

18

Knowledge Economy

- In 2012, holiday accommodation (28%), other travel arrangements (30%) and tickets for events (27%) were the most popular types of goods and services purchased using the internet.
- 94% of all enterprises with 10 or more employees had a computer connected to the internet in 2012 and 73% of enterprises had a website or homepage.
- 91% of all enterprises with 10 or more employees had a broadband connection in 2012.
- 46% of all enterprises with 10 or more employees used the internet to make purchases in 2012, whereas 20% of such enterprises used the internet for sales.
- In 2012 there were almost 5.5m mobile phone subscriptions in Ireland.
- Enterprises across all business sectors spent almost €1.9 billion on research & development in 2011.

Contents

Introductory text	301
Table 18.1 Main trends in household ICT use	305
Table 18.2 Activities on the internet for private use by individuals aged 16-74 in the previous three months	305
Table 18.3 Percentage of individuals aged 16-74 who made purchases on the internet and type of purchase for private purposes	306
Table 18.4 Main results of enterprise ICT survey, as a percentage of all enterprises, March 2012	306
Table 18.5 Levels of interaction with public authorities via the internet, as a percentage of all enterprises, March 2012	307
Table 18.6 Purchases and sales via e-commerce by enterprises, March 2012	307
Table 18.7 Selected telecommunications data	308
Table 18.8 Selected broadcasting data	308
Table 18.9 Business expenditure on research and development for all enterprises.	308
Table 18.10 Total headcount of research personnel in all enterprises.	309
Table 18.11 Number of enterprises engaged in research and development activities by size of spend for all enterprises.	309

Introduction

This chapter presents information on the knowledge economy in Ireland. It contains statistics on information society and telecommunications as well as research and development (R&D). 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.

Use of ICT by households

In 2012, an estimated 83% of households with at least one occupant aged between 16 and 74 years of age had access to a home computer compared with 70% in 2008. In addition, 81% of households indicated they have access to the internet compared with 78% in 2011 and 63% in 2008. See table 18.1.

In 2012, the most popular internet activities conducted by individuals aged 16 to 74 during the 3 months prior to being interviewed were sending and receiving emails (66%) and finding information about goods and services (63%). See table 18.2.

In the twelve months prior to the first quarter of 2012, it is estimated that 46% of individuals aged between 16 and 74 ordered goods and services using the internet. The most popular type of goods or services purchased was 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 2012: 98% in manufacturing and 94% in both construction and services. The majority also used the internet, while 73% of all enterprises reported that they have a website or homepage. See table 18.4.

In 2012, 86% of enterprises said they had downloaded forms from a public authority website, while 84% had returned completed forms online. See table 18.5.

In the manufacturing sector 30% of enterprises had e-commerce sales, compared with 24% in services. Sales by e-commerce accounted for 10% of total turnover in the manufacturing sector in 2012. In the services sector sales via e-commerce accounted for 28% of turnover.

The results show that 51% of all businesses purchased some goods using e-commerce. The percentage of total purchases completed in this way was 30%. See table 18.6.

Telecommunications

There were almost 1.66 million fixed access paths in 2012. The total number of mobile subscribers in the same period (including HSDPA) was 5.461 million, with pre-paid subscribers making up 60% of the total. The mobile penetration rate for Ireland (including HSDPA) fell from 120% in 2011 to 119% in 2012. See table 18.7.

The number of television households in Ireland in the second quarter of 2012 was 1,577,000 of which 77% of households were paying for a digital or cable subscription. See table 18.8.

Research and development expenditure in 2011

In 2011 almost €1.9bn was spent on research and development activities by enterprises across all business sectors in Ireland, as shown in table 18.9. Over 86% of all spending was on current expenditure while 14% was spent on capital expenditure. Enterprises spent over €1.0bn on labour costs, €601m on other current costs and €253m was spent on capital expenditure.

Research and development - staff headcount

There were 19,068 persons engaged in research and development activities in Ireland in 2011 of which 14,465 were male and 4,602 were female. Of the 10,618 researchers, 1,551 were PhD qualified researchers. In addition to researchers, 8,450 technicians and support staff were engaged in research and development activities. See table 18.10.

Number of active enterprises

Table 18.11 shows there were 1,608 enterprises engaged in research and development activities in Ireland in 2011 of which just under 10% had expenditure of €2m or more on R&D activities. See table 18.11.

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 18.9-18.11

Research and development activity in 2011

The Business Expenditure on Research and Development (BERD) Survey 2011/2012 is a survey of the research and development activities of enterprises in Ireland. The BERD Survey is required for Commission Regulation (EC) No 753/2004 implementing Decision No 1608/2003/EC. The survey collected information about the research and development activities of enterprises across all business sectors of the economy.

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	2012
% of all households with home computers	70	73	76	81	83
Households with computers connected to internet					
% of all households	63	67	72	78	81
% of all households with home computers	89	91	93	96	98
Type of internet connection as a percentage of all households					
Modem/ISDN	19	12	8	11	10
Broadband	43	54	62	65	65
Other/don't know	1	1	2	2	3

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	2012
Communication					
Sending and receiving e-mails	53	56	58	n/a	66
Telephoning over internet (VOIP) or video conferencing	n/a	14	17	21	29
Posting messages to chat site blog, news groups or online discussion forum, use of instant messaging	n/a	17	25	40	46
Information search and on-line services					
Finding information about goods and services	46	54	57	53	63
Travel and accommodation	41	44	47	47	47
Downloading software (other than game software)	13	14	12	18	n/a
Reading/downloading newspapers or magazines	17	19	21	29	33
Looking for a job/sending job applications	9	14	14	20	n/a
Seeking health-related information	19	24	27	40	n/a
Web radio/television	13	16	18	n/a	32
Playing/downloading games, images or music	n/a	19	20	n/a	17
Uploading self-created content	9	13	14	n/a	29
Selling or banking					
Internet banking	28	30	34	33	43
Selling goods or services	3	5	5	13	13
Interaction with public authorities					
Obtaining information from web sites	21	23	22	36	n/a
Downloading official forms	20	20	20	36	n/a
Sending completed forms	18	19	19	34	n/a
Training and education					
Looking for information about educational, training or course offers	23	27	28	38	n/a
Doing an online course (of any subject)	3	5	5	5	n/a
Consulting the internet with the purpose of learning	21	30	35	22	n/a
All persons who used the internet in previous 3 months	63	65	67	75	77

Source: CSO

Knowledge Economy

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	2012
Food/groceries	2	2	2	4	4
Household goods	3	5	6	8	10
Films/music	10	10	10	14	14
Books/magazines/newspapers/e-learning material	9	10	11	14	16
Clothes/sports goods	7	11	13	17	20
Computer hardware	3	3	2	8	4
Electronic equipment	5	10	10	13	12
Share purchases/financial services/insurance	2	3	3	5	7
Tickets for events	12	21	22	27	27
Video games software and upgrades	n/a	5	4	3	6
Other computer software and upgrades	n/a	5	5	6	8
Telecommunications services	n/a	n/a	5	4	8
Holiday accommodation	n/a	23	23	28	28
Other travel arrangements	n/a	26	26	30	30
Medicine	n/a	n/a	1	2	1
Computer software and upgrades including games	5	n/a	n/a	n/a	n/a
Travel/holiday accommodation	21	n/a	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	46

Source: CSO

Table 18.4 Main results of enterprise ICT survey, as a percentage of all enterprises, March 2012

%

	Manufacturing sectors	Construction sector	Selected services sectors	Total
General information about ICT systems				
Using a computer	98	94	94	95
Using intranet	51	35	42	42
Using LAN	75	60	62	63
Using extranet	22	6	20	19
Use of the internet				
Using the internet	98	93	93	94
Having a website or homepage	86	65	72	73
Type of external connection to the Internet				
Modem/ISDN	13	15	16	15
Broadband	95	88	90	91

Source: CSO

Table 18.5 Levels of interaction with public authorities via the internet, as a percentage of all enterprises, March 2012

%

	Manufacturing sectors	Construction sector	Selected services sectors	Total
Interaction with public authorities via internet				
For obtaining information	90	86	83	84
For obtaining forms	93	89	85	86
For returning filled-in forms	93	85	82	84

Source: CSO

Table 18.6 Purchases and sales via e-commerce by enterprises, March 2012

%

	Manufacturing sectors	Construction sector	Selected services sectors	Total
Use of e-commerce for purchases (as % of total enterprises)				
By internet or EDI	54	41	51	51
By internet	51	39	46	46
By EDI	12	5	14	13
Use of e-commerce for sales (as % of total enterprises)				
By internet or EDI	30	9	24	23
By internet	20	7	21	20
By EDI	15	2	6	7
Percentage of purchases by e-commerce (as % of total purchases)				
By internet or EDI	25	4	33	30
By internet	11	3	12	11
By EDI	13	1	22	19
Percentage of sales by e-commerce (as % of total turnover)				
By internet or EDI	10	1	28	21
By internet	3	0	11	8
By EDI	6	0	17	13

Source: CSO

Knowledge Economy

Table 18.7 Selected telecommunications data

	Unit	2010	2011	2012
Fixed				
Total fixed access paths	'000	1,858	1,763	1,658
Mobile				
Post-paid subscribers	'000	1,876	2,049	2,206
Pre-paid subscribers	'000	3,397	3,451	3,255
Total mobile subscribers (incl. HSDPA)	'000	5,273	5,500	5,461
Average Revenue per user per month	€	34.42	30.00	29.27
Mobile penetration rates				
including HSDPA	%	117.95	120.05	119.01
excluding HSDPA	%	105.16	107.10	106.92

Source: ComReg

Table 18.8 Selected broadcasting data

	Q2 2009	Q2 2010	Q2 2011	Q2 2012
Number of television households	1,580	1,586	1,591	1,577
<i>of which</i>				
Digital satellite	646	729	807	870
Digital cable	251	274	361	341
Analogue cable	305	240	103	69
Other (inc. Irish & UK terrestrial; not cable/satellite)	378	343	320	295

Source: ComReg

Table 18.9 Business expenditure on research and development for all enterprises

	€m
2011	
Current Expenditure	1,607
<i>of which</i>	
Labour costs	1,006
Other current costs	601
Capital Expenditure	253
<i>of which</i>	
Land and buildings	32
Payments made for licences to use intellectual products	109
Instruments and equipment (excluding software)	93
Software purchased wholly for R&D purposes	12
Software development by company in-house and used in-house	7
Total R&D Expenditure	1,860

Source: CSO and Forfás

Table 18.10 Total headcount of research personnel in all enterprises

	Number
	2011
PhD qualified researchers	1,551
Male	1,114
Female	436
Other researchers	9,067
Male	7,134
Female	1,934
Technicians	4,479
Male	3,489
Female	990
Support Staff	3,971
Male	2,729
Female	1,242
All R&D Staff	19,068
Male	14,465
Female	4,602

Source: CSO and Forfás

Table 18.11 Number of enterprises engaged in research and development activities by size of spend for all enterprises

	Unit	2011
Size of R&D spend		
< €100,000	No.	539
	%	33.5
€100,000 to €499,999	No.	627
	%	39
€500,000 to €1,999,999	No.	288
	%	17.9
€2,000,000 to €4,999,999	No.	84
	%	5.2
>= €5,000,000	No.	70
	%	4.4
Total	No.	1,608
	%	100.0

Source: CSO and Forfás

