

18

Knowledge Economy

- 73% of households where at least one member is aged between 16 and 74 had a computer in 2009.
- 54% of households where at least one member is aged between 16 and 74 had a broadband connection in 2009.
- 65% of people aged between 16 and 74 used the internet in the last 3 months in 2009.
- 66% of all enterprises with ten or more employees had a website or homepage in 2009.
- 84% of all enterprises with ten or more employees had a broadband connection in 2009.
- 45% of enterprises had innovation activity in the period 2006-2008.



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Introduction

This chapter presents information on the knowledge economy in Ireland. It contains statistics on information society and telecommunications as well as innovation activity at enterprise level. The results have been obtained from a number of CSO enterprise and household surveys and a joint survey with Forfás on R&D. Administrative data from the Commission for Communications Regulation (ComReg) on telecommunications and broadcasting is also included.

ICT sector

The ICT sector had 89,025 persons engaged in 2007, which represented 7.9% of total persons engaged in industry and services. The ICT manufacturing sector had 26,910 persons engaged, while 62,115 people were engaged in ICT services.

The ICT sector accounted for 6.1% of the total number of enterprises. However, it contributed 23.5% of total turnover in industry and services. Total turnover in the ICT sector was just under €79bn in 2007, of which 48% was in manufacturing and 52% in services. Value added in the ICT sector, at €14bn, accounted for 15.7% of total value added in industry and services. See table 18.1.

Use of ICT by households

In the first quarter of 2009, an estimated 73% of households where at least one member was aged between 16 and 74 years of age, had a home computer compared with 65% in the same quarter in 2007. Internet access also increased over this period, with 66% of these households having a computer connected to the internet in the first quarter of 2009 compared with 57% in 2007. More than half (54%) of these households had a broadband internet connection in 2009 compared with only 31% of households in 2007. See table 18.2.

In 2009, the most popular activities on the internet for private purposes in the previous 3 months were *sending and receiving e-mails* and *finding information about goods and services* 56% and 54% respectively, of people aged between 16 and 74. See table 18.3.

In the twelve months prior to the first quarter of 2009, 37% of people aged between 16 and 74 had ordered goods or services from the internet for private use. The most popular type of goods and services ordered on the internet during this period were *Tickets for events* (21%). See table 18.4.

Use of ICT by enterprises (with 10 or more persons engaged)

Virtually all enterprises use computers in one way or another today: 98% in manufacturing, 96% in construction and 97% in services. The majority also use the internet, while 66% of all enterprises reported that they have a website or homepage and some 21% of enterprises had a written ICT strategy in 2009. See table 18.5.

In 2009, 83% of enterprises said they had downloaded forms from a public authority website, while 66% had returned completed forms online. See table 18.6.

In the manufacturing sector 26% of enterprises had e-commerce sales, compared with 21% in services. Sales by e-commerce accounted for 25% of total turnover in the manufacturing sector in 2009. In the services sector sales via e-commerce accounted for 34% of turnover. The results show that 49% of all businesses purchased some goods using e-commerce. The percentage of total purchases completed in this way was 32%. See table 18.7.

Telecommunications

There were just over 1.95 million fixed access paths in 2009. The total number of mobile subscribers in the same period (including HSDPA) was 5.3 million, with pre-paid subscribers making up 67% of the total. The mobile penetration rate for Ireland (including HSDPA) fell from 121% in 2008 to just under 119% in 2009. See table 18.8.

In the second quarter of 2008, 79% of pay television subscribers had a digital subscription via satellite or digital cable. By the second quarter of 2009 this had increased to just over 83% of pay TV subscribers. See table 18.9.

The Community Innovation Survey

In the period 2006 to 2008 inclusive, almost 45% of enterprises with ten or more persons engaged in Ireland indicated that they were active innovators. Over 52% of industrial enterprises were classed as innovation active while almost 41% of service enterprises were innovation active. Almost one third (32.8%) of industrial enterprises were engaged in product innovations compared to a quarter (24.8%) of service enterprises. Just under 43% of enterprises in the industrial sector were process innovators compared to 30.4% of enterprises in the services sector. In total, almost 28% of all enterprises with ten or more persons engaged were engaged in product innovations, while 35% of enterprises were engaged in process innovations.

Technical Notes

Table 18.1

Table 18.1 contains data on the key economic variables for the ICT sector from the CSO's Census of Industrial Production and Annual Services Inquiries over the period 2004 to 2007.

Table 18.2

Households refers to households where at least one member was aged between 16 and 74.

Some households may have more than one type of internet connection. Households that had a Broadband and a Modem/ISDN internet connection are included under Broadband only.

Tables 18.3 and 18.4

Only persons aged between 16 and 74 were included in the survey.

Tables 18.2-18.4

Information on the usage of ICT by households and individuals is obtained from the CSO's Quarterly National Household Survey (QNHS). A sample of around 6,000 QNHS households is used annually for the purposes of the household ICT survey module. It includes questions relating to the household and questions asked of each person aged 16 to 74. The reference period is the first quarter of each year.

Tables 18.5-18.7

The results presented in tables 18.5-18.7 are obtained from the CSO's survey of ICT and e-commerce usage in enterprises. The results from this annual survey cover manufacturing and selected services enterprises with 10 or more persons engaged and construction sector enterprises with 20 or more persons engaged.

Table 18.8-18.9

The information contained in tables 18.8 and 18.9 was provided by ComReg. Total fixed access paths include the total number of direct and indirect PSTN and ISDN access paths. Individual ISDN lines may have multiple access paths. Mobile penetration rates are based on active SIMS as a percentage of the total population.

High Speed Downlink Packet Access (HSDPA) is a 3G (third generation) mobile telephony communications protocol in the High Speed Packet Access (HSPA) family, which allows networks based on Universal Mobile Telecommunications System (UMTS) to have higher data transfer speeds and capacity.

Table 18.10

The Community Innovation Survey (CIS) 2006-2008 is a survey of innovation activities of enterprises in Ireland over the period 2006 to 2008. The CIS is jointly conducted by the CSO and Forfás to increase efficiency in the collection of statistical data and to reduce the burden on the participating enterprises. The survey included enterprises with 10 or more persons engaged in the industry and selected services sectors. Methodological changes have been introduced in the CIS 2006-2008. As a consequence of this, no conclusions should be drawn regarding the direction or scale of any real changes between CIS 2004-2006 and CIS 2006-2008.

Definitions

EDI = Electronic Data Interchange

Electronic exchange of forms, such as for orders, between geographically dispersed locations.

ISDN = Integrated Services Digital Network

Integrated Services Digital Network is the digital version of the old telephone system. ISDN offers many services such as private virtual networks, high-speed facsimile (fax), video-conferencing and most importantly, high speed communications.

LAN = Local Area Network

This relates to your company's computer network, usually within an office, building or closed geographical area.

Table 18.1 Contribution of the ICT sector to the Irish economy – enterprises

| | Unit | 2004 | 2005 | 2006 | 2007 |
|--|------|--------|--------|--------|--------|
| ICT Manufacturing (A) | | | | | |
| Number of enterprises | No. | 183 | 166 | 166 | 193 |
| Persons engaged | No. | 30,004 | 27,883 | 28,646 | 26,910 |
| Turnover | €m | 32,299 | 33,950 | 38,195 | 37,920 |
| Gross value added | €m | 7,302 | 7,120 | 7,611 | 6,117 |
| ICT Services (B) | | | | | |
| Number of enterprises | No. | 5,100 | 4,924 | 5,236 | 5,872 |
| Persons engaged | No. | 53,415 | 54,858 | 58,514 | 62,115 |
| Turnover | €m | 19,821 | 28,171 | 37,175 | 40,949 |
| Gross value added | €m | 5,698 | 7,532 | 7,882 | 7,961 |
| ICT Total (A + B) | | | | | |
| Number of enterprises | No. | 5,283 | 5,090 | 5,402 | 6,065 |
| Persons engaged | No. | 83,419 | 82,741 | 87,160 | 89,025 |
| Turnover | €m | 52,120 | 62,121 | 75,370 | 78,869 |
| Gross value added | €m | 13,000 | 14,652 | 15,493 | 14,078 |
| Total ICT as a % of Total Industry and Services | | | | | |
| Number of enterprises | % | 5.9 | 5.8 | 5.6 | 6.1 |
| Persons engaged | % | 8.6 | 8.5 | 8.2 | 7.9 |
| Turnover | % | 20.5 | 21.9 | 24.4 | 23.5 |
| Gross value added | % | 16.5 | 18.4 | 18.6 | 15.7 |

Source: CSO

Table 18.2 Main trends in household ICT use

| | 2007 | 2008 | 2009 |
|---|------|------|------|
| | | | % |
| % of all households with home computers | 65 | 70 | 73 |
| Households with computers connected to internet | | | |
| % of all households | 57 | 62 | 66 |
| % of all households with home computers | 87 | 88 | 91 |
| Type of internet connection as a % of all households | | | |
| Modem/ISDN | 25 | 19 | 12 |
| Broadband | 31 | 43 | 54 |
| Other/don't know | 1 | 1 | 1 |

Source: CSO

Table 18.3 Activities on the internet for private use by individuals aged 16-74 in the previous three months

| | 2007 | 2008 | 2009 |
|--|-----------|-----------|-----------|
| | | | % |
| Communication | | | |
| Sending and receiving e-mails | 48 | 53 | 56 |
| Information search and on-line services | | | |
| Finding information about goods and services | 44 | 46 | 54 |
| Travel and accommodation | 39 | 41 | 44 |
| Downloading software | 10 | 13 | 14 |
| Reading/downloading newspapers or magazines | 10 | 17 | 19 |
| Looking for a job/sending job applications | 7 | 9 | 14 |
| Seeking health-related information | 12 | 19 | 24 |
| Selling or banking | | | |
| Internet banking | 24 | 28 | 30 |
| Selling goods or services | 3 | 3 | 5 |
| Interaction with public authorities | | | |
| Obtaining information from web sites | 26 | 21 | 23 |
| Downloading official forms | 22 | 20 | 20 |
| Sending completed forms | 19 | 18 | 19 |
| Training and education | | | |
| Looking for information about educational, training or course offers | 23 | 23 | 27 |
| Doing an online course (of any subject) | 3 | 3 | 5 |
| Consulting the internet with the purpose of learning | 16 | 21 | 30 |
| All persons who used the internet in previous 3 months | 57 | 63 | 65 |

Source: CSO

Table 18.4 Percentage of individuals aged 16-74 who made purchases on the internet and type of purchase for private purposes

| | % | | |
|--|-----------|-----------|-----------|
| Types of goods and services ordered in last 12 months | 2007 | 2008 | 2009 |
| Food/groceries | 2 | 2 | 2 |
| Household goods | 3 | 3 | 5 |
| Films/music | 10 | 10 | 10 |
| Books/magazines/newspapers/e-learning material | 8 | 9 | 10 |
| Clothes/sports goods | 5 | 7 | 11 |
| Computer software | 5 | 5 | 5 |
| Computer hardware | 2 | 3 | 3 |
| Electronic equipment | 4 | 5 | 10 |
| Share purchases/financial services/insurance | 2 | 2 | 3 |
| Tickets for events | 11 | 12 | 21 |
| All persons aged 16-74 who have purchased on the internet in the last 12 months | 33 | 36 | 37 |

Source: CSO

Table 18.5 Main results of enterprise ICT survey, as a percentage of all enterprises - March 2009

| | Unit | Manufacturing sectors | Construction sector | Selected services sectors | Total |
|--|------|-----------------------|---------------------|---------------------------|-------|
| General information about ICT systems | | | | | |
| Using a computer | % | 98 | 96 | 97 | 97 |
| Using intranet | % | 54 | 32 | 46 | 46 |
| Using LAN | % | 69 | 58 | 64 | 64 |
| Using extranet | % | 17 | 13 | 22 | 20 |
| Having a written ICT strategy | % | 20 | 11 | 22 | 21 |
| Use of the internet | | | | | |
| Using the internet | % | 97 | 96 | 94 | 95 |
| Having a website or homepage | % | 77 | 58 | 64 | 66 |
| Type of external connection to the Internet | | | | | |
| Modem | % | 13 | 16 | 13 | 13 |
| ISDN | % | 21 | 19 | 21 | 21 |
| Broadband | % | 86 | 82 | 83 | 84 |

Source: CSO

Table 18.6 Levels of interaction with public authorities via the internet, as a percentage of all enterprises - March 2009

| | Unit | Manufacturing sectors | Construction sector | Selected services sectors | Total |
|---|------|-----------------------|---------------------|---------------------------|-------|
| Interaction with public authorities via internet | | | | | |
| For obtaining information | % | 87 | 87 | 81 | 83 |
| For obtaining forms | % | 88 | 90 | 81 | 83 |
| For returning filled-in forms | % | 69 | 73 | 65 | 66 |
| For full electronic case handling | % | 67 | 69 | 61 | 62 |
| Submit proposal by electronic tender system | % | 29 | 45 | 28 | 29 |

Source: CSO

Table 18.7 Purchases and sales via e-commerce enterprises, March 2009

| | Unit | Manufacturing sectors | Construction sector | Selected services sectors | Total |
|--|------|-----------------------|---------------------|---------------------------|-------|
| Use of e-commerce for purchases (as % of total enterprises) | | | | | |
| By internet or EDI | % | 63 | 32 | 48 | 49 |
| By internet | % | 60 | 30 | 43 | 45 |
| By EDI | % | 12 | 6 | 15 | 13 |
| Use of e-commerce for sales (as % of total enterprises) | | | | | |
| By internet or EDI | % | 26 | 8 | 21 | 21 |
| By internet | % | 20 | 8 | 19 | 18 |
| By EDI | % | 11 | 2 | 7 | 7 |
| Percentage of purchases by e-commerce (as % of total purchases) | | | | | |
| By internet or EDI | % | 28 | 8 | 36 | 32 |
| By internet | % | 17 | 6 | 15 | 16 |
| By EDI | % | 11 | 2 | 20 | 16 |
| Percentage of sales by e-commerce (as % of total turnover) | | | | | |
| By internet or EDI | % | 25 | 1 | 34 | 29 |
| By internet | % | 10 | 1 | 13 | 11 |
| By EDI | % | 15 | 0 | 22 | 18 |

Source: CSO

Table 18.8 Selected telecommunications data

| | Unit | 2006 | 2007 | 2008 | 2009 |
|---|-------------|--------------|--------------|--------------|--------------|
| Fixed | | | | | |
| Total fixed access paths | '000 | 2,074 | 2,095 | 2,057 | 1,952 |
| Mobile | | | | | |
| Post-paid subscribers | '000 | n/a | 1,310 | 1,592 | 1,722 |
| Pre-paid subscribers | '000 | n/a | 3,788 | 3,765 | 3,580 |
| Total mobile subscribers (incl. HSDPA) | '000 | n/a | 5,098 | 5,357 | 5,302 |
| Average Revenue per user per month | € | 45.02 | 44.33 | 41.16 | 37.16 |
| Mobile penetration rates | | | | | |
| including HSDPA | % | n/a | 117.60 | 121.14 | 118.91 |
| excluding HSDPA | % | 110.75 | 114.56 | 114.16 | 108.43 |

Source: ComReg

Table 18.9 Selected broadcasting data

| | Unit | Q2 2007 | Q2 2008 | Q2 2009 |
|--|------|--------------|--------------|--------------|
| Television | | | | |
| Number of subscribers by platform | '000 | 1,062 | 1,102 | 1,091 |
| <i>of which</i> | | | | |
| Analogue cable | '000 | 268 | 233 | 181 |
| Satellite | '000 | 497 | 557 | 586 |
| Digital cable | '000 | 297 | 312 | 323 |

Source: ComReg

Table 18.10 Innovation activity of enterprises as a percentage of all enterprises, 2006-2008

| | Unit | Industrial sector | Selected services sectors | Total |
|---------------------------|----------|-------------------|---------------------------|-------------|
| Type of innovation | | | | |
| Product innovation | % | 32.8 | 24.8 | 27.8 |
| Process innovation | % | 42.7 | 30.4 | 35.0 |
| Ongoing innovation | % | 0.9 | 1.1 | 1.0 |
| Abandoned innovation | | 0.4 | 0.4 | 0.4 |
| Any innovation | % | 52.3 | 40.6 | 44.9 |

Source: CSO and Forfás

