

E-Commerce Inquiry to Business 2000

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Introduction

E-commerce is likely to have a huge impact on the way we do business. It has the potential to lead to dramatic growth in trade, increase markets, improve efficiency and effectiveness and transform business processes. In recognition of its significance in the future performance of the economy, the UK Government set itself the target of becoming 'the best environment in the world to do e-commerce.'¹

In response to this policy need, as reported in *Economic Trends* in March, the Office for National Statistics (ONS) has developed a package of measures that will help monitor the UK's progress towards this aim. One strand of the strategy is a survey of UK business that asks about their use of, and attitude to, the internet and e-commerce. This article sets out some of the results of the first annual E-commerce Inquiry (covering the year 2000), which were published on 15 May 2001, as well as some additional analysis. A further article is planned for September's *Economic Trends* to publish the results of other e-commerce work which is in hand.

The ONS's E-commerce Inquiry

The ONS's E-commerce Inquiry is part of an European Union (EU) initiative to produce comparable data for the EU countries. This comparison is due to be published by the Statistical Office of the EU (Eurostat) by the end of 2001. The UK element was a survey of 9,000 businesses randomly sampled from the Interdepartmental Business Register, stratified by employment size. The sampling methodology ensured wide coverage of the UK economy and the estimates produced cover all sectors except agriculture, fishing, mining, construction and the public sector, and all businesses with employment of 10 or more.²

The survey used the definition of e-commerce that was agreed by the Organisation for Economic Co-operation and Development (OECD) and the EU:

"the sale or purchase of goods or services, where agreement between buyer and seller to transfer ownership occurs over a computer-mediated network."

In other words, it is the method by which the order is placed which determines whether a transaction is e-commerce - not the payment or delivery channels. The survey attempted to capture the level of wider electronic transactions including electronic data interchange (EDI), as well as those via the internet itself.

The E-commerce Inquiry was carried out in line with the rigorous standards of all National Statistics. However, it is important to realise that many businesses do not separately monitor e-commerce transactions (at least not in the same way) and could provide only estimates of the levels of their e-commerce sales and purchases.

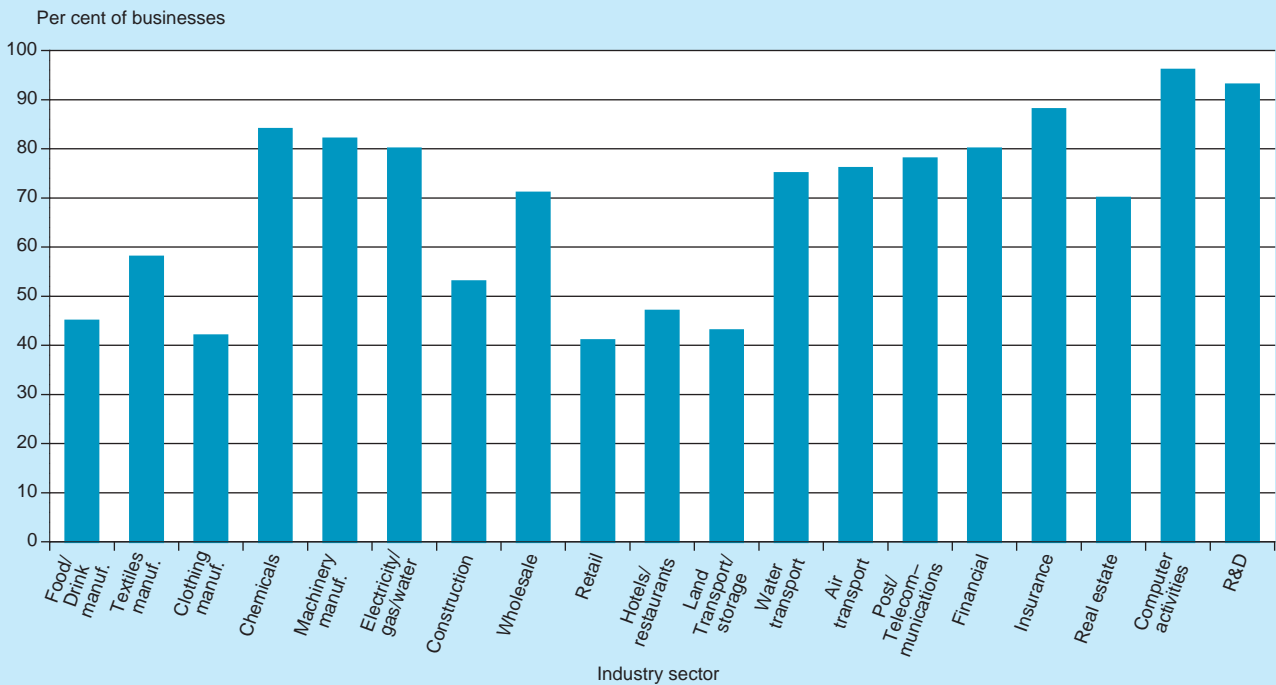
Results of the survey

Use of the internet

The results of the E-commerce Inquiry show that 92 per cent of UK businesses now use PCs, workstations or terminals. If the data are weighted according to the size of the business³, this figure rises to 98 per cent. The picture is consistent across most industries and most size of businesses and the only exceptions appear in smaller businesses in the manufacturing and hotel and catering sectors where the figure is around 70 per cent.

The overall percentage web access is lower at 63 per cent⁴. This masks major variations (see Chart 1). For example, less than half of

Chart 1
Businesses with web access



food and clothing manufacturers, retail, catering and transportation have access to the web. Meanwhile, over 90 per cent of the computing industry have access and the figure for the largest businesses across all sectors is 94 per cent.

This reluctance is most marked in the smallest companies surveyed (Chart 2).

Websites

Most businesses have been using the web for about a year, with this increasing to two years for those with more than 250 employees. Perhaps surprisingly, only 11 per cent more businesses plan to start using the web during the next year, with the remaining 25 per cent of respondents saying that they did not have any plans for it in 2001.

61 per cent of businesses now have their own, or third party, websites⁵, with a further 19 per cent planning to set one up within a year⁶. There are some sector variations as Chart 3 shows. More than a third of respondents with less than 50 employees stated that they will not set up a website in the next year.

Chart 2
Planned web access

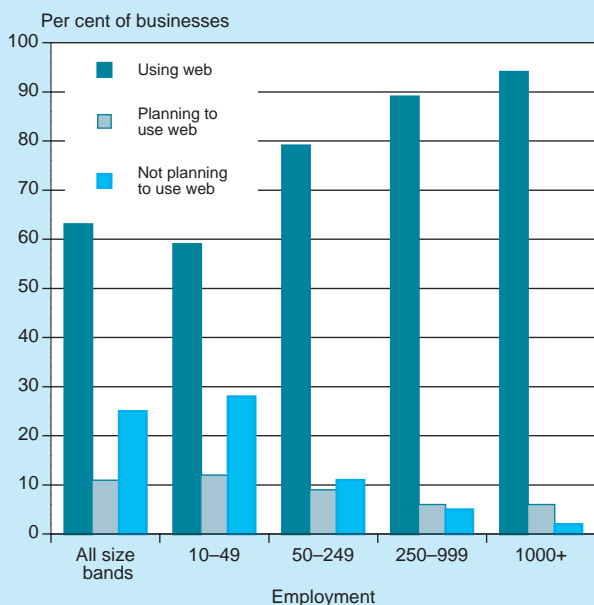
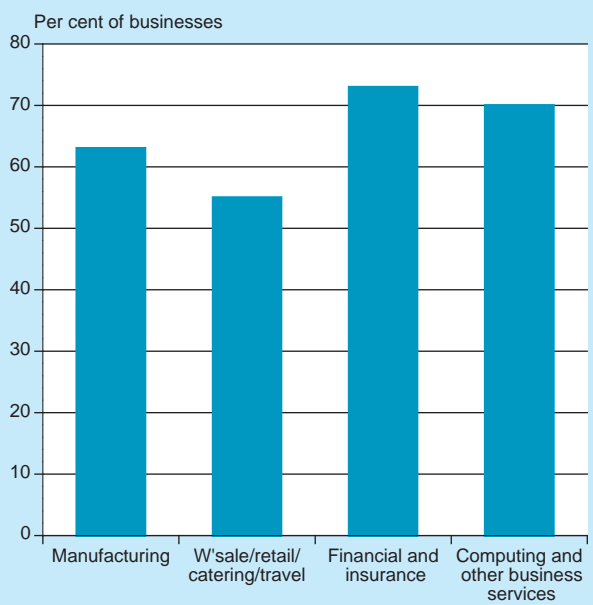


Chart 3
Businesses with own or third party web site

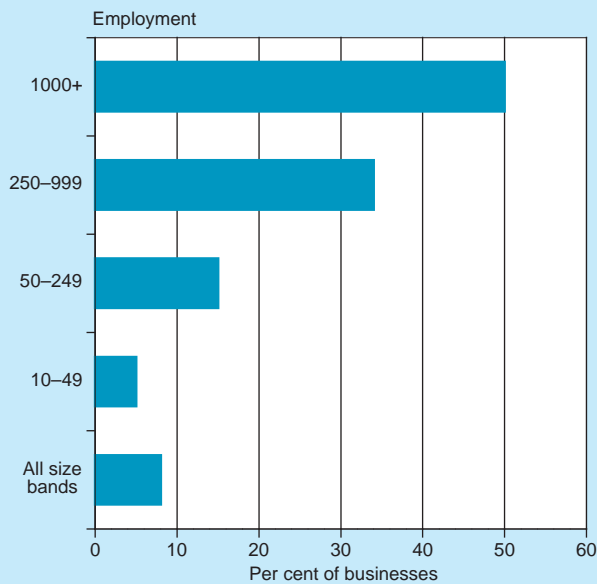


Type of internet connection

Of the businesses who have internet access, 46 per cent use dial-up connections and 32 per cent use ISDN lines. Only 8 per cent have broadband connections. The level of broadband connection varies from 5 per cent for the smallest companies surveyed to 50 per cent for those with 1000+ employees⁷ (Chart 4).

Chart 4

Per cent of businesses using broadband connection



Barriers to using the internet

The survey asked respondents to indicate which of the suggested reasons were barriers their business faced in using the internet. Around 50 per cent of respondents said the following were of some importance or very important:

- cost of provision and access charges;
- lack of knowledge;
- no perceived benefits;
- lost working time through 'surfing';
- slow or unstable data communication.

These problems were almost equally important across industry and size of business. The barrier that was of most importance was the lack of security through viruses and hackers. 64 per cent of respondents overall said this was a barrier to them, increasing to 80 per cent for those with 1,000+ employees.

Sales by e-commerce

Businesses were asked whether they used the internet or other computer-mediated networks (such as EDI) to make sales. Overall, 16 per cent already did⁸, 12 per cent planned to in the next year and nearly 70 per cent did not plan to use e-commerce for sales within a year. This however varies with the size of business (Chart 5) and sector of industry (Chart 6).

Chart 5

Internet usage for sales

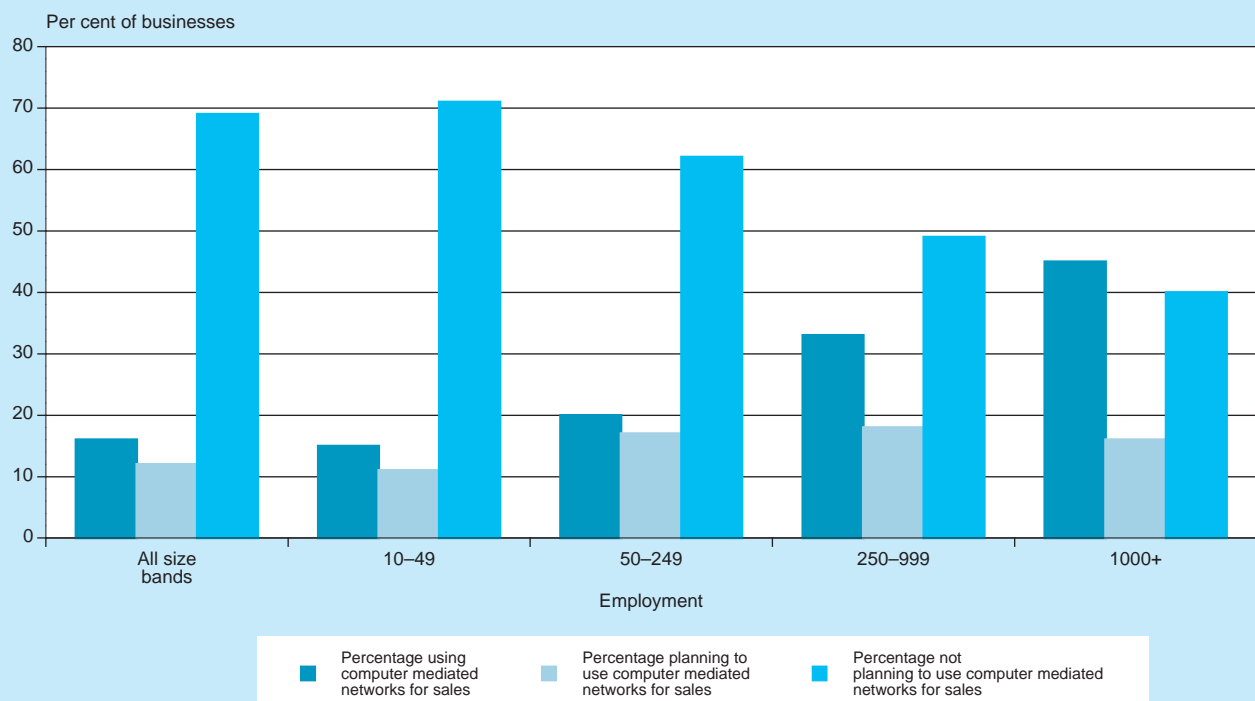
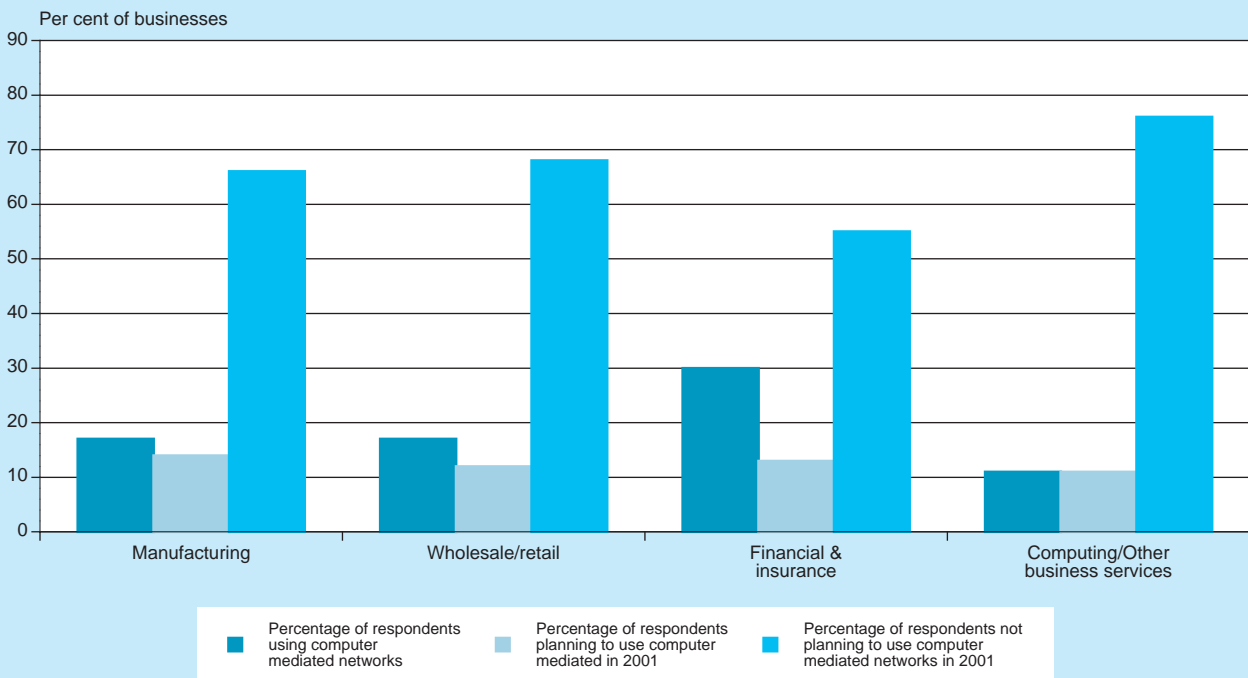


Chart 6
Use of computer mediated networks for sales

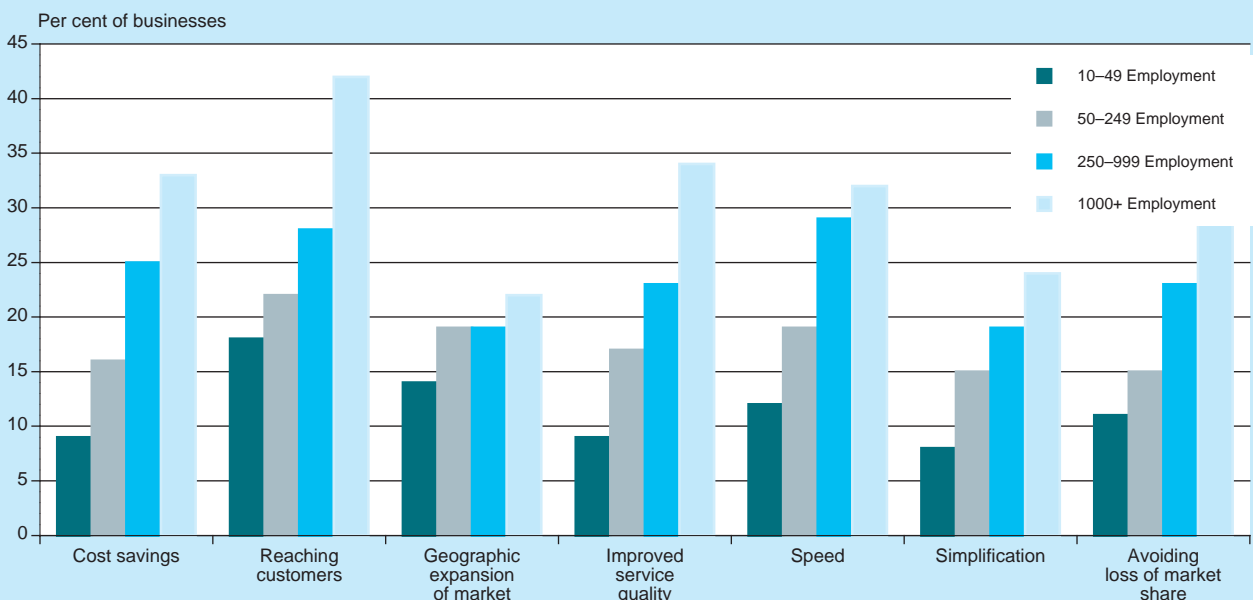


Despite the relatively small percentages of businesses already using computer-mediated networks for sales, a large number have no plans to start doing so in the next year. Two-thirds of manufacturing, wholesaling and retailing have no intention of using e-commerce for sales. This rises to three-quarters for those in computing and other business services. At a lower level of industry detail, the insurance, air travel and computing and office machinery manufacturing industries carry out the highest levels of e-commerce – around 30 to 40 per cent of their sales are via electronic networks.

The average length of time that business has carried out e-commerce for sales is only a matter of months and even for the very largest companies, the average is still less than a year.

When asked about the barriers they faced in making sales using e-commerce, 40 per cent or more of respondents said that uncertainty with contracts and/or the cost of developing and maintaining the system were of most importance. The most commonly perceived benefit of e-commerce sales for all sizes of companies was the potential to reach more customers, but far fewer smaller companies saw any benefits (Chart 7).

Chart 7
Benefits of making sales by e-commerce



Purchases by e-commerce

Twice as many businesses (33 per cent) used e-commerce for purchases than they did for sales⁹. A further 9 per cent intend to use it in the next year, while 58 per cent do not. The computing (74 per cent) and insurance (60 per cent) sectors used the highest level of e-commerce for purchases.

Manufacturers, wholesalers and retailers had similar levels for e-commerce purchases as they did for sales. The biggest difference is in the computing and other business services sectors where the percentage using, or planning to use, e-commerce for purchases rises to over 50 per cent, compared with 22 per cent for e-commerce sales (see Chart 8).

One in five respondents saw the benefit of using e-commerce for purchases as cost savings and one in four saw the benefit as speed. These levels rose to nearly one in two for the largest businesses. Once again the average length of time that e-commerce had been used for placing orders was less than a year.

Estimates of the value of e-commerce

Sales

Respondents to the survey were asked to provide an estimate of the percentage of their sales and purchases that they carried out using e-commerce. They were asked for two figures: transactions

carried out using the internet; and transactions carried out using all electronic networks, including EDI¹⁰.

From the responses given, internet sales are estimated to be worth £56.6 billion¹¹. This represents 2.04 per cent of total sales for the sectors covered. Sales via all electronic networks are estimated to be worth £161.8 billion, or 5.83 per cent of total sales.

Table 1 shows how the overall levels of e-commerce are split between different sized businesses and by sector. The larger businesses account for nearly 80 per cent of all of e-commerce sales, while the financial sector account for 77 per cent of all of e-commerce sales. If the financial sector are removed, the value of internet sales drops to £12.9 billion which represents 0.94 per cent of all sales excluding the financial sector (Chart 9).

Less than one fifth of internet sales were to households, with an estimated value of £10 billion (Table 2). The financial sector accounts for most of this and, when removed, internet sales to household are £1.2 billion which represents less than 0.1 per cent of all sales. At a lower level industry split, the air transport, insurance and pension sectors carried out the greatest volume of their internet sales to households.

Overseas internet sales are very low, amounting to £1.3 billion or 0.05 per cent of total sales in the sectors surveyed (Table 3). The air transport industry carries out the largest percentage of overseas internet sales at 0.7 per cent of its total sales.

Chart 8
Use of computer mediated networks for purchases

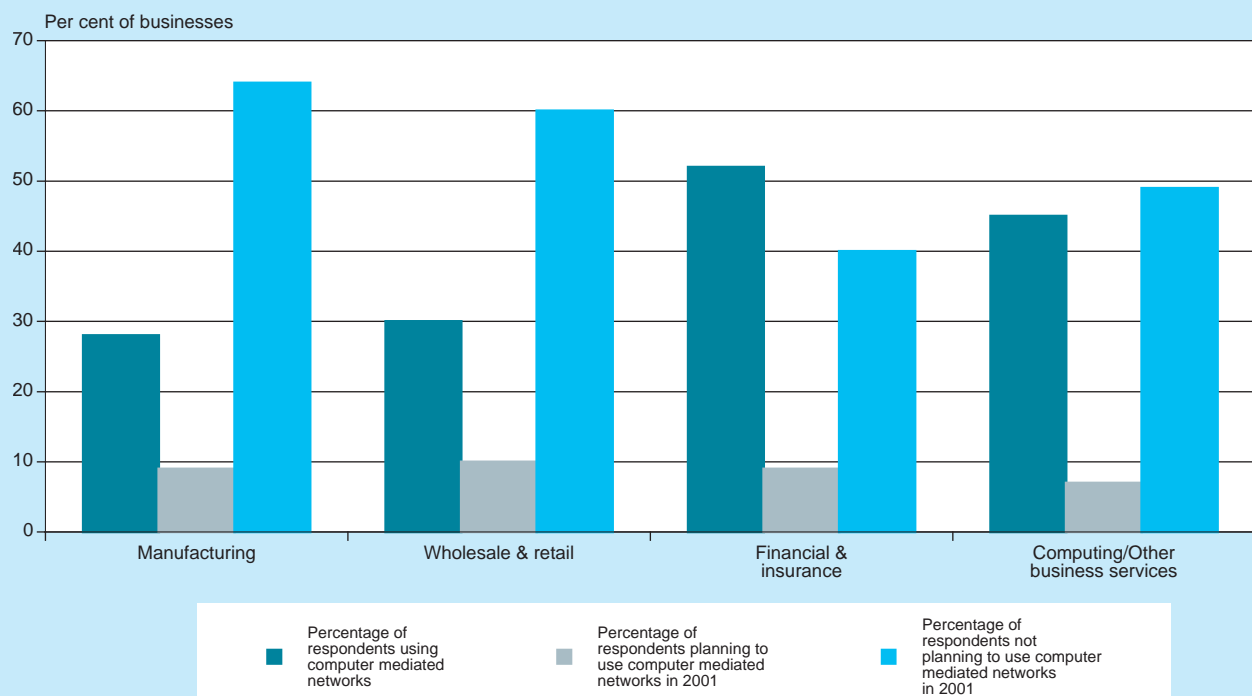


Table 1: Value of e-commerce sales split by sizeband and sector

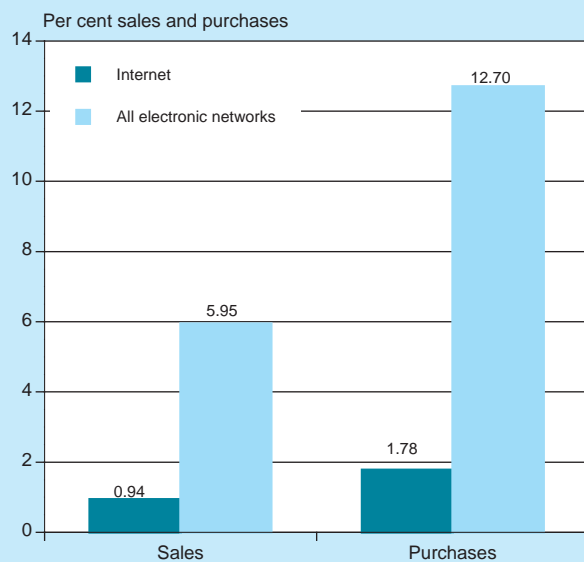
	Internet Sales		All electronic networks	
	£ bn	per cent	£ bn	per cent
Total	56.6	2.04	161.75	5.83
Sizeband of business				
10–49	3.43	0.12	5.97	0.21
50–249	8.11	0.29	24.27	0.87
250–999	23.21	0.84	58.17	2.10
1000+	21.88	0.79	73.35	2.64
Sector of business				
Manufacturing	3.99	0.14	49.46	1.78
W'sale/retail/catering/ travel	7.61	0.27	29.65	1.07
Financial and insurance	43.74	1.58	79.90	2.88
Computing and other business services	1.28	0.05	2.75	0.10

Table 2: E-commerce sales to households

	Internet Sales		All electronic networks	
	£ bn	per cent	£ bn	per cent
Total households	9.9	0.36	24.30	0.88
Sizeband of business				
10–49	0.11	0.00	0.19	0.01
50–249	0.40	0.01	0.86	0.03
250–999	3.00	0.11	6.57	0.24
1000+	6.38	0.23	16.68	0.60
Sector of business				
Manufacturing	0.10	0.00	3.59	0.13
W'sale/retail/catering/ travel	1.12	0.04	2.72	0.10
Financial and insurance	8.66	0.31	17.66	0.64
Computing and other business services	0.01	0.00	0.32	0.01

Chart 9

Per cent of sales and purchases carried out using e-commerce (excluding financial sector)



Purchases

It was not possible to produce estimates of e-commerce purchases for the financial sector because there are no data on the sector's purchases as a whole; all estimates of e-commerce purchases therefore omit the financial sector. However, as the level of e-commerce sales by this industry is around £44 billion, it would be reasonable to assume that the level of e-commerce purchases¹² would also be sizeable.

Internet purchases (without the financial sector) are estimated at £16.6 billion, which is 1.78 per cent of total purchases, while purchases by all electronic networks (without the financial sector) are estimated at £118.5 billion – 12.7 per cent of total purchases.

Table 3: E-commerce sales to overseas

	Internet Sales		All electronic networks	
	£ bn	%	£ bn	%
Total overseas	1.3	0.05	6.45	0.23
Sizeband of business				
10–49	0.04	0.00	0.08	0.00
50–249	0.11	0.00	0.48	0.02
250–999	0.69	0.02	2.39	0.09
1000+	0.46	0.02	3.50	0.13
Sector of business				
Manufacturing	0.08	0.00	3.18	0.11
W'sale/retail/catering/ travel	0.20	0.01	0.66	0.02
Financial and insurance	1.00	0.04	2.29	0.08
Computing and other business services	0.02	0.00	0.32	0.01

Methodology Note

Definitions

The definitions of e-commerce and electronic networks used in the E-commerce Inquiry are in line with those agreed by OECD and the statistical office of the EU (Eurostat).

Sample Design

The E-commerce Inquiry was a random sample survey of 9,000 businesses. The sample was selected from the Interdepartmental Business Register (IDBR) which holds records on all UK businesses registered for VAT and PAYE .

The sectors included in the sample were: manufacturing; electricity, gas and water supply; wholesale and retail; hotel and catering; transport; financial services; and other business services. This equates to 43 divisions of the UK Standard Industrial Classification - SIC(92).

The sample was further stratified by four employment size bands:

Size band 1:	10–49
Size band 2:	50–249
Size band 3:	250–999
Size band 4:	1,000+

Businesses with less than 10 employees were excluded in line with the policy to reduce the burden on small businesses. All of those in the relevant industries with more than 1,000 employees were included.

Survey Instrument

The data were collected by postal questionnaire. As it was part of an EU-wide initiative to produce comparable European data, the ONS used the questionnaire agreed by Eurostat, with only minor variations to improve readability.

The questionnaire was sent out in January 2001. Respondents were requested to provide estimates of their e-commerce sales and purchases for the year ending 31 December 2000. The rest of the data gave a 'snapshot' for January 2000.

Data Analysis

There were two methods of data analysis carried out:

Tick box data

(This was everything apart from e-commerce sales and purchases). To produce estimates by sizeband for each sector surveyed, the average percentage of all those surveyed was multiplied by the population totals of businesses in that sizeband and sector. The population totals were obtained from the Interdepartmental Business Register (IDBR).

For selected variables, employment weighted data were produced in parallel. These results give more importance to the results from bigger businesses, rather than to those strata with large numbers of smaller businesses.

Sales and purchases data

Each survey response was employment weighted to produce estimated percentages for e-commerce sales and purchases for each SIC (92) division and sizeband. This e-commerce percentage was multiplied by the estimated sales and purchases for the cell to produce e-commerce estimates for sizeband, industry and overall economy. The sales and purchases information is collected by the ONS's Annual Business Inquiry (ABI) which surveys 70,000 businesses.

However, the ABI does not survey SIC(92) division 65, 'Financial Intermediation Without Insurance and Pensions'. Turnover data held on the IDBR were used to produce estimated e-commerce sales for this SIC, which should be treated with due caution. As there are no purchases data held by ONS on this SIC(92) division, no estimates of e-commerce purchases for the financial sector could be produced.

Quality of the Results

The levels of e-commerce sales and purchases published are estimates for UK businesses with employment of 10 or more. As the survey was only a sample of businesses, the responses received have been used to estimate for the sectors covered by the survey. As with all surveys, these estimates have an associated sampling error that has been estimated for this survey as follows:

	estimate £ billion	standard deviation £ billion
internet purchases	19.6	1.5
all electronic purchases	124.6	5.6
internet sales	56.1	4.9
all electronic purchases	161.8	8.9

It is normally assumed that 95 per cent of values will lie within two standard deviations of the estimate. In other words, we are 95 per cent confident that internet purchases lie between £16.6 billion and £22.6 billion and that internet sales lie between £46.3 billion and £65.9 billion.

References

1. DTI 1998 White Paper *Our Competitive Future: Building the Knowledge-Driven Economy* CM4176.
2. Full methodology at end of article.
3. Weighting by size of business gives more weight, or importance, to larger businesses and less to the smaller businesses that tend to have slower take-up of technology.
4. This figures rises, if size-weighting is used, to 85 per cent.
5. The size-weighted figure is 96 per cent.
6. Some businesses reported having both their own and a third-party website, so there is some overlap and the percentages will add to more than 100 per cent.
7. There may be some overlap if companies said they had more than one type of broadband access.
8. Size-weighted = 38 per cent.
9. Size-weighted = 51 per cent.
10. See Methodology Note for definitions.
11. There are no sales data held by ONS for much of the financial sector and so 'turnover' from administrative sources was used to produce estimates from the percentages supplied by business. This means that estimates for e-commerce in the financial sector must be treated with due caution. For information, in the National Accounts the effect of the financial sector is measured through output or value added and so the figures here cannot be compared with those.
12. Respondents in the financial sector estimated that 10 per cent of their purchases were via the internet.