line quality (17%), TPON (15%), service not available (9%), DACS[1] (4%), aluminium (2%), exchange capacity (2%), and no cable (2%).

2.19 There was above average reporting of TPON in the region, where fibre-optic cables used in the local loop between telephone exchanges and street cabinets cannot support ADSL signals. These are predominately in urban - typically new build - areas, including Peterborough. The report estimates that 10% of the UK's 80+ TPON areas are in the East of England. It suggests 4,000 households in the region may be affected.

2.20 BT has a TPON overlay programme in Peterborough, which is scheduled to be completed by late summer 2007. They expect the results to enable 2,500 customers affected there to get broadband.

2.21 Elsewhere BT estimates that there are around 2,200 customers in small clusters unable to receive broadband - roughly half of which are in Norfolk, with the others spread fairly evenly around the region. This would imply a regional availability of first generation broadband of c. 99.9% (once the Peterborough TPON issue is resolved).

Next generation broadband availability

2.22 As technology advances, the level of bandwidth likely to be required by both businesses and households is expected to increase, and this presents new challenges for regional economic development.

2.23 There have been high profile investments in next generation broadband services in a number of countries, including France, Germany, Spain, Denmark, the US, Hong Kong and Singapore (see Figure 2-7). These overseas developments provide some indication of the technologies likely to be introduced in the UK in the next few years.

Figure 2-7: Examples of overseas developments in next generation broadband

- In 2004, both Verizon and SBC announced major deep fibre roll-outs in the US; Verizon will extend fibre to about 10 million homes by 2010 (20% of their footprint); SBC will invest c. $4 billion to serve 18 million homes (37% of their footprint) through Fibre-to-the-Node technology by 2008.
- In April 2005, Hong Kong Broadband Network launched a 1Gbit/s service for residential customers in Hong Kong (at c. £120 per month).
- In June 2005, Motorola announced that they are working on upgrading Starhub's network to DOCSIS 3.0, in order to offer speeds of up to 50Mbit/s to 100Mbit/s to StarHub's customers in Singapore.
- In September 2005, Deutsche Telekom announced that it would roll-out 50Mbit/s services (using fibre to the cabinet) to the top 50 cities in Germany by 2007, at a cost of c. EUR3 billion.
- In December 2005, Telefonica announced that it would start trials of VDSL in Spain in 2006, offering speeds up to 52Mbit/s. Mass deployment is expected to commence in 2007, with 60% having access by 2010.
- In January 2006, France Telecom announced that it would be piloting Fibre to the Home with thousands of households in six districts of Paris and six cities in the Haut-de-Seine.
- In January 2006, Danish incumbent operator TDC announced that it will roll-out a 'triple-play' offering of up to 50Mbit/s, covering more than 80% of households in Denmark over the next two years.
- In September 2006, French ISP Iliad announced that it would spend EUR1 billion to roll out a Fibre to the Home network past 4 million premises by 2012, starting in Paris.

Source: SQW (2006) 'Next Generation Broadband in Scotland' report on behalf of the Scottish Executive

[1] DACS is a line sharing system, historically used by BT where there was a lack of available copper cabling.

2.24 For this study, SQW adapted a model (to estimate the economic impact of various generations of broadband) recently developed for Scottish Executive, which was informed by extensive consultation with senior industry executives. The model uses an analysis of cable coverage and of the distance of postcode centroids from the nearest BT exchange (using SQW's Geographic Information System). We have input East of England data into this model, while retaining the core assumptions regarding the reach and rate of roll-out of various broadband generations to varying population densities, in order to derive estimates of the future coverage of next generation broadband services in the East of England.

2.25 The broadband generations are defined as follows[2]:

Table 2-3: Definitions of broadband generations, used for next generation broadband modelling

Generation	Label	Description
Dial-up		Bandwidth in the order of 0.05Mbit/s
First generation broadband	1B	Downstream peak bandwidth of at least 0.5Mbit/s[3] (10 x dial-up), but less than 5Mbit/s, at a price affordable by households and SMEs
Second generation broadband	2B	Downstream peak bandwidth of at least 5Mbit/s (100 x dial-up), but less than 50Mbit/s, at a price affordable by households and SMEs
Third generation broadband	3B	Downstream peak bandwidth of at least 50Mbit/s (1000 x dial-up), but less than 500Mbit/s, at a price affordable by households and SMEs

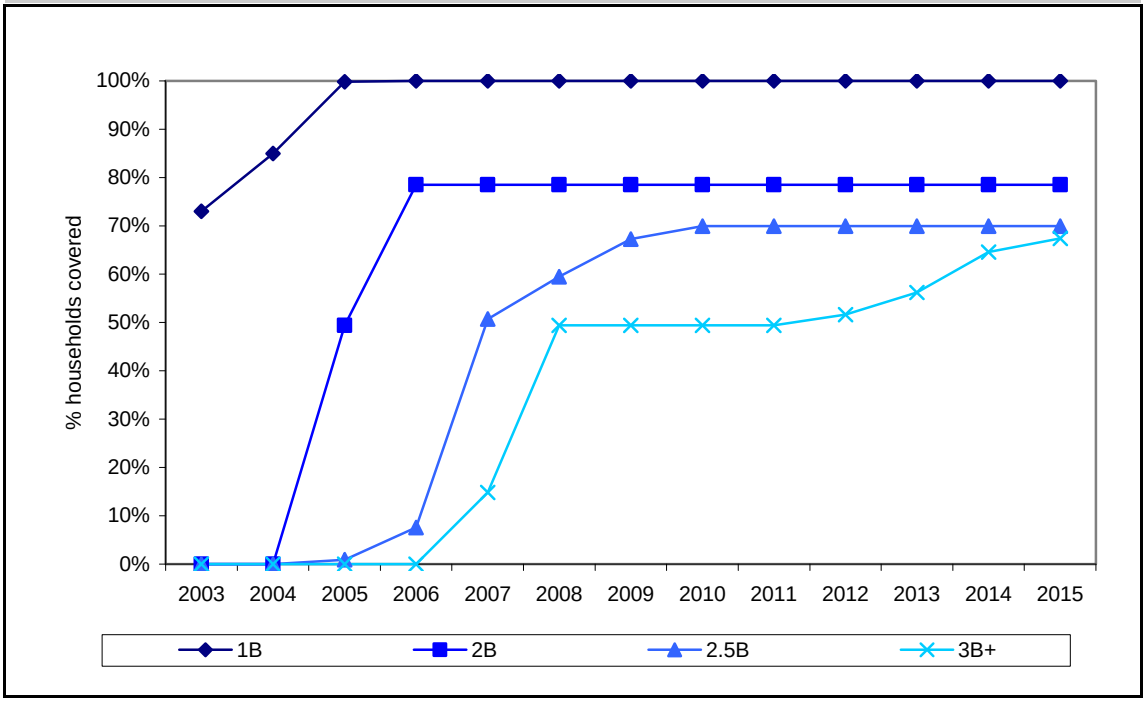
Source: SQW

2.26 We have also modelled an intermediate '2.5B' generation, of at least 15Mbit/s downstream bandwidth but less than 50Mbit/s (a subset of '2B'), noting that Virgin Media has announced plans to launch a 20Mbit/s service nationally in May 2007, and that BT plans to roll out ADSL2+ services which will offer 2.5B type speeds, as it rolls out its 21CN core network.

2.27 Our indicative coverage projections for the region are shown in Figure 2-8 below.

[2] Note that these definitions vary from those used in the Regional ICT Strategy
[3] Note that this differs from Ofcom's definition of broadband referring to higher speed always-on services, offering data rates of 128kbit/s and above.

Figure 2-8: Indicative projections of next generation broadband coverage in the East of England



Source: SQW, 2007

2.28 Regarding 3B+, we have assumed that the adoption of DOCSIS 3.0 or Ethernet to the Home will allow Virgin Media to offer peak bandwidths of 50Mbit/s and above – starting in 2007 and completing roll-out across their network by the end of 2008. We note that Virgin Media is already running a commercial trial of a 50Mbit/s service.

2.29 As set out in our recent Next Generation Broadband report for the Scottish Executive[4], we anticipate that BT will have to respond to this competitive threat by rolling out fibre to the cabinet and VDSL2 technology in urban areas – starting in the densest areas of population in 2008. It will, we believe, take a very long time for BT to extend such services to rural areas, however, given:

- the heavy costs of digging up roads to lay new ducts and fibre in the access network, and installing new street cabinets capable of housing DSLAMs
- the lack of infrastructure-level competition in rural areas (leading to BT's existing 1B/2B wholesale revenues facing little competitive threat)
- the relatively small incremental benefit to consumers of 3B+ services versus 2B or 1B services, and the likelihood that the premium that BT Wholesale will be able to charge for 3B+ services (versus 1B or 2B services) would be insufficient to provide a reasonable return on the incremental investment required in rural areas.

2.30 We consider it likely, then, that a new – more persistent – broadband divide will open up in the East of England over the next few years: while about 50% of the region will be able to purchase affordable services of 50Mbit/s or more, c. 20% of the region will only have a choice of services of below 5Mbit/s.

[4] http://www.scotland.gov.uk/Publications/2007/01/09153006/0

2.31 The Broadband Stakeholder Group Green Paper (May 2006) on 'Predicting UK Future Residential Bandwidth Requirements' suggests that, by 2012, the bandwidth demand for the most bandwidth intensive households could reach 23Mbit/s downstream and 14Mbit/s upstream. This implies that lack of 2B/3B+ broadband could represent a significant disadvantage for rural areas – even if this is primarily in terms of the entertainment options available to households.

2.32 Public sector intervention in this area would need to be very carefully thought through, given the potential to distort the market, and given that it is likely to be video-intensive entertainment applications (rather than business use) that will drive the demand for next generation bandwidths.

Mobile network coverage

2G mobile

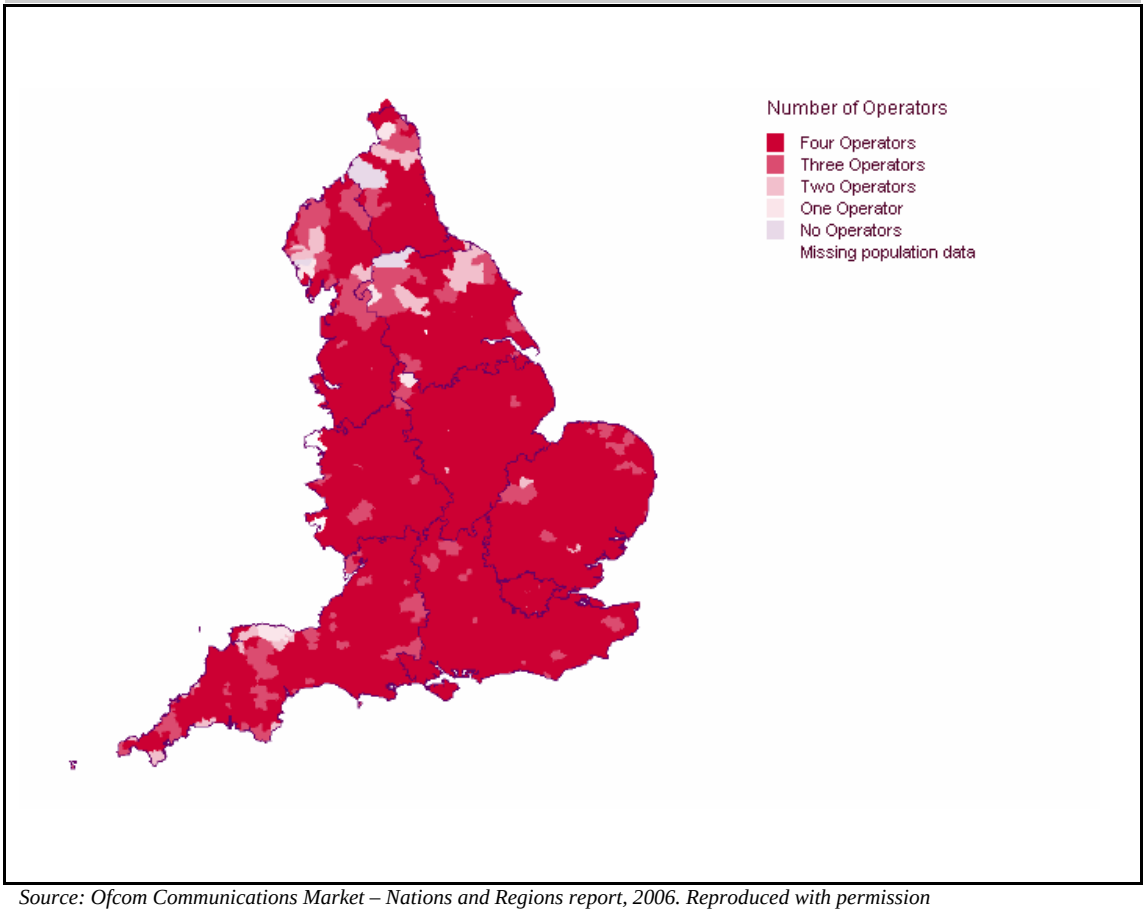
2.33 Overall, 2G network coverage is consistently high for all four 2G mobile phone network operators (Vodafone, O2, T-Mobile and Orange) across the region and the UK. In 2005, all of the operators claimed they covered 99.9% of the UK population (Ofcom, 2006[5]).

2.34 In 2006, Ofcom reported in their 'The Communications Market: Nations and Regions, English Regions Report' that 96.2% of the population of the East of England lived in postcode district areas with at least 75% coverage by four operators.

2.35 The map below in Figure 2-9 shows 2G mobile phone coverage across the English regions by number of operators in late 2005. Although there are a few areas where 2G reception is poor for some operators (for example Norfolk, around Peterborough and parts of rural Essex), most areas are covered. Overall, at least one operator reports over 75% coverage in 98.8% postal districts within the region.

[5] Ofcom (2006) 'The Communications Market: Nations and Regions, English regions'

Figure 2-9: 2G mobile phone coverage in the English regions by number of operators reporting at least 75% area coverage in postal districts

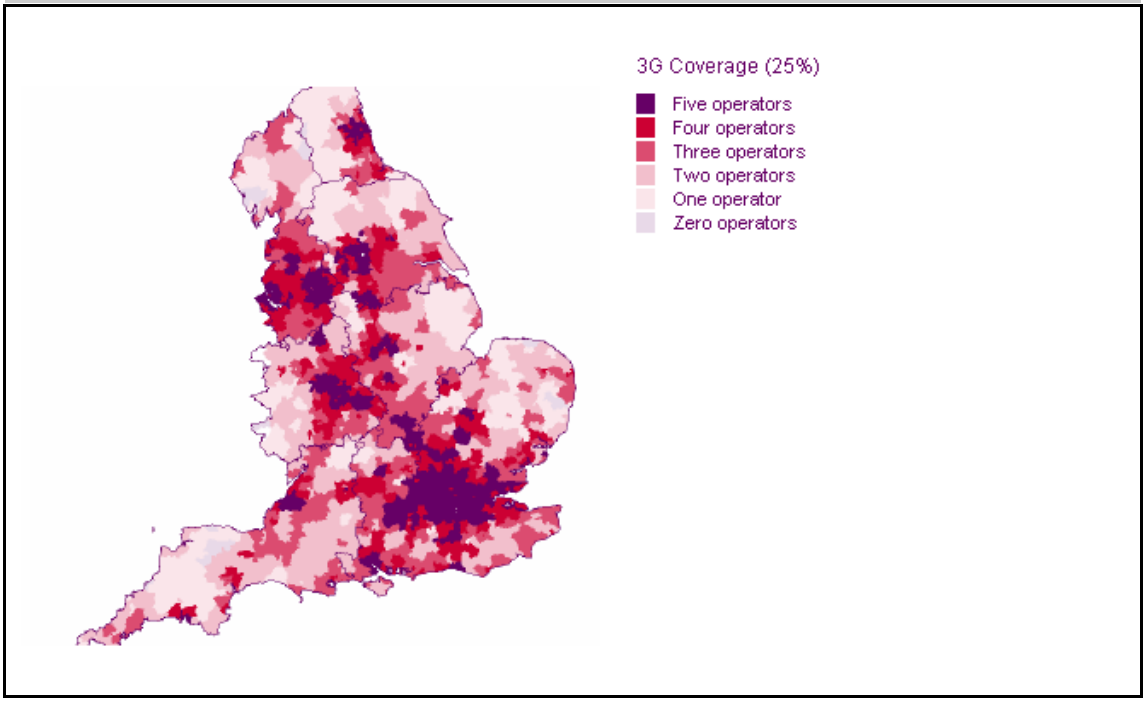


Source: Ofcom Communications Market – Nations and Regions report, 2006. Reproduced with permission

3G mobile

2.36 Geographical coverage of 3G networks is still significantly below that of 2G networks, as the roll-outs have focused on densely populated urban areas. The map below in Figure 2-10 shows 3G mobile phone coverage across the English regions by number of operators in late 2005.

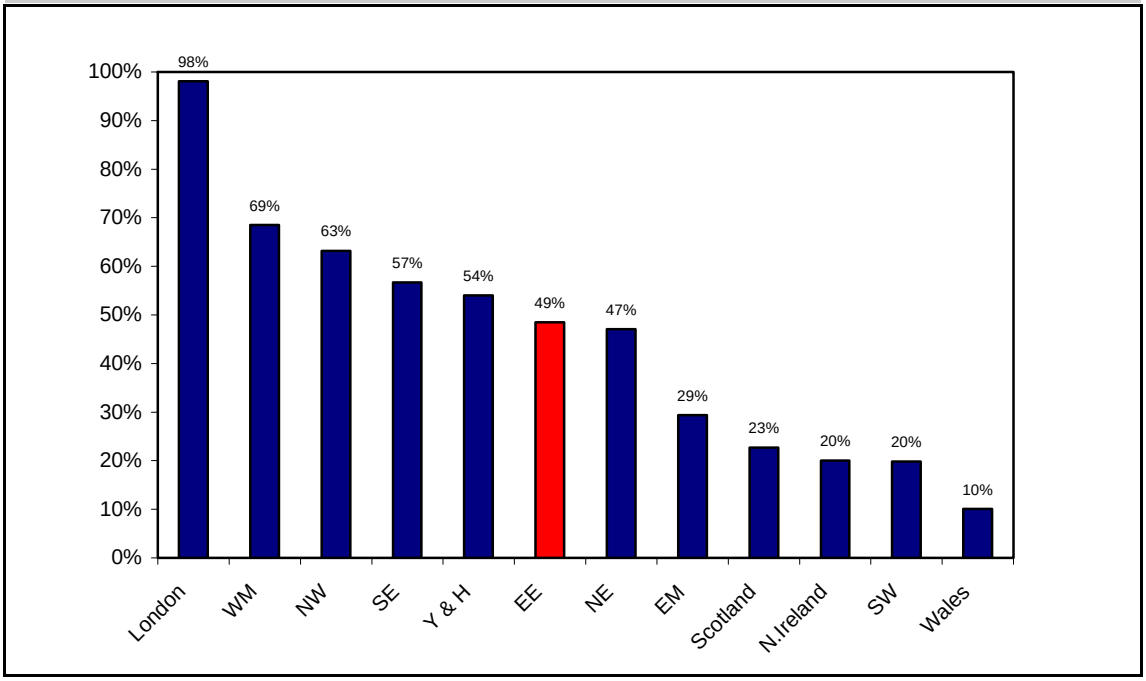
Figure 2-10: 3G mobile phone coverage in the English regions by number of operators reporting at least 25% area coverage in postal districts



Source: Ofcom Communications Market – Nations and Regions report, 2006. Reproduced with permission

2.37 As of the latter part of 2005, 97% of postal district areas in the East of England were covered by at least one 3G provider with at least 25% coverage; however, only 49% of postal districts had at least four operators with that coverage level - marginally higher than the UK average of 46% (see Figure 2 -11).

Figure 2 -11: Proportion of postal districts where at least four operators report at least 25% 3G coverage, as of late 2005



Source: Ofcom Communications Market – Nations and Regions report, 2006

2.38 We note that the (predominantly rural) areas that have – and will continue to have – the least 3G mobile coverage are also the areas that are likely to be least well-served by next generation broadband services. As the 3G market develops it will be important to monitor the extent to which businesses are adopting the technology, and to assess whether lack of 3G mobile coverage is starting to constrain the growth of businesses in rural parts of the region.

2.39 The remainder of this section summarises the findings of recent research on supplier quality and customer satisfaction.

Delivering quality support to businesses

2.40 Because businesses often find choosing suppliers difficult, RDAs and other regional organisations are investigating the potential to create a supplier accreditation system. This would be a mutually agreed system in order to assist ICT companies in developing and delivering content initiatives.

Customer satisfaction with suppliers

Ofcom data[6]

2.41 Ofcom's Residential Communications Tracking Study, 2005 asked respondents about their level of satisfaction with mobile phone and internet services. The results of this study are broken down by region which allows us to compare the level of satisfaction of these services in the East of England with other English regions.

2.42 In terms of satisfaction with mobile phone services, 41% of respondents in the East of England were very satisfied and 51% were fairly satisfied, the results are comparable with the other English regions where the percentage of respondents being either very or fairly satisfied were more or less the same. The same can be said for the level of satisfaction of respondents in terms of the value for money of mobile phone services. In the East of England, 22% were very satisfied and 57% fairly satisfied.

2.43 Internet user satisfaction was comparable to that shown for mobile phone: 38% of users were very satisfied and 53% were fairly satisfied with the services provided, while 27% of respondents were very satisfied against 54% that were fairly satisfied that internet access was good value for money. Again, these results are broadly comparable with those for other English regions.

Point-Topic.com survey findings

2.44 Broadband market research group Point Topic carried out two extensive broadband user surveys in February 2006 and in December 2006. The main findings of the surveys are that the number of dissatisfied customers is growing rapidly. In effect, the level of satisfied customers dropped 15% in that space of time, from 92% of respondents claiming to be "very" or "fairly" satisfied to 77%. After-sales support and general customer services were often

[6] Ofcom Residential Tracking Study, 2005, Q1, Q2 and Q3 in Ofcom (2006) 'The Communications Market: Nations and Regions, English regions'

cited as reasons for dissatisfaction. It is likely that the introduction of 'free' broadband services (e.g. by Talk Talk) has played a large part in raising dissatisfaction levels.

2.45 Arguably more significant is the finding that 25% of consumers are thinking of changing broadband provider or "churning" compared to only 8% in 2005. The main reason respondents gave for wanting to change broadband provider was price.

2.46 The survey also mentioned that in the six months prior to February 2007, one in ten respondents had switched ISP.

2.47 A new national regulation was put in place by Ofcom in February 2007, under which broadband providers will be obliged by law to provide customers wishing to migrate to another ISP with a 'MAC code', effectively making it easier for customers to change ISP providers if they are dissatisfied and arguably forcing ISPs to "work hard" to retain their customer base.

Speed test quality

2.48 Thinkbroadband.com conducts an on-going speed test survey through a speed test tool on their website. Analysis of the period October 2006 to January 2007 found that the average download speed was 2.03 Mbit/s. The results are useful in providing an indication of the extent to which providers are delivering high speed services across the UK. The site points out that comparisons cannot be easily made - whereas around five years ago, all consumers had a 500 kbits/s connection, providers now offer different services and consequently the results are dependent on the services to which consumers subscribe. Be had the highest average because it only sells ADSL2+ within short distances of local exchanges.

3: ICT usage

Broadband usage

3.1 In December 2006, ONS published statistics from their latest survey of internet service providers which showed that broadband connections accounted for 79% of all UK internet connections. This increased from 76% in September 2006, as broadband substituted for dial up connections. The survey showed that 60% of connections are less than 2Mbit/s, 33% are between 2Mbit/s and 8Mbit/s, 2% are above 8Mbit/s, and the remainder are unknown.

3.2 We estimate that there are now in excess of 1.1 million broadband connections in use in the region. Further information on the take-up of BT's ADSL services and Virgin Media's cable broadband services is provided below.

BT ADSL service take-up

3.3 BT's ADSL penetration in the East of England has increased broadly in line with UK national levels, but is somewhat below that of the South East region, as shown in Table 3 -1.

Table 3 -1: Penetration of BT wholesale ADSL services, for the East of England, the UK and the South East (% of premises)

	East of England	UK	South East
2003	6.0	6.1	8.0
2004	10.1	10.1	13.2
2005	23.9	23.1	28.6
2006	33.8	31.1	38.3

Source: BT, March 2007

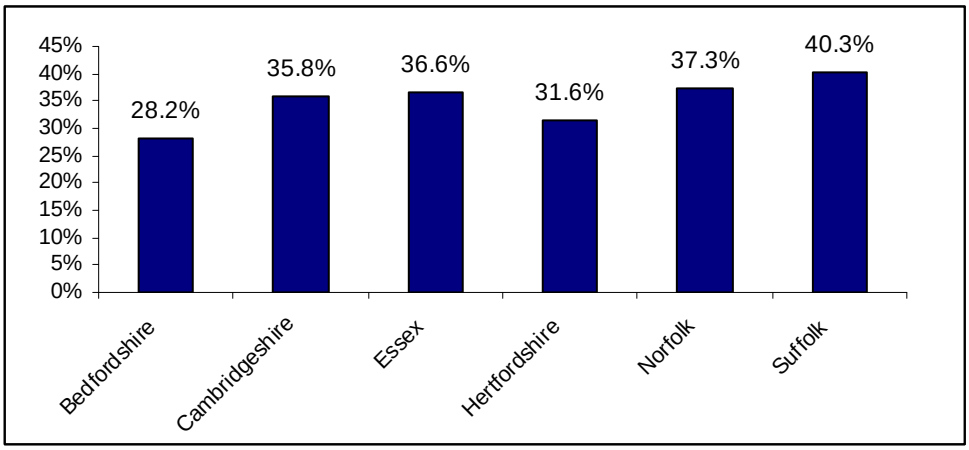
3.4 Care should be taken when interpreting this data. The fact that the region's BT wholesale ADSL penetration is now higher than the UK average is likely to be more a reflection of there being lower than average LLU competition, rather than higher overall levels of demand.

3.5 As of the end of February 2007, BT reports that 35.3% of premises in the region had taken up services based on BT's wholesale ADSL. In the parts of the region not served by cable (i.e. where there is less competition to BT), ADSL take-up was significantly higher, at 45.6%.

3.6 Growth in the use of BT's wholesale broadband services is continuing in all counties, but at widely varying rates: Hertfordshire is seeing the lowest growth, and Norfolk/Suffolk the highest, although these differences may well be due to the effects of differing levels of competition, rather than differing total demand.

3.7 Figure 3-1 shows average penetrations split by county within the region. These are highest in the north and east, which tend to be more rural parts of the region, and where LLU and cable competition is least.

Figure 3-1: Average BT wholesale ADSL penetration rates by counties of the East of England



Source: BT, March 2007

Cable broadband take-up

3.8 Virgin Media advises us that that they currently have a total of 272,000 broadband connections across the East of England, distributed as follows:

Table 3 -2: Virgin Media broadband connections within the East of England

Sub-regional area	Number of broadband connections
North Beds, East Herts, Luton, S. Beds, Broxbourne, Central Herts	100,000
Cambridge	66,000
S. Herts	22,500
West Herts	19,500
Great Yarmouth, Lowestoft, Norwich, March, Wisbech, Peterborough, Ipswich, Colchester	64,000
All East of England	**272,000**

Source: Virgin Media, March 2007

3.9 Using data from Ofcom that 49% of premises in the region are passed by Virgin Media digital cable, this would imply cable broadband take-up rates in the order of 23% in cabled areas.

3.10 Take up appears to balance out across the region when both ADSL and cable broadband are mapped together. For example, low BT ADSL penetration in Hertfordshire is balanced by substantial cable broadband uptake in the same area.

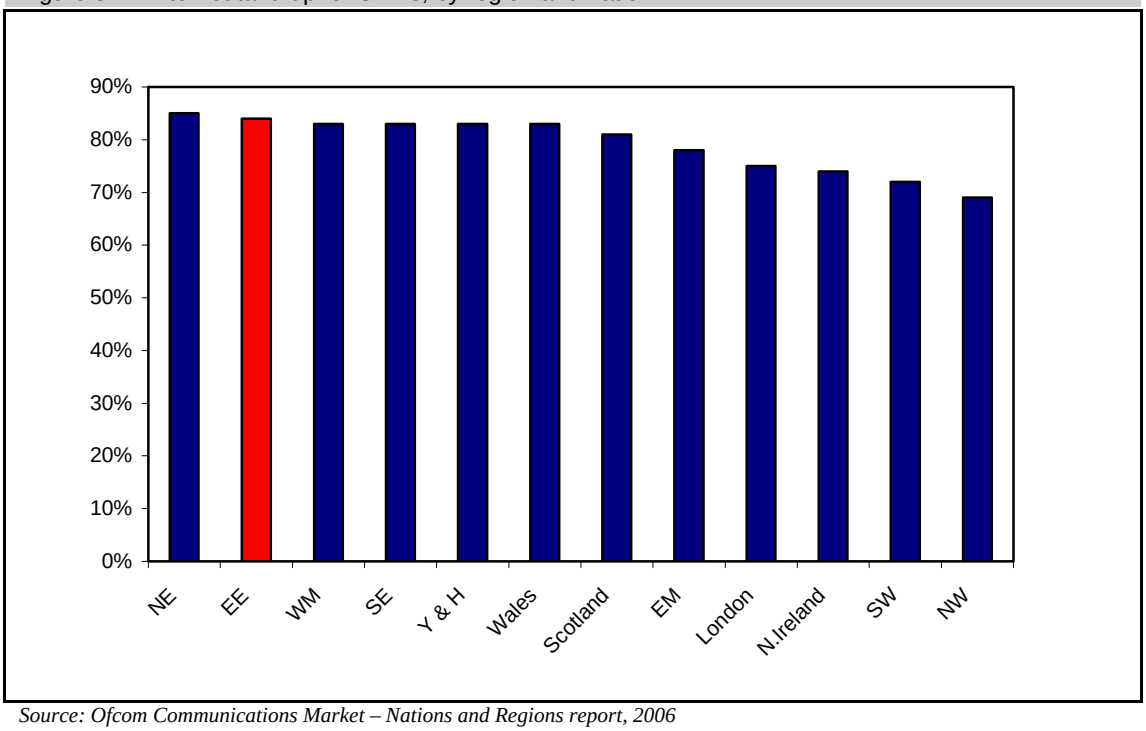
Business ICT use

3.11 The benefits of ICTs at the level of the firm are well documented. EEDA's Regional ICT Strategy makes reference to these, including: enhancing the efficiency of business planning and management systems; improving the precision and quality of goods and services; lowering costs of production; enabling the development of new products and services; increasing staff training, awareness, enterprise and innovation and improving supply chain management. Research studies have estimated the impact of ICT on regional GVA at 3% to 4%, which the regional ICT strategy equated to a £3.6 billion GVA uplift for existing firms in

the East of England[7]. A recent report from the European Commission[8] states that ICT accounted for nearly 50% of the productivity growth in the EU in the period 2000-2004. The extent to which the East of England's businesses are exploiting ICT is clearly, therefore, a key concern for the region's policy makers.

3.12 According to Ofcom research in 2005, 79% of businesses in the UK had, or were in the process of gaining, access to the internet. At 84%, the take-up level for the East of England (SMEs) was somewhat higher than the UK average of 79%, as shown below[9].

Figure 3 -2: Internet take-up for SMEs, by region and nation



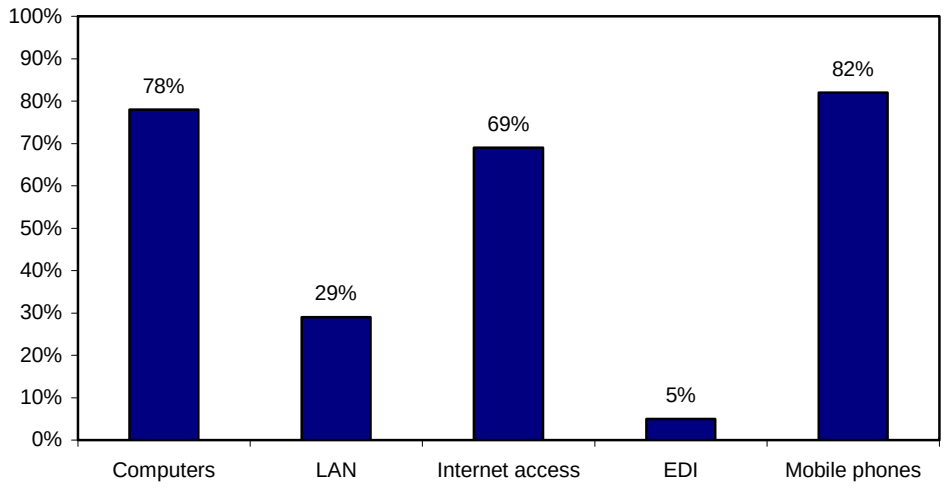
Source: Ofcom Communications Market – Nations and Regions report, 2006

Usage of ICT equipment and applications

3.13 SQW's study for Defra in 2005 on 'The Role of ICT in Rural Economies[10]' included a sample of 236 predominantly rural businesses in the East of England. These results should be treated with some caution as the survey was not designed to be representative at a regional level. However, it provides a relative comparison of the use of different ICTs within its sample population. This survey found that 78% of the respondents in the East of England were using computers and 69% were using the internet. A higher proportion (82%) was using mobile phones, but substantially fewer firms were using Local Area Networks (29%) and Electronic Data Interchange (5%). A total of 36% had a website. See Figure 3-3.

[7] Regeneris Consulting Ltd, Adroit Economics Ltd, and Interconnect Communications Ltd (June 2006) Regional ICT Strategy – A Business Plan
[8] European Commission, March 2007, i2010 – Annual Information Society Report
[9] Note though that regional-level samples sizes were not large for some regions – e.g. 99 for the East of England- so comparisons between the regions and nations need to be treated with some caution
[10] http://www.defra.gov.uk/rural/research/ict.htm

Figure 3-3: Usage of different ICT equipment and facilities among firms in the East of England, 2005



Source: SQW (2005) The Role of ICT in Rural Economies

3.14 The SQW survey also explored the use of other ICTs among businesses with computers in the sample group. Table 3-3 shows that email and the internet were found to be the most widely used ICT technologies, while over half of the respondents claimed to use online ordering of products and services from suppliers and computerised accounting systems.

Table 3-3: Use of different IT applications by businesses with computers in the East of England

Application	% using the application
Email	85%
The internet[11]	83%
Computerised accounting systems	57%
Online ordering of products or services from suppliers	52%
Systems to handle order processing	28%
Systems for sharing documents	27%
Human resource management systems	24%
Systems for sharing customer information	20%
Computerised stock control systems	17%
An intranet	12%
Supply chain management system	10%
Enterprise resource planning systems	6%

Source: SQW (2005) The Role of ICT in Rural Economies

[11] The percentage of internet access is different in Figure 3-3 and Table 3-3 because the base of respondents is different. It is higher in the table because only firms who had a computers were asked questions on their use of different IT applications

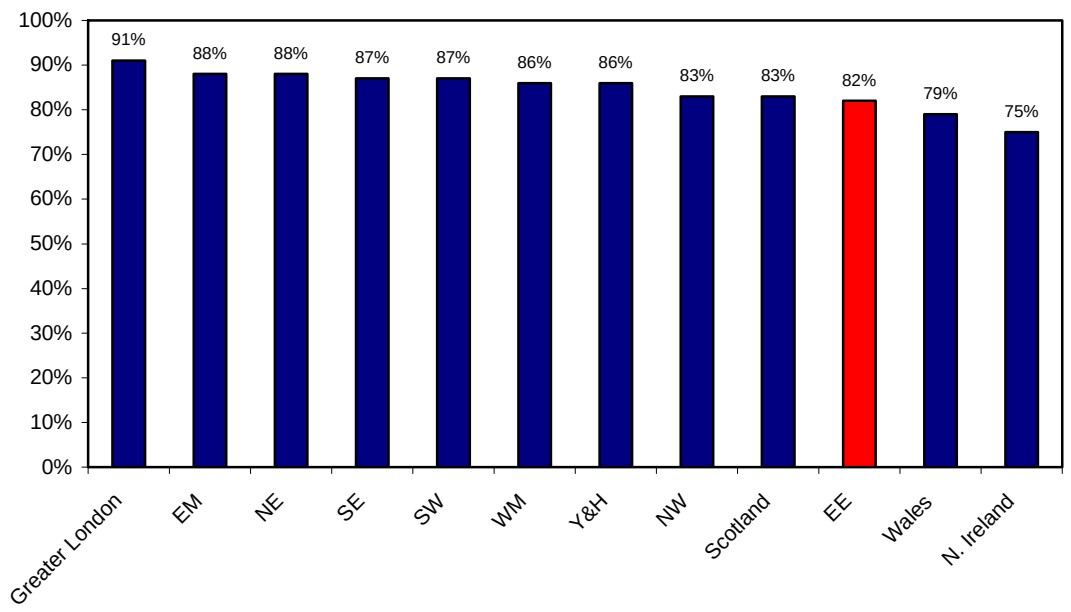
3.15 Respondents were asked about their use of video conferencing, and only 3% indicated that they were using this application.

3.16 The DTI's international benchmarking study[12] (2004) provides some useful regional comparisons of business ICT usage. Care needs to be taken in reviewing this data, however, as:

- the proportion of businesses stated (x%) actually mean businesses accounting for x% employment in the sample
- sampling errors need to be borne in mind: small variations between regions (e.g. internet penetration) are not necessarily significant.

3.17 Bearing these caveats in mind, and looking at the areas where the differences between regions are most pronounced in the DTI report, we find the proportion of businesses in the East of England with a website was the lowest of all English regions (Figure 3-4), and is only higher than that in Wales and Northern Ireland. The proportion of businesses with an intranet was also below average (Figure 3-5). However, the region was broadly in line with the national average in terms of the proportion of its businesses with a Local Area Network (Figure 3-6) and the proportion trading online (Figure 3-7).

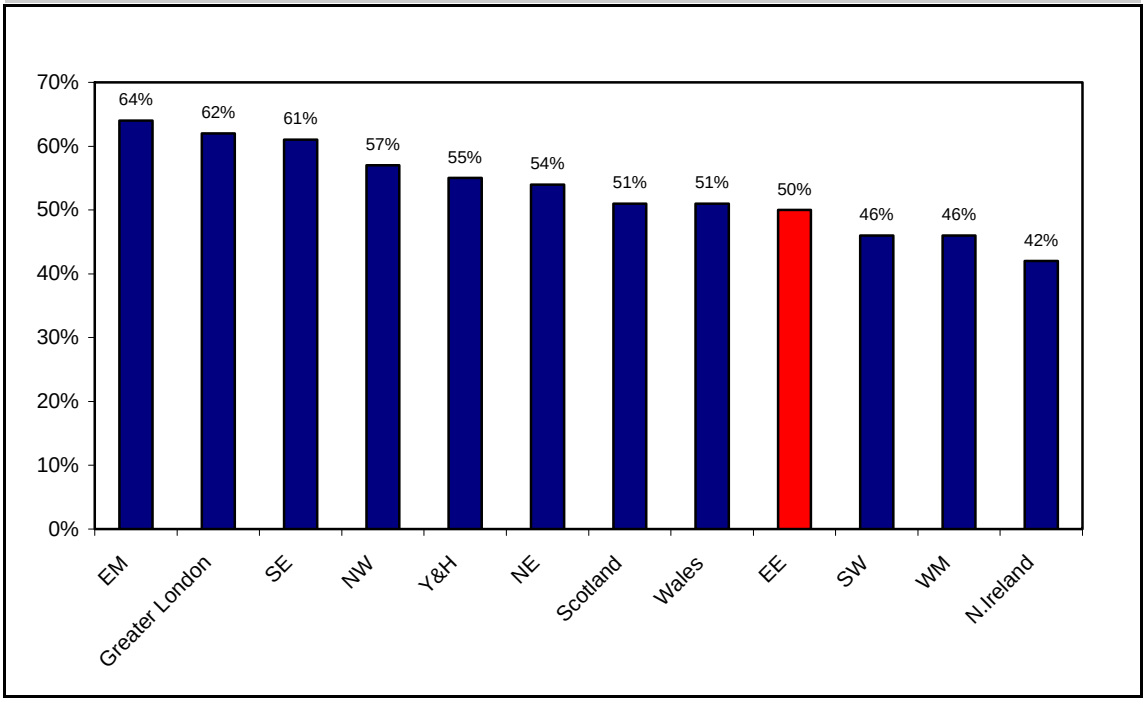
Figure 3-4: Businesses with a website



Source: DTI (2004), Business in the Information Age: The international benchmarking study

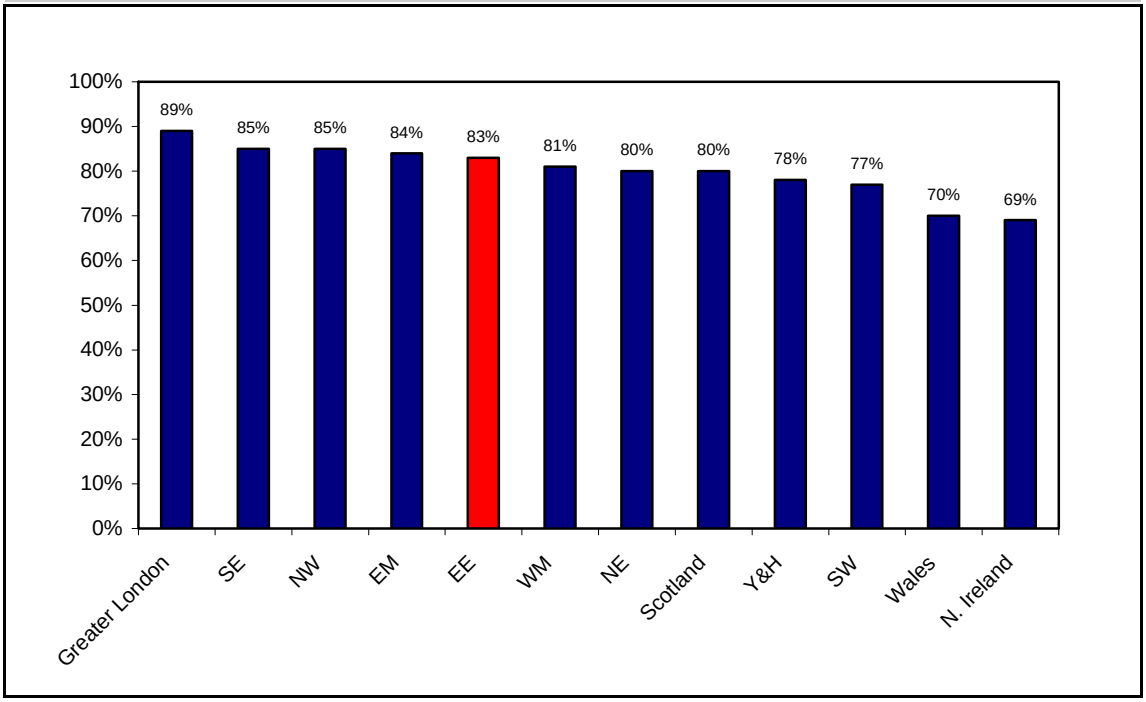
[12] *DTI (2004), Business in the Information Age: The international benchmarking study, p120*

Figure 3-5: Businesses with an intranet



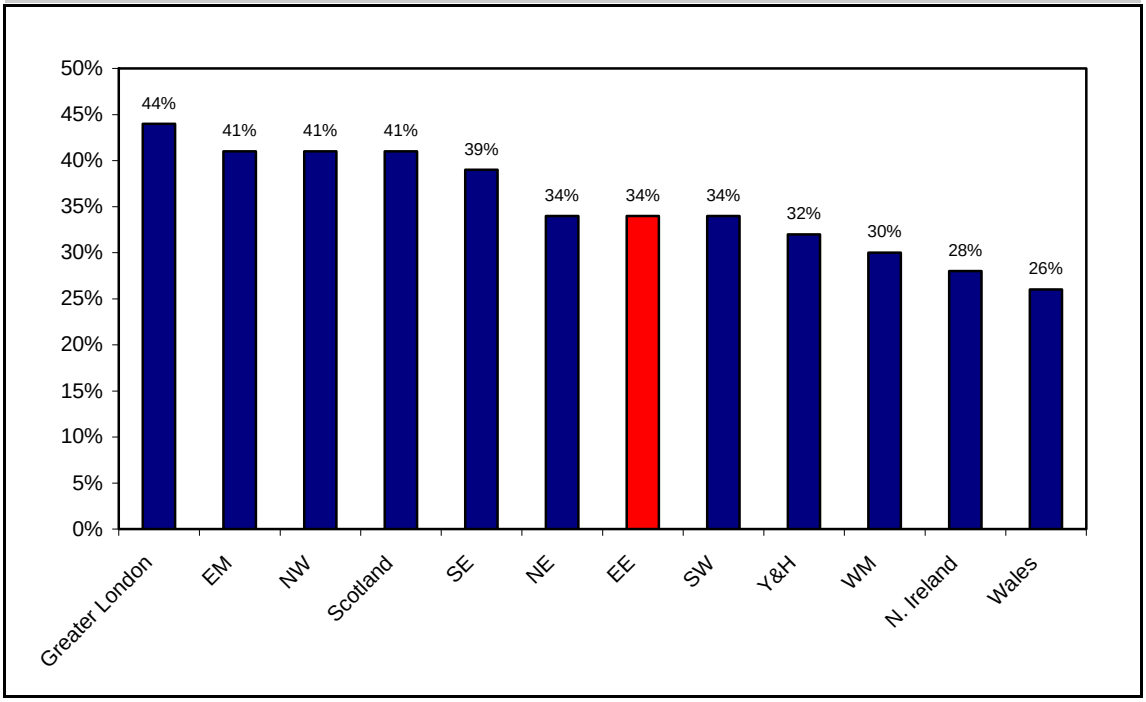
Source: DTI (2004), Business in the Information Age: The international benchmarking study

Figure 3-6: Businesses with a Local Area Network



Source: DTI (2004), Business in the Information Age: The international benchmarking study

Figure 3-7: Businesses trading online



Source: DTI (2004), Business in the Information Age: The international benchmarking study

Differences in ICT usage by size of firm

3.18 Research consistently demonstrates that the level of ICT usage and sophistication tends to be higher for larger firms, as shown for example in Table 3-4 from the Office of National Statistics e-commerce survey.

Table 3-4: Business use of ICT by number of employees, UK, 2005

	Number of employees				All businesses with 10 or more
	10-49	50-249	150-999	1,000 or more	
Computers, workstations, terminals, etc					
2002	87.2	97.5	99.3	99.3	89.0
2003	90.6	98.6	99.3	99.5	92.1
2004	90.7	99.0	99.7	99.9	92.2
2005	92.0	98.9	100.0	99.6	93.3
With website, own or third party					
2002	53.9	77.0	88.1	95.1	58.3
2003	57.5	82.6	89.8	96.8	62.3
2004	62.7	84.9	92.4	97.9	66.9
2005	65.7	86.7	94.8	97.7	69.8
Intranet					
2002	19.4	44,1	65.0	82.0	24.5
2003	23.1	47.2	69.0	83.9	28.2

	Number of employees				All businesses with 10 or more
	10-49	50-249	150-999	1,000 or more	
2004	24.9	45.3	69.2	84.6	29.4
2005	25.5	48.6	74.3	86.4	30.6
Extranet					
2002	3.7	9.6	23.4	35.4	5.2
2003	5.3	11.0	23.8	39.7	6.9
2004	4.5	13.5	26.7	41.4	6.6
2005	6.0	15.0	33.1	48.5	8.4

Source: Office of National Statistics (2005), e-Commerce Survey

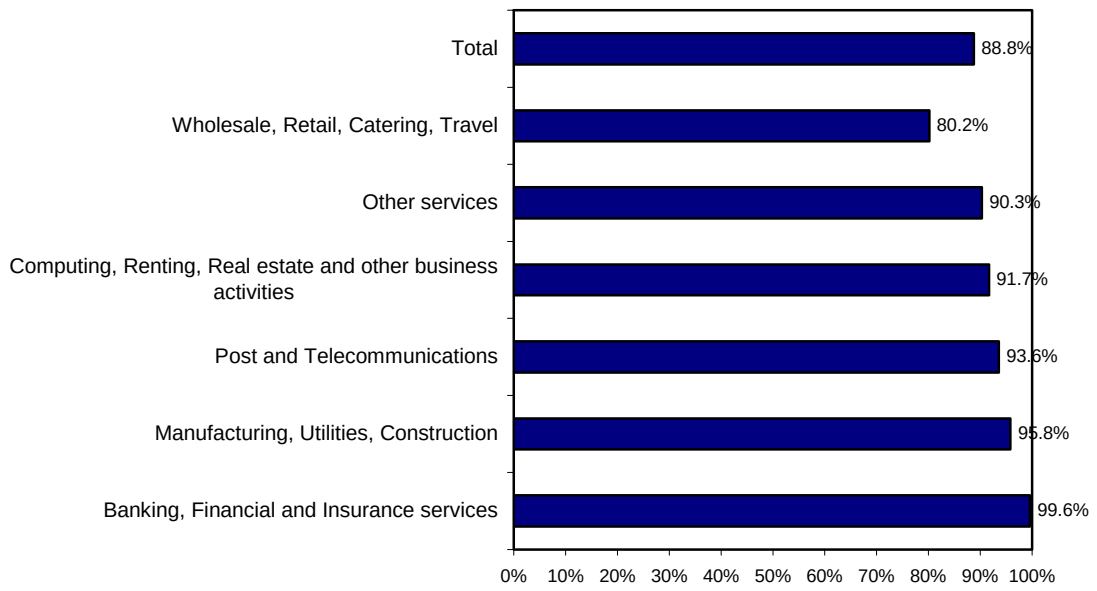
3.19 The e-commerce survey excluded businesses with less than 10 employees from its sample in 2005, but in analysing the results ONS pointed out that 'this had a significant effect on the data due to the relatively low ICT activity among smaller businesses and the number of businesses of that size'. Pre-2005 results of the e-commerce survey confirm that trading on-line is lowest for the smallest businesses.

Differences in ICT usage by sector

3.20 At a national level, sectors where internet use remains low include agriculture, tourism, real estate and recreational sectors. ONS findings from the sixth annual e-commerce survey[13] showed that internet use increased in all sectors from 2002 to 2005, with the exception of the Post and Telecommunications sector. Sectors that had the greatest internet access in 2005 were banking, financial, and insurance services (99.6%), manufacturing, utilities (electricity gas and water) and construction (95.8%), post and telecommunications (93.6%). Unsurprisingly, sectors which are less office-based – such as wholesale, retail, catering and travel - had the lowest rate of internet access, with 80.2% in 2005. See Figure 3-8.

[13] Office of National Statistics (2005), Information and Communication Technology (ICT): Activity of UK businesses

Figure 3-8: Business with internet access by broad industrial sector, 2005



Source: Office of National Statistics (2005), Information and Communication Technology (ICT): Activity of UK businesses

E-commerce

3.21 E-commerce is increasing as more companies are purchasing online, although only a small proportion of businesses are selling their goods or services online as yet. Findings from the 2005 ecommerce survey of business[14] reveal the extent and importance of internet sales. The total value of sales stood at £103.3bn in 2005, and represented 34% of sales over all kinds of ICTs. As sales have steadily increased, the sectors leading in the value of their sales over the internet are: wholesale/retail/catering/travel and manufacturing/utilities/construction representing about £50 billion and £40 billion respectively.

3.22 The proportion of businesses (with more than 10 employees) selling online has increased from c. 7% in 2002 to c. 15% in 2005, see Table 3-5. This varies from c. 13% for SMEs employing 10-49 staff and 39% for companies employing over 1000 staff. In the same period, the proportion of businesses purchasing online increased from 18% to 56%. Again there was substantial variance between the smallest firms employing 10-49 staff (53%) and companies employing over 1000 staff (79%). The total value of purchases was £72.8bn in 2005.

3.23 Sales over other ICTs, including non-internet Electronic Data Interchange (EDI), automated telephone systems and e-mail, were nearly twice the value of sales over the internet at £204.1bn in 2005, but have reduced as a proportion of total sales since 2002.

[14] Office of National Statistics (2005), Information and Communication Technology (ICT): Activity of UK businesses , Based on the results of the 2005 e-commerce Survey of Business, online. Available: http://www.statistics.gov.uk/downloads/theme_economy/ecommerce_report_2005.pdf

Table 3-5: Businesses trading through electronic means by number of employees, United Kingdom, 2005

	Number of employees				All businesses with 10 or more
	10-49	50-249	150-999	1,000 or more	
Sold over the internet					
2002	6.4	7.7	14.4	22.3	6.9
2003	9.1	10.6	16.0	27.4	9.6
2004	10.6	17.0	22.7	31.5	12.0
2005	12.9	20.9	28.5	38.6	14.6
Purchased over the internet					
2002	15.8	23.7	31.0	37.3	17.5
2003	37.6	50.3	57.5	58.1	40.0
2004	47.7	61.9	64.9	69.2	50.3
2005	52.8	71.1	77.1	79.1	56.3
Sold over other ICT (excluding the internet*)					
2002	9.2	20.4	33.9	30.2	11.5
2003	14.5	24.2	35.3	34.0	16.5
2004	13.2	24.9	33.2	34.8	15.6
2005	15.0	24.1	32.8	36.8	16.9
Purchased over other ICT (excluding the internet)					
2002	10.4	19.2	33.7	48.0	12.5
2003	15.8	24.5	43.9	57.7	18.0
2004	14.3	29.3	39.6	54.3	17.3
2005	16.0	26.9	42.6	56.3	18.5

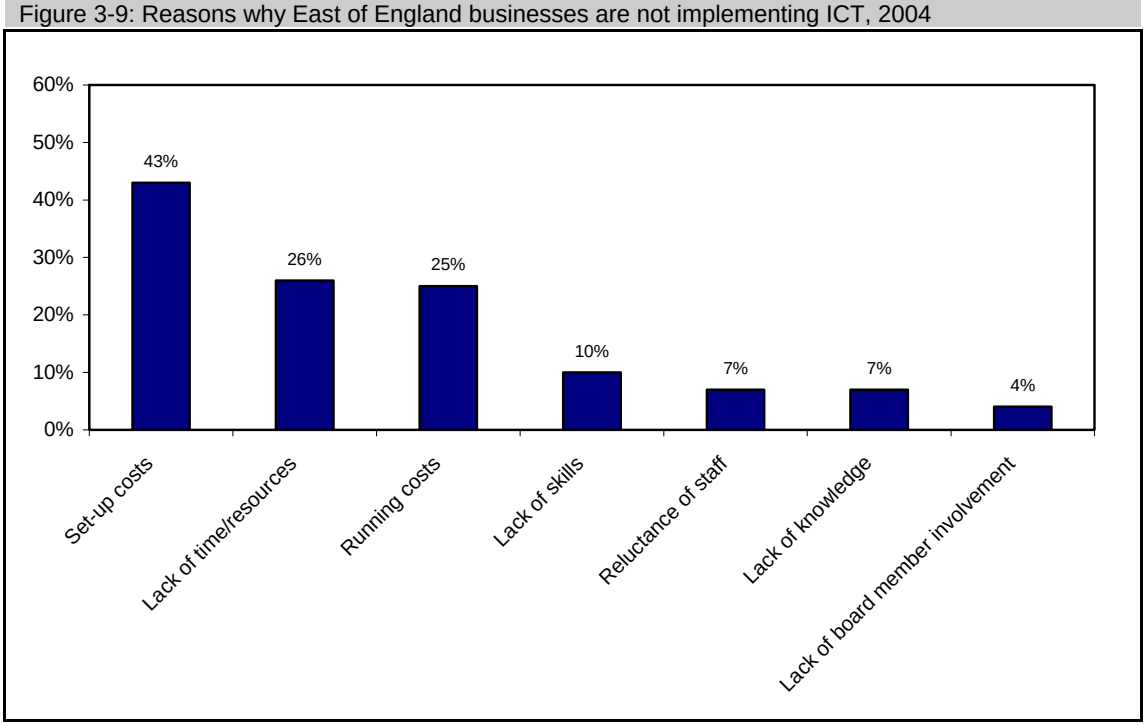
Source: Office of National Statistics (2005), e-Commerce Survey. Note: the internet includes Electronic Data Interchange, email, computer-based fax and automated telephony reply.*

Barriers to adoption

3.24 The DTI's international benchmarking study[15] found that that the main barriers to business entry are overwhelmingly related to cost. The most widely cited reasons by businesses in the East of England for not implementing ICT were, in order of importance given by respondents: set-up costs (43%), lack of time and/or resources (26%) and running costs (25%). See Figure 3-9.

[15] DTI (2004), Business in the Information Age: The international benchmarking study, p119

Figure 3-9: Reasons why East of England businesses are not implementing ICT, 2004



Source: DTI (2004), Business in the Information Age: The International Benchmarking study, p.119

3.25 Again, costs were the primary concern for both urban and rural businesses (60% and 61% respectively) in SQW's 'Role of ICT in Rural Economies' survey on the main barriers to ICT investment. Concern over security was also one of the main barriers to implementation cited by respondents (46% for urban and 50% for rural businesses). See Table 3-6.

Table 3-6: Barriers to ICT investment for East of England firms

Barriers to investment	Percentage of responses
Concern over costs	62%
Lack of time to assess what the firm should invest in	52%
Uncertainty over the benefits to the business	50%
Concerns over security (hackers, viruses, etc)	50%
Uncertainty over which supplier, product or service to use	46%
Lack of up-to-date information	41%
Low levels of IT awareness/understanding of managers	40%
Concern over implementing changes to business processes	32%
Concern over the integration with existing systems	30%
Concerns over ongoing technical support	29%
Concerns over the need for training current staff	28%
Difficulty getting advice	28%
Concern over staff skills	22%
Difficulties getting agreement within the firm	12%
A high turnover of staff, with concerns over training new staff	9%

Source: SQW (2005) The Role of ICT in Rural Economies

3.26 Whilst the DEFRA survey was primarily of rural businesses, it should be noted that a key finding of the study was that there were no significant differences in the barriers to ICT adoption between urban and rural businesses (with the sole exception of broadband availability), when the responses are adjusted for business sector and size.

3.27 Respondents who had previously answered in the SQW survey that they were unlikely to start using computers in the next 18 months were also asked why that had made that choice. The most frequent reason given was that using computers was not a need for their business (65%) and that security concerns were a main barrier to start using them (23% of respondents).

3.28 Research by West Focus on ICT adoption and use by SMEs, based on a survey of over 400 SMEs (including micro-businesses) in the West London and Thames Valley area also found that the key factors which hold businesses back from ICT investments are concerns over costs, uncertainty over business benefits and lack of internal ICT skills. Most of the businesses they interviewed tend to deal with the skill issues by training staff internally. Around 80% were put off from going on formal courses because they believe that their skills are completely or mostly able to meet their business needs. Many of the small companies manage ICT systems in a self-taught way because they perceived ICT training as expensive.

Influences on ICT adoption

3.29 When businesses were asked what influences and informs their decisions on ICT, in SQW's survey for Defra, respondents in the region said discussions with customers (57%), discussions with friends or relatives (53%) and discussions with non-ICT suppliers (48%), suggesting that word of mouth recommendations are most persuasive. Other influences included: research on the internet (49%) professional advice (42% by a bank accountant or lawyer), articles in the press (40%) and a local campaign for broadband (43%). See Table 3-7.

Table 3-7: Sources of information and influence that impact on businesses' investment decisions on ICT, East of England, 2005

Sources of information and/or influence	Percentage of responses
Discussions with customers	57%
Discussions with friends or relatives	53%
Research on the internet	49%
Discussions with other suppliers	48%
A local campaign for broadband to be made available in your area	43%
Discussions with a bank, accountant or lawyer	42%
Articles in the press	40%
Discussions with competitors	39%
Discussions with suppliers of ICT products and services	38%
Trade organisation	32%
Advertising (TV/radio/posters/press adverts etc.)	31%
A publicly-funded organisation (such as Business Link or Local Authority/Council)	28%

Sources of information and/or influence	Percentage of responses
Government websites	26%
A wish to access to e-government services (e.g. filling tax returns online)	24%
Discussions with firms in other sectors	24%
Consultants	23%
View of new recruits	19%
Direct mail	18%
Don't know	11%
Others	2%

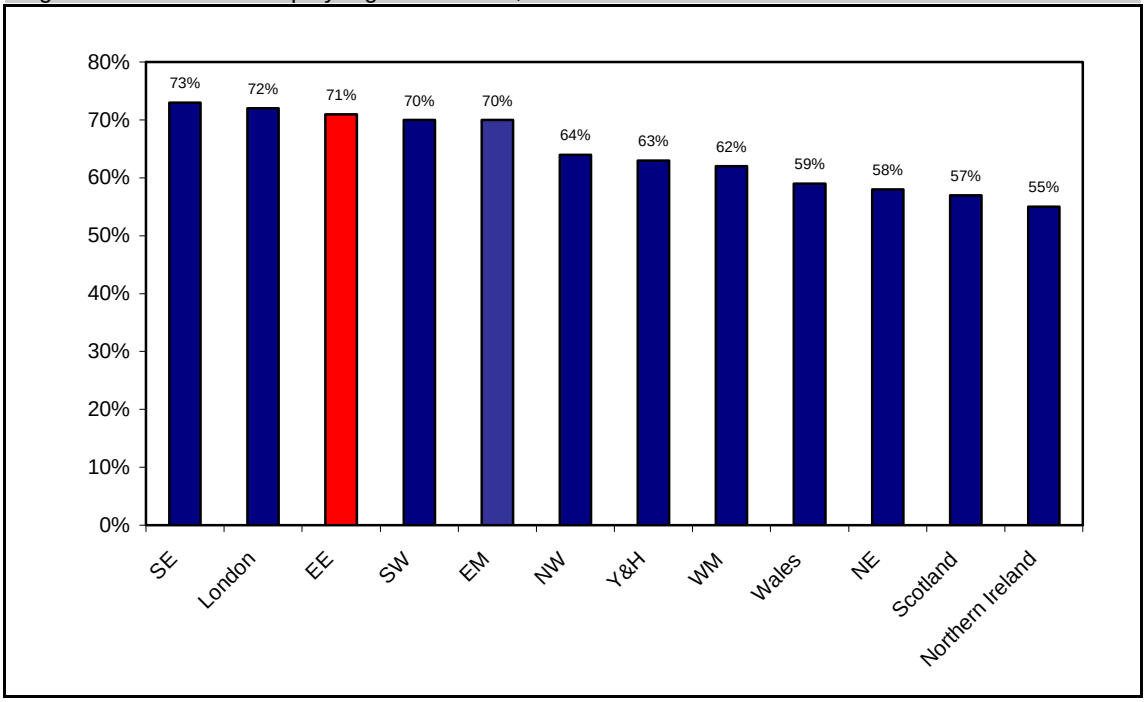
Source: SQW (2005) The Role of ICT in Rural Economies

Residential use

Computer and internet use in the home

3.30 Ofcom's residential tracking survey in 2005[16] found that PC ownership in the East of England was above average at 71% compared to an average of 66% in the UK (Figure 3-10).

Figure 3-10: PC ownership by region in the UK, 2005



Source: Ofcom Communications Market – Nations and Regions report, 2006

3.31 Computer ownership has risen steadily from just under 30% in the mid-1990s to just under 70% in 2005/06 (ONS, 2007[17]), although ownership is still low in comparison to other forms of technology. More households own CD players, DVD players ands mobile phones, but the

[16] *Ofcom (2005), Residential Communications Tracking, Q2/Q3*
[17] *Focus on the Digital Age, March 2007, Office of National Statistics, p.2*

trend in year on year increases in computer ownership and internet access seems set to continue.

3.32 Table 3-8 illustrates that the East of England is well placed in terms of internet access and broadband access in comparison with the UK average. Overall, ONS estimates that 65% of households had an internet connection in 2006, compared to 57% in the UK. Take-up of internet in the home increased by eight percentage points from 2005 to 2006. About two-thirds of these households accessed the internet via broadband (68%), compared to 70% in the UK.

Table 3-8: Households with internet access in the East of England and the UK by type of connection (%)

	2005	2006
East of England		
Broadband access	27%	44%
Non-broadband access	30%	21%
Total internet access	**57%**	**65%**
United Kingdom	-	
Broadband access	-	40%
Non-broadband access	-	17%
Total internet access	**-**	**57%**

Source: Office of National Statistics (August 2006), Internet Access: Households and Individuals

3.33 Home is the most common location for adult internet users of all ages to access the internet: ONS[18] estimates that 85% of current internet users aged 16 and over went online at home. In 2004/05, 94% of these internet users used desktop computers to go online and 14% used their mobile phone. Fifty-nine per cent of internet users in Great Britain go online everyday or almost everyday while only 4% go online less than once a month (ONS, 2007).

3.34 Internet experience (defined as more than 3 years' experience) has, naturally, increased over the years, from 42% of internet users aged over 16 in 2001/2002 to 65% in 2004/2005 (ONS, 2007).

3.35 ONS (2007) also found that the East of England is one of the regions with the highest proportion of its adult population being current users of the internet with 65% - the same proportion as that of London and slightly below that of the South East of England at 67%. The region also has a higher average of adults going online at least five days a week (63% versus 60% for England).

Online purchasing

3.36 With 77% of its population ever having shopped online, the East of England is the second most experienced in internet purchasing of all English regions, and is above the England average of 72% in 2006, as recorded in the ONS Omnibus survey[19]. For Great Britain as a

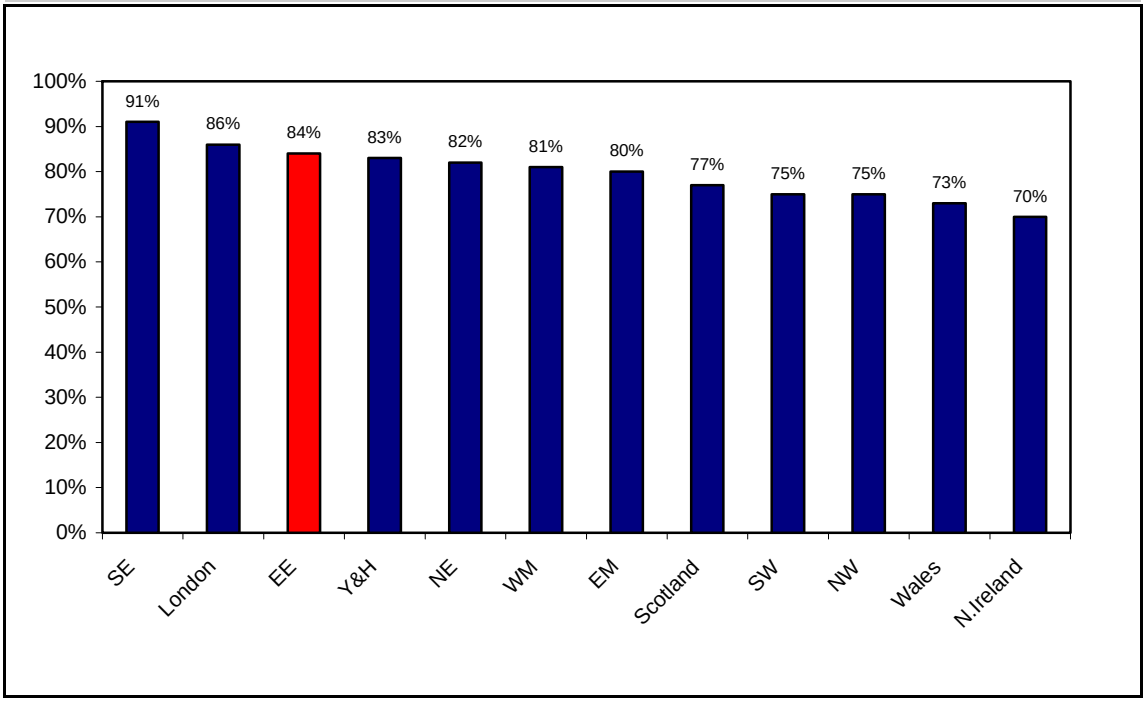
[18] Office of National Statistics (2007), Focus on the Digital Age
[19] Office of National Statistics (2006), Omnibus Survey

whole, most people were shopping for non-essential luxury goods and items (e.g. holidays and entertainment).

Mobile use

3.37 Growth in mobile phone use has been rapid since the mid-1990s, although it has slowed more recently. Take-up of mobile phones is above average in the East of England at 84%, compared to 80% in the UK[20], as shown in Figure 3-11.

Figure 3-11: Personal take-up of mobile phones (adult population) in the UK by region, 2005



Source: Ofcom Communications Market – Nations and Regions report, 2006

3.38 Among those not intending to use a mobile phone in the UK and England, the overwhelming majority felt that that they saw no need to do so or were happy with a landline and/or payphone (88%), the next most cited reasons were that mobile phones are hard to use (12%) and expensive (also 12%).

The 'digital divide': barriers to residential adoption

3.39 Resident adoption of ICT is also an RDA issue. Independent research conducted on behalf of BT on the Digital Divide[21] estimated that 51% or 24 million of the adult population in Great Britain was digitally excluded in December 2004. It also estimated a similar number could remain excluded by 2025 unless action is taken soon.

3.40 For some this exclusion is due to inability to access the technology, due to low income, skills gaps or personal disabilities. For others it can be voluntary, because they do not perceive there to be any benefits or need to engage with new technology and online world (BT, 2004).

[20] Ofcom Residential Communications Tracking Study, Q2/Q3 2005
[21] BT (Dec 2004), The Digital Divide in 2025: An independent study conducted for BT

3.41 Some of the reasons households have given for why they don't have internet access are shown in the table from ONS below:

Table 3-9: Reasons why UK households do not have internet access, 2006

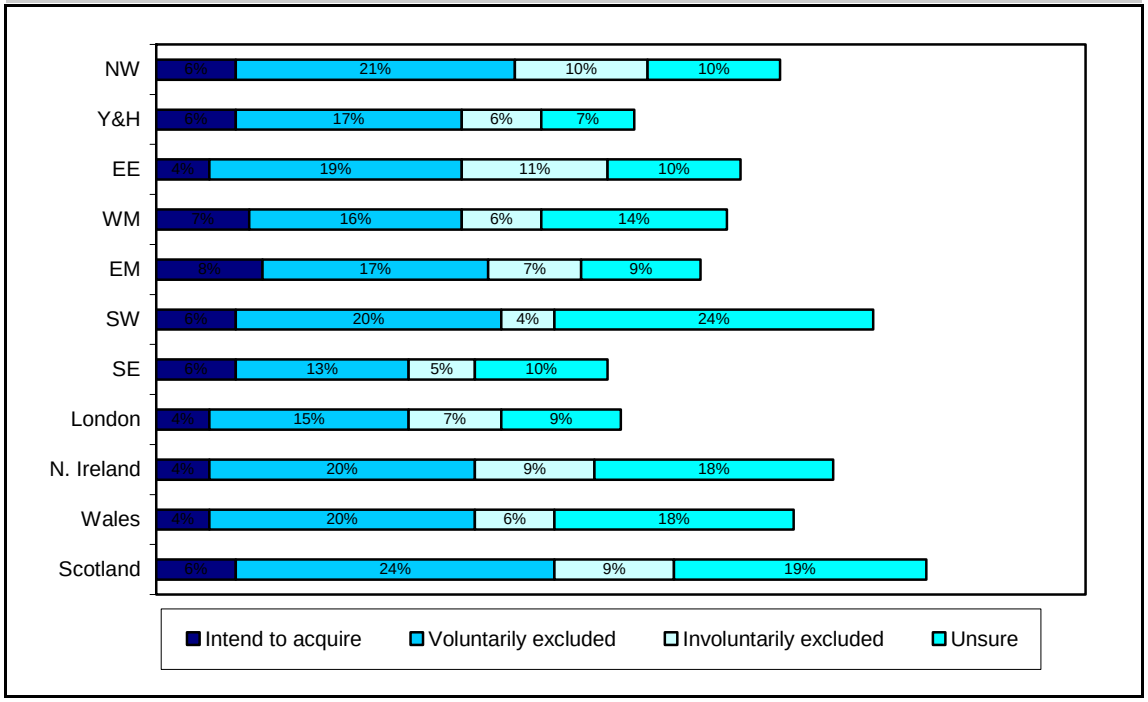
Reasons for not having internet access	Percentage of UK households
Don't need internet because not useful, not interesting	24
Lack of skills	24
Equipment costs too high	14
Access costs too high	11
Other	9
Have access to internet elsewhere	7
Privacy or security concerns	5
Don't want internet because content harmful	3
Physical disability	2

Source: Office of National Statistics (2006), Internet Access: Households and individuals, p.3

3.42 BT-sponsored research reported that digitally excluded adults are more likely to be older and have no educational qualifications, but that people on low incomes only account for 29% of the digitally excluded population. It also claimed that the presence of children in a household increases the likelihood of that household being digitally included. This is demonstrated in the Expenditure and Food Survey and Family Expenditure Surveys conducted by ONS, which shows that households with dependent children have had greater internet access than those without children since 1999/00.

3.43 An Ofcom Media Literacy Audit in 2005 indicated that the *voluntarily* excluded (19%) in the East of England was proportionately the same as the UK. The *involuntarily* excluded was slightly higher in the East of England (11%) than the UK (8%) at the time of the survey (Figure 3-12).

Figure 3-12: Ofcom analysis of those not taking up the internet, 2005



Source: Ofcom Communications Market – Nations and Regions report, 2006

3.44 Age, income and level of qualification all seem to play an important part in determining both the take up of PCs in the home and access to the internet. Indeed, PC take-up is far more common among adults under 45 than for those over 45 at both the national level (78% and 56% respectively) and East of England level (84% and 57% respectively)[22].

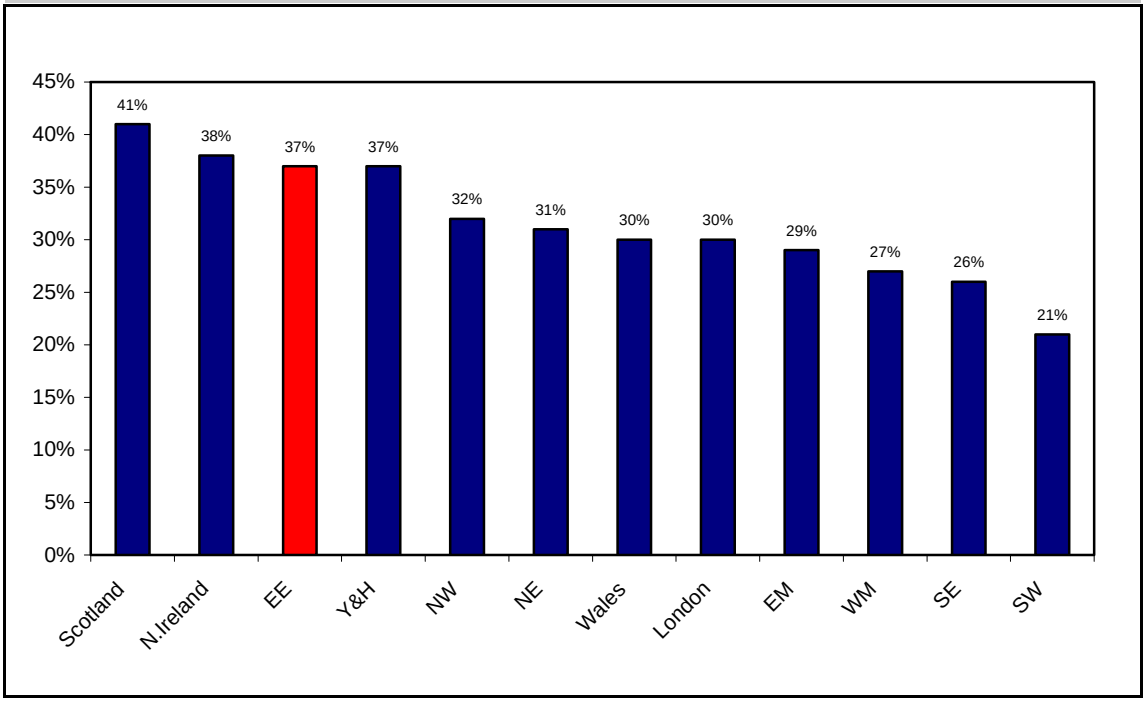
3.45 The same can be said of internet access. Although it has steadily increased among all age groups, it is still far more likely among those aged 16 to 24 (over 80%), 25-44 (slightly below 80%) and 45-54 (slightly below 70%) than among those aged 55-64 (about 50%) and 65 and over (slightly above 15%) [23].

3.46 Income is also a determining factor in terms of PC take-up at both national and regional level. Adults within the ABC1 income group[24] are far more likely to have a PC in the home at both national and East of England levels (73% and 77% respectively) compared with those within the C2DE income group (42% at national level and 40% at East of England level)[25][26].

3.47 Figure 3-13 below illustrates that the gap between internet take up in socio-economic groups ABC1 and C2DE is, jointly with Yorkshire and Humber, wider in the East of England than in any other English region.

[22] Ofcom (2006), The Communications Market: Nations and Regions: English Regions
[23] Office of National Statistics (December 2006), First Release- Internet Connectivity
[24] ABC1 income group is defined as upper middle class, middle class and lower middle class.
C2DE income group is defined as skilled working class, working class and those at the lowest level of subsistence.
[25] Note: ABC1 is described as upper middle class, middle class and lower middle class. C2DE is defined as skilled working class, working class and those at the lowest level of subsistence.
[26] Ofcom (2006), The Communications Market: Nations and Regions: English Regions

Figure 3-13: Difference in % internet take-up between socio-economic groups ABC1 and C2DE



Source: SQW analysis of data from Ofcom Communications Market – Nations and Regions report, 2006

3.48 Adults with higher level of qualifications (degree level or higher and other qualifications) are also far more likely to be current internet users (over 80% at degree level or higher and over 70% for other qualifications) than those with no qualifications (slightly below 20% of current internet users)[27].

[27] Office of National Statistics (December 2006), First Release- Internet Connectivity

4: Skills for ICT use

Demand side: sector trends and skills gaps

ICT sector overview

4.1 The Sector Skills Council, 'e-skills' in their Regional Skills Gap Analysis[28] (2005) estimated that the East of England's IT sector is comprised of 14,700 ICT businesses and 52,870 employees.

4.2 They ranked the region third amongst the nine English regions in terms of the size of its IT workforce, having:

- 52,872 employees in the IT industry
- 65,147 IT professionals working in other industries
- a total IT workforce of 118,019.

4.3 It also estimated that 1.9 million members (73%) of the 2.6 million workforce use IT in their day to day work.

Regional workforce skills gap

General workforce

4.4 According to the e-skills Regional Skills Gap Analysis, employers in the East of England identified 72% of their workforce in need of some form of IT skills compared to 70% at a national level. This is likely to increase over the next few years, as e-skills states:

> *'a significant upskilling need is forecast as jobs move to demanding higher levels of IT user skills than they do today'.*

4.5 The e-skills report forecasts that, by 2008, there will be 204,360 fewer jobs that require no or level 1 IT user skill in the East of England, of the 1.7 million in the UK. It also predicts that by 2008, there will be 269,731 more jobs that require level 3+ IT user skills in the East of England, of the 2.4 million in the UK.

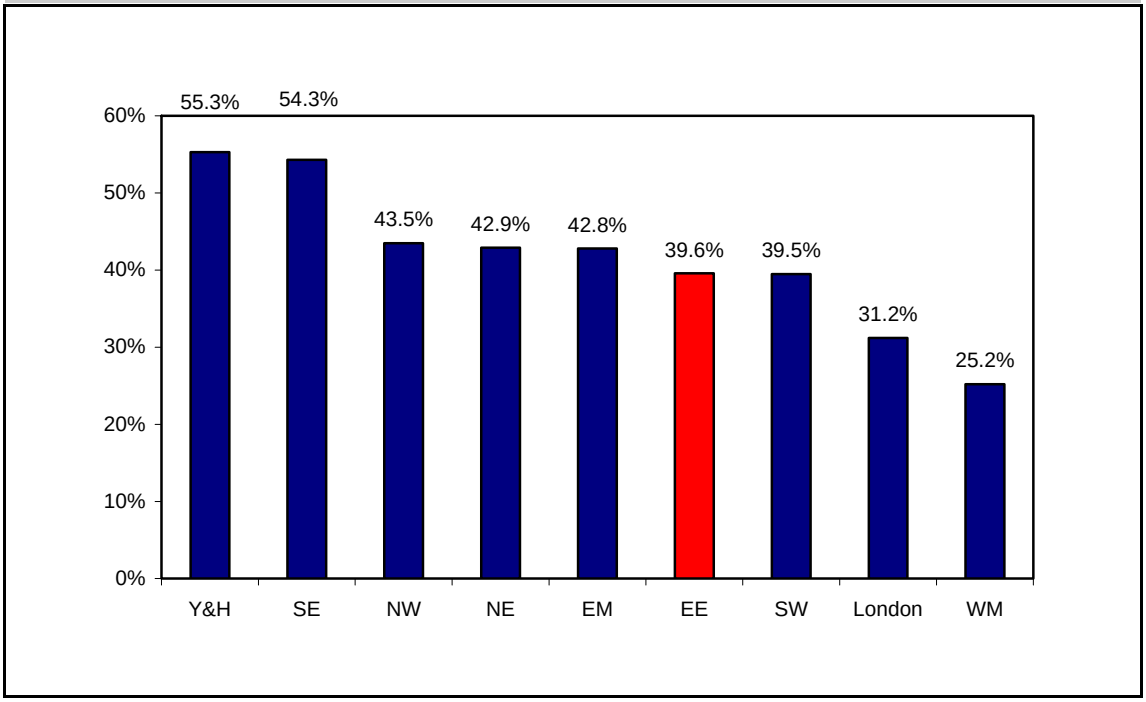
4.6 Taking all needs into account, e-skills identifies a need to upskill 742,182 of the current East of England workforce: 132,963 people to address current gaps and 609,219 people to address needs over the next three years. Of these, around 60% will require upskilling to level 2 and 40% at level 3+.

4.7 Using e-skills regional forecasts on skills needed by IT users, from each of the e-skills regional skills gap analysis reports, we have produced Figure 4-1 which shows the proportion of all IT users in each region that require upskilling towards Level 2 or 3 by 2008. This places

[28] e-skills UK (2005) Regional Skills Gap Analysis: 'IT insights: Regional Skills in the East of England'

the region in a slightly better than average position, with a smaller proportion of its current IT user workforce requiring upskilling to 2008.

Figure 4-1: Skills Gap shown as percentage of all IT users in each region that require upskilling towards Level 2 or 3 by 2008

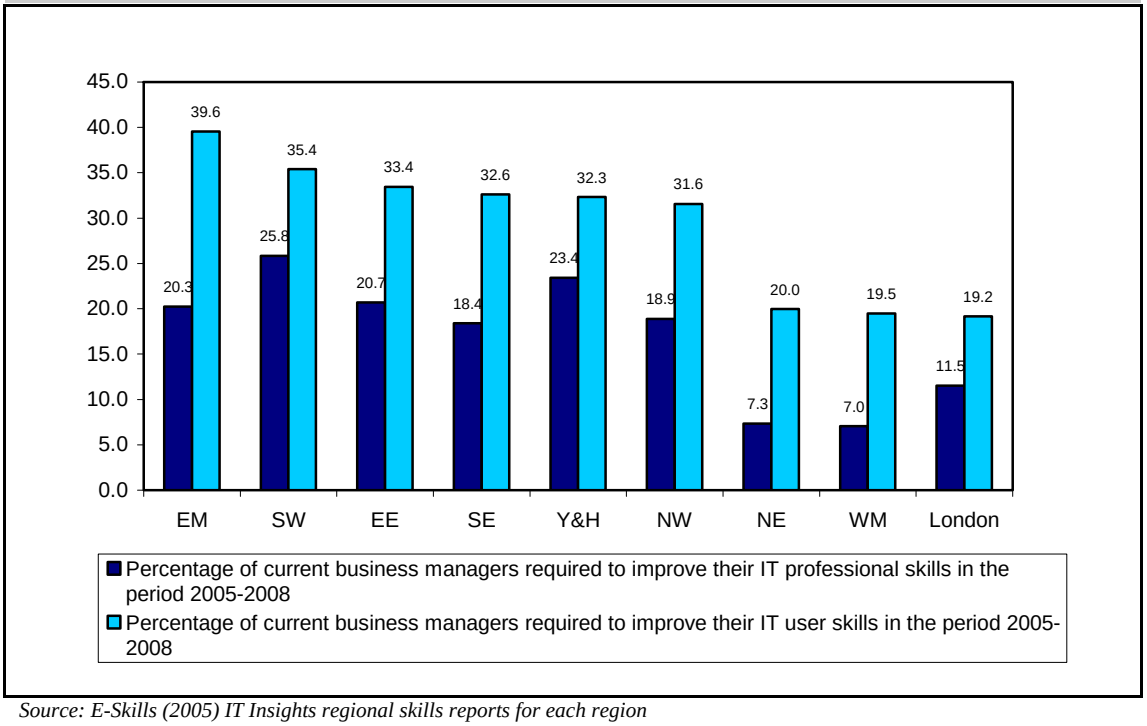


Source: E-Skills (2005) IT Insights regional skills reports for each region

4.8 In particular, e-skills also identified a need to upskill the IT competency skills of the 425,614 business managers in the region 'with skills to interpret and exploit ICT opportunities', in particular to improve the IT professional skills of 88,103 of these managers and IT user skills of 142,356 of these managers.

4.9 Figure 4-2, produced from e-skills regional skills gap analysis data, shows the proportion of business manager requiring IT professional skills and IT user skills by region. This indicates that need in the East of England has been estimated to be above average in relation to other regions, as business manager jobs move to demanding higher levels of IT professional skills than they do today.

Figure 4-2: Percentage of current managers required to improve their IT user skills and IT professional skills in the period 2005-2008



Source: E-Skills (2005) IT Insights regional skills reports for each region

IT professionals

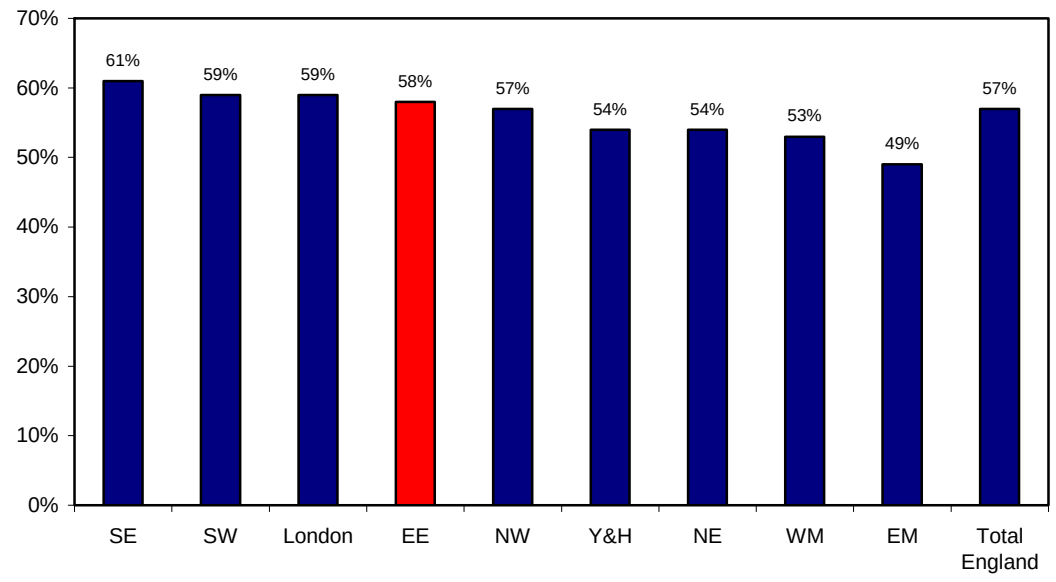
4.10 In terms of skills gaps in the IT professional workforce, the region has a lower proportion of companies who report have skills gaps among IT professionals: 8% in East of England compared with 9% nationally. Their most significant gaps were in the development and implementation of IT systems and services. The region also has a lower proportion of companies with vacancies for IT professionals (9%) than the GB average (17%), suggesting that companies in the region are finding it easier to fill IT vacancies than companies elsewhere.

Supply side: training provision

Attainment at GCSE and A-Level

4.11 The region is average compared to other regions in terms of A*-C pass rate in ICT and computer studies courses. Of the 6,496 pupils entered for IT related GCSEs in 2003, 5,349 (82%) passed with a grade A*-E and 3,760 (58%) passed in the A*-C range. This puts the region in fourth position in relation to the other English regions for A*-C passes in the subject.

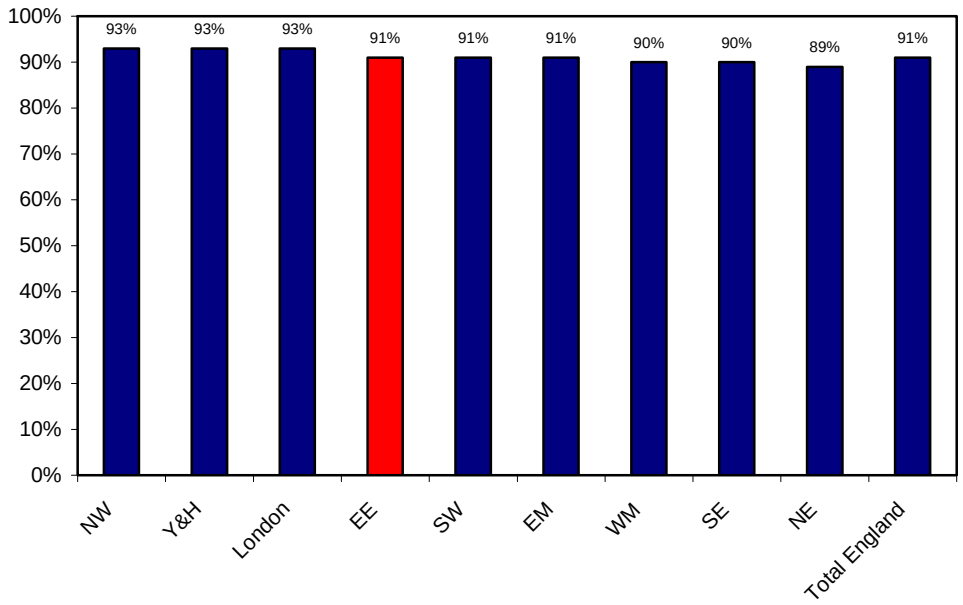
Figure 4-3: Success rate at GCSE A*-C passes in ICT and Computer studies by region, 2003



Source: E-Skill (2005) IT Insights regional skills reports for each region

4.12 At 'A' Level, 2,121 (91%) of the 2,323 pupils entered for ICT and Computer Studies 'A' Levels in 2003 were passed, placing the region joint-fourth in relation to the other English regions by the proportion of passes, through the variations between regions were minimal.

Figure 4-4: Success rate at A level in ICT and Computer studies by region, 2003



Source: E-Skill (2005) IT Insights regional skills reports for each region

Further Education

4.13 In October 2006 the Learning and Skills Council identified 45 FE colleges in the region: 24 general colleges, 3 specialist colleges, 8 sixth form colleges and 10 local authority colleges. In

addition there are 237 school sixth forms, 123 work based learning providers and 10 adult and community learning providers.

4.14 The LSC Centres of Vocational Excellence (CoVE) Network has around 400 approved centres. These are specialist training providers which partner with local employers, trainers and communities to provide skills that meet the economic needs of the community – aiming to increase the numbers attaining vocational level three qualifications in particular. There are 39 CoVEs in the East of England. Four specifically in ICT:

- Barnfield College Computer Integrated Networking Systems
- Norwich City College of Further & Higher Education Norfolk Computing & Networking
- South East Essex College ICT Solutions (Interim)
- Suffolk College I-CoVE: a centre of vocational excellence in information & communications technologies.

4.15 Furthermore, the Sector Skills Agreement research by e-skills in 2005 also identified 13 HE establishments with QAA accredited Computing or Computer Science Courses, predominately located in the south of the region. As would be expected, most of these are in urban areas, clustered around London, with less coverage in the north of the region.

Analysis of LSC Individual Learner Records

4.16 The latest available statistical information published by the LSC indicates there were 109,756 enrolments onto FE ICT courses within LSC funded FE funding streams in the East of England in 2004/05. This represented 14.9% of all enrolments which was higher than the UK average of 13.6%.

Table 4-1: ICT enrolments in FE, 2004/05

Local LSC	ICT	% of regional total	All enrolments
Bedfordshire and Luton	17,854	16.3%	109,700
Cambridgeshire	14,177	12.9%	126,620
Essex	26,427	24.1%	203,105
Hertfordshire	19,045	17.4%	107,966
Norfolk	17,512	16.0%	109,137
Suffolk	14,741	13.4%	77,903
All East of England	**109,756**	**100.0%**	**734,431**
All England	**1,216,209**		**8,926,013**

Source: LSC data 2004/05

4.17 This distribution is proportionate to the population in each county. High levels of provision in Essex and Hertfordshire reflect their large populations relative to other parts of the region.

4.18 With permission of the LSC, further analysis of the latest complete dataset of LSC Individual Learner Records (2004/05) was undertaken to provide more detail on the nature of provision in the region, which is not available through published LSC data sources. Our analysis was undertaken at a broad level for all Information Technology (IT) courses and included all LSC provision in the East of England (including work-based learning and adult and community learning). It shows that according to the latest available LSC data:

- over 80% provision is delivered through further education and sixth form colleges
- most learners study level 1 and level 2 IT courses in computer use (76%) followed by a smaller proportion studying computer technology (13%) which mirrors take-up in England
- IT courses attract a broad age range of learners between 16 and 59 years of age (in comparison to creative industries subjects, for example, where most learners are aged 16 to 29 years)
- there are more female than male learners on IT courses in the East of England, but female learners also make up a higher proportion of learners across England.

4.19 E-skills analysis of FE learner records in 2002/03 for two types of qualification – FE professional skills and FE IT user qualifications – reported that

- there were 3,955 completions from 7,305 entries on FE professional courses
- there were 31,604 completions from 61,220 entries for FE IT user qualifications.

4.20 The report also observed that the region accounts for a smaller proportion of IT profession training starts (9.1%) than the region's IT professional workforce (11.4%), and similarly a smaller proportion of IT user FE training (8%) than the region's share of the IT user workforce (11.6%). However, this could be because companies prefer to train in-house, train less, recruit people who are already trained or use private suppliers.

Graduate entry to IT employment

4.21 The latest data in the e-skills study indicates that there were 804 (9.2%) graduates entries into the IT workforce in the region in 2002. This was the fourth highest level of the nine English regions, yet this is slightly below the region's 10.1% share of the IT workforce.

Other (private) training provision

4.22 E-Skills observed in their Regional Skills Gap Analysis that private training provision is greater in the south of the region than it is in the north. The East of England was ranked last for the number of courses available through major training providers identified through a recent survey. E-skills believe this may be a result of the region's proximity to nearby London and the South East region or the strength of local independent providers.

5: ICT suppliers

Supply sector analysis

5.1 For the purposes of this analysis we have taken a relatively narrow definition of the IT sector, as referring to SIC code 72: Computer and related activities, as this would appear to be the SIC code most relevant to supporting the exploitation of ICT by the region's businesses. Table 5-1 provides the number of employees in the region at the 4 digit SIC code level for SIC 72.00.

Table 5-1: Number of employees within the ICT sector defined as SIC code 72.00

Sub-sectors	Number of employees
7210 : Hardware consultancy	3,124
7221 : Publishing of software	912
7222 : Other software consultancy and supply	27,291
7230 : Data processing	2,601
7240 : Data base activities	896
7250 : Maintenance and repair of office, accounting and computing machinery	3,149
7260 : Other computer related activities	7,241
Total	**45,214**

Source: Office of National Statistics, ABI data, 2005

5.2 Overall, the concentration of the IT sector in the East of England is broadly in line with the England average, in terms of both number of companies and number of employees. This is demonstrated through location quotient analysis from ONS, where a location quotient of 1.0 indicates a concentration equal to the England average, higher than 1.0 is above average and lower than 1.0 is below average.

5.3 The counties with the highest concentrations of both companies and employees in the sector are Hertfordshire, Cambridgeshire and Bedfordshire (see Table 5-2).

Table 5-2: Companies (local units) and employees in SIC code 72 in the East of England

	Number of companies	Location Quotients for companies	Number of employees	Location Quotients for Employees
Peterborough	295	0.94	1,147	0.62
Suffolk	1,222	0.83	2,898	0.5
Bedfordshire	1,062	1.23	3,380	1.09
Essex	2,831	0.98	8,263	0.81
Hertfordshire	3,770	1.48	17,409	1.71
Luton	283	0.97	1,795	1.01
Southend-on-sea	368	1.13	682	0.54

	Number of companies	Location Quotients for companies	Number of employees	Location Quotients for Employees
Thurrock	176	0.76	276	0.25
Cambridgeshire	1,631	1.26	7,292	1.42
Norfolk	948	0.58	2,073	0.31
East of England	**12,586**	**1.06**	**45,214**	**0.96**

Source: Office of National Statistics, ABI data, 2005

5.4 More detailed analysis at county level and sub-sector level (in Annex A) allows us to make further comment on the current state of the IT sector in the East of England, in particular:

- Thurrock, Norfolk and Suffolk all have employment location quotients of 0.5 or less, indicating particularly weak IT sectors in these areas
- Bedfordshire has a significantly high number of employees in the maintenance and repair of office equipment sub-sector (SIC 72.50), almost 4 times the England average. Within the region, this county has a much higher number of companies and employees in the sector
- Cambridgeshire has a significantly high concentration of employees in the publishing and software sub-sector (almost 3 times the England average) and a relatively low number of employees in the data processing (SIC 72.30), database activities (72.40) and maintenance and repair (SIC 72.%) sub-sectors
- Hertfordshire has a very high concentration of companies and employees in all sub-sectors with the exception of database activities where it has a slightly lower concentration of employees than the England average. In particular, it has a high concentration of employees in hardware consultancy (SIC 72.10) and maintenance and repair of office equipment (72.50) - more than 4 times the England average and over 3 times the England average, respectively.

5.5 Table 5-3 below shows the number of companies in the IT sector by size in the East of England. As is to be expected, the vast majority (96%) are micro-businesses (1 to 10 employees).

Table 5-3: Number of companies in the IT sector (SIC code 72) by size and county in the East of England

	1-10 employees		11-49 employees		50-199 employees		200 or more employees	
	Count	%	Count	%	Count	%	Count	%
Bedfordshire	1,022	8.1	32	0.3	6	0.0	2	0.0
Cambridgeshire	1,512	12.0	95	0.8	23	0.2	1	0.0
Essex	2,757	21.9	58	0.5	14	0.1	2	0.0
Hertfordshire	3,574	28.4	144	1.1	39	0.3	13	0.1
Luton	267	2.1	10	0.1	4	0.0	2	0.0
Norfolk	929	7.4	17	0.1	2	0.0	0	0.0

	1-10 employees		11-49 employees		50-199 employees		200 or more employees	
	Count	%	Count	%	Count	%	Count	%
Peterborough	282	2.2	10	0.1	2	0.0	1	0.0
Southend-on-sea	363	2.9	4	0.0	1	0.0	0	0.0
Suffolk	1,190	9.5	28	0.2	4	0.0	0	0.0
Thurrock	174	1.4	2	0.0	0	0.0	0	0.0
Total East of England	**12,070**	**95.9**	**400**	**3.2**	**95**	**0.8**	**21**	**0.2**

Source: Office of National Statistics, ABI data, 2005

5.6 The number of employees in the IT sector in the East of England has decreased by about 3,700 (7.7%) from 2003 to 2005 (Table 5-4). The largest losses have been in Essex (-1,626), Suffolk (-1,094), Cambridgeshire (-975) and Peterborough (-905). At the same time the sector has grown in Hertfordshire by 1,089 (6.7%).

Table 5-4: Number of employees in IT in the East of England in 2003, 2004, 2005

	2003		2004		2005	
	Count	%	Count	%	Count	%
Bedfordshire	3,056	6.2	2,751	5.9	3,380	7.5
Cambridgeshire	8,267	16.9	7,459	16.1	7,292	16.1
Essex	9,889	20.2	8,594	18.6	8,263	18.3
Hertfordshire	16,320	33.3	17,831	38.5	17,409	38.5
Luton	1,936	4.0	1,876	4.1	1,795	4.0
Norfolk	2,207	4.5	1,893	4.1	2,073	4.6
Peterborough	2,052	4.2	1,121	2.4	1,147	2.5
Southend-on-sea	831	1.7	791	1.7	682	1.5
Suffolk	3,992	8.2	3,618	7.8	2,898	6.4
Thurrock	430	0.9	348	0.8	276	0.6
Total East of England	**48,981**	100.0	**46,282**	100.0	**45,214**	100.0

Source: Office of National Statistics, ABI data, 2003, 2004 and 2005

Multimedia network analysis

5.7 The East of England Multi Media Alliance has a formal membership of 878 companies. In addition, EMMA holds contact details of another 1500 enterprises/organisations in the region that are involved in digital/creative industries. Data provided by EMMA enabled us to undertake some analysis of the distribution of the network. The network started and grew from Essex and consequently this is reflected in the geographical distribution of members. At a broader level, the majority of EMMA members are micro-businesses and almost half are involved in ICT supply services including: hardware and software supply, telecommunications, software development and authoring, computer-aided design, web site design and development.

Annex A: ABI data tables

A.1 This annex presents location quotient analysis from ONS Annual Business Inquiry data, where a location quotient of 1.0 indicates a concentration equal to the England average, higher than 1.0 is above average and lower than 1.0 is below average. The following analysis is drawn from location quotient data in tables A-1 to A-7.

A.2 The hardware and consultancy sub-sector (SIC 72.10) is where the East of England as a whole has the largest number of companies and employees in the IT sector. Hertfordshire has a very high number of employees in that sub-sector with more than 4 times the England average.

A.3 Cambridgeshire has a relatively high number of employees in the Publishing of Software sub-sector (SIC 72.21) with almost 3 times the England average and more than 4 times the average of the region. Many areas in the East of England have rather low numbers of companies and employees in that sub-sector including Peterborough, Southend-on-sea and Thurrock. Luton however, has a very low number of companies but more than double the regional average in terms of employees.

A.4 The "other software consultancy and supply" sub-sector (SIC 72.22) is broadly comparable with the England average in terms of both number of companies and number of employees with a few areas of the region having lower than average number of companies and employees such as Norfolk, Suffolk and Thurrock.

A.5 The East of England region has a slightly higher number of companies than the England average but also a slightly lower number of employees in the Data processing sub-sector (SIC 72.30). Luton has a relatively high number of both companies and employees in that sub-sector (SIC 72.30) with two and a half times the England average for number of companies and more than three times the England average for number of employees.

A.6 Database activities (SIC 72.40) represent a slightly higher than average number of companies in the region but a rather low number of employees, almost half the average of England as a whole.

A.7 The East of England has slightly higher numbers of companies and employees in the sub-sector Maintenance and repair of office, accounting and computing machinery (SIC 72.50) : Luton and Southend-on-Sea both have more than twice the England average in terms of number of employees and companies in that sub-sector. Hertfordshire and Bedfordshire both have very high number of employees (LQ of 3.06 and 3.82 respectively) in that sub-sector and slightly above average numbers of companies.

A.8 The region has a lower number of companies and employees than the England average in the sub-sector "other computer-related activities" (SIC 72.60)

Table A-1: Number of companies and number of employees, including Location Quotients for the East of England at subregional level for SIC 72.10 Hardware and consultancy

	Number of companies	**LQ for companies**	**Number of employees**	**LQ for employees**
East of England	1,046	1.26	3,124	1.68
Bedfordshire	121	2.00	221	1.80
Cambridgeshire	116	1.27	289	1.43
Essex	232	1.14	411	1.02
Hertfordshire	306	1.71	1,772	4.42
Luton	32	1.55	50	0.71
Norfolk	68	0.60	141	0.54
Peterborough	20	0.91	30	0.41
Southend-on-sea	33	1.44	38	0.77
Suffolk	104	1.00	154	0.67
Thurrock	14	0.86	18	0.42

Table A-2: Number of companies and number of employees, including Location Quotients for the East of England at subregional level for SIC 72.21: Publishing of Software

	Number of companies	**LQ for companies**	**Number of employees**	**LQ for employees**
East of England	285	1.12	912	0.88
Bedfordshire	26	1.41	49	0.71
Cambridgeshire	39	1.40	333	2.94
Essex	58	0.94	118	0.52
Hertfordshire	97	1.78	259	1.16
Luton	Less than 10	0.48	53	1.37
Norfolk	21	0.60	40	0.27
Peterborough	Less than 10	0.74	Less than 10	0.14
Southend-on-sea	Less than 10	0.72	10	0.36
Suffolk	30	0.95	44	0.34
Thurrock	Less than 10	0.20	Less than 10	0.03

Table A-3: Number of companies and number of employees, including Location Quotients for the East of England at subregional level for SIC 72.22: Other software consultancy and supply

	Number of companies	**LQ for companies**	**Number of employees**	**LQ for employees**
East of England	7,203	1.06	27,291	0.95
Bedfordshire	608	1.24	1,794	0.94
Cambridgeshire	972	1.31	5,184	1.65
Essex	1,607	0.97	5,404	0.87
Hertfordshire	2,248	1.55	9,850	1.58
Luton	144	0.86	867	0.80
Norfolk	471	0.51	1,098	0.27
Peterborough	176	0.98	884	0.78
Southend-on-sea	195	1.05	267	0.34
Suffolk	691	0.82	1,822	0.51
Thurrock	91	0.69	122	0.18

Table A-4: Number of companies and number of employees, including Location Quotients for the East of England at subregional level for SIC 72.30: Data processing

	Number of companies	**LQ for companies**	**Number of employees**	**LQ for employees**
East of England	415	1.21	2,601	0.75
Bedfordshire	33	1.32	103	0.45
Cambridgeshire	42	1.12	198	0.52
Essex	94	1.12	279	0.37
Hertfordshire	127	1.73	1,323	1.76
Luton	21	2.47	457	3.50
Norfolk	30	0.64	41	0.08
Peterborough	Less than 10	0.33	Less than 10	0.02
Southend-on-sea	19	2.01	67	0.72
Suffolk	43	1.00	98	0.23
Thurrock	Less than 10	0.45	31	0.38

Table A-5: Number of companies and number of employees, including Location Quotients for the East of England at subregional level for SIC 72.40: Data base activities

	Number of companies	**LQ for companies**	**Number of employees**	**LQ for employees**
East of England	368	1.13	896	0.55
Bedfordshire	30	1.27	41	0.38
Cambridgeshire	44	1.23	117	0.66
Essex	92	1.15	294	0.83
Hertfordshire	95	1.36	254	0.72
Luton	Less than 10	0.99	19	0.31
Norfolk	30	0.67	64	0.28
Peterborough	Less than 10	0.23	Less than 10	0.04
Southend-on-sea	21	2.33	31	0.70
Suffolk	40	0.98	68	0.34
Thurrock	Less than 10	0.94	Less than 10	0.15

Table A-6: Number of companies and number of employees, including Location Quotients for the East of England at subregional level for SIC 72.50: Maintenance and repair of office, accounting and computing machinery

	Number of companies	**LQ for companies**	**Number of employees**	**LQ for employees**
East of England	263	1.15	3,149	1.38
Bedfordshire	21	1.26	577	3.82
Cambridgeshire	25	1.00	100	0.40
Essex	62	1.11	432	0.87
Hertfordshire	70	1.43	1,509	3.06
Luton	13	2.30	210	2.44
Norfolk	22	0.70	61	0.19
Peterborough	Less than 10	1.16	29	0.32
Southend-on-sea	13	2.06	130	2.11
Suffolk	23	0.81	74	0.26
Thurrock	Less than 10	1.57	27	0.50

Table A-7: Number of companies and number of employees, including Location Quotients for the East of England at subregional level for SIC 72.60: Other computer related activities

	Number of companies	**LQ for companies**	**Number of employees**	**LQ for employees**
East of England	3,006	0.97	7,241	0.90
Bedfordshire	223	0.99	595	1.12
Cambridgeshire	393	1.16	1,072	1.23
Essex	686	0.91	1,325	0.76
Hertfordshire	827	1.24	2,441	1.41
Luton	62	0.81	139	0.46
Norfolk	306	0.72	628	0.55
Peterborough	82	1.00	193	0.61
Southend-on-sea	82	0.96	139	0.65
Suffolk	291	0.75	638	0.65
Thurrock	54	0.89	70	0.37

Annex B: ILR data tables

B.1 The data in this annex is taken from LSC 2004/05 Individual Learner Records. Due to limited resources available within this study, this analysis was performed on all LSC provision including work-based and adult and community learning for learners studying Information Technology as defined by top level Learning Directory Classification System (LDCS) codes only. This selection of LDCS codes is not directly comparable with LSC published statistics on number of learners undertaking ICT as an 'Area of Learning' which is defined by the LSC using a more specific definition of lower level LDCS codes across a broader range of subject areas.

B.2 The full list of LDCS codes used in our definition of Information Technology is listed in Table B-1 – we used all Information, technology and communication codes with the addition of e-commerce and telecommunications.

Table B-1: Two Digit LDCS codes

Subject area	2-Digit LDCS codes
INFORMATION TECHNOLOGY & INFORMATION	C
computer technology	CJ
computer science / computer systems	CK
software engineering,	CL
computer operations	CM
computer use	CN
using software & operating systems	CP
using text / graphics / multimedia software	CQ
using Internet software	CR
software for specific subjects / industries	CS

Subject area	2-Digit LDCS codes
information work / information use	CX
information systems / management	CY
libraries / librarianship	CZ
SALES, MARKETING & RETAILING	B
e-commerce	BF
ENGINEERING	X
telecommunications	XM

Source: Learndirect (September 2003), National Learning Advice: The LearnDirect Classification System, Version 2:2

B.3 Table B-2 indicates that, by far, the largest funding stream in the East of England is further education representing 89% of the funding for Information technology.

Table B-2: Funding streams for Information Technology courses, East of England

	Information technology	
	Count	Percentage of column
adult & community learning	270	0.29
further education	83523	88.59
reserved for school sixth form	0	0.00
work based learning	324	0.34
WBL technical certificate funded as part of a framework	24	0.03
WBL Key Skills funded as part of a framework	6041	6.41
Framework record	0	0.00
LSC ESF co-financed	562	0.60

	Information technology	
	Count	Percentage of column
other LSC funding stream (further details may be requested)	10	0.01
no LSC funding for this learning aim	3522	3.74
Total	94276	100.00

B.4 Tables B-3 and B-4 show that the largest provider type for both the East of England region and England as a whole is General FE college including tertiary. This provider type represented just over 70% at the East of England level, while at the national level, it represented about half the provision.

Table B-3: Provider types for Information Technology courses, East of England

	Information technology	
	Count	Percentage of column
Chamber of Commerce / Trade	Less than 10	0.0
Independent school or college	0	0.0
Organisation in Business in its own right	3256	3.5
UFI Directly Funded Hub	0	0.0
Other Private Organisation	Less than 10	0.0
Business Link	0	0.0
Dance and Drama School	0	0.0
External Institution	85	0.1
Further Education Organisations	0	0.0
Sixth form college	8863	9.4
Specialist Designated college	0	0.0
Special college - Agriculture and horticulture	6825	7.2

	Information technology	
	Count	Percentage of column
Special college - Art, design and performing arts	0	0.0
General FE College incl Tertiary	67746	71.9
Higher Education Organisation	668	0.7
Learning + Skills Council	0	0.0
Local LSC	0	0.0
National LSC	0	0.0
Local Authority	0	0.0
Local Education Authority (LEA)	6663	7.1
Social Services	0	0.0
Parliamentary Constituency	0	0.0
School Sixth Form (not college)	0	0.0
Special learning needs establishment	0	0.0
Other Public Organisation	0	0.0
Charitable	142	0.2
Non-Charitable	0	0.0
Other Voluntary Organisation	0	0.0
LSC Region	0	0.0
Other Local Authority	16	0.0
Total	94276	100.0

Table B-4: Provider types for Information Technology courses, England

	Information technology	
	Count	Percentage of column
Chamber of Commerce / Trade	1416	0.1
Independent school or college	0	0.0
Organisation in Business in its own right	88595	5.5
UFI Directly Funded Hub	509850	31.6
Other Private Organisation	5988	0.4
Business Link	80	0.0
Dance and Drama School	Less than 10	0.0
External Institution	16425	1.0
Further Education Organisations	0	0.0
Sixth form college	100818	6.3
Specialist Designated college	7166	0.4
Special college - Agriculture and horticulture	20041	1.2
Special college - Art, design and performing arts	1094	0.1
General FE College incl Tertiary	758712	47.1
Higher Education Organisation	4831	0.3
Learning + Skills Council	0	0.0
Local LSC	0	0.0
National LSC	0	0.0
Local Authority	1047	0.1

	Information technology	
	Count	Percentage of column
Local Education Authority (LEA)	77576	4.8
Social Services	Less than 10	0.0
Parliamentary Constituency	0	0.0
School Sixth Form (not college)	235	0.0
Special learning needs establishment	24	0.0
Other Public Organisation	3053	0.2
Charitable	12357	0.8
Non-Charitable	0	0.0
Other Voluntary Organisation	796	0.0
LSC Region	0	0.0
Other Local Authority	1147	0.1
Total	1611257	100.0

B.5 Table B-5 and B-6 show the most common qualifications people study for on Information Technology courses are level 1 (46% for the East of England and 38% for England as a whole) and level 2 (30% and 35% respectively).

Table B-5: Qualification levels of learners on Information Technology courses, East of England

	Information technology	
	Count	Percentage of column
entry level	1267	1.3
higher level	415	0.4
level 1	43314	45.9

	Information technology	
	Count	Percentage of column
level 2	28220	29.9
level 3	9055	9.6
level 4	99	0.1
not applicable	11906	12.6
Total	94276	100.0

Table B-6: Qualification levels of learners on Information Technology courses, England

	Information technology	
	Count	Percentage of column
entry level	92757	5.8
higher level	4022	0.2
level 1	609601	37.8
level 2	559181	34.7
level 3	139516	8.7
level 4	2271	0.1
level 5	0	0.0
mixed level	142	0.0
not applicable	200143	12.4
unknown	3624	0.2
Total	1611257	100.0

B.6 Table B-7 and B-8 show that England and the East of England region are broadly comparable in terms of gender split. Overall, there are a greater number of female learners in Information technology with around 55% at both the regional and national level.

Table B-7: Gender of learners on Information Technology courses, East of England

	Information technology	
	Count	Percentage of column
Female	53321	56.6
Male	40955	43.4
Total	94276	100.0

Table B-8: Gender of learners on Information Technology courses, England

	Information technology	
	Count	Percentage of column
Female	894813	55.5
Male	716444	44.5
Total	1611257	100.0

B.7 Table B-9 and B-10 show the most common courses in Information technology (defined using 2-digit LDCS codes) in the East of England are: Computer use (76%), Computer technology (13%) and Using texts/graphics/multimedia software (5%). Although take-up is slightly different at national level, Computer use is still the most common course (59%).

Table B-9: Number of IT learners by 2-digit LDCS codes, East of England

	Information technology	
	Count	Percentage of column
e-commerce (BF)	170	0.2
Computer technology (CJ)	11958	12.7

	Information technology	
	Count	Percentage of column
Computer science/computer systems (CK)	495	0.5
Software engineering (CL)	519	0.6
Computer operations (CM)	972	1.0
Computer use (CN)	71653	76.0
Using software and operating systems (CP)	2254	2.4
Using text/graphics/multimedia software (CQ)	4886	5.2
Using Internet software (CR)	1066	1.1
Software for specific subjects/industries (CS)	34	0.0
Information management (CY)	248	0.3
Telecommunications (XM)	21	0.0
Total	94276	100.0

Table B-10: Number of IT learners by 2-digit LDCS codes, England

	Information technology	
	Count	Percentage of column
e-commerce (BF)	1585	0.1
Computer technology (CJ)	130895	8.1
Computer science/computer systems (CK)	17866	1.1
Software engineering (CL)	6731	0.4
Computer operations (CM)	18634	1.2
Computer use (CN)	954418	59.2

	Information technology	
	Count	Percentage of column
Using software and operating systems (CP)	166792	10.4
Using text/graphics/multimedia software (CQ)	187576	11.6
Using Internet software (CR)	118115	7.3
Software for specific subjects/industries (CS)	997	0.1
Information work/information use (CX)	14	0.0
Information systems/management (CY)	4260	0.3
Libraries/ Librarianship (CZ)	455	0.0
Telecommunications (XM)	2919	0.2
Total	1611257	100.0

B.8 Table B-11 and B-12 show that although the largest age group of learners is 16 and 19 at both the East of England and England level, around half the learners on IT courses are over 20 years of age.

Table B-11: Learners on Information Technology courses by age, East of England

	Information technology	
	Count	Percentage of column
Under 16	362	0.4
16-19	41928	44.5
20-29	10254	10.9
30-39	9935	10.5
40-49	11875	12.6
50-59	9963	10.6

	Information technology	
	Count	Percentage of column
60-64	3652	3.9
65 and over	6223	6.6
Unknown	84	0.1
Total	94276	100.0

Table B-12: Learners on Information Technology courses by age, England

	Information technology	
	Count	Percentage of column
Under 16	7135	0.4
16-19	477989	29.7
20-29	246768	15.3
30-39	248388	15.4
40-49	256136	15.9
50-59	194519	12.1
60-64	64076	4.0
65 and over	114292	7.1
Unknown	1954	0.1
Total	1611257	100.0

B.9 Table B-13 and B-14 indicate the overwhelming majority of learners at both the East of England and at the national level is white with over 82% in both cases. Ethnic minorities therefore make up a rather small proportion of learners. However, given that the BME population in the East of England is estimated at around 7% compared to 10% in England (MENTER, 2005[29]), this suggests that ethnic minorities are at least proportionately represented in this provision.

Table B-13: Learners on Information Technology courses by ethnicity, East of England

	Information technology	
	Count	Percentage of column
Asian or Asian British	3856	4.1
Black or Black British	2582	2.7
Chinese	444	0.5
Mixed	1446	1.5
White	81744	86.7
Other	943	1.0
Not known/ not provided	3261	3.5
Total	94276	100.0

Table B-14: Learners on Information technology courses by ethnicity, England

	Information technology	
	Count	Percentage of column
Asian or Asian British	100951	6.3
Black or Black British	90187	5.6
Chinese	8182	0.5
Mixed	24736	1.5

[29] Cambridgeshire County Council Research Group (September 2005) 'Review of Ethnicity in the East of England, commissioned by the Minority Ethnic Network Eastern Region (MENTER)

	Information technology	
	Count	Percentage of column
White	1323078	82.1
Other	25760	1.6
Not known/ not provided	38363	2.4
Total	1611257	100.0

B.10 Table B-15 and B-16 show that the vast majority of learners on IT courses at both regional and national level have no disability (over 83% in both cases).

Table B-15: Learners on Information Technology courses by disability, East of England

	Information technology	
	Count	Percentage of column
visual impairment	433	0.5
hearing impairment	638	0.7
disability affecting mobility	576	0.6
other physical disability	330	0.4
other medical condition (for example epilepsy, asthma, diabetes	1945	2.1
emotional/behavioural difficulties	158	0.2
mental ill health	297	0.3
temporary disability after illness (for example post-viral)	63	0.1
profound complex disabilities	9	0.0
multiple disabilities	384	0.4
other	1584	1.7
no disability	78087	83.5

	Information technology	
	Count	Percentage of column
not known/information not provided	9052	9.7
Total	93556	100.0

Table B-16: Learners on Information technology courses by disability, England

	Information technology	
	Count	Percentage of column
visual impairment	6979	0.4
hearing impairment	10254	0.6
disability affecting mobility	15353	1.0
other physical disability	7483	0.5
other medical condition (for example epilepsy, asthma, diabetes	22659	1.4
emotional/behavioural difficulties	2212	0.1
mental ill health	7043	0.4
temporary disability after illness (for example post-viral)	1239	0.1
profound complex disabilities	397	0.0
multiple disabilities	4134	0.3
other	17343	1.1
no disability	1337194	83.7
not known/information not provided	165012	10.3
Total	1597302	100.0