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Knowledge Economy

- In 2011, 81% of households where at least one member was aged between 16 and 74, had a home computer and 78% had access to the internet.
- Holiday accommodation (27.6%) and other travel arrangements (30.1%) were the most popular types of purchases made by individuals over the internet.
- 91% of all enterprises had a broadband connection in 2011 and 82% of enterprises used the internet to electronically complete forms such as VAT and PAYE.
- In 2011 there were 5.5m mobile phone subscriptions in Ireland, of which 0.5m were mobile broadband subscriptions. The average revenue per user dropped from €34 per month to €30 over the period 2010 to 2011.
- Of the 1.6m households with a television, 307,000 were using a terrestrial signal in 2011.
- 47% of enterprises had technological innovation activity in the period 2008-2010.

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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 innovation activity. Administrative data from the Commission of Communications Regulation (ComReg) on telecommunications and broadcasting is also included.

Use of ICT by households

In the first quarter of 2011, an estimated 81% of households, where at least one member was aged between 16 and 74 years of age, had a home computer compared with 70% in the same quarter in 2008. Internet access also increased over this period, with 78% of all households having a computer connected to the internet in the first quarter of 2011 compared with 72% in 2010 and 63% in 2008. See table 18.1.

In 2011, the most popular activities on the internet for private purposes in the previous three months were *finding information about goods and services* and *travel and accommodation services* 53% and 47% respectively of people aged between 16 and 74. See table 18.2 *sending and receiving e-mails*, the previous most popular activity, was not included in the 2011 ICT survey.

In the twelve months prior to the first quarter of 2011, 43% 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 *Holiday accommodation* (28%) and *other travel arrangements* (30%). See table 18.3.

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

Virtually all enterprises used computers in one way or another in 2011: 99% in manufacturing, 98% in construction and 93% in services. The majority also used the internet, while 70% of all enterprises reported that they have a website or homepage and 19% of enterprises had a written IT strategy in 2011. See table 18.4.

In 2011, 85% of enterprises said they had downloaded forms from a public authority website, while 82% had returned completed forms online. See table 18.5.

In the manufacturing sector 35% of enterprises had e-commerce sales, compared with 23% in services. Sales by e-commerce accounted for 12% of total turnover in the manufacturing sector in 2011. In the services sector sales via e-commerce accounted for 21% of turnover.

The results show that 49% of all enterprises purchased some goods using e-commerce. The percentage of total purchases completed in this way was 20%. See table 18.6.

Telecommunications

There were just over 1.76 million fixed access paths in 2011. The total number of mobile subscribers in the same period (including HSDPA) was 5.5 million, with pre-paid subscribers making up 63% of the total. The mobile penetration rate for Ireland (including HSDPA) rose from 117.9% to just over 120% in 2011. See table 18.7.

The number of television households in Ireland in the second quarter of 2011 was 1,591,000 of which 73% of households were paying for a digital or cable subscription. See table 18.8.

The Community Innovation Survey

In the period 2008 to 2010 inclusive, almost 47% of enterprises with ten or more persons engaged in Ireland indicated that they were technological innovation active. Almost 57% of industrial enterprises were classed as technological innovation active compared to over 41% of selected services enterprises. Over one third (34.9%) of industrial enterprises were engaged in product innovations compared to almost a quarter (24%) of selected services enterprises. Just over 40% of enterprises in the industrial sector were process innovators compared to 28.5% of enterprises in the selected services sector. In total, almost 28% of all enterprises with ten or more persons engaged were engaged in product innovations while 32.9% of enterprises were engaged in process innovations. See table 18.9.

Technical Notes

Table 18.1

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 18.2 and 18.3

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

Tables 18.1-18.3

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 18.4-18.6

The results presented in tables 18.4-18.6 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.

Tables 18.7-18.8

The information contained in tables 18.7 and 18.8 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.

Tables 18.9

The Community Innovation Survey (CIS) 2008-2010 is a survey of innovation activities of enterprises in Ireland over the period 2008 to 2010. Enterprises that were classed as technological innovation active are those enterprises that had carried out a product innovation or a process innovation. 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.

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 a company's computer network, usually within an office, building or closed geographical area.

Table 18.1 Main trends in household ICT use

| | % | | | |
|----------------------------------------------------------------------|------|------|------|------|
| | 2008 | 2009 | 2010 | 2011 |
| % of all households with home computers | 70 | 73 | 76 | 81 |
| Households with computers connected to internet | | | | |
| % of all households | 63 | 67 | 72 | 78 |
| % of all households with home computers | 89 | 91 | 93 | 96 |
| Type of internet connection as a percentage of all households | | | | |
| Modem/ISDN | 19 | 12 | 8 | 11 |
| Broadband | 43 | 54 | 62 | 65 |
| Other/don't know | 1 | 1 | 2 | 2 |

Source: CSO

Table 18.2 Activities on the internet for private use by individuals aged 16-74 in the previous three months

| | % | | | |
|------------------------------------------------------------------------------------------------------|-----------|-----------|-----------|-----------|
| | 2008 | 2009 | 2010 | 2011 |
| Communication | | | | |
| Sending and receiving e-mails | 53 | 56 | 58 | n/a |
| Telephoning over internet (VOIP) or video conferencing | n/a | 14 | 17 | 21 |
| Posting messages to chat site blog, news groups or online discussion forum, use of instant messaging | n/a | 17 | 25 | 40 |
| Information search and on-line services | | | | |
| Finding information about goods and services | 46 | 54 | 57 | 53 |
| Travel and accommodation | 41 | 44 | 47 | 47 |
| Downloading software (other than game software) | 13 | 14 | 12 | 18 |
| Reading/downloading newspapers or magazines | 17 | 19 | 21 | 29 |
| Looking for a job/sending job applications | 9 | 14 | 14 | 20 |
| Seeking health-related information | 19 | 24 | 27 | 40 |
| Web radio/television | 13 | 16 | 18 | n/a |
| Playing/downloading games, images or music | n/a | 19 | 20 | n/a |
| Uploading self-created content | 9 | 13 | 14 | n/a |
| Selling or banking | | | | |
| Internet banking | 28 | 30 | 34 | 33 |
| Selling goods or services | 3 | 5 | 5 | 13 |
| Interaction with public authorities | | | | |
| Obtaining information from web sites | 21 | 23 | 22 | 36 |
| Downloading official forms | 20 | 20 | 20 | 36 |
| Sending completed forms | 18 | 19 | 19 | 34 |
| Training and education | | | | |
| Looking for information about educational, training or course offers | 23 | 27 | 28 | 38 |
| Doing an online course (of any subject) | 3 | 5 | 5 | 5 |
| Consulting the internet with the purpose of learning | 21 | 30 | 35 | 22 |
| All persons who used the internet in previous 3 months | 63 | 65 | 67 | 75 |

Source: CSO

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Table 18.3 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 | 2008 | 2009 | 2010 | 2011 |
| Food/groceries | 2 | 2 | 2 | 4 |
| Household goods | 3 | 5 | 6 | 8 |
| Films/music | 10 | 10 | 10 | 14 |
| Books/magazines/newspapers/e-learning material | 9 | 10 | 11 | 14 |
| Clothes/sports goods | 7 | 11 | 13 | 17 |
| Computer hardware | 3 | 3 | 2 | 8 |
| Electronic equipment | 5 | 10 | 10 | 13 |
| Share purchases/financial services/insurance | 2 | 3 | 3 | 5 |
| Tickets for events | 12 | 21 | 22 | 27 |
| Video games software and upgrades | n/a | 5 | 4 | 3 |
| Other computer software and upgrades | n/a | 5 | 5 | 6 |
| Telecommunications services | n/a | n/a | 5 | 4 |
| Holiday accomodation | n/a | 23 | 23 | 28 |
| Other travel arrangements | n/a | 26 | 26 | 30 |
| Medicine | n/a | n/a | 1 | 2 |
| Computer software and upgrades including games | 5 | n/a | n/a | n/a |
| Travel/holiday accomodation | 21 | n/a | n/a | n/a |
| All persons aged 16-74 who have purchased on the internet in the last 12 months | 36 | 37 | 36 | 43 |

Source: CSO

Table 18.4 Main results of enterprise ICT survey, as a percentage of all enterprises, March 2011

| | Manufacturing sectors | Construction sector | Selected services sectors | Total |
|----------------------------------------------------|-----------------------|---------------------|---------------------------|-------|
| General information about ICT systems | | | | |
| Using a computer | 99 | 98 | 93 | 94 |
| Using intranet | 48 | 34 | 40 | 41 |
| Using LAN | 74 | 66 | 63 | 64 |
| Using extranet | 20 | 12 | 19 | 19 |
| Having a written ICT strategy | 23 | 13 | 19 | 19 |
| Use of the internet | | | | |
| Using the internet | 99 | 98 | 92 | 93 |
| Having a website or homepage | 85 | 70 | 68 | 70 |
| Type of external connection to the Internet | | | | |
| Modem/ISDN | 17 | 15 | 17 | 17 |
| Broadband | 96 | 93 | 90 | 91 |

Source: CSO

Table 18.5 Levels of interaction with public authorities via the internet, as a percentage of all enterprises, March 2011

| | % | | | |
|---------------------------------------------------------|-----------------------|---------------------|---------------------------|-------|
| | Manufacturing sectors | Construction sector | Selected services sectors | Total |
| Interaction with public authorities via internet | | | | |
| For obtaining information | 92 | 93 | 81 | 83 |
| For obtaining forms | 95 | 90 | 83 | 85 |
| For returning filled-in forms | 91 | 94 | 80 | 82 |
| For full electronic case handling | 58 | 72 | 54 | 55 |
| Submit proposal by electronic tender system | 45 | 80 | 34 | 38 |

Source: CSO

Table 18.6 Purchases and sales via e-commerce enterprises, March 2011

| | % | | | |
|------------------------------------------------------------------------|-----------------------|---------------------|---------------------------|-------|
| | Manufacturing sectors | Construction sector | Selected services sectors | Total |
| Use of e-commerce for purchases (as % of total enterprises) | | | | |
| By internet or EDI | 52 | 39 | 49 | 49 |
| By internet | 50 | 38 | 44 | 45 |
| By EDI | 11 | 1 | 12 | 11 |
| Use of e-commerce for sales (as % of total enterprises) | | | | |
| By internet or EDI | 35 | 5 | 23 | 23 |
| By internet | 25 | 5 | 20 | 20 |
| By EDI | 15 | 0 | 6 | 7 |
| Percentage of purchases by e-commerce (as % of total purchases) | | | | |
| By internet or EDI | 18 | 14 | 21 | 20 |
| By internet | 9 | 10 | 9 | 9 |
| By EDI | 9 | 3 | 13 | 11 |
| Percentage of sales by e-commerce (as % of total turnover) | | | | |
| By internet or EDI | 12 | 0 | 21 | 17 |
| By internet | 3 | 0 | 10 | 7 |
| By EDI | 9 | 0 | 11 | 10 |

Source: CSO

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Table 18.7 Selected telecommunications data

| | Unit | 2010 | 2011 |
|-----------------------------------------------|-------------|--------------|--------------|
| Fixed | | | |
| Total fixed access paths | '000 | 1,858 | 1,763 |
| Mobile | | | |
| Post-paid subscribers | '000 | 1,876 | 2,049 |
| Pre-paid subscribers | '000 | 3,397 | 3,451 |
| Total mobile subscribers (incl. HSDPA) | '000 | 5,273 | 5,500 |
| Average Revenue per user per month | € | 34.42 | 30.00 |
| Mobile penetration rates | | | |
| including HSDPA | % | 117.95 | 120.05 |
| excluding HSDPA | % | 105.16 | 107.10 |

Source: ComReg

Table 18.8 Selected broadcasting data

| | Q2 2009 | Q2 2010 | Q2 2011 |
|----------------------------------------------------------|--------------|--------------|--------------|
| | | | '000 |
| Number of television households | 1,580 | 1,586 | 1,591 |
| <i>of which</i> | | | |
| Digital satellite | 646 | 729 | 811 |
| Digital cable | 251 | 274 | 357 |
| Analogue cable | 305 | 240 | 103 |
| Other (inc. Irish & UK terrestrial; not cable/satellite) | 378 | 343 | 307 |

Source: ComReg

Table 18.9 Detailed technological innovation activity rates by sector, 2008 - 2010

| | Industry | Selected services | All enterprises |
|----------------------------------|-------------|-------------------|-----------------|
| | | | % |
| Product innovation | 34.9 | 24.0 | 27.9 |
| Process innovation | 40.5 | 28.5 | 32.9 |
| Product and process innovation | 24.4 | 14.8 | 18.2 |
| Ongoing innovation | 4.5 | 3.0 | 3.5 |
| Abandoned innovation | 1.6 | 0.8 | 1.1 |
| Abandoned and ongoing innovation | 0.6 | 0.3 | 0.4 |
| Any innovation | 56.7 | 41.2 | 46.8 |

Source: CSO and Forfás

