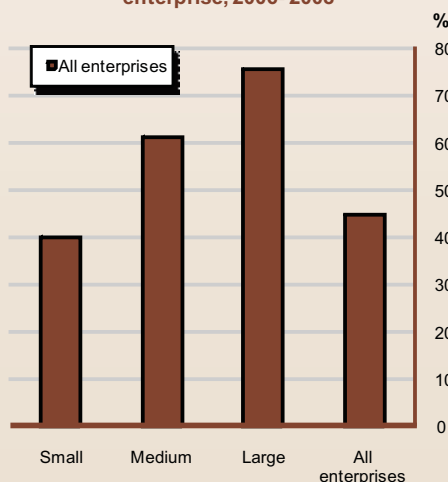




Innovation rates by size of enterprise, 2006-2008



This release presents first results from the Community Innovation Survey (CIS) of enterprises in Ireland. The survey was jointly conducted by the Central Statistics Office and Forfás and covers innovation activity and other key variables in the period 2006-2008. It is carried out under international rules, and is part of the EU "Community Innovation" set of surveys which are carried out every two years.

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Community Innovation Survey 2006-2008 First Findings

Innovation rates by sector and size of enterprise, 2006 - 2008

	Small (10-49)	Medium (50-249)	Large (250+)	Total %
Industry	44.6	69.5	85.8	52.3
Services	37.8	53.4	64.2	40.6
All enterprises	40.1	61.4	75.7	44.9

Source: CSO/Forfás - Community Innovation Survey 2006 - 2008

45 % of all enterprises engaged in innovation activities

In the period 2006 to 2008 inclusive, almost 45% of enterprises with 10 or more persons engaged in Ireland indicated that they were active innovators. Over half (52%) of industrial enterprises were classed as innovation active while almost 41% of service enterprises were innovation active.

86% of large industrial enterprises are innovative active

Large industrial enterprises had innovation rates of 86% compared to 64% of similarly sized service enterprises. Almost 70% of medium sized industrial enterprises engaged in innovation activity in the period while over 53% of medium service enterprises were innovation active. Small industrial enterprises had an innovation activity rate of 45% while the corresponding rate for small service enterprises was just 38%.

Main findings of results:

- ◆ Nearly 28% of all enterprises were engaged in product innovation while 35% were engaged in process innovation.
- ◆ 11% of total turnover in the industrial and services sectors in 2008 was estimated to be the result of product innovations between 2006 and 2008.
- ◆ Almost €5.3bn was spent by enterprises on innovation-related activities in 2008.
- ◆ Of those enterprises that were innovation active, almost a quarter (24.1%) engaged in innovation collaboration.
- ◆ The principle barriers to innovation for those firms who did not engage in any innovation activities in the period were high innovation costs, market dominated by established enterprises and lack of funds.
- ◆ Over 32% of all enterprises with ten or more persons engaged introduced an organisational innovation in the three years 2006 to 2008.

The business classification used for CIS 2006-2008 survey is now based on the Statistical Classification of Economic Activities in the European Community (NACE Rev. 2). CIS 2004-2006 was based on NACE Rev.1.1. 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.

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Innovation types

Enterprises that are innovation active engage in product innovation, process innovation or both product and process innovation. In addition, some enterprises have ongoing or abandoned innovation activities.

In the period 2006 to 2008, almost 28% of all enterprises were engaged in product innovations, 35% of enterprises were engaged in process innovations and 1.4% of enterprises had ongoing or abandoned innovation activities.

Innovation rates tended to be higher as the size of the enterprise increased. Over three-quarters of large enterprises were innovation active compared to 40% of small enterprises. While 61% of large enterprises were product innovators, 42% of medium enterprises were active in product innovation and just over 23% of small enterprises were engaged in product innovations. Similarly, 64% of large enterprises engaged in process innovations compared to 46% of medium enterprises and 31% of small enterprises. See Table 1 and Figure 1.

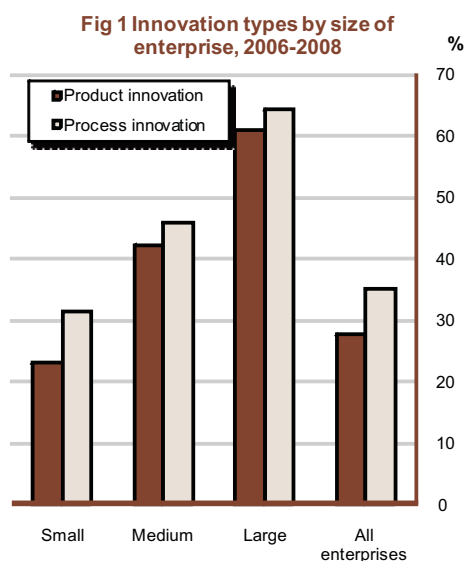
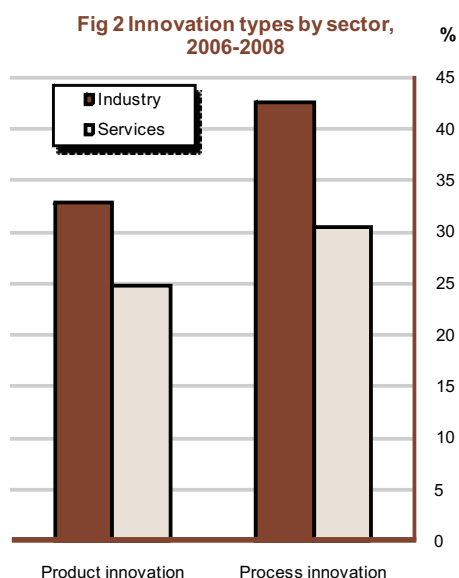


Table 1 Innovation types by size of enterprise, 2006 - 2008

	Small (10-49)	Medium (50-249)	Large (250+)	All enterprises
Product innovation	23.2	42.2	61.1	27.8
Process innovation	31.4	45.9	64.4	35.0
Ongoing innovation	0.9	1.6	0.0	1.0
Abandoned innovation	0.3	0.7	0.0	0.4
Any innovation	40.1	61.4	75.7	44.9

Source: CSO/Forfás - Community Innovation Survey 2006 - 2008



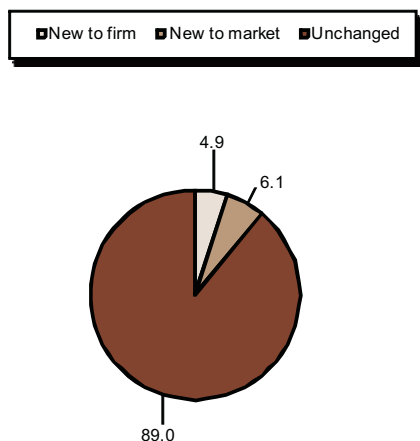
Innovation rates were higher in the industrial sector when compared to the services sector. Some 52.3% of all industrial enterprises engaged in some type of innovation activity over the period compared to 40.6% of all service enterprises. A third (33%) of industrial companies were engaged in product innovations while a quarter (25%) of service enterprises were engaged in product innovations. Just under 43% of enterprises in the industrial sector were process innovators compared to 30% of service enterprises. See Table 2 and Figure 2.

Table 2 Innovation types by sector and size, 2006 - 2008

	Product Innovation	Process Innovation	Ongoing Innovation	Abandoned Innovation	Any Innovation
Industry					
Small	25.3	36.6	0.8	0.2	44.6
Medium	49.3	54.3	1.4	1.0	69.5
Large	67.6	78.2	0.0	0.0	85.8
Total Industry	32.8	42.7	0.9	0.4	52.3
Services					
Small	22.2	28.7	1.0	0.4	37.8
Medium	35.3	37.6	1.8	0.3	53.4
Large	53.6	48.8	0.0	0.0	64.2
Total Services	24.8	30.4	1.1	0.4	40.6
All Enterprises	27.8	35.0	1.0	0.4	44.9

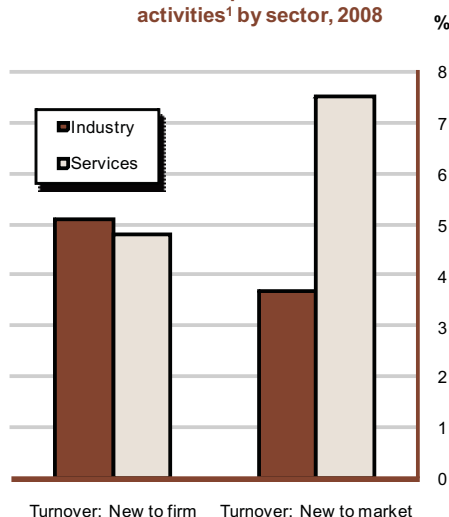
Source: CSO/Forfás - Community Innovation Survey 2006 - 2008

Fig 3 Percentage of total turnover attributed to product innovation activities¹, 2008



Note: ¹ Product innovation activities during the period 2006-2008

Fig 4 Percentage of total turnover attributed to product innovation activities¹ by sector, 2008



Note: ¹ Product innovation activities during the period 2006-2008

Innovation turnover

The survey measured how much of total turnover was attributed to product innovations, separated into new to market innovations (a measure of novelty and creativity) and new to the firm innovations (those which were adopted by the firm but invented and created elsewhere).

Around 11% of turnover of all active and non-active innovators in 2008 in the industrial and service sectors was as a result of product innovations in the 2006 to 2008 period. Nearly 5% of this turnover was from new to firm products and over 6% was from new to market products. Large enterprises attributed 12.5% of their turnover to product innovations with over 6% being from new to market products and over 6% being from new to firm product innovations. Medium sized enterprises attributed almost 8% of their total turnover to new to market products compared to nearly 4% for new to firm products. See Table 3 and Figure 3.

Table 3 Percentage of total turnover attributed to product innovation activities¹ by size of enterprise, 2008

	Small (10-49)	Medium (50-249)	Large (250+)	All enterprises
Turnover: New to firm	2.7	3.7	6.2	4.9
Turnover: New to market	3.6	7.8	6.3	6.1
Unchanged turnover	93.6	88.5	87.5	89.0
Total	100.0	100.0	100.0	100.0

Source: CSO/Forfás - Community Innovation Survey 2006 - 2008

Note: ¹ Product innovation activities during the period 2006-2008

The percentage of turnover generated by new to the firm product innovations was in excess of 5% for the industrial sector and just under 5% for the services sector. Large enterprises in services sector however, generated nearly twice as much of their turnover from new to market product innovations (8.1%) when compared to enterprises in the industrial sector (4.1%). New to market product innovations contributed 7.5% of the turnover in services while new to market product innovations contributed nearly 4% of turnover in industry. See Table 4 and Figure 4.

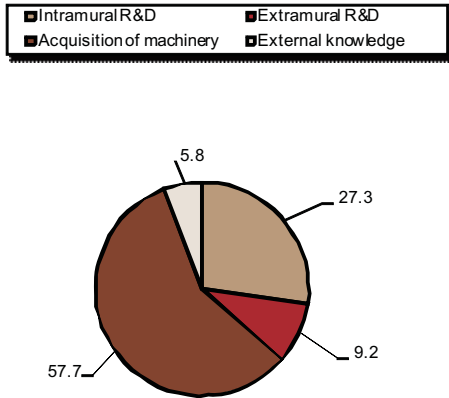
Table 4 Percentage of total turnover attributed to product innovation activities¹ by sector and size, 2008

	Turnover: New to firm	Turnover: New to market	Turnover: Unchanged	Total
Industry				
Small	3.9	1.4	94.7	100.0
Medium	6.0	3.6	90.4	100.0
Large	5.0	4.1	90.8	100.0
Total Industry	5.1	3.7	91.1	100.0
Services				
Small	2.5	4.1	93.4	100.0
Medium	2.5	10.0	87.5	100.0
Large	7.2	8.1	84.8	100.0
Total Services	4.8	7.5	87.7	100.0
All Enterprises	4.9	6.1	89.0	100.0

Source: CSO/Forfás - Community Innovation Survey 2006 - 2008

Note: ¹ Product innovation activities during the period 2006-2008

Fig 5 Percentage share of innovation expenditure by type of expenditure, 2008



Innovation expenditure

Enterprises were asked if they were active in any of the following categories and to estimate innovation spending on each of those categories in 2008: in-house R&D; purchase of external R&D; acquisition of machinery, equipment and software; acquisition of other external knowledge.

Total spending on innovation activities across the Irish economy is estimated to have been almost €5.3bn in 2008. Over a half of all expenditure (58%) was for the acquisition of machinery, equipment and software, which totalled over €3bn in 2008. In excess of €1.4bn or 27% was spent on in-house R&D. Purchase of external R&D accounted for over 9% of expenditure and acquisition of other external knowledge accounted for 6%. See Table 5 and Figure 5.

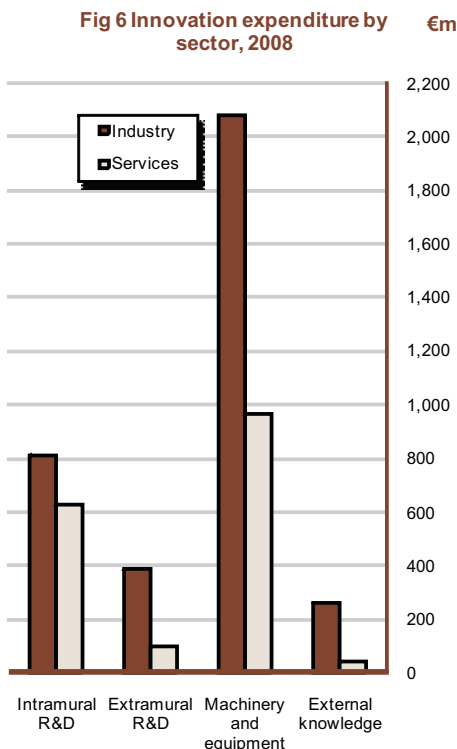
Table 5 Innovation expenditure by size of enterprise, 2008¹

	Small (10-49)	Medium (50-249)	Large (250+)	All enterprises
In-house R&D	136.5	316.4	988.3	1,441.2
Purchase of external R&D	27.3	201.0	258.7	487.1
Machinery and equipment	296.4	1,282.7	1,466.0	3,045.2
External knowledge	23.4	163.3	119.8	306.4
Total	483.5	1,963.5	2,832.8	5,279.9

Source: CSO/Forfás - Community Innovation Survey 2006 - 2008

¹ Provisional

Fig 6 Innovation expenditure by sector, 2008



The total spend by industrial enterprises on innovation activities was in excess of €3.5bn in 2008 while the total spend in the services sector was over €1.7bn. Industrial enterprises spent over €2bn on machinery and equipment and €812m or 23% of total expenditure on in-house R&D. The industrial sector also accounted for a spend of €386m on the purchase of external R&D and €262m on the acquisition of external knowledge. See Table 6 and Figure 6.

Table 6 Innovation expenditure by sector, 2008¹

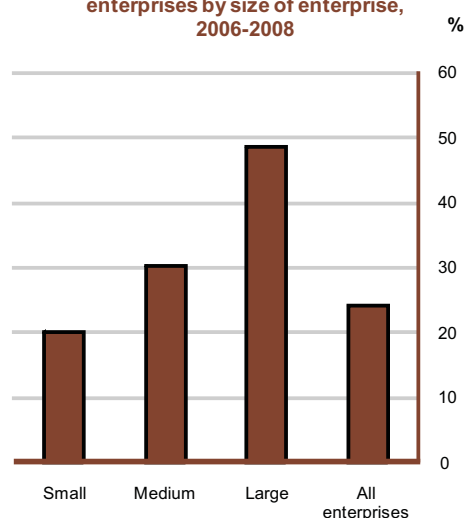
	Industry	Services	All enterprises
In-house R&D	812.3	628.9	1,441.2
Purchase of external R&D	385.8	101.3	487.1
Machinery and equipment	2,077.5	967.7	3,045.2
External knowledge	261.8	44.6	306.4
Total expenditure	3,537.4	1,742.5	5,279.9

Source: CSO/Forfás - Community Innovation Survey 2006 - 2008

¹ Provisional

Innovation co-operation

Fig 7 Co-operation by innovative enterprises by size of enterprise, 2006-2008



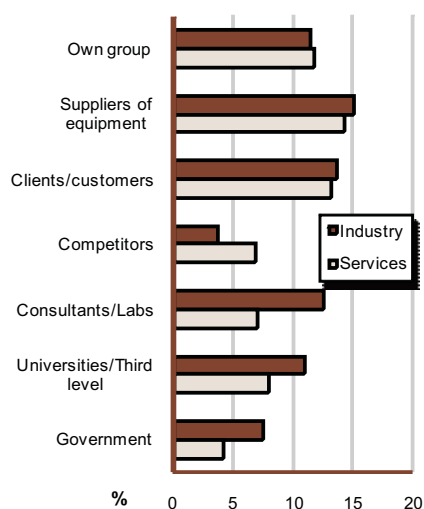
Enterprises were asked if they co-operated on any of their innovation activities with other enterprises or institutions. Overall, nearly a quarter (24.1%) of all innovative enterprises indicated that they engaged in some co-operation activity when developing their innovations. Almost half (49%) of all large innovation active enterprises were involved in innovation partnerships compared to one-fifth of small enterprises. Suppliers of equipment, materials, components or software were the most commonly cited innovation partners with nearly 15% of enterprises having innovation co-operation with these suppliers. Almost 12% of enterprises indicated that they co-operated with other enterprises within their own enterprise group. See Table 7 and Figure 7.

Table 7 Co-operation by innovative enterprises by type of co-operation partner and size of enterprise, 2006 - 2008

	Small (10-49)	Medium (50-249)	Large (250+)	All enterprises
Within own group	8.0	16.4	34.8	11.6
Suppliers of equipment	12.2	18.8	27.1	14.6
Clients/customers	11.2	17.6	22.6	13.3
Competitors	5.0	6.5	7.3	5.5
Consultants/labs	7.0	13.8	21.2	9.4
Universities/third level	6.4	12.7	28.1	9.2
Government	4.2	8.9	9.8	5.6
Any co-operation	20.0	30.2	48.6	24.1

Source: CSO/Forfás - Community Innovation Survey 2006 - 2008

Fig 8 Co-operation by innovative enterprises by type of co-operation partner and sector, 2006-2008



Nearly a quarter of innovation active industrial and services enterprises indicated that they were engaged in innovation co-operation. Co-operation partnerships with suppliers of equipment, materials, components or software were the most likely innovation partnerships in both industry (15%) and services (14%). See Table 8 and Figure 8.

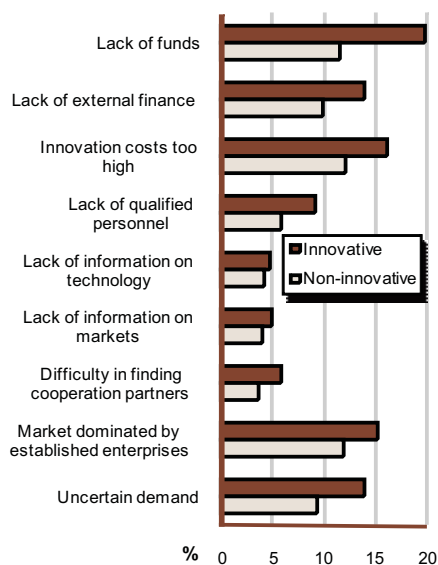
Table 8 Co-operation by innovative enterprises by type of co-operation partner and sector, 2006 - 2008

	Industry	Services	All enterprises
Within own group	11.4	11.7	11.6
Suppliers of equipment	15.1	14.3	14.6
Clients/customers	13.6	13.1	13.3
Competitors	3.7	6.8	5.5
Consultants/labs	12.5	7.0	9.4
Universities/third level	10.9	7.9	9.2
Government	7.5	4.2	5.6
Any cooperation	23.9	24.3	24.1

Source: CSO/Forfás - Community Innovation Survey 2006 - 2008

Barriers to innovation

Fig 9 Highly important hampering factors of innovative and non-innovative enterprises, 2006-2008



A number of factors which might have curtailed innovation activities were listed in the survey and enterprises were asked to rank each of the factors as being of high, medium, low or no importance. Results are shown for hampering factors that enterprises indicated as being of high importance.

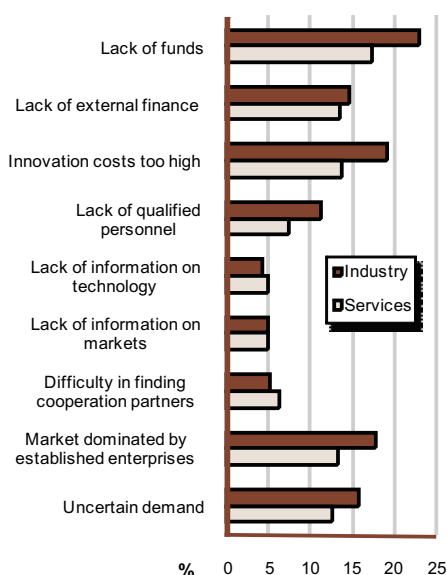
Those enterprises that were both innovative and non-innovative indicated that the three largest hampering factors were lack of funds, high costs and markets dominated by established enterprises. Almost 20% of innovative enterprises indicated that lack of funds was a highly important fact hampering innovation compared to nearly 12% of non-innovative enterprises. Over 16% of innovative active firms cited high costs as a high hampering factor while in excess of 12% of non-innovative enterprises indicated that high costs were a hampering factor. See Table 9 and Figure 9.

Table 9 Highly important hampering factors to innovative activities, 2006 - 2008

	Innovative Enterprises	Non-innovative Enterprises
Lack of funds	19.8	11.6
Lack of external finance	14.0	10.0
Innovation costs too high	16.1	12.1
Lack of qualified personnel	9.1	5.9
Lack of information on technology	4.7	4.2
Lack of information on markets	4.9	4.1
Difficulty in finding cooperation partners	5.9	3.6
Market dominated by established enterprises	15.2	12.0
Uncertain demand	13.9	9.4

Source: CSO/Forfás - Community Innovation Survey 2006 - 2008

Fig 10 Highly important hampering factors of innovative enterprises by sector, 2006-2008



The largest hampering factor for innovative enterprises in industry was a lack of funds with 23% citing this as a high hampering factor. Similarly, service enterprises also cited lack of funds as their largest hampering factor with over 17% of service enterprises being hampered by this factor. See Table 10 and Figure 10.

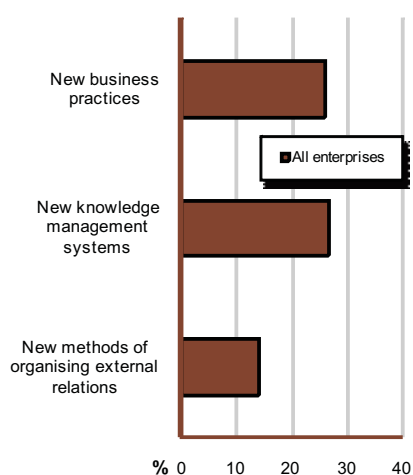
Table 10 Highly important hampering factors to innovation activities for innovative enterprises by sector, 2006 - 2008

	Industry	Services
Lack of funds	22.9	17.4
Lack of external finance	14.6	13.6
Innovation costs too high	19.1	13.8
Lack of qualified personnel	11.2	7.5
Lack of information on technology	4.3	5.0
Lack of information on markets	5.0	4.9
Difficulty in finding cooperation partners	5.2	6.3
Market dominated by established enterprises	17.7	13.4
Uncertain demand	15.7	12.6

Source: CSO/Forfás - Community Innovation Survey 2006 - 2008

Organisational innovation

Fig 11 Organisational innovation by type of innovation, 2006-2008



Almost one-third of all enterprises carried out an organisational innovation between 2006 and 2008. Both new knowledge management systems and new business practices were the most common form of organisational innovations with 26% of all enterprises indicating that they engaged in these activities.

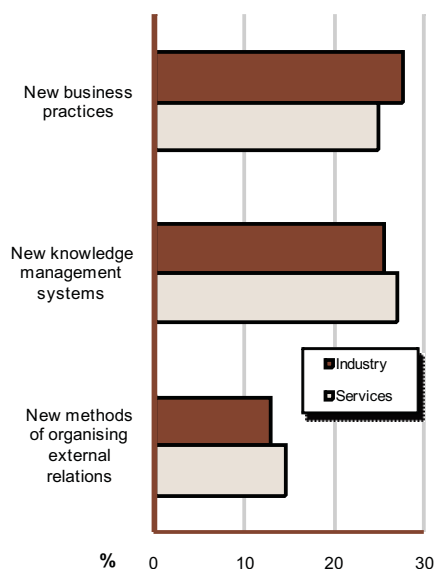
Two-thirds of large enterprises (66%) introduced an organisational innovation between 2006 and 2008 compared to 28% of small enterprises and 44% of medium sized enterprises. See Table 11 and Figure 11.

Table 11 Organisational innovation by type of innovation and size of enterprise, 2006 - 2008

	Small (10-49)	Medium (50-249)	Large (250+)	All enterprises
New business practices	22.1	36.4	60.9	25.9
New knowledge management systems	23.5	35.3	51.9	26.5
New methods of organising external relations	12.2	18.3	31.0	13.9
Any organisational innovation	28.4	43.7	65.7	32.3

Source: CSO/Forfás - Community Innovation Survey 2006 - 2008

Fig 12 Organisational innovation by type of innovation and sector, 2006-2008



Nearly a third of both industrial (32.3%) and services (32.2%) enterprises engaged in organisational innovations in the period 2006-2008. Enterprises in both industry and services generally had similar rates of introducing the various categories of organisational innovations. See Table 12 and Figure 12.

Table 12 Organisational innovation by type of innovation and sector, 2006 - 2008

	Industry	Services	All enterprises
New business practices	27.6	24.9	25.9
New knowledge management systems	25.6	27.1	26.5
New methods of organising external relations	12.9	14.5	13.9
Any organisational innovation	32.3	32.2	32.3

Source: CSO/Forfás - Community Innovation Survey 2006 - 2008

Background Notes

Introduction The Community Innovation Survey (CIS) 2008 is a survey of innovation activities of enterprises in Ireland and other EU Member States. The CIS is carried out under Commission Regulation (EC) No 1450/2004 implementing Decision No 1608/2003/EC. The survey collects information about product and process innovation as well as organisational innovation and other key variables during the three year period 2006 to 2008 inclusive. Most questions cover new or significantly improved goods or services or the implementation of new or significantly improved processes, logistics or distribution methods.

The CIS was previously conducted by Forfas but is now jointly conducted by the CSO and Forfas to increase efficiency in the collection of statistical data and to reduce the burden on the participating enterprises. Data were collected in accordance with Section 33 of the Statistics Act, 1993 and with EU law and the survey was carried out under the agreed set of international rules as laid out in the OECD Oslo manual. Data are strictly confidential and will be used only for statistical purposes.

Methodological changes have been introduced in the CIS 2006-2008. The business classification used for CIS 2006-2008 survey is now based on the Statistical Classification of Economic Activities in the European Community (NACE Rev. 2). 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.

Survey The CIS survey sampled enterprises with ten or more persons engaged in the selected NACE categories as included in the table below. The CSO and Forfas jointly conducted a postal survey in June 2009. A total of 4,650 survey forms were issued to the sampled enterprises from the CSO's Business Register. The sample returns were then grossed using this Register population to produce overall results.

Nace Rev.2

Sections and Divisions	Description
B (05-09)	Mining and quarrying
C (10-33)	Manufacturing
D (35)	Electricity, gas, steam and air conditioning supply
E (36-39)	Water supply; sewerage, waste management and remediation activities
G (46)	Wholesale trade, except of motor vehicles and motorcycles
H (49-53)	Transportation and Storage
J (58,61,62,63)	Information and communication
K (64-66)	Financial and insurance activities
M (71)	Architectural and engineering activities; technical testing and analysis

Questionnaire The CIS questionnaire is available from the CSO website. Go to www.cso.ie and then go to Business Sectors: Science and Technology.

Definitions **Product Innovation:** The introduction of a new good or service or a significantly improved good or service with respect to its capabilities. The product innovation could either be new to the market or new to the firm.

Process Innovation: The introduction of a new or significantly improved production process, distribution method, or support activity for goods and services. The process innovation could either be new to the market or new to the firm.

New to Market Innovation: An innovation activity, which saw the introduction of a new good or service by the firm onto its operating market before other competitors.

New to Firm Innovation: An innovation activity which saw the introduction of a significantly improved good or service to the firm that was already available from competitors in the operating sector.

Innovation Expenditure: Spending on activities to support and implement production or process innovations.

Organisational Innovation: The implementation of new or significant changes in firm structure or management methods that are intended to improve your firms use of knowledge, the quality of your goods and services or the efficiency of work flows.