



Ministry of Economic Development
of the Russian Federation



Federal State
Statistics Service



HIGHER SCHOOL OF ECONOMICS
NATIONAL RESEARCH UNIVERSITY

Indicators of Innovation in the Russian Federation

Data book



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of the Russian Federation



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NATIONAL RESEARCH UNIVERSITY

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Data Book

Moscow 2013

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Indicators of Innovation in the Russian Federation : 2013 : Data Book – Moscow : National Research University – Higher School of Economics (HSE), 2013. – p. 368

The data book presents the results of statistical innovation surveys in the Russian Federation. It contains internationally compatible indicators characterising the level of innovative activity in industry and services. The publication covers statistical data reflecting innovation expenditure and output, co-operational linkages, and factors hampering innovation. A specific chapter is devoted to ecological innovation. International comparisons with a wide range of innovation indicators are provided as well.

The data book includes information of the Federal State Statistics Service, Organisation for Economic Co-operation and Development, European Commission, Eurostat, national statistical agencies, and results of own methodological and analytical studies of the HSE Institute for Statistical Studies and Economics of Knowledge.

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INDICATORS OF INNOVATION IN THE RUSSIAN FEDERATION**Data Book**

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Symbols used in tables are:

- ... data not available
and not included in the totals,
- data not applicable.

In some tables, details may not add up to the total because of rounding.

MAIN INDICATORS OF INNOVATION

	1998	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Enterprises engaged in technological innovation as a percentage of all enterprises:													
Mining and quarrying, manufacturing, electricity, gas and water supply	5.0	10.6	9.6	9.8	10.3	10.5	9.3	9.4	9.4	9.6	9.4	9.3	9.6
Communications, computer and related activities*	8.3	12.1	12.2	13.5	14.3	14.7	15.3	12.5	11.2	10.9	10.1	10.8	9.9
Innovative goods and services as a percentage of total sales:													
Mining and quarrying, manufacturing, electricity, gas and water supply	3.8	4.4	4.2	4.3	4.7	5.4	5.0	5.5	5.5	5.1	4.6	4.9	6.1
Communications, computer and related activities	...	16.9	6.9	2.8	8.9	8.4	8.6	8.3	4.2	4.2	3.8	4.7	4.8
Expenditure on technological innovation, <i>million roubles</i> :													
Mining and quarrying, manufacturing, electricity, gas and water supply:													
at current prices	13864.4	49428.0	61312.9	86394.6	105444.7	122850.5	125678.2	188492.2	207499.2	276262.3	358861.1	349763.3	469442.2
at constant 1995 prices	6966.0	10462.7	11140.3	13590.9	14576.3	14116.7	12105.3	15760.0	15245.3	17201.2	21906.1	19131.5	22174.1
Communications, computer and related activities:													
at current prices	4197.1	11794.1	6328.6	6049.3	14782.7	19495.3	17544.4	18892.4	25125.5	24148.0	32790.9	38684.0	137754.0
at constant 1995 prices	2108.8	2496.5	1149.9	951.6	2043.5	2240.2	1689.9	1579.6	1846.0	1503.6	2001.7	2115.9	6506.8

(continued)

	1998	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Expenditure on technological innovation as a percentage of total sales:													
Mining and quarrying, manufacturing, electricity, gas and water supply	1.1	1.4	1.4	1.8	1.6	1.5	1.2	1.4	1.2	1.4	1.9	1.5	1.5
Communications, computer and related activities	...	11.1	4.8	3.9	6.5	5.9	3.5	2.7	2.7	2.1	2.7	2.9	8.8
Innovative activity (enterprises engaged in technological, marketing and organisational innovation as a percentage of all enterprises):													
Mining and quarrying, manufacturing, electricity, gas and water supply	...	...	...	...	...	...	...	10.6	10.8	11.0	11.0	10.8	11.1
Communications, computer and related activities	...	...	...	...	...	...	...	15.6	13.5	13.4	13.2	13.6	12.1
Enterprises engaged in organisational innovation during the reference year as a percentage of all enterprises:													
Mining and quarrying, manufacturing, electricity, gas and water supply	...	...	...	...	...	...	...	3.2	3.5	3.5	3.7	3.4	3.5
Communications, computer and related activities	...	...	...	...	...	...	...	5.4	4.8	4.5	4.7	5.1	3.9

(continued)

	1998	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Enterprises engaged in marketing innovation during the reference year as a percentage of all enterprises:													
Mining and quarrying, manufacturing, electricity, gas and water supply	2.3	2.5	2.6	2.4	2.5	2.5
Communications, computer and related activities	4.4	4.5	4.5	4.7	4.7	3.9
Expenditure on technological, organisational and marketing innovation, <i>million roubles</i> :													
Mining and quarrying, manufacturing, electricity, gas and water supply:													
at current prices	191341.5	213020.1	283194.8	365785.1	356163.5	474587.1
at constant 1995 prices	15998.2	15650.9	17632.9	22328.7	19481.5	22417.2
Communications, computer and related activities:													
at current prices	20010.5	26405.2	27076.7	34821.89	40223.1	146419.4
at constant 1995 prices	1673.1	1940.0	1685.9	2125.6	2200.1	6916.1
Expenditure on technological, organisational and marketing innovation as a percentage of total sales:													
Mining and quarrying, manufacturing, electricity, gas and water supply	1.5	1.3	1.4	1.9	1.5	1.6
Communications, computer and related activities	2.7	2.8	2.3	2.8	3.0	9.4

(continued)

	1998	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Small enterprises engaged in technological innovation as a percentage of all small enterprises:													
Mining and quarrying, manufacturing, electricity, gas and water supply	...	1.3	1.5	...	1.6	...	1.6	...	4.3	...	4.1	...	5.1
Innovative goods and services as a percentage of total sales of small enterprises:													
Mining and quarrying, manufacturing, electricity, gas and water supply	...	0.6	0.6	...	0.3	...	0.3	...	2.0	...	1.4	...	1.5
Expenditure on technological innovation of small enterprises, <i>million roubles</i> :													
Mining and quarrying, manufacturing, electricity, gas and water supply:													
at current prices	...	867.6	997.7	...	1296.5	...	1932.7	...	10608.2	...	6793.5	...	947.3
at constant 1995 prices	...	183.7	181.3	...	179.2	...	186.2	...	779.4	...	414.7	...	447.8
Expenditure on technological innovation as a percentage of total sales of small enterprises:													
Mining and quarrying, manufacturing, electricity, gas and water supply	...	0.6	0.5	...	0.4	...	0.2	...	1.7	...	0.9	...	0.9

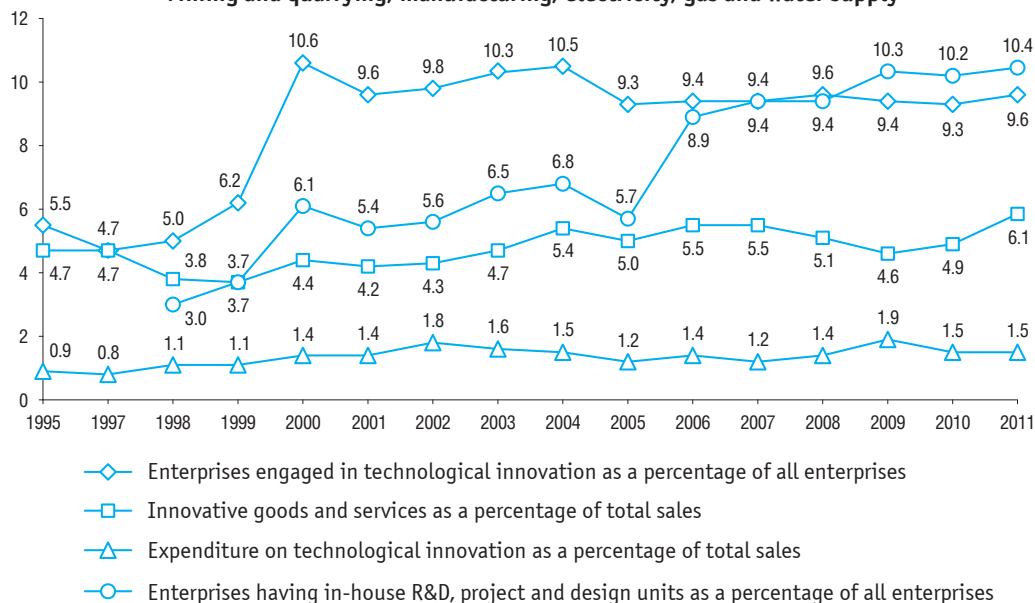
* In contrast with other service sectors, innovation in communications, computer and related activities was the subject of statistical observations during the entire period considered.



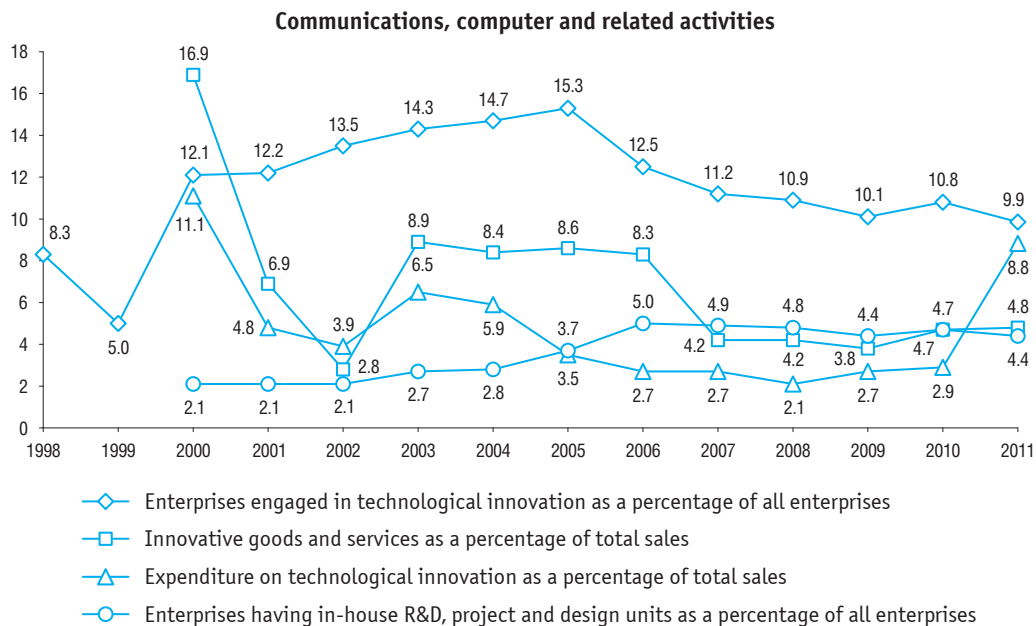
1. Main Innovation Trends

1.1. INNOVATIVE ACTIVITY OF ENTERPRISES

Mining and quarrying, manufacturing, electricity, gas and water supply



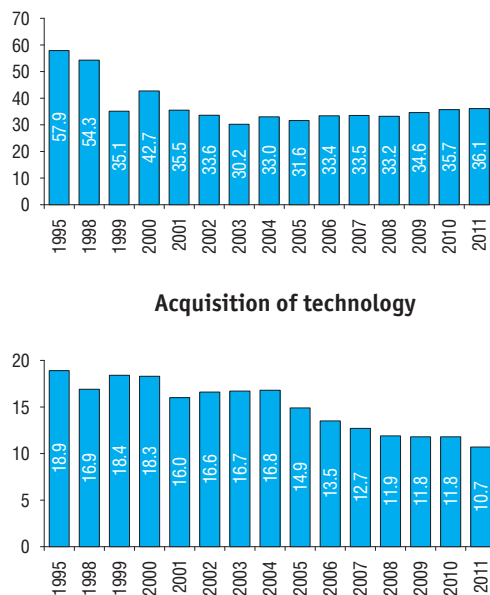
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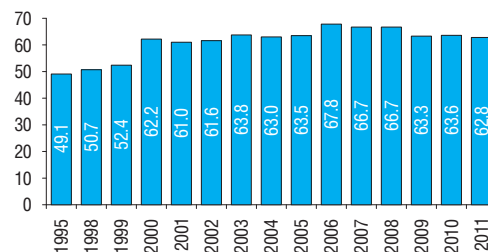
1.2. ENTERPRISES ENGAGED IN SELECTED TYPES OF INNOVATIVE ACTIVITY AS A PERCENTAGE OF ALL ENTERPRISES ENGAGED IN TECHNOLOGICAL INNOVATION

Mining and quarrying, manufacturing, electricity, gas and water supply

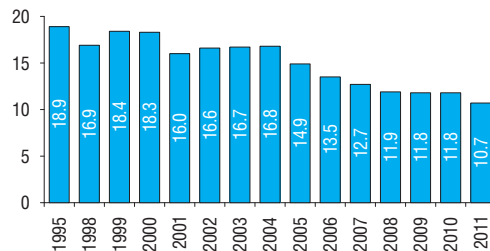
R&D



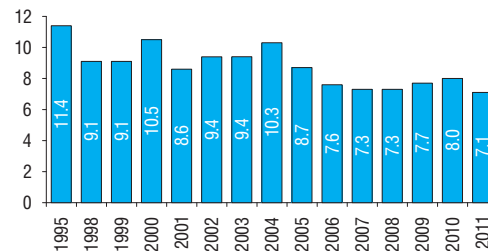
Acquisition of machinery and equipment



Acquisition of technology

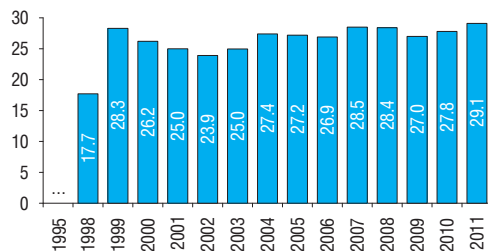


Acquisition of patent rights and patent licenses

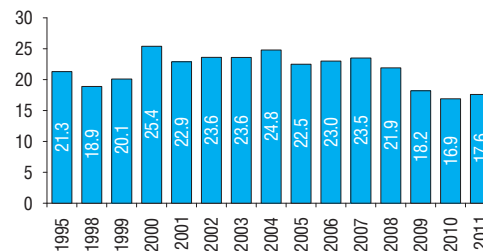


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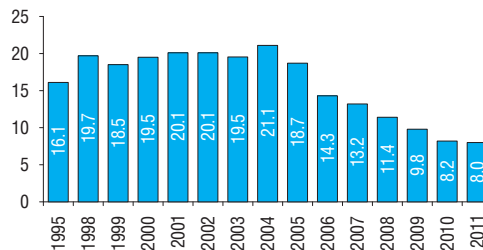
Acquisition of software



Personnel training



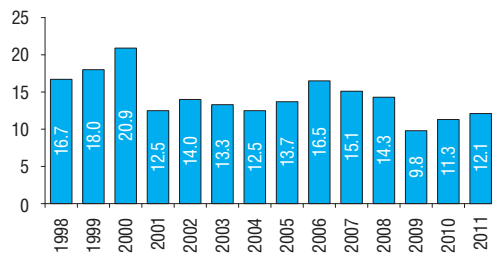
Market research



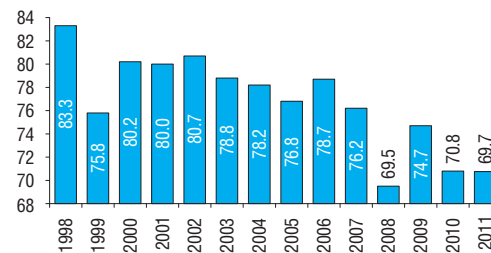
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Communications, computer and related activities

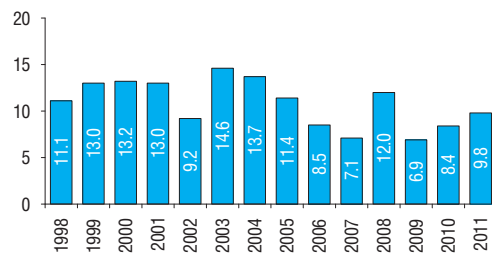
R&D



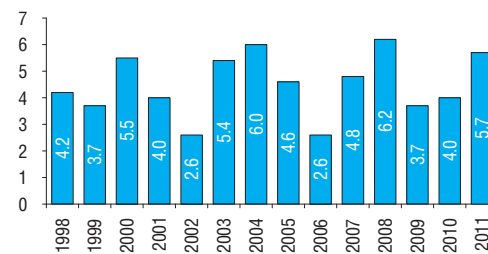
Acquisition of machinery and equipment



Acquisition of technology

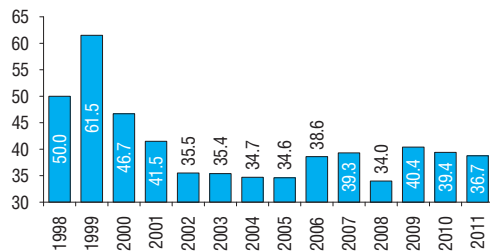


Acquisition of patent rights and patent licenses

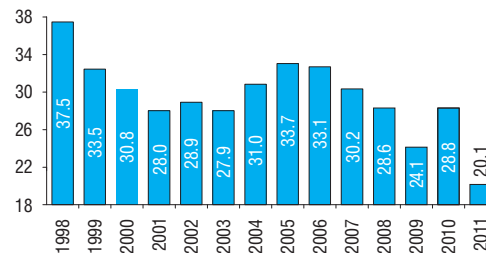


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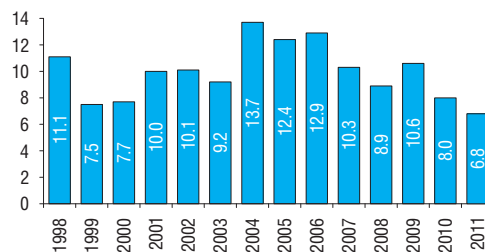
Acquisition of software



Personnel training



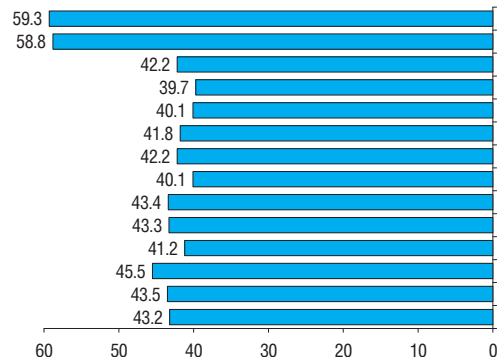
Market research



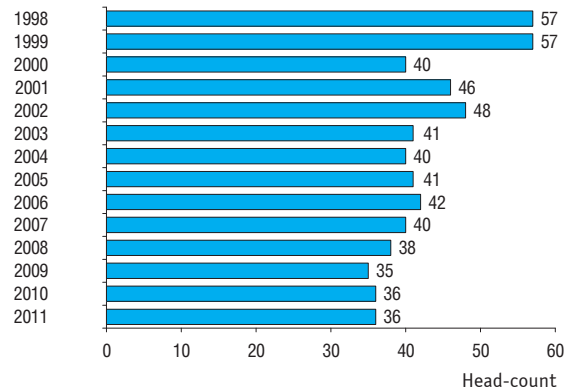
1.3. R&D UNITS AT ENTERPRISES ENGAGED IN TECHNOLOGICAL INNOVATION

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Mining and quarrying, manufacturing, electricity, gas and water supply														
R&D units at enterprises	1336	1570	2584	1852	1788	2048	2009	2083	2274	2360	2117	2248	2218	2234
Employment in R&D units, <i>head-count</i>	76590	89388	103367	85695	85902	84492	81052	86356	96188	94116	80106	79603	79993	80639

**Enterprises having in-house R&D,
project and design units as a percentage of all
enterprises engaged in technological innovation**



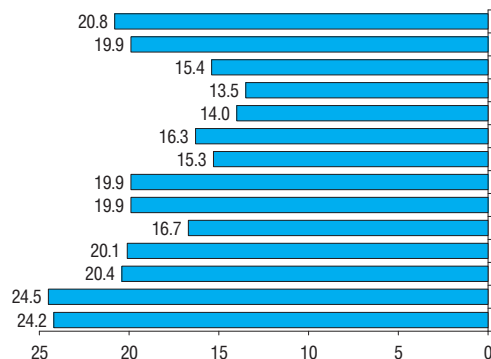
Average employment in R&D units



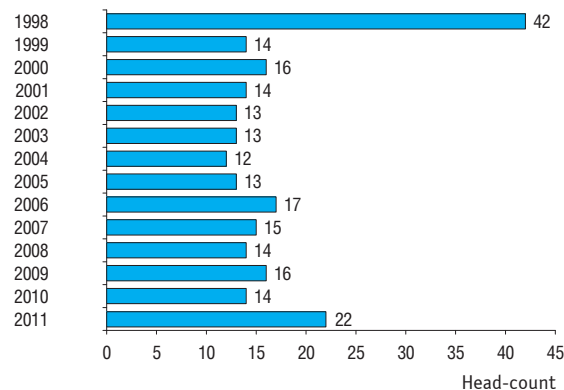
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	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Communications, computer and related activities														
R&D units at enterprises	24	45	39	36	51	62	72	108	101	95	116	87	114	134
Employment in R&D units, <i>head-count</i>	1018	611	620	498	679	787	873	1450	1757	1385	1627	1357	1634	2888

Enterprises having in-house R&D, project and design units as a percentage of all enterprises engaged in technological innovation



Average employment in R&D units

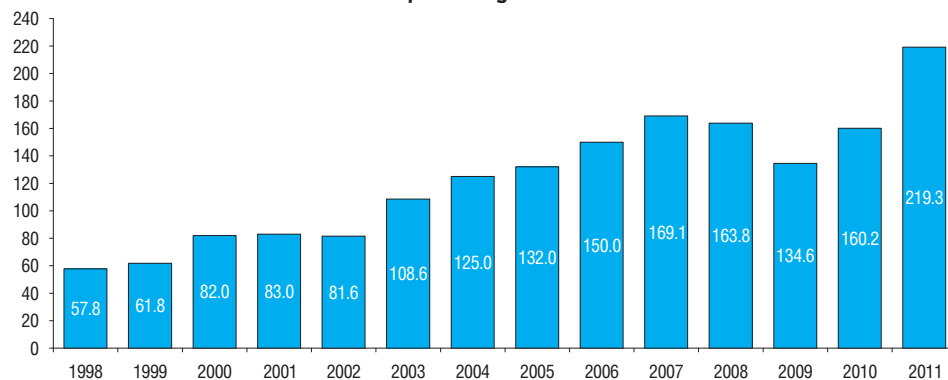


1.4. SALES OF INNOVATIVE GOODS AND SERVICES

(million roubles)

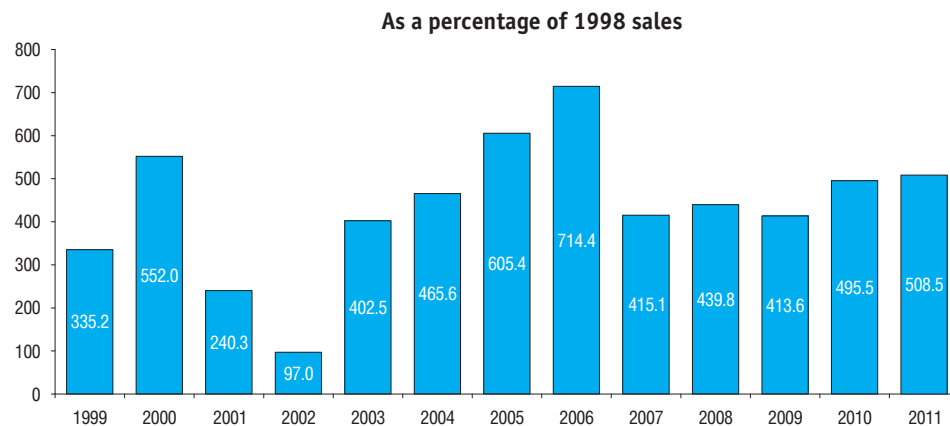
	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Mining and quarrying, manufacturing, electricity, gas and water supply														
Sales of innovative goods and services:														
at current prices	45776.6	84379.6	154135.0	181826.1	206313.2	312692.0	433003.5	545540.0	714024.6	916131.6	1046960.0	877684.8	1165747.6	1847370.4
at constant 1995 prices	22999.8	24576.8	32626.7	33037.1	32455.5	43225.3	49756.2	52546.2	59700.1	67309.7	65188.1	53576.8	63764.4	87260.7
per rouble of expenditure on technological innovation, roubles	3.3	3.5	3.1	3.0	2.4	3.0	3.5	4.3	3.8	4.4	3.8	2.4	3.3	3.9

As a percentage of 1995 sales



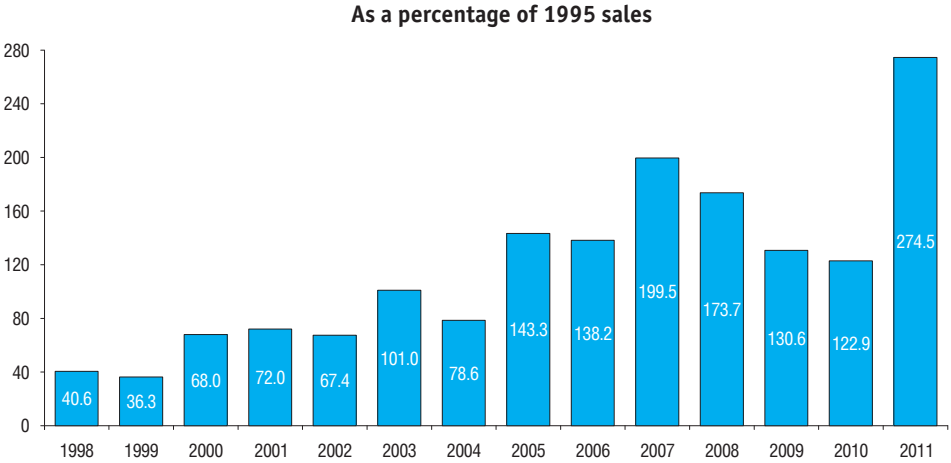
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	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Communications, computer and related activities														
Sales of innovative goods and services:														
at current prices	1376.3	7958.8	18033.2	9144.1	4261.9	20132.3	28020.0	43465.3	59086.3	39069.6	48839.0	46854.7	62636.4	74437.8
at constant 1995 prices	691.5	2318.1	3817.2	1661.4	670.4	2783.0	3219.8	4186.6	4940.2	2870.5	3040.9	2860.2	3426.1	3516.1
per rouble of expenditure on technological innovation, <i>roubles</i>	0.3	1.8	1.5	1.4	0.7	1.4	1.4	2.5	3.1	1.6	2.0	1.4	1.6	0.5



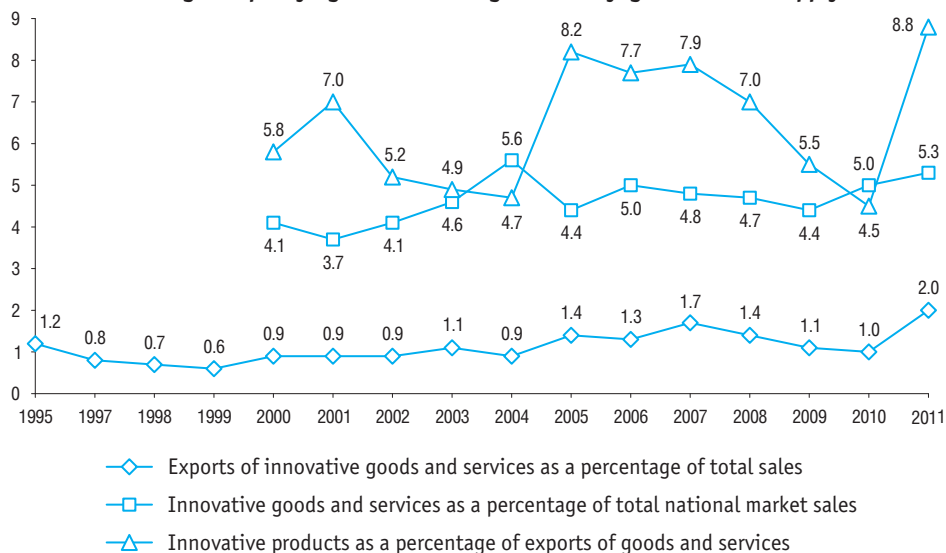
1.5. EXPORTS OF INNOVATIVE GOODS AND SERVICES
(million roubles)

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Mining and quarrying, manufacturing, electricity, gas and water supply														
Exports of innovative goods and services:														
at current prices	8213.8	12678.7	32672.3	40330.6	43597.2	74351.1	69557.8	151358.0	168176.0	276280.8	283792.5	217621.4	228644.5	591239.1
at constant 1995 prices	4126.9	3692.9	6915.9	7327.9	6858.4	10278.0	7992.9	14578.7	14061.3	20298.8	17670.1	13284.3	12506.5	27927.2



1.6. INNOVATIVE GOODS AND SERVICES AS A SHARE OF NATIONAL AND FOREIGN MARKET SALES

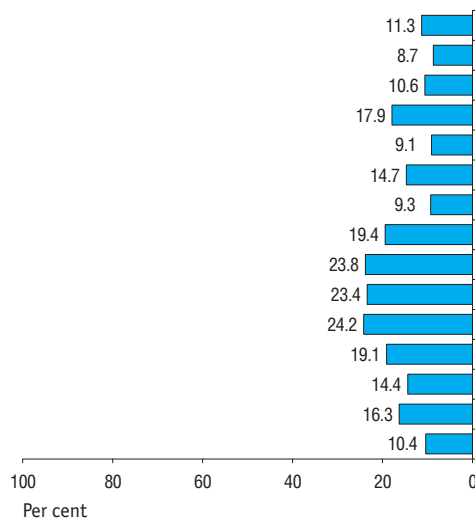
Mining and quarrying, manufacturing, electricity, gas and water supply



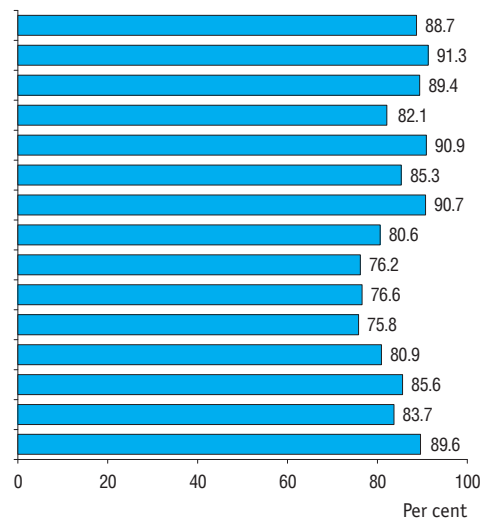
1.7. DISTRIBUTION OF EXPORTS OF INNOVATIVE GOODS AND SERVICES

Mining and quarrying, manufacturing, electricity, gas and water supply

Exports of innovative goods and services to CIS countries

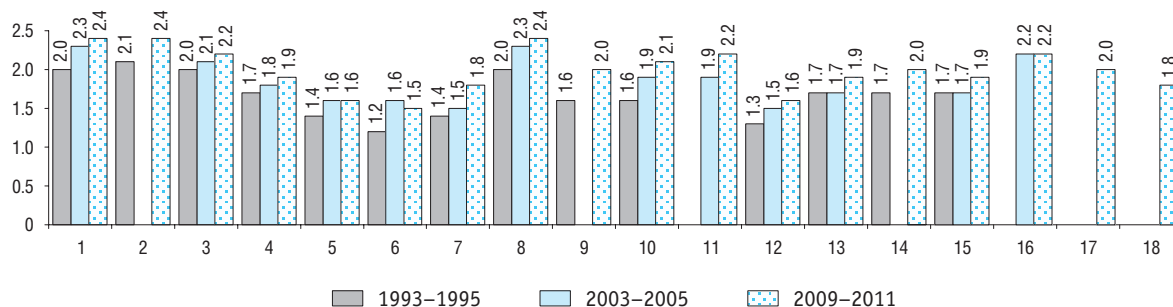


Exports of innovative goods and services to other foreign countries



1.8. EFFECTS OF TECHNOLOGICAL INNOVATION BY RANK OF IMPORTANCE

Mining and quarrying, manufacturing, electricity, gas and water supply



1 – Increasing range of goods and services

2 – Maintaining traditional market share

Increasing market share:

3 – in Russia

4 – in CIS countries

5 – in EU Member States, Iceland, Liechtenstein, Norway, and Switzerland

6 – in the United States and Canada

7 – in other countries

8 – Improving quality of goods and services

9 – Replacing products being phased out

10 – Increasing flexibility of production

11 – Increasing industrial capacity

12 – Reducing labour costs

13 – Reducing material costs

14 – Increasing energy efficiency
(lower energy consumption or energy loss)

15 – Reducing environmental impacts

16 – Meeting regulatory requirements and standards

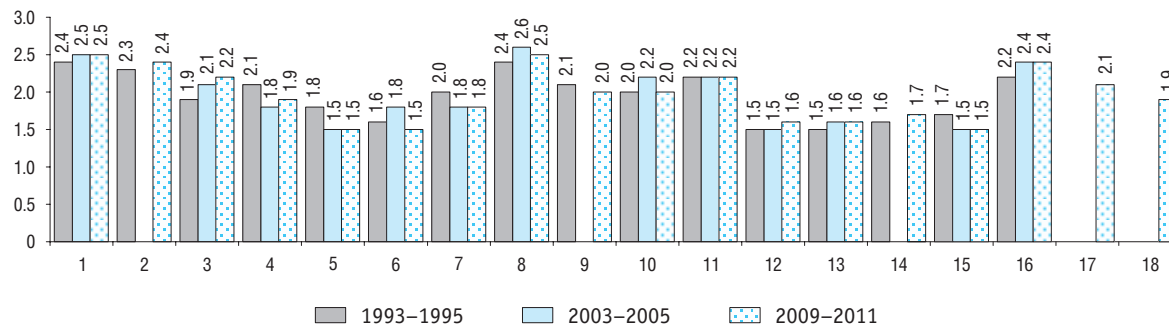
Marketing innovation

17 – Introducing products and services to new markets and new consumer groups

18 – Introducing products and services to new geographical markets

(continued)

Communications, computer and related activities



1 – Increasing range of goods and services

2 – Maintaining traditional market share

Increasing market share:

3 – in Russia

4 – in CIS countries

5 – in EU Member States, Iceland, Liechtenstein,
Norway, and Switzerland

6 – in the United States and Canada

7 – in other countries

8 – Improving quality of goods and services

9 – Replacing products being phased out

10 – Increasing flexibility of production

11 – Increasing industrial capacity

12 – Reducing labour costs

13 – Reducing material costs

14 – Increasing energy efficiency
(lower energy consumption or energy loss)

15 – Reducing environmental impacts

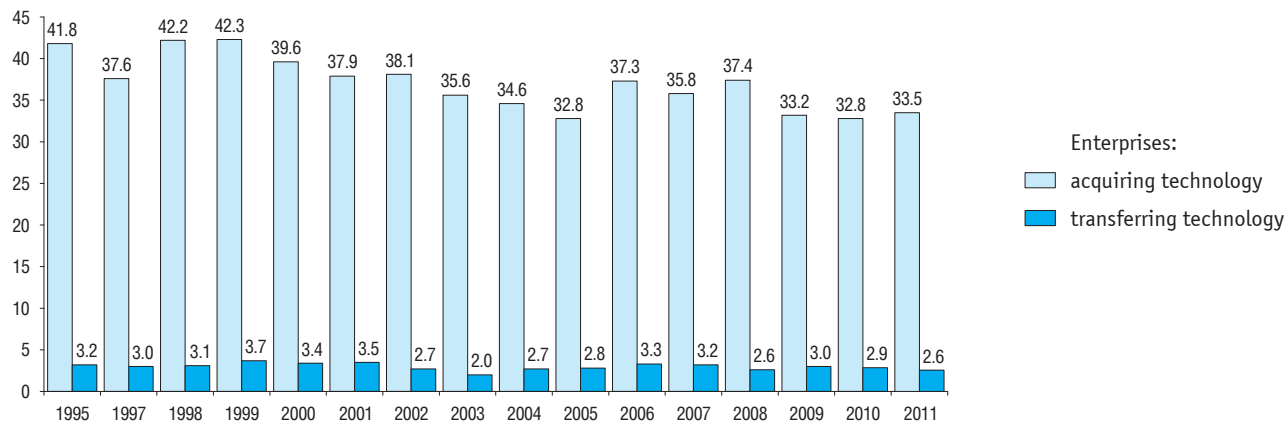
16 – Meeting regulatory requirements
and standards

Marketing innovation

17 – Introducing products and services
to new markets and new consumer
groups18 – Introducing products and services
to new geographical markets

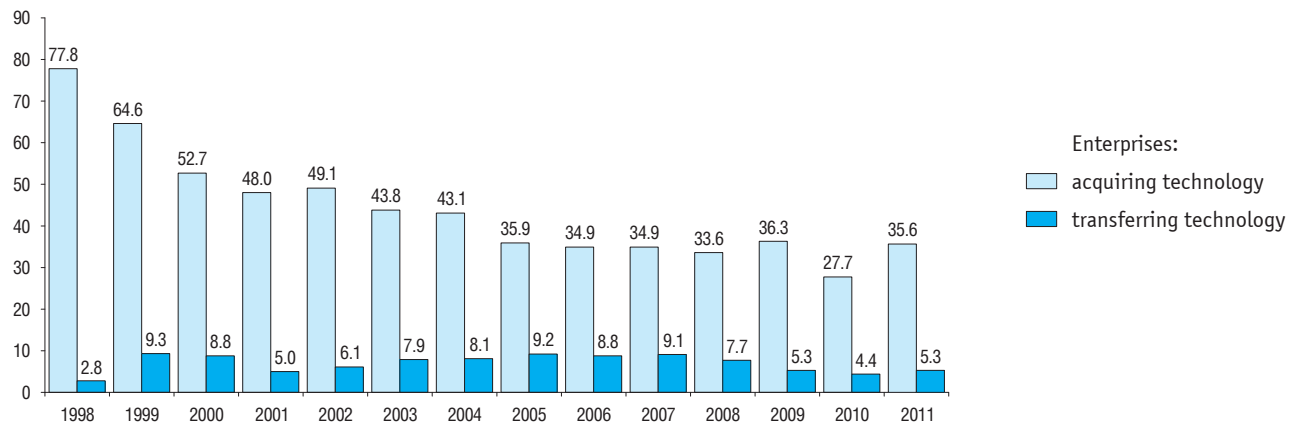
1.9. ENTERPRISES ENGAGED IN TECHNOLOGY EXCHANGE AS A PERCENTAGE OF ALL ENTERPRISES ENGAGED IN TECHNOLOGICAL INNOVATION

Mining and quarrying, manufacturing, electricity, gas and water supply



(continued)

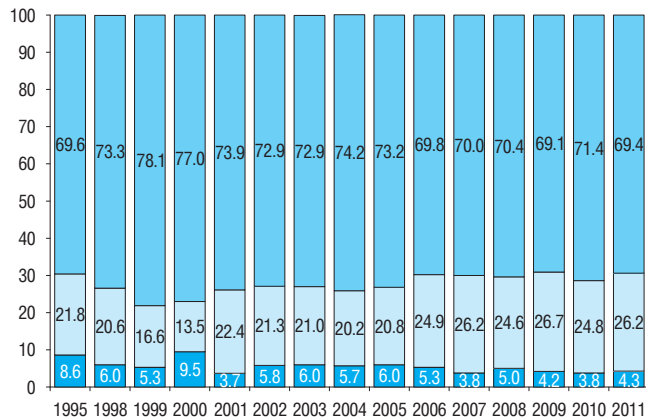
Communications, computer and related activities



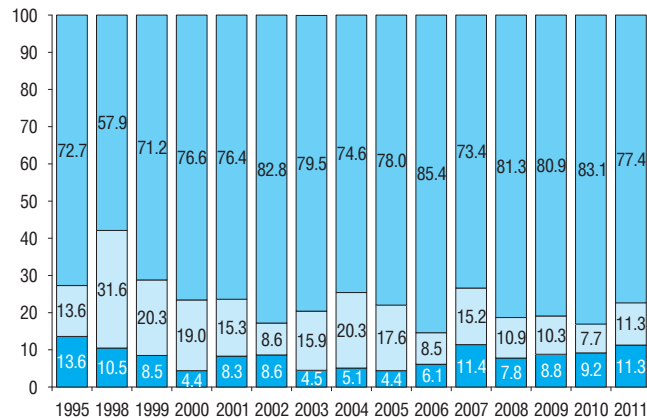
1.10. PERCENTAGE DISTRIBUTION OF ENTERPRISES ENGAGED IN TECHNOLOGICAL INNOVATION AND TECHNOLOGICAL EXCHANGE BY COUNTRY

Mining and quarrying, manufacturing, electricity, gas and water supply

Enterprises acquiring technology



Enterprises transferring technology



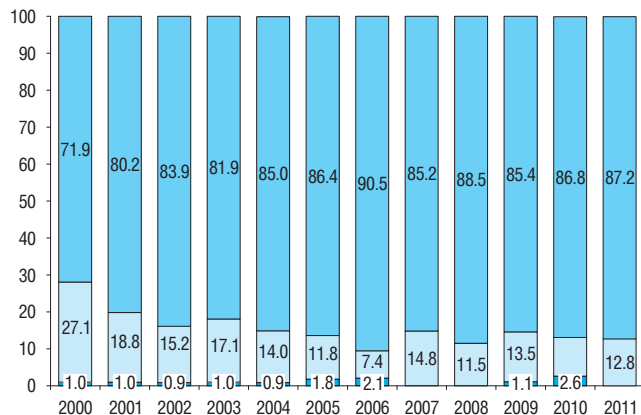
Enterprises engaged in technological exchange:

■ in Russia
 ■ with other foreign countries
 ■ with CIS countries

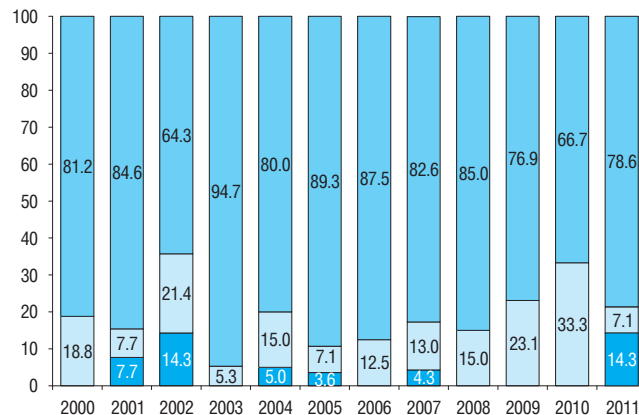
(continued)

Communications, computer and related activities

Enterprises acquiring technology



Enterprises transferring technology



Enterprises engaged in technological exchange:

in Russia

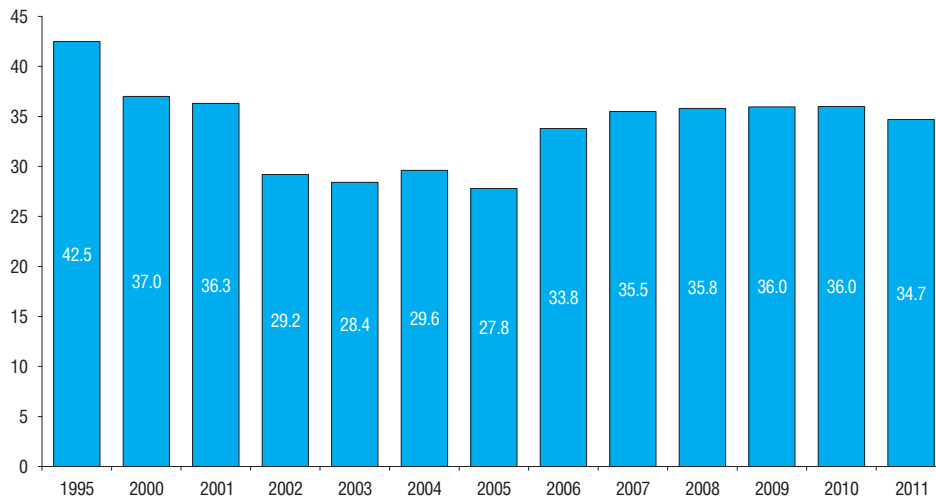
with other foreign countries

with CIS countries

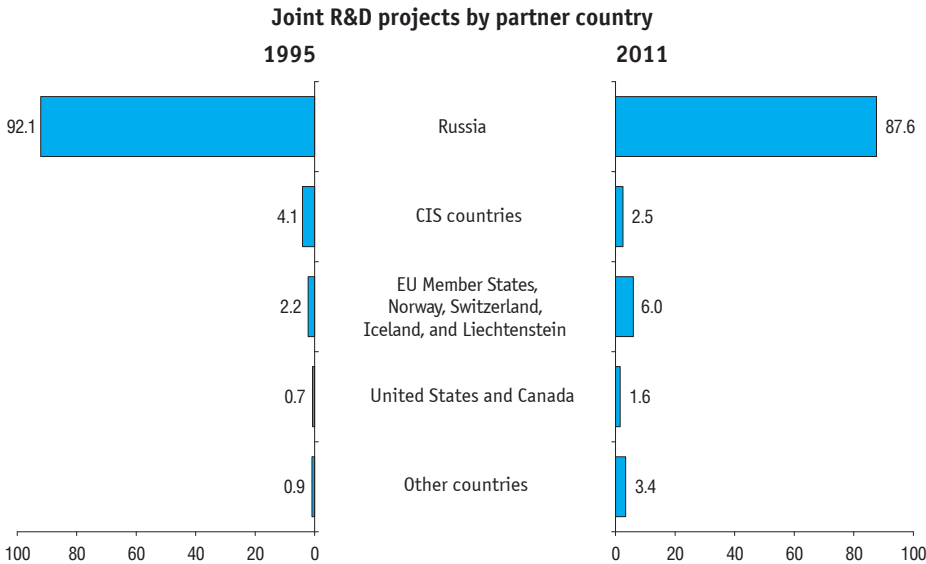
1.11. JOINT R&D PROJECTS OF ENTERPRISES ENGAGED IN TECHNOLOGICAL INNOVATION

Mining and quarrying, manufacturing, electricity, gas and water supply

Enterprises taking part in joint R&D projects as a percentage of all enterprises engaged in technological innovation



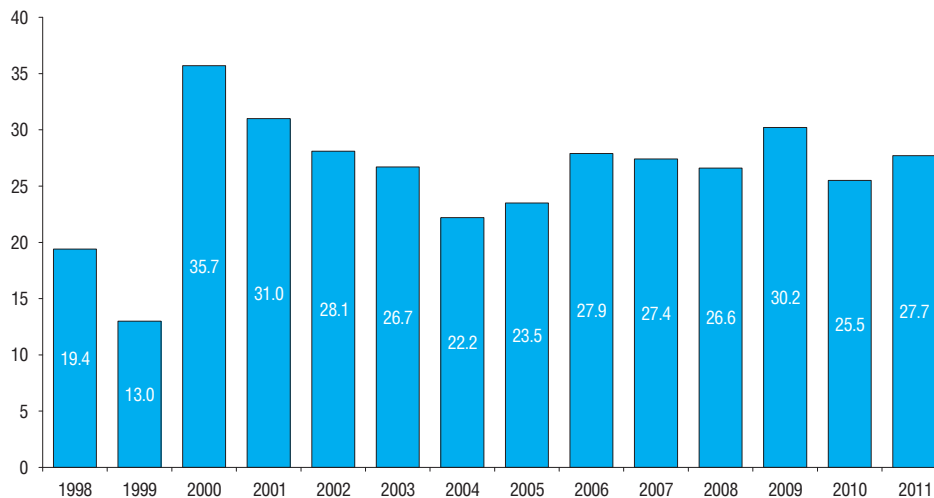
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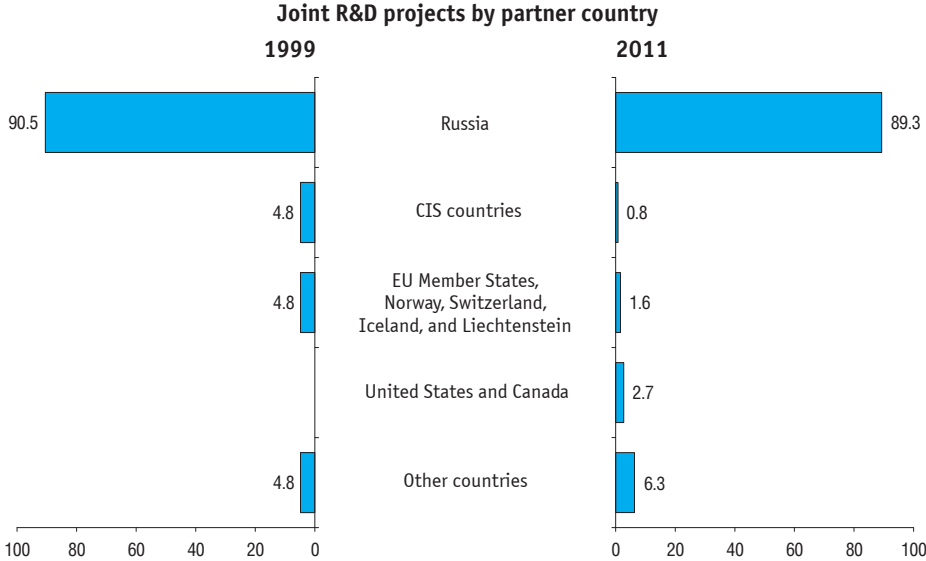
(continued)

Communications, computer and related activities

Enterprises taking part in joint R&D projects as a percentage of all enterprises engaged in technological innovation



(continued)



1.12. EXPENDITURE ON TECHNOLOGICAL INNOVATION

(million roubles)

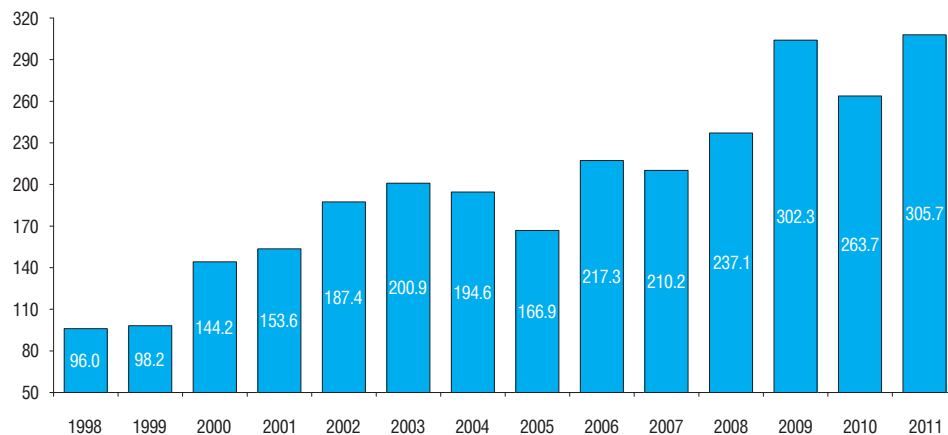
	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
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Mining and quarrying, manufacturing, electricity, gas and water supply

Expenditure on technological innovation:

at current prices	13864.4	24451.4	49428.0	61312.9	86394.6	105444.7	122850.5	125678.2	188492.2	207499.2	276262.3	358861.1	349763.3	469442.2
at constant 1995 prices	6966.0	7121.8	10462.7	11140.3	13590.9	14576.3	14116.7	12105.3	15760.0	15245.3	17201.2	21906.1	19131.5	22174.1

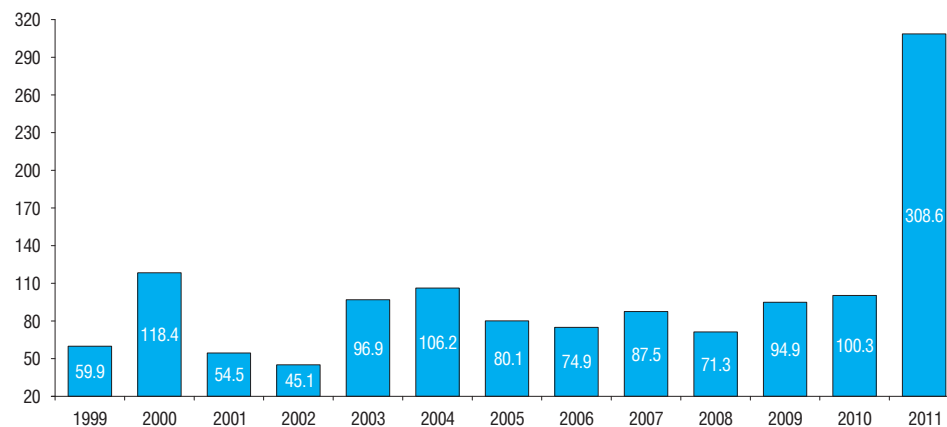
As a percentage of 1995 expenditure



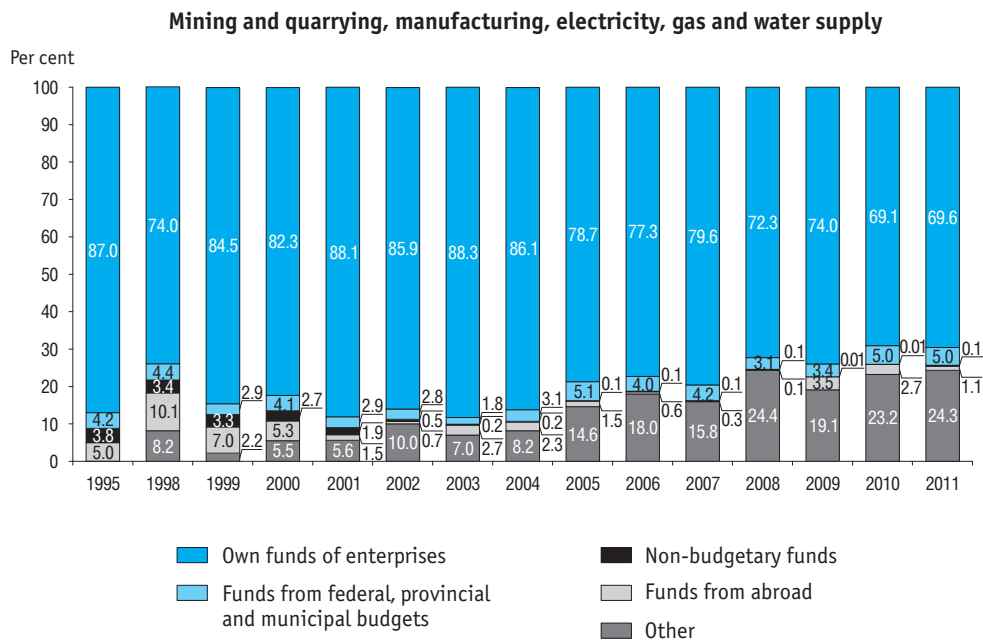
(continued)

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Communications, computer and related activities														
Expenditure on technological innovation:														
at current prices	4197.1	4336.5	11794.1	6328.6	6049.3	14782.7	19495.3	17544.4	18892.4	25125.5	24148.0	32790.9	38684.0	137754.0
at constant 1995 prices	2108.8	1263.1	2496.5	1149.9	951.6	2043.5	2240.2	1689.9	1579.6	1846.0	1503.6	2001.7	2115.9	6506.8

As a percentage of 1998 expenditure

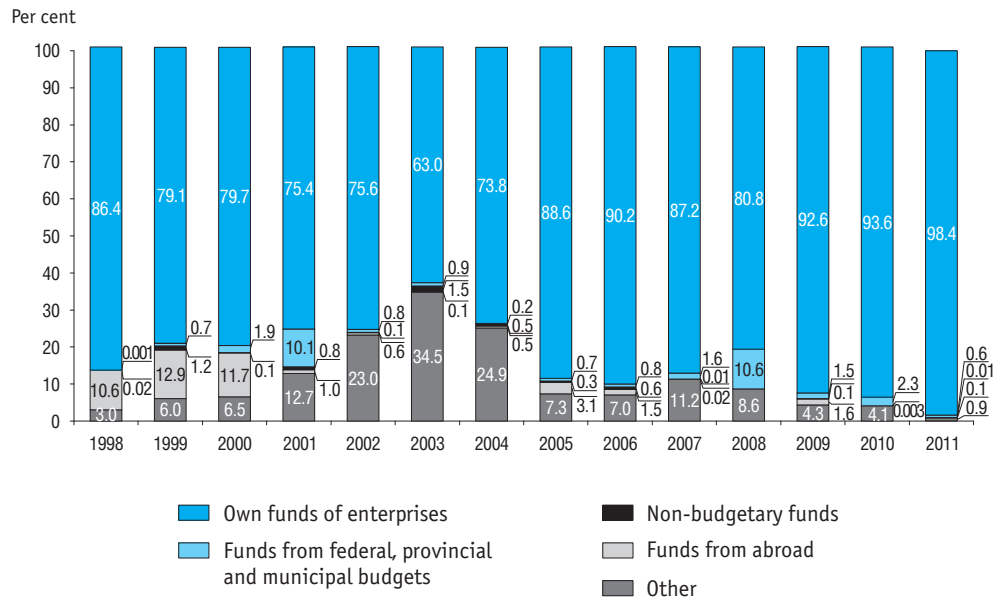


1.13. EXPENDITURE ON TECHNOLOGICAL INNOVATION BY SOURCE OF FUNDS



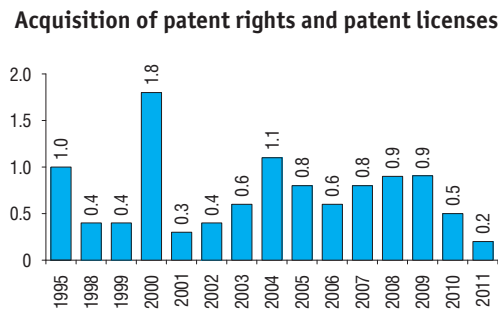
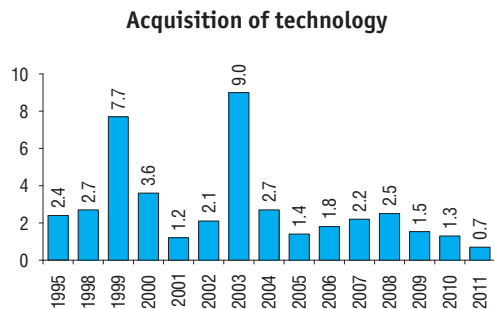
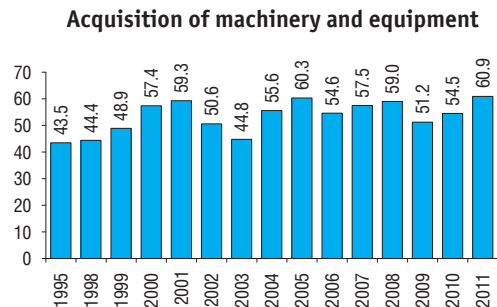
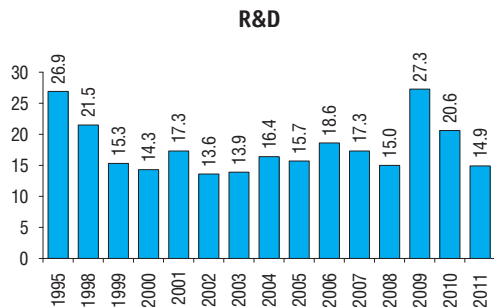
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Communications, computer and related activities



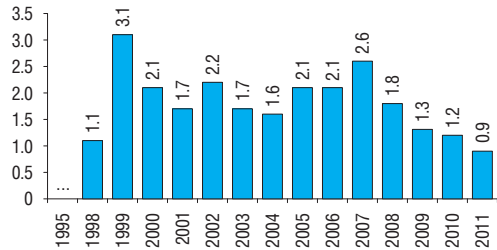
1.14. EXPENDITURE ON TECHNOLOGICAL INNOVATION AS A PERCENTAGE OF TOTAL EXPENDITURE BY INNOVATIVE ACTIVITY

Mining and quarrying, manufacturing, electricity, gas and water supply

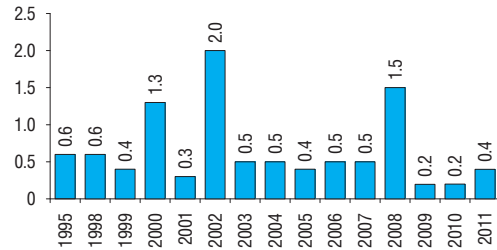


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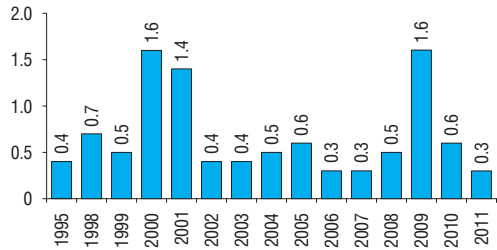
Acquisition of software



Personnel training



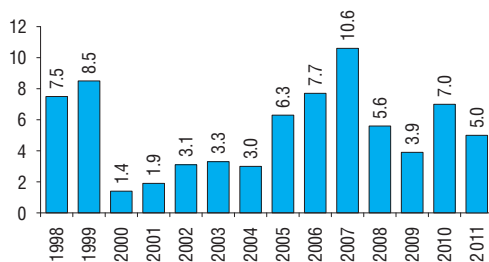
Market research



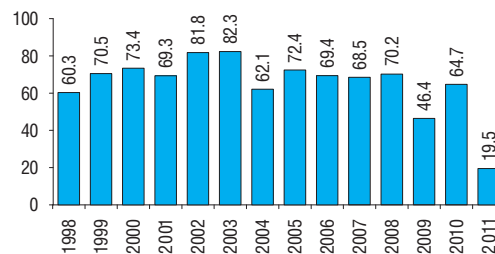
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Communications, computer and related activities

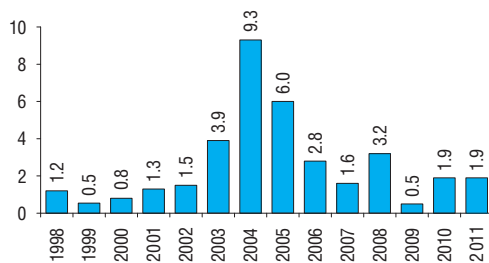
R&D



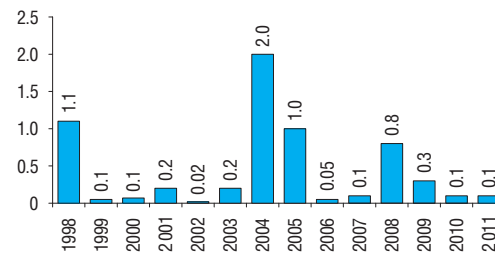
Acquisition of machinery and equipment



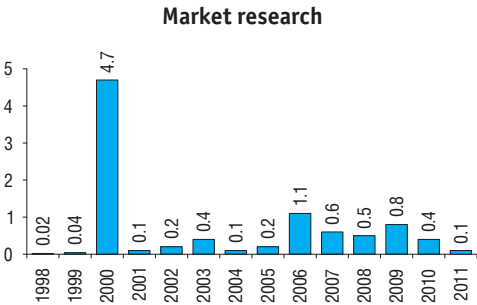
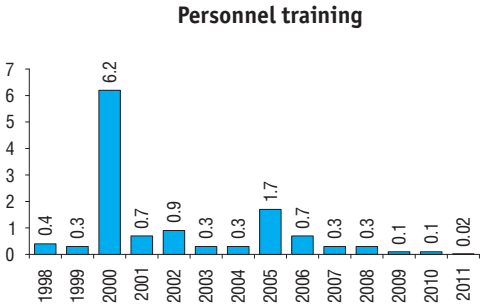
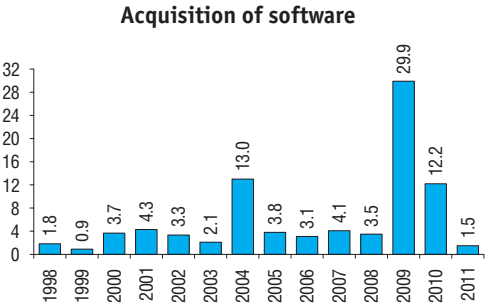
Acquisition of technology



Acquisition of patent rights and patent licenses

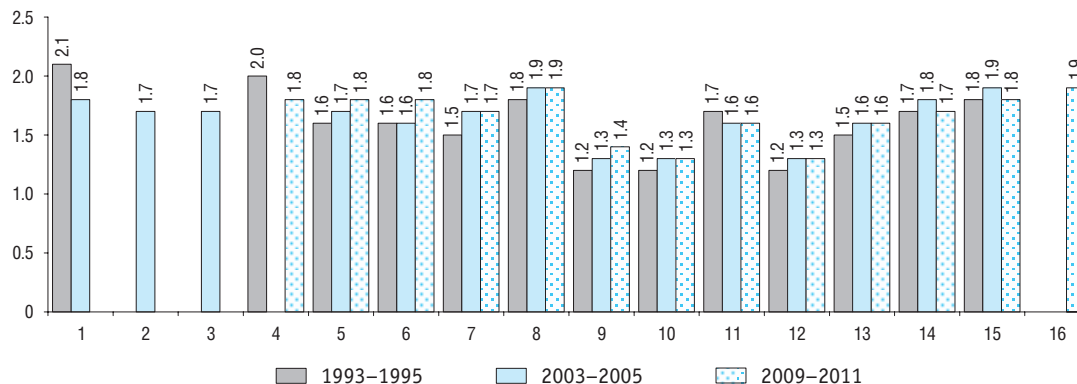


(continued)



1.15. SOURCES OF INFORMATION FOR TECHNOLOGICAL INNOVATION BY RANK OF IMPORTANCE

Mining and quarrying, manufacturing, electricity, gas and water supply



Internal sources within the enterprise:

- 1 – R&D units
- 2 – production units
- 3 – marketing units
- 4 – other internal sources
- 5 – other enterprises within the same enterprise group

Market sources:

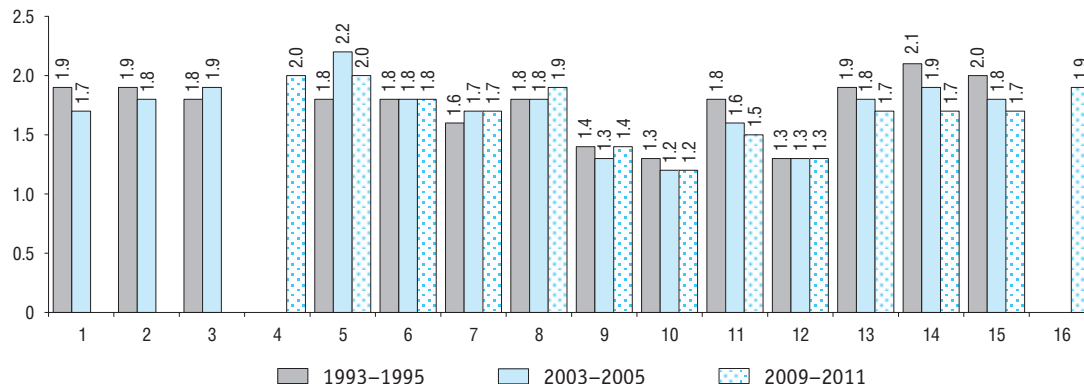
- 6 – suppliers of equipment, materials, components, software
- 7 – competitors within the same sector
- 8 – clients or customers
- 9 – consultancy, information firms

Institutional sources:

- R&D institutions:
 - 10 – Russian Academy of Sciences
 - 11 – industry
 - 12 – universities or other higher education institutions
- General information sources:
 - 13 – conferences, workshops, symposia
 - 14 – science and technology literature
 - 15 – exhibitions, trade fairs, and other advertising facilities
 - 16 – Internet

(continued)

Communications, computer and related activities



Internal sources within the enterprise:

- 1 – R&D units
- 2 – production units
- 3 – marketing units
- 4 – other internal sources
- 5 – other enterprises within the same enterprise group

Market sources:

- 6 – suppliers of equipment, materials, components, software
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Institutional sources:

R&D institutions:

10 – Russian Academy of Sciences

11 – industry

12 – universities or other higher education institutions

General information sources:

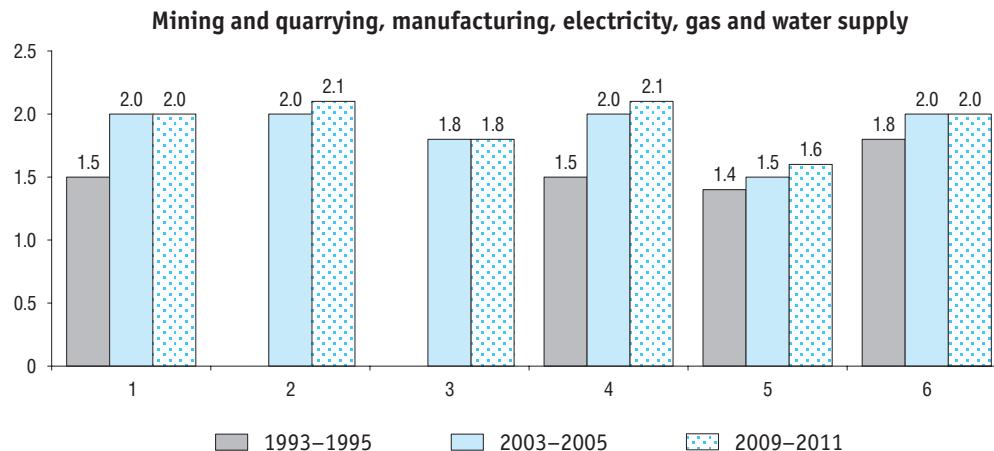
13 – conferences, workshops, symposia

14 – science and technology literature

15 – exhibitions, trade fairs, and other advertising facilities

16 – Internet

1.16. METHODS USED TO PROTECT VALUE OF INNOVATION AT ENTERPRISES ENGAGED IN TECHNOLOGICAL INNOVATION BY RANK OF IMPORTANCE



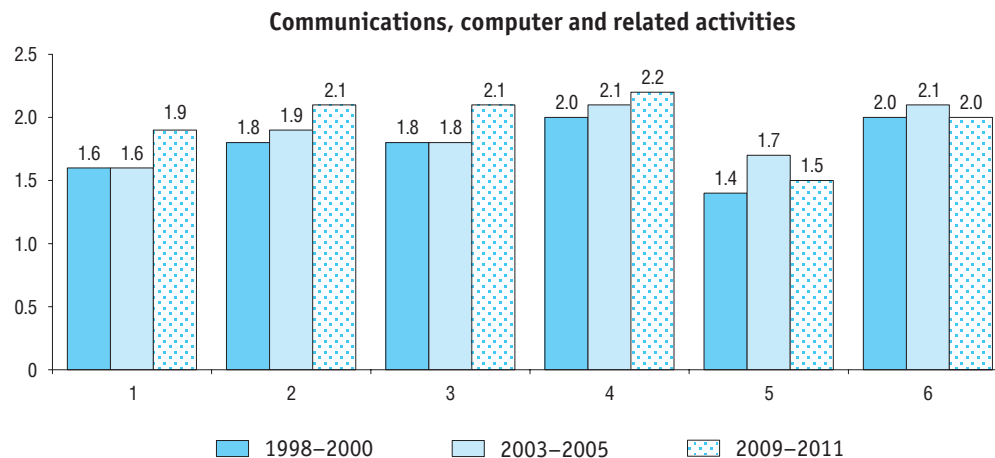
Formal methods:

- 1 – patenting inventions, industrial prototypes, and utility models
- 2 – registering trademarks
- 3 – protecting copyright

Informal methods:

- 4 – ensuring the confidentiality of commercial secrets and know-how
- 5 – ensuring complicated design of products
- 6 – ensuring time advantage over competitors

(continued)



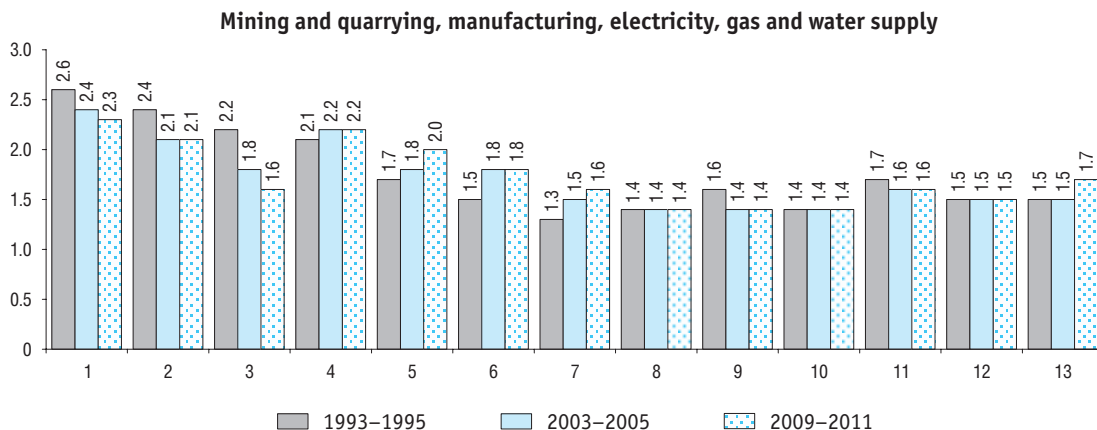
Formal methods:

- 1 – patenting inventions, industrial prototypes, and utility models
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- 3 – protecting copyright

Informal methods:

- 4 – ensuring the confidentiality of commercial secrets and know-how
- 5 – ensuring complicated design of products
- 6 – ensuring time advantage over competitors

1.17. FACTORS HAMPERING TECHNOLOGICAL INNOVATION BY RANK OF IMPORTANCE



Economic factors:

- 1 – lack of funds within the enterprise
- 2 – lack of finance from the government
- 3 – low demand for new goods and services
- 4 – high innovation expenditure
- 5 – excessive perceived risk

Internal factors:

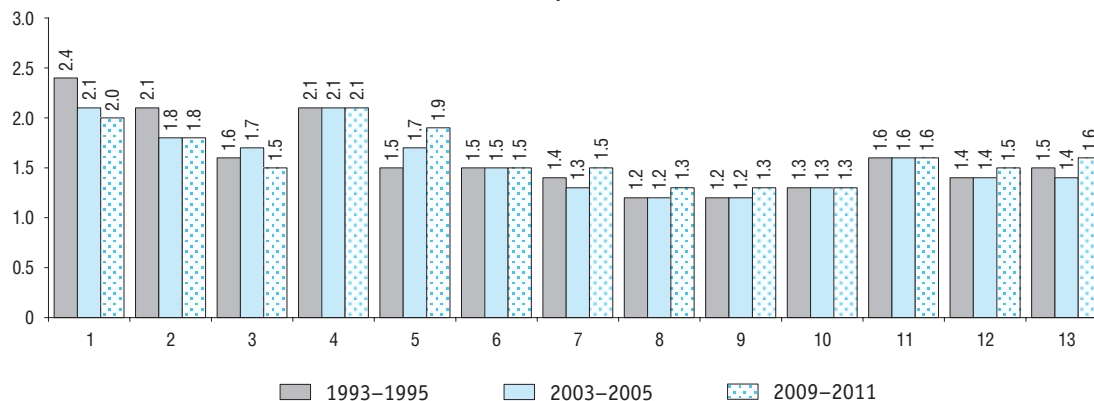
- 6 – low innovation potential
- 7 – lack of qualified personnel
- 8 – lack of information on technology
- 9 – lack of information on sale markets
- 10 – lack of co-operation linkages

Other factors:

- 11 – deficiencies in legislation
- 12 – underdevelopment of innovation infrastructure
- 13 – uncertainty of economic benefits

(continued)

Communications, computer and related activities



Economic factors:

- 1 – lack of funds within the enterprise
- 2 – lack of finance from the government
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Internal factors:

- 6 – low innovation potential
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- 10 – lack of co-operation linkages

Other factors:

- 11 – deficiencies in legislation
- 12 – underdevelopment of innovation infrastructure
- 13 – uncertainty of economic benefits



2. Innovative Activity of Enterprises

2.1. INNOVATIVE ACTIVITY OF ENTERPRISES BY ECONOMIC ACTIVITY

	Enterprises engaged in innovation of selected types as a percentage of all enterprises							
	Total		Technological		Organisational		Marketing	
	2010	2011	2010	2011	2010	2011	2010	2011
Mining and quarrying, manufacturing, electricity, gas and water supply								
Total	10.8	11.1	9.3	9.6	3.4	3.5	2.5	2.5
Mining and quarrying	7.8	8.4	6.6	6.8	2.9	3.9	0.4	0.7
Mining and quarrying of energy producing materials	9.7	11.3	8.0	9.0	3.9	5.8	0.6	1.1
Mining and quarrying, except energy producing materials	5.3	4.5	4.8	3.9	1.7	1.2	0.2	0.2
Manufacturing	13.0	13.3	11.3	11.6	4.0	4.1	3.4	3.4
High tech	29.1	30.1	27.1	28.0	8.4	9.3	6.6	6.7
Manufacture of pharmaceuticals	25.5	24.7	24.2	22.4	5.7	4.7	10.8	8.8
Manufacture of office machinery and computers	26.8	27.5	26.8	25.0	7.3	10.0	4.9	7.5
Manufacture of radio, television and communication equipment and apparatus	32.3	36.1	31.3	33.5	8.2	9.7	5.6	5.2
Manufacture of medical, precision and optical instruments, watches and clocks	27.1	27.2	24.5	25.5	7.7	8.6	6.2	6.4
Manufacture of aircrafts, including spacecrafts	34.5	35.6	31.7	33.6	14.8	16.4	6.3	8.9
Medium high tech	19.7	19.7	17.7	17.6	6.6	6.3	4.6	4.6
Manufacture of chemicals and chemical products	25.3	23.2	23.0	21.1	8.2	6.8	6.0	4.1
Manufacture of machinery and equipment, n.e.c.	17.1	17.7	14.8	15.3	6.0	5.8	4.1	4.3
Manufacture of electrical machinery and apparatus	21.8	21.2	20.4	20.1	7.0	6.6	5.6	7.1

(continued)

	Enterprises engaged in innovation of selected types as a percentage of all enterprises							
	Total		Technological		Organisational		Marketing	
	2010	2011	2010	2011	2010	2011	2010	2011
Manufacture of motor vehicles, trailers and semi-trailers	23.1	24.4	21.0	22.2	7.2	7.9	4.0	3.3
Manufacture of other transport vehicles	14.5	13.9	12.8	12.0	5.1	5.6	2.6	3.0
Medium low tech	12.5	13.1	10.7	11.5	4.2	3.9	2.9	2.4
Manufacture of coke, refined petroleum products	32.1	31.7	30.2	31.7	14.2	11.5	6.6	5.8
Manufacture of rubber and plastic products	11.3	12.1	9.6	10.3	3.2	3.6	3.2	3.0
Manufacture of other non-metallic mineral products	8.9	9.7	7.2	8.4	2.8	2.8	2.4	1.9
Manufacture of basic metals	24.3	24.9	22.4	22.8	8.3	8.3	2.8	2.9
Manufacture of fabricated metal products	11.3	11.8	9.7	9.7	3.7	3.2	3.0	2.5
Construction and repair of vessels	16.3	14.4	12.8	14.4	7.6	3.6	4.1	1.2
Low tech	7.8	7.7	6.3	6.3	2.0	2.2	2.6	2.6
Manufacture of food products and beverages	11.4	11.7	9.4	9.4	2.5	3.1	4.4	4.7
Manufacture of tobacco products	36.8	36.8	31.6	31.6	5.3	5.3	15.8	15.8
Manufacture of textiles	12.2	11.6	11.3	11.0	2.1	2.3	1.5	1.6
Manufacture of wearing apparel, dressing and dyeing of fur	6.2	5.3	4.4	3.9	2.1	2.2	2.6	0.8
Manufacture of leather, leather products and footwear	11.1	8.0	8.1	5.8	4.4	3.6	2.2	2.2
Manufacture of wood and of products of wood and cork, except furniture	4.9	5.5	4.1	3.8	2.0	2.7	1.3	1.7
Manufacture of cellulose, wood pulp, paper and cardboard and appropriate paper products	12.6	13.3	10.3	12.4	4.5	4.4	3.6	4.0

(continued)

	Enterprises engaged in innovation of selected types as a percentage of all enterprises							
	Total		Technological		Organisational		Marketing	
	2010	2011	2010	2011	2010	2011	2010	2011
Publishing and printing, reproduction of recorded media	3.2	2.7	2.5	2.1	1.0	0.7	0.8	0.6
Manufacture of furniture, manufacturing n.e.c.	11.0	12.2	8.6	9.9	2.9	2.8	2.9	3.3
Recycling	4.9	4.2	3.3	3.2	1.6	1.4	0.5	1.4
Electricity, gas and water supply	5.4	5.6	4.3	4.7	1.9	1.6	0.4	0.4
Communications, computer and related activities, research and development, other business activities								
Total	6.7	9.2	5.1	7.8	2.8	3.0	1.6	1.9
Communications	15.6	13.8	11.9	11.1	6.1	4.6	6.5	5.5
Computer and related activities	10.0	9.2	8.7	7.9	3.3	2.8	1.5	1.2
Research and development*	...	29.8	...	28.8	...	8.5	...	4.6
Other business activities	4.9	4.9	3.5	3.6	2.1	1.9	0.8	0.9

* The R&D sector has been the subject of statistical observations since 2011.

2.2. PERCENTAGE DISTRIBUTION OF ENTERPRISES ENGAGED IN TECHNOLOGICAL, ORGANISATIONAL, AND MARKETING INNOVATION BY ECONOMIC ACTIVITY

	2010	2011
Mining and quarrying, manufacturing, electricity, gas and water supply		
Total	100	100
Mining and quarrying	4.2	4.7
Mining and quarrying of energy producing materials	2.9	3.6
Mining and quarrying, except energy producing materials	1.2	1.1
Manufacturing	83.1	82.8
High tech	13.6	13.9
Manufacture of pharmaceuticals	1.5	1.6
Manufacture of office machinery and computers	0.4	0.4
Manufacture of radio, television and communication equipment and apparatus	3.9	4.1
Manufacture of medical, precision and optical instruments, watches and clocks	6.0	5.8
Manufacture of aircrafts, including spacecrafts	1.9	1.9
Medium high tech	24.3	24.0
Manufacture of chemicals and chemical products	4.7	4.4
Manufacture of machinery and equipment, n.e.c.	9.8	9.9
Manufacture of electrical machinery and apparatus	5.3	5.1
Manufacture of motor vehicles, trailers and semi-trailers	3.3	3.3
Manufacture of other transport vehicles	1.3	1.4
Medium low tech	17.0	17.6
Manufacture of coke, refined petroleum products	1.3	1.2
Manufacture of rubber and plastic products	2.5	2.7
Manufacture of other non-metallic mineral products	4.8	5.0

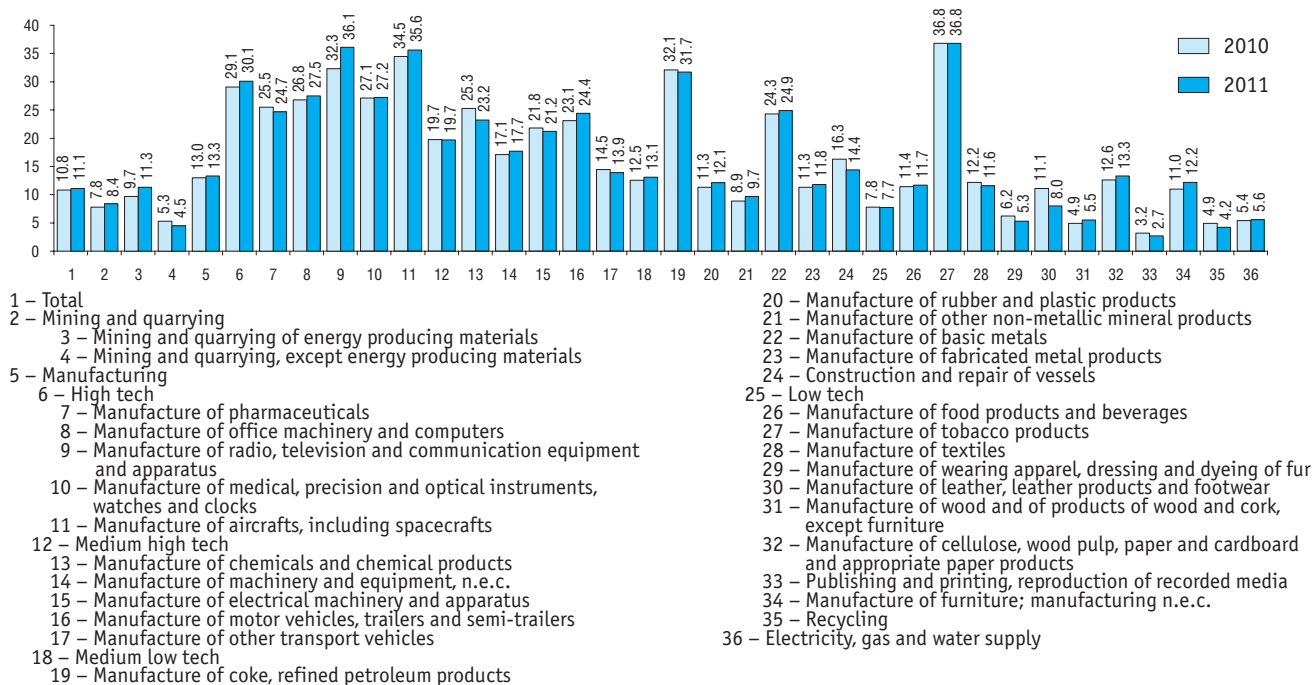
(continued)

	2010	2011
Manufacture of basic metals	3.3	3.4
Manufacture of fabricated metal products	4.0	4.3
Construction and repair of vessels	1.1	0.9
Low tech	25.4	24.3
Manufacture of food products and beverages	14.3	14.1
Manufacture of tobacco products	0.3	0.3
Manufacture of textiles	1.5	1.3
Manufacture of wearing apparel, dressing and dyeing of fur	0.9	0.7
Manufacture of leather, leather products and footwear	0.6	0.4
Manufacture of wood and of products of wood and cork, except furniture	1.0	1.1
Manufacture of cellulose, wood pulp, paper and cardboard and appropriate paper products	1.1	1.1
Publishing and printing, reproduction of recorded media	3.6	3.0
Manufacture of furniture, manufacturing n.e.c.	1.9	1.9
Recycling	0.3	0.3
Manufacturing of other materials and substances, n.e.c.	2.8	3.0
Electricity, gas and water supply	12.7	12.6
Communications, computer and related activities, research and development, other business activities		
Total	100	100
Communications	31.8	17.3
Computer and related activities	11.1	6.9
Research and development	...	38.4
Other business activities	57.1	37.4

2.3. INNOVATIVE ACTIVITY OF ENTERPRISES BY ECONOMIC ACTIVITY

(enterprises engaged in technological, organisational, and marketing innovation as a percentage of all enterprises)

Mining and quarrying, manufacturing, electricity, gas and water supply



(continued)



2.4. INNOVATIVE ACTIVITY OF ENTERPRISES BY SIZE

	Enterprises engaged in innovation of selected types as a percentage of all enterprises							
	Total		Technological		Organisational		Marketing	
	2010	2011	2010	2011	2010	2011	2010	2011
Mining and quarrying, manufacturing, electricity, gas and water supply; communications, computer and related activities, research and development, other business activities								
Total	9.5	10.4	7.9	8.9	3.2	3.3	2.2	2.3
Number of employees, <i>head-count</i> :								
below 50	2.8	3.2	2.0	2.4	1.1	1.0	0.6	0.6
50–99	6.2	6.8	5.0	5.5	1.7	2.1	1.4	1.3
100–199	9.6	10.6	7.7	9.1	2.7	2.7	2.3	2.3
200–249	11.4	12.8	9.1	11.0	3.5	3.3	2.9	2.7
250–499	14.5	16.3	12.1	13.9	4.3	4.8	3.2	3.5
500–999	23.6	25.5	20.3	22.5	8.5	8.3	6.2	5.8
1000–4999	41.7	44.7	38.1	41.0	16.0	17.9	10.0	11.5
5000–9999	63.6	68.1	62.9	66.0	26.4	27.0	10.7	12.1
10 000 and over	73.1	78.4	71.2	76.5	44.2	45.1	11.5	15.7

2.5. PERCENTAGE DISTRIBUTION OF ENTERPRISES ENGAGED IN TECHNOLOGICAL, ORGANISATIONAL, AND MARKETING INNOVATION BY SIZE

	2010	2011
Mining and quarrying, manufacturing, electricity, gas and water supply; communications, computer and related activities, research and development, other business activities		
Total	100	100
Number of employees, <i>head-count</i> :		
below 50	12.8	13.7
50–99	8.3	8.0
100–199	16.4	16.1
200–249	5.9	5.8
250–499	17.2	17.9
500–999	15.1	15.1
1000–4999	20.5	20.1
5000–9999	2.6	2.4
10 000 and over	1.1	1.0

2.6. INNOVATIVE ACTIVITY OF ENTERPRISES BY OWNERSHIP

	Enterprises engaged in innovation of selected types as a percentage of all enterprises							
	Total		Technological		Organisational		Marketing	
	2010	2011	2010	2011	2010	2011	2010	2011
Mining and quarrying, manufacturing, electricity, gas and water supply; communications, computer and related activities, research and development, other business activities								
Total	9.5	10.4	7.9	8.9	3.2	3.3	2.2	2.3
Russian ownership	9.2	10.4	7.8	9.0	3.1	3.3	2.1	2.2
Public ownership	8.8	12.0	7.4	10.7	3.1	3.8	1.6	2.1
Federal	12.6	17.7	11.1	16.3	3.9	5.5	2.2	3.3
Provincial	5.9	6.4	4.6	5.1	2.4	2.1	1.1	0.9
Municipal ownership	2.9	3.0	2.3	2.4	0.9	0.8	0.3	0.3
Private ownership	11.9	11.9	9.9	10.2	3.9	3.7	3.0	2.8
Ownership of consumer cooperatives	6.0	4.7	4.0	3.3	-	1.3	2.7	2.0
Ownership of voluntary associations	5.4	5.0	4.3	4.5	1.1	0.5	0.7	0.7
Joint ownership	14.7	19.5	13.1	17.3	5.0	7.2	3.5	4.7
Foreign ownership	8.3	7.9	6.2	6.1	3.3	3.0	1.9	2.1
Joint ownership (with both Russian and foreign participation)	14.5	12.5	12.3	10.4	5.5	4.3	4.7	3.5

2.7. PERCENTAGE DISTRIBUTION OF ENTERPRISES ENGAGED IN TECHNOLOGICAL, ORGANISATIONAL, AND MARKETING INNOVATION BY OWNERSHIP

	2010	2011
Mining and quarrying, manufacturing, electricity, gas and water supply; communications, computer and related activities, research and development, other business activities		
Total	100	100
Russian ownership	86.8	88.8
Public ownership	17.5	23.5
Federal	10.8	17.1
Provincial	6.8	6.3
Municipal ownership	6.3	5.8
Private ownership	51.0	45.3
Ownership of consumer cooperatives	0.3	0.2
Ownership of voluntary associations	0.7	0.5
Joint ownership	10.7	12.7
Foreign ownership	5.0	4.9
Joint ownership (with both Russian and foreign participation)	8.2	6.3

2.8. EXPENDITURE ON TECHNOLOGICAL, ORGANISATIONAL, AND MARKETING INNOVATION BY ECONOMIC ACTIVITY

	Million roubles		Per cent	
	2010	2011	2010	2011
Mining and quarrying, manufacturing, electricity, gas and water supply				
Total	356163.5	474587.1	100	100
Mining and quarrying	54042.7	70585.0	15.2	14.9
Mining and quarrying of energy producing materials	49564.7	66170.9	13.9	13.9
Mining and quarrying, except energy producing materials	4478.0	4414.1	1.3	0.9
Manufacturing	266439.3	374362.3	74.8	78.9
High tech	38568.3	39054.0	10.8	8.2
Manufacture of pharmaceuticals	1027.9	2381.2	0.3	0.5
Manufacture of office machinery and computers	419.4	754.0	0.1	0.2
Manufacture of radio, television and communication equipment and apparatus	7674.6	7736.5	2.2	1.6
Manufacture of medical, precision and optical instruments, watches and clocks	10348.6	12009.9	2.9	2.5
Manufacture of aircrafts, including spacecrafts	19097.9	16172.5	5.4	3.4
Medium high tech	51299.6	67152.6	14.4	14.1
Manufacture of chemicals and chemical products	23413.0	28583.8	6.6	6.0
Manufacture of machinery and equipment, n.e.c.	10808.5	11852.9	3.0	2.5
Manufacture of electrical machinery and apparatus	5366.7	7016.5	1.5	1.5
Manufacture of motor vehicles, trailers and semi-trailers	8434.2	15633.7	2.4	3.3
Manufacture of other transport vehicles	3277.2	4065.7	0.9	0.9
Medium low tech	137474.2	213912.7	38.6	45.1
Manufacture of coke, refined petroleum products	44444.8	86139.0	12.5	18.2
Manufacture of rubber and plastic products	8222.7	7807.1	2.3	1.6
Manufacture of other non-metallic mineral products	3468.6	20635.7	1.0	4.3

(continued)

	Million roubles		Per cent	
	2010	2011	2010	2011
Manufacture of basic metals	75411.7	89920.6	21.2	18.9
Manufacture of fabricated metal products	2733.1	3290.9	0.8	0.7
Construction and repair of vessels	3193.3	6119.4	0.9	1.3
Low tech	20112.1	28324.4	5.6	6.0
Manufacture of food products and beverages	9877.7	12884.8	2.8	2.7
Manufacture of tobacco products	874.7	735.1	0.2	0.2
Manufacture of textiles	706.4	635.4	0.2	0.1
Manufacture of wearing apparel, dressing and dyeing of fur	264.4	131.8	0.1	0.03
Manufacture of leather, leather products and footwear	103.4	56.8	0.03	0.01
Manufacture of wood and of products of wood and cork, except furniture	646.4	2293.3	0.2	0.5
Manufacture of cellulose, wood pulp, paper and cardboard and appropriate paper products	3637.0	7602.7	1.0	1.6
Publishing and printing, reproduction of recorded media	866.0	1058.5	0.2	0.2
Manufacture of furniture, manufacturing n.e.c.	276.9	1213.3	0.1	0.3
Recycling	2859.2	1712.6	0.8	0.4
Manufacturing of other materials and substances, n.e.c.	18985.0	25918.5	5.3	5.6
Electricity, gas and water supply	35681.4	29639.8	10.0	6.2
Communications, computer and related activities, research and development, other business activities				
Total	54845.3	273953.0	100	100
Communications	35224.9	138826.1	64.2	50.7
Computer and related activities	4998.2	7593.3	9.1	2.8
Research and development	...	117157.6	...	42.8
Other business activities	14622.3	10376.0	26.7	3.8

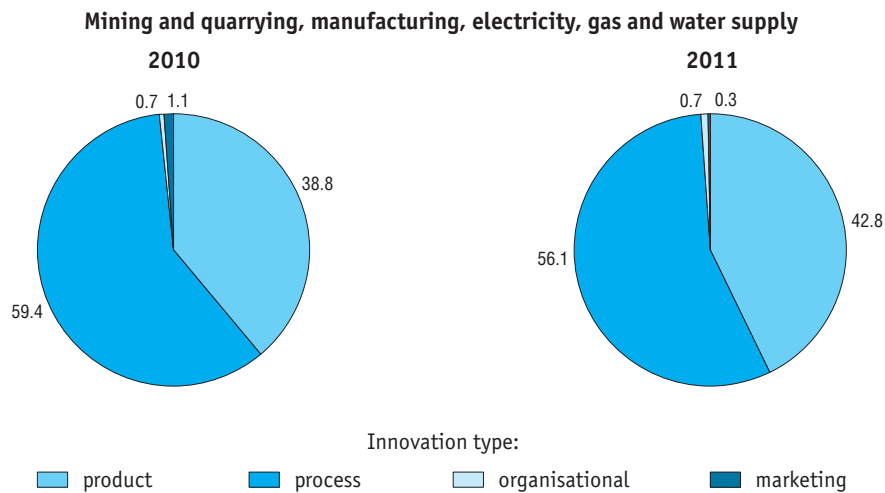
2.9. EXPENDITURE ON TECHNOLOGICAL, ORGANISATIONAL, AND MARKETING INNOVATION BY SIZE

	Million roubles		Per cent	
	2010	2011	2010	2011
Mining and quarrying, manufacturing, electricity, gas and water supply; communications, computer and related activities, research and development, other business activities				
Total	411008.8	748540.1	100	100
Number of employees, <i>head-count</i> :				
below 50	6104.8	9454.8	1.5	1.3
50–99	4296.1	6388.9	1.0	0.9
100–199	11511.5	20264.1	2.8	2.7
200–249	2759.6	7193.1	0.7	1.0
250–499	36881.8	33451.3	9.0	4.5
500–999	30388.2	60227.8	7.4	8.0
1000–4999	186831.2	432764.3	45.5	57.8
5000–9999	40091.9	64605.6	9.8	8.6
10 000 and over	92143.6	114190.2	22.4	15.3

2.10. EXPENDITURE ON TECHNOLOGICAL, ORGANISATIONAL, AND MARKETING INNOVATION BY OWNERSHIP

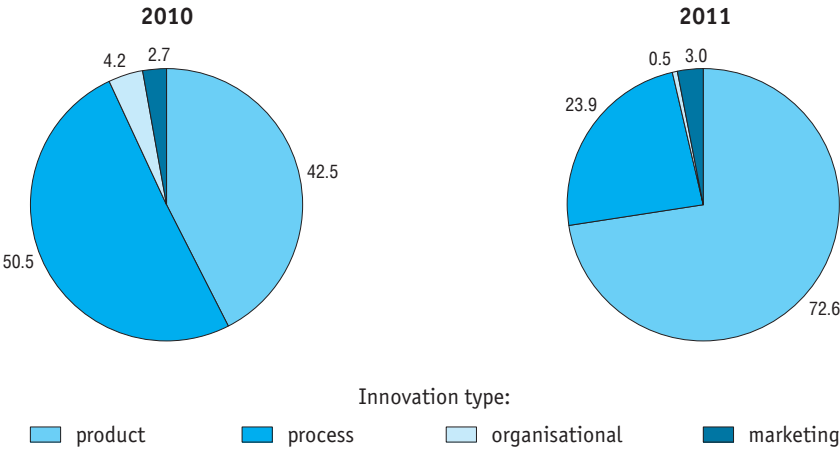
	Million roubles		Per cent	
	2010	2011	2010	2011
Mining and quarrying, manufacturing, electricity, gas and water supply; communications, computer and related activities, research and development, other business activities				
Total	411008.8	748540.1	100	100
Russian ownership	286556.3	588555.4	69.7	78.6
Public ownership	45194.2	109492.8	11.0	14.6
Federal	38062.1	105833.6	9.3	14.1
Provincial	7132.1	3659.2	1.7	0.5
Municipal ownership	3242.8	1811.0	0.8	0.2
Private ownership	175268.1	264468.2	42.6	35.3
Ownership of consumer cooperatives	52.6	13.7	0.01	0.002
Ownership of voluntary associations	52.7	97.2	0.01	0.01
Joint ownership	60595.5	192492.7	14.7	25.7
Foreign ownership	33058.1	45200.2	8.0	6.0
Joint ownership (with both Russian and foreign participation)	91394.4	114784.4	22.2	15.3

2.11. PERCENTAGE DISTRIBUTION OF EXPENDITURE ON TECHNOLOGICAL, ORGANISATIONAL, AND MARKETING INNOVATION BY INNOVATION TYPE



(continued)

Communications, computer and related activities, research and development, other business activities



2.12. PERCENTAGE DISTRIBUTION OF EXPENDITURE ON TECHNOLOGICAL, ORGANISATIONAL, AND MARKETING INNOVATION BY INNOVATION TYPE AND ECONOMIC ACTIVITY

	Expenditure on innovation									
	Technological		Of which				Organisational		Marketing	
			product		process					
	2010	2011	2010	2011	2010	2011	2010	2011	2010	2011
Mining and quarrying, manufacturing, electricity, gas and water supply										
Total	98.2	98.9	38.8	42.8	59.4	56.1	0.7	0.7	1.1	0.3
Mining and quarrying	99.1	99.5	19.0	15.7	80.1	83.8	0.9	0.5	–	0.02
Mining and quarrying of energy producing materials	99.4	99.5	16.8	12.7	82.6	86.8	0.6	0.5	–	0.03
Mining and quarrying, except energy producing materials	95.8	99.8	43.8	61.5	52.0	38.3	4.2	0.2	–	–
Manufacturing	97.9	98.8	41.7	49.3	56.2	49.5	0.6	0.7	1.5	0.4
High tech	95.5	98.5	61.2	63.3	34.2	35.2	0.7	1.2	3.8	0.4
Manufacture of pharmaceuticals	97.2	97.9	50.1	82.0	47.1	15.9	0.3	0.1	2.5	2.0
Manufacture of office machinery and computers	99.4	99.3	79.1	73.3	20.3	25.9	0.4	0.4	0.2	0.3
Manufacture of radio, television and communication equipment and apparatus	99.5	99.5	56.3	64.8	43.2	34.7	0.4	0.4	0.05	0.1
Manufacture of medical, precision and optical instruments, watches and clocks	97.5	99.1	75.4	74.3	22.1	24.9	1.2	0.6	1.3	0.2
Manufacture of aircrafts, including spacecrafts	92.5	97.6	55.7	51.2	36.8	46.4	0.6	2.1	6.9	0.4

(continued)

	Expenditure on innovation									
	Technological		Of which				Organisational		Marketing	
			product		process					
	2010	2011	2010	2011	2010	2011	2010	2011	2010	2011
Medium high tech	98.2	99.0	57.8	56.3	40.4	42.7	0.8	0.8	1.0	0.2
Manufacture of chemicals and chemical products	98.7	99.4	35.8	45.3	62.8	54.1	1.0	0.5	0.3	0.2
Manufacture of machinery and equipment, n.e.c.	98.4	99.1	66.6	71.6	31.8	27.5	1.2	0.8	0.4	0.2
Manufacture of electrical machinery and apparatus	93.4	98.9	73.7	77.3	19.6	21.6	0.3	0.8	6.3	0.3
Manufacture of motor vehicles, trailers and semi-trailers	99.0	98.6	92.6	58.0	6.3	40.5	0.3	1.1	0.7	0.4
Manufacture of other transport vehicles	99.7	98.4	70.3	46.6	29.5	51.8	0.1	1.5	0.2	0.1
Medium low tech	99.7	99.7	27.0	41.3	72.7	58.4	0.2	0.2	0.1	0.1
Manufacture of coke, refined petroleum products	99.6	99.7	18.1	47.9	81.5	51.8	0.4	0.1	0.03	0.2
Manufacture of rubber and plastic products	99.8	99.8	62.0	79.0	37.7	20.8	0.1	0.1	0.1	0.1
Manufacture of other non-metallic mineral products	98.1	99.7	28.5	8.1	69.6	91.7	1.2	0.1	0.7	0.2
Manufacture of basic metals	99.9	99.8	24.8	36.2	75.1	63.7	0.1	0.1	0.01	0.04
Manufacture of fabricated metal products	97.6	96.5	54.8	48.9	42.8	47.6	1.2	3.4	1.2	0.1
Construction and repair of vessels	99.7	99.8	86.5	85.8	13.2	13.9	0.2	0.2	0.1	0.01
Low tech	89.2	93.0	31.2	41.8	58.0	51.2	1.9	3.1	8.9	3.9
Manufacture of food products and beverages	80.5	91.8	40.9	46.3	39.6	45.5	2.3	3.9	17.2	4.2
Manufacture of tobacco products	92.2	99.6	82.7	78.8	9.5	20.8	0.3	0.4	7.5	–
Manufacture of textiles	100	96.7	42.2	61.0	57.8	35.7	0.01	3.2	0.005	0.1
Manufacture of wearing apparel, dressing and dyeing of fur	97.9	88.7	89.5	55.3	8.5	33.4	0.8	9.8	1.3	1.5

(continued)

	Expenditure on innovation									
	Technological		Of which				Organisational		Marketing	
			product		process					
	2010	2011	2010	2011	2010	2011	2010	2011	2010	2011
Manufacture of leather, leather products and footwear	95.8	67.1	13.2	18.0	82.6	49.1	1.4	2.0	2.8	31.0
Manufacture of wood and of products of wood and cork, except furniture	95.9	85.6	37.1	24.7	58.7	60.8	2.9	14.4	1.3	0.1
Manufacture of cellulose, wood pulp, paper and cardboard and appropriate paper products	97.3	98.1	5.6	42.6	91.7	55.5	2.6	0.1	0.04	1.9
Publishing and printing, reproduction of recorded media	96.5	97.9	40.9	45.2	55.6	52.7	2.6	0.2	0.9	2.0
Manufacture of furniture, manufacturing n.e.c.	94.6	69.9	54.2	43.4	40.3	26.5	1.1	0.3	4.3	29.8
Recycling	100	100	0.3	0.8	99.7	99.2	0.001	0.02	–	0.01
Electricity, gas and water supply	99.2	98.5	47.2	24.5	52.0	74.0	0.5	1.5	0.3	0.03
Communications, computer and related activities, research and development, other business activities										
Total	93.1	96.5	42.5	72.6	50.5	23.9	4.2	0.5	2.7	3.0
Communications	95.7	93.8	36.3	76.1	59.4	17.7	0.7	0.3	3.6	5.9
Computer and related activities	99.5	99.3	31.9	28.6	67.6	70.8	0.3	0.5	0.2	0.1
Research and development	...	99.5	...	72.0	...	27.5	...	0.5	...	0.1
Other business activities	84.5	97.3	61.1	65.7	23.4	31.6	14.0	2.6	1.5	0.1

2.13. PERCENTAGE DISTRIBUTION OF EXPENDITURE ON TECHNOLOGICAL, ORGANISATIONAL, AND MARKETING INNOVATION BY INNOVATION TYPE AND SIZE

	Expenditure on innovation									
	Technological		Of which				Organisational		Marketing	
			product		process					
	2010	2011	2010	2011	2010	2011	2010	2011	2010	2011
Mining and quarrying, manufacturing, electricity, gas and water supply; communications, computer and related activities, research and development, other business activities										
Total	97.5	98.0	39.3	53.7	58.2	44.3	1.1	0.6	1.3	1.3
Number of employees, <i>head-count</i> :										
below 50	96.6	97.2	79.2	84.1	17.4	13.0	2.9	1.5	0.5	1.3
50–99	90.7	97.8	31.0	45.0	59.7	52.8	1.2	1.1	8.0	1.2
100–199	96.9	96.4	48.1	63.7	48.7	32.7	0.5	2.6	2.6	1.0
200–249	88.9	89.9	45.1	54.2	43.7	35.7	7.0	9.4	4.1	0.7
250–499	92.1	95.4	39.9	63.5	52.2	31.9	5.1	2.2	2.8	2.4
500–999	97.6	98.2	31.2	45.5	66.3	52.6	1.5	0.9	0.9	0.9
1000–4999	98.3	97.9	42.0	58.0	56.3	39.8	0.6	0.3	1.1	1.8
5000–9999	99.0	99.4	47.0	50.7	51.9	48.6	1.0	0.5	0.1	0.1
10 000 and over	98.2	99.5	29.4	36.5	68.7	63.0	0.4	0.4	1.4	0.1

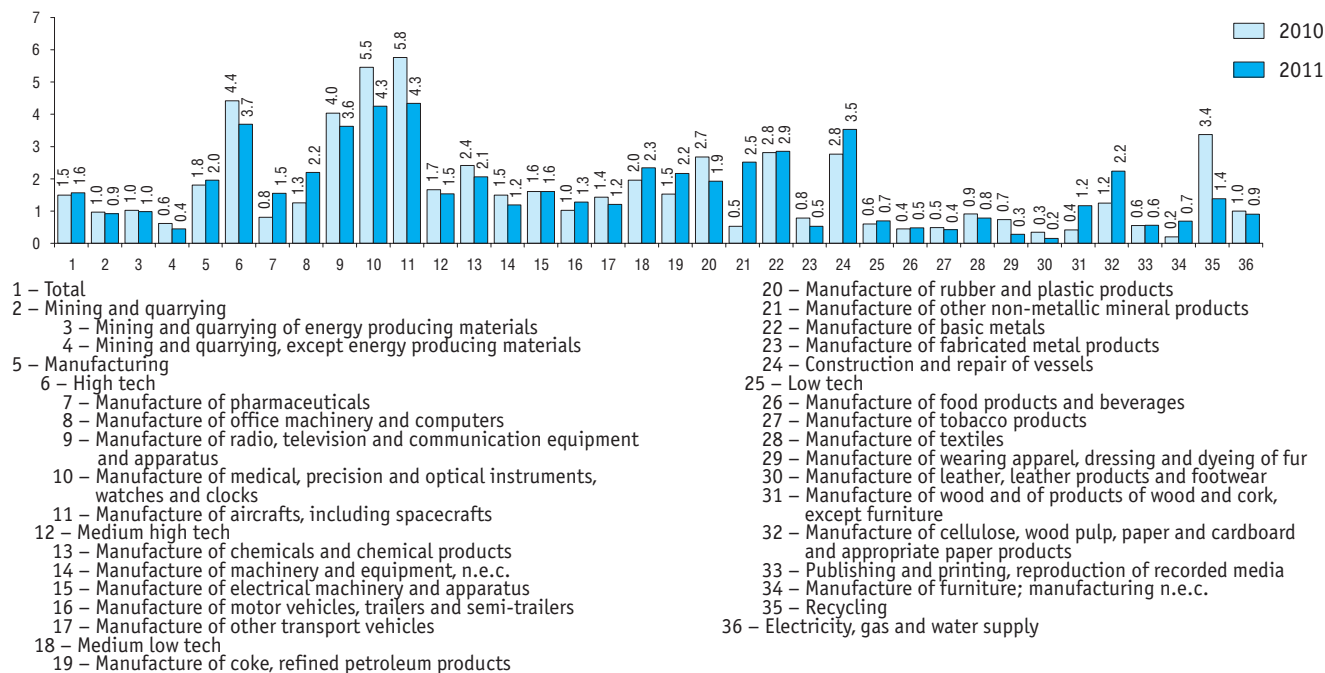
2.14. PERCENTAGE DISTRIBUTION OF EXPENDITURE ON TECHNOLOGICAL, ORGANISATIONAL, MARKETING INNOVATION BY INNOVATION TYPE AND OWNERSHIP OF ENTERPRISES

	Expenditure on innovation									
	Technological		Of which				Organisational		Marketing	
			product		process					
	2010	2011	2010	2011	2010	2011	2010	2011	2010	2011
Mining and quarrying, manufacturing, electricity, gas and water supply; communications, computer and related activities, research and development, other business activities										
Total	97.5	98.0	39.3	53.7	58.2	44.3	1.1	0.6	1.3	1.3
Russian ownership	97.0	97.8	47.3	61.2	49.6	36.6	1.5	0.6	1.6	1.6
Public ownership	94.6	99.0	58.7	61.3	35.9	37.7	5.1	0.9	0.3	0.1
Federal	97.4	99.0	63.9	61.6	33.4	37.4	2.3	0.9	0.3	0.1
Provincial	79.6	98.7	30.6	54.2	49.0	44.6	20.0	1.1	0.4	0.2
Municipal ownership	98.6	97.7	29.7	16.6	68.9	81.1	1.3	2.2	0.02	0.05
Private ownership	97.8	98.9	38.7	50.3	59.1	48.6	0.8	0.6	1.4	0.4
Ownership of consumer cooperatives	99.4	94.1	94.1	76.8	5.4	17.3	–	–	0.6	5.9
Ownership of voluntary associations	99.7	99.9	22.6	27.2	77.1	72.6	0.2	0.1	0.1	–
Joint ownership	96.2	95.4	66.3	74.2	29.9	21.2	0.7	0.4	3.2	4.2
Foreign ownership	99.5	98.6	15.6	25.8	84.0	72.8	0.2	1.1	0.3	0.3
Joint ownership (with both Russian and foreign participation)	98.5	99.1	22.9	26.4	75.6	72.7	0.5	0.5	1.0	0.5

2.15. INTENSITY OF EXPENDITURE ON TECHNOLOGICAL, ORGANISATIONAL, AND MARKETING INNOVATION BY ECONOMIC ACTIVITY

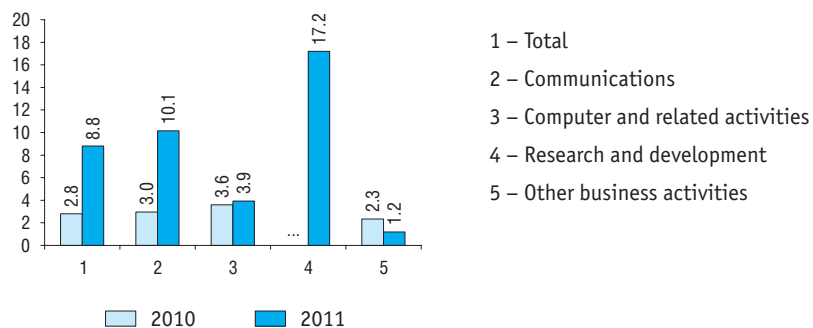
(expenditure on technological, organisational, and marketing innovation as a percentage of total sales)

Mining and quarrying, manufacturing, electricity, gas and water supply



(continued)

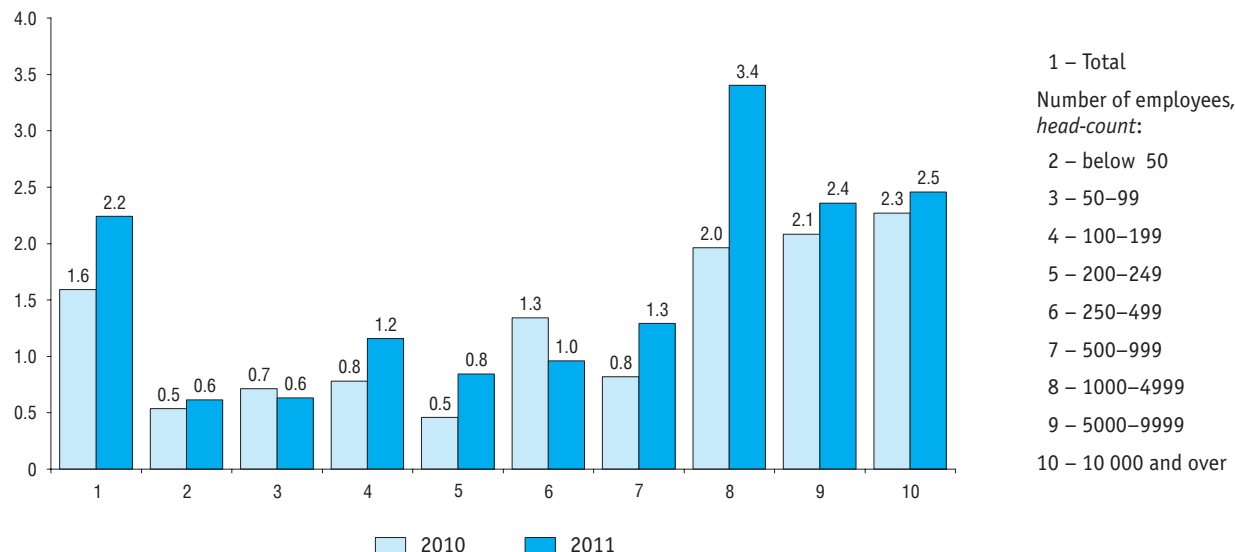
Communications, computer and related activities, research and development, other business activities



2.16. INTENSITY OF EXPENDITURE ON TECHNOLOGICAL, ORGANISATIONAL, AND MARKETING INNOVATION BY SIZE

(expenditure on technological, organisational, and marketing innovation as a percentage of total sales)

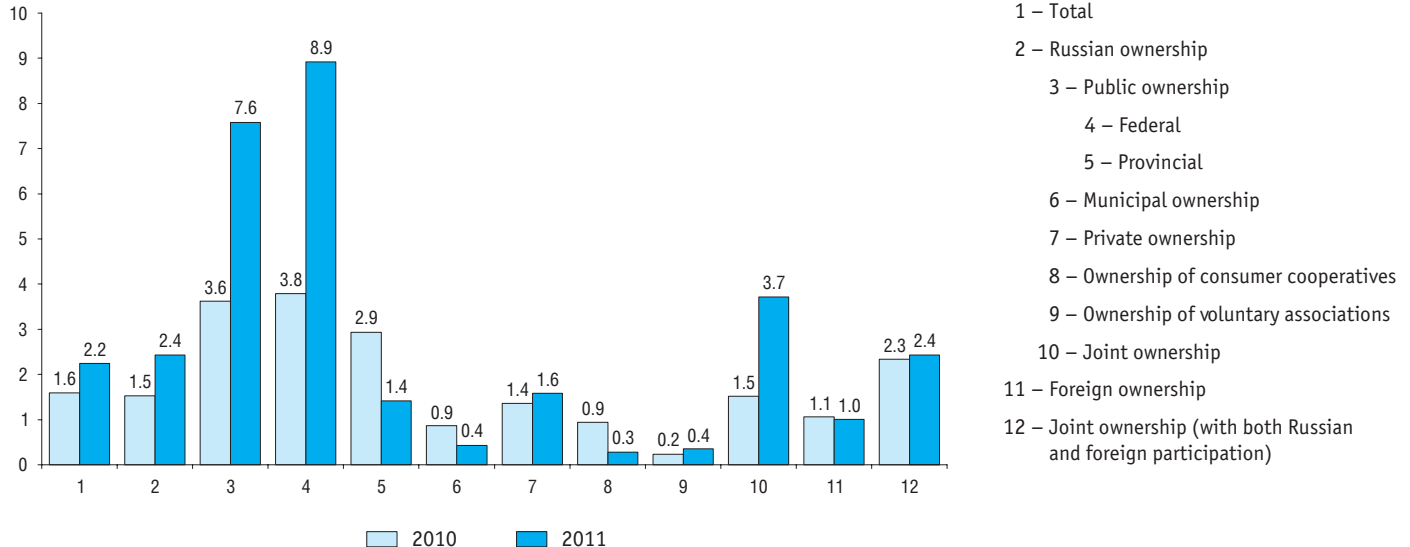
Mining and quarrying, manufacturing, electricity, gas and water supply; communications, computer and related activities, research and development, other business activities



2.17. INTENSITY OF EXPENDITURE ON TECHNOLOGICAL, ORGANISATIONAL, AND MARKETING INNOVATION BY OWNERSHIP

(expenditure on technological, organisational, and marketing innovation as a percentage of total sales)

Mining and quarrying, manufacturing, electricity, gas and water supply; communications, computer and related activities, research and development, other business activities



2.18. EFFECTS OF INNOVATION

	High degree of impact		Medium degree of impact		Low degree of impact		No impact at all		Rank
	Enterprises	Per cent	Enterprises	Per cent	Enterprises	Per cent	Enterprises	Per cent	
2008–2010									
Mining and quarrying, manufacturing, electricity, gas and water supply									
Increasing range of goods and services	1228	37.9	916	28.3	329	10.2	764	23.6	2.4
Maintaining traditional market share	1172	36.2	974	30.1	314	9.7	777	24.0	2.3
Increasing market share:	851	26.3	941	29.1	372	11.5	1073	33.1	2.2
in Russia	859	26.5	906	28.0	428	13.2	1044	32.3	2.2
in CIS countries	291	9.0	495	15.3	469	14.5	1982	61.2	1.9
in EU Member States, Iceland, Liechtenstein, Norway, and Switzerland	56	1.7	119	3.7	272	8.4	2790	86.2	1.5
in the United States and Canada	45	1.4	94	2.9	248	7.7	2850	88.0	1.5
in other countries	177	5.5	256	7.9	324	10.0	2480	76.6	1.8
Improving quality of goods and services	1209	37.3	1032	31.9	304	9.4	692	21.4	2.4
Replacing outdated products	486	15.0	703	21.7	550	17.0	1498	46.3	2.0
Increasing employment	354	10.9	837	25.9	769	23.8	1277	39.5	1.8
Increasing flexibility of production	627	19.4	1059	32.7	544	16.8	1007	31.1	2.0
Increasing industrial capacity	790	24.4	916	28.3	499	15.4	1032	31.9	2.1
Reducing labour costs	225	7.0	668	20.6	826	25.5	1518	46.9	1.7
Reducing material costs	431	13.3	1014	31.3	710	21.9	1082	33.4	1.9
Increasing energy efficiency (lower energy consumption or energy loss)	553	17.1	926	28.6	641	19.8	1117	34.5	2.0

(continued)

	High degree of impact		Medium degree of impact		Low degree of impact		No impact at all		Rank
	Enterprises	Per cent	Enterprises	Per cent	Enterprises	Per cent	Enterprises	Per cent	
Improving health and safety	549	17.0	1042	32.2	598	18.5	1048	32.4	2.0
Reducing time for interaction with customers or suppliers	325	10.0	750	23.2	670	20.7	1492	46.1	1.8
Increasing motivation for innovation activity	361	11.2	941	29.1	678	20.9	1257	38.8	1.8
Improving information links within the organisation or with other organisations	484	15.0	934	28.9	581	17.9	1238	38.2	2.0
Reducing environmental impacts	409	12.6	866	26.8	637	19.7	1325	40.9	1.9
Meeting regulatory requirements and standards	942	29.1	1038	32.1	423	13.1	834	25.8	2.2
Marketing innovation:									
introducing products and services to new markets and new consumer groups	423	13.1	651	20.1	419	12.9	1744	53.9	2.0
introducing products and services to new geographical markets	269	8.3	513	15.8	464	14.3	1991	61.5	1.8
Communications, computer and related activities, research and development, other business activities									
Increasing range of goods and services	299	33.3	205	22.8	96	10.7	298	33.2	2.3
Maintaining traditional market share	270	30.1	205	22.8	85	9.5	338	37.6	2.3
Increasing market share:	170	18.9	163	18.2	101	11.2	464	51.7	2.2
in Russia	171	19.0	163	18.2	96	10.7	468	52.1	2.2
in CIS countries	34	3.8	52	5.8	67	7.5	745	83.0	1.8
in EU Member States, Iceland, Liechtenstein, Norway, and Switzerland	13	1.4	19	2.1	61	6.8	805	89.6	1.5
in the United States and Canada	15	1.7	21	2.3	58	6.5	804	89.5	1.5
in other countries	32	3.6	38	4.2	55	6.1	773	86.1	1.8

(continued)

	High degree of impact		Medium degree of impact		Low degree of impact		No impact at all		Rank
	Enterprises	Per cent	Enterprises	Per cent	Enterprises	Per cent	Enterprises	Per cent	
Improving quality of goods and services	385	42.9	220	24.5	65	7.2	228	25.4	2.5
Replacing outdated products	111	12.4	119	13.3	115	12.8	553	61.6	2.0
Increasing employment	104	11.6	154	17.1	166	18.5	474	52.8	1.9
Increasing flexibility of production	153	17.0	203	22.6	100	11.1	442	49.2	2.1
Increasing industrial capacity	171	19.0	152	16.9	110	12.2	465	51.8	2.1
Reducing labour costs	52	5.8	128	14.3	153	17.0	565	62.9	1.7
Reducing material costs	71	7.9	177	19.7	176	19.6	474	52.8	1.8
Increasing energy efficiency (lower energy consumption or energy loss)	69	7.7	143	15.9	154	17.1	532	59.2	1.8
Improving health and safety	135	15.0	201	22.4	132	14.7	430	47.9	2.0
Reducing time for interaction with customers or suppliers	178	19.8	237	26.4	124	13.8	359	40.0	2.1
Increasing motivation for innovation activity	161	17.9	191	21.3	137	15.3	409	45.5	2.0
Improving information links within the organisation or with other organisations	279	31.1	244	27.2	86	9.6	289	32.2	2.3
Reducing environmental impacts	50	5.6	82	9.1	117	13.0	649	72.3	1.7
Meeting regulatory requirements and standards	332	37.0	238	26.5	67	7.5	261	29.1	2.4
Marketing innovation:									
introducing products and services to new markets and new consumer groups	143	15.9	137	15.3	87	9.7	531	59.1	2.2
introducing products and services to new geographical markets	62	6.9	88	9.8	120	13.4	628	69.9	1.8

(continued)

	High degree of impact		Medium degree of impact		Low degree of impact		No impact at all		Rank
	Enterprises	Per cent	Enterprises	Per cent	Enterprises	Per cent	Enterprises	Per cent	
2009–2011									
Mining and quarrying, manufacturing, electricity, gas and water supply									
Increasing range of goods and services	1286	40.0	882	27.4	303	9.4	744	23.1	2.4
Maintaining traditional market share	1209	37.6	976	30.4	304	9.5	726	22.6	2.4
Increasing market share:	912	28.4	960	29.9	398	12.4	945	29.4	2.2
in Russia	904	28.1	896	27.9	416	12.9	999	31.1	2.2
in CIS countries	321	10.0	560	17.4	457	14.2	1877	58.4	1.9
in EU Member States, Iceland, Liechtenstein, Norway, and Switzerland	78	2.4	146	4.5	291	9.1	2700	84.0	1.6
in the United States and Canada	58	1.8	108	3.4	273	8.5	2776	86.3	1.5
in other countries	172	5.3	233	7.2	362	11.3	2448	76.1	1.8
Improving quality of goods and services	1244	38.7	1056	32.8	286	8.9	629	19.6	2.4
Replacing outdated products	531	16.5	697	21.7	536	16.7	1451	45.1	2.0
Increasing employment	360	11.2	872	27.1	747	23.2	1236	38.4	1.8
Increasing flexibility of production	679	21.1	1090	33.9	545	17.0	901	28.0	2.1
Increasing industrial capacity	840	26.1	973	30.3	465	14.5	937	29.1	2.2
Reducing labour costs	204	6.3	672	20.9	836	26.0	1503	46.7	1.6
Reducing material costs	436	13.6	1027	31.9	689	21.4	1063	33.1	1.9
Increasing energy efficiency (lower energy consumption or energy loss)	581	18.1	955	29.7	620	19.3	1059	32.9	2.0

(continued)

	High degree of impact		Medium degree of impact		Low degree of impact		No impact at all		Rank
	Enterprises	Per cent	Enterprises	Per cent	Enterprises	Per cent	Enterprises	Per cent	
Improving health and safety	590	18.4	1057	32.9	570	17.7	998	31.0	2.0
Reducing time for interaction with customers or suppliers	328	10.2	791	24.6	661	20.6	1435	44.6	1.8
Increasing motivation for innovation activity	389	12.1	990	30.8	675	21.0	1161	36.1	1.9
Improving information links within the organisation or with other organisations	504	15.7	983	30.6	585	18.2	1143	35.6	2.0
Reducing environmental impacts	437	13.6	887	27.6	655	20.4	1236	38.4	1.9
Meeting regulatory requirements and standards	1009	31.4	1033	32.1	423	13.2	750	23.3	2.2
Marketing innovation:									
introducing products and services to new markets and new consumer groups	441	13.7	635	19.8	405	12.6	1734	53.9	2.0
introducing products and services to new geographical markets	257	8.0	522	16.2	462	14.4	1974	61.4	1.8
Communications, computer and related activities, research and development, other business activities									
Increasing range of goods and services	483	35.1	405	29.4	153	11.1	337	24.5	2.3
Maintaining traditional market share	458	33.2	395	28.7	129	9.4	396	28.7	2.3
Increasing market share:	296	21.5	377	27.4	161	11.7	544	39.5	2.2
in Russia	287	20.8	367	26.6	159	11.5	565	41.0	2.2
in CIS countries	69	5.0	144	10.4	168	12.2	997	72.4	1.7
in EU Member States, Iceland, Liechtenstein, Norway, and Switzerland	24	1.7	56	4.1	125	9.1	1173	85.1	1.5
in the United States and Canada	25	1.8	46	3.3	127	9.2	1180	85.6	1.5
in other countries	57	4.1	92	6.7	124	9.0	1105	80.2	1.8

(continued)

	High degree of impact		Medium degree of impact		Low degree of impact		No impact at all		Rank
	Enterprises	Per cent	Enterprises	Per cent	Enterprises	Per cent	Enterprises	Per cent	
Improving quality of goods and services	556	40.3	448	32.5	93	6.7	281	20.4	2.4
Replacing outdated products	197	14.3	275	20.0	183	13.3	723	52.5	2.0
Increasing employment	158	11.5	305	22.1	285	20.7	630	45.7	1.8
Increasing flexibility of production	220	16.0	381	27.6	233	16.9	544	39.5	2.0
Increasing industrial capacity	251	18.2	329	23.9	213	15.5	585	42.5	2.0
Reducing labour costs	53	3.8	195	14.2	326	23.7	804	58.3	1.5
Reducing material costs	110	8.0	313	22.7	324	23.5	631	45.8	1.7
Increasing energy efficiency (lower energy consumption or energy loss)	119	8.6	289	21.0	288	20.9	682	49.5	1.8
Improving health and safety	174	12.6	405	29.4	242	17.6	557	40.4	1.9
Reducing time for interaction with customers or suppliers	213	15.5	345	25.0	265	19.2	555	40.3	1.9
Increasing motivation for innovation activity	240	17.4	417	30.3	247	17.9	474	34.4	2.0
Improving information links within the organisation or with other organisations	365	26.5	444	32.2	186	13.5	383	27.8	2.2
Reducing environmental impacts	113	8.2	207	15.0	238	17.3	820	59.5	1.8
Meeting regulatory requirements and standards	522	37.9	391	28.4	134	9.7	331	24.0	2.4
Marketing innovation:									
introducing products and services to new markets and new consumer groups	155	11.2	235	17.1	151	11.0	837	60.7	2.0
introducing products and services to new geographical markets	89	6.5	165	12.0	181	13.1	943	68.4	1.8

2.19. MAIN INNOVATION TRENDS IN NANOTECHNOLOGY-RELATED INDUSTRIES

	2010	2011
Mining and quarrying, manufacturing, electricity, gas and water supply		
Enterprises producing innovative nanotechnology-related goods and services as a percentage of all enterprises producing innovative goods and services	2.5	3.7
Sales of innovative nanotechnology-related goods and services, <i>million roubles</i>	53402.6	63752.1
Exports of innovative nanotechnology-related goods and services, <i>million roubles</i>	23867.2	12360.3
Exports of innovative nanotechnology-related goods and services as a percentage of total exports of innovative goods and services	10.4	2.1
Sales of new to market (including new to the world) innovative nanotechnology-related goods and services, <i>million roubles</i>	2715.5	2820.3
Sales of new to market (including new to the world) innovative nanotechnology-related goods and services as a percentage of total sales of new to market innovative goods and services	1.4	1.4

2.20. INNOVATIVE NANOTECHNOLOGY-RELATED GOODS AND SERVICES BY ECONOMIC ACTIVITY*

(million rubles)

	Sales of innovative nanotechnology-related goods and services		Of which exports			
			total		to CIS countries	
	2010	2011	2010	2011	2010	2011
Mining and quarrying, manufacturing, electricity, gas and water supply						
Total	53402.6	63752.1	23867.2	12360.3	245.9	1184.2
Mining and quarrying	–	–	–	–	–	–
Manufacturing	53402.6	63752.1	23867.2	12360.3	245.9	1184.2
Of which:						
High-tech	2578.2	3399.5	77.9	125.8	21.1	17.5
Manufacture of pharmaceuticals	136.0	12.6	–	–	–	–
Manufacture of radio, television and communication equipment and apparatus	1652.2	2289.7	77.8	120.8	21.0	15.7
Medical and measuring equipment, optical devices, clocks and watches	790.1	1097.2	0.1	5.1	0.1	1.8
Medium high tech	1491.6	15879.4	260.1	1465.6	133.4	1139.5
Manufacture of chemicals and chemical products	0.02	7570.9	–	2.9	–	–
Manufacture of machinery and equipment, n.e.c.	1368.9	7249.5	260.1	1395.6	133.4	1072.6
Manufacture of electrical machinery and apparatus	122.7	666.9	–	67.1	–	66.9
Manufacture of motor vehicles, trailers and semitrailers	–	392.2	–	–	–	–

* Preliminary estimates for those types of economic activities, where nanotechnology-related goods and services were produced.

(continued)

	Sales of innovative nanotechnology-related goods and services		Of which exports			
			total		to CIS countries	
	2010	2011	2010	2011	2010	2011
Medium low tech	48213.5	43334.7	23521.3	10768.2	89.1	27.3
Manufacture of coke, refined petroleum products	47921.9	42698.4	23512.4	10729.1	82.7	–
Manufacture of rubber and plastic products	–	100.5	–	–	–	–
Manufacture of other non-metallic mineral products	–	149.8	–	–	–	–
Manufacture of basic metals	0.2	54.4	–	5.2	–	5.2
Manufacture of fabricated metal products	291.4	331.6	8.9	33.9	6.4	22.1
Low tech	526.1	–	–	–	–	–
Manufacture of food products and beverages	525.8	1088.5	–	–	–	–
Manufacture of wearing apparel, dressing and dyeing of fur	0.3	858.9	–	–	–	–
Publishing and printing, reproduction of recorded media	–	1.4	–	–	–	–
Manufacture of furniture, manufacturing n.e.c.	–	228.2	–	–	–	–
Electricity, gas and water supply	–	–	–	–	–	–

2.21. INNOVATIVE NANOTECHNOLOGY-RELATED GOODS AND SERVICES BY SIZE*

(million rubles)

	Sales of innovative nanotechnology-related goods and services		Of which exports			
			total		to CIS countries	
	2010	2011	2010	2011	2010	2011
Mining and quarrying, manufacturing, electricity, gas and water supply						
Total	53402.6	63752.1	23867.2	12360.3	245.9	1184.2
Number of employees, head-count:						
below 50	132.4	269.9	8.9	2.9	6.4	–
50–99	319.5	125.0	0.2	–	0.2	–
100–199	–	1293.8	–	35.3	–	23.6
200–249	–	58.2	–	–	–	–
250–499	1562.3	2328.0	160.0	120.8	103.2	15.7
500–999	884.3	1571.6	–	65.7	–	65.4
1000–4999	49910.9	58054.7	23690.2	12134.9	133.8	1079.5
5000–9999	–	50.4	–	0.6	–	–
10 000 and over	593.3	0.5	8.0	–	2.3	–

* Preliminary estimates.

2.22. INNOVATIVE NANOTECHNOLOGY-RELATED GOODS AND SERVICES BY OWNERSHIP*

(million roubles)

	Sales of innovative nanotechnology-related goods and services		Of which exports			
			total		to CIS countries	
	2010	2011	2010	2011	2010	2011
Mining and quarrying, manufacturing, electricity, gas and water supply						
Total	53402.6	63752.1	23867.2	12360.3	245.9	1184.2
Russian ownership	52692.8	62381.2	23790.9	12239.5	226.4	1168.5
Public ownership	581.5	1228.0	0.1	1.4	0.1	1.4
Federal	581.5	649.5	0.1	1.4	0.1	1.4
Provincial	—	578.5	—	—	—	—
Municipal ownership	—	—	—	—	—	—
Private ownership	51303.1	60572.0	23790.6	12237.4	226.1	1167.1
Ownership of consumer cooperatives	—	—	—	—	—	—
Ownership of voluntary associations	—	—	—	—	—	—
Joint ownership	706.1	531.8	—	0.04	—	—
Foreign ownership	182.1	80.4	—	—	—	—
Joint ownership (with both Russian and foreign participation)	527.7	1290.4	76.3	120.8	19.5	15.7

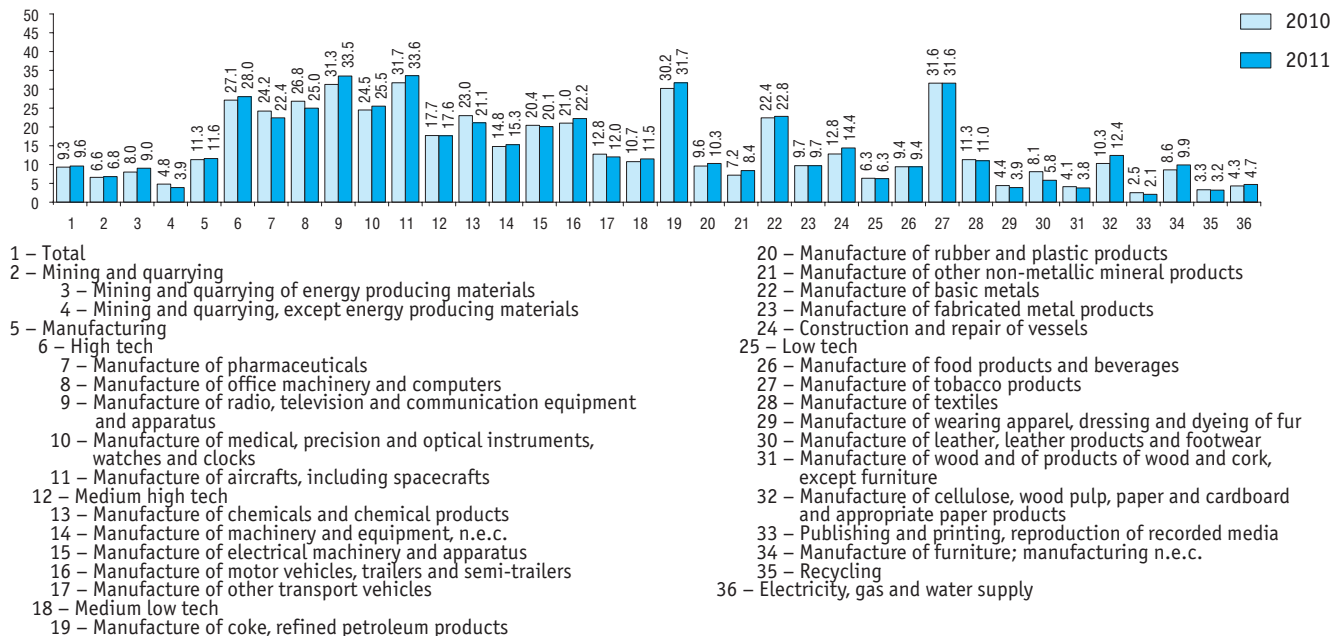
* Preliminary estimates.



3. Technological Innovation

3.1. ENTERPRISES ENGAGED IN TECHNOLOGICAL INNOVATION AS A PERCENTAGE OF ALL ENTERPRISES BY ECONOMIC ACTIVITY

Mining and quarrying, manufacturing, electricity, gas and water supply



(continued)



3.2. ENTERPRISES ENGAGED IN PRODUCT AND PROCESS INNOVATION AS A PERCENTAGE OF ALL ENTERPRISES ENGAGED IN TECHNOLOGICAL INNOVATION BY ECONOMIC ACTIVITY

	Enterprises engaged in product innovation		Enterprises engaged in process innovation	
	2010	2011	2010	2011
Mining and quarrying, manufacturing, electricity, gas and water supply				
Total	62.0	61.3	57.6	57.2
Mining and quarrying	22.6	34.3	81.7	75.5
Mining and quarrying of energy producing materials	18.8	31.2	85.9	79.2
Mining and quarrying, except energy producing materials	31.0	44.0	72.4	64.0
Manufacturing	70.6	68.8	52.0	52.3
High tech	81.9	81.1	50.7	46.7
Manufacture of pharmaceuticals	92.1	92.1	50.0	36.8
Manufacture of office machinery and computers	63.6	70.0	54.5	50.0
Manufacture of radio, television and communication equipment and apparatus	85.0	87.5	48.0	42.3
Manufacture of medical, precision and optical instruments, watches and clocks	83.2	81.8	46.9	46.6
Manufacture of aircrafts, including spacecrafts	66.7	59.2	68.9	63.3
Medium high tech	78.7	75.6	44.5	47.3
Manufacture of chemicals and chemical products	69.6	63.9	54.5	61.1
Manufacture of machinery and equipment, n.e.c.	78.2	73.9	42.7	43.5

(continued)

	Enterprises engaged in product innovation		Enterprises engaged in process innovation	
	2010	2011	2010	2011
Manufacture of electrical machinery and apparatus	82.4	84.6	43.5	45.4
Manufacture of motor vehicles, trailers and semi-trailers	88.6	80.5	36.7	41.5
Manufacture of other transport vehicles	73.3	78.1	46.7	50.0
Medium low tech	61.0	59.3	60.3	60.3
Manufacture of coke, refined petroleum products	65.6	69.7	65.6	60.6
Manufacture of rubber and plastic products	73.7	69.8	45.6	49.2
Manufacture of other non-metallic mineral products	49.0	53.0	68.6	65.0
Manufacture of basic metals	54.3	55.3	71.6	65.9
Manufacture of fabricated metal products	68.1	56.3	52.7	58.3
Construction and repair of vessels	72.7	75.0	40.9	54.2
Low tech	60.0	58.6	55.2	55.5
Manufacture of food products and beverages	68.8	63.4	48.6	50.8
Manufacture of tobacco products	100	83.3	50.0	50.0
Manufacture of textiles	54.1	55.9	56.8	52.9
Manufacture of wearing apparel, dressing and dyeing of fur	58.8	50.0	52.9	64.3
Manufacture of leather, leather products and footwear	63.6	75.0	54.5	50.0
Manufacture of wood and of products of wood and cork, except furniture	43.5	45.0	73.9	80.0

(continued)

	Enterprises engaged in product innovation		Enterprises engaged in process innovation	
	2010	2011	2010	2011
Manufacture of cellulose, wood pulp, paper and cardboard and appropriate paper products	26.1	32.1	73.9	71.4
Publishing and printing, reproduction of recorded media	38.7	46.9	76.0	67.2
Manufacture of furniture, manufacturing n.e.c.	65.8	69.0	42.1	47.6
Recycling	16.7	28.6	83.3	71.4
Electricity, gas and water supply	13.9	20.0	89.5	84.6
Communications, computer and related activities, research and development, other business activities				
Total	38.5	52.8	70.7	64.3
Communications	46.9	49.2	64.3	63.8
Computer and related activities	42.3	36.7	64.1	69.6
Research and development	...	72.4	...	54.6
Other business activities	32.6	31.5	76.1	76.8

3.3. PERCENTAGE DISTRIBUTION OF ENTERPRISES ENGAGED IN TECHNOLOGICAL INNOVATION BY ECONOMIC ACTIVITY

	Enterprises engaged in technological innovation					
	Total		Product		Process	
	2010	2011	2010	2011	2010	2011
Mining and quarrying, manufacturing, electricity, gas and water supply						
Total	100	100	100	100	100	100
Mining and quarrying	4.1	4.4	1.5	2.4	5.8	5.8
Mining and quarrying of energy producing materials	2.8	3.3	0.9	1.7	4.2	4.6
Mining and quarrying, except energy producing materials	1.3	1.1	0.6	0.8	1.6	1.2
Manufacturing	84.2	83.5	95.9	93.6	76.0	76.3
High tech	14.8	14.9	19.6	19.7	13.1	12.2
Manufacture of pharmaceuticals	1.7	1.6	2.5	2.4	1.5	1.0
Manufacture of office machinery and computers	0.5	0.4	0.5	0.5	0.5	0.4
Manufacture of radio, television and communication equipment and apparatus	4.4	4.4	6.0	6.3	3.7	3.3
Manufacture of medical, precision and optical instruments, watches and clocks	6.3	6.3	8.4	8.4	5.1	5.2
Manufacture of aircrafts, including spacecrafts	2.0	2.1	2.1	2.0	2.4	2.3
Medium high tech	25.4	24.9	32.2	30.6	19.6	20.5
Manufacture of chemicals and chemical products	4.9	4.6	5.5	4.8	4.7	4.9
Manufacture of machinery and equipment, n.e.c.	9.9	9.8	12.5	11.8	7.3	7.5

(continued)

	Enterprises engaged in technological innovation					
	Total		Product		Process	
	2010	2011	2010	2011	2010	2011
Manufacture of electrical machinery and apparatus	5.8	5.6	7.7	7.7	4.4	4.4
Manufacture of motor vehicles, trailers and semi-trailers	3.5	3.5	5.0	4.6	2.2	2.5
Manufacture of other transport vehicles	1.3	1.4	1.6	1.7	1.1	1.2
Medium low tech	16.9	17.9	16.7	17.3	17.7	18.8
Manufacture of coke, refined petroleum products	1.4	1.4	1.5	1.6	1.6	1.5
Manufacture of rubber and plastic products	2.5	2.7	3.0	3.1	2.0	2.3
Manufacture of other non-metallic mineral products	4.5	5.0	3.5	4.3	5.3	5.7
Manufacture of basic metals	3.6	3.6	3.1	3.3	4.4	4.2
Manufacture of fabricated metal products	4.0	4.1	4.4	3.8	3.7	4.2
Construction and repair of vessels	1.0	1.0	1.1	1.3	0.7	1.0
Low tech	24.0	22.7	23.2	21.7	23.1	22.0
Manufacture of food products and beverages	13.7	13.2	15.2	13.6	11.5	11.7
Manufacture of tobacco products	0.3	0.3	0.4	0.3	0.2	0.2
Manufacture of textiles	1.6	1.5	1.4	1.3	1.6	1.3
Manufacture of wearing apparel, dressing and dyeing of fur	0.7	0.6	0.7	0.5	0.7	0.7
Manufacture of leather, leather products and footwear	0.5	0.3	0.5	0.4	0.5	0.3
Manufacture of wood and of products of wood and cork, except furniture	1.0	0.9	0.7	0.6	1.3	1.2

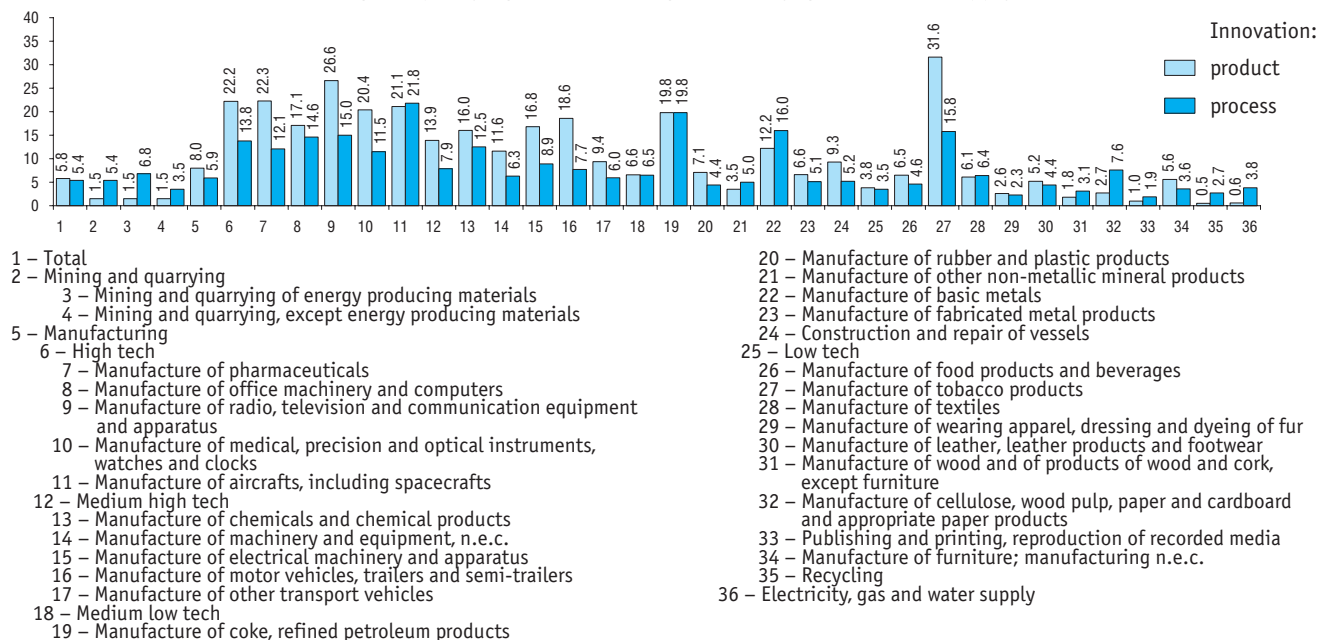
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	Enterprises engaged in technological innovation					
	Total		Product		Process	
	2010	2011	2010	2011	2010	2011
Manufacture of cellulose, wood pulp, paper and cardboard and appropriate paper products	1.0	1.2	0.4	0.6	1.3	1.5
Publishing and printing, reproduction of recorded media	3.3	2.7	2.1	2.1	4.4	3.2
Manufacture of furniture, manufacturing n.e.c.	1.7	1.8	1.8	2.0	1.2	1.5
Recycling	0.3	0.3	0.1	0.1	0.4	0.4
Manufacturing of other materials and substances, n.e.c.	3.1	3.1	4.3	4.2	2.6	2.7
Electricity, gas and water supply	11.7	12.2	2.6	4.0	18.2	18.0
Communications, computer and related activities, research and development, other business activities						
Total	100	100	100	100	100	100
Communications	32.4	16.5	39.5	15.4	29.4	16.4
Computer and related activities	12.9	7.1	14.2	4.9	11.7	7.6
Research and development	...	44.1	...	60.4	...	37.4
Other business activities	54.7	32.4	46.4	19.3	58.9	38.6

3.4. ENTERPRISES ENGAGED IN PRODUCT AND PROCESS INNOVATION AS A PERCENTAGE OF ALL ENTERPRISES BY ECONOMIC ACTIVITY

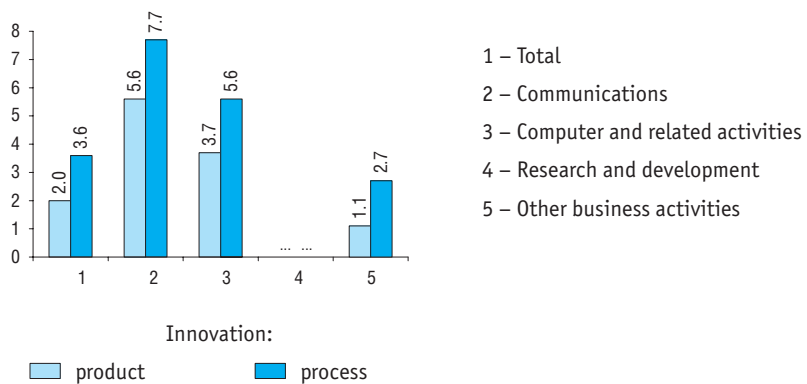
2010

Mining and quarrying, manufacturing, electricity, gas and water supply



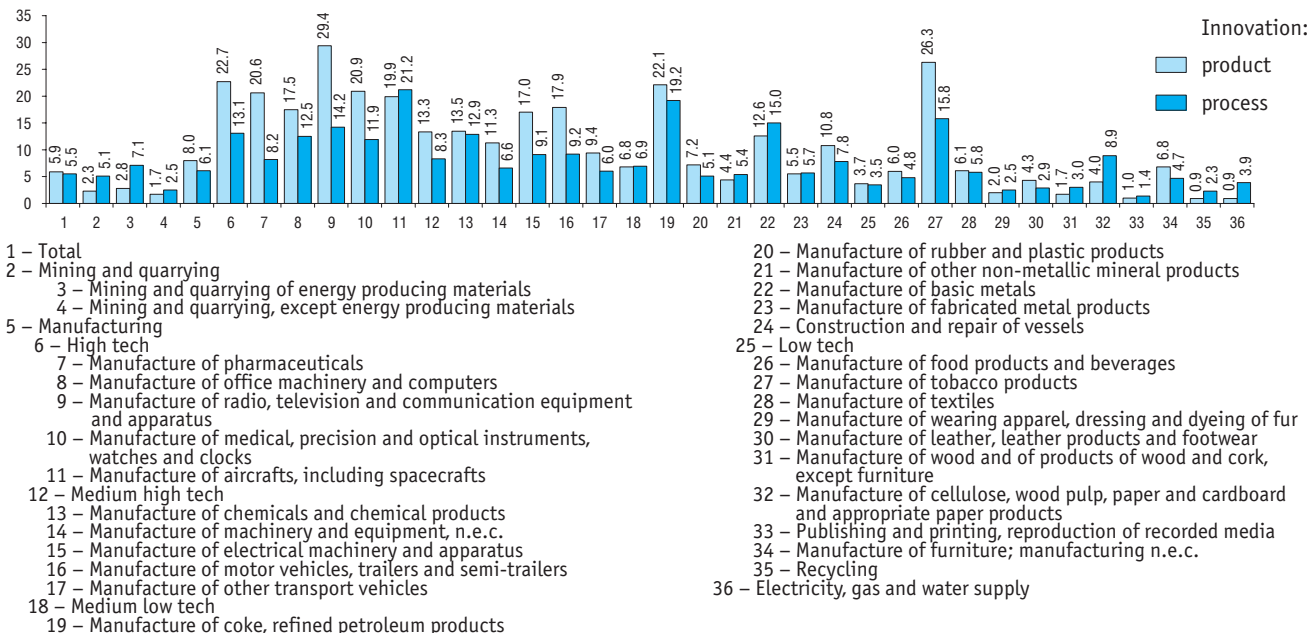
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Communications, computer and related activities, research and development, other business activities

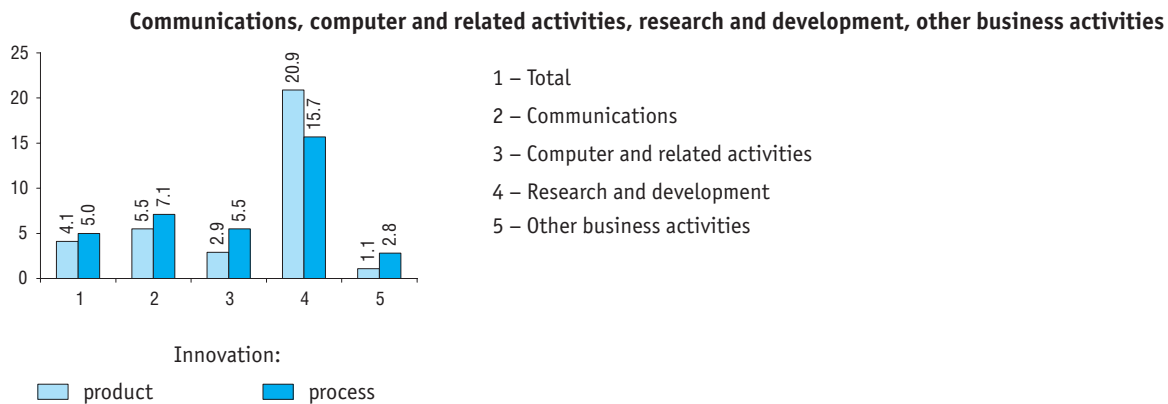


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2011
Mining and quarrying, manufacturing, electricity, gas and water supply

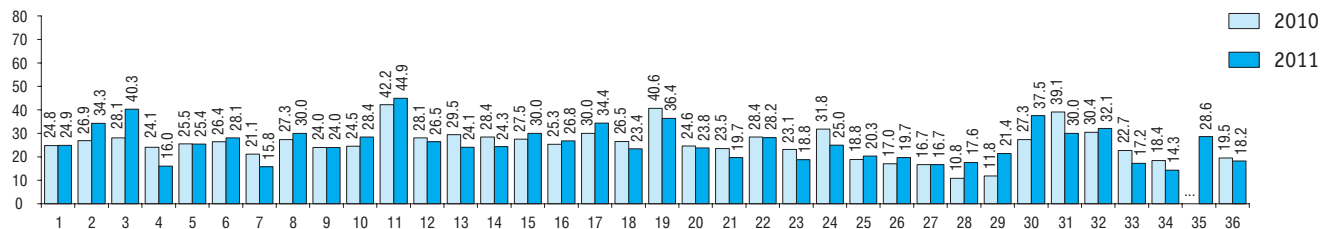


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3.5. ENTERPRISES ENGAGED IN TECHNOLOGICAL AND ORGANISATIONAL INNOVATION AS A PERCENTAGE OF ALL ENTERPRISES ENGAGED IN TECHNOLOGICAL INNOVATION BY ECONOMIC ACTIVITY

Mining and quarrying, manufacturing, electricity, gas and water supply

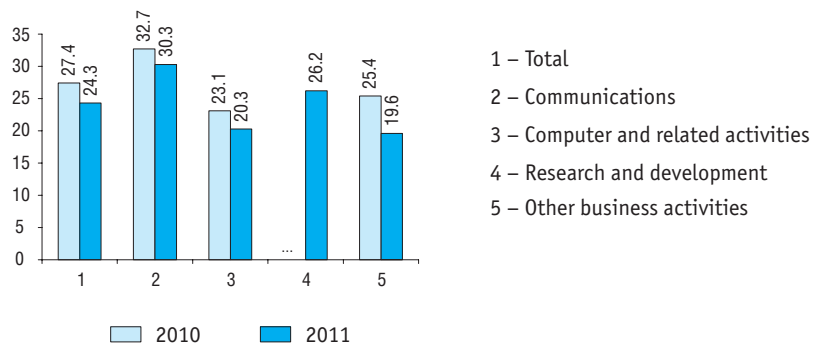


- 1 – Total
- 2 – Mining and quarrying
 - 3 – Mining and quarrying of energy producing materials
 - 4 – Mining and quarrying, except energy producing materials
- 5 – Manufacturing
 - 6 – High tech
 - 7 – Manufacture of pharmaceuticals
 - 8 – Manufacture of office machinery and computers
 - 9 – Manufacture of radio, television and communication equipment and apparatus
 - 10 – Manufacture of medical, precision and optical instruments, watches and clocks
 - 11 – Manufacture of aircrafts, including spacecrafts
 - 12 – Medium high tech
 - 13 – Manufacture of chemicals and chemical products
 - 14 – Manufacture of machinery and equipment, n.e.c.
 - 15 – Manufacture of electrical machinery and apparatus
 - 16 – Manufacture of motor vehicles, trailers and semi-trailers
 - 17 – Manufacture of other transport vehicles
 - 18 – Medium low tech
 - 19 – Manufacture of coke, refined petroleum products

- 20 – Manufacture of rubber and plastic products
- 21 – Manufacture of other non-metallic mineral products
- 22 – Manufacture of basic metals
- 23 – Manufacture of fabricated metal products
- 24 – Construction and repair of vessels
- 25 – Low tech
 - 26 – Manufacture of food products and beverages
 - 27 – Manufacture of tobacco products
 - 28 – Manufacture of textiles
 - 29 – Manufacture of wearing apparel, dressing and dyeing of fur
 - 30 – Manufacture of leather, leather products and footwear
 - 31 – Manufacture of wood and of products of wood and cork, except furniture
 - 32 – Manufacture of cellulose, wood pulp, paper and cardboard and appropriate paper products
 - 33 – Publishing and printing, reproduction of recorded media
 - 34 – Manufacture of furniture; manufacturing n.e.c.
 - 35 – Recycling
- 36 – Electricity, gas and water supply

(continued)

Communications, computer and related activities, research and development, other business activities



3.6. PERCENTAGE DISTRIBUTION OF ENTERPRISES ENGAGED IN TECHNOLOGICAL AND ORGANISATIONAL INNOVATION BY ECONOMIC ACTIVITY

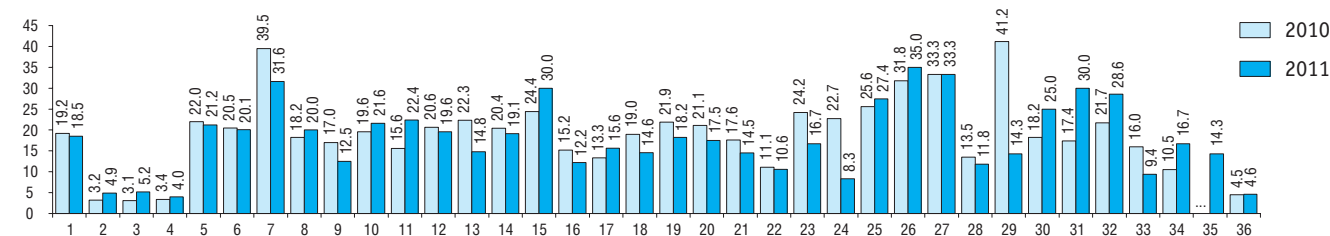
	2010	2011
Mining and quarrying, manufacturing, electricity, gas and water supply		
Total	100	100
Mining and quarrying	4.4	6.0
Mining and quarrying of energy producing materials	3.2	5.3
Mining and quarrying, except energy producing materials	1.2	0.7
Manufacturing	86.4	85.1
High tech	15.8	16.8
Manufacture of pharmaceuticals	1.4	1.0
Manufacture of office machinery and computers	0.5	0.5
Manufacture of radio, television and communication equipment and apparatus	4.2	4.3
Manufacture of medical, precision and optical instruments, watches and clocks	6.2	7.2
Manufacture of aircrafts, including spacecrafts	3.4	3.8
Medium high tech	28.7	26.4
Manufacture of chemicals and chemical products	5.8	4.5
Manufacture of machinery and equipment, n.e.c.	11.3	9.6
Manufacture of electrical machinery and apparatus	6.4	6.7
Manufacture of motor vehicles, trailers and semi-trailers	3.5	3.8
Manufacture of other transport vehicles	1.6	1.9
Medium low tech	18.1	16.8
Manufacture of coke, refined petroleum products	2.3	2.1
Manufacture of rubber and plastic products	2.5	2.6
Manufacture of other non-metallic mineral products	4.2	3.9

(continued)

	2010	2011
Manufacture of basic metals	4.1	4.1
Manufacture of fabricated metal products	3.7	3.1
Construction and repair of vessels	1.2	1.0
Low tech	18.2	18.5
Manufacture of food products and beverages	9.4	10.4
Manufacture of tobacco products	0.2	0.2
Manufacture of textiles	0.7	1.0
Manufacture of wearing apparel, dressing and dyeing of fur	0.4	0.5
Manufacture of leather, leather products and footwear	0.5	0.5
Manufacture of wood and of products of wood and cork, except furniture	1.6	1.0
Manufacture of cellulose, wood pulp, paper and cardboard and appropriate paper products	1.2	1.5
Publishing and printing, reproduction of recorded media	3.0	1.9
Manufacture of furniture, manufacturing n.e.c.	1.2	1.0
Recycling	–	0.3
Manufacturing of other materials and substances, n.e.c.	5.7	6.7
Electricity, gas and water supply	9.2	8.9
Communications, computer and related activities, research and development, other business activities		
Total	100	100
Communications	38.6	20.6
Computer and related activities	10.8	5.9
Research and development	...	47.4
Other business activities	50.6	26.1

3.7. ENTERPRISES ENGAGED IN TECHNOLOGICAL AND MARKETING INNOVATION AS A PERCENTAGE OF ALL ENTERPRISES ENGAGED IN TECHNOLOGICAL INNOVATION BY ECONOMIC ACTIVITY

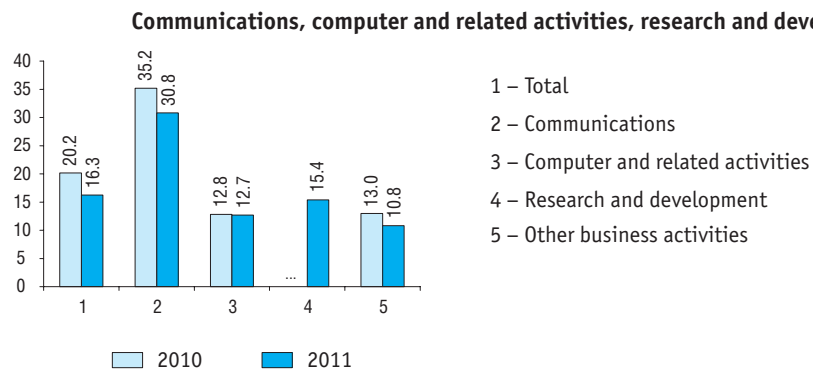
Mining and quarrying, manufacturing, electricity, gas and water supply



- 1 – Total
- 2 – Mining and quarrying
 - 3 – Mining and quarrying of energy producing materials
 - 4 – Mining and quarrying, except energy producing materials
- 5 – Manufacturing
 - 6 – High tech
 - 7 – Manufacture of pharmaceuticals
 - 8 – Manufacture of office machinery and computers
 - 9 – Manufacture of radio, television and communication equipment and apparatus
 - 10 – Manufacture of medical, precision and optical instruments, watches and clocks
 - 11 – Manufacture of aircrafts, including spacecrafts
 - 12 – Medium high tech
 - 13 – Manufacture of chemicals and chemical products
 - 14 – Manufacture of machinery and equipment, n.e.c.
 - 15 – Manufacture of electrical machinery and apparatus
 - 16 – Manufacture of motor vehicles, trailers and semi-trailers
 - 17 – Manufacture of other transport vehicles
 - 18 – Medium low tech
 - 19 – Manufacture of coke, refined petroleum products

- 20 – Manufacture of rubber and plastic products
- 21 – Manufacture of other non-metallic mineral products
- 22 – Manufacture of basic metals
- 23 – Manufacture of fabricated metal products
- 24 – Construction and repair of vessels
- 25 – Low tech
 - 26 – Manufacture of food products and beverages
 - 27 – Manufacture of tobacco products
 - 28 – Manufacture of textiles
 - 29 – Manufacture of wearing apparel, dressing and dyeing of fur
 - 30 – Manufacture of leather, leather products and footwear
 - 31 – Manufacture of wood and of products of wood and cork, except furniture
 - 32 – Manufacture of cellulose, wood pulp, paper and cardboard and appropriate paper products
 - 33 – Publishing and printing, reproduction of recorded media
 - 34 – Manufacture of furniture; manufacturing n.e.c.
 - 35 – Recycling
- 36 – Electricity, gas and water supply

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3.8. PERCENTAGE DISTRIBUTION OF ENTERPRISES ENGAGED IN TECHNOLOGICAL AND MARKETING INNOVATION BY ECONOMIC ACTIVITY

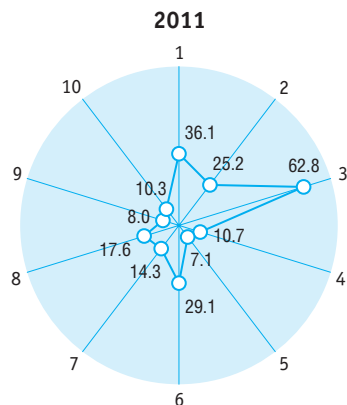
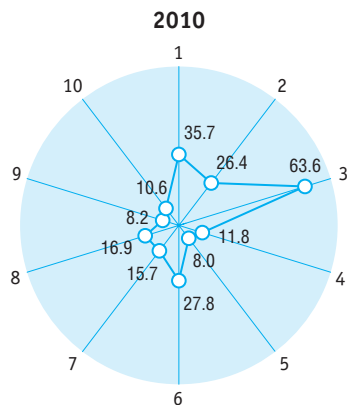
	2010	2011
Mining and quarrying, manufacturing, electricity, gas and water supply		
Total	100	100
Mining and quarrying	0.7	1.2
Mining and quarrying of energy producing materials	0.5	0.9
Mining and quarrying, except energy producing materials	0.2	0.2
Manufacturing	96.6	95.8
High tech	15.8	16.2
Manufacture of pharmaceuticals	3.4	2.8
Manufacture of office machinery and computers	0.5	0.5
Manufacture of radio, television and communication equipment and apparatus	3.9	3.0
Manufacture of medical, precision and optical instruments, watches and clocks	6.4	7.4
Manufacture of aircrafts, including spacecrafts	1.6	2.5
Medium high tech	27.3	26.4
Manufacture of chemicals and chemical products	5.7	3.7
Manufacture of machinery and equipment, n.e.c.	10.6	10.2
Manufacture of electrical machinery and apparatus	7.3	9.0
Manufacture of motor vehicles, trailers and semi-trailers	2.8	2.3
Manufacture of other transport vehicles	0.9	1.2
Medium low tech	16.7	14.1
Manufacture of coke, refined petroleum products	1.6	1.4
Manufacture of rubber and plastic products	2.8	2.5
Manufacture of other non-metallic mineral products	4.1	3.9

(continued)

	2010	2011
Manufacture of basic metals	2.1	2.1
Manufacture of fabricated metal products	5.0	3.7
Construction and repair of vessels	1.1	0.5
Low tech	32.1	33.8
Manufacture of food products and beverages	22.7	25.0
Manufacture of tobacco products	0.5	0.5
Manufacture of textiles	1.1	0.9
Manufacture of wearing apparel, dressing and dyeing of fur	1.6	0.5
Manufacture of leather, leather products and footwear	0.5	0.5
Manufacture of wood and of products of wood and cork, except furniture	0.9	1.4
Manufacture of cellulose, wood pulp, paper and cardboard and appropriate paper products	1.1	1.9
Publishing and printing, reproduction of recorded media	2.8	1.4
Manufacture of furniture, manufacturing n.e.c.	0.9	1.6
Recycling	–	0.2
Manufacturing of other materials and substances, n.e.c.	4.6	5.3
Electricity, gas and water supply	2.8	3.0
Communications, computer and related activities, research and development, other business activities		
Total	100	100
Communications	56.6	31.3
Computer and related activities	8.2	5.5
Research and development	...	41.8
Other business activities	35.2	21.4

3.9. PERCENTAGE DISTRIBUTION OF ENTERPRISES ENGAGED IN TECHNOLOGICAL INNOVATION BY INNOVATIVE ACTIVITY

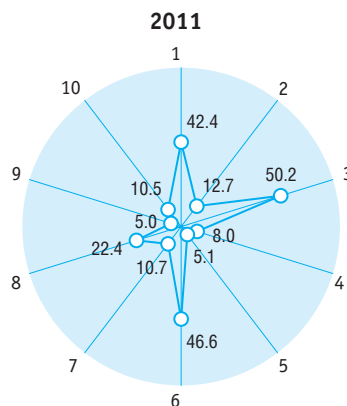
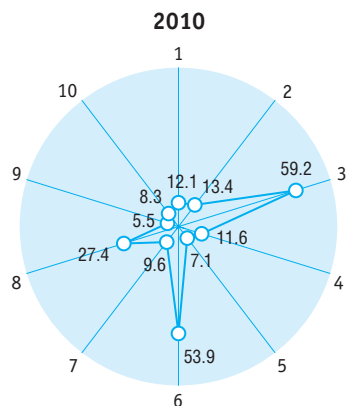
Mining and quarrying, manufacturing, electricity, gas and water supply



- 1 – R&D
- 2 – Industrial design
- 3 – Acquisition of machinery and equipment
- 4 – Acquisition of technology
- 5 – Of which acquisition of patent rights and patent licenses
- 6 – Acquisition of software
- 7 – Other types of pre-production
- 8 – Personnel training
- 9 – Market research
- 10 – Other

(continued)

Communications, computer and related activities, research and development, other business activities



- 1 – R&D
- 2 – Industrial design
- 3 – Acquisition of machinery and equipment
- 4 – Acquisition of technology
- 5 – Of which acquisition of patent rights and patent licenses
- 6 – Acquisition of software
- 7 – Other types of pre-production
- 8 – Personnel training
- 9 – Market research
- 10 – Other

3.10. ENTERPRISES ENGAGED IN SELECTED TYPES OF INNOVATIVE ACTIVITY AS A PERCENTAGE OF ALL ENTERPRISES ENGAGED IN TECHNOLOGICAL INNOVATION BY ECONOMIC ACTIVITY

	Enterprises engaged in									
	R&D	Industrial design	Acquisition of machinery and equipment	Acquisition of technology	Of which acquisition of patent rights and licenses	Acquisition of software	Other types of pre-production	Personnel training	Market research	Other innovative activities
2010										
Mining and quarrying, manufacturing, electricity, gas and water supply										
Total	35.7	26.4	63.6	11.8	8.0	27.8	15.7	16.9	8.2	10.6
Mining and quarrying	38.7	18.3	54.8	9.7	3.2	22.6	11.8	10.8	2.2	12.9
Mining and quarrying of energy producing materials	39.1	15.6	45.3	14.1	4.7	20.3	10.9	10.9	1.6	12.5
Mining and quarrying, except energy producing materials	37.9	24.1	75.9	—	—	27.6	13.8	10.3	3.4	13.8
Manufacturing	38.9	28.3	64.0	12.7	9.2	27.2	17.0	18.3	9.6	9.9
High tech	56.4	30.6	64.4	12.8	9.8	39.5	19.3	27.6	12.2	8.9
Manufacture of pharmaceuticals	78.9	15.8	50.0	10.5	10.5	15.8	18.4	21.1	21.1	13.2
Manufacture of office machinery and computers	54.5	45.5	54.5	18.2	9.1	36.4	9.1	36.4	9.1	9.1
Manufacture of radio, television and communication equipment and apparatus	58.0	30.0	72.0	8.0	7.0	38.0	21.0	24.0	11.0	9.0
Manufacture of medical, precision and optical instruments, watches and clocks	55.2	30.8	58.7	15.4	11.9	42.0	18.2	24.5	11.9	8.4
Manufacture of aircrafts, including space-crafts	37.8	40.0	80.0	15.6	8.9	55.6	22.2	48.9	8.9	6.7
Medium high tech	45.8	34.1	60.0	14.2	10.2	25.5	18.4	17.7	11.1	12.1
Manufacture of chemicals and chemical products	52.7	44.6	63.4	15.2	7.1	15.2	24.1	16.1	10.7	19.6
Manufacture of machinery and equipment, n.e.c.	41.8	29.3	53.8	14.7	11.1	28.9	16.4	19.1	12.0	7.1

(continued)

	Enterprises engaged in									
	R&D	Industrial design	Acquisition of machinery and equipment	Acquisition of technology	Of which acquisition of patent rights and licenses	Acquisition of software	Other types of pre-production	Personnel training	Market research	Other innovative activities
Manufacture of electrical machinery and apparatus	47.3	32.1	68.7	13.0	12.2	26.7	16.0	20.6	8.4	13.0
Manufacture of motor vehicles, trailers and semi-trailers	44.3	38.0	60.8	11.4	7.6	26.6	22.8	11.4	17.7	11.4
Manufacture of other transport vehicles	46.7	30.0	53.3	20.0	13.3	30.0	10.0	16.7	–	20.0
Medium low tech	31.9	25.2	70.6	13.5	10.1	24.2	16.9	17.4	4.9	11.4
Manufacture of coke, refined petroleum products	50.0	46.9	53.1	15.6	15.6	40.6	18.8	12.5	–	25.0
Manufacture of rubber and plastic products	38.6	26.3	77.2	12.3	10.5	17.5	21.1	15.8	5.3	8.8
Manufacture of other non-metallic mineral products	20.6	16.7	75.5	11.8	8.8	11.8	19.6	13.7	2.9	12.7
Manufacture of basic metals	46.9	29.6	69.1	19.8	13.6	28.4	13.6	18.5	3.7	21.0
Manufacture of fabricated metal products	24.2	24.2	68.1	9.9	6.6	25.3	14.3	20.9	9.9	1.1
Construction and repair of vessels	18.2	18.2	72.7	13.6	9.1	54.5	13.6	27.3	4.5	–
Low tech	22.3	21.2	62.2	10.2	6.4	21.8	12.8	11.3	8.8	6.0
Manufacture of food products and beverages	25.1	24.4	62.1	11.6	7.1	17.0	11.6	11.3	11.3	8.0
Manufacture of tobacco products	33.3	–	50.0	–	–	16.7	50.0	–	–	–
Manufacture of textiles	29.7	13.5	59.5	8.1	2.7	21.6	16.2	18.9	13.5	–
Manufacture of wearing apparel, dressing and dyeing of fur	23.5	29.4	70.6	–	–	23.5	11.8	11.8	17.6	5.9
Manufacture of leather, leather products and footwear	18.2	9.1	81.8	18.2	18.2	18.2	27.3	18.2	18.2	–

(continued)

	Enterprises engaged in									
	R&D	Industrial design	Acquisition of machinery and equipment	Acquisition of technology	Of which acquisition of patent rights and licenses	Acquisition of software	Other types of pre-production	Personnel training	Market research	Other innovative activities
Manufacture of wood and of products of wood and cork, except furniture	13.0	13.0	65.2	8.7	4.3	30.4	17.4	17.4	4.3	17.4
Manufacture of cellulose, wood pulp, paper and cardboard and appropriate paper products	13.0	8.7	78.3	4.3	4.3	26.1	13.0	13.0	—	—
Publishing and printing, reproduction of recorded media	12.0	13.3	60.0	8.0	2.7	41.3	9.3	4.0	2.7	4.0
Manufacture of furniture, manufacturing n.e.c.	21.1	34.2	47.4	15.8	15.8	18.4	13.2	15.8	—	—
Recycling	33.3	16.7	83.3	—	—	—	16.7	—	—	—
Electricity, gas and water supply	12.0	15.4	63.5	5.6	1.1	33.8	8.3	9.4	—	15.0
Communications, computer and related activities, research and development, other business activities										
Total	12.1	13.4	59.2	11.6	7.1	53.9	9.6	27.4	5.5	8.3
Communications	6.6	19.4	78.1	7.7	4.6	33.2	14.3	27.0	9.7	15.3
Computer and related activities	23.1	20.5	52.6	10.3	2.6	55.1	7.7	33.3	3.8	2.6
Research and development	...	...	...	...	...	...	...	...	...	...
Other business activities	12.7	8.2	49.5	14.2	9.7	65.9	7.3	26.3	3.3	5.4

(continued)

	Enterprises engaged in									
	R&D	Industrial design	Acquisition of machinery and equipment	Acquisition of technology	Of which acquisition of patent rights and licenses	Acquisition of software	Other types of pre-production	Personnel training	Market research	Other innovative activities
2011										
Mining and quarrying, manufacturing, electricity, gas and water supply										
Total	36.1	25.2	62.8	10.7	7.1	29.1	14.3	17.6	8.0	10.3
Mining and quarrying	44.1	17.6	52.0	9.8	5.9	26.5	8.8	6.9	2.0	9.8
Mining and quarrying of energy producing materials	48.1	14.3	46.8	7.8	3.9	24.7	7.8	9.1	1.3	7.8
Mining and quarrying, except energy producing materials	32.0	28.0	68.0	16.0	12.0	32.0	12.0	—	4.0	16.0
Manufacturing	39.1	27.5	63.2	11.3	8.1	28.5	15.6	19.5	9.4	9.5
High tech	57.6	30.9	65.0	13.8	11.2	37.5	16.6	28.9	11.7	7.4
Manufacture of pharmaceuticals	76.3	18.4	47.4	26.3	23.7	23.7	13.2	15.8	18.4	5.3
Manufacture of office machinery and computers	60.0	40.0	60.0	10.0	10.0	50.0	20.0	20.0	10.0	10.0
Manufacture of radio, television and communication equipment and apparatus	62.5	33.7	68.3	3.8	2.9	33.7	20.2	27.9	9.6	7.7
Manufacture of medical, precision and optical instruments, watches and clocks	54.7	27.7	59.5	18.2	15.5	38.5	15.5	25.7	12.2	8.1
Manufacture of aircrafts, including spacecrafts	40.8	42.9	89.8	12.2	6.1	51.0	14.3	53.1	10.2	6.1
Medium high tech	45.4	32.0	60.3	12.4	8.9	28.2	17.7	19.4	10.0	12.0
Manufacture of chemicals and chemical products	49.1	43.5	63.0	9.3	6.5	20.4	20.4	14.8	10.2	21.3
Manufacture of machinery and equipment, n.e.c.	40.0	24.8	53.0	12.2	7.8	29.1	15.7	19.6	11.3	7.0

(continued)

	Enterprises engaged in									
	R&D	Industrial design	Acquisition of machinery and equipment	Acquisition of technology	Of which acquisition of patent rights and licenses	Acquisition of software	Other types of pre-production	Personnel training	Market research	Other innovative activities
Manufacture of electrical machinery and apparatus	56.9	32.3	71.5	16.9	13.8	31.5	19.2	24.6	10.8	9.2
Manufacture of motor vehicles, trailers and semi-trailers	37.8	35.4	59.8	8.5	7.3	26.8	19.5	17.1	8.5	18.3
Manufacture of other transport vehicles	43.8	34.4	59.4	15.6	9.4	37.5	12.5	18.8	–	12.5
Medium low tech	33.0	25.1	67.2	12.7	7.7	24.2	15.8	16.5	5.0	11.7
Manufacture of coke, refined petroleum products	54.5	51.5	54.5	30.3	18.2	30.3	21.2	12.1	–	24.2
Manufacture of rubber and plastic products	33.3	23.8	63.5	14.3	11.1	25.4	20.6	14.3	4.8	9.5
Manufacture of other non-metallic mineral products	18.8	23.1	75.2	7.7	2.6	13.7	16.2	17.1	6.8	10.3
Manufacture of basic metals	49.4	23.5	64.7	16.5	11.8	29.4	10.6	15.3	2.4	21.2
Manufacture of fabricated metal products	26.0	18.8	65.6	8.3	4.2	21.9	15.6	16.7	7.3	4.2
Construction and repair of vessels	41.7	33.3	70.8	12.5	8.3	54.2	12.5	29.2	4.2	4.2
Low tech	21.4	19.7	62.4	6.8	4.9	24.2	11.1	13.5	9.6	6.2
Manufacture of food products and beverages	25.6	22.0	63.8	6.8	4.9	16.8	11.0	11.7	10.7	7.4
Manufacture of tobacco products	16.7	–	50.0	–	–	16.7	50.0	–	–	–
Manufacture of textiles	20.6	14.7	58.8	8.8	5.9	26.5	11.8	17.6	14.7	8.8
Manufacture of wearing apparel, dressing and dyeing of fur	28.6	28.6	64.3	–	–	35.7	7.1	14.3	28.6	–
Manufacture of leather, leather products and footwear	12.5	25.0	62.5	25.0	25.0	25.0	–	37.5	25.0	12.5

(continued)

	Enterprises engaged in									
	R&D	Industrial design	Acquisition of machinery and equipment	Acquisition of technology	Of which acquisition of patent rights and licenses	Acquisition of software	Other types of pre-production	Personnel training	Market research	Other innovative activities
Manufacture of wood and of products of wood and cork, except furniture	10.0	25.0	75.0	10.0	10.0	35.0	15.0	15.0	5.0	5.0
Manufacture of cellulose, wood pulp, paper and cardboard and appropriate paper products	14.3	14.3	71.4	–	–	25.0	17.9	21.4	7.1	3.6
Publishing and printing, reproduction of recorded media	9.4	10.9	43.8	4.7	1.6	56.3	7.8	12.5	1.6	3.1
Manufacture of furniture, manufacturing n.e.c.	21.4	21.4	66.7	11.9	9.5	21.4	9.5	14.3	7.1	4.8
Recycling	14.3	14.3	100	–	–	14.3	–	28.6	–	–
Electricity, gas and water supply	12.3	12.3	63.5	7.4	1.1	34.0	7.4	7.7	0.4	15.8
Communications, computer and related activities, research and development, other business activities										
Total	42.4	12.7	50.2	8.0	5.1	46.6	10.7	22.4	5.0	10.5
Communications	7.0	22.7	78.9	8.1	3.8	33.0	13.5	19.5	8.1	23.2
Computer and related activities	24.1	16.5	48.1	13.9	10.1	45.6	13.9	21.5	3.8	5.1
Research and development	80.7	12.8	44.4	6.9	4.1	33.9	13.4	22.9	6.1	8.9
Other business activities	12.4	6.6	43.9	8.3	6.1	71.0	5.0	23.5	2.2	7.5

3.11. PERCENTAGE DISTRIBUTION OF ENTERPRISES ENGAGED IN TECHNOLOGICAL INNOVATION BY INNOVATIVE AND ECONOMIC ACTIVITY

	Enterprises engaged in									
	R&D	Industrial design	Acquisition of machinery and equipment	Acquisition of technology	Of which acquisition of patent rights and licenses	Acquisition of software	Other types of pre-production	Personnel training	Market research	Other innovative activities
2010										
Mining and quarrying, manufacturing, electricity, gas and water supply										
Total	100	100	100	100	100	100	100	100	100	100
Mining and quarrying	4.4	2.8	3.5	3.4	1.6	3.3	3.1	2.6	1.1	5.0
Mining and quarrying of energy producing materials	3.1	1.7	2.0	3.4	1.6	2.1	2.0	1.8	0.5	3.3
Mining and quarrying, except energy producing materials	1.4	1.2	1.5	—	—	1.3	1.1	0.8	0.5	1.7
Manufacturing	91.6	90.3	84.8	91.0	96.7	82.4	90.8	90.9	98.9	78.4
High tech	23.4	17.2	15.0	16.0	18.1	21.0	18.2	24.2	22.0	12.4
Manufacture of pharmaceuticals	3.7	1.0	1.3	1.5	2.2	0.9	2.0	2.1	4.3	2.1
Manufacture of office machinery and computers	0.7	0.8	0.4	0.7	0.5	0.6	0.3	1.0	0.5	0.4
Manufacture of radio, television and communication equipment and apparatus	7.1	5.0	5.0	3.0	3.8	6.0	5.9	6.2	5.9	3.7
Manufacture of medical, precision and optical instruments, watches and clocks	9.7	7.3	5.8	8.2	9.3	9.5	7.3	9.1	9.1	5.0
Manufacture of aircrafts, including spacecrafts	2.1	3.0	2.5	2.6	2.2	4.0	2.8	5.7	2.2	1.2
Medium high tech	32.5	32.8	23.9	30.6	32.4	23.3	29.6	26.5	34.4	29.0
Manufacture of chemicals and chemical products	7.3	8.3	4.9	6.3	4.4	2.7	7.5	4.7	6.5	9.1
Manufacture of machinery and equipment, n.e.c.	11.6	11.0	8.4	12.3	13.7	10.3	10.3	11.2	14.5	6.6

(continued)

	Enterprises engaged in									
	R&D	Industrial design	Acquisition of machinery and equipment	Acquisition of technology	Of which acquisition of patent rights and licenses	Acquisition of software	Other types of pre-production	Personnel training	Market research	Other innovative activities
Manufacture of electrical machinery and apparatus	7.6	7.0	6.2	6.3	8.8	5.5	5.9	7.0	5.9	7.1
Manufacture of motor vehicles, trailers and semi-trailers	4.3	5.0	3.3	3.4	3.3	3.3	5.0	2.3	7.5	3.7
Manufacture of other transport vehicles	1.7	1.5	1.1	2.2	2.2	1.4	0.8	1.3	–	2.5
Medium low tech	15.1	16.2	18.8	19.4	21.4	14.7	18.2	17.4	10.2	18.3
Manufacture of coke, refined petroleum products	2.0	2.5	1.2	1.9	2.7	2.1	1.7	1.0	–	3.3
Manufacture of rubber and plastic products	2.7	2.5	3.0	2.6	3.3	1.6	3.4	2.3	1.6	2.1
Manufacture of other non-metallic mineral products	2.6	2.8	5.3	4.5	4.9	1.9	5.6	3.6	1.6	5.4
Manufacture of basic metals	4.7	4.0	3.9	6.0	6.0	3.6	3.1	3.9	1.6	7.1
Manufacture of fabricated metal products	2.7	3.7	4.3	3.4	3.3	3.6	3.6	4.9	4.8	0.4
Construction and repair of vessels	0.5	0.7	1.1	1.1	1.1	1.9	0.8	1.6	0.5	–
Low tech	15.0	19.3	23.5	20.9	19.2	18.8	19.6	16.1	25.8	13.7
Manufacture of food products and beverages	9.6	12.7	13.3	13.4	12.1	8.4	10.1	9.1	18.8	10.4
Manufacture of tobacco products	0.2	–	0.2	–	–	0.2	0.8	–	–	–
Manufacture of textiles	1.4	0.8	1.5	1.1	0.5	1.3	1.7	1.8	2.7	–
Manufacture of wearing apparel, dressing and dyeing of fur	0.5	0.8	0.8	–	–	0.6	0.6	0.5	1.6	0.4
Manufacture of leather, leather products and footwear	0.2	0.2	0.6	0.7	1.1	0.3	0.8	0.5	1.1	–

(continued)

	Enterprises engaged in									
	R&D	Industrial design	Acquisition of machinery and equipment	Acquisition of technology	Of which acquisition of patent rights and licenses	Acquisition of software	Other types of pre-production	Personnel training	Market research	Other innovative activities
Manufacture of wood and of products of wood and cork, except furniture	0.4	0.5	1.0	0.7	0.5	1.1	1.1	1.0	0.5	1.7
Manufacture of cellulose, wood pulp, paper and cardboard and appropriate paper products	0.4	0.3	1.2	0.4	0.5	0.9	0.8	0.8	–	–
Publishing and printing, reproduction of recorded media	1.1	1.7	3.1	2.2	1.1	4.9	2.0	0.8	1.1	1.2
Manufacture of furniture, manufacturing n.e.c.	1.0	2.2	1.2	2.2	3.3	1.1	1.4	1.6	–	–
Recycling	0.2	0.2	0.3	–	–	–	0.3	–	–	–
Manufacturing of other materials and substances, n.e.c.	5.7	4.8	3.6	4.1	5.5	4.6	5.3	6.8	6.5	5.0
Electricity, gas and water supply	3.9	6.8	11.7	5.6	1.6	14.2	6.1	6.5	–	16.6
Communications, computer and related activities, research and development, other business activities										
Total	100	100	100	100	100	100	100	100	100	100
Communications	17.8	46.9	42.7	21.4	20.9	19.9	48.3	31.9	57.6	60.0
Computer and related activities	24.7	19.8	11.5	11.4	4.7	13.2	10.3	15.7	9.1	4.0
Research and development	...	...	...	...	...	...	...	...	...	...
Other business activities	57.5	33.3	45.8	67.1	74.4	66.9	41.4	52.4	33.3	36.0

(continued)

	Enterprises engaged in									
	R&D	Industrial design	Acquisition of machinery and equipment	Acquisition of technology	Of which acquisition of patent rights and licenses	Acquisition of software	Other types of pre-production	Personnel training	Market research	Other innovative activities
2011										
Mining and quarrying, manufacturing, electricity, gas and water supply										
Total	100	100	100	100	100	100	100	100	100	100
Mining and quarrying	5.3	3.0	3.6	4.0	3.6	4.0	2.7	1.7	1.1	4.2
Mining and quarrying of energy producing materials	4.4	1.9	2.5	2.4	1.8	2.8	1.8	1.7	0.5	2.5
Mining and quarrying, except energy producing materials	0.9	1.2	1.2	1.6	1.8	1.2	0.9	–	0.5	1.7
Manufacturing	90.5	91.0	84.1	87.6	94.6	81.8	91.0	92.9	98.4	77.1
High tech	23.8	18.3	15.5	19.1	23.4	19.2	17.3	24.6	21.9	10.8
Manufacture of pharmaceuticals	3.4	1.2	1.2	4.0	5.4	1.3	1.5	1.5	3.7	0.8
Manufacture of office machinery and computers	0.7	0.7	0.4	0.4	0.6	0.7	0.6	0.5	0.5	0.4
Manufacture of radio, television and communication equipment and apparatus	7.7	5.9	4.8	1.6	1.8	5.1	6.3	7.1	5.3	3.3
Manufacture of medical, precision and optical instruments, watches and clocks	9.6	6.9	6.0	10.8	13.8	8.4	6.9	9.2	9.6	5.0
Manufacture of aircrafts, including space-crafts	2.4	3.6	3.0	2.4	1.8	3.7	2.1	6.3	2.7	1.3
Medium high tech	31.3	31.5	23.9	28.7	31.1	24.1	30.7	27.5	31.0	29.2
Manufacture of chemicals and chemical products	6.3	8.0	4.6	4.0	4.2	3.2	6.6	3.9	5.9	9.6
Manufacture of machinery and equipment, n.e.c.	10.9	9.6	8.3	11.2	10.8	9.8	10.7	10.9	13.9	6.7

(continued)

	Enterprises engaged in									
	R&D	Industrial design	Acquisition of machinery and equipment	Acquisition of technology	Of which acquisition of patent rights and licenses	Acquisition of software	Other types of pre-production	Personnel training	Market research	Other innovative activities
Manufacture of electrical machinery and apparatus	8.8	7.1	6.3	8.8	10.8	6.0	7.5	7.8	7.5	5.0
Manufacture of motor vehicles, trailers and semi-trailers	3.7	4.9	3.3	2.8	3.6	3.2	4.8	3.4	3.7	6.3
Manufacture of other transport vehicles	1.7	1.9	1.3	2.0	1.8	1.8	1.2	1.5	–	1.7
Medium low tech	16.4	17.8	19.1	21.1	19.2	14.8	19.7	16.8	11.2	20.4
Manufacture of coke, refined petroleum products	2.1	2.9	1.2	4.0	3.6	1.5	2.1	1.0	–	3.3
Manufacture of rubber and plastic products	2.5	2.5	2.7	3.6	4.2	2.3	3.9	2.2	1.6	2.5
Manufacture of other non-metallic mineral products	2.6	4.6	6.0	3.6	1.8	2.3	5.7	4.9	4.3	5.0
Manufacture of basic metals	5.0	3.4	3.7	5.6	6.0	3.7	2.7	3.2	1.1	7.5
Manufacture of fabricated metal products	3.0	3.0	4.3	3.2	2.4	3.1	4.5	3.9	3.7	1.7
Construction and repair of vessels	1.2	1.4	1.2	1.2	1.2	1.9	0.9	1.7	0.5	0.4
Low tech	13.5	17.8	22.6	14.3	15.6	18.9	17.6	17.5	27.3	13.8
Manufacture of food products and beverages	9.4	11.5	13.4	8.4	9.0	7.6	10.1	8.8	17.6	9.6
Manufacture of tobacco products	0.1	–	0.2	–	–	0.1	0.9	–	–	–
Manufacture of textiles	0.8	0.8	1.4	1.2	1.2	1.3	1.2	1.5	2.7	1.3
Manufacture of wearing apparel, dressing and dyeing of fur	0.5	0.7	0.6	–	–	0.7	0.3	0.5	2.1	–
Manufacture of leather, leather products and footwear	0.1	0.3	0.3	0.8	1.2	0.3	–	0.7	1.1	0.4

(continued)

	Enterprises engaged in									
	R&D	Industrial design	Acquisition of machinery and equipment	Acquisition of technology	Of which acquisition of patent rights and licenses	Acquisition of software	Other types of pre-production	Personnel training	Market research	Other innovative activities
Manufacture of wood and of products of wood and cork, except furniture	0.2	0.8	1.0	0.8	1.2	1.0	0.9	0.7	0.5	0.4
Manufacture of cellulose, wood pulp, paper and cardboard and appropriate paper products	0.5	0.7	1.4	–	–	1.0	1.5	1.5	1.1	0.4
Publishing and printing, reproduction of recorded media	0.7	1.2	1.9	1.2	0.6	5.3	1.5	1.9	0.5	0.8
Manufacture of furniture, manufacturing n.e.c.	1.1	1.5	1.9	2.0	2.4	1.3	1.2	1.5	1.6	0.8
Recycling	0.1	0.2	0.5	–	–	0.1	–	0.5	–	–
Manufacturing of other materials and substances, n.e.c.	5.6	5.8	3.0	4.4	5.4	4.7	5.7	6.6	7.0	2.9
Electricity, gas and water supply	4.1	5.9	12.3	8.4	1.8	14.2	6.3	5.4	0.5	18.8
Communications, computer and related activities, research and development, other business activities										
Total	100	100	100	100	100	100	100	100	100	100
Communications	2.7	29.6	26.0	16.7	12.3	11.7	20.8	14.3	26.8	36.4
Computer and related activities	4.0	9.2	6.8	12.2	14.0	6.9	9.2	6.8	5.4	3.4
Research and development	83.8	44.4	39.0	37.8	35.1	32.1	55.0	45.0	53.6	37.3
Other business activities	9.5	16.9	28.3	33.3	38.6	49.3	15.0	33.9	14.3	22.9

3.12. ENTERPRISES HAVING IN-HOUSE R&D, DESIGN UNITS AS A PERCENTAGE OF ALL ENTERPRISES BY ECONOMIC ACTIVITY

	Enterprises engaged in technological innovation		Enterprises not engaged in technological innovation	
	2010	2011	2010	2011
Mining and quarrying, manufacturing, electricity, gas and water supply				
Total	39.5	39.6	60.5	60.4
Mining and quarrying	33.9	30.2	66.1	69.8
Mining and quarrying of energy producing materials	30.8	52.0	69.2	48.0
Mining and quarrying, except energy producing materials	36.1	15.8	63.9	84.2
Manufacturing	40.9	41.1	59.1	58.9
High tech	55.6	53.8	44.4	46.2
Manufacture of pharmaceuticals	67.6	55.8	32.4	44.2
Manufacture of office machinery and computers	64.7	55.6	35.3	44.4
Manufacture of radio, television and communication equipment and apparatus	53.7	56.8	46.3	43.2
Manufacture of medical, precision and optical instruments, watches and clocks	53.8	51.4	46.2	48.6
Manufacture of aircrafts, including spacecrafts	56.4	52.7	43.6	47.3
Medium high tech	40.2	39.4	59.8	60.6
Manufacture of chemicals and chemical products	54.0	49.3	46.0	50.7
Manufacture of machinery and equipment, n.e.c.	32.7	32.9	67.3	67.1

(continued)

	Enterprises engaged in technological innovation		Enterprises not engaged in technological innovation	
	2010	2011	2010	2011
Manufacture of electrical machinery and apparatus	43.3	42.4	56.7	57.6
Manufacture of motor vehicles, trailers and semi-trailers	47.4	45.8	52.6	54.2
Manufacture of other transport vehicles	44.4	42.6	55.6	57.4
Medium low tech	30.0	32.8	70.0	67.2
Manufacture of coke, refined petroleum products	58.1	59.4	41.9	40.6
Manufacture of rubber and plastic products	31.5	39.7	68.5	60.3
Manufacture of other non-metallic mineral products	23.9	33.3	76.1	66.7
Manufacture of basic metals	40.6	42.6	59.4	57.4
Manufacture of fabricated metal products	25.6	21.6	74.4	78.4
Construction and repair of vessels	21.4	31.7	78.6	68.3
Low tech	33.8	34.3	66.2	65.7
Manufacture of food products and beverages	44.8	42.6	55.2	57.4
Manufacture of tobacco products	100	50.0	–	50.0
Manufacture of textiles	64.7	50.0	35.3	50.0
Manufacture of wearing apparel, dressing and dyeing of fur	17.6	25.0	82.4	75.0
Manufacture of leather, leather products and footwear	50.0	42.9	50.0	57.1

(continued)

	Enterprises engaged in technological innovation		Enterprises not engaged in technological innovation	
	2010	2011	2010	2011
Manufacture of wood and of products of wood and cork, except furniture	23.8	25.0	76.2	75.0
Manufacture of cellulose, wood pulp, paper and cardboard and appropriate paper products	37.9	44.4	62.1	55.6
Publishing and printing, reproduction of recorded media	35.7	33.3	64.3	66.7
Manufacture of furniture, manufacturing n.e.c.	15.1	19.6	84.9	80.4
Recycling	—	25.0	100	75.0
Electricity, gas and water supply	20.0	21.4	80.0	78.6
Communications, computer and related activities, research and development, other business activities				
Total	27.4	37.5	72.6	62.5
Communications	59.7	61.4	40.3	38.6
Computer and related activities	50.0	43.8	50.0	56.3
Research and development	...	43.3	...	56.7
Other business activities	17.6	17.9	82.4	82.1

3.13. R&D UNITS AND THEIR EMPLOYMENT BY ECONOMIC ACTIVITY

	Enterprises engaged in technological innovation				Enterprises not engaged in technological innovation			
	R&D units		Employment, <i>head-count</i>		R&D units		Employment, <i>head-count</i>	
	2010	2011	2010	2011	2010	2011	2010	2011
Mining and quarrying, manufacturing, electricity, gas and water supply								
Total	2218	2234	79993	80639	2213	3310	30632	34971
Mining and quarrying	49	30	4596	3831	54	236	713	1545
Mining and quarrying of energy producing materials	10	16	3440	3663	26	31	432	234
Mining and quarrying, except energy producing materials	39	14	1156	168	28	205	281	1311
Manufacturing	2123	2162	74850	75954	2024	2326	28515	31068
High tech	731	788	27176	26819	443	415	7956	7368
Manufacture of pharmaceuticals	41	37	695	663	18	32	169	446
Manufacture of office machinery and computers	27	25	480	398	9	20	88	512
Manufacture of radio, television and communication equipment and apparatus	184	215	6378	6384	140	128	2794	2256
Manufacture of medical, precision and optical instruments, watches and clocks	282	316	11139	11477	174	186	2479	2912
Manufacture of aircrafts, including spacecrafts	197	195	8484	7897	102	49	2426	1242
Medium high tech	807	779	24921	24310	777	1128	11125	13720
Manufacture of chemicals and chemical products	167	150	4625	3719	105	105	1784	2154
Manufacture of machinery and equipment, n.e.c.	306	295	7965	8609	399	398	5573	7504

(continued)

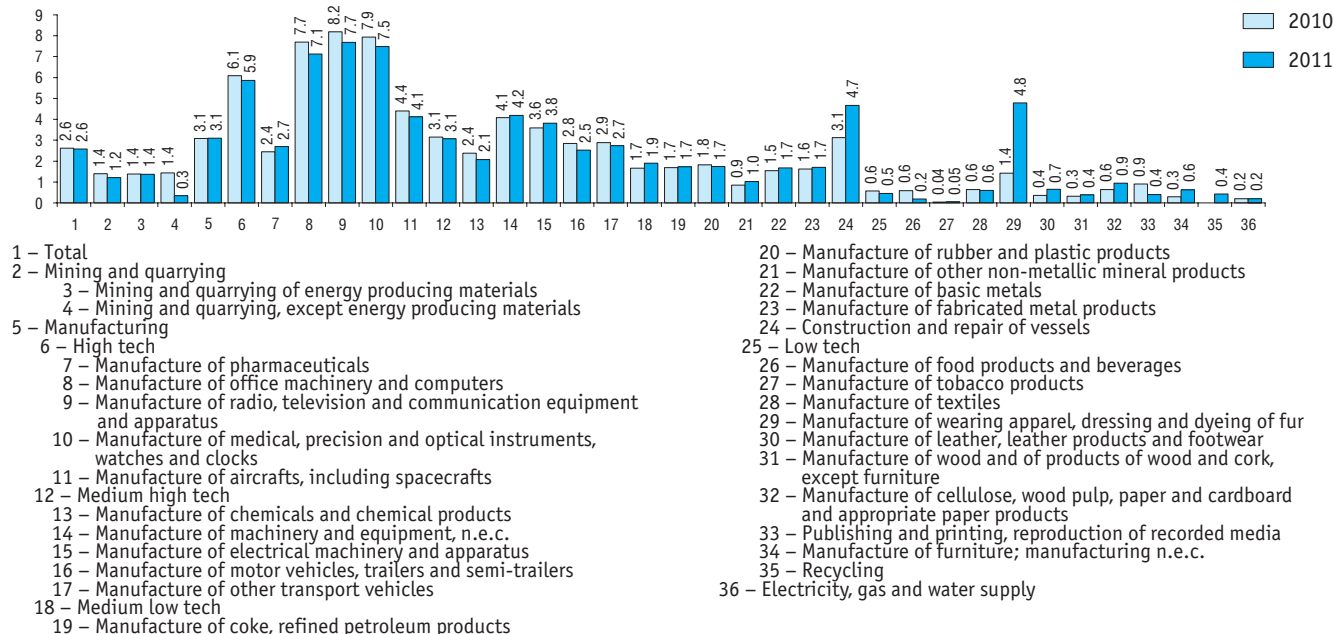
	Enterprises engaged in technological innovation				Enterprises not engaged in technological innovation			
	R&D units		Employment, <i>head-count</i>		R&D units		Employment, <i>head-count</i>	
	2010	2011	2010	2011	2010	2011	2010	2011
Manufacture of electrical machinery and apparatus	182	189	4086	4521	153	172	2077	2196
Manufacture of motor vehicles, trailers and semi-trailers	100	96	6136	5550	80	84	983	1014
Manufacture of other transport vehicles	52	49	2109	1911	40	369	708	852
Medium low tech	281	301	11373	13424	486	488	5851	5730
Manufacture of coke, refined petroleum products	26	25	1337	1256	15	13	310	163
Manufacture of rubber and plastic products	45	46	839	814	66	61	369	499
Manufacture of other non-metallic mineral products	48	63	532	709	132	111	970	933
Manufacture of basic metals	80	85	5658	6242	81	72	1625	1157
Manufacture of fabricated metal products	65	61	1046	1259	157	201	2014	2488
Construction and repair of vessels	17	21	1961	3144	35	30	563	490
Low tech	140	112	1496	1153	266	244	2211	3145
Manufacture of food products and beverages	77	43	899	288	114	54	1088	1773
Manufacture of tobacco products	1	1	2	2	—	1	—	29
Manufacture of textiles	14	12	102	82	6	12	25	74
Manufacture of wearing apparel, dressing and dyeing of fur	5	7	77	224	23	17	294	376
Manufacture of leather, leather products and footwear	3	4	19	24	4	5	21	30

(continued)

	Enterprises engaged in technological innovation				Enterprises not engaged in technological innovation			
	R&D units		Employment, <i>head-count</i>		R&D units		Employment, <i>head-count</i>	
	2010	2011	2010	2011	2010	2011	2010	2011
Manufacture of wood and of products of wood and cork, except furniture	7	8	40	46	18	19	78	74
Manufacture of cellulose, wood pulp, paper and cardboard and appropriate paper products	14	18	209	323	24	17	170	131
Publishing and printing, reproduction of recorded media	9	6	99	40	19	69	125	294
Manufacture of furniture, manufacturing n.e.c.	10	12	49	110	55	45	397	342
Recycling	–	1	–	14	3	5	13	22
Manufacturing of other materials and substances, n.e.c.	164	182	9884	10248	52	51	1372	1105
Electricity, gas and water supply	46	42	547	854	135	748	1404	2358
Communications, computer and related activities, research and development, other business activities								
Total	514	6363	10744	158948	1629	6858	22267	91560
Communications	49	49	404	506	49	101	302	790
Computer and related activities	65	85	1230	2382	56	59	1089	1243
Research and development	...	5603	...	142126	...	4507	...	62843
Other business activities	400	626	9110	13934	1524	2191	20876	26684

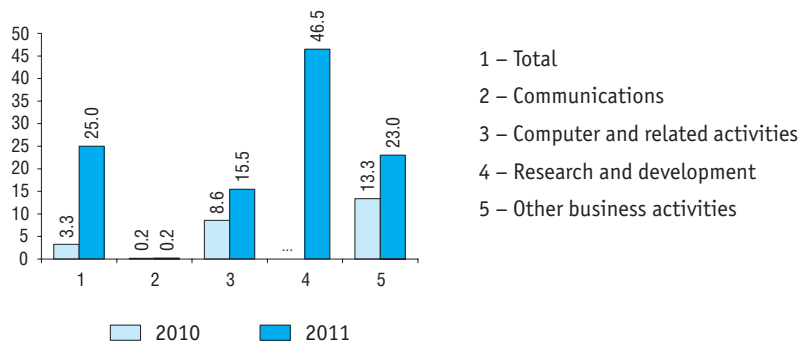
3.14. R&D PERSONNEL AS A PERCENTAGE OF TOTAL EMPLOYMENT AT ENTERPRISES ENGAGED IN TECHNOLOGICAL INNOVATION BY ECONOMIC ACTIVITY

Mining and quarrying, manufacturing, electricity, gas and water supply



(continued)

Communications, computer and related activities, research and development, other business activities



3.15. CO-OPERATION IN DEVELOPMENT OF TECHNOLOGICAL INNOVATIONS

(as a percentage of the total number of enterprises having market-ready technological innovations during the last three years)

	Enterprises with innovations developed					
	mainly by external organisations		jointly with other organisations		mainly in-house	
	2010	2011	2010	2011	2010	2011
Mining and quarrying, manufacturing, electricity, gas and water supply						
Total	18.1	21.9	31.7	30.0	51.7	50.1
Mining and quarrying	41.2	42.5	38.7	42.5	21.0	17.5
Mining and quarrying of energy producing materials	49.4	50.0	32.5	38.1	18.2	14.3
Mining and quarrying, except energy producing materials	26.2	25.0	50.0	52.8	26.2	25.0
Manufacturing	12.9	16.2	31.3	29.8	57.3	55.8
High tech	10.3	13.1	31.4	29.2	60.1	60.0
Manufacture of pharmaceuticals	18.2	20.5	18.2	22.7	68.2	63.6
Manufacture of office machinery and computers	-	-	36.4	18.2	63.6	81.8
Manufacture of radio, television and communication equipment and apparatus	6.7	8.0	33.6	31.9	62.2	61.9
Manufacture of medical, precision and optical instruments, watches and clocks	9.5	12.9	29.0	25.9	62.7	62.9
Manufacture of aircrafts, including spacecrafts	17.8	21.2	46.7	42.3	35.6	38.5
Medium high tech	8.9	12.7	28.5	27.6	64.5	60.9
Manufacture of chemicals and chemical products	12.6	16.7	34.1	28.6	54.1	55.6
Manufacture of machinery and equipment, n.e.c.	7.9	10.2	21.9	22.1	71.9	68.6

(continued)

	Enterprises with innovations developed					
	mainly by external organisations		jointly with other organisations		mainly in-house	
	2010	2011	2010	2011	2010	2011
Manufacture of electrical machinery and apparatus	8.6	11.7	30.7	32.5	63.2	57.7
Manufacture of motor vehicles, trailers and semi-trailers	4.6	11.9	31.0	28.7	66.7	60.4
Manufacture of other transport vehicles	13.0	23.4	43.5	40.4	47.8	38.3
Medium low tech	13.8	18.8	36.2	33.0	51.0	50.2
Manufacture of coke, refined petroleum products	18.2	36.1	63.6	50.0	21.2	13.9
Manufacture of rubber and plastic products	13.2	18.8	25.0	27.5	63.2	55.1
Manufacture of other non-metallic mineral products	18.6	21.6	38.5	32.7	43.6	47.1
Manufacture of basic metals	5.3	14.0	44.7	46.0	51.1	43.0
Manufacture of fabricated metal products	10.0	13.8	26.4	21.1	64.5	66.7
Construction and repair of vessels	25.8	20.0	32.3	32.0	41.9	56.0
Low tech	18.6	20.6	29.9	28.9	52.5	51.8
Manufacture of food products and beverages	18.0	18.9	31.0	30.0	52.3	51.8
Manufacture of tobacco products	–	–	50.0	50.0	50.0	50.0
Manufacture of textiles	23.3	26.3	20.9	18.4	55.8	60.5
Manufacture of wearing apparel, dressing and dyeing of fur	4.0	–	28.0	21.7	68.0	78.3
Manufacture of leather, leather products and footwear	16.7	11.1	16.7	44.4	66.7	44.4

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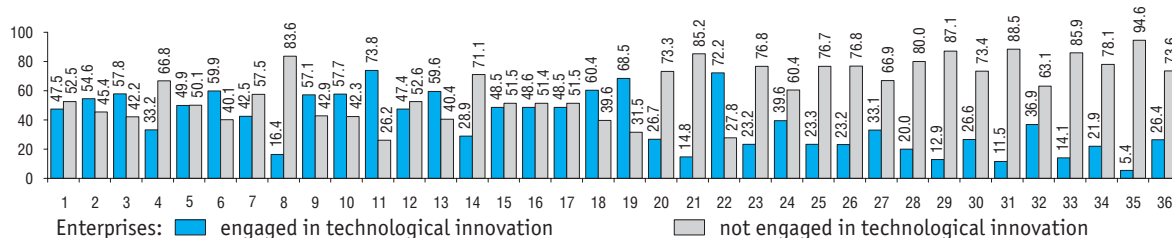
	Enterprises with innovations developed					
	mainly by external organisations		jointly with other organisations		mainly in-house	
	2010	2011	2010	2011	2010	2011
Manufacture of wood and of products of wood and cork, except furniture	16.7	33.3	41.7	26.7	41.7	40.0
Manufacture of cellulose, wood pulp, paper and cardboard and appropriate paper products	13.3	11.4	40.0	45.7	46.7	42.9
Publishing and printing, reproduction of recorded media	30.1	38.5	25.3	20.5	44.6	42.3
Manufacture of furniture, manufacturing n.e.c.	20.0	17.9	18.0	21.4	64.0	66.1
Recycling	—	11.1	45.5	66.7	54.5	22.2
Electricity, gas and water supply	50.2	56.3	32.6	26.6	19.5	20.4
Communications, computer and related activities, research and development, other business activities						
Total	40.0	24.7	33.3	29.7	30.3	47.7
Communications	32.6	30.0	41.2	44.9	31.5	28.4
Computer and related activities	28.3	26.1	30.4	31.8	44.6	45.5
Research and development	...	5.5	...	24.2	...	72.5
Other business activities	49.0	48.3	27.9	26.8	25.5	26.0

3.16. SALES OF GOODS AND SERVICES OF ENTERPRISES ENGAGED AND NOT ENGAGED IN TECHNOLOGICAL INNOVATION BY ECONOMIC ACTIVITY

(as a percentage of total sales for each type of enterprise)

2010

Mining and quarrying, manufacturing, electricity, gas and water supply



- | | |
|--|--|
| 1 – Total | 20 – Manufacture of rubber and plastic products |
| 2 – Mining and quarrying | 21 – Manufacture of other non-metallic mineral products |
| 3 – Mining and quarrying of energy producing materials | 22 – Manufacture of basic metals |
| 4 – Mining and quarrying, except energy producing materials | 23 – Manufacture of fabricated metal products |
| 5 – Manufacturing | 24 – Construction and repair of vessels |
| 6 – High tech | 25 – Low tech |
| 7 – Manufacture of pharmaceuticals | 26 – Manufacture of food products and beverages |
| 8 – Manufacture of office machinery and computers | 27 – Manufacture of tobacco products |
| 9 – Manufacture of radio, television and communication equipment and apparatus | 28 – Manufacture of textiles |
| 10 – Manufacture of medical, precision and optical instruments, watches and clocks | 29 – Manufacture of wearing apparel, dressing and dyeing of fur |
| 11 – Manufacture of aircrafts, including spacecrafts | 30 – Manufacture of leather, leather products and footwear |
| 12 – Medium high tech | 31 – Manufacture of wood and of products of wood and cork, except furniture |
| 13 – Manufacture of chemicals and chemical products | 32 – Manufacture of cellulose, wood pulp, paper and cardboard and appropriate paper products |
| 14 – Manufacture of machinery and equipment, n.e.c. | 33 – Publishing and printing, reproduction of recorded media |
| 15 – Manufacture of electrical machinery and apparatus | 34 – Manufacture of furniture; manufacturing n.e.c. |
| 16 – Manufacture of motor vehicles, trailers and semi-trailers | 35 – Recycling |
| 17 – Manufacture of other transport vehicles | 36 – Electricity, gas and water supply |
| 18 – Medium low tech | |
| 19 – Manufacture of coke, refined petroleum products | |

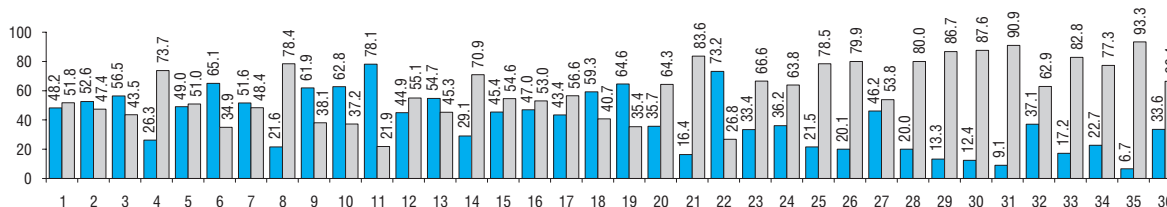
(continued)



(continued)

2011

Mining and quarrying, manufacturing, electricity, gas and water supply



Enterprises: engaged in technological innovation

not engaged in technological innovation

- 1 - Total
- 2 - Mining and quarrying
 - 3 - Mining and quarrying of energy producing materials
 - 4 - Mining and quarrying, except energy producing materials
- 5 - Manufacturing
 - 6 - High tech
 - 7 - Manufacture of pharmaceuticals
 - 8 - Manufacture of office machinery and computers
 - 9 - Manufacture of radio, television and communication equipment and apparatus
 - 10 - Manufacture of medical, precision and optical instruments, watches and clocks
 - 11 - Manufacture of aircrafts, including spacecrafts
 - 12 - Medium high tech
 - 13 - Manufacture of chemicals and chemical products
 - 14 - Manufacture of machinery and equipment, n.e.c.
 - 15 - Manufacture of electrical machinery and apparatus
 - 16 - Manufacture of motor vehicles, trailers and semi-trailers
 - 17 - Manufacture of other transport vehicles
 - 18 - Medium low tech
 - 19 - Manufacture of coke, refined petroleum products

- 20 - Manufacture of rubber and plastic products
- 21 - Manufacture of other non-metallic mineral products
- 22 - Manufacture of basic metals
- 23 - Manufacture of fabricated metal products
- 24 - Construction and repair of vessels
- 25 - Low tech
 - 26 - Manufacture of food products and beverages
 - 27 - Manufacture of tobacco products
 - 28 - Manufacture of textiles
 - 29 - Manufacture of wearing apparel, dressing and dyeing of fur
 - 30 - Manufacture of leather, leather products and footwear
 - 31 - Manufacture of wood and of products of wood and cork, except furniture
 - 32 - Manufacture of cellulose, wood pulp, paper and cardboard and appropriate paper products
 - 33 - Publishing and printing, reproduction of recorded media
 - 34 - Manufacture of furniture; manufacturing n.e.c.
 - 35 - Recycling
- 36 - Electricity, gas and water supply

(continued)

Communications, computer and related activities, research and development, other business activities



3.17. SALES OF INNOVATIVE GOODS AND SERVICES BY ECONOMIC ACTIVITY

	Million roubles		As a percentage of total sales	
	2010	2011	2010	2011
Mining and quarrying, manufacturing, electricity, gas and water supply				
Total	1165747.6	1847370.4	4.9	6.1
Mining and quarrying	151581.1	516779.7	2.7	6.7
Mining and quarrying of energy producing materials	143117.4	506198.0	3.0	7.5
Mining and quarrying, except energy producing materials	8463.7	10581.7	1.2	1.1
Manufacturing	990624.4	1309228.6	6.7	6.8
High tech	97267.0	128342.9	11.2	12.1
Manufacture of pharmaceuticals	10188.3	22813.0	8.0	14.8
Manufacture of office machinery and computers	1986.5	1136.6	5.9	3.3
Manufacture of radio, television and communication equipment and apparatus	19647.1	20837.9	10.3	9.8
Manufacture of medical, precision and optical instruments, watches and clocks	29032.5	38587.0	15.3	13.7
Manufacture of aircrafts, including spacecrafts	36412.7	44968.4	11.0	12.1
Medium high tech	386437.8	559925.7	12.5	12.8
Manufacture of chemicals and chemical products	115994.0	133944.3	11.9	9.7
Manufacture of machinery and equipment, n.e.c.	47272.7	58384.1	6.5	5.9
Manufacture of electrical machinery and apparatus	24226.4	27099.9	7.3	6.2

(continued)

	Million roubles		As a percentage of total sales	
	2010	2011	2010	2011
Manufacture of motor vehicles, trailers and semi-trailers	161065.3	288502.9	19.5	23.7
Manufacture of other transport vehicles	37879.5	51994.5	16.6	15.4
Medium low tech	317483.1	392457.2	4.5	4.3
Manufacture of coke, refined petroleum products	112621.7	93082.1	3.9	2.3
Manufacture of rubber and plastic products	20050.7	31746.0	6.5	7.8
Manufacture of other non-metallic mineral products	16781.4	21659.1	2.6	2.6
Manufacture of basic metals	139110.8	225270.9	5.2	7.2
Manufacture of fabricated metal products	7357.9	7670.0	2.1	1.2
Construction and repair of vessels	21560.6	13029.2	18.7	7.5
Low tech	149583.2	166260.9	4.5	4.1
Manufacture of food products and beverages	112266.4	109552.6	5.1	4.1
Manufacture of tobacco products	5521.9	6640.5	3.1	3.8
Manufacture of textiles	2246.3	2062.8	2.9	2.5
Manufacture of wearing apparel, dressing and dyeing of fur	1541.6	933.3	4.3	2.0
Manufacture of leather, leather products and footwear	686.4	531.5	2.3	1.4

(continued)

	Million roubles		As a percentage of total sales	
	2010	2011	2010	2011
Manufacture of wood and of products of wood and cork, except furniture	2670.0	2546.8	1.7	1.3
Manufacture of cellulose, wood pulp, paper and cardboard and appropriate paper products	13345.4	12028.9	4.6	3.5
Publishing and printing, reproduction of recorded media	6466.6	19223.5	4.1	10.1
Manufacture of furniture, manufacturing n.e.c.	2413.4	7958.1	1.7	4.5
Recycling	2425.2	4783.0	2.9	3.9
Manufacturing of other materials and substances, n.e.c.	39853.2	62242.0	10.1	12.7
Electricity, gas and water supply	23542.1	21362.1	0.7	0.6
Communications, computer and related activities, research and development, other business activities				
Total	77964.9	259370.3	4.0	8.3
Communications	42849.6	49486.6	3.6	3.6
Computer and related activities	19786.9	24951.2	14.3	12.9
Research and development	...	159410.0	...	23.4
Other business activities	15328.4	25522.6	2.4	2.9

3.18. SALES OF INNOVATIVE GOODS AND SERVICES BY DEGREE OF NOVELTY AND ECONOMIC ACTIVITY

	Innovative goods and services, <i>million roubles</i>		Of which			
			technologically new or significantly improved		improved	
	2010	2011	2010	2011	2010	2011
Mining and quarrying, manufacturing, electricity, gas and water supply						
Total	1165747.6	1847370.4	729224.2	1140247.2	436523.4	707123.2
Mining and quarrying	151581.1	516779.7	40358.2	327940.5	111222.8	188839.2
Mining and quarrying of energy producing materials	143117.4	506198.0	32968.5	317592.2	110148.8	188605.8
Mining and quarrying, except energy producing materials	8463.7	10581.7	7389.7	10348.3	1074.0	233.3
Manufacturing	990624.4	1309228.6	669823.4	794853.2	320801.0	514375.4
High tech	97267.0	128342.9	61262.9	89090.7	36004.1	39252.2
Manufacture of pharmaceuticals	10188.3	22813.0	8341.3	19207.7	1847.0	3605.3
Manufacture of office machinery and computers	1986.5	1136.6	1827.1	978.5	159.4	158.0
Manufacture of radio, television and communication equipment and apparatus	19647.1	20837.9	10869.2	11321.7	8777.9	9516.2
Manufacture of medical, precision and optical instruments, watches and clocks	29032.5	38587.0	17079.0	27160.2	11953.5	11426.8
Manufacture of aircrafts, including spacecrafts	36412.7	44968.4	23146.4	30422.5	13266.3	14545.9
Medium high tech	386437.8	559925.7	281447.5	341669.2	104990.4	218256.4
Manufacture of chemicals and chemical products	115994.0	133944.3	76398.5	79470.4	39595.5	54473.9
Manufacture of machinery and equipment, n.e.c.	47272.7	58384.1	32790.1	37424.1	14482.6	20960.0
Manufacture of electrical machinery and apparatus	24226.4	27099.9	16725.8	20135.8	7500.6	6964.1

(continued)

	Innovative goods and services, <i>million roubles</i>		Of which			
			technologically new or significantly improved		improved	
	2010	2011	2010	2011	2010	2011
Manufacture of motor vehicles, trailers and semi-trailers	161065.3	288502.9	122095.4	154391.7	38969.9	134111.1
Manufacture of other transport vehicles	37879.5	51994.5	33437.8	50247.2	4441.7	1747.3
Medium low tech	317483.1	392457.2	169781.8	208633.5	147701.3	183823.6
Manufacture of coke, refined petroleum products	112621.7	93082.1	41654.2	20885.7	70967.5	72196.5
Manufacture of rubber and plastic products	20050.7	31746.0	10609.5	23911.4	9441.1	7834.6
Manufacture of other non-metallic mineral products	16781.4	21659.1	13376.7	15377.0	3404.7	6282.1
Manufacture of basic metals	139110.8	225270.9	77973.8	129573.5	61137.0	95697.4
Manufacture of fabricated metal products	7357.9	7670.0	5985.0	5860.8	1372.9	1809.2
Construction and repair of vessels	21560.6	13029.2	20182.6	13025.2	1378.0	3.9
Low tech	149583.2	166260.9	123464.7	123803.8	26118.5	42457.1
Manufacture of food products and beverages	112266.4	109552.6	91706.9	88455.5	20559.5	21097.1
Manufacture of tobacco products	5521.9	6640.5	5476.8	1613.1	45.1	5027.4
Manufacture of textiles	2246.3	2062.8	1779.4	1818.7	466.9	244.1
Manufacture of wearing apparel, dressing and dyeing of fur	1541.6	933.3	1393.4	708.0	148.1	225.3
Manufacture of leather, leather products and footwear	686.4	531.5	158.0	151.9	528.5	379.6

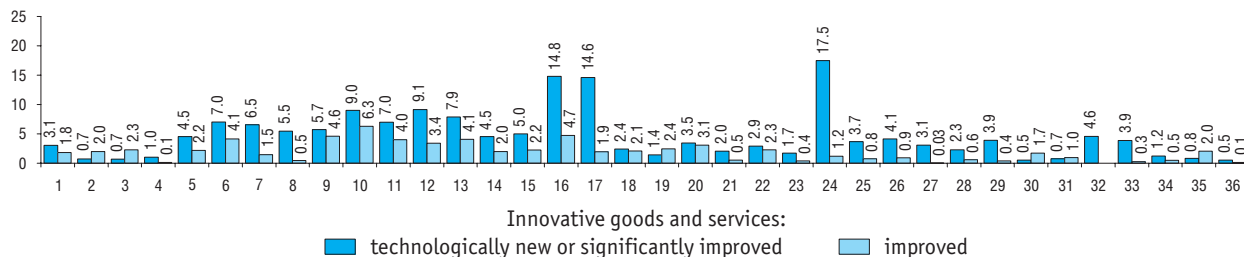
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	Innovative goods and services, <i>million roubles</i>		Of which			
			technologically new or significantly improved		improved	
	2010	2011	2010	2011	2010	2011
Manufacture of wood and of products of wood and cork, except furniture	2670.0	2546.8	1158.7	646.7	1511.3	1900.1
Manufacture of cellulose, wood pulp, paper and cardboard and appropriate paper products	13345.4	12028.9	13345.4	8453.2	—	3575.7
Publishing and printing, reproduction of recorded media	6466.6	19223.5	6028.0	15838.2	438.6	3385.3
Manufacture of furniture, manufacturing n.e.c.	2413.4	7958.1	1728.4	3342.5	684.9	4615.6
Recycling	2425.2	4783.0	689.7	2776.1	1735.5	2006.9
Manufacturing of other materials and substances, n.e.c.	39853.2	62242.0	33866.5	31655.9	5986.8	30586.1
Electricity, gas and water supply	23542.1	21362.1	19042.6	17453.5	4499.5	3908.6
Communications, computer and related activities, research and development, other business activities						
Total	77964.9	259370.3	48694.8	189175.1	29270.1	70195.2
Communications	42849.6	49486.6	19825.0	39255.1	23024.5	10231.5
Computer and related activities	19786.9	24951.2	14939.0	21560.4	4847.9	3390.8
Research and development	...	159410.0	...	110513.3	...	48896.6
Other business activities	15328.4	25522.6	13930.8	17846.2	1397.6	7676.3

3.19. INNOVATIVE GOODS AND SERVICES AS A PERCENTAGE OF TOTAL SALES BY DEGREE OF NOVELTY AND ECONOMIC ACTIVITY

2010

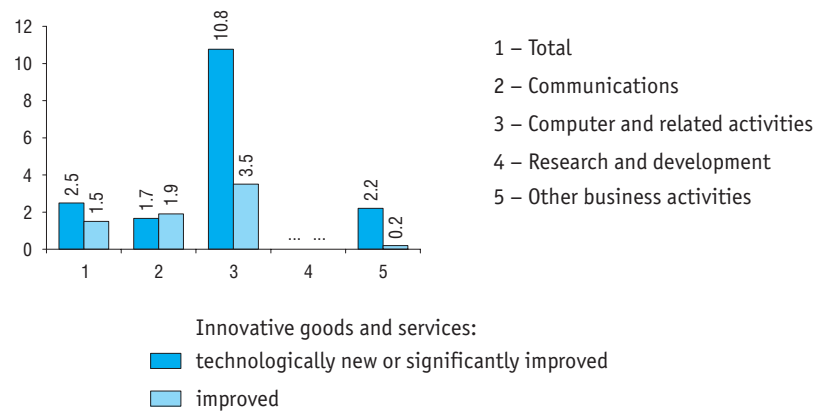
Mining and quarrying, manufacturing, electricity, gas and water supply



- 1 - Total
- 2 - Mining and quarrying
- 3 - Mining and quarrying of energy producing materials
- 4 - Mining and quarrying, except energy producing materials
- 5 - Manufacturing
- 6 - High tech
- 7 - Manufacture of pharmaceuticals
- 8 - Manufacture of office machinery and computers
- 9 - Manufacture of radio, television and communication equipment and apparatus
- 10 - Manufacture of medical, precision and optical instruments, watches and clocks
- 11 - Manufacture of aircrafts, including spacecrafts
- 12 - Medium high tech
- 13 - Manufacture of chemicals and chemical products
- 14 - Manufacture of machinery and equipment, n.e.c.
- 15 - Manufacture of electrical machinery and apparatus
- 16 - Manufacture of motor vehicles, trailers and semi-trailers
- 17 - Manufacture of other transport vehicles
- 18 - Medium low tech
- 19 - Manufacture of coke, refined petroleum products
- 20 - Manufacture of rubber and plastic products
- 21 - Manufacture of other non-metallic mineral products
- 22 - Manufacture of basic metals
- 23 - Manufacture of fabricated metal products
- 24 - Construction and repair of vessels
- 25 - Low tech
- 26 - Manufacture of food products and beverages
- 27 - Manufacture of tobacco products
- 28 - Manufacture of textiles
- 29 - Manufacture of wearing apparel, dressing and dyeing of fur
- 30 - Manufacture of leather, leather products and footwear
- 31 - Manufacture of wood and of products of wood and cork, except furniture
- 32 - Manufacture of cellulose, wood pulp, paper and cardboard and appropriate paper products
- 33 - Publishing and printing, reproduction of recorded media
- 34 - Manufacture of furniture; manufacturing n.e.c.
- 35 - Recycling
- 36 - Electricity, gas and water supply

(continued)

Communications, computer and related activities, research and development, other business activities



(continued)

2011

Mining and quarrying, manufacturing, electricity, gas and water supply



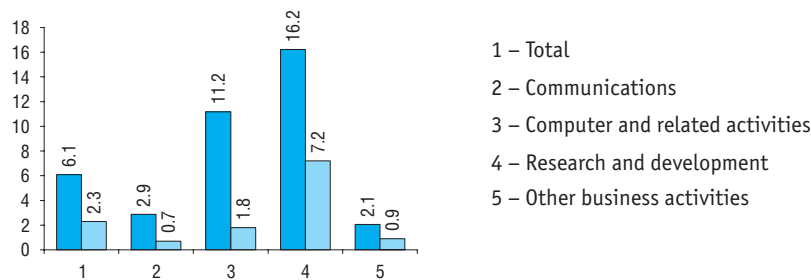
Innovative goods and services:

■ technologically new or significantly improved ■ improved

- 1 - Total
- 2 - Mining and quarrying
 - 3 - Mining and quarrying of energy producing materials
 - 4 - Mining and quarrying, except energy producing materials
- 5 - Manufacturing
 - 6 - High tech
 - 7 - Manufacture of pharmaceuticals
 - 8 - Manufacture of office machinery and computers
 - 9 - Manufacture of radio, television and communication equipment and apparatus
 - 10 - Manufacture of medical, precision and optical instruments, watches and clocks
 - 11 - Manufacture of aircrafts, including spacecrafts
 - 12 - Medium high tech
 - 13 - Manufacture of chemicals and chemical products
 - 14 - Manufacture of machinery and equipment, n.e.c.
 - 15 - Manufacture of electrical machinery and apparatus
 - 16 - Manufacture of motor vehicles, trailers and semi-trailers
 - 17 - Manufacture of other transport vehicles
 - 18 - Medium low tech
 - 19 - Manufacture of coke, refined petroleum products
 - 20 - Manufacture of rubber and plastic products
 - 21 - Manufacture of other non-metallic mineral products
 - 22 - Manufacture of basic metals
 - 23 - Manufacture of fabricated metal products
 - 24 - Construction and repair of vessels
 - 25 - Low tech
 - 26 - Manufacture of food products and beverages
 - 27 - Manufacture of tobacco products
 - 28 - Manufacture of textiles
 - 29 - Manufacture of wearing apparel, dressing and dyeing of fur
 - 30 - Manufacture of leather, leather products and footwear
 - 31 - Manufacture of wood and of products of wood and cork, except furniture
 - 32 - Manufacture of cellulose, wood pulp, paper and cardboard and appropriate paper products
 - 33 - Publishing and printing, reproduction of recorded media
 - 34 - Manufacture of furniture; manufacturing n.e.c.
 - 35 - Recycling
 - 36 - Electricity, gas and water supply

(continued)

Communications, computer and related activities, research and development, other business activities



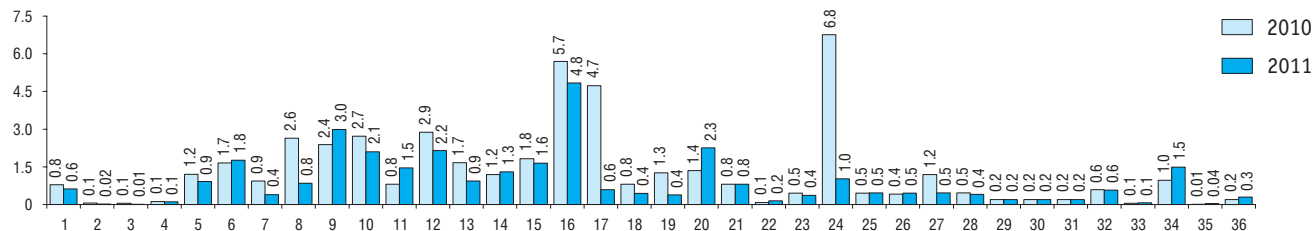
Innovative goods and services:

- technologically new or significantly improved
- improved

3.20. TECHNOLOGICALLY NEW OR SIGNIFICANTLY IMPROVED GOODS AND SERVICES NEW TO THE ENTERPRISE'S MARKET BY ECONOMIC ACTIVITY

(as a percentage of total sales)

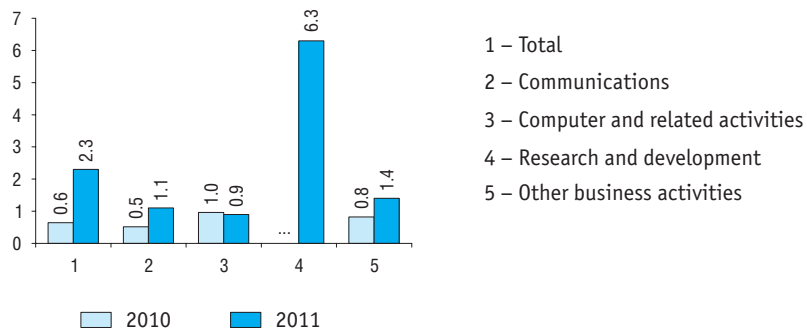
Mining and quarrying, manufacturing, electricity, gas and water supply



- 1 – Total
- 2 – Mining and quarrying
 - 3 – Mining and quarrying of energy producing materials
 - 4 – Mining and quarrying, except energy producing materials
- 5 – Manufacturing
 - 6 – High tech
 - 7 – Manufacture of pharmaceuticals
 - 8 – Manufacture of office machinery and computers
 - 9 – Manufacture of radio, television and communication equipment and apparatus
 - 10 – Manufacture of medical, precision and optical instruments, watches and clocks
 - 11 – Manufacture of aircrafts, including spacecrafts
 - 12 – Medium high tech
 - 13 – Manufacture of chemicals and chemical products
 - 14 – Manufacture of machinery and equipment, n.e.c.
 - 15 – Manufacture of electrical machinery and apparatus
 - 16 – Manufacture of motor vehicles, trailers and semi-trailers
 - 17 – Manufacture of other transport vehicles
 - 18 – Medium low tech
 - 19 – Manufacture of coke, refined petroleum products

- 20 – Manufacture of rubber and plastic products
- 21 – Manufacture of other non-metallic mineral products
- 22 – Manufacture of basic metals
- 23 – Manufacture of fabricated metal products
- 24 – Construction and repair of vessels
- 25 – Low tech
 - 26 – Manufacture of food products and beverages
 - 27 – Manufacture of tobacco products
 - 28 – Manufacture of textiles
 - 29 – Manufacture of wearing apparel, dressing and dyeing of fur
 - 30 – Manufacture of leather, leather products and footwear
 - 31 – Manufacture of wood and of products of wood and cork, except furniture
 - 32 – Manufacture of cellulose, wood pulp, paper and cardboard and appropriate paper products
 - 33 – Publishing and printing, reproduction of recorded media
 - 34 – Manufacture of furniture; manufacturing n.e.c.
 - 35 – Recycling
- 36 – Electricity, gas and water supply

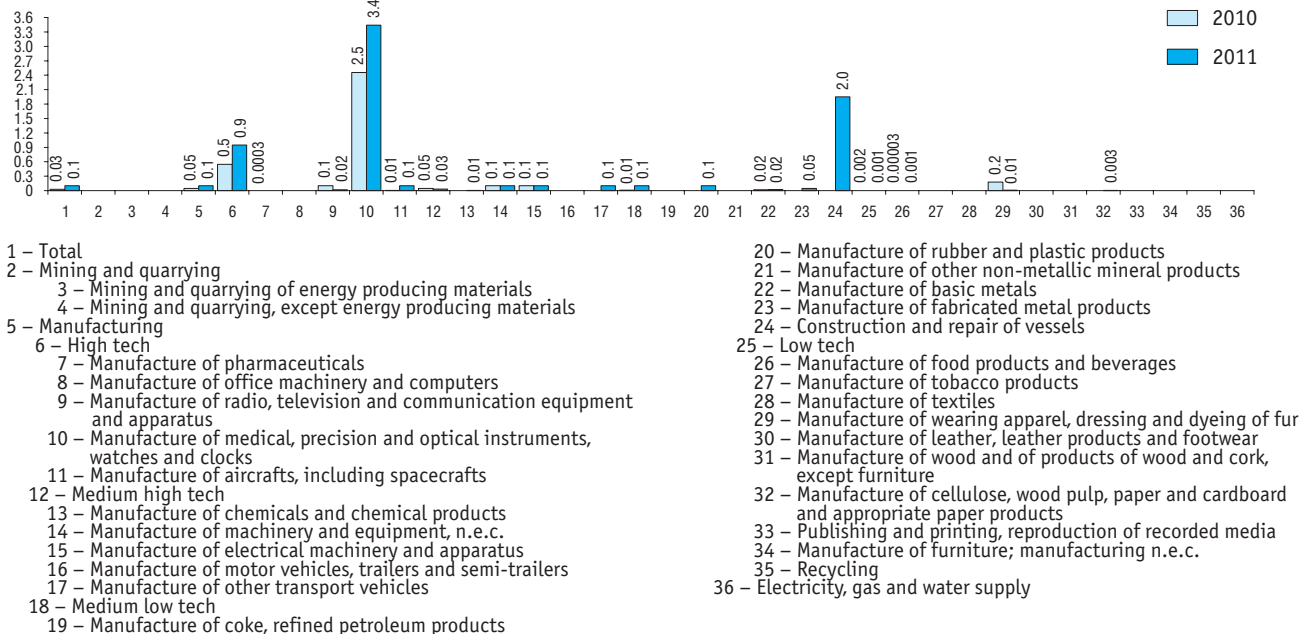
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Communications, computer and related activities, research and development, other business activities

3.21. TECHNOLOGICALLY NEW OR SIGNIFICANTLY IMPROVED GOODS AND SERVICES NEW TO THE WORLD MARKET BY ECONOMIC ACTIVITY

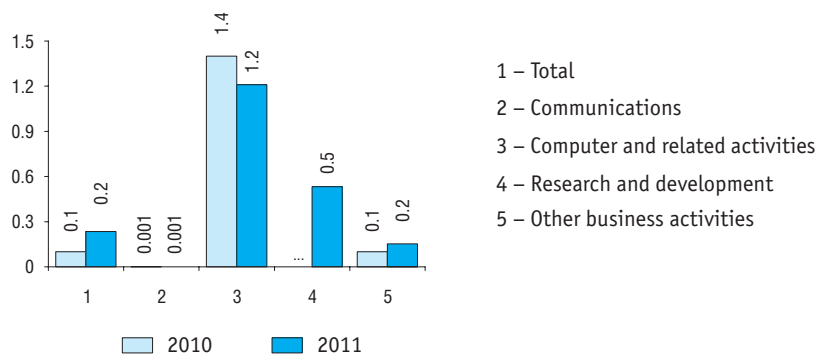
(as a percentage of total sales)

Mining and quarrying, manufacturing, electricity, gas and water supply



(continued)

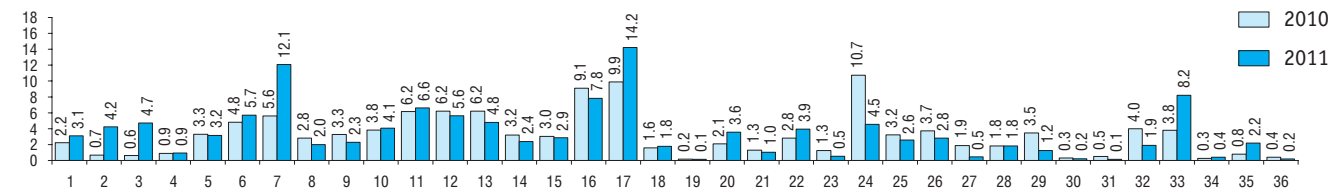
Communications, computer and related activities, research and development, other business activities



3.22. TECHNOLOGICALLY NEW OR SIGNIFICANTLY IMPROVED INNOVATIVE GOODS AND SERVICES NEW TO THE ENTERPRISE BY ECONOMIC ACTIVITY

(as a percentage of total sales)

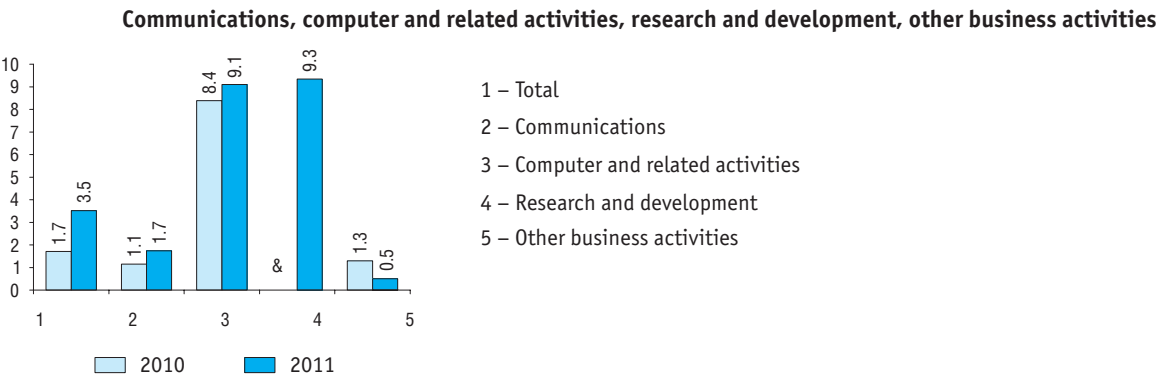
Mining and quarrying, manufacturing, electricity, gas and water supply



- 1 - Total
- 2 - Mining and quarrying
 - 3 - Mining and quarrying of energy producing materials
 - 4 - Mining and quarrying, except energy producing materials
- 5 - Manufacturing
 - 6 - High tech
 - 7 - Manufacture of pharmaceuticals
 - 8 - Manufacture of office machinery and computers
 - 9 - Manufacture of radio, television and communication equipment and apparatus
 - 10 - Manufacture of medical, precision and optical instruments, watches and clocks
 - 11 - Manufacture of aircrafts, including spacecrafts
 - 12 - Medium high tech
 - 13 - Manufacture of chemicals and chemical products
 - 14 - Manufacture of machinery and equipment, n.e.c.
 - 15 - Manufacture of electrical machinery and apparatus
 - 16 - Manufacture of motor vehicles, trailers and semi-trailers
 - 17 - Manufacture of other transport vehicles
 - 18 - Medium low tech
 - 19 - Manufacture of coke, refined petroleum products

- 20 - Manufacture of rubber and plastic products
- 21 - Manufacture of other non-metallic mineral products
- 22 - Manufacture of basic metals
- 23 - Manufacture of fabricated metal products
- 24 - Construction and repair of vessels
- 25 - Low tech
 - 26 - Manufacture of food products and beverages
 - 27 - Manufacture of tobacco products
 - 28 - Manufacture of textiles
 - 29 - Manufacture of wearing apparel, dressing and dyeing of fur
 - 30 - Manufacture of leather, leather products and footwear
 - 31 - Manufacture of wood and of products of wood and cork, except furniture
 - 32 - Manufacture of cellulose, wood pulp, paper and cardboard and appropriate paper products
 - 33 - Publishing and printing, reproduction of recorded media
 - 34 - Manufacture of furniture; manufacturing n.e.c.
 - 35 - Recycling
- 36 - Electricity, gas and water supply

(continued)



3.23. EXPORTS OF INNOVATIVE AND TECHNOLOGICALLY UNCHANGED GOODS AND SERVICES BY ECONOMIC ACTIVITY

	Exports of goods and services, <i>million roubles</i>		Innovative goods and services				Technologically unchanged goods and services			
			Million roubles		Per cent		Million roubles		Per cent	
	2010	2011	2010	2011	2010	2011	2010	2011	2010	2011
Mining and quarrying, manufacturing, electricity, gas and water supply										
Total	5076348.4	6722313.7	228644.5	591239.1	4.5	8.8	4847703.9	6131074.6	95.5	91.2
Mining and quarrying	1639098.9	2402459.3	67599.3	378392.4	4.1	15.8	1571499.6	2024066.9	95.9	84.2
Mining and quarrying of energy producing materials	1425518.2	2131852.6	66374.9	374925.7	4.7	17.6	1359143.3	1756926.9	95.3	82.4
Mining and quarrying, except energy producing materials	213580.7	270606.7	1224.4	3466.6	0.6	1.3	212356.3	267140.0	99.4	98.7
Manufacturing	3432985.5	4315198.8	161045.2	212846.8	4.7	4.9	3271940.3	4102352.1	95.3	95.1
High tech	131157.7	159875.1	11289.7	24146.6	8.6	15.1	119868.0	135728.6	91.4	84.9
Manufacture of pharmaceuticals	3902.9	8937.9	271.1	2764.8	6.9	30.9	3631.8	6173.0	93.1	69.1
Manufacture of office machinery and computers	231.2	179.3	39.9	33.5	17.3	18.7	191.3	145.7	82.7	81.3
Manufacture of radio, television and communication equipment and apparatus	5413.2	8084.7	2223.0	3323.7	41.1	41.1	3190.2	4761.0	58.9	58.9
Manufacture of medical, precision and optical instruments, watches and clocks	11494.9	20746.3	6044.2	10916.2	52.6	52.6	5450.7	9830.1	47.4	47.4
Manufacture of aircrafts, including spacecrafts	110115.5	121927.0	2711.5	7108.3	2.5	5.8	107404.0	114818.7	97.5	94.2
Medium high tech	465135.7	692775.0	63256.5	90258.9	13.6	13.0	401879.2	602516.1	86.4	87.0
Manufacture of chemicals and chemical products	369336.7	556316.3	47593.3	62267.4	12.9	11.2	321743.4	494048.9	87.1	88.8
Manufacture of machinery and equipment, n.e.c.	44223.5	43811.4	7791.0	4620.4	17.6	10.5	36432.5	39191.0	82.4	89.5

(continued)

	Exports of goods and services, <i>million roubles</i>		Innovative goods and services				Technologically unchanged goods and services			
			Million roubles		Per cent		Million roubles		Per cent	
	2010	2011	2010	2011	2010	2011	2010	2011	2010	2011
Manufacture of electrical machinery and apparatus	13133.8	14515.1	1579.9	1386.6	12.0	9.6	11553.9	13128.5	88.0	90.4
Manufacture of motor vehicles, trailers and semi-trailers	23108.7	37636.0	4723.6	18542.8	20.4	49.3	18385.1	19093.2	79.6	50.7
Manufacture of other transport vehicles	15333.0	40496.3	1568.7	3441.8	10.2	8.5	13764.3	37054.5	89.8	91.5
Medium low tech	2557404.4	3112459.4	62496.0	58233.8	2.4	1.9	2494908.4	3054225.6	97.6	98.1
Manufacture of coke, refined petroleum products	1450280.8	1829920.5	24630.4	11036.7	1.7	0.6	1425650.3	1818883.8	98.3	99.4
Manufacture of rubber and plastic products	16618.7	13537.8	1202.6	1501.5	7.2	11.1	15416.2	12036.3	92.8	88.9
Manufacture of other non-metallic mineral products	19945.8	26786.7	975.4	903.9	4.9	3.4	18970.4	25882.9	95.1	96.6
Manufacture of basic metals	1024573.6	1196309.9	27615.4	39983.2	2.7	3.3	996958.2	1156326.7	97.3	96.7
Manufacture of fabricated metal products	17749.7	14756.1	89.4	322.1	0.5	2.2	17660.2	14434.0	99.5	97.8
Construction and repair of vessels	28235.8	31148.4	7982.8	4486.5	28.3	14.4	20253.0	26661.9	71.7	85.6
Low tech	209582.6	263550.8	14839.8	13658.4	7.1	5.2	194742.8	249892.3	92.9	94.8
Manufacture of food products and beverages	46762.2	63228.8	8548.3	9597.2	18.3	15.2	38213.9	53631.6	81.7	84.8
Manufacture of tobacco products	11494.7	16984.5	669.5	1216.7	5.8	7.2	10825.2	15767.8	94.2	92.8
Manufacture of textiles	4229.6	3482.7	63.0	74.9	1.5	2.1	4166.6	3407.8	98.5	97.9
Manufacture of wearing apparel, dressing and dyeing of fur	426.6	1226.6	4.0	139.2	0.9	11.4	422.6	1087.3	99.1	88.6
Manufacture of leather, leather products and footwear	4132.3	3152.6	2.2	6.3	0.1	0.2	4130.1	3146.3	99.9	99.8
Manufacture of wood and of products of wood and cork, except furniture	44748.3	53215.4	692.4	199.2	1.5	0.4	44055.9	53016.2	98.5	99.6

(continued)

	Exports of goods and services, <i>million roubles</i>		Innovative goods and services				Technologically unchanged goods and services			
			Million roubles		Per cent		Million roubles		Per cent	
	2010	2011	2010	2011	2010	2011	2010	2011	2010	2011
Manufacture of cellulose, wood pulp, paper and cardboard and appropriate paper products	70833.0	89494.0	4284.0	1195.5	6.0	1.3	66549.0	88298.4	94.0	98.7
Publishing and printing, reproduction of recorded media	974.7	1573.7	–	17.6	–	1.1	974.7	1556.1	100	98.9
Manufacture of furniture, manufacturing n.e.c.	17546.4	22414.1	77.2	12.9	0.4	0.1	17469.3	22401.2	99.6	99.9
Recycling	8434.9	8778.4	499.2	1198.9	5.9	13.7	7935.6	7579.6	94.1	86.3
Manufacturing of other materials and substances, n.e.c.	69705.1	86538.5	9163.1	26549.1	13.1	30.7	60542.0	59989.4	86.9	69.3
Electricity, gas and water supply	4264.0	4655.6	–	–	–	–	4264.0	4655.6	100	100
Communications, computer and related activities, research and development, other business activities										
Total	51011.9	115123.9	4811.3	39416.9	9.4	34.2	46200.6	75707.0	90.6	65.8
Communications	23602.6	12525.1	1000.8	35.0	4.2	0.3	22601.8	12490.2	95.8	99.7
Computer and related activities	13849.7	14850.8	3621.8	4011.5	26.2	27.0	10227.9	10839.3	73.8	73.0
Research and development	...	69335.4	...	33184.8	...	47.9	...	36150.6	...	52.1
Other business activities	13559.6	18412.6	188.7	2185.6	1.4	11.9	13370.9	16226.9	98.6	88.1

3.24. EXPORTS OF INNOVATIVE GOODS AND SERVICES BY COUNTRY AND ECONOMIC ACTIVITY

	Exports of goods and services, <i>million roubles</i>		CIS countries				Other foreign countries			
			Million roubles		Per cent		Million roubles		Per cent	
	2010	2011	2010	2011	2010	2011	2010	2011	2010	2011
Mining and quarrying, manufacturing, electricity, gas and water supply										
Total	228644.5	591239.1	37196.2	61194.5	16.3	10.4	191448.3	530044.6	83.7	89.6
Mining and quarrying	67599.3	378392.4	2738.1	5208.9	4.1	1.4	64861.3	373183.4	95.9	98.6
Mining and quarrying of energy producing materials	66374.9	374925.7	2731.2	5208.7	4.1	1.4	63643.7	369717.0	95.9	98.6
Mining and quarrying, except energy producing materials	1224.4	3466.6	6.9	0.2	0.6	0.01	1217.5	3466.5	99.4	99.99
Manufacturing	161045.2	212846.8	34458.1	55985.6	21.4	26.3	126587.1	156861.2	78.6	73.7
High tech	11289.7	24146.6	606.4	3938.5	5.4	16.3	10683.3	20208.0	94.6	83.7
Manufacture of pharmaceuticals	271.1	2764.8	141.3	205.4	52.1	7.4	129.9	2559.4	47.9	92.6
Manufacture of office machinery and computers	39.9	33.5	39.9	32.0	100	95.3	–	1.6	–	4.7
Manufacture of radio, television and communication equipment and apparatus	2223.0	3323.7	141.6	88.9	6.4	2.7	2081.4	3234.8	93.6	97.3
Manufacture of medical, precision and optical instruments, watches and clocks	6044.2	10916.2	150.6	544.0	2.5	5.0	5893.6		97.5	95.0
Manufacture of aircrafts, including spacecrafts	2711.5	7108.3	133.1	3068.2	4.9	43.2	2578.5	4040.1	95.1	56.8
Medium high tech	63256.5	90258.9	14597.6	25092.3	23.1	27.8	48658.9	65166.6	76.9	72.2
Manufacture of chemicals and chemical products	47593.3	62267.4	5161.7	4934.8	10.8	7.9	42431.6	57332.6	89.2	92.1
Manufacture of machinery and equipment, n.e.c.	7791.0	4620.4	3640.8	2595.5	46.7	56.2	4150.2	2024.8	53.3	43.8

(continued)

	Exports of goods and services, <i>million roubles</i>		CIS countries				Other foreign countries			
			Million roubles		Per cent		Million roubles		Per cent	
	2010	2011	2010	2011	2010	2011	2010	2011	2010	2011
Manufacture of electrical machinery and apparatus	1579.9	1386.6	622.2	734.6	39.4	53.0	957.7	652.0	60.6	47.0
Manufacture of motor vehicles, trailers and semi-trailers	4723.6	18542.8	3957.5	13933.8	83.8	75.1	766.1	4608.9	16.2	24.9
Manufacture of other transport vehicles	1568.7	3441.8	1215.5	2893.6	77.5	84.1	353.3	548.2	22.5	15.9
Medium low tech	62496.0	58233.8	10154.0	9055.8	16.2	15.6	52342.0	49178.0	83.8	84.4
Manufacture of coke, refined petroleum products	24630.4	11036.7	789.7	220.7	3.2	2.0	23840.8	10816.0	96.8	98.0
Manufacture of rubber and plastic products	1202.6	1501.5	983.0	1311.1	81.7	87.3	219.5	190.4	18.3	12.7
Manufacture of other non-metallic mineral products	975.4	903.9	588.5	809.6	60.3	89.6	386.9	94.2	39.7	10.4
Manufacture of basic metals	27615.4	39983.2	7196.8	6525.4	26.1	16.3	20418.6	33457.7	73.9	83.7
Manufacture of fabricated metal products	89.4	322.1	69.9	157.8	78.2	49.0	19.5	164.2	21.8	51.0
Construction and repair of vessels	7982.8	4486.5	526.1	31.0	6.6	0.7	7456.7	4455.5	93.4	99.3
Low tech	14839.8	13658.4	8997.3	8922.7	60.6	65.3	5842.5	4735.8	39.4	34.7
Manufacture of food products and beverages	8548.3	9597.2	7699.1	6840.4	90.1	71.3	849.2	2756.8	9.9	28.7
Manufacture of tobacco products	669.5	1216.7	549.5	662.5	82.1	54.4	120.1	554.3	17.9	45.6
Manufacture of textiles	63.0	74.9	15.3	34.6	24.3	46.2	47.7	40.3	75.7	53.8
Manufacture of wearing apparel, dressing and dyeing of fur	4.0	139.2	2.5	114.2	62.4	82.0	1.5	25.1	37.6	18.0
Manufacture of leather, leather products and footwear	2.2	6.3	1.3	–	58.5	–	0.9	6.3	41.5	100
Manufacture of wood and of products of wood and cork, except furniture	692.4	199.2	–	69.6	–	35.0	692.4	129.6	100	65.0

(continued)

	Exports of goods and services, million roubles		CIS countries				Other foreign countries			
			Million roubles		Per cent		Million roubles		Per cent	
	2010	2011	2010	2011	2010	2011	2010	2011	2010	2011
Manufacture of cellulose, wood pulp, paper and cardboard and appropriate paper products	4284.0	1195.5	311.8	312.2	7.3	26.1	3972.1	883.3	92.7	73.9
Publishing and printing, reproduction of recorded media	—	17.6	—	17.6	—	100	—	—	—	—
Manufacture of furniture, manufacturing n.e.c.	77.2	12.9	5.5	7.4	7.1	57.2	71.7	5.5	92.9	42.8
Recycling	499.2	1198.9	412.4	864.3	82.6	72.1	86.8	334.6	17.4	27.9
Manufacturing of other materials and substances, n.e.c.	9163.1	26549.1	102.7	8976.3	1.1	33.8	9060.3	17572.8	98.9	66.2
Electricity, gas and water supply	—	—	—	—	—	—	—	—	—	—
Communications, computer and related activities, research and development, other business activities										
Total	4811.3	39416.9	87.2	2235.3	1.8	5.7	4724.1	37181.5	98.2	94.3
Communications	1000.8	35.0	0.6	0.4	0.1	1.1	1000.2	34.6	99.9	98.9
Computer and related activities	3621.8	4011.5	0.5	29.2	0.01	0.7	3621.2	3982.3	99.99	99.3
Research and development	...	33184.8	...	1853.2	...	5.6	...	31331.6	...	94.4
Other business activities	188.7	2185.6	86.1	352.5	45.6	16.1	102.7	1833.1	54.4	83.9

3.25. ENTERPRISES ENGAGED IN TECHNOLOGY EXCHANGE AS A PERCENTAGE OF ALL ENTERPRISES BY ECONOMIC ACTIVITY

	Enterprises acquiring technology				Enterprises transferring technology			
	Enterprises engaged in technological innovation		Enterprises not engaged in technological innovation		Enterprises engaged in technological innovation		Enterprises not engaged in technological innovation	
	2010	2011	2010	2011	2010	2011	2010	2011
Mining and quarrying, manufacturing, electricity, gas and water supply								
Total	73.8	73.4	26.2	26.6	76.5	79.5	23.5	20.5
Mining and quarrying	72.1	68.5	27.9	31.5	100	100	–	–
Mining and quarrying of energy producing materials	72.7	70.0	27.3	30.0	100	100	–	–
Mining and quarrying, except energy producing materials	70.0	64.3	30.0	35.7	–	–	–	–
Manufacturing	76.7	75.4	23.3	24.6	78.2	78.9	21.8	21.1
High tech	86.5	85.3	13.5	14.7	94.1	85.7	5.9	14.3
Manufacture of pharmaceuticals	92.3	90.0	7.7	10.0	100	100	–	–
Manufacture of office machinery and computers	100	66.7	–	33.3	–	–	–	100
Manufacture of radio, television and communication equipment and apparatus	86.8	90.2	13.2	9.8	85.7	88.9	14.3	11.1
Manufacture of medical, precision and optical instruments, watches and clocks	83.1	83.3	16.9	16.7	100	85.7	–	14.3
Manufacture of aircrafts, including spacecrafts	92.0	85.7	8.0	14.3	100	100	–	–
Medium high tech	77.7	77.8	22.3	22.2	78.6	76.2	21.4	23.8
Manufacture of chemicals and chemical products	87.5	87.8	12.5	12.2	75.0	100	25.0	–

(continued)

	Enterprises acquiring technology				Enterprises transferring technology			
	Enterprises engaged in technological innovation		Enterprises not engaged in technological innovation		Enterprises engaged in technological innovation		Enterprises not engaged in technological innovation	
	2010	2011	2010	2011	2010	2011	2010	2011
Manufacture of machinery and equipment, n.e.c.	69.6	69.7	30.4	30.3	81.8	66.7	18.2	33.3
Manufacture of electrical machinery and apparatus	83.6	82.8	16.4	17.2	83.3	100	16.7	—
Manufacture of motor vehicles, trailers and semi-trailers	80.8	86.7	19.2	13.3	80.0	80.0	20.0	20.0
Manufacture of other transport vehicles	71.4	69.6	28.6	30.4	50.0	50.0	50.0	50.0
Medium low tech	75.8	76.6	24.2	23.4	68.8	66.7	31.3	33.3
Manufacture of coke, refined petroleum products	94.1	94.4	5.9	5.6	100	100	—	—
Manufacture of rubber and plastic products	77.8	75.0	22.2	25.0	66.7	33.3	33.3	66.7
Manufacture of other non-metallic mineral products	63.4	77.3	36.6	22.7	50.0	50.0	50.0	50.0
Manufacture of basic metals	78.6	75.6	21.4	24.4	83.3	83.3	16.7	16.7
Manufacture of fabricated metal products	75.0	64.7	25.0	35.3	33.3	50.0	66.7	50.0
Construction and repair of vessels	81.8	90.0	18.2	10.0	—	100	—	—
Low tech	67.6	61.6	32.4	38.4	62.5	100	37.5	—
Manufacture of food products and beverages	72.3	69.6	27.7	30.4	75.0	100	25.0	—
Manufacture of tobacco products	100	100	—	—	—	—	—	—
Manufacture of textiles	88.9	71.4	11.1	28.6	100	—	—	—
Manufacture of wearing apparel, dressing and dyeing of fur	100	25.0	—	75.0	100	100	—	—
Manufacture of leather, leather products and footwear	100	25.0	—	75.0	—	—	—	—

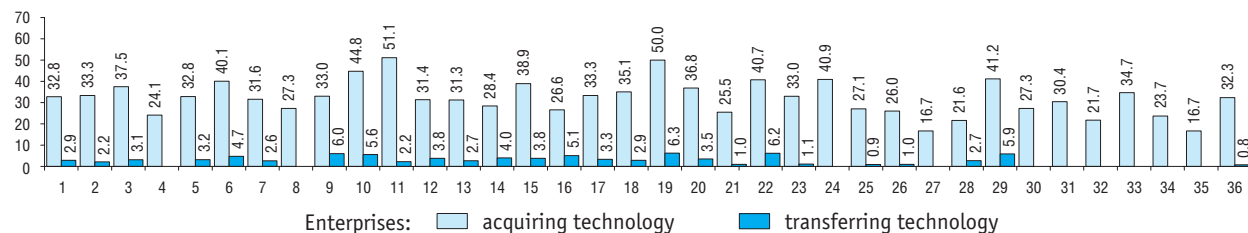
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	Enterprises acquiring technology				Enterprises transferring technology			
	Enterprises engaged in technological innovation		Enterprises not engaged in technological innovation		Enterprises engaged in technological innovation		Enterprises not engaged in technological innovation	
	2010	2011	2010	2011	2010	2011	2010	2011
Manufacture of wood and of products of wood and cork, except furniture	53.8	53.3	46.2	46.7	—	—	—	—
Manufacture of cellulose, wood pulp, paper and cardboard and appropriate paper products	83.3	100	16.7	—	—	—	—	—
Publishing and printing, reproduction of recorded media	56.5	46.4	43.5	53.6	—	—	100	—
Manufacture of furniture, manufacturing n.e.c.	47.4	66.7	52.6	33.3	—	—	—	—
Recycling	33.3	50.0	66.7	50.0	—	—	—	—
Electricity, gas and water supply	58.1	64.8	41.9	35.2	40.0	66.7	60.0	33.3
Communications, computer and related activities, research and development, other business activities								
Total	51.3	60.6	48.7	39.4	64.7	74.4	35.3	25.6
Communications	76.4	78.0	23.6	22.0	66.7	66.7	33.3	33.3
Computer and related activities	42.9	56.6	57.1	43.4	52.6	60.0	47.4	40.0
Research and development	...	74.3	...	25.7	...	76.9	...	23.1
Other business activities	46.2	46.3	53.8	53.7	72.4	65.0	27.6	35.0

3.26. ENTERPRISES ENGAGED IN TECHNOLOGY EXCHANGE AS A PERCENTAGE OF ALL ENTERPRISES ENGAGED IN TECHNOLOGICAL INNOVATION BY ECONOMIC ACTIVITY

2010

Mining and quarrying, manufacturing, electricity, gas and water supply



Enterprises: acquiring technology

transferring technology

1 – Total

2 – Mining and quarrying

3 – Mining and quarrying of energy producing materials

4 – Mining and quarrying, except energy producing materials

5 – Manufacturing

6 – High tech

7 – Manufacture of pharmaceuticals

8 – Manufacture of office machinery and computers

9 – Manufacture of radio, television and communication equipment and apparatus

10 – Manufacture of medical, precision and optical instruments, watches and clocks

11 – Manufacture of aircrafts, including spacecrafts

12 – Medium high tech

13 – Manufacture of chemicals and chemical products

14 – Manufacture of machinery and equipment, n.e.c.

15 – Manufacture of electrical machinery and apparatus

16 – Manufacture of motor vehicles, trailers and semi-trailers

17 – Manufacture of other transport vehicles

18 – Medium low tech

19 – Manufacture of coke, refined petroleum products

20 – Manufacture of rubber and plastic products

21 – Manufacture of other non-metallic mineral products

22 – Manufacture of basic metals

23 – Manufacture of fabricated metal products

24 – Construction and repair of vessels

25 – Low tech

26 – Manufacture of food products and beverages

27 – Manufacture of tobacco products

28 – Manufacture of textiles

29 – Manufacture of wearing apparel, dressing and dyeing of fur

30 – Manufacture of leather, leather products and footwear

31 – Manufacture of wood and of products of wood and cork, except furniture

32 – Manufacture of cellulose, wood pulp, paper and cardboard and appropriate paper products

33 – Publishing and printing, reproduction of recorded media

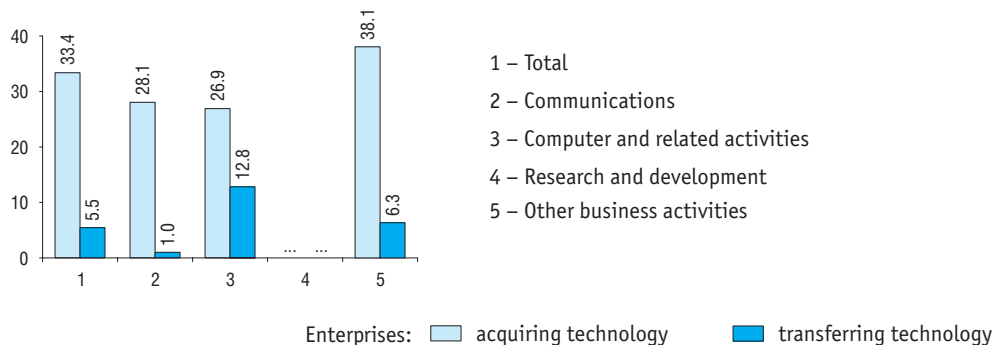
34 – Manufacture of furniture; manufacturing n.e.c.

35 – Recycling

36 – Electricity, gas and water supply

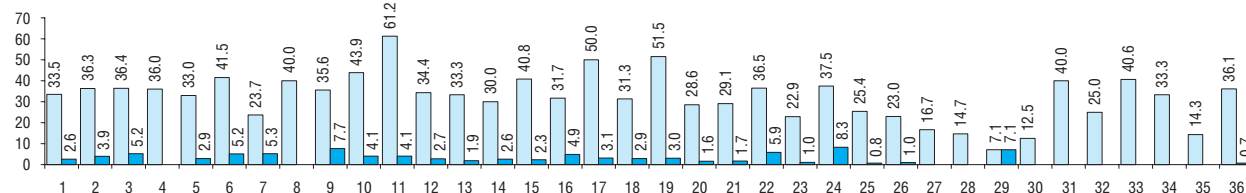
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Communications, computer and related activities, research and development, other business activities



(continued)

2011
Mining and quarrying, manufacturing, electricity, gas and water supply

Enterprises: ■ acquiring technology■ transferring technology

1 – Total

2 – Mining and quarrying

3 – Mining and quarrying of energy producing materials

4 – Mining and quarrying, except energy producing materials

5 – Manufacturing

6 – High tech

7 – Manufacture of pharmaceuticals

8 – Manufacture of office machinery and computers

9 – Manufacture of radio, television and communication equipment and apparatus

10 – Manufacture of medical, precision and optical instruments, watches and clocks

11 – Manufacture of aircrafts, including spacecrafts

12 – Medium high tech

13 – Manufacture of chemicals and chemical products

14 – Manufacture of machinery and equipment, n.e.c.

15 – Manufacture of electrical machinery and apparatus

16 – Manufacture of motor vehicles, trailers and semi-trailers

17 – Manufacture of other transport vehicles

18 – Medium low tech

19 – Manufacture of coke, refined petroleum products

20 – Manufacture of rubber and plastic products

21 – Manufacture of other non-metallic mineral products

22 – Manufacture of basic metals

23 – Manufacture of fabricated metal products

24 – Construction and repair of vessels

25 – Low tech

26 – Manufacture of food products and beverages

27 – Manufacture of tobacco products

28 – Manufacture of textiles

29 – Manufacture of wearing apparel, dressing and dyeing of fur

30 – Manufacture of leather, leather products and footwear

31 – Manufacture of wood and of products of wood and cork, except furniture

32 – Manufacture of cellulose, wood pulp, paper and cardboard and appropriate paper products

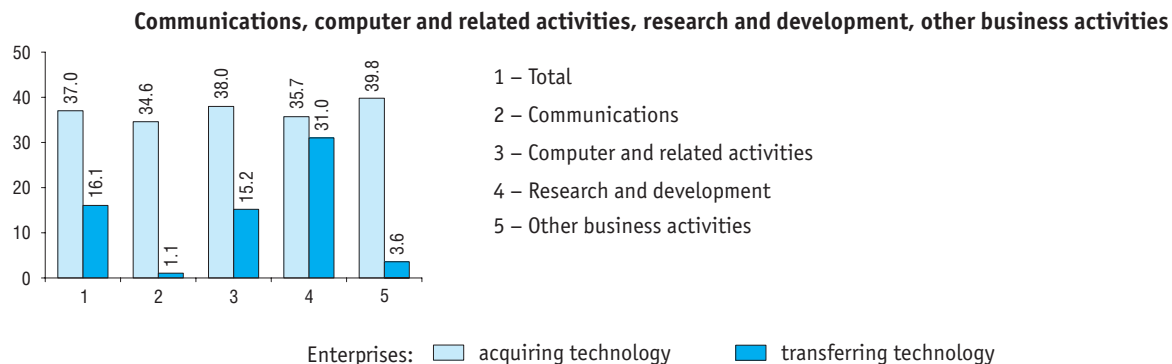
33 – Publishing and printing, reproduction of recorded media

34 – Manufacture of furniture; manufacturing n.e.c.

35 – Recycling

36 – Electricity, gas and water supply

(continued)



3.27. ENTERPRISES ACQUIRING TECHNOLOGY OUTSIDE RUSSIA

(as a percentage of all enterprises engaged in technological innovation and technology acquisition)

	Total		From CIS countries		From other foreign countries	
	2010	2011	2010	2011	2010	2011
Mining and quarrying, manufacturing, electricity, gas and water supply						
Total	28.6	30.6	3.8	4.3	24.8	26.2
Mining and quarrying	6.5	21.6	–	8.1	6.5	13.5
Mining and quarrying of energy producing materials	8.3	25.0	–	10.7	8.3	14.3
Mining and quarrying, except energy producing materials	–	11.1	–	–	–	11.1
Manufacturing	32.3	34.3	4.1	4.3	28.1	29.9
High tech	28.9	32.4	6.7	4.8	22.2	27.6
Manufacture of pharmaceuticals	50.0	44.4	16.7	11.1	33.3	33.3
Manufacture of office machinery and computers	–	25.0	–	–	–	25.0
Manufacture of radio, television and communication equipment and apparatus	24.2	27.0	6.1	2.7	18.2	24.3
Manufacture of medical, precision and optical instruments, watches and clocks	23.4	27.7	3.1	3.1	20.3	24.6
Manufacture of aircrafts, including spacecrafts	43.5	46.7	13.0	10.0	30.4	36.7
Medium high tech	36.5	39.5	3.9	4.0	32.6	35.5
Manufacture of chemicals and chemical products	42.9	52.8	2.9	2.8	40.0	50.0
Manufacture of machinery and equipment, n.e.c.	34.4	29.0	4.7	5.8	29.7	23.2

(continued)

	Total		From CIS countries		From other foreign countries	
	2010	2011	2010	2011	2010	2011
Manufacture of electrical machinery and apparatus	33.3	43.4	3.9	3.8	29.4	39.6
Manufacture of motor vehicles, trailers and semi-trailers	38.1	46.2	–	–	38.1	46.2
Manufacture of other transport vehicles	40.0	31.3	10.0	6.3	30.0	25.0
Medium low tech	37.0	33.6	2.2	4.6	34.8	29.0
Manufacture of coke, refined petroleum products	37.5	47.1	–	5.9	37.5	41.2
Manufacture of rubber and plastic products	38.1	16.7	–	–	38.1	16.7
Manufacture of other non-metallic mineral products	50.0	23.5	–	–	50.0	23.5
Manufacture of basic metals	39.4	45.2	6.1	9.7	33.3	35.5
Manufacture of fabricated metal products	30.0	27.3	3.3	–	26.7	27.3
Construction and repair of vessels	11.1	55.6	–	22.2	11.1	33.3
Low tech	24.3	26.7	2.0	3.7	22.3	23.0
Manufacture of food products and beverages	27.2	26.8	3.7	2.8	23.5	23.9
Manufacture of tobacco products	100	–	–	–	100	–
Manufacture of textiles	25.0	20.0	–	20.0	25.0	–
Manufacture of wearing apparel, dressing and dyeing of fur	14.3	–	–	–	14.3	–
Manufacture of leather, leather products and footwear	–	–	–	–	–	–

(continued)

	Total		From CIS countries		From other foreign countries	
	2010	2011	2010	2011	2010	2011
Manufacture of wood and of products of wood and cork, except furniture	28.6	37.5	–	–	28.6	37.5
Manufacture of cellulose, wood pulp, paper and cardboard and appropriate paper products	40.0	57.1	–	–	40.0	57.1
Publishing and printing, reproduction of recorded media	7.7	19.2	–	7.7	7.7	11.5
Manufacture of furniture, manufacturing n.e.c.	44.4	21.4	–	–	44.4	21.4
Recycling	–	100	–	–	–	100
Electricity, gas and water supply	9.3	10.7	2.3	2.9	7.0	7.8
Communications, computer and related activities, research and development, other business activities						
Total	11.4	16.2	3.5	3.4	7.9	12.8
Communications	12.7	14.1	1.8	–	10.9	14.1
Computer and related activities	14.3	10.0	4.8	–	9.5	10.0
Research and development	...	22.7	...	6.3	...	16.5
Other business activities	10.3	10.4	4.0	2.1	6.3	8.3

3.28. ENTERPRISES TRANSFERRING TECHNOLOGY OUTSIDE RUSSIA

(as a percentage of all enterprises engaged in technological innovation and technology transfer)

	Total		To CIS countries		To other foreign countries	
	2010	2011	2010	2011	2010	2011
Mining and quarrying, manufacturing, electricity, gas and water supply						
Total	16.9	22.6	9.2	11.3	7.7	11.3
Mining and quarrying	–	–	–	–	–	–
Mining and quarrying of energy producing materials	–	–	–	–	–	–
Mining and quarrying, except energy producing materials	–	–	–	–	–	–
Manufacturing	18.0	25.0	9.8	12.5	8.2	12.5
High tech	18.8	38.9	6.3	16.7	12.5	22.2
Manufacture of pharmaceuticals	–	–	–	–	–	–
Manufacture of office machinery and computers	–	–	–	–	–	–
Manufacture of radio, television and communication equipment and apparatus	16.7	25.0	–	12.5	16.7	12.5
Manufacture of medical, precision and optical instruments, watches and clocks	25.0	50.0	12.5	33.3	12.5	16.7
Manufacture of aircrafts, including spacecrafts	–	100	–	–	–	100
Medium high tech	13.6	18.8	9.1	6.3	4.5	12.5
Manufacture of chemicals and chemical products	–	–	–	–	–	–
Manufacture of machinery and equipment, n.e.c.	22.2	–	11.1	–	11.1	–

(continued)

	Total		To CIS countries		To other foreign countries	
	2010	2011	2010	2011	2010	2011
Manufacture of electrical machinery and apparatus	20.0	–	20.0	–	–	–
Manufacture of motor vehicles, trailers and semi-trailers	–	75.0	–	25.0	–	50.0
Manufacture of other transport vehicles	–	–	–	–	–	–
Medium low tech	18.2	16.7	9.1	8.3	9.1	8.3
Manufacture of coke, refined petroleum products	–	–	–	–	–	–
Manufacture of rubber and plastic products	–	–	–	–	–	–
Manufacture of other non-metallic mineral products	100	50.0	100	50.0	–	–
Manufacture of basic metals	20.0	–	–	–	20.0	–
Manufacture of fabricated metal products	–	–	–	–	–	–
Construction and repair of vessels	–	50.0	–	–	–	50.0
Low tech	20.0	–	20.0	–	–	–
Manufacture of food products and beverages	–	–	–	–	–	–
Manufacture of tobacco products	–	–	–	–	–	–
Manufacture of textiles	–	–	–	–	–	–
Manufacture of wearing apparel, dressing and dyeing of fur	100	–	100	–	–	–
Manufacture of leather, leather products and footwear	–	–	–	–	–	–
Manufacture of wood and of products of wood and cork, except furniture	–	–	–	–	–	–

(continued)

	Total		To CIS countries		To other foreign countries	
	2010	2011	2010	2011	2010	2011
Manufacture of cellulose, wood pulp, paper and cardboard and appropriate paper products	–	–	–	–	–	–
Publishing and printing, reproduction of recorded media	–	–	–	–	–	–
Manufacture of furniture, manufacturing n.e.c.	–	–	–	–	–	–
Recycling	–	–	–	–	–	–
Electricity, gas and water supply	–	–	–	–	–	–
Communications, computer and related activities, research and development, other business activities						
Total	27.3	18.9	6.1	6.1	21.2	12.8
Communications	50.0	50.0	–	50.0	50.0	–
Computer and related activities	30.0	16.7	–	8.3	30.0	8.3
Research and development	...	19.0	...	5.9	...	13.1
Other business activities	23.8	15.4	9.5	–	14.3	15.4

3.29. FORMS OF TECHNOLOGY ACQUISITION AT ENTERPRISES ENGAGED IN TECHNOLOGICAL INNOVATION BY ECONOMIC ACTIVITY

	Enterprises acquiring technology as a percentage of all enterprises engaged in technological innovation and technology acquisition					
	Patent rights and licenses	R&D results	Know-how, agreements on technology transfer	Purchase of equipment	Targeted hiring of skilled personnel	Other
2010						
Mining and quarrying, manufacturing, electricity, gas and water supply						
Total	23.5	13.3	5.8	64.5	14.1	19.0
Mining and quarrying	25.8	29.0	3.2	41.9	6.5	25.8
Mining and quarrying of energy producing materials	29.2	33.3	4.2	37.5	–	25.0
Mining and quarrying, except energy producing materials	14.3	14.3	–	57.1	28.6	28.6
Manufacturing	25.3	12.4	6.5	65.3	15.9	17.8
High tech	22.2	14.1	5.9	69.6	26.7	23.7
Manufacture of pharmaceuticals	33.3	8.3	16.7	58.3	8.3	–
Manufacture of office machinery and computers	33.3	–	–	66.7	–	33.3
Manufacture of radio, television and communication equipment and apparatus	24.2	18.2	3.0	78.8	33.3	27.3
Manufacture of medical, precision and optical instruments, watches and clocks	18.8	12.5	4.7	65.6	26.6	26.6
Manufacture of aircrafts, including spacecrafts	21.7	17.4	8.7	73.9	30.4	21.7

(continued)

	Enterprises acquiring technology as a percentage of all enterprises engaged in technological innovation and technology acquisition					
	Patent rights and licenses	R&D results	Know-how, agreements on technology transfer	Purchase of equipment	Targeted hiring of skilled personnel	Other
Medium high tech	27.6	15.5	8.3	62.4	12.7	15.5
Manufacture of chemicals and chemical products	22.9	22.9	17.1	40.0	2.9	20.0
Manufacture of machinery and equipment, n.e.c.	28.1	7.8	4.7	64.1	20.3	18.8
Manufacture of electrical machinery and apparatus	27.5	15.7	5.9	70.6	9.8	11.8
Manufacture of motor vehicles, trailers and semi-trailers	28.6	14.3	9.5	66.7	14.3	9.5
Manufacture of other transport vehicles	40.0	40.0	10.0	80.0	10.0	10.0
Medium low tech	28.1	9.6	8.1	57.0	13.3	17.8
Manufacture of coke, refined petroleum products	18.8	37.5	43.8	37.5	18.8	25.0
Manufacture of rubber and plastic products	33.3	–	9.5	47.6	14.3	9.5
Manufacture of other non-metallic mineral products	26.9	–	–	73.1	11.5	23.1
Manufacture of basic metals	42.4	21.2	6.1	51.5	15.2	12.1
Manufacture of fabricated metal products	20.0	–	–	70.0	10.0	13.3
Construction and repair of vessels	11.1	–	–	44.4	11.1	44.4
Low tech	24.3	8.1	4.1	72.3	11.5	17.6
Manufacture of food products and beverages	29.6	8.6	3.7	75.3	7.4	9.9
Manufacture of tobacco products	–	–	–	100	–	–
Manufacture of textiles	25.0	12.5	12.5	75.0	25.0	25.0
Manufacture of wearing apparel, dressing and dyeing of fur	14.3	–	–	71.4	14.3	57.1

(continued)

	Enterprises acquiring technology as a percentage of all enterprises engaged in technological innovation and technology acquisition					
	Patent rights and licenses	R&D results	Know-how, agreements on technology transfer	Purchase of equipment	Targeted hiring of skilled personnel	Other
Manufacture of leather, leather products and footwear	–	–	–	100	33.3	–
Manufacture of wood and of products of wood and cork, except furniture	28.6	–	–	85.7	28.6	14.3
Manufacture of cellulose, wood pulp, paper and cardboard and appropriate paper products	–	–	–	80.0	–	60.0
Publishing and printing, reproduction of recorded media	19.2	11.5	7.7	57.7	15.4	19.2
Manufacture of furniture, manufacturing n.e.c.	22.2	11.1	–	55.6	11.1	33.3
Recycling	–	–	–	100	–	–
Electricity, gas and water supply	9.3	14.0	1.2	66.3	3.5	25.6
Communications, computer and related activities, research and development, other business activities						
Total	25.2	8.9	3.5	56.9	12.9	30.2
Communications	25.5	3.6	1.8	76.4	10.9	12.7
Computer and related activities	28.6	9.5	–	52.4	19.0	28.6
Research and development	...	...	...	...	...	...
Other business activities	24.6	11.1	4.8	49.2	12.7	38.1

(continued)

	Enterprises acquiring technology as a percentage of all enterprises engaged in technological innovation and technology acquisition					
	Patent rights and licenses	R&D results	Know-how, agreements on technology transfer	Purchase of equipment	Targeted hiring of skilled personnel	Other
2011						
Mining and quarrying, manufacturing, electricity, gas and water supply						
Total	23.7	13.6	4.2	63.3	12.1	22.5
Mining and quarrying	27.0	37.8	–	54.1	5.4	21.6
Mining and quarrying of energy producing materials	21.4	42.9	–	57.1	7.1	17.9
Mining and quarrying, except energy producing materials	44.4	22.2	–	44.4	–	33.3
Manufacturing	24.2	12.4	5.1	65.1	14.1	21.1
High tech	18.6	17.9	4.1	71.7	22.1	23.4
Manufacture of pharmaceuticals	33.3	44.4	11.1	44.4	11.1	–
Manufacture of office machinery and computers	–	–	–	75.0	–	50.0
Manufacture of radio, television and communication equipment and apparatus	10.8	18.9	2.7	70.3	29.7	24.3
Manufacture of medical, precision and optical instruments, watches and clocks	21.5	18.5	4.6	72.3	20.0	24.6
Manufacture of aircrafts, including spacecrafts	20.0	10.0	3.3	80.0	23.3	23.3

(continued)

	Enterprises acquiring technology as a percentage of all enterprises engaged in technological innovation and technology acquisition					
	Patent rights and licenses	R&D results	Know-how, agreements on technology transfer	Purchase of equipment	Targeted hiring of skilled personnel	Other
Medium high tech	27.0	14.0	5.0	61.5	13.0	19.5
Manufacture of chemicals and chemical products	22.2	19.4	13.9	52.8	5.6	22.2
Manufacture of machinery and equipment, n.e.c.	30.4	8.7	2.9	49.3	13.0	27.5
Manufacture of electrical machinery and apparatus	32.1	18.9	3.8	75.5	17.0	11.3
Manufacture of motor vehicles, trailers and semi-trailers	11.5	7.7	3.8	76.9	7.7	19.2
Manufacture of other transport vehicles	31.3	18.8	–	62.5	25.0	6.3
Medium low tech	22.9	12.2	9.2	60.3	11.5	22.1
Manufacture of coke, refined petroleum products	41.2	23.5	17.6	17.6	17.6	35.3
Manufacture of rubber and plastic products	33.3	16.7	5.6	44.4	11.1	16.7
Manufacture of other non-metallic mineral products	5.9	5.9	5.9	79.4	2.9	23.5
Manufacture of basic metals	32.3	22.6	12.9	54.8	16.1	22.6
Manufacture of fabricated metal products	13.6	–	4.5	72.7	9.1	13.6
Construction and repair of vessels	22.2	–	11.1	88.9	22.2	22.2
Low tech	25.9	6.7	2.2	65.2	8.1	22.2
Manufacture of food products and beverages	21.1	8.5	1.4	71.8	7.0	19.7
Manufacture of tobacco products	–	–	–	–	–	100
Manufacture of textiles	20.0	–	–	40.0	20.0	40.0
Manufacture of wearing apparel, dressing and dyeing of fur	100	100	–	100	100	–

(continued)

	Enterprises acquiring technology as a percentage of all enterprises engaged in technological innovation and technology acquisition					
	Patent rights and licenses	R&D results	Know-how, agreements on technology transfer	Purchase of equipment	Targeted hiring of skilled personnel	Other
Manufacture of leather, leather products and footwear	–	–	–	100	–	–
Manufacture of wood and of products of wood and cork, except furniture	12.5	12.5	–	87.5	25.0	12.5
Manufacture of cellulose, wood pulp, paper and cardboard and appropriate paper products	28.6	–	–	71.4	14.3	14.3
Publishing and printing, reproduction of recorded media	38.5	–	7.7	50.0	–	26.9
Manufacture of furniture, manufacturing n.e.c.	35.7	7.1	–	50.0	7.1	28.6
Recycling	–	–	–	100	–	–
Electricity, gas and water supply	19.4	12.6	–	55.3	1.9	32.0
Communications, computer and related activities, research and development, other business activities						
Total	26.8	14.7	5.8	49.5	18.4	29.2
Communications	20.3	9.4	1.6	68.8	4.7	14.1
Computer and related activities	40.0	16.7	–	30.0	16.7	33.3
Research and development	27.3	25.6	10.8	55.1	32.4	20.5
Other business activities	26.4	3.5	2.8	38.2	7.6	45.8

3.30. FORMS OF TECHNOLOGY TRANSFER AT ENTERPRISES ENGAGED IN TECHNOLOGICAL INNOVATION BY ECONOMIC ACTIVITY

	Enterprises transferring technology as a percentage of all enterprises engaged in technological innovation and technology transfer					
	Patent rights and licenses	R&D results	Know-how, agreements on technology transfer	Sale of equipment	Targeted transfer of skilled personnel	Other
2010						
Mining and quarrying, manufacturing, electricity, gas and water supply						
Total	35.4	27.7	9.2	27.7	10.8	4.6
Mining and quarrying	100	50.0	—	—	—	—
Mining and quarrying of energy producing materials	100	50.0	—	—	—	—
Mining and quarrying, except energy producing materials	—	—	—	—	—	—
Manufacturing	34.4	27.9	9.8	26.2	11.5	4.9
High tech	18.8	50.0	12.5	31.3	12.5	6.3
Manufacture of pharmaceuticals	—	100	—	—	—	—
Manufacture of office machinery and computers	—	—	—	—	—	—
Manufacture of radio, television and communication equipment and apparatus	16.7	100	16.7	16.7	16.7	—
Manufacture of medical, precision and optical instruments, watches and clocks	25.0	12.5	12.5	37.5	12.5	12.5
Manufacture of aircrafts, including spacecrafts	—	—	—	—	—	—

(continued)

	Enterprises transferring technology as a percentage of all enterprises engaged in technological innovation and technology transfer					
	Patent rights and licenses	R&D results	Know-how, agreements on technology transfer	Sale of equipment	Targeted transfer of skilled personnel	Other
Medium high tech	40.9	27.3	13.6	18.2	9.1	4.5
Manufacture of chemicals and chemical products	33.3	66.7	33.3	–	–	–
Manufacture of machinery and equipment, n.e.c.	33.3	22.2	11.1	22.2	22.2	–
Manufacture of electrical machinery and apparatus	60.0	20.0	–	40.0	–	–
Manufacture of motor vehicles, trailers and semi-trailers	50.0	25.0	25.0	–	–	–
Manufacture of other transport vehicles	–	–	–	–	–	100
Medium low tech	54.5	9.1	–	27.3	9.1	9.1
Manufacture of coke, refined petroleum products	50.0	–	–	50.0	50.0	–
Manufacture of rubber and plastic products	50.0	–	–	50.0	–	–
Manufacture of other non-metallic mineral products	100	–	–	–	–	–
Manufacture of basic metals	60.0	20.0	–	20.0	–	–
Manufacture of fabricated metal products	–	–	–	–	–	100
Construction and repair of vessels	–	–	–	–	–	–
Low tech	40.0	20.0	–	40.0	–	–
Manufacture of food products and beverages	33.3	–	–	66.7	–	–
Manufacture of tobacco products	–	–	–	–	–	–
Manufacture of textiles	100	–	–	–	–	–
Manufacture of wearing apparel, dressing and dyeing of fur	–	100	–	–	–	–

(continued)

	Enterprises transferring technology as a percentage of all enterprises engaged in technological innovation and technology transfer					
	Patent rights and licenses	R&D results	Know-how, agreements on technology transfer	Sale of equipment	Targeted transfer of skilled personnel	Other
Manufacture of leather, leather products and footwear	–	–	–	–	–	–
Manufacture of wood and of products of wood and cork, except furniture	–	–	–	–	–	–
Manufacture of cellulose, wood pulp, paper and cardboard and appropriate paper products	–	–	–	–	–	–
Publishing and printing, reproduction of recorded media	–	–	–	–	–	–
Manufacture of furniture, manufacturing n.e.c.	–	–	–	–	–	–
Recycling	–	–	–	–	–	–
Electricity, gas and water supply	–	–	–	100	–	–
Communications, computer and related activities, research and development, other business activities						
Total	21.2	45.5	12.1	24.2	6.1	15.2
Communications	50.0	–	–	100	–	–
Computer and related activities	10.0	60.0	10.0	20.0	10.0	10.0
Research and development	...	...	...	...	...	...
Other business activities	23.8	42.9	14.3	19.0	4.8	19.0

(continued)

	Enterprises transferring technology as a percentage of all enterprises engaged in technological innovation and technology transfer					
	Patent rights and licenses	R&D results	Know-how, agreements on technology transfer	Sale of equipment	Targeted transfer of skilled personnel	Other
2011						
Mining and quarrying, manufacturing, electricity, gas and water supply						
Total	38.7	40.3	16.1	16.1	9.7	8.1
Mining and quarrying	75.0	25.0	—	—	—	25.0
Mining and quarrying of energy producing materials	75.0	25.0	—	—	—	25.0
Mining and quarrying, except energy producing materials	—	—	—	—	—	—
Manufacturing	37.5	41.1	17.9	16.1	10.7	7.1
High tech	33.3	55.6	16.7	16.7	11.1	5.6
Manufacture of pharmaceuticals	100	—	—	—	—	—
Manufacture of office machinery and computers	—	—	—	—	—	—
Manufacture of radio, television and communication equipment and apparatus	37.5	87.5	25.0	12.5	12.5	—
Manufacture of medical, precision and optical instruments, watches and clocks	16.7	50.0	—	16.7	16.7	16.7
Manufacture of aircrafts, including spacecrafts	—	—	50.0	50.0	—	—

(continued)

	Enterprises transferring technology as a percentage of all enterprises engaged in technological innovation and technology transfer					
	Patent rights and licenses	R&D results	Know-how, agreements on technology transfer	Sale of equipment	Targeted transfer of skilled personnel	Other
Medium high tech	31.3	50.0	25.0	6.3	6.3	12.5
Manufacture of chemicals and chemical products	–	100	–	–	–	–
Manufacture of machinery and equipment, n.e.c.	16.7	33.3	33.3	–	16.7	16.7
Manufacture of electrical machinery and apparatus	33.3	100	33.3	33.3	–	–
Manufacture of motor vehicles, trailers and semi-trailers	50.0	25.0	25.0	–	–	25.0
Manufacture of other transport vehicles	100	–	–	–	–	–
Medium low tech	50.0	16.7	8.3	8.3	16.7	8.3
Manufacture of coke, refined petroleum products	–	–	–	–	100	–
Manufacture of rubber and plastic products	–	100	–	–	–	–
Manufacture of other non-metallic mineral products	50.0	–	–	–	50.0	50.0
Manufacture of basic metals	80.0	20.0	–	–	–	–
Manufacture of fabricated metal products	–	–	100	–	–	–
Construction and repair of vessels	50.0	–	–	50.0	–	–
Low tech	50.0	50.0	–	50.0	–	–
Manufacture of food products and beverages	66.7	33.3	–	66.7	–	–
Manufacture of tobacco products	–	–	–	–	–	–
Manufacture of textiles	–	–	–	–	–	–
Manufacture of wearing apparel, dressing and dyeing of fur	–	100	–	–	–	–

(continued)

	Enterprises transferring technology as a percentage of all enterprises engaged in technological innovation and technology transfer					
	Patent rights and licenses	R&D results	Know-how, agreements on technology transfer	Sale of equipment	Targeted transfer of skilled personnel	Other
Manufacture of leather, leather products and footwear	–	–	–	–	–	–
Manufacture of wood and of products of wood and cork, except furniture	–	–	–	–	–	–
Manufacture of cellulose, wood pulp, paper and cardboard and appropriate paper products	–	–	–	–	–	–
Publishing and printing, reproduction of recorded media	–	–	–	–	–	–
Manufacture of furniture, manufacturing n.e.c.	–	–	–	–	–	–
Recycling	–	–	–	–	–	–
Electricity, gas and water supply	–	50.0	–	50.0	–	–
Communications, computer and related activities, research and development, other business activities						
Total	27.8	66.7	16.7	13.9	5.6	4.4
Communications	100	–	–	50.0	–	–
Computer and related activities	25.0	58.3	8.3	16.7	16.7	8.3
Research and development	28.1	68.6	17.0	13.7	5.2	3.9
Other business activities	15.4	61.5	23.1	7.7	–	7.7

3.31. TECHNOLOGY ACQUISITION AND TRANSFER BY ENTERPRISES ENGAGED IN TECHNOLOGICAL INNOVATION

	Number of technologies acquired	Of which from outside Russia			Number of technologies transferred	Of which outside Russia		
		Total	From CIS countries	From other foreign countries		Total	To CIS countries	To other foreign countries
2010								
Mining and quarrying, manufacturing, electricity, gas and water supply								
Total	11054	1054	69	985	682	49	29	20
Patent rights and patent licenses	792	66	5	61	90	9	6	3
R&D results	870	44	5	39	112	26	19	7
Know-how, agreements on technology transfer	348	29	—	29	7	1	—	1
Purchase (sale) of equipment	6626	828	59	769	278	9	4	5
Targeted hiring (transfer) of skilled personnel	873	10	—	10	181	2	—	2
Other	1545	77	—	77	14	2	—	2
Communications, computer and related activities, research and development, other business activities								
Total	4161	62	13	49	266	58	2	56
Patent rights and patent licenses	1205	12	5	7	44	27	2	25
R&D results	204	—	—	—	172	20	—	20
Know-how, agreements on technology transfer	9	—	—	—	7	2	—	2
Purchase (sale) of equipment	2301	31	5	26	31	7	—	7
Targeted hiring (transfer) of skilled personnel	75	2	1	1	3	—	—	—
Other	367	17	2	15	9	2	—	2

(continued)

	Number of technologies acquired	Of which from outside Russia			Number of technologies transferred	Of which outside Russia		
		Total	From CIS countries	From other foreign countries		Total	To CIS countries	To other foreign countries
2011								
Mining and quarrying, manufacturing, electricity, gas and water supply								
Total	10890	2289	186	2103	1513	78	11	67
Patent rights and patent licenses	999	123	7	116	181	38	3	35
R&D results	933	41	14	27	883	7	4	3
Know-how, agreements on technology transfer	84	23	–	23	51	11	2	9
Purchase (sale) of equipment	6279	1806	134	1672	302	15	2	13
Targeted hiring (transfer) of skilled personnel	1045	54	21	33	79	2	–	2
Other	1550	242	10	232	17	5	–	5
Communications, computer and related activities, research and development, other business activities								
Total	12004	644	37	607	4014	376	107	269
Patent rights and patent licenses	1906	65	4	61	1009	55	7	48
R&D results	774	18	2	16	2237	285	90	195
Know-how, agreements on technology transfer	131	14	–	14	239	4	–	4
Purchase (sale) of equipment	4589	460	27	433	280	31	9	22
Targeted hiring (transfer) of skilled personnel	1890	68	2	66	102	–	–	–
Other	2714	19	2	17	147	1	1	–

3.32. PARTICIPATION OF ENTERPRISES IN JOINT R&D PROJECTS

	Enterprises taking part in joint R&D projects					Joint R&D projects of enterprises				
	Total	engaged in technological innovation		not engaged in technological innovation		Total	engaged in technological innovation		not engaged in technological innovation	
		Number	Per cent	Number	Per cent		Number	Per cent	Number	Per cent
2010										
Mining and quarrying, manufacturing, electricity, gas and water supply										
Total	1050	818	77.9	232	22.1	8648	7576	87.6	1072	12.4
Of which with partners from:										
Russia	975	756	77.5	219	22.5	7730	6753	87.4	977	12.6
CIS countries	121	97	80.2	24	19.8	286	244	85.3	42	14.7
EU Member States, Iceland, Liechtenstein, Norway, and Switzerland	189	154	81.5	35	18.5	488	423	86.7	65	13.3
United States and Canada	46	36	78.3	10	21.7	100	77	77.0	23	23.0
India and China	37	27	73.0	10	27.0	89	65	73.0	24	27.0
Other	62	47	75.8	15	24.2	151	119	78.8	32	21.2
Communications, computer and related activities, research and development, other business activities										
Total	215	129	60.0	86	40.0	1400	1007	71.9	393	28.1
Of which with partners from:										
Russia	206	125	60.7	81	39.3	1306	944	72.3	362	27.7
CIS countries	13	6	46.2	7	53.8	23	13	56.5	10	43.5
EU Member States, Iceland, Liechtenstein, Norway, and Switzerland	14	4	28.6	10	71.4	34	6	17.6	28	82.4
United States and Canada	8	6	75.0	2	25.0	18	13	72.2	5	27.8
India and China	9	8	88.9	1	11.1	18	14	77.8	4	22.2
Other	12	8	66.7	4	33.3	39	31	79.5	8	20.5

(continued)

	Enterprises taking part in joint R&D projects					Joint R&D projects of enterprises				
	Total	engaged in technological innovation		not engaged in technological innovation		Total	engaged in technological innovation		not engaged in technological innovation	
		Number	Per cent	Number	Per cent		Number	Per cent	Number	Per cent
2011										
Mining and quarrying, manufacturing, electricity, gas and water supply										
Total	1032	813	78.8	219	21.2	7259	6000	82.7	1259	17.3
Of which with partners from:										
Russia	967	767	79.3	200	20.7	6364	5255	82.6	1109	17.4
CIS countries	127	98	77.2	29	22.8	232	148	63.8	84	36.2
EU Member States, Iceland, Liechtenstein, Norway, and Switzerland	187	146	78.1	41	21.9	458	360	78.6	98	21.4
United States and Canada	53	41	77.4	12	22.6	127	93	73.2	34	26.8
India and China	44	33	75.0	11	25.0	120	86	71.7	34	28.3
Other	59	41	69.5	18	30.5	166	116	69.9	50	30.1
Communications, computer and related activities, research and development, other business activities										
Total	669	464	69.4	205	30.6	10955	8909	81.3	2046	18.7
Of which with partners from:										
Russia	638	451	70.7	187	29.3	9770	7909	81.0	1861	19.0
CIS countries	88	69	78.4	19	21.6	253	200	79.1	53	20.9
EU Member States, Iceland, Liechtenstein, Norway, and Switzerland	84	58	69.0	26	31.0	519	453	87.3	66	12.7
United States and Canada	52	39	75.0	13	25.0	153	133	86.9	20	13.1
India and China	49	37	75.5	12	24.5	118	83	70.3	35	29.7
Other	69	46	66.7	23	33.3	219	175	79.9	44	20.1

3.33. ENTERPRISES TAKING PART IN JOINT R&D PROJECTS BY ECONOMIC ACTIVITY

	Enterprises taking part in joint R&D projects					
	as a percentage of all enterprises		as a percentage of all enterprises engaged in technological innovation		as a percentage of all enterprises not engaged in technological innovation	
	2010	2011	2010	2011	2010	2011
Mining and quarrying, manufacturing, electricity, gas and water supply						
Total	4.3	4.2	36.0	34.7	1.0	1.0
Mining and quarrying	4.4	4.5	41.9	41.2	1.8	1.8
Mining and quarrying of energy producing materials	5.1	5.6	46.9	44.2	1.5	1.8
Mining and quarrying, except energy producing materials	3.5	3.0	31.0	32.0	2.1	1.8
Manufacturing	5.3	5.3	37.3	36.4	1.2	1.2
High tech	17.7	18.0	55.5	53.6	3.6	4.1
Manufacture of pharmaceuticals	12.1	10.6	42.1	39.5	2.5	2.3
Manufacture of office machinery and computers	22.0	25.0	72.7	80.0	3.3	6.7
Manufacture of radio, television and communication equipment and apparatus	21.9	22.9	58.0	59.6	5.5	4.4
Manufacture of medical, precision and optical instruments, watches and clocks	15.3	15.7	53.1	48.6	3.0	4.4
Manufacture of aircrafts, including spacecrafts	23.2	23.3	64.4	61.2	4.1	4.1
Medium high tech	8.9	8.7	40.2	39.5	2.1	2.1
Manufacture of chemicals and chemical products	12.3	11.9	43.8	47.2	2.9	2.5
Manufacture of machinery and equipment, n.e.c.	7.1	7.2	38.2	37.4	1.7	1.8

(continued)

	Enterprises taking part in joint R&D projects					
	as a percentage of all enterprises		as a percentage of all enterprises engaged in technological innovation		as a percentage of all enterprises not engaged in technological innovation	
	2010	2011	2010	2011	2010	2011
Manufacture of electrical machinery and apparatus	9.7	9.4	36.6	36.2	2.7	2.7
Manufacture of motor vehicles, trailers and semi-trailers	10.9	10.0	45.6	39.0	1.7	1.7
Manufacture of other transport vehicles	7.7	7.1	43.3	43.8	2.4	2.1
Medium low tech	5.5	5.3	37.9	36.6	1.6	1.3
Manufacture of coke, refined petroleum products	24.5	25.0	68.8	69.7	5.4	4.2
Manufacture of rubber and plastic products	3.9	3.8	26.3	22.2	1.5	1.6
Manufacture of other non-metallic mineral products	3.3	3.4	28.4	27.4	1.4	1.2
Manufacture of basic metals	15.7	14.5	58.0	57.6	3.6	1.7
Manufacture of fabricated metal products	3.2	3.3	27.5	29.2	0.6	0.6
Construction and repair of vessels	7.6	6.6	36.4	29.2	3.3	2.8
Low tech	1.6	1.4	18.6	16.9	0.4	0.4
Manufacture of food products and beverages	2.5	2.2	20.3	17.8	0.7	0.5
Manufacture of tobacco products	10.5	15.8	33.3	33.3	–	7.7
Manufacture of textiles	1.5	1.6	10.8	8.8	0.3	0.7
Manufacture of wearing apparel, dressing and dyeing of fur	0.8	1.4	17.6	35.7	–	–
Manufacture of leather, leather products and footwear	2.2	2.2	18.2	25.0	0.8	0.8

(continued)

	Enterprises taking part in joint R&D projects					
	as a percentage of all enterprises		as a percentage of all enterprises engaged in technological innovation		as a percentage of all enterprises not engaged in technological innovation	
	2010	2011	2010	2011	2010	2011
Manufacture of wood and of products of wood and cork, except furniture	0.5	0.6	13.0	10.0	–	0.2
Manufacture of cellulose, wood pulp, paper and cardboard and appropriate paper products	5.4	5.8	47.8	39.3	0.5	1.0
Publishing and printing, reproduction of recorded media	0.7	0.4	13.3	9.4	0.3	0.2
Manufacture of furniture, manufacturing n.e.c.	0.9	0.9	10.5	7.1	–	0.3
Recycling	0.5	0.5	–	14.3	0.6	–
Electricity, gas and water supply	1.5	1.3	24.4	20.7	0.5	0.3
Communications, computer and related activities, research and development, other business activities						
Total	1.8	4.6	21.3	41.5	0.8	1.5
Communications	3.9	3.5	23.5	23.8	1.2	0.9
Computer and related activities	4.1	4.5	30.8	36.7	1.6	1.7
Research and development	...	26.6	...	66.7	...	10.3
Other business activities	1.2	1.1	17.8	17.1	0.6	0.5

3.34. ENTERPRISES ENGAGED IN TECHNOLOGICAL INNOVATION AND JOINT R&D PROJECTS BY PARTNER COUNTRY AND ECONOMIC ACTIVITY

	Percentage distribution of enterprises taking part in joint R&D projects by partner country											
	Russia		CIS countries		EU Member States, Iceland, Liechten- stein, Norway, and Switzerland		United States and Canada		India and China		Other	
	2010	2011	2010	2011	2010	2011	2010	2011	2010	2011	2010	2011
Mining and quarrying, manufacturing, electricity, gas and water supply												
Total	92.4	94.3	11.9	12.1	18.8	18.0	4.4	5.0	3.3	4.1	5.7	5.0
Mining and quarrying	100	95.2	2.6	7.1	10.3	7.1	5.1	9.5	–	–	–	2.4
Mining and quarrying of energy producing materials	100	97.1	3.3	2.9	13.3	8.8	6.7	11.8	–	–	–	–
Mining and quarrying, except energy producing materials	100	87.5	–	25.0	–	–	–	–	–	–	–	12.5
Manufacturing	91.7	94.0	13.3	13.1	20.2	19.8	4.6	5.2	3.6	4.6	6.6	5.3
High tech	96.8	97.9	12.8	12.3	9.6	10.2	2.1	3.7	3.2	2.1	5.3	5.3
Manufacture of pharmaceuticals	93.8	93.3	37.5	33.3	18.8	13.3	–	–	–	–	6.3	–
Manufacture of office machinery and computers	100	100	12.5	12.5	–	–	–	–	12.5	12.5	12.5	12.5
Manufacture of radio, television and communication equipment and apparatus	98.3	98.4	6.9	8.1	1.7	6.5	1.7	4.8	1.7	1.6	3.4	3.2
Manufacture of medical, precision and optical instruments, watches and clocks	94.7	98.6	11.8	9.7	10.5	11.1	1.3	1.4	2.6	1.4	7.9	5.6
Manufacture of aircrafts, including spacecrafts	100	96.7	13.8	16.7	20.7	16.7	6.9	10.0	6.9	3.3	–	10.0
Medium high tech	89.7	95.2	14.7	14.3	22.4	21.7	3.4	7.0	4.3	7.0	5.2	6.1
Manufacture of chemicals and chemical products	91.8	96.1	12.2	7.8	30.6	31.4	8.2	7.8	2.0	–	12.2	2.0
Manufacture of machinery and equipment, n.e.c.	90.7	5.3	12.8	15.1	14.0	14.0	3.5	9.3	4.7	4.7	1.2	8.1

(continued)

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(continued)

	Percentage distribution of enterprises taking part in joint R&D projects by partner country											
	Russia		CIS countries		EU Member States, Iceland, Liechtenstein, Norway, and Switzerland		United States and Canada		India and China		Other	
	2010	2011	2010	2011	2010	2011	2010	2011	2010	2011	2010	2011
Manufacture of wood and of products of wood and cork, except furniture	100	100	33.3	50.0	33.3	50.0	–	–	–	–	33.3	–
Manufacture of cellulose, wood pulp, paper and cardboard and appropriate paper products	81.8	72.7	–	–	45.5	63.6	18.2	9.1	9.1	–	–	–
Publishing and printing, reproduction of recorded media	90.0	100	–	–	20.0	–	–	–	–	–	–	–
Manufacture of furniture, manufacturing n.e.c.	100	100	25.0	33.3	50.0	33.3	–	–	–	–	50.0	–
Recycling	–	100	–	–	–	–	–	–	–	–	–	–
Electricity, gas and water supply	95.4	98.3	1.5	3.4	9.2	3.4	1.5	–	1.5	–	–	3.4
Communications, computer and related activities, research and development, other business activities												
Total	96.9	97.2	4.7	14.9	3.1	12.5	4.7	8.4	6.2	8.0	6.2	9.9
Communications	100	97.7	2.2	2.3	4.3	9.1	–	2.3	8.7	4.5	8.7	11.4
Computer and related activities	91.7	89.7	4.2	6.9	–	6.9	20.8	24.1	8.3	6.9	8.3	3.4
Research and development	...	97.3	...	19.1	...	14.6	...	9.4	...	9.7	...	11.2
Other business activities	96.6	100	6.8	4.8	3.4	6.5	1.7	–	3.4	1.6	3.4	4.8

3.35. PERCENTAGE DISTRIBUTION OF ENTERPRISES ENGAGED IN TECHNOLOGICAL INNOVATION AND JOINT R&D PROJECTS BY PARTNER COUNTRY AND ECONOMIC ACTIVITY

	Russia		CIS countries		EU Member States, Iceland, Liechten- stein, Norway, and Switzerland		United States and Canada		India and China		Other	
	2010	2011	2010	2011	2010	2011	2010	2011	2010	2011	2010	2011
Mining and quarrying, manufacturing, electricity, gas and water supply												
Total	100	100	100	100	100	100	100	100	100	100	100	100
Mining and quarrying	5.2	5.2	1.0	3.1	2.6	2.1	5.6	9.8	–	–	–	2.4
Mining and quarrying of energy producing materials	4.0	4.3	1.0	1.0	2.6	2.1	5.6	9.8	–	–	–	–
Mining and quarrying, except energy producing materials	1.2	0.9	–	2.0	–	–	–	–	–	–	–	2.4
Manufacturing	86.6	87.2	97.9	94.9	93.5	96.6	91.7	90.2	96.3	100	100	92.7
High tech	23.9	23.9	24.7	23.5	11.7	13.0	11.1	17.1	22.2	12.1	21.3	24.4
Manufacture of pharmaceuticals	2.0	1.8	6.2	5.1	1.9	1.4	–	–	–	–	2.1	–
Manufacture of office machinery and computers	1.1	1.0	1.0	1.0	–	–	–	–	3.7	3.0	2.1	2.4
Manufacture of radio, television and communication equipment and apparatus	7.5	8.0	4.1	5.1	0.6	2.7	2.8	7.3	3.7	3.0	4.3	4.9
Manufacture of medical, precision and optical instruments, watches and clocks	9.5	9.3	9.3	7.1	5.2	5.5	2.8	2.4	7.4	3.0	12.8	9.8
Manufacture of aircrafts, including spacecrafts	3.8	3.8	4.1	5.1	3.9	3.4	5.6	7.3	7.4	3.0	–	7.3

(continued)

	Russia		CIS countries		EU Member States, Iceland, Liechtenstein, Norway, and Switzerland		United States and Canada		India and China		Other	
	2010	2011	2010	2011	2010	2011	2010	2011	2010	2011	2010	2011
Medium high tech	27.5	28.6	35.1	33.7	33.8	34.2	22.2	39.0	37.0	48.5	25.5	34.1
Manufacture of chemicals and chemical products	6.0	6.4	6.2	4.1	9.7	11.0	11.1	9.8	3.7	–	12.8	2.4
Manufacture of machinery and equipment, n.e.c.	10.3	10.7	11.3	13.3	7.8	8.2	8.3	19.5	14.8	12.1	2.1	17.1
Manufacture of electrical machinery and apparatus	5.7	5.9	7.2	7.1	5.2	5.5	–	4.9	7.4	18.2	4.3	4.9
Manufacture of motor vehicles, trailers and semi-trailers	3.8	3.8	8.2	7.1	7.8	7.5	2.8	4.9	11.1	15.2	4.3	9.8
Manufacture of other transport vehicles	1.7	1.8	2.1	2.0	3.2	2.1	–	–	–	3.0	2.1	–
Medium low tech	17.2	17.5	21.6	26.5	28.6	28.8	38.9	26.8	25.9	24.2	21.3	24.4
Manufacture of coke, refined petroleum products	2.9	2.9	2.1	6.1	3.9	6.2	11.1	12.2	–	–	6.4	4.9
Manufacture of rubber and plastic products	1.5	1.4	1.0	1.0	3.2	1.4	–	–	–	3.0	–	2.4
Manufacture of other non-metallic mineral products	3.3	3.7	3.1	1.0	5.2	4.8	5.6	2.4	7.4	9.1	4.3	2.4
Manufacture of basic metals	5.6	5.5	10.3	11.2	10.4	11.0	16.7	9.8	3.7	–	–	9.8
Manufacture of fabricated metal products	3.0	3.1	3.1	5.1	3.9	4.1	2.8	–	11.1	6.1	6.4	2.4
Construction and repair of vessels	0.9	0.9	2.1	2.0	1.9	1.4	2.8	2.4	3.7	6.1	4.3	2.4
Low tech	11.8	10.6	10.3	6.1	16.2	17.1	13.9	7.3	11.1	12.1	25.5	9.8
Manufacture of food products and beverages	7.4	6.6	5.2	3.1	6.5	8.2	5.6	4.9	7.4	12.1	19.1	9.8
Manufacture of tobacco products	0.3	0.1	1.0	1.0	1.3	1.4	–	–	–	–	–	–
Manufacture of textiles	0.3	0.3	–	–	1.9	1.4	2.8	–	–	–	–	–
Manufacture of wearing apparel, dressing and dyeing of fur	0.3	0.7	2.1	–	–	–	–	–	–	–	–	–

(continued)

	Russia		CIS countries		EU Member States, Iceland, Liechten- stein, Norway, and Switzerland		United States and Canada		India and China		Other	
	2010	2011	2010	2011	2010	2011	2010	2011	2010	2011	2010	2011
Manufacture of leather, leather products and footwear	0.3	0.3	–	–	–	–	–	–	–	–	–	–
Manufacture of wood and of products of wood and cork, except furniture	0.4	0.3	1.0	1.0	0.6	0.7	–	–	–	–	2.1	–
Manufacture of cellulose, wood pulp, paper and cardboard and appropriate paper products	1.2	1.0	–	–	3.2	4.8	5.6	2.4	3.7	–	–	–
Publishing and printing, reproduction of recorded media	1.2	0.8	–	–	1.3	–	–	–	–	–	–	–
Manufacture of furniture, manufacturing n.e.c.	0.5	0.4	1.0	1.0	1.3	0.7	–	–	–	–	4.3	–
Recycling	–	0.1	–	–	–	–	–	–	–	–	–	–
Manufacturing of other materials and substances, n.e.c.	6.2	6.8	6.2	5.1	3.2	3.4	5.6	–	–	3.0	6.4	–
Electricity, gas and water supply	8.2	7.6	1.0	2.0	3.9	1.4	2.8	–	3.7	–	–	4.9
Communications, computer and related activities, research and development, other business activities												
Total	100	100	100	100	100	100	100	100	100	100	100	100
Communications	36.8	9.5	16.7	1.4	50.0	6.9	–	2.6	50.0	5.4	50.0	10.9
Computer and related activities	17.6	5.8	16.7	2.9	–	3.4	83.3	17.9	25.0	5.4	25.0	2.2
Research and development	...	71.0	...	91.3	...	82.8	...	79.5	...	86.5	...	80.4
Other business activities	45.6	13.7	66.7	4.3	50.0	6.9	16.7	–	25.0	2.7	25.0	6.5

3.36. ENTERPRISES ENGAGED IN TECHNOLOGICAL INNOVATION AND JOINT R&D PROJECTS BY PARTNER AND ECONOMIC ACTIVITY

	Percentage distribution of enterprises taking part in joint R&D projects by partner						
	Enterprises within the same enterprise group	Clients or customers	Suppliers of equipment, materials, components, software	Competitors within the same sector	Consultancy and information firms	R&D institutions	Universities and other higher education institutions
2010							
Mining and quarrying, manufacturing, electricity, gas and water supply							
Total	34.2	26.4	46.6	9.4	14.2	41.4	24.2
Mining and quarrying	56.4	12.8	38.5	–	20.5	61.5	38.5
Mining and quarrying of energy producing materials	63.3	13.3	40.0	–	20.0	53.3	36.7
Mining and quarrying, except energy producing materials	33.3	11.1	33.3	–	22.2	88.9	44.4
Manufacturing	33.8	29.3	45.2	10.5	13.6	41.7	24.4
High tech	41.7	40.1	41.2	15.5	9.1	46.5	29.9
Manufacture of pharmaceuticals	25.0	6.3	37.5	12.5	6.3	68.8	43.8
Manufacture of office machinery and computers	25.0	50.0	25.0	–	–	25.0	12.5
Manufacture of radio, television and communication equipment and apparatus	34.5	48.3	31.0	6.9	3.4	39.7	27.6
Manufacture of medical, precision and optical instruments, watches and clocks	47.4	40.8	42.1	18.4	7.9	52.6	30.3
Manufacture of aircrafts, including spacecrafts	55.2	37.9	65.5	31.0	27.6	37.9	31.0

(continued)

	Percentage distribution of enterprises taking part in joint R&D projects by partner						
	Enterprises within the same enterprise group	Clients or customers	Suppliers of equipment, materials, components, software	Competitors within the same sector	Consultancy and information firms	R&D institutions	Universities and other higher education institutions
Medium high tech	33.6	29.3	43.5	8.2	8.6	41.4	23.3
Manufacture of chemicals and chemical products	30.6	18.4	32.7	4.1	14.3	75.5	26.5
Manufacture of machinery and equipment, n.e.c.	25.6	38.4	44.2	9.3	3.5	26.7	20.9
Manufacture of electrical machinery and apparatus	37.5	20.8	35.4	8.3	6.3	41.7	29.2
Manufacture of motor vehicles, trailers and semi-trailers	47.2	33.3	69.4	8.3	13.9	19.4	8.3
Manufacture of other transport vehicles	46.2	30.8	38.5	15.4	15.4	69.2	46.2
Medium low tech	32.2	15.1	41.8	11.0	19.2	49.3	26.7
Manufacture of coke, refined petroleum products	45.5	9.1	36.4	13.6	50.0	77.3	50.0
Manufacture of rubber and plastic products	33.3	33.3	33.3	20.0	6.7	26.7	13.3
Manufacture of other non-metallic mineral products	31.0	10.3	44.8	13.8	10.3	17.2	13.8
Manufacture of basic metals	29.8	17.0	38.3	2.1	25.5	61.7	34.0
Manufacture of fabricated metal products	28.0	8.0	48.0	12.0	4.0	52.0	16.0
Construction and repair of vessels	25.0	25.0	62.5	25.0	–	50.0	25.0
Low tech	18.6	20.6	64.7	5.9	24.5	15.7	11.8
Manufacture of food products and beverages	25.4	20.6	61.9	3.2	27.0	19.0	12.7
Manufacture of tobacco products	–	–	100	50.0	50.0	–	–
Manufacture of textiles	–	25.0	75.0	–	–	–	25.0
Manufacture of wearing apparel, dressing and dyeing of fur	–	33.3	33.3	33.3	33.3	–	–

(continued)

	Percentage distribution of enterprises taking part in joint R&D projects by partner						
	Enterprises within the same enterprise group	Clients or customers	Suppliers of equipment, materials, components, software	Competitors within the same sector	Consultancy and information firms	R&D institutions	Universities and other higher education institutions
Manufacture of leather, leather products and footwear	–	–	–	–	–	–	100
Manufacture of wood and of products of wood and cork, except furniture	33.3	–	66.7	33.3	–	–	–
Manufacture of cellulose, wood pulp, paper and cardboard and appropriate paper products	9.1	27.3	81.8	9.1	18.2	27.3	9.1
Publishing and printing, reproduction of recorded media	10.0	20.0	60.0	–	40.0	–	–
Manufacture of furniture, manufacturing n.e.c.	–	25.0	100	–	–	25.0	–
Recycling	–	–	–	–	–	–	–
Electricity, gas and water supply	26.2	3.1	66.2	3.1	16.9	26.2	13.8
Communications, computer and related activities, research and development, other business activities							
Total	27.9	24.8	58.1	15.5	14.7	20.2	29.5
Communications	41.3	6.5	78.3	15.2	13.0	8.7	32.6
Computer and related activities	20.8	54.2	50.0	12.5	12.5	8.3	16.7
Research and development	...	...	...	...	...	...	...
Other business activities	20.3	27.1	45.8	16.9	16.9	33.9	32.2

(continued)

	Percentage distribution of enterprises taking part in joint R&D projects by partner						
	Enterprises within the same enterprise group	Clients or customers	Suppliers of equipment, materials, components, software	Competitors within the same sector	Consultancy and information firms	R&D institutions	Universities and other higher education institutions
2011							
Mining and quarrying, manufacturing, electricity, gas and water supply							
Total	32.6	24.8	43.5	10.3	12.1	45.6	27.6
Mining and quarrying	47.6	11.9	47.6	4.8	11.9	64.3	40.5
Mining and quarrying of energy producing materials	55.9	14.7	47.1	5.9	11.8	61.8	38.2
Mining and quarrying, except energy producing materials	12.5	–	50.0	–	12.5	75.0	50.0
Manufacturing	32.7	27.4	41.7	11.4	11.7	45.6	28.1
High tech	40.1	37.4	40.1	15.0	8.0	49.2	33.7
Manufacture of pharmaceuticals	20.0	26.7	20.0	6.7	6.7	60.0	33.3
Manufacture of office machinery and computers	37.5	25.0	25.0	–	–	62.5	–
Manufacture of radio, television and communication equipment and apparatus	35.5	40.3	29.0	11.3	4.8	38.7	29.0
Manufacture of medical, precision and optical instruments, watches and clocks	45.8	38.9	47.2	15.3	8.3	55.6	37.5
Manufacture of aircrafts, including spacecrafts	46.7	36.7	60.0	30.0	16.7	46.7	43.3

(continued)

	Percentage distribution of enterprises taking part in joint R&D projects by partner						
	Enterprises within the same enterprise group	Clients or customers	Suppliers of equipment, materials, components, software	Competitors within the same sector	Consultancy and information firms	R&D institutions	Universities and other higher education institutions
Medium high tech	30.0	29.1	39.6	11.7	10.4	42.6	24.3
Manufacture of chemicals and chemical products	31.4	19.6	31.4	3.9	13.7	72.5	21.6
Manufacture of machinery and equipment, n.e.c.	19.8	31.4	34.9	15.1	5.8	25.6	25.6
Manufacture of electrical machinery and apparatus	31.9	25.5	31.9	14.9	8.5	48.9	23.4
Manufacture of motor vehicles, trailers and semi-trailers	40.6	43.8	78.1	9.4	18.8	18.8	18.8
Manufacture of other transport vehicles	57.1	28.6	35.7	14.3	14.3	71.4	42.9
Medium low tech	32.7	13.1	39.2	8.5	12.4	53.6	31.4
Manufacture of coke, refined petroleum products	30.4	8.7	39.1	8.7	34.8	87.0	47.8
Manufacture of rubber and plastic products	35.7	7.1	21.4	7.1	–	28.6	14.3
Manufacture of other non-metallic mineral products	31.3	12.5	43.8	3.1	3.1	31.3	18.8
Manufacture of basic metals	34.7	10.2	34.7	6.1	18.4	61.2	38.8
Manufacture of fabricated metal products	35.7	14.3	46.4	14.3	3.6	53.6	21.4
Construction and repair of vessels	14.3	57.1	57.1	28.6	–	42.9	57.1
Low tech	21.1	17.8	56.7	6.7	18.9	24.4	11.1
Manufacture of food products and beverages	29.1	21.8	52.7	1.8	25.5	25.5	7.3
Manufacture of tobacco products	–	–	50.0	50.0	50.0	–	–
Manufacture of textiles	–	33.3	66.7	33.3	–	33.3	33.3
Manufacture of wearing apparel, dressing and dyeing of fur	–	40.0	40.0	–	–	60.0	–

(continued)

	Percentage distribution of enterprises taking part in joint R&D projects by partner						
	Enterprises within the same enterprise group	Clients or customers	Suppliers of equipment, materials, components, software	Competitors within the same sector	Consultancy and information firms	R&D institutions	Universities and other higher education institutions
Manufacture of leather, leather products and footwear	–	–	–	–	–	–	100
Manufacture of wood and of products of wood and cork, except furniture	–	–	100	50.0	–	–	–
Manufacture of cellulose, wood pulp, paper and cardboard and appropriate paper products	9.1	9.1	72.7	9.1	9.1	27.3	9.1
Publishing and printing, reproduction of recorded media	33.3	–	66.7	–	–	–	–
Manufacture of furniture, manufacturing n.e.c.	–	–	66.7	33.3	33.3	33.3	33.3
Recycling	–	–	100	–	–	–	100
Electricity, gas and water supply	20.3	3.4	62.7	1.7	16.9	32.2	11.9
Communications, computer and related activities, research and development, other business activities							
Total	29.3	44.8	39.0	19.2	8.8	55.2	36.6
Communications	43.2	9.1	77.3	15.9	9.1	9.1	11.4
Computer and related activities	20.7	51.7	37.9	17.2	24.1	3.4	3.4
Research and development	29.8	50.2	32.8	20.7	6.7	69.6	45.9
Other business activities	21.0	38.7	45.2	14.5	12.9	35.5	21.0

3.37. PERCENTAGE DISTRIBUTION OF ENTERPRISES ENGAGED IN TECHNOLOGICAL INNOVATION AND JOINT R&D PROJECTS BY PARTNER AND ECONOMIC ACTIVITY

	Enterprises within the same enterprise group	Clients or customers	Suppliers of equipment, materials, components, software	Competitors within the same sector	Consultancy and information firms	R&D institutions	Universities and other higher education insti- tutions
2010							
Mining and quarrying, manufacturing, electricity, gas and water supply							
Total	100	100	100	100	100	100	100
Mining and quarrying	7.9	2.3	3.9	–	6.9	7.1	7.6
Mining and quarrying of energy producing materials	6.8	1.9	3.1	–	5.2	4.7	5.6
Mining and quarrying, except energy producing materials	1.1	0.5	0.8	–	1.7	2.4	2.0
Manufacturing	86.1	96.8	84.8	97.4	83.6	87.9	87.9
High tech	27.9	34.7	20.2	37.7	14.7	25.7	28.3
Manufacture of pharmaceuticals	1.4	0.5	1.6	2.6	0.9	3.2	3.5
Manufacture of office machinery and computers	0.7	1.9	0.5	–	–	0.6	0.5
Manufacture of radio, television and communi- cation equipment and apparatus	7.1	13.0	4.7	5.2	1.7	6.8	8.1
Manufacture of medical, precision and optical instruments, watches and clocks	12.9	14.4	8.4	18.2	5.2	11.8	11.6
Manufacture of aircrafts, including spacecrafts	5.7	5.1	5.0	11.7	6.9	3.2	4.5

(continued)

	Enterprises within the same enterprise group	Clients or customers	Suppliers of equipment, materials, components, software	Competitors within the same sector	Consultancy and information firms	R&D institutions	Universities and other higher education insti- tutions
Medium high tech	27.9	31.5	26.5	24.7	17.2	28.3	27.3
Manufacture of chemicals and chemical products	5.4	4.2	4.2	2.6	6.0	10.9	6.6
Manufacture of machinery and equipment, n.e.c.	7.9	15.3	10.0	10.4	2.6	6.8	9.1
Manufacture of electrical machinery and apparatus	6.4	4.6	4.5	5.2	2.6	5.9	7.1
Manufacture of motor vehicles, trailers and semi-trailers	6.1	5.6	6.6	3.9	4.3	2.1	1.5
Manufacture of other transport vehicles	2.1	1.9	1.3	2.6	1.7	2.7	3.0
Medium low tech	16.8	10.2	16.0	20.8	24.1	21.2	19.7
Manufacture of coke, refined petroleum products	3.6	0.9	2.1	3.9	9.5	5.0	5.6
Manufacture of rubber and plastic products	1.8	2.3	1.3	3.9	0.9	1.2	1.0
Manufacture of other non-metallic mineral products	3.2	1.4	3.4	5.2	2.6	1.5	2.0
Manufacture of basic metals	5.0	3.7	4.7	1.3	10.3	8.6	8.1
Manufacture of fabricated metal products	2.5	0.9	3.1	3.9	0.9	3.8	2.0
Construction and repair of vessels	0.7	0.9	1.3	2.6	-	1.2	1.0
Low tech	6.8	9.7	17.3	7.8	21.6	4.7	6.1
Manufacture of food products and beverages	5.7	6.0	10.2	2.6	14.7	3.5	4.0
Manufacture of tobacco products	-	-	0.5	1.3	0.9	-	-
Manufacture of textiles	-	0.5	0.8	-	-	-	0.5
Manufacture of wearing apparel, dressing and dyeing of fur	-	0.5	0.3	1.3	0.9	-	-

(continued)

	Enterprises within the same enterprise group	Clients or customers	Suppliers of equipment, materials, components, software	Competitors within the same sector	Consultancy and information firms	R&D institutions	Universities and other higher education insti- tutions
Manufacture of leather, leather products and footwear	–	–	–	–	–	–	1.0
Manufacture of wood and of products of wood and cork, except furniture	0.4	–	0.5	1.3	–	–	–
Manufacture of cellulose, wood pulp, paper and cardboard and appropriate paper products	0.4	1.4	2.4	1.3	1.7	0.9	0.5
Publishing and printing, reproduction of re- corded media	0.4	0.9	1.6	–	3.4	–	–
Manufacture of furniture, manufacturing n.e.c.	–	0.5	1.0	–	–	0.3	–
Recycling	–	–	–	–	–	–	–
Manufacturing of other materials and substances, n.e.c.	6.8	10.6	4.7	8.5	6.0	8.0	6.6
Electricity, gas and water supply	6.1	0.9	11.3	2.6	9.5	5.0	4.5
Communications, computer and related activities, research and development, other business activities							
Total	100	100	100	100	100	100	100
Communications	52.8	9.4	48.0	35.0	31.6	15.4	39.5
Computer and related activities	13.9	40.6	16.0	15.0	15.8	7.7	10.5
Research and development	...	...	...	...	...	...	...
Other business activities	33.3	50.0	36.0	50.0	52.6	76.9	50.0

(continued)

	Enterprises within the same enterprise group	Clients or customers	Suppliers of equipment, materials, components, software	Competitors within the same sector	Consultancy and information firms	R&D institutions	Universities and other higher education insti- tutions
2011							
Mining and quarrying, manufacturing, electricity, gas and water supply							
Total	100	100	100	100	100	100	100
Mining and quarrying	7.5	2.5	5.6	2.4	5.1	7.3	7.6
Mining and quarrying of energy producing materials	7.2	2.5	4.5	2.4	4.1	5.7	5.8
Mining and quarrying, except energy producing materials	0.4	–	1.1	–	1.0	1.6	1.8
Manufacturing	87.9	96.5	83.9	96.4	84.7	87.6	89.3
High tech	28.3	34.7	21.2	33.3	15.3	24.8	28.1
Manufacture of pharmaceuticals	1.1	2.0	0.8	1.2	1.0	2.4	2.2
Manufacture of office machinery and computers	1.1	1.0	0.6	–	–	1.3	–
Manufacture of radio, television and communi- cation equipment and apparatus	8.3	12.4	5.1	8.3	3.1	6.5	8.0
Manufacture of medical, precision and optical instruments, watches and clocks	12.5	13.9	9.6	13.1	6.1	10.8	12.1
Manufacture of aircrafts, including spacecrafts	5.3	5.4	5.1	10.7	5.1	3.8	5.8

(continued)

	Enterprises within the same enterprise group	Clients or customers	Suppliers of equipment, materials, components, software	Competitors within the same sector	Consultancy and information firms	R&D institutions	Universities and other higher education institutions
Medium high tech	26.0	33.2	25.7	32.1	24.5	26.4	25.0
Manufacture of chemicals and chemical products	6.0	5.0	4.5	2.4	7.1	10.0	4.9
Manufacture of machinery and equipment, n.e.c.	6.4	13.4	8.5	15.5	5.1	5.9	9.8
Manufacture of electrical machinery and apparatus	5.7	5.9	4.2	8.3	4.1	6.2	4.9
Manufacture of motor vehicles, trailers and semi-trailers	4.9	6.9	7.1	3.6	6.1	1.6	2.7
Manufacture of other transport vehicles	3.0	2.0	1.4	2.4	2.0	2.7	2.7
Medium low tech	18.9	9.9	16.9	15.5	19.4	22.1	21.4
Manufacture of coke, refined petroleum products	2.6	1.0	2.5	2.4	8.2	5.4	4.9
Manufacture of rubber and plastic products	1.9	0.5	0.8	1.2	–	1.1	0.9
Manufacture of other non-metallic mineral products	3.8	2.0	4.0	1.2	1.0	2.7	2.7
Manufacture of basic metals	6.4	2.5	4.8	3.6	9.2	8.1	8.5
Manufacture of fabricated metal products	3.8	2.0	3.7	4.8	1.0	4.0	2.7
Construction and repair of vessels	0.4	2.0	1.1	2.4	–	0.8	1.8
Low tech	7.2	7.9	14.4	7.1	17.3	5.9	4.5
Manufacture of food products and beverages	6.0	5.9	8.2	1.2	14.3	3.8	1.8
Manufacture of tobacco products	–	–	0.3	1.2	1.0	–	–
Manufacture of textiles	–	0.5	0.6	1.2	–	0.3	0.4
Manufacture of wearing apparel, dressing and dyeing of fur	–	1.0	0.6	–	–	0.8	–

(continued)

	Enterprises within the same enterprise group	Clients or customers	Suppliers of equipment, materials, components, software	Competitors within the same sector	Consultancy and information firms	R&D institutions	Universities and other higher education insti- tutions
Manufacture of leather, leather products and footwear	–	–	–	–	–	–	0.9
Manufacture of wood and of products of wood and cork, except furniture	–	–	0.6	1.2	–	–	–
Manufacture of cellulose, wood pulp, paper and cardboard and appropriate paper products	0.4	0.5	2.3	1.2	1.0	0.8	0.4
Publishing and printing, reproduction of re- corded media	0.8	–	1.1	–	–	–	–
Manufacture of furniture, manufacturing n.e.c.	–	–	0.6	1.2	1.0	0.3	0.4
Recycling	–	–	0.3	–	–	–	0.4
Manufacturing of other materials and substances, n.e.c.	7.5	10.9	5.6	8.3	8.2	8.4	10.3
Electricity, gas and water supply	4.5	1.0	10.5	1.2	10.2	5.1	3.1
Communications, computer and related activities, research and development, other business activities							
Total	100	100	100	100	100	100	100
Communications	14.0	1.9	18.8	7.9	9.8	1.6	2.9
Computer and related activities	4.4	7.2	6.1	5.6	17.1	0.4	0.6
Research and development	72.1	79.3	59.7	76.4	53.7	89.5	88.8
Other business activities	9.6	11.5	15.5	10.1	19.5	8.6	7.6

3.38. ENTERPRISES ENGAGED IN TECHNOLOGICAL INNOVATION AND JOINT R&D PROJECTS BY TYPE OF CO-OPERATION AND ECONOMIC ACTIVITY

	Percentage distribution of enterprises taking part in joint R&D projects by type of co-operation					
	Permanent co-operation		Co-operation within a specific project		One-time co-operation unrelated to any specific project	
	2010	2011	2010	2011	2010	2011
Mining and quarrying, manufacturing, electricity, gas and water supply						
Total	49.0	45.9	71.9	73.3	12.3	12.9
Mining and quarrying	53.8	45.2	71.8	81.0	10.3	11.9
Mining and quarrying of energy producing materials	60.0	47.1	63.3	79.4	6.7	8.8
Mining and quarrying, except energy producing materials	33.3	37.5	100	87.5	22.2	25.0
Manufacturing	50.3	47.5	71.3	72.6	12.6	13.2
High tech	54.0	49.2	72.7	73.3	13.9	12.8
Manufacture of pharmaceuticals	37.5	26.7	87.5	80.0	25.0	20.0
Manufacture of office machinery and computers	37.5	62.5	100	62.5	25.0	–
Manufacture of radio, television and communication equipment and apparatus	50.0	46.8	65.5	71.0	10.3	11.3
Manufacture of medical, precision and optical instruments, watches and clocks	56.6	51.4	72.4	76.4	10.5	11.1
Manufacture of aircrafts, including spacecrafts	69.0	56.7	72.4	70.0	20.7	20.0

(continued)

	Percentage distribution of enterprises taking part in joint R&D projects by type of co-operation					
	Permanent co-operation		Co-operation within a specific project		One-time co-operation unrelated to any specific project	
	2010	2011	2010	2011	2010	2011
Medium high tech	50.0	46.1	73.7	78.7	9.1	10.9
Manufacture of chemicals and chemical products	49.0	43.1	75.5	78.4	12.2	15.7
Manufacture of machinery and equipment, n.e.c.	46.5	44.2	70.9	74.4	8.1	9.3
Manufacture of electrical machinery and apparatus	45.8	42.6	77.1	83.0	4.2	4.3
Manufacture of motor vehicles, trailers and semi-trailers	58.3	46.9	72.2	84.4	13.9	15.6
Manufacture of other transport vehicles	69.2	78.6	76.9	78.6	7.7	14.3
Medium low tech	48.6	46.4	69.9	69.9	14.4	13.1
Manufacture of coke, refined petroleum products	45.5	43.5	95.5	95.7	–	–
Manufacture of rubber and plastic products	46.7	35.7	66.7	71.4	6.7	–
Manufacture of other non-metallic mineral products	48.3	46.9	51.7	46.9	20.7	21.9
Manufacture of basic metals	53.2	46.9	72.3	71.4	21.3	16.3
Manufacture of fabricated metal products	44.0	50.0	64.0	67.9	12.0	10.7
Construction and repair of vessels	50.0	57.1	75.0	85.7	12.5	28.6
Low tech	37.3	40.0	66.7	65.6	14.7	15.6
Manufacture of food products and beverages	33.3	30.9	68.3	72.7	17.5	16.4
Manufacture of tobacco products	100	100	50.0	–	–	–
Manufacture of textiles	25.0	66.7	75.0	33.3	–	–
Manufacture of wearing apparel, dressing and dyeing of fur	33.3	80.0	33.3	40.0	33.3	40.0

(continued)

	Percentage distribution of enterprises taking part in joint R&D projects by type of co-operation					
	Permanent co-operation		Co-operation within a specific project		One-time co-operation unrelated to any specific project	
	2010	2011	2010	2011	2010	2011
Manufacture of leather, leather products and footwear	–	50.0	–	–	100	50.0
Manufacture of wood and of products of wood and cork, except furniture	33.3	50.0	66.7	50.0	–	–
Manufacture of cellulose, wood pulp, paper and cardboard and appropriate paper products	45.5	36.4	63.6	72.7	–	–
Publishing and printing, reproduction of recorded media	40.0	16.7	70.0	66.7	–	16.7
Manufacture of furniture, manufacturing n.e.c.	75.0	100	100	67	25.0	33.3
Recycling	–	100	–	100	–	–
Electricity, gas and water supply	32.3	27.1	78.5	76.3	10.8	10.2
Communications, computer and related activities, research and development, other business activities						
Total	45.0	50.0	64.3	74.8	17.1	14.2
Communications	45.7	65.9	71.7	50.0	6.5	6.8
Computer and related activities	58.3	62.1	58.3	51.7	29.2	13.8
Research and development	...	48.0	...	81.8	...	15.2
Other business activities	39.0	43.5	61.0	66.1	20.3	14.5

3.39. JOINT R&D PROJECTS OF ENTERPRISES ENGAGED IN TECHNOLOGICAL INNOVATION BY ECONOMIC ACTIVITY

	Joint R&D projects		Of which with partners from											
			Russia		CIS countries		EU Member States, Iceland, Liechtenstein, Norway, and Switzerland		United States and Canada		India and China		other countries	
	2010	2011	2010	2011	2010	2011	2010	2011	2010	2011	2010	2011	2010	2011
Mining and quarrying, manufacturing, electricity, gas and water supply														
Total	7576	6000	6753	5255	244	148	423	360	77	93	65	86	119	116
Mining and quarrying	424	389	414	378	1	3	6	4	3	5	–	–	–	1
Mining and quarrying of energy producing materials	383	346	373	338	1	1	6	4	3	5	–	–	–	–
Mining and quarrying, except energy producing materials	41	43	41	40	–	2	–	–	–	–	–	–	–	1
Manufacturing	6892	5352	6096	4625	242	143	403	353	73	88	64	86	119	113
High tech	1589	1398	1417	1261	66	36	51	41	26	28	12	19	24	31
Manufacture of pharmaceuticals	116	87	102	77	9	10	4	2	–	–	–	–	1	–
Manufacture of office machinery and computers	35	35	31	32	2	1	–	–	–	–	1	1	1	1
Manufacture of radio, television and communication equipment and apparatus	378	495	347	459	7	10	5	9	5	7	1	1	13	13
Manufacture of medical, precision and optical instruments, watches and clocks	693	511	635	467	14	8	19	17	18	18	3	1	9	7
Manufacture of aircrafts, including spacecrafts	367	270	302	226	34	7	23	13	3	3	7	16	–	10

(continued)

	Joint R&D projects		Of which with partners from											
			Russia		CIS countries		EU Member States, Iceland, Liechtenstein, Norway, and Switzerland		United States and Canada		India and China		other countries	
	2010	2011	2010	2011	2010	2011	2010	2011	2010	2011	2010	2011	2010	2011
Medium high tech	1642	1481	1411	1228	76	49	123	110	9	24	17	38	19	50
Manufacture of chemicals and chemical products	325	413	283	373	7	5	22	26	4	4	2	-	10	5
Manufacture of machinery and equipment, n.e.c.	734	425	645	344	41	18	42	28	4	15	4	17	3	13
Manufacture of electrical machinery and apparatus	174	221	149	184	10	11	11	12	-	2	3	11	2	3
Manufacture of motor vehicles, trailers and semi-trailers	288	336	235	249	9	13	37	39	1	3	8	9	2	29
Manufacture of other transport vehicles	121	86	99	78	9	2	11	5	-	-	-	1	2	-
Medium low tech	1595	1276	1367	1070	45	43	149	110	27	26	31	16	44	28
Manufacture of coke, refined petroleum products	526	326	463	271	4	12	44	32	12	13	-	-	6	2
Manufacture of rubber and plastic products	93	42	85	22	1	1	7	17	-	-	-	1	-	1
Manufacture of other non-metallic mineral products	129	111	88	82	13	1	40	17	4	3	13	5	7	4
Manufacture of basic metals	641	637	598	585	14	16	27	29	9	7	1	-	-	4
Manufacture of fabricated metal products	138	98	97	77	8	7	17	8	1	-	12	2	12	6
Construction and repair of vessels	68	62	36	33	5	6	14	7	1	3	5	8	19	11
Low tech	1552	717	1418	600	34	10	65	81	8	10	4	12	26	4
Manufacture of food products and beverages	421	371	351	306	12	5	30	36	4	8	3	12	21	4
Manufacture of tobacco products	8	11	3	1	2	2	6	8	-	-	-	-	-	-
Manufacture of textiles	12	15	3	6	-	-	8	9	1	-	-	-	-	-
Manufacture of wearing apparel, dressing and dyeing of fur	44	16	27	16	17	-	-	-	-	-	-	-	-	-

(continued)

	Joint R&D projects		Of which with partners from											
			Russia		CIS countries		EU Member States, Iceland, Liechtenstein, Norway, and Switzerland		United States and Canada		India and China		other countries	
	2010	2011	2010	2011	2010	2011	2010	2011	2010	2011	2010	2011	2010	2011
Manufacture of leather, leather products and footwear	2	2	2	2	–	–	–	–	–	–	–	–	–	–
Manufacture of wood and of products of wood and cork, except furniture	20	20	13	15	2	2	3	3	–	–	–	–	2	–
Manufacture of cellulose, wood pulp, paper and cardboard and appropriate paper products	430	243	413	222	–	–	13	19	3	2	1	–	–	–
Publishing and printing, reproduction of recorded media	587	8	585	8	–	–	2	–	–	–	–	–	–	–
Manufacture of furniture, manufacturing n.e.c.	28	23	21	16	1	1	3	6	–	–	–	–	3	–
Recycling	–	8	–	8	–	–	–	–	–	–	–	–	–	–
Manufacturing of other materials and substances, n.e.c.	514	480	483	466	21	5	15	11	3	–	–	1	6	–
Electricity, gas and water supply	260	259	243	252	1	2	14	3	1	–	1	–	–	2
Communications, computer and related activities, research and development, other business activities														
Total	1007	8909	944	7909	13	200	6	453	13	133	14	83	31	175
Communications	268	294	252	282	5	1	3	6	–	1	5	2	7	5
Computer and related activities	180	218	140	175	2	3	–	2	11	13	6	5	21	20
Research and development	...	7867	...	6948	...	193	...	424	...	119	...	75	...	144
Other business activities	559	530	552	504	6	3	3	21	2	–	3	1	3	6

3.40. JOINT R&D PROJECTS OF ENTERPRISES ENGAGED IN TECHNOLOGICAL INNOVATION BY PARTNER AND ECONOMIC ACTIVITY

	Total	Of which by partner						
		Enterprises within the same enterprise group	Clients or customers	Suppliers of equipment, materials, components, software	Competitors within the same sector	Consultancy and information firms	R&D institutions	Universities and other higher education institutions
2010								
Mining and quarrying, manufacturing, electricity, gas and water supply								
Total	7576	1163	2023	2344	554	425	1518	407
Mining and quarrying	424	139	11	64	—	15	194	25
Mining and quarrying of energy producing materials	383	132	10	56	—	11	172	17
Mining and quarrying, except energy producing materials	41	7	1	8	—	4	22	8
Manufacturing	6892	989	2002	2168	548	384	1246	369
High tech	1589	204	535	554	97	34	304	108
Manufacture of pharmaceuticals	116	9	1	6	5	1	81	13
Manufacture of office machinery and computers	35	2	21	8	—	—	3	1
Manufacture of radio, television and communication equipment and apparatus	378	39	212	78	21	8	63	29
Manufacture of medical, precision and optical instruments, watches and clocks	693	112	252	232	37	11	103	46
Manufacture of aircrafts, including space-crafts	367	42	49	230	34	14	54	19

(continued)

	Total	Of which by partner						
		Enterprises within the same enterprise group	Clients or customers	Suppliers of equipment, materials, components, software	Competitors within the same sector	Consultancy and information firms	R&D institutions	Universities and other higher education institutions
Medium high tech	1642	332	336	592	171	28	258	84
Manufacture of chemicals and chemical products	325	37	30	148	10	10	106	21
Manufacture of machinery and equipment, n.e.c.	734	178	176	213	116	4	45	29
Manufacture of electrical machinery and apparatus	174	27	46	38	22	3	42	18
Manufacture of motor vehicles, trailers and semi-trailers	288	71	59	160	20	9	17	8
Manufacture of other transport vehicles	121	19	25	33	3	2	48	8
Medium low tech	1595	219	134	476	146	166	531	124
Manufacture of coke, refined petroleum products	526	36	5	276	8	72	121	28
Manufacture of rubber and plastic products	93	6	60	13	6	1	8	4
Manufacture of other non-metallic mineral products	129	11	44	59	52	12	12	7
Manufacture of basic metals	641	149	15	59	1	80	349	77
Manufacture of fabricated metal products	138	15	7	34	69	1	26	4
Construction and repair of vessels	68	2	3	35	10	–	15	4
Low tech	1552	96	831	362	120	123	28	18
Manufacture of food products and beverages	421	91	36	145	16	109	23	14
Manufacture of tobacco products	8	–	–	7	2	2	–	–
Manufacture of textiles	12	–	1	10	–	–	–	1
Manufacture of wearing apparel, dressing and dyeing of fur	44	–	40	1	10	3	–	–

(continued)

	Total	Of which by partner						
		Enterprises within the same enterprise group	Clients or customers	Suppliers of equipment, materials, components, software	Competitors within the same sector	Consultancy and information firms	R&D institutions	Universities and other higher education institutions
Manufacture of leather, leather products and footwear	2	–	–	–	–	–	–	2
Manufacture of wood and of products of wood and cork, except furniture	20	2	–	6	12	–	–	–
Manufacture of cellulose, wood pulp, paper and cardboard and appropriate paper products	430	1	182	157	80	5	4	1
Publishing and printing, reproduction of recorded media	587	2	567	14	–	4	–	–
Manufacture of furniture, manufacturing n.e.c.	28	–	5	22	–	–	1	–
Recycling	–	–	–	–	–	–	–	–
Manufacturing of other materials and substances, n.e.c.	514	138	166	184	14	33	125	35
Electricity, gas and water supply	260	35	10	112	6	26	78	13
Communications, computer and related activities, research and development, other business activities								
Total	1007	171	254	277	118	93	79	49
Communications	268	128	7	85	12	20	8	17
Computer and related activities	180	21	56	37	11	50	5	8
Research and development	...	...	...	...	...	...	...	...
Other business activities	559	22	191	155	95	23	66	24

(continued)

	Total	Of which by partner						
		Enterprises within the same enterprise group	Clients or customers	Suppliers of equipment, materials, components, software	Competitors within the same sector	Consultancy and information firms	R&D institutions	Universities and other higher education institutions
2011								
Mining and quarrying, manufacturing, electricity, gas and water supply								
Total	6000	964	1170	1975	403	311	1459	450
Mining and quarrying	389	140	12	44	3	14	169	28
Mining and quarrying of energy producing materials	346	134	12	39	3	12	146	21
Mining and quarrying, except energy producing materials	43	6	–	5	–	2	23	7
Manufacturing	5352	785	1156	1825	399	281	1187	413
High tech	1398	201	385	483	89	22	285	118
Manufacture of pharmaceuticals	87	6	6	6	1	2	51	17
Manufacture of office machinery and computers	35	3	6	8	–	–	18	–
Manufacture of radio, television and communication equipment and apparatus	495	64	179	190	30	3	56	31
Manufacture of medical, precision and optical instruments, watches and clocks	511	103	160	136	28	11	121	53
Manufacture of aircrafts, including spacecrafts	270	25	34	143	30	6	39	17

(continued)

	Total	Of which by partner						
		Enterprises within the same enterprise group	Clients or customers	Suppliers of equipment, materials, components, software	Competitors within the same sector	Consultancy and information firms	R&D institutions	Universities and other higher education institutions
Medium high tech	1481	230	304	539	144	38	247	92
Manufacture of chemicals and chemical products	413	79	47	166	4	13	106	19
Manufacture of machinery and equipment, n.e.c.	425	72	121	91	82	9	60	38
Manufacture of electrical machinery and apparatus	221	24	57	58	31	7	37	15
Manufacture of motor vehicles, trailers and semi-trailers	336	29	66	201	23	7	16	13
Manufacture of other transport vehicles	86	26	13	23	4	2	28	7
Medium low tech	1276	196	64	312	78	138	453	149
Manufacture of coke, refined petroleum products	326	26	3	133	3	44	105	30
Manufacture of rubber and plastic products	42	10	4	4	16	–	6	2
Manufacture of other non-metallic mineral products	111	14	17	37	10	8	19	12
Manufacture of basic metals	637	130	13	82	6	82	288	93
Manufacture of fabricated metal products	98	15	16	34	21	4	27	7
Construction and repair of vessels	62	1	11	22	22	–	8	5
Low tech	717	90	287	374	72	50	44	15
Manufacture of food products and beverages	371	85	83	126	5	45	31	8
Manufacture of tobacco products	11	–	–	6	3	2	–	–
Manufacture of textiles	15	–	2	12	1	–	2	1
Manufacture of wearing apparel, dressing and dyeing of fur	16	–	2	8	–	–	6	–

(continued)

	Total	Of which by partner						
		Enterprises within the same enterprise group	Clients or customers	Suppliers of equipment, materials, components, software	Competitors within the same sector	Consultancy and information firms	R&D institutions	Universities and other higher education institutions
Manufacture of leather, leather products and footwear	2	–	–	–	–	–	–	–
Manufacture of wood and of products of wood and cork, except furniture	20	–	–	8	12	–	–	–
Manufacture of cellulose, wood pulp, paper and cardboard and appropriate paper products	243	3	200	182	50	2	4	2
Publishing and printing, reproduction of recorded media	8	2	–	6	–	–	–	–
Manufacture of furniture, manufacturing n.e.c.	23	–	–	19	1	1	1	1
Recycling	8	–	–	7	–	–	–	1
Manufacturing of other materials and substances, n.e.c.	480	68	116	117	16	33	158	39
Electricity, gas and water supply	259	39	2	106	1	16	103	9
Communications, computer and related activities, research and development, other business activities								
Total	8909	867	2814	3240	483	166	2127	516
Communications	294	213	4	68	12	13	8	8
Computer and related activities	218	23	71	57	13	55	2	4
Research and development	7867	580	2603	2970	353	74	2057	483
Other business activities	530	51	136	145	105	24	60	21

3.41. JOINT R&D PROJECTS OF ENTERPRISES ENGAGED IN TECHNOLOGICAL INNOVATION BY TYPE OF CO-OPERATION AND ECONOMIC ACTIVITY

	Permanent co-operation		Co-operation within a specific project		One-time co-operation unrelated to any specific project	
	2010	2011	2010	2011	2010	2011
Mining and quarrying, manufacturing, electricity, gas and water supply						
Total	3579	2311	3595	3366	461	352
Mining and quarrying	163	144	249	236	17	10
Mining and quarrying of energy producing materials	158	137	210	202	15	8
Mining and quarrying, except energy producing materials	5	7	39	34	2	2
Manufacturing	3330	2132	3184	2919	431	328
High tech	689	685	762	659	148	63
Manufacture of pharmaceuticals	25	13	91	73	7	3
Manufacture of office machinery and computers	11	25	21	14	3	–
Manufacture of radio, television and communication equipment and apparatus	171	270	182	201	25	24
Manufacture of medical, precision and optical instruments, watches and clocks	386	205	245	281	65	27
Manufacture of aircrafts, including spacecrafts	96	172	223	90	48	9

(continued)

	Permanent co-operation		Co-operation within a specific project		One-time co-operation unrelated to any specific project	
	2010	2011	2010	2011	2010	2011
Medium high tech	649	601	961	777	43	110
Manufacture of chemicals and chemical products	148	175	166	223	12	17
Manufacture of machinery and equipment, n.e.c.	224	191	503	228	12	9
Manufacture of electrical machinery and apparatus	78	80	94	113	2	28
Manufacture of motor vehicles, trailers and semi-trailers	126	99	148	184	15	54
Manufacture of other transport vehicles	73	56	50	29	2	2
Medium low tech	583	408	898	782	126	92
Manufacture of coke, refined petroleum products	97	83	429	243	–	–
Manufacture of rubber and plastic products	22	5	24	37	48	–
Manufacture of other non-metallic mineral products	45	56	74	46	12	9
Manufacture of basic metals	306	193	301	380	38	64
Manufacture of fabricated metal products	93	55	36	33	14	14
Construction and repair of vessels	20	16	34	43	14	5
Low tech	1219	239	251	455	83	23
Manufacture of food products and beverages	190	154	192	204	40	13
Manufacture of tobacco products	6	11	2	–	–	–
Manufacture of textiles	9	14	3	1	–	–
Manufacture of wearing apparel, dressing and dyeing of fur	1	5	3	4	40	7

(continued)

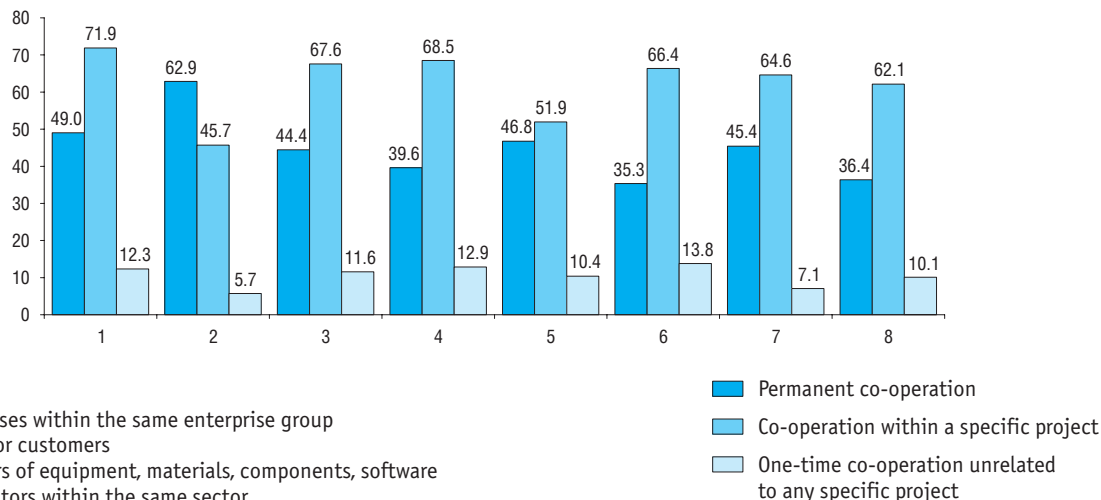
	Permanent co-operation		Co-operation within a specific project		One-time co-operation unrelated to any specific project	
	2010	2011	2010	2011	2010	2011
Manufacture of leather, leather products and footwear	–	1	–	–	2	1
Manufacture of wood and of products of wood and cork, except furniture	15	15	5	5	–	–
Manufacture of cellulose, wood pulp, paper and cardboard and appropriate paper products	407	21	23	222	–	–
Publishing and printing, reproduction of recorded media	576	2	11	5	–	1
Manufacture of furniture, manufacturing n.e.c.	15	13	12	9	1	1
Recycling	–	3	–	5	–	–
Manufacturing of other materials and substances, n.e.c.	190	199	312	246	31	40
Electricity, gas and water supply	86	35	162	211	13	14
Communications, computer and related activities, research and development, other business activities						
Total	408	4041	505	3776	106	1141
Communications	156	241	107	56	8	7
Computer and related activities	57	145	60	59	68	17
Research and development	...	3391	...	3411	...	1097
Other business activities	195	264	338	250	30	20

3.42. TECHNOLOGICAL PARTNERSHIP IN R&D AT ENTERPRISES ENGAGED IN TECHNOLOGICAL INNOVATION

(as a percentage of the total number of enterprises having joint R&D projects)

2010

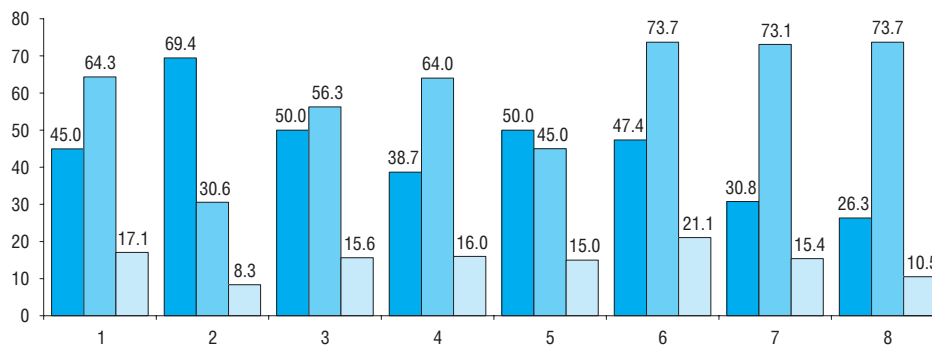
Mining and quarrying, manufacturing, electricity, gas and water supply



- 1 – Total
- 2 – Enterprises within the same enterprise group
- 3 – Clients or customers
- 4 – Suppliers of equipment, materials, components, software
- 5 – Competitors within the same sector
- 6 – Consultancy and information firms
- 7 – R&D institutions
- 8 – Universities and other higher education institutions

(continued)

Communications, computer and related activities, research and development, other business activities



1 – Total

2 – Enterprises within the same enterprise group

3 – Clients or customers

4 – Suppliers of equipment, materials, components, software

5 – Competitors within the same sector

6 – Consultancy and information firms

7 – R&D institutions

8 – Universities and other higher education institutions

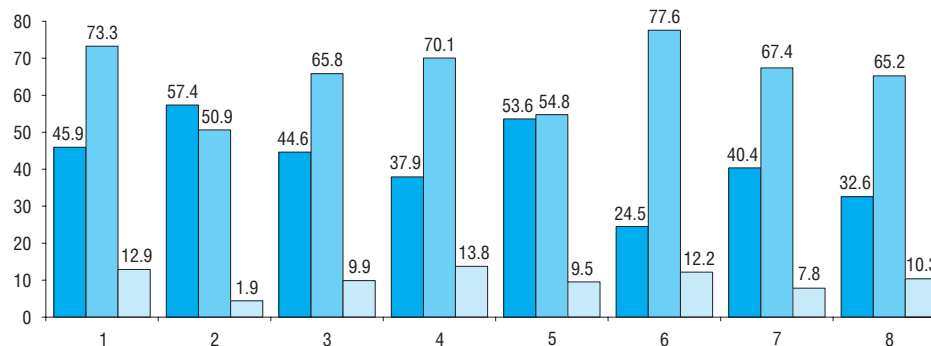
Permanent co-operation

Co-operation within a specific project

One-time co-operation unrelated to any specific project

(continued)

2011
Mining and quarrying, manufacturing, electricity, gas and water supply

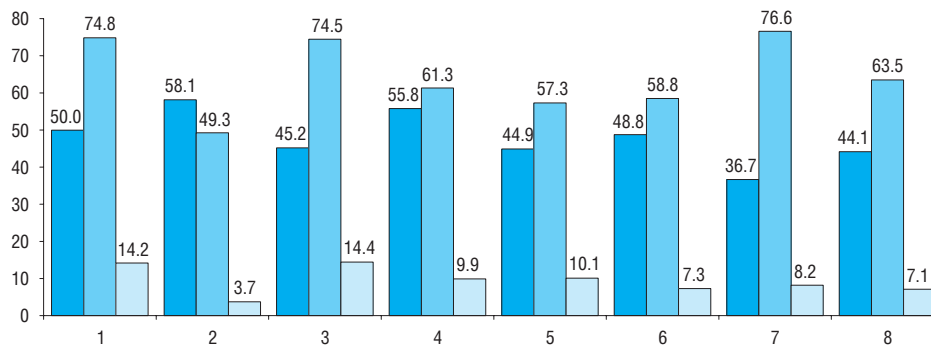


- 1 – Total
- 2 – Enterprises within the same enterprise group
- 3 – Clients or customers
- 4 – Suppliers of equipment, materials, components, software
- 5 – Competitors within the same sector
- 6 – Consultancy and information firms
- 7 – R&D institutions
- 8 – Universities and other higher education institutions

- Permanent co-operation
- Co-operation within a specific project
- One-time co-operation unrelated to any specific project

(continued)

Communications, computer and related activities, research and development, other business activities



1 – Total

2 – Enterprises within the same enterprise group

3 – Clients or customers

4 – Suppliers of equipment, materials, components, software

5 – Competitors within the same sector

6 – Consultancy and information firms

7 – R&D institutions

8 – Universities and other higher education institutions

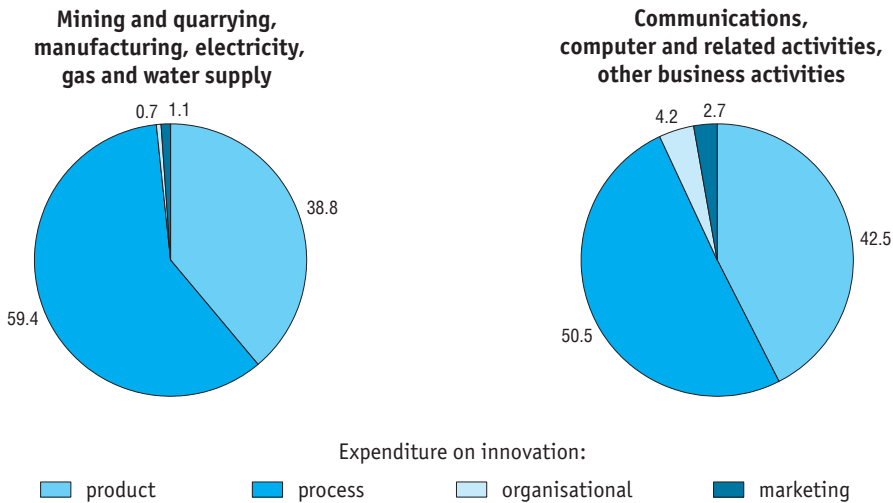
Permanent co-operation

Co-operation within a specific project

One-time co-operation unrelated to any specific project

3.43. PERCENTAGE DISTRIBUTION OF EXPENDITURE OF ENTERPRISES ENGAGED IN TECHNOLOGICAL INNOVATION BY TYPE OF INNOVATION

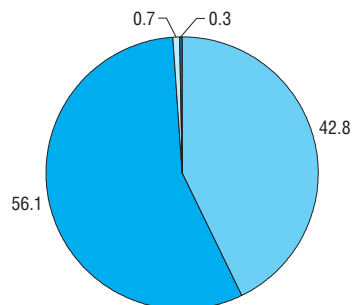
2010



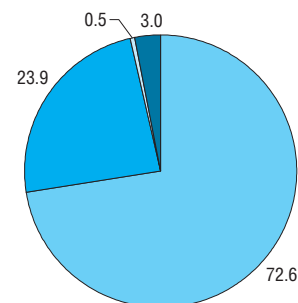
(continued)

2011

**Mining and quarrying,
manufacturing, electricity,
gas and water supply**



**Communications,
computer and related activities,
other business activities**



Expenditure on innovation:

product

process

organisational

marketing

3.44. EXPENDITURE ON TECHNOLOGICAL INNOVATION BY ECONOMIC ACTIVITY

	Expenditure on technological innovation, <i>million roubles</i>		Of which			
			product		process	
	2010	2011	2010	2011	2010	2011
Mining and quarrying, manufacturing, electricity, gas and water supply						
Total	349763.3	469442.2	138333.0	203066.9	211430.2	266375.3
Mining and quarrying	53541.7	70239.3	10264.5	11110.9	43277.2	59128.5
Mining and quarrying of energy producing materials	49250.9	65836.2	8304.3	8398.0	40946.6	57438.3
Mining and quarrying, except energy producing materials	4290.8	4403.1	1960.2	2712.9	2330.6	1690.2
Manufacturing	260835.2	370006.0	111219.9	184706.3	149615.3	185299.7
High tech	36816.2	38460.7	23622.0	24718.6	13194.3	13742.2
Manufacture of pharmaceuticals	999.4	2331.6	514.8	1952.3	484.6	379.3
Manufacture of office machinery and computers	416.8	748.4	331.7	552.8	85.1	195.6
Manufacture of radio, television and communication equipment and apparatus	7637.7	7697.1	4324.0	5015.3	3313.7	2681.8
Manufacture of medical, precision and optical instruments, watches and clocks	10089.1	11906.5	7807.1	8917.7	2282.0	2988.8
Manufacture of aircrafts, including spacecrafts	17673.3	15777.2	10644.4	8280.5	7028.9	7496.6
Medium high tech	50374.9	66501.1	29665.8	37833.2	20709.1	28667.9
Manufacture of chemicals and chemical products	23107.1	28407.1	8392.1	12953.3	14715.0	15453.9
Manufacture of machinery and equipment, n.e.c.	10639.5	11740.9	7200.0	8483.4	3439.5	3257.5
Manufacture of electrical machinery and apparatus	5012.0	6941.6	3957.5	5427.2	1054.6	1514.4
Manufacture of motor vehicles, trailers and semi-trailers	8348.1	15411.1	7813.3	9074.7	534.8	6336.5
Manufacture of other transport vehicles	3268.2	4000.2	2302.9	1894.6	965.2	2105.6

(continued)

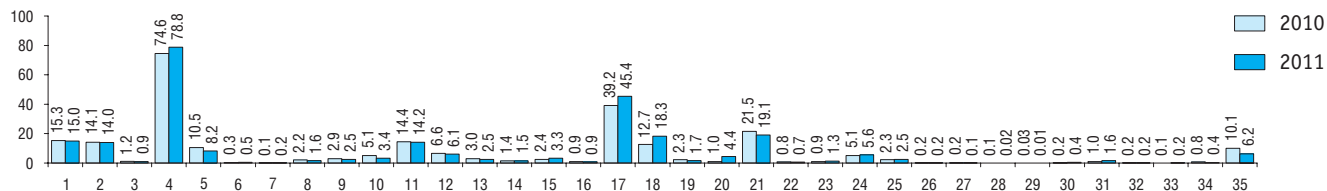
	Expenditure on technological innovation, <i>million roubles</i>		Of which			
			product		process	
	2010	2011	2010	2011	2010	2011
Medium low tech	137057.8	213314.3	37143.1	88442.9	99914.7	124871.3
Manufacture of coke, refined petroleum products	44261.9	85891.6	8060.3	41237.8	36201.6	44653.8
Manufacture of rubber and plastic products	8203.4	7793.0	5099.9	6166.1	3103.5	1626.8
Manufacture of other non-metallic mineral products	3404.1	20582.3	990.1	1666.0	2414.0	18916.3
Manufacture of basic metals	75337.4	89766.5	18733.4	32510.4	56604.0	57256.1
Manufacture of fabricated metal products	2667.1	3176.1	1498.1	1609.8	1169.0	1566.3
Construction and repair of vessels	3183.9	6104.8	2761.4	5252.8	422.4	852.0
Low tech	17940.7	26347.8	6270.4	11836.8	11670.3	14511.0
Manufacture of food products and beverages	7954.6	11830.8	4042.0	5964.3	3912.6	5866.6
Manufacture of tobacco products	806.3	732.0	723.3	579.4	82.9	152.6
Manufacture of textiles	706.3	614.4	297.8	387.3	408.5	227.1
Manufacture of wearing apparel, dressing and dyeing of fur	259.0	117.0	236.6	72.9	22.4	44.0
Manufacture of leather, leather products and footwear	99.1	38.1	13.6	10.2	85.5	27.9
Manufacture of wood and of products of wood and cork, except furniture	619.7	1962.2	240.1	567.4	379.6	1394.8
Manufacture of cellulose, wood pulp, paper and cardboard and appropriate paper products	3539.4	7457.3	202.8	3237.2	3336.6	4220.1
Publishing and printing, reproduction of recorded media	835.5	1036.1	354.4	478.7	481.1	557.3
Manufacture of furniture, manufacturing n.e.c.	261.8	847.7	150.1	526.4	111.7	321.3
Recycling	2859.2	1712.1	9.7	12.9	2849.5	1699.2
Manufacturing of other materials and substances, n.e.c.	18645.6	25382.1	14518.7	21874.7	4126.9	3507.4
Electricity, gas and water supply	35386.4	29196.9	16848.6	7249.8	18537.8	21947.2

(continued)

	Expenditure on technological innovation, <i>million roubles</i>		Of which			
			product		process	
	2010	2011	2010	2011	2010	2011
Communications, computer and related activities, research and development, other business activities						
Total	51040.6	264373.7	23322.4	198920.9	27718.2	65452.9
Communications	33710.4	130211.3	12793.5	105591.2	20916.9	24620.1
Computer and related activities	4973.6	7542.7	1593.3	2169.8	3380.3	5372.9
Research and development	...	116525.5	...	84346.2	...	32179.3
Other business activities	12356.5	10094.3	8935.6	6813.7	3421.0	3280.6

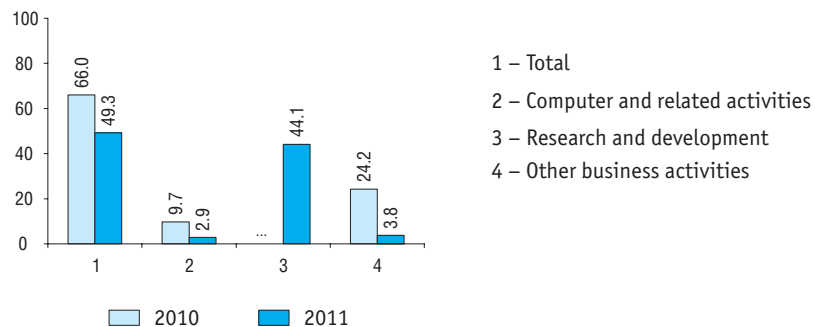
3.45. PERCENTAGE DISTRIBUTION OF EXPENDITURE ON TECHNOLOGICAL INNOVATION BY ECONOMIC ACTIVITY

Mining and quarrying, manufacturing, electricity, gas and water supply



- 1 – Total
- 2 – Mining and quarrying
 - 3 – Mining and quarrying of energy producing materials
 - 4 – Mining and quarrying, except energy producing materials
- 5 – Manufacturing
 - 6 – High tech
 - 7 – Manufacture of pharmaceuticals
 - 8 – Manufacture of office machinery and computers
 - 9 – Manufacture of radio, television and communication equipment and apparatus
 - 10 – Manufacture of medical, precision and optical instruments, watches and clocks
 - 11 – Manufacture of aircrafts, including spacecrafts
 - 12 – Medium high tech
 - 13 – Manufacture of chemicals and chemical products
 - 14 – Manufacture of machinery and equipment, n.e.c.
 - 15 – Manufacture of electrical machinery and apparatus
 - 16 – Manufacture of motor vehicles, trailers and semi-trailers
 - 17 – Manufacture of other transport vehicles
 - 18 – Medium low tech
 - 19 – Manufacture of coke, refined petroleum products
 - 20 – Manufacture of rubber and plastic products
 - 21 – Manufacture of other non-metallic mineral products
 - 22 – Manufacture of basic metals
 - 23 – Manufacture of fabricated metal products
 - 24 – Construction and repair of vessels
 - 25 – Low tech
 - 26 – Manufacture of food products and beverages
 - 27 – Manufacture of tobacco products
 - 28 – Manufacture of textiles
 - 29 – Manufacture of wearing apparel, dressing and dyeing of fur
 - 30 – Manufacture of leather, leather products and footwear
 - 31 – Manufacture of wood and of products of wood and cork, except furniture
 - 32 – Manufacture of cellulose, wood pulp, paper and cardboard and appropriate paper products
 - 33 – Publishing and printing, reproduction of recorded media
 - 34 – Manufacture of furniture; manufacturing n.e.c.
 - 35 – Recycling
 - 36 – Electricity, gas and water supply

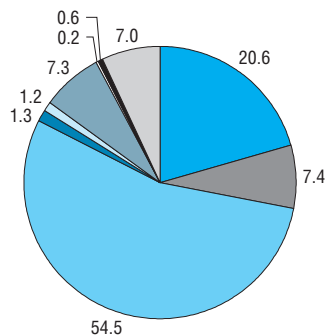
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Communications, computer and related activities, research and development, other business activities

3.46. PERCENTAGE DISTRIBUTION OF EXPENDITURE ON TECHNOLOGICAL INNOVATION BY INNOVATIVE ACTIVITY

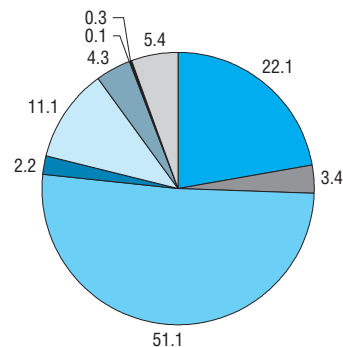
2010

**Mining and quarrying,
manufacturing, electricity,
gas and water supply**



- R&D
- Industrial design
- Acquisition of machinery and equipment
- Acquisition of technology
- Acquisition of software

**Communications,
computer and related activities,
other business activities**

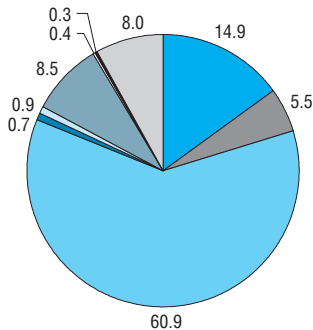


- Other types of pre-production
- Personnel training
- Market research
- Other

(continued)

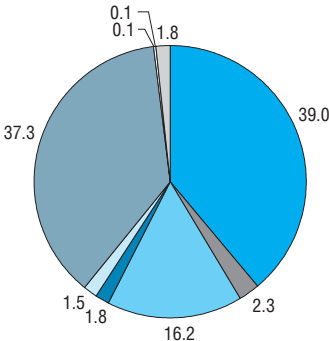
2011

Mining and quarrying,
manufacturing, electricity,
gas and water supply



- R&D
- Industrial design
- Acquisition of machinery and equipment
- Acquisition of technology
- Acquisition of software

Communications,
computer and related activities,
other business activities



- Other types of pre-production
- Personnel training
- Market research
- Other

3.47. EXPENDITURE ON TECHNOLOGICAL INNOVATION BY INNOVATIVE AND ECONOMIC ACTIVITY

(million roubles)

	Total expendi- ture	R&D	Industrial design	Acquisi- tion of machin- ery and equip- ment	Acquisi- tion of technol- ogy	Of which acquisi- tion of patent rights and licenses	Acquisi- tion of software	Other types of prepro- duction	Personnel training	Market research	Other
2010											
Mining and quarrying, manufacturing, electricity, gas and water supply											
Total	349763.3	72040.9	25755.4	190553.1	4637.5	1598.2	4273.3	25367.0	844.0	1930.4	24361.7
Mining and quarrying	53541.7	23329.3	949.8	17715.6	100.5	20.9	992.0	1489.4	437.1	887.0	7641.0
Mining and quarrying of energy producing materials	49250.9	22743.6	693.0	15707.8	100.5	20.9	960.8	401.8	434.4	887.0	7322.1
Mining and quarrying, except energy producing materials	4290.8	585.7	256.8	2007.8	—	—	31.2	1087.6	2.7	0.02	318.9
Manufacturing	260835.2	40533.8	22437.5	156982.4	2378.2	1559.6	2703.6	22058.2	383.6	1043.4	12314.5
High tech	36816.2	14920.3	4155.4	14438.3	211.9	165.9	521.4	968.5	122.4	52.0	1426.0
Manufacture of pharmaceuticals	999.4	271.1	10.0	599.6	26.5	26.5	18.1	37.1	3.7	16.1	17.2
Manufacture of office machinery and computers	416.8	89.8	17.7	121.0	11.8	11.7	1.7	2.0	1.4	0.3	171.1
Manufacture of radio, television and communication equipment and apparatus	7637.7	2602.1	402.7	3457.6	106.1	105.6	56.6	137.4	30.1	2.7	842.3
Manufacture of medical, precision and optical instruments, watches and clocks	10089.1	5793.6	1213.9	2299.6	16.9	11.3	105.7	292.0	37.9	11.1	318.4
Manufacture of aircrafts, including spacecrafts	17673.3	6163.7	2511.0	7960.5	50.7	10.8	339.3	500.1	49.2	21.7	77.0

(continued)

	Total expenditure	R&D	Industrial design	Acquisition of machinery and equipment	Acquisition of technology	Of which acquisition of patent rights and licenses	Acquisition of software	Other types of preproduction	Personnel training	Market research	Other
Medium high tech	50374.9	9912.7	6001.6	23578.9	1260.8	846.5	553.9	5420.7	101.7	822.5	2722.2
Manufacture of chemicals and chemical products	23107.1	1151.1	2565.7	13664.6	1085.2	735.8	54.2	2488.5	17.4	36.2	2044.0
Manufacture of machinery and equipment, n.e.c.	10639.5	3443.1	824.8	4356.2	90.8	69.2	361.7	1197.9	40.3	245.6	79.0
Manufacture of electrical machinery and apparatus	5012.0	1485.1	1432.6	1446.7	63.1	37.3	60.9	335.2	28.9	4.5	154.9
Manufacture of motor vehicles, trailers and semi-trailers	8348.1	2596.3	886.1	2790.5	8.9	3.9	40.1	1276.7	8.9	536.3	204.3
Manufacture of other transport vehicles	3268.2	1237.1	292.3	1320.9	12.7	0.3	37.0	122.3	6.1	–	239.9
Medium low tech	137057.8	8679.9	8009.9	101192.7	760.8	476.3	1062.4	12192.8	82.3	10.0	5067.0
Manufacture of coke, refined petroleum products	44261.9	3971.5	4439.4	23782.3	124.7	103.5	697.2	9136.7	13.5	–	2096.6
Manufacture of rubber and plastic products	8203.4	437.3	121.7	5473.6	190.3	190.2	10.6	1931.8	12.5	0.8	24.8
Manufacture of other non-metallic mineral products	3404.1	384.5	497.9	2002.7	81.9	35.4	16.2	261.3	3.1	1.1	155.6
Manufacture of basic metals	75337.4	1162.2	2544.4	67533.5	318.9	137.7	223.6	741.1	21.4	3.2	2789.2
Manufacture of fabricated metal products	2667.1	607.1	62.9	1877.4	40.3	6.4	22.4	37.6	13.7	5.0	0.8
Construction and repair of vessels	3183.9	2117.3	343.7	523.2	4.8	3.0	92.3	84.3	18.2	0.01	–
Low tech	17940.7	1054.9	2292.1	12362.7	128.1	59.0	329.0	1305.6	33.4	142.9	292.0
Manufacture of food products and beverages	7954.6	681.2	584.4	5481.2	57.6	16.2	265.7	598.9	9.7	132.8	143.1
Manufacture of tobacco products	806.3	55.2	–	263.7	–	–	1.2	486.1	–	–	–
Manufacture of textiles	706.3	20.9	3.0	655.0	0.5	0.03	0.8	22.3	1.4	2.3	–
Manufacture of wearing apparel, dressing and dyeing of fur	259.0	143.1	60.2	52.2	–	–	0.9	0.1	1.1	1.2	0.1

(continued)

	Total expendi- ture	R&D	Industrial design	Acquisi- tion of machin- ery and equip- ment	Acquisi- tion of technol- ogy	Of which acquisi- tion of patent rights and licenses	Acquisi- tion of software	Other types of prepro- duction	Personnel training	Market research	Other
Manufacture of leather, leather products and footwear	99.1	4.1	0.2	42.6	5.2	5.2	0.7	45.7	0.5	0.2	–
Manufacture of wood and of products of wood and cork, except furniture	619.7	2.6	19.0	407.9	25.1	0.1	7.1	5.8	1.5	2.8	147.9
Manufacture of cellulose, wood pulp, paper and cardboard and appropriate paper products	3539.4	3.2	35.1	3399.6	2.5	2.5	33.0	47.9	18.1	–	–
Publishing and printing, reproduction of re- corded media	835.5	133.6	33.9	618.9	2.3	0.03	18.4	23.9	0.05	3.4	1.0
Manufacture of furniture, manufacturing n.e.c.	261.8	7.7	10.7	204.9	34.9	34.9	1.4	1.2	0.9	–	–
Recycling	2859.2	3.4	1545.5	1236.6	–	–	–	73.7	–	–	–
Manufacturing of other materials and substances, n.e.c.	18645.6	5966.0	1978.6	5409.8	16.6	11.9	236.9	2170.6	43.8	16.1	2807.4
Electricity, gas and water supply	35386.4	8177.8	2368.0	15855.2	2158.8	17.7	577.7	1819.5	23.3	–	4406.2
Communications, computer and related activities, research and development, other business activities											
Total	51040.6	11277.7	1745.3	26058.6	1141.6	369.2	5658.2	2175.4	68.6	145.0	2770.0
Communications	33710.4	218.9	438.0	24088.5	309.0	23.3	4560.6	1488.2	24.6	82.2	2500.5
Computer and related activities	4973.6	2471.2	225.7	952.1	423.3	20.2	151.6	674.8	13.9	59.0	1.9
Research and development	...	...	...	...	...	...	...	...	...	...	...
Other business activities	12356.5	8587.6	1081.7	1018.0	409.3	325.8	946.0	12.4	30.1	3.7	267.6

(continued)

	Total expendi- ture	R&D	Industrial design	Acquisi- tion of machin- ery and equip- ment	Acquisi- tion of technol- ogy	Of which acquisi- tion of patent rights and licenses	Acquisi- tion of software	Other types of prepro- duction	Personnel training	Market research	Other
2011											
Mining and quarrying, manufacturing, electricity, gas and water supply											
Total	469442.2	69831.0	25630.5	285897.7	3215.6	1034.8	4081.1	39894.7	1847.1	1473.3	37571.2
Mining and quarrying	70239.3	10916.9	1228.6	53637.1	215.2	65.4	374.2	436.2	39.0	31.8	3360.4
Mining and quarrying of energy producing materials	65836.2	8540.7	1160.4	52184.5	153.9	38.3	359.4	378.4	39.0	0.01	3019.9
Mining and quarrying, except energy producing materials	4403.1	2376.2	68.1	1452.6	61.3	27.2	14.8	57.8	—	31.8	340.5
Manufacturing	370006.0	53818.5	23444.9	219588.2	1809.7	963.2	2883.8	38291.7	1244.1	949.7	27975.5
High tech	38460.7	15009.6	4636.9	15857.4	68.0	53.8	535.7	1361.0	186.6	84.0	721.5
Manufacture of pharmaceuticals	2331.6	991.5	17.0	1224.9	17.2	13.9	29.4	30.6	4.7	12.3	4.0
Manufacture of office machinery and computers	748.4	379.7	26.9	274.5	12.4	12.4	0.8	19.0	0.3	0.1	34.8
Manufacture of radio, television and commu- nication equipment and apparatus	7697.1	3535.9	818.4	2842.7	1.6	0.4	63.6	94.1	20.6	9.3	310.9
Manufacture of medical, precision and optical instruments, watches and clocks	11906.5	7307.6	868.9	2862.9	28.9	23.0	108.1	400.5	38.2	30.2	261.3
Manufacture of aircrafts, including spacecrafts	15777.2	2794.9	2905.6	8652.5	8.0	4.2	333.9	816.8	122.9	32.1	110.5

(continued)

	Total expenditure	R&D	Industrial design	Acquisition of machinery and equipment	Acquisition of technology	Of which acquisition of patent rights and licenses	Acquisition of software	Other types of preproduction	Personnel training	Market research	Other
Medium high tech	66501.1	13297.2	4864.9	29673.2	651.0	361.3	716.5	12271.6	151.9	547.3	4327.5
Manufacture of chemicals and chemical products	28407.1	1376.8	2596.4	13056.2	271.3	245.5	199.4	7838.4	7.5	46.9	3014.3
Manufacture of machinery and equipment, n.e.c.	11740.9	4403.7	414.4	5073.4	86.7	40.7	235.5	682.1	45.6	22.0	777.6
Manufacture of electrical machinery and apparatus	6941.6	2432.0	528.1	2746.9	211.6	65.4	113.7	343.8	52.6	450.1	62.9
Manufacture of motor vehicles, trailers and semi-trailers	15411.1	4206.0	961.8	6389.9	60.8	8.9	63.3	3260.7	44.4	28.3	396.0
Manufacture of other transport vehicles	4000.2	878.7	364.3	2406.8	20.7	0.9	104.6	146.5	1.9	–	76.8
Medium low tech	213314.3	12433.7	9279.2	150267.6	973.1	498.0	1225.5	18927.2	737.9	10.9	19459.3
Manufacture of coke, refined petroleum products	85891.6	4035.0	5531.4	49814.9	560.6	370.4	751.9	16351.2	632.7	–	8214.0
Manufacture of rubber and plastic products	7793.0	237.6	45.7	6015.2	29.6	26.5	97.0	768.8	1.8	0.1	597.2
Manufacture of other non-metallic mineral products	20582.3	897.1	1055.2	10474.3	211.8	27.6	55.8	347.4	7.7	3.9	7529.1
Manufacture of basic metals	89766.5	1716.3	2401.0	80991.5	98.7	65.6	204.2	1220.8	43.5	0.2	3090.4
Manufacture of fabricated metal products	3176.1	707.5	94.5	2054.2	70.1	7.7	30.6	184.0	17.6	5.8	11.9
Construction and repair of vessels	6104.8	4840.2	151.4	917.4	2.2	0.2	86.1	55.1	34.6	0.9	16.8
Low tech	26347.8	2290.5	2466.4	16176.3	79.0	32.0	169.7	3259.4	140.1	290.5	1476.0
Manufacture of food products and beverages	11830.8	1690.4	855.8	7147.7	48.6	5.1	73.7	1040.5	124.9	247.2	602.1
Manufacture of tobacco products	732.0	0.5	–	548.1	–	–	0.3	183.2	–	–	–
Manufacture of textiles	614.4	51.6	97.3	258.4	0.9	0.5	1.8	55.5	1.4	2.4	145.2
Manufacture of wearing apparel, dressing and dyeing of fur	117.0	27.3	41.7	42.8	–	–	2.2	0.03	1.3	1.7	–

(continued)

	Total expendi- ture	R&D	Industrial design	Acquisi- tion of machin- ery and equip- ment	Acquisi- tion of technol- ogy	Of which acquisi- tion of patent rights and licenses	Acquisi- tion of software	Other types of prepro- duction	Personnel training	Market research	Other
Manufacture of leather, leather products and footwear	38.1	4.3	1.6	28.1	0.4	0.1	2.4	–	0.5	0.8	0.2
Manufacture of wood and of products of wood and cork, except furniture	1962.2	0.2	30.4	1121.9	0.6	0.3	5.5	81.5	2.3	0.01	719.8
Manufacture of cellulose, wood pulp, paper and cardboard and appropriate paper products	7457.3	13.0	43.8	5597.9	–	–	9.3	1774.8	5.9	6.9	5.8
Publishing and printing, reproduction of recorded media	1036.1	106.8	149.0	610.6	0.3	0.3	44.6	123.0	1.3	0.4	0.1
Manufacture of furniture, manufacturing n.e.c.	847.7	384.4	35.3	332.7	28.2	25.6	29.8	0.9	2.4	31.2	2.9
Recycling	1712.1	12.0	1211.6	488.2	–	–	0.1	–	0.2	–	–
Manufacturing of other materials and substances, n.e.c.	25382.1	10787.6	2197.4	7613.8	38.6	18.1	236.4	2472.6	27.5	17.0	1991.2
Electricity, gas and water supply	29196.9	5095.6	957.1	12672.4	1190.7	6.2	823.1	1166.8	564.1	491.9	6235.4
Communications, computer and related activities, research and development, other business activities											
Total	264373.7	103032.0	6031.2	42764.9	4658.1	493.6	4059.6	98667.3	317.7	185.0	4658.0
Communications	130211.3	3741.3	2070.9	24450.9	2608.2	152.5	1964.3	92828.6	20.0	93.6	2433.6
Computer and related activities	7542.7	3079.2	338.5	2454.5	42.4	22.2	119.6	1418.0	9.3	12.7	68.5
Research and development	116525.5	91374.7	2318.4	14522.5	1847.8	300.0	1342.6	2699.4	241.0	47.8	2131.3
Other business activities	10094.3	4836.8	1303.5	1337.0	159.7	19.0	633.1	1721.4	47.4	30.9	24.5

3.48. PERCENTAGE DISTRIBUTION OF EXPENDITURE ON TECHNOLOGICAL INNOVATION BY INNOVATIVE AND ECONOMIC ACTIVITY

	R&D	Industrial design	Acquisition of machinery and equipment	Acquisition of technology	Of which acquisition of patent rights and licenses	Acquisition of software	Other types of preproduction	Personnel training	Market research	Other
2010										
Mining and quarrying, manufacturing, electricity, gas and water supply										
Total	20.6	7.4	54.5	1.3	0.5	1.2	7.3	0.2	0.6	7.0
Mining and quarrying	43.6	1.8	33.1	0.2	0.04	1.9	2.8	0.8	1.7	14.3
Mining and quarrying of energy producing materials	46.2	1.4	31.9	0.2	0.04	2.0	0.8	0.9	1.8	14.9
Mining and quarrying, except energy producing materials	13.6	6.0	46.8	–	–	0.7	25.3	0.1	0.0003	7.4
Manufacturing	15.5	8.6	60.2	0.9	0.6	1.0	8.5	0.1	0.4	4.7
High tech	40.5	11.3	39.2	0.6	0.5	1.4	2.6	0.3	0.1	3.9
Manufacture of pharmaceuticals	27.1	1.0	60.0	2.6	2.6	1.8	3.7	0.4	1.6	1.7
Manufacture of office machinery and computers	21.5	4.3	29.0	2.8	2.8	0.4	0.5	0.3	0.1	41.1
Manufacture of radio, television and communication equipment and apparatus	34.1	5.3	45.3	1.4	1.4	0.7	1.8	0.4	0.04	11.0
Manufacture of medical, precision and optical instruments, watches and clocks	57.4	12.0	22.8	0.2	0.1	1.0	2.9	0.4	0.1	3.2
Manufacture of aircrafts, including spacecrafts	34.9	14.2	45.0	0.3	0.1	1.9	2.8	0.3	0.1	0.4

(continued)

	R&D	Industrial design	Acquisition of machinery and equipment	Acquisition of technology	Of which acquisition of patent rights and licenses	Acquisition of software	Other types of preproduction	Personnel training	Market research	Other
Medium high tech	19.7	11.9	46.8	2.5	1.7	1.1	10.8	0.2	1.6	5.4
Manufacture of chemicals and chemical products	5.0	11.1	59.1	4.7	3.2	0.2	10.8	0.1	0.2	8.8
Manufacture of machinery and equipment, n.e.c.	32.4	7.8	40.9	0.9	0.7	3.4	11.3	0.4	2.3	0.7
Manufacture of electrical machinery and apparatus	29.6	28.6	28.9	1.3	0.7	1.2	6.7	0.6	0.1	3.1
Manufacture of motor vehicles, trailers and semi-trailers	31.1	10.6	33.4	0.1	0.05	0.5	15.3	0.1	6.4	2.4
Manufacture of other transport vehicles	37.9	8.9	40.4	0.4	0.01	1.1	3.7	0.2	–	7.3
Medium low tech	6.3	5.8	73.8	0.6	0.3	0.8	8.9	0.1	0.01	3.7
Manufacture of coke, refined petroleum products	9.0	10.0	53.7	0.3	0.2	1.6	20.6	0.03	–	4.7
Manufacture of rubber and plastic products	5.3	1.5	66.7	2.3	2.3	0.1	23.5	0.2	0.01	0.3
Manufacture of other non-metallic mineral products	11.3	14.6	58.8	2.4	1.0	0.5	7.7	0.1	0.03	4.6
Manufacture of basic metals	1.5	3.4	89.6	0.4	0.2	0.3	1.0	0.03	0.004	3.7
Manufacture of fabricated metal products	22.8	2.4	70.4	1.5	0.2	0.8	1.4	0.5	0.2	0.03
Construction and repair of vessels	66.5	10.8	16.4	0.2	0.1	2.9	2.6	0.6	0.0004	–
Low tech	5.9	12.8	68.9	0.7	0.3	1.8	7.3	0.2	0.8	1.6
Manufacture of food products and beverages	8.6	7.3	68.9	0.7	0.2	3.3	7.5	0.1	1.7	1.8
Manufacture of tobacco products	6.8	–	32.7	–	–	0.1	60.3	–	–	–
Manufacture of textiles	3.0	0.4	92.7	0.1	0.004	0.1	3.2	0.2	0.3	–
Manufacture of wearing apparel, dressing and dyeing of fur	55.3	23.2	20.2	–	–	0.4	0.03	0.4	0.5	0.02

(continued)

	R&D	Industrial design	Acquisition of machinery and equipment	Acquisition of technology	Of which acquisition of patent rights and licenses	Acquisition of software	Other types of reproduction	Personnel training	Market research	Other
Manufacture of leather, leather products and footwear	4.1	0.2	43.0	5.3	5.3	0.7	46.2	0.5	0.2	–
Manufacture of wood and of products of wood and cork, except furniture	0.4	3.1	65.8	4.0	0.01	1.1	0.9	0.2	0.5	23.9
Manufacture of cellulose, wood pulp, paper and cardboard and appropriate paper products	0.1	1.0	96.0	0.1	0.1	0.9	1.4	0.5	–	–
Publishing and printing, reproduction of recorded media	16.0	4.1	74.1	0.3	0.003	2.2	2.9	0.01	0.4	0.1
Manufacture of furniture, manufacturing n.e.c.	2.9	4.1	78.3	13.3	13.3	0.5	0.5	0.4	–	–
Recycling	0.1	54.1	43.2	–	–	–	2.6	–	–	–
Electricity, gas and water supply	23.1	6.7	44.8	6.1	0.05	1.6	5.1	0.1	–	12.5
Communications, computer and related activities, research and development, other business activities										
Total	22.1	3.4	51.1	2.2	0.7	11.1	4.3	0.1	0.3	5.4
Communications	0.6	1.3	71.5	0.9	0.1	13.5	4.4	0.1	0.2	7.4
Computer and related activities	49.7	4.5	19.1	8.5	0.4	3.0	13.6	0.3	1.2	0.04
Research and development	...	...	...	...	...	...	...	...	...	...
Other business activities	69.5	8.8	8.2	3.3	2.6	7.7	0.1	0.2	0.03	2.2

(continued)

	R&D	Industrial design	Acquisition of machinery and equipment	Acquisition of technology	Of which acquisition of patent rights and licenses	Acquisition of software	Other types of preproduction	Personnel training	Market research	Other
2011										
Mining and quarrying, manufacturing, electricity, gas and water supply										
Total	14.9	5.5	60.9	0.7	0.2	0.9	8.5	0.4	0.3	8.0
Mining and quarrying	15.5	1.7	76.4	0.3	0.1	0.5	0.6	0.1	0.05	4.8
Mining and quarrying of energy producing materials	13.0	1.8	79.3	0.2	0.1	0.5	0.6	0.1	0.00002	4.6
Mining and quarrying, except energy producing materials	54.0	1.5	33.0	1.4	0.6	0.3	1.3	—	0.7	7.7
Manufacturing	14.5	6.3	59.3	0.5	0.3	0.8	10.3	0.3	0.3	7.6
High tech	39.0	12.1	41.2	0.2	0.1	1.4	3.5	0.5	0.2	1.9
Manufacture of pharmaceuticals	42.5	0.7	52.5	0.7	0.6	1.3	1.3	0.2	0.5	0.2
Manufacture of office machinery and computers	50.7	3.6	36.7	1.7	1.7	0.1	2.5	0.04	0.01	4.7
Manufacture of radio, television and communication equipment and apparatus	45.9	10.6	36.9	0.02	0.01	0.8	1.2	0.3	0.1	4.0
Manufacture of medical, precision and optical instruments, watches and clocks	61.4	7.3	24.0	0.2	0.2	0.9	3.4	0.3	0.3	2.2
Manufacture of aircrafts, including spacecrafts	17.7	18.4	54.8	0.1	0.03	2.1	5.2	0.8	0.2	0.7

(continued)

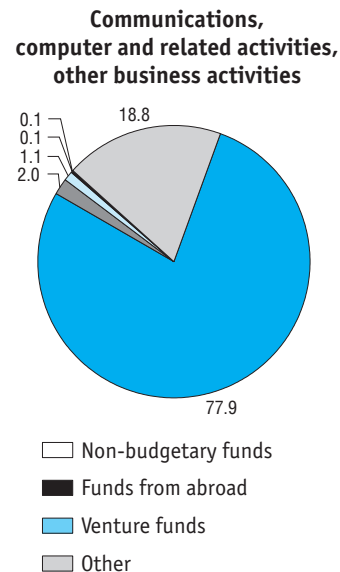
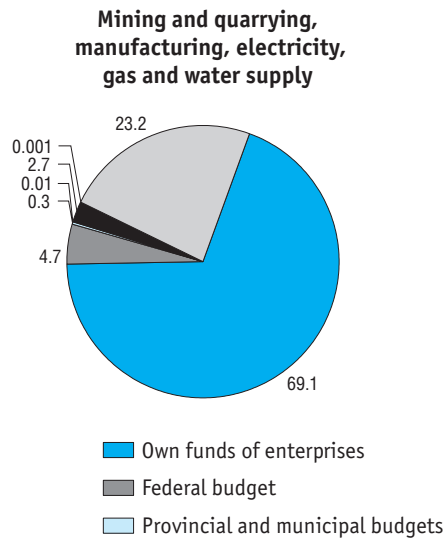
	R&D	Industrial design	Acquisition of machinery and equipment	Acquisition of technology	Of which acquisition of patent rights and licenses	Acquisition of software	Other types of preproduction	Personnel training	Market research	Other
Medium high tech	20.0	7.3	44.6	1.0	0.5	1.1	18.5	0.2	0.8	6.5
Manufacture of chemicals and chemical products	4.8	9.1	46.0	1.0	0.9	0.7	27.6	0.03	0.2	10.6
Manufacture of machinery and equipment, n.e.c.	37.5	3.5	43.2	0.7	0.3	2.0	5.8	0.4	0.2	6.6
Manufacture of electrical machinery and apparatus	35.0	7.6	39.6	3.0	0.9	1.6	5.0	0.8	6.5	0.9
Manufacture of motor vehicles, trailers and semi-trailers	27.3	6.2	41.5	0.4	0.1	0.4	21.2	0.3	0.2	2.6
Manufacture of other transport vehicles	22.0	9.1	60.2	0.5	0.02	2.6	3.7	0.05	–	1.9
Medium low tech	5.8	4.4	70.4	0.5	0.2	0.6	8.9	0.3	0.01	9.1
Manufacture of coke, refined petroleum products	4.7	6.4	58.0	0.7	0.4	0.9	19.0	0.7	–	9.6
Manufacture of rubber and plastic products	3.0	0.6	77.2	0.4	0.3	1.2	9.9	0.02	0.001	7.7
Manufacture of other non-metallic mineral products	4.4	5.1	50.9	1.0	0.1	0.3	1.7	0.04	0.02	36.6
Manufacture of basic metals	1.9	2.7	90.2	0.1	0.1	0.2	1.4	0.05	0.0002	3.4
Manufacture of fabricated metal products	22.3	3.0	64.7	2.2	0.2	1.0	5.8	0.6	0.2	0.4
Construction and repair of vessels	79.3	2.5	15.0	0.04	0.004	1.4	0.9	0.6	0.01	0.3
Low tech	8.7	9.4	61.4	0.3	0.1	0.6	12.4	0.5	1.1	5.6
Manufacture of food products and beverages	14.3	7.2	60.4	0.4	0.04	0.6	8.8	1.1	2.1	5.1
Manufacture of tobacco products	0.1	–	74.9	–	–	0.04	25.0	–	–	–
Manufacture of textiles	8.4	15.8	42.0	0.1	0.1	0.3	9.0	0.2	0.4	23.6
Manufacture of wearing apparel, dressing and dyeing of fur	23.3	35.6	36.6	–	–	1.9	0.03	1.1	1.4	–

(continued)

	R&D	Industrial design	Acquisition of machinery and equipment	Acquisition of technology	Of which acquisition of patent rights and licenses	Acquisition of software	Other types of reproduction	Personnel training	Market research	Other
Manufacture of leather, leather products and footwear	11.4	4.1	73.6	1.1	0.3	6.2	–	1.3	2.0	0.4
Manufacture of wood and of products of wood and cork, except furniture	0.01	1.5	57.2	0.03	0.02	0.3	4.2	0.1	0.001	36.7
Manufacture of cellulose, wood pulp, paper and cardboard and appropriate paper products	0.2	0.6	75.1	–	–	0.1	23.8	0.1	0.1	0.1
Publishing and printing, reproduction of recorded media	10.3	14.4	58.9	0.03	0.03	4.3	11.9	0.1	0.04	0.01
Manufacture of furniture, manufacturing n.e.c.	45.3	4.2	39.2	3.3	3.0	3.5	0.1	0.3	3.7	0.3
Recycling	0.7	70.8	28.5	–	–	0.005	–	0.01	–	–
Electricity, gas and water supply	17.5	3.3	43.4	4.1	0.02	2.8	4.0	1.9	1.7	21.4
Communications, computer and related activities, research and development, other business activities										
Total	39.0	2.3	16.2	1.8	0.2	1.5	37.3	0.1	0.1	1.8
Communications	2.9	1.6	18.8	2.0	0.1	1.5	71.3	0.02	0.1	1.9
Computer and related activities	40.8	4.5	32.5	0.6	0.3	1.6	18.8	0.1	0.2	0.9
Research and development	78.4	2.0	12.5	1.6	0.3	1.2	2.3	0.2	0.04	1.8
Other business activities	47.9	12.9	13.2	1.6	0.2	6.3	17.1	0.5	0.3	0.2

3.49. PERCENTAGE DISTRIBUTION OF EXPENDITURE ON TECHNOLOGICAL INNOVATION BY SOURCE OF FUNDS

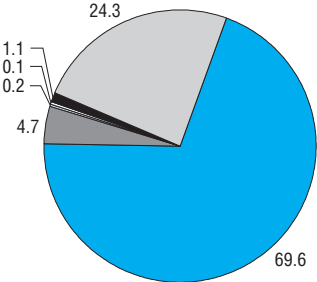
2010



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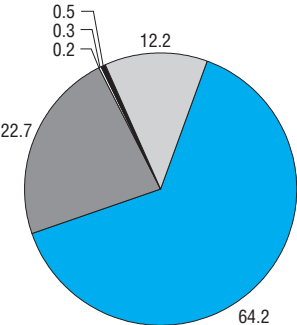
2011

Mining and quarrying,
manufacturing, electricity,
gas and water supply



- Own funds of enterprises
- Federal budget
- Provincial and municipal budgets

Communications,
computer and related activities,
other business activities



- Non-budgetary funds
- Funds from abroad
- Venture funds
- Other

3.50. EXPENDITURE ON TECHNOLOGICAL INNOVATION BY SOURCE OF FUNDS AND ECONOMIC ACTIVITY

(million roubles)

	Total expenditure	Own funds of enterprises	Federal budget	Regional and local budgets	Non-budgetary funds	Funds from abroad	Of which from EU Member States, Iceland, Liechtenstein, Norway, and Switzerland	Venture funds	Other
2010									
Mining and quarrying, manufacturing, electricity, gas and water supply									
Total	349763.3	241703.9	16386.5	1004.8	34.2	9446.1	481.0	2.0	81185.7
Mining and quarrying	53541.7	31523.4	–	–	–	–	–	–	22018.3
Mining and quarrying of energy producing materials	49250.9	27877.8	–	–	–	–	–	–	21373.1
Mining and quarrying, except energy producing materials	4290.8	3645.6	–	–	–	–	–	–	645.2
Manufacturing	260835.2	194374.1	15436.0	308.7	34.2	1337.0	414.2	2.0	49343.1
High tech	36816.2	26205.6	5948.2	43.1	17.5	29.9	22.3	–	4572.0
Manufacture of pharmaceuticals	999.4	980.7	–	–	–	–	–	–	18.7
Manufacture of office machinery and computers	416.8	347.3	69.5	–	–	–	–	–	–
Manufacture of radio, television and communication equipment and apparatus	7637.7	4887.7	1224.6	37.8	1.3	0.9	–	–	1485.4
Manufacture of medical, precision and optical instruments, watches and clocks	10089.1	7106.4	2121.1	5.3	–	29.0	22.3	–	827.3
Manufacture of aircrafts, including spacecrafts	17673.3	12883.5	2533.1	–	16.1	–	–	–	2240.6

(continued)

	Total expenditure	Own funds of enterprises	Federal budget	Regional and local budgets	Non-budgetary funds	Funds from abroad	Of which from EU Member States, Iceland, Liechtenstein, Norway, and Switzerland	Venture funds	Other
Medium high tech	50374.9	39597.4	1124.1	108.8	1.7	100.1	99.8	2.0	9440.8
Manufacture of chemicals and chemical products	23107.1	19108.6	162.9	5.4	–	100.1	99.8	2.0	3728.0
Manufacture of machinery and equipment, n.e.c.	10639.5	7938.9	407.9	–	–	–	–	–	2292.7
Manufacture of electrical machinery and apparatus	5012.0	4477.7	286.2	103.4	1.7	–	–	–	143.1
Manufacture of motor vehicles, trailers and semi-trailers	8348.1	6316.7	48.8	–	–	–	–	–	1982.6
Manufacture of other transport vehicles	3268.2	1755.5	218.3	–	–	–	–	–	1294.4
Medium low tech	137057.8	105725.2	1238.0	100.7	–	1181.8	288.2	–	28812.1
Manufacture of coke, refined petroleum products	44261.9	43298.4	–	–	–	884.3	–	–	79.1
Manufacture of rubber and plastic products	8203.4	5494.6	26.7	39.8	–	103.1	93.9	–	2539.1
Manufacture of other non-metallic mineral products	3404.1	3058.2	–	14.7	–	–	–	–	331.3
Manufacture of basic metals	75337.4	50782.9	121.5	–	–	194.3	194.3	–	24238.7
Manufacture of fabricated metal products	2667.1	2328.9	70.9	46.2	–	–	–	–	221.1
Construction and repair of vessels	3183.9	762.1	1018.9	–	–	–	–	–	1402.8
Low tech	17940.7	12083.0	43.7	50.1	0.9	14.5	3.9	–	5748.4
Manufacture of food products and beverages	7954.6	6772.2	31.7	46.5	–	10.6	–	–	1093.6
Manufacture of tobacco products	806.3	806.3	–	–	–	–	–	–	–
Manufacture of textiles	706.3	447.0	10.2	–	–	–	–	–	249.1
Manufacture of wearing apparel, dressing and dyeing of fur	259.0	103.5	–	–	–	–	–	–	155.5

(continued)

	Total expenditure	Own funds of enterprises	Federal budget	Regional and local budgets	Non-budgetary funds	Funds from abroad	Of which from EU Member States, Iceland, Liechtenstein, Norway, and Switzerland	Venture funds	Other
Manufacture of leather, leather products and footwear	99.1	54.0	–	0.05	–	–	–	–	45.0
Manufacture of wood and of products of wood and cork, except furniture	619.7	466.3	–	0.5	0.9	–	–	–	152.0
Manufacture of cellulose, wood pulp, paper and cardboard and appropriate paper products	3539.4	2372.8	0.7	–	–	–	–	–	1165.9
Publishing and printing, reproduction of recorded media	835.5	757.5	1.1	3.1	–	3.1	3.1	–	70.7
Manufacture of furniture, manufacturing n.e.c.	261.8	256.7	–	–	–	0.8	0.8	–	4.3
Recycling	2859.2	46.8	–	–	–	–	–	–	2812.4
Manufacturing of other materials and substances, n.e.c.	18645.6	10762.8	7082.0	6.1	14.2	10.7	–	–	769.8
Electricity, gas and water supply	35386.4	15806.5	950.5	696.0	–	8109.1	66.8	–	9824.4
Communications, computer and related activities, research and development, other business activities									
Total	51040.6	39739.1	995.6	568.9	73.3	58.7	–	–	9604.9
Communications	33710.4	31562.6	640.8	7.3	1.0	–	–	–	1498.8
Computer and related activities	4973.6	4636.5	19.7	216.8	0.1	–	–	–	100.5
Research and development	...	...	...	...	...	...	...	...	...
Other business activities	12356.5	3540.1	335.1	344.7	72.3	58.7	–	–	8005.7

(continued)

	Total expenditure	Own funds of enterprises	Federal budget	Regional and local budgets	Non-budgetary funds	Funds from abroad	Of which from EU Member States, Iceland, Liechtenstein, Norway, and Switzerland	Venture funds	Other
2011									
Mining and quarrying, manufacturing, electricity, gas and water supply									
Total	469442.2	326642.0	22146.2	1167.7	349.0	5042.8	3253.4	-	114094.5
Mining and quarrying	70239.3	57813.1	25.4	-	-	-	-	-	12400.8
Mining and quarrying of energy producing materials	65836.2	56000.8	25.4	-	-	-	-	-	9810.0
Mining and quarrying, except energy producing materials	4403.1	1812.3	-	-	-	-	-	-	2590.8
Manufacturing	370006.0	248360.7	21744.3	831.4	348.8	4644.6	3253.4	-	94076.2
High tech	38460.7	25829.3	7276.0	44.0	326.6	883.8	-	-	4101.0
Manufacture of pharmaceuticals	2331.6	1684.1	512.6	-	-	-	-	-	134.9
Manufacture of office machinery and computers	748.4	414.1	334.2	-	-	-	-	-	0.1
Manufacture of radio, television and communication equipment and apparatus	7697.1	4612.6	2068.0	32.5	-	9.5	-	-	974.6
Manufacture of medical, precision and optical instruments, watches and clocks	11906.5	7609.6	2602.7	11.6	-	789.1	-	-	893.4
Manufacture of aircrafts, including spacecrafts	15777.2	11508.9	1758.4	-	326.6	85.2	-	-	2098.0

(continued)

	Total expenditure	Own funds of enterprises	Federal budget	Regional and local budgets	Non-budgetary funds	Funds from abroad	Of which from EU Member States, Iceland, Liechtenstein, Norway, and Switzerland	Venture funds	Other
Medium high tech	66501.1	55471.5	1701.2	253.5	5.4	19.2	19.2	–	9050.4
Manufacture of chemicals and chemical products	28407.1	24468.3	190.8	–	–	19.2	19.2	–	3728.8
Manufacture of machinery and equipment, n.e.c.	11740.9	9213.7	928.0	21.3	5.0	–	–	–	1572.9
Manufacture of electrical machinery and apparatus	6941.6	5968.0	465.0	69.2	–	–	–	–	439.5
Manufacture of motor vehicles, trailers and semi-trailers	15411.1	13060.6	12.8	–	–	–	–	–	2337.7
Manufacture of other transport vehicles	4000.2	2760.9	104.6	163.0	0.4	–	–	–	971.4
Medium low tech	213314.3	137161.7	1569.3	266.1	–	396.7	240.0	–	73920.5
Manufacture of coke, refined petroleum products	85891.6	54887.6	–	–	–	155.0	–	–	30849.0
Manufacture of rubber and plastic products	7793.0	4397.3	21.0	237.1	–	–	–	–	3137.6
Manufacture of other non-metallic mineral products	20582.3	13676.8	–	14.6	–	–	–	–	6890.9
Manufacture of basic metals	89766.5	60757.6	93.6	–	–	241.7	240.0	–	28673.7
Manufacture of fabricated metal products	3176.1	2100.1	143.8	14.1	–	–	–	–	918.2
Construction and repair of vessels	6104.8	1342.4	1310.9	0.3	–	–	–	–	3451.2
Low tech	26347.8	18784.1	24.0	10.0	1.7	3345.0	2994.2	–	4183.1
Manufacture of food products and beverages	11830.8	9862.7	5.3	5.8	–	268.4	49.8	–	1688.6
Manufacture of tobacco products	732.0	560.1	–	–	–	–	–	–	172.0
Manufacture of textiles	614.4	383.7	0.1	–	–	–	–	–	230.6
Manufacture of wearing apparel, dressing and dyeing of fur	117.0	106.9	8.4	–	–	–	–	–	1.7

(continued)

	Total expenditure	Own funds of enterprises	Federal budget	Regional and local budgets	Non-budgetary funds	Funds from abroad	Of which from EU Member States, Iceland, Liechtenstein, Norway, and Switzerland	Venture funds	Other
Manufacture of leather, leather products and footwear	38.1	38.1	–	–	–	–	–	–	–
Manufacture of wood and of products of wood and cork, except furniture	1962.2	540.6	–	1.7	1.7	132.1	–	–	1286.1
Manufacture of cellulose, wood pulp, paper and cardboard and appropriate paper products	7457.3	3973.3	0.7	2.0	–	2944.4	2944.4	–	537.0
Publishing and printing, reproduction of recorded media	1036.1	921.9	1.0	0.4	–	–	–	–	112.7
Manufacture of furniture, manufacturing n.e.c.	847.7	814.1	8.5	–	–	–	–	–	25.2
Recycling	1712.1	1582.8	–	–	–	–	–	–	129.3
Manufacturing of other materials and substances, n.e.c.	25382.1	11114.0	11173.9	257.8	15.2	–	–	–	2821.2
Electricity, gas and water supply	29196.9	20468.3	376.5	336.3	0.2	398.2	–	–	7617.6
Communications, computer and related activities, research and development, other business activities									
Total	264373.7	169689.9	59924.7	528.4	751.7	1204.3	122.8	1.0	32273.7
Communications	130211.3	128284.5	670.3	100.7	2.4	–	–	–	1153.4
Computer and related activities	7542.7	7269.8	62.1	42.2	9.1	81.6	70.1	–	77.8
Research and development	116525.5	29501.4	58713.0	334.1	737.8	957.5	52.6	1.0	26280.8
Other business activities	10094.3	4634.3	479.3	51.4	2.4	165.2	–	–	4761.8

3.51. PERCENTAGE DISTRIBUTION OF EXPENDITURE ON TECHNOLOGICAL INNOVATION BY SOURCE OF FUNDS AND ECONOMIC ACTIVITY

	Own funds of enterprises	Federal budget	Regional and local budgets	Non-budgetary funds	Funds from abroad	Of which from EU Member States, Iceland, Liechtenstein, Norway, and Switzerland	Venture funds	Other
2010								
Mining and quarrying, manufacturing, electricity, gas and water supply								
Total	69.1	4.7	0.3	0.01	2.7	0.1	0.001	23.2
Mining and quarrying	58.9	–	–	–	–	–	–	41.1
Mining and quarrying of energy producing materials	56.6	–	–	–	–	–	–	43.4
Mining and quarrying, except energy producing materials	85.0	–	–	–	–	–	–	15.0
Manufacturing	74.5	5.9	0.1	0.01	0.5	0.2	0.001	18.9
High tech	71.2	16.2	0.1	0.05	0.1	0.1	–	12.4
Manufacture of pharmaceuticals	98.1	–	–	–	–	–	–	1.9
Manufacture of office machinery and computers	83.3	16.7	–	–	–	–	–	–
Manufacture of radio, television and communication equipment and apparatus	64.0	16.0	0.5	0.02	0.01	–	–	19.4
Manufacture of medical, precision and optical instruments, watches and clocks	70.4	21.0	0.1	–	0.3	0.2	–	8.2
Manufacture of aircrafts, including spacecrafts	72.9	14.3	–	0.1	–	–	–	12.7

(continued)

	Own funds of enterprises	Federal budget	Regional and local budgets	Non-budgetary funds	Funds from abroad	Of which from EU Member States, Iceland, Liechtenstein, Norway, and Switzerland	Venture funds	Other
Medium high tech	78.6	2.2	0.2	0.003	0.2	0.2	0.004	18.7
Manufacture of chemicals and chemical products	82.7	0.7	0.02	–	0.4	0.4	0.01	16.1
Manufacture of machinery and equipment, n.e.c.	74.6	3.8	–	–	–	–	–	21.5
Manufacture of electrical machinery and apparatus	89.3	5.7	2.1	0.03	–	–	–	2.9
Manufacture of motor vehicles, trailers and semi-trailers	75.7	0.6	–	–	–	–	–	23.7
Manufacture of other transport vehicles	53.7	6.7	–	–	–	–	–	39.6
Medium low tech	77.1	0.9	0.1	–	0.9	0.2	–	21.0
Manufacture of coke, refined petroleum products	97.8	–	–	–	2.0	–	–	0.2
Manufacture of rubber and plastic products	67.0	0.3	0.5	–	1.3	1.1	–	31.0
Manufacture of other non-metallic mineral products	89.8	–	0.4	–	–	–	–	9.7
Manufacture of basic metals	67.4	0.2	–	–	0.3	0.3	–	32.2
Manufacture of fabricated metal products	87.3	2.7	1.7	–	–	–	–	8.3
Construction and repair of vessels	23.9	32.0	–	–	–	–	–	44.1
Low tech	67.3	0.2	0.3	0.01	0.1	0.02	–	32.0
Manufacture of food products and beverages	85.1	0.4	0.6	–	0.1	–	–	13.7
Manufacture of tobacco products	100	–	–	–	–	–	–	–
Manufacture of textiles	63.3	1.4	–	–	–	–	–	35.3
Manufacture of wearing apparel, dressing and dyeing of fur	40.0	–	–	–	–	–	–	60.0

(continued)

	Own funds of enterprises	Federal budget	Regional and local budgets	Non-budgetary funds	Funds from abroad	Of which from EU Member States, Iceland, Liechtenstein, Norway, and Switzerland	Venture funds	Other
Manufacture of leather, leather products and footwear	54.5	–	0.05	–	–	–	–	45.4
Manufacture of wood and of products of wood and cork, except furniture	75.2	–	0.1	0.1	–	–	–	24.5
Manufacture of cellulose, wood pulp, paper and cardboard and appropriate paper products	67.0	0.02	–	–	–	–	–	32.9
Publishing and printing, reproduction of recorded media	90.7	0.1	0.4	–	0.4	0.4	–	8.5
Manufacture of furniture, manufacturing n.e.c.	98.1	–	–	–	0.3	0.3	–	1.6
Recycling	1.6	–	–	–	–	–	–	98.4
Electricity, gas and water supply	44.7	2.7	2.0	–	22.9	0.2	–	27.8
Communications, computer and related activities, research and development, other business activities								
Total	77.9	2.0	1.1	0.1	0.1	–	–	18.8
Communications	93.6	1.9	0.02	0.003	–	–	–	4.4
Computer and related activities	93.2	0.4	4.4	0.002	–	–	–	2.0
Research and development	...	...	...	...	...	...	...	...
Other business activities	28.6	2.7	2.8	0.6	0.5	–	–	64.8

(continued)

	Own funds of enterprises	Federal budget	Regional and local budgets	Non-budgetary funds	Funds from abroad	Of which from EU Member States, Iceland, Liechtenstein, Norway, and Switzerland	Venture funds	Other
2011								
Mining and quarrying, manufacturing, electricity, gas and water supply								
Total	69.6	4.7	0.2	0.1	1.1	0.7	–	24.3
Mining and quarrying	82.3	0.04	–	–	–	–	–	17.7
Mining and quarrying of energy producing materials	85.1	0.04	–	–	–	–	–	14.9
Mining and quarrying, except energy producing materials	41.2	–	–	–	–	–	–	58.8
Manufacturing	67.1	5.9	0.2	0.1	1.3	0.9	–	25.4
High tech	67.2	18.9	0.1	0.8	2.3	–	–	10.7
Manufacture of pharmaceuticals	72.2	22.0	–	–	–	–	–	5.8
Manufacture of office machinery and computers	55.3	44.7	–	–	–	–	–	0.01
Manufacture of radio, television and communication equipment and apparatus	59.9	26.9	0.4	–	0.1	–	–	12.7
Manufacture of medical, precision and optical instruments, watches and clocks	63.9	21.9	0.1	–	6.6	–	–	7.5
Manufacture of aircrafts, including spacecrafts	72.9	11.1	–	2.1	0.5	–	–	13.3

(continued)

	Own funds of enterprises	Federal budget	Regional and local budgets	Non-budgetary funds	Funds from abroad	Of which from EU Member States, Iceland, Liechtenstein, Norway, and Switzerland	Venture funds	Other
Medium high tech	83.4	2.6	0.4	0.01	0.03	0.03	–	13.6
Manufacture of chemicals and chemical products	86.1	0.7	–	–	0.1	0.1	–	13.1
Manufacture of machinery and equipment, n.e.c.	78.5	7.9	0.2	0.04	–	–	–	13.4
Manufacture of electrical machinery and apparatus	86.0	6.7	1.0	–	–	–	–	6.3
Manufacture of motor vehicles, trailers and semi-trailers	84.7	0.1	–	–	–	–	–	15.2
Manufacture of other transport vehicles	69.0	2.6	4.1	0.01	–	–	–	24.3
Medium low tech	64.3	0.7	0.1	–	0.2	0.1	–	34.7
Manufacture of coke, refined petroleum products	63.9	–	–	–	0.2	–	–	35.9
Manufacture of rubber and plastic products	56.4	0.3	3.0	–	–	–	–	40.3
Manufacture of other non-metallic mineral products	66.4	–	0.1	–	–	–	–	33.5
Manufacture of basic metals	67.7	0.1	–	–	0.3	0.3	–	31.9
Manufacture of fabricated metal products	66.1	4.5	0.4	–	–	–	–	28.9
Construction and repair of vessels	22.0	21.5	0.005	–	–	–	–	56.5
Low tech	71.3	0.1	0.04	0.01	12.7	11.4	–	15.9
Manufacture of food products and beverages	83.4	0.04	0.05	–	2.3	0.4	–	14.3
Manufacture of tobacco products	76.5	–	–	–	–	–	–	23.5
Manufacture of textiles	62.5	0.02	–	–	–	–	–	37.5
Manufacture of wearing apparel, dressing and dyeing of fur	91.4	7.2	–	–	–	–	–	1.5

(continued)

	Own funds of enterprises	Federal budget	Regional and local budgets	Non-budgetary funds	Funds from abroad	Of which from EU Member States, Iceland, Liechtenstein, Norway, and Switzerland	Venture funds	Other
Manufacture of leather, leather products and footwear	100	–	–	–	–	–	–	–
Manufacture of wood and of products of wood and cork, except furniture	27.6	–	0.1	0.1	6.7	–	–	65.5
Manufacture of cellulose, wood pulp, paper and cardboard and appropriate paper products	53.3	0.01	0.03	–	39.5	39.5	–	7.2
Publishing and printing, reproduction of recorded media	89.0	0.1	0.04	–	–	–	–	10.9
Manufacture of furniture, manufacturing n.e.c.	96.0	1.0	–	–	–	–	–	3.0
Recycling	92.4	–	–	–	–	–	–	7.6
Electricity, gas and water supply	70.1	1.3	1.2	0.001	1.4	–	–	26.1
Communications, computer and related activities, research and development, other business activities								
Total	64.2	22.7	0.2	0.3	0.5	0.05	0.0004	12.2
Communications	98.5	0.5	0.1	0.002	–	–	–	0.9
Computer and related activities	96.4	0.8	0.6	0.1	1.1	0.9	–	1.0
Research and development	25.3	50.4	0.3	0.6	0.8	0.05	0.001	22.6
Other business activities	45.9	4.7	0.5	0.02	1.6	–	–	47.2

3.52. INTENSITY OF EXPENDITURE ON TECHNOLOGICAL INNOVATION BY ECONOMIC ACTIVITY

(expenditure on technological innovation as a percentage of total sales)

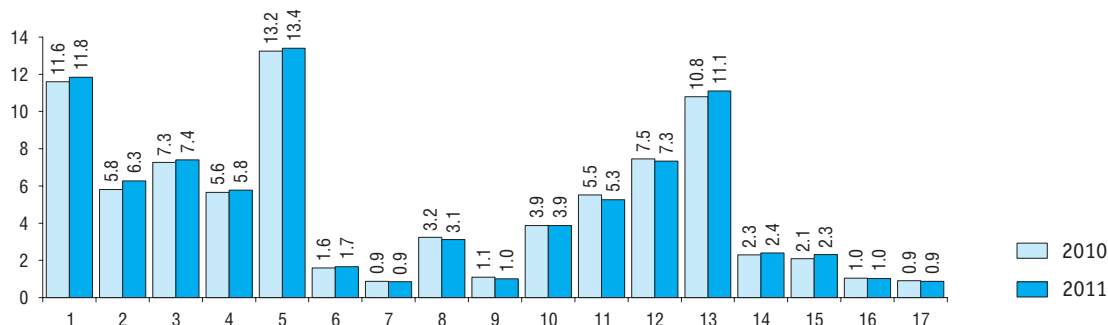
	2010	2011
Mining and quarrying, manufacturing, electricity, gas and water supply		
Total	1.5	1.5
Mining and quarrying	1.0	0.9
Mining and quarrying of energy producing materials	1.0	1.0
Mining and quarrying, except energy producing materials	0.6	0.4
Manufacturing	1.8	1.9
High tech	4.2	3.6
Manufacture of pharmaceuticals	0.8	1.5
Manufacture of office machinery and computers	1.2	2.2
Manufacture of radio, television and communication equipment and apparatus	4.0	3.6
Manufacture of medical, precision and optical instruments, watches and clocks	5.3	4.2
Manufacture of aircrafts, including spacecrafts	5.3	4.2
Medium high tech	1.6	1.5
Manufacture of chemicals and chemical products	2.4	2.0
Manufacture of machinery and equipment, n.e.c.	1.5	1.2
Manufacture of electrical machinery and apparatus	1.5	1.6
Manufacture of motor vehicles, trailers and semi-trailers	1.0	1.3
Manufacture of other transport vehicles	1.4	1.2
Medium low tech	2.0	2.3
Manufacture of coke, refined petroleum products	1.5	2.2
Manufacture of rubber and plastic products	2.7	1.9
Manufacture of other non-metallic mineral products	0.5	2.5
Manufacture of basic metals	2.8	2.8
Manufacture of fabricated metal products	0.8	0.5
Construction and repair of vessels	2.8	3.5

(continued)

	2010	2011
Low tech	0.5	0.6
Manufacture of food products and beverages	0.4	0.4
Manufacture of tobacco products	0.5	0.4
Manufacture of textiles	0.9	0.8
Manufacture of wearing apparel, dressing and dyeing of fur	0.7	0.2
Manufacture of leather, leather products and footwear	0.3	0.1
Manufacture of wood and of products of wood and cork, except furniture	0.4	1.0
Manufacture of cellulose, wood pulp, paper and cardboard and appropriate paper products	1.2	2.2
Publishing and printing, reproduction of recorded media	0.5	0.5
Manufacture of furniture, manufacturing n.e.c.	0.2	0.5
Recycling	3.4	1.4
Electricity, gas and water supply	1.0	0.8
Communications, computer and related activities, research and development, other business activities		
Total	2.6	8.5
Communications	2.8	9.5
Computer and related activities	3.6	3.9
Research and development	...	17.1
Other business activities	2.0	1.2

3.53. ENTERPRISES CONSIDERING SOURCES OF INFORMATION AS PRINCIPAL FOR TECHNOLOGICAL INNOVATION AS A PERCENTAGE OF ALL ENTERPRISES*

Mining and quarrying, manufacturing, electricity, gas and water supply



Internal sources:

- 1 – internal sources within the enterprise
- 2 – enterprises within the same enterprise group

Market sources:

- 3 – suppliers of equipment, materials, components, software
- 4 – competitors within the same sector
- 5 – clients or customers
- 6 – consultancy, information firms

Institutional sources:

R&D institutions:

- 7 – Russian Academy of Sciences
- 8 – industry
- 9 – universities or other higher education institutions

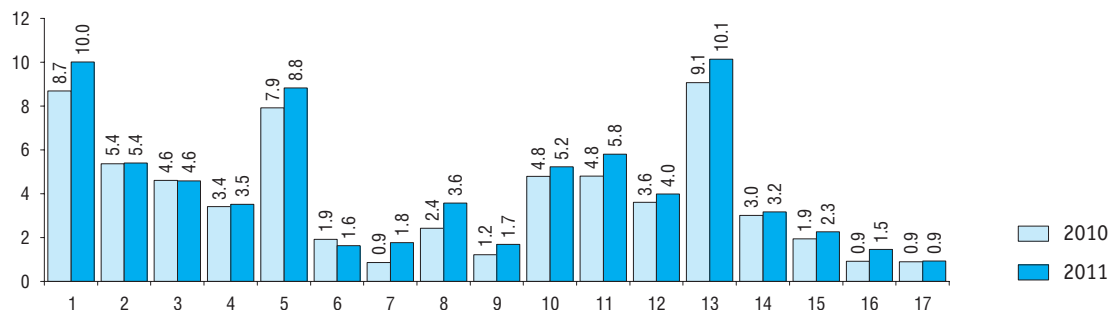
Other sources:

- 10 – conferences, workshops, symposia
- 11 – science and technology literature
- 12 – exhibitions, trade fairs, and other advertising facilities
- 13 – Internet
- 14 – professional associations
- 15 – informal contacts
- 16 – patent information
- 17 – other sources

* Enterprises' assessment.

(continued)

Communications, computer and related activities, research and development, other business activities



Internal sources:

- 1 – internal sources within the enterprise
- 2 – enterprises within the same enterprise group

Market sources:

- 3 – suppliers of equipment, materials, components, software
- 4 – competitors within the same sector
- 5 – clients or customers
- 6 – consultancy, information firms

Institutional sources:

R&D institutions:

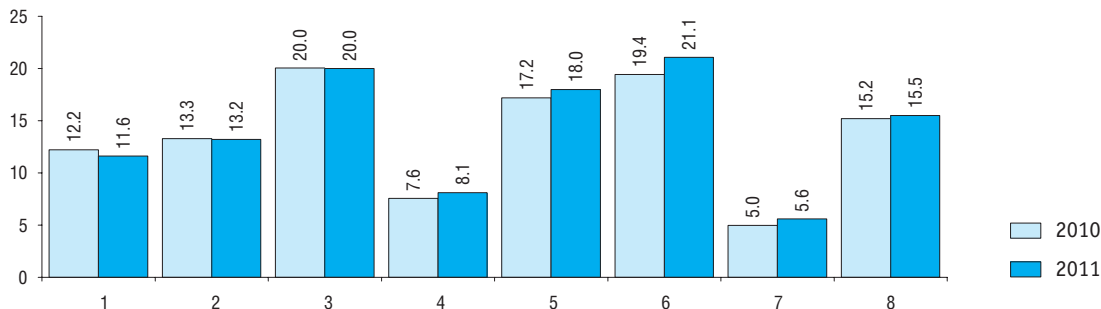
- 7 – Russian Academy of Sciences
- 8 – industry
- 9 – universities or other higher education institutions

Other sources:

- 10 – conferences, workshops, symposia
- 11 – science and technology literature
- 12 – exhibitions, trade fairs, and other advertising facilities
- 13 – Internet
- 14 – professional associations
- 15 – informal contacts
- 16 – patent information
- 17 – other sources

3.54. ENTERPRISES CONSIDERING METHODS USED TO PROTECT VALUE OF INNOVATION AS PRINCIPAL AS A PERCENTAGE OF ALL ENTERPRISES ENGAGED IN TECHNOLOGICAL INNOVATION

Mining and quarrying, manufacturing, electricity, gas and water supply



Formal methods:

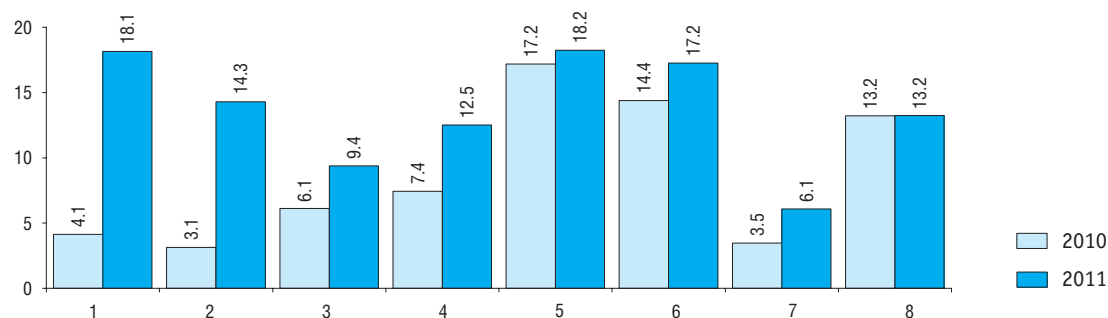
- 1 – patenting inventions, industrial prototypes, and utility models
- 2 – keeping patents in force
- 3 – registering trademarks
- 4 – protecting copyright
- 5 – confidential agreements with personnel of enterprises and/or other organisations (specialists) engaged in production of goods and services under contracts with enterprise

Informal methods:

- 6 – ensuring the confidentiality of commercial secrets and know-how
- 7 – ensuring complicated design of products
- 8 – ensuring time advantage over competitors

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Communications, computer and related activities, research and development, other business activities



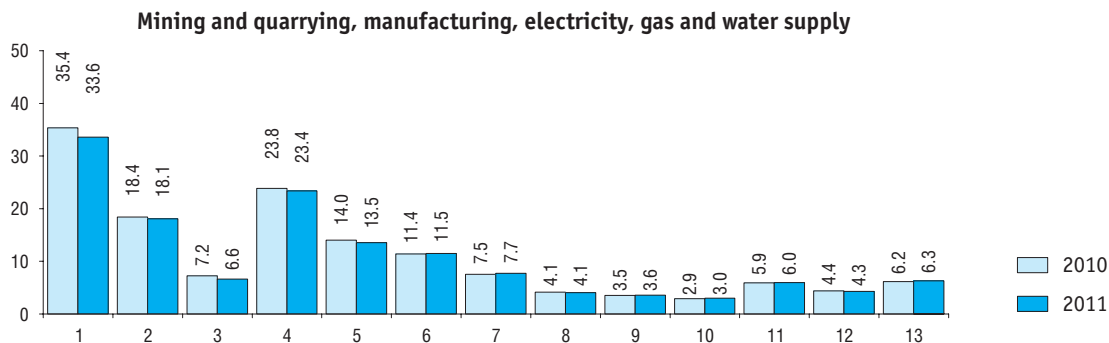
Formal methods:

- 1 – patenting inventions, industrial prototypes, and utility models
- 2 – keeping patents in force
- 3 – registering trademarks
- 4 – protecting copyright
- 5 – confidential agreements with personnel of enterprises and/or other organisations (specialists) engaged in production of goods and services under contracts with enterprise

Informal methods:

- 6 – ensuring the confidentiality of commercial secrets and know-how
- 7 – ensuring complicated design of products
- 8 – ensuring time advantage over competitors

3.55. ENTERPRISES CONSIDERING FACTORS HAMPERING TECHNOLOGICAL INNOVATION AS PRINCIPAL AS A PERCENTAGE OF ALL ENTERPRISES



Economic factors:

- 1 – lack of funds within the enterprise
- 2 – lack of finance from the government
- 3 – low demand for new goods and services
- 4 – high innovation expenditure
- 5 – excessive perceived risks

Internal factors:

- 6 – low innovation potential
- 7 – lack of qualified personnel
- 8 – lack of information on technology

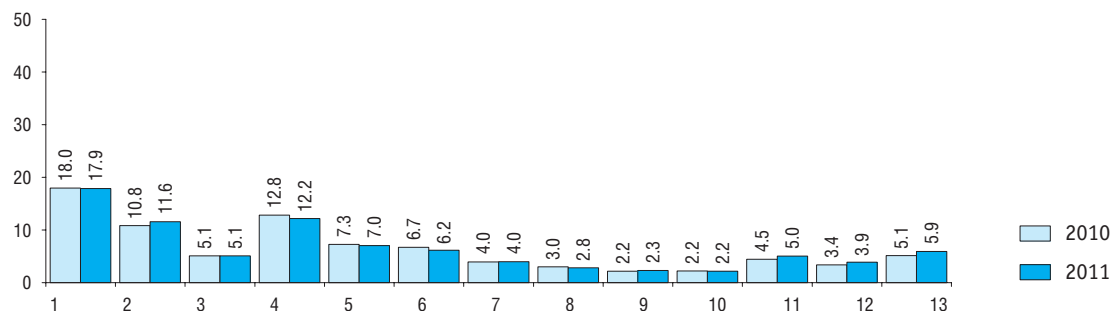
9 – lack of information on sale markets

10 – lack of co-operation linkages

Other factors:

- 11 – deficiencies in legislation
- 12 – underdevelopment of innovation infrastructure
- 13 – uncertainty of economic benefits

(continued)

Communications, computer and related activities, research and development, other business activities**Economic factors:**

- 1 – lack of funds within the enterprise
- 2 – lack of finance from the government
- 3 – low demand for new goods and services
- 4 – high innovation expenditure
- 5 – excessive perceived risks

Internal factors:

- 6 – low innovation potential
- 7 – lack of qualified personnel
- 8 – lack of information on technology

- 9 – lack of information on sale markets

- 10 – lack of co-operation linkages

Other factors:

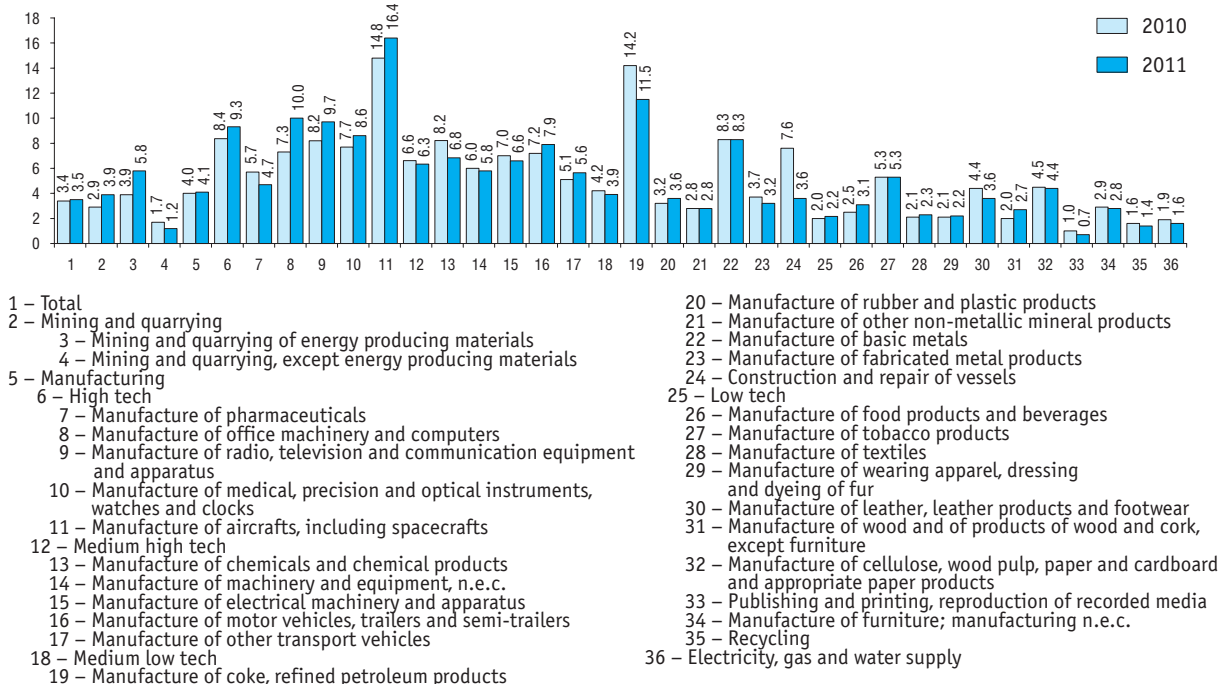
- 11 – deficiencies in legislation
- 12 – underdevelopment of innovation infrastructure
- 13 – uncertainty of economic benefits



4. Organisational Innovation

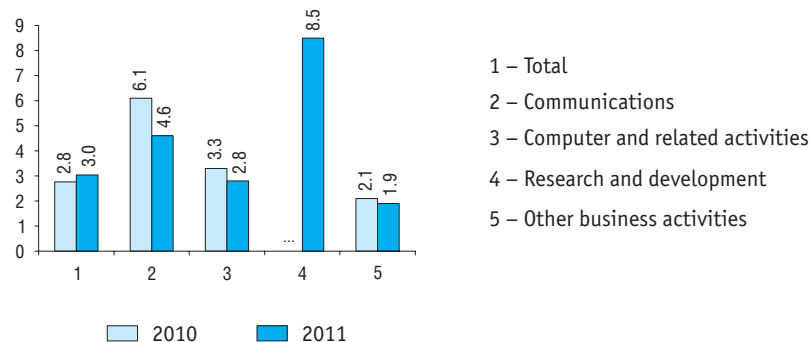
4.1. ENTERPRISES ENGAGED IN ORGANISATIONAL INNOVATION AS A PERCENTAGE OF ALL ENTERPRISES BY ECONOMIC ACTIVITY

Mining and quarrying, manufacturing, electricity, gas and water supply



(continued)

**Communications, computer and related activities, research and development,
other business activities**



4.2. PERCENTAGE DISTRIBUTION OF ENTERPRISES ENGAGED IN ORGANISATIONAL INNOVATION BY ECONOMIC ACTIVITY

	2010	2011
Mining and quarrying, manufacturing, electricity, gas and water supply		
Total	100	100
Mining and quarrying	4.9	6.8
Mining and quarrying of energy producing materials	3.7	5.9
Mining and quarrying, except energy producing materials	1.2	0.9
Manufacturing	80.9	81.6
High tech	12.4	13.6
Manufacture of pharmaceuticals	1.1	0.9
Manufacture of office machinery and computers	0.4	0.5
Manufacture of radio, television and communication equipment and apparatus	3.1	3.5
Manufacture of medical, precision and optical instruments, watches and clocks	5.4	5.9
Manufacture of aircrafts, including spacecrafts	2.5	2.8
Medium high tech	25.8	24.6
Manufacture of chemicals and chemical products	4.8	4.1
Manufacture of machinery and equipment, n.e.c.	11.0	10.2
Manufacture of electrical machinery and apparatus	5.4	5.1
Manufacture of motor vehicles, trailers and semi-trailers	3.2	3.4
Manufacture of other transport vehicles	1.4	1.8
Medium low tech	18.0	16.7
Manufacture of coke, refined petroleum products	1.8	1.4
Manufacture of rubber and plastic products	2.3	2.6
Manufacture of other non-metallic mineral products	4.7	4.6

(continued)

	2010	2011
Manufacture of basic metals	3.6	3.6
Manufacture of fabricated metal products	4.2	3.8
Construction and repair of vessels	1.6	0.7
Low tech	20.5	21.5
Manufacture of food products and beverages	10.0	11.9
Manufacture of tobacco products	0.1	0.1
Manufacture of textiles	0.8	0.8
Manufacture of wearing apparel, dressing and dyeing of fur	1.0	0.9
Manufacture of leather, leather products and footwear	0.7	0.6
Manufacture of wood and of products of wood and cork, except furniture	1.3	1.6
Manufacture of cellulose, wood pulp, paper and cardboard and appropriate paper products	1.2	1.2
Publishing and printing, reproduction of recorded media	3.5	2.6
Manufacture of furniture, manufacturing n.e.c.	1.6	1.4
Recycling	0.4	0.4
Manufacturing of other materials and substances, n.e.c.	4.1	5.2
Electricity, gas and water supply	14.2	11.6
Communications, computer and related activities, research and development, other business activities		
Total	100	100
Communications	30.3	17.4
Computer and related activities	8.8	6.4
Research and development	...	33.1
Other business activities	60.9	43.2

4.3. CO-OPERATION IN DEVELOPMENT OF ORGANISATIONAL INNOVATION

(as a percentage of the total number of enterprises having market-ready organisational innovations during the last three years)

	Enterprises with innovations developed					
	mainly by external organisations		jointly with other organisations		mainly in-house	
	2010	2011	2010	2011	2010	2011
Mining and quarrying, manufacturing, electricity, gas and water supply						
Total	11.7	14.5	32.4	30.0	57.1	57.0
Mining and quarrying	12.0	28.4	56.0	35.8	36.0	37.3
Mining and quarrying of energy producing materials	12.8	30.4	48.7	33.9	43.6	37.5
Mining and quarrying, except energy producing materials	9.1	18.2	81.8	45.5	9.1	36.4
Manufacturing	9.5	10.9	31.6	29.7	60.0	60.2
High tech	5.5	8.8	33.9	32.0	60.6	59.2
Manufacture of pharmaceuticals	–	–	25.0	25.0	75.0	75.0
Manufacture of office machinery and computers	–	–	40.0	–	60.0	100
Manufacture of radio, television and communication equipment and apparatus	3.3	11.8	36.7	29.4	60.0	58.8
Manufacture of medical, precision and optical instruments, watches and clocks	8.8	11.1	31.6	35.2	59.6	53.7
Manufacture of aircrafts, including spacecrafts	4.3	4.0	39.1	36.0	56.5	60.0

(continued)

	Enterprises with innovations developed					
	mainly by external organisations		jointly with other organisations		mainly in-house	
	2010	2011	2010	2011	2010	2011
Medium high tech	12.1	10.7	27.9	29.2	62.6	60.9
Manufacture of chemicals and chemical products	12.8	10.9	40.4	41.3	46.8	47.8
Manufacture of machinery and equipment n.e.c.	11.2	7.8	25.9	26.2	66.4	67.0
Manufacture of electrical machinery and apparatus	14.5	9.3	21.8	29.6	65.5	63.0
Manufacture of motor vehicles, trailers and semi-trailers	3.4	6.7	34.5	26.7	69.0	66.7
Manufacture of other transport vehicles	22.2	35.0	16.7	20.0	61.1	45.0
Medium low tech	9.4	11.6	29.8	30.7	61.3	59.3
Manufacture of coke, refined petroleum products	11.1	11.1	50.0	50.0	38.9	38.9
Manufacture of rubber and plastic products	11.1	20.0	14.8	20.0	74.1	60.0
Manufacture of other non-metallic mineral products	12.5	14.0	33.3	32.0	54.2	54.0
Manufacture of basic metals	7.9	11.6	36.8	32.6	57.9	60.5
Manufacture of fabricated metal products	6.7	5.0	28.9	30.0	64.4	67.5
Construction and repair of vessels	6.7	7.7	6.7	15.4	86.7	76.9
Low tech	10.6	12.5	35.9	28.5	54.0	59.0
Manufacture of food products and beverages	9.0	10.3	39.0	26.2	52.0	63.6
Manufacture of tobacco products	–	–	100	100	–	–
Manufacture of textiles	12.5	28.6	12.5	42.9	75.0	28.6
Manufacture of wearing apparel, dressing and dyeing of fur	–	10.0	46.2	50.0	53.8	40.0
Manufacture of leather, leather products and footwear	–	–	50.0	40.0	50.0	60.0

(continued)

	Enterprises with innovations developed					
	mainly by external organisations		jointly with other organisations		mainly in-house	
	2010	2011	2010	2011	2010	2011
Manufacture of wood and of products of wood and cork, except furniture	6.7	21.4	33.3	21.4	60.0	57.1
Manufacture of cellulose, wood pulp, paper and cardboard and appropriate paper products	–	14.3	30.0	35.7	70.0	50.0
Publishing and printing, reproduction of recorded media	23.1	13.6	23.1	18.2	53.8	68.2
Manufacture of furniture, manufacturing n.e.c.	28.6	16.7	28.6	27.8	50.0	55.6
Recycling	–	–	60.0	50.0	40.0	50.0
Electricity, gas and water supply	23.0	30.4	28.9	28.8	48.7	46.4
Communications, computer and related activities, research and development, other business activities						
Total	27.9	19.6	32.3	30.5	41.4	50.5
Communications	12.7	13.7	42.1	43.1	47.6	43.1
Computer and related activities	25.7	15.2	25.7	45.5	51.4	42.4
Research and development	...	7.4	...	22.8	...	71.1
Other business activities	36.8	33.5	27.8	27.0	36.3	39.5

4.4. EXPENDITURE ON ORGANISATIONAL INNOVATION BY ECONOMIC ACTIVITY

(million roubles)

	2010	2011
Mining and quarrying, manufacturing, electricity, gas and water supply		
Total	2388.8	3483.9
Mining and quarrying	501.1	328.5
Mining and quarrying of energy producing materials	313.8	317.5
Mining and quarrying, except energy producing materials	187.2	11.0
Manufacturing	1693.3	2721.7
High tech	271.9	450.5
Manufacture of pharmaceuticals	2.8	2.1
Manufacture of office machinery and computers	1.9	3.4
Manufacture of radio, television and communication equipment and apparatus	33.2	32.2
Manufacture of medical, precision and optical instruments, watches and clocks	122.4	74.9
Manufacture of aircrafts, including spacecrafts	111.7	338.0
Medium high tech	394.6	510.6
Manufacture of chemicals and chemical products	225.2	132.5
Manufacture of machinery and equipment, n.e.c.	128.0	93.3
Manufacture of electrical machinery and apparatus	14.4	56.6
Manufacture of motor vehicles, trailers and semi-trailers	25.0	165.3
Manufacture of other transport vehicles	2.0	63.0
Medium low tech	326.3	381.2
Manufacture of coke, refined petroleum products	170.7	111.0
Manufacture of rubber and plastic products	7.2	6.0
Manufacture of other non-metallic mineral products	41.8	17.5

(continued)

	2010	2011
Manufacture of basic metals	66.5	121.5
Manufacture of fabricated metal products	32.6	111.2
Construction and repair of vessels	7.4	13.9
Low tech	375.1	883.6
Manufacture of food products and beverages	228.3	506.9
Manufacture of tobacco products	2.6	3.1
Manufacture of textiles	0.1	20.4
Manufacture of wearing apparel, dressing and dyeing of fur	2.1	12.9
Manufacture of leather, leather products and footwear	1.4	1.1
Manufacture of wood and of products of wood and cork, except furniture	18.5	329.3
Manufacture of cellulose, wood pulp, paper and cardboard and appropriate paper products	96.3	3.9
Publishing and printing, reproduction of recorded media	22.7	1.7
Manufacture of furniture, manufacturing n.e.c.	3.1	3.9
Recycling	0.04	0.4
Manufacturing of other materials and substances, n.e.c.	325.4	495.7
Electricity, gas and water supply	194.4	433.6
Communications, computer and related activities, research and development, other business activities		
Total	2313.5	1282.2
Communications	249.5	416.5
Computer and related activities	16.1	41.6
Research and development	...	557.6
Other business activities	2047.9	266.4

4.5. EXPENDITURE ON ORGANISATIONAL INNOVATION PER ENTERPRISE ENGAGED IN ORGANISATIONAL INNOVATION BY ECONOMIC ACTIVITY

(million roubles)

	2010	2011
Mining and quarrying, manufacturing, electricity, gas and water supply		
Total	2.9	4.1
Mining and quarrying	12.2	5.7
Mining and quarrying of energy producing materials	10.1	6.4
Mining and quarrying, except energy producing materials	18.7	1.4
Manufacturing	2.5	3.9
High tech	2.6	3.9
Manufacture of pharmaceuticals	0.3	0.3
Manufacture of office machinery and computers	0.6	0.8
Manufacture of radio, television and communication equipment and apparatus	1.3	1.1
Manufacture of medical, precision and optical instruments, watches and clocks	2.7	1.5
Manufacture of aircrafts, including spacecrafts	5.3	14.1
Medium high tech	1.8	2.4
Manufacture of chemicals and chemical products	5.6	3.8
Manufacture of machinery and equipment, n.e.c.	1.4	1.1
Manufacture of electrical machinery and apparatus	0.3	1.3
Manufacture of motor vehicles, trailers and semi-trailers	0.9	5.7
Manufacture of other transport vehicles	0.2	4.2
Medium low tech	2.2	2.7
Manufacture of coke, refined petroleum products	11.4	9.3
Manufacture of rubber and plastic products	0.4	0.3
Manufacture of other non-metallic mineral products	1.1	0.4

(continued)

	2010	2011
Manufacture of basic metals	2.2	3.9
Manufacture of fabricated metal products	0.9	3.5
Construction and repair of vessels	0.6	2.3
Low tech	2.2	4.8
Manufacture of food products and beverages	2.7	5.0
Manufacture of tobacco products	2.6	3.1
Manufacture of textiles	0.01	2.9
Manufacture of wearing apparel, dressing and dyeing of fur	0.3	1.6
Manufacture of leather, leather products and footwear	0.2	0.2
Manufacture of wood and of products of wood and cork, except furniture	1.7	23.5
Manufacture of cellulose, wood pulp, paper and cardboard and appropriate paper products	9.6	0.4
Publishing and printing, reproduction of recorded media	0.8	0.1
Manufacture of furniture, manufacturing n.e.c.	0.2	0.3
Recycling	0.01	0.1
Electricity, gas and water supply	1.6	4.4
Communications, computer and related activities, research and development, other business activities		
Total	7.0	2.9
Communications	0.8	5.5
Computer and related activities	0.2	1.5
Research and development	...	3.8
Other business activities	70.6	1.4

4.6. ENTERPRISES ENGAGED IN ORGANISATIONAL INNOVATION BY INNOVATION TYPE AND ECONOMIC ACTIVITY

(as a percentage of the total number of enterprises having market-ready organisational innovations during the last three years)

	Implementation of new or improved corporate strategy	Introduction of modern ICT-based management techniques	Introduction of new or improved organisational structures	Innovation in the use of shift work	Use of modern systems of quality control, certification of goods and services	Introduction of modern systems of logistics and supply of materials and components	Establishment of specialised units for R&D and practical implementation of S&T achievements	Implementation of corporate knowledge management systems	Personnel development	Implementation of new forms of strategic alliances, partnerships and other cooperative linkages with consumers, suppliers, Russian and foreign manufacturers	Outsourcing	Other organisational innovations
2010												
Mining and quarrying, manufacturing, electricity, gas and water supply												
Total	39.7	59.2	54.9	19.9	65.1	31.1	14.1	22.7	67.3	24.0	31.3	3.7
Mining and quarrying	38.0	50.0	64.0	16.0	44.0	20.0	4.0	40.0	76.0	26.0	50.0	8.0
Mining and quarrying of energy producing materials	35.9	46.2	64.1	15.4	46.2	17.9	5.1	46.2	82.1	25.6	59.0	7.7
Mining and quarrying, except energy producing materials	45.5	63.6	63.6	18.2	36.4	27.3	–	18.2	54.5	27.3	18.2	9.1
Manufacturing	40.9	58.9	55.1	22.2	71.5	33.8	16.6	22.9	68.1	26.7	29.6	3.4
High tech	44.9	64.6	61.4	18.1	75.6	21.3	27.6	18.1	71.7	33.1	23.6	3.1
Manufacture of pharmaceuticals	41.7	58.3	58.3	8.3	75.0	33.3	16.7	16.7	83.3	16.7	8.3	–
Manufacture of office machinery and computers	60.0	80.0	80.0	20.0	80.0	40.0	20.0	40.0	60.0	60.0	20.0	–
Manufacture of radio, television and communication equipment and apparatus	40.0	66.7	60.0	20.0	70.0	16.7	30.0	13.3	56.7	30.0	13.3	3.3

(continued)

	Implementation of new or improved corporate strategy	Introduction of modern ICT-based management techniques	Introduction of new or improved organisational structures	Innovation in the use of shift work	Use of modern systems of quality control, certification of goods and services	Introduction of modern systems of logistics and supply of materials and components	Establishment of specialised units for R&D and practical implementation of S&T achievements	Implementation of corporate knowledge management systems	Personnel development	Implementation of new forms of strategic alliances, partnerships and other cooperative linkages with consumers, suppliers, Russian and foreign manufacturers	Outsourcing	Other organisational innovations
Manufacture of medical, precision and optical instruments, watches and clocks	42.1	61.4	56.1	19.3	82.5	24.6	29.8	12.3	75.4	28.1	21.1	–
Manufacture of aircrafts, including spacecrafts	56.5	69.6	73.9	17.4	65.2	8.7	26.1	34.8	78.3	52.2	52.2	13.0
Medium high tech	42.6	61.9	57.4	22.3	77.4	38.5	18.9	29.1	75.1	30.9	36.2	3.0
Manufacture of chemicals and chemical products	40.4	59.6	53.2	17.0	76.6	42.6	31.9	40.4	72.3	31.9	40.4	4.3
Manufacture of machinery and equipment, n.e.c.	44.8	61.2	58.6	23.3	75.0	34.5	13.8	24.1	74.1	31.0	34.5	2.6
Manufacture of electrical machinery and apparatus	38.2	69.1	52.7	23.6	87.3	40.0	29.1	27.3	81.8	29.1	27.3	3.6
Manufacture of motor vehicles, trailers and semi-trailers	48.3	48.3	62.1	20.7	72.4	55.2	10.3	31.0	72.4	31.0	58.6	3.4
Manufacture of other transport vehicles	38.9	72.2	66.7	27.8	72.2	22.2	–	33.3	72.2	33.3	27.8	–

(continued)

	Implementation of new or improved corporate strategy	Introduction of modern ICT-based management techniques	Introduction of new or improved organisational structures	Innovation in the use of shift work	Use of modern systems of quality control, certification of goods and services	Introduction of modern systems of logistics and supply of materials and components	Establishment of specialised units for R&D and practical implementation of S&T achievements	Implementation of corporate knowledge management systems	Personnel development	Implementation of new forms of strategic alliances, partnerships and other cooperative linkages with consumers, suppliers, Russian and foreign manufacturers	Outsourcing	Other organisational innovations
Medium low tech	38.7	56.5	53.4	27.2	68.6	34.6	15.7	22.0	66.5	22.0	9.8	3.7
Manufacture of coke, refined petroleum products	50.0	72.2	55.6	16.7	77.8	44.4	33.3	50.0	77.8	38.9	44.4	11.1
Manufacture of rubber and plastic products	40.7	51.9	63.0	33.3	74.1	51.9	7.4	18.5	77.8	33.3	33.3	–
Manufacture of other non-metallic mineral products	31.3	47.9	39.6	20.8	66.7	27.1	22.9	12.5	58.3	16.7	12.5	2.1
Manufacture of basic metals	31.6	57.9	60.5	21.1	63.2	28.9	7.9	23.7	63.2	13.2	47.4	7.9
Manufacture of fabricated metal products	46.7	62.2	55.6	42.2	71.1	26.7	17.8	20.0	66.7	20.0	28.9	2.2
Construction and repair of vessels	40.0	53.3	53.3	20.0	60.0	53.3	–	26.7	66.7	26.7	20.0	–
Low tech	35.9	51.5	47.5	20.7	63.1	34.8	7.6	15.7	55.6	20.7	24.2	3.5
Manufacture of food products and beverages	27.0	43.0	43.0	19.0	80.0	45.0	7.0	20.0	62.0	22.0	24.0	4.0
Manufacture of tobacco products	–	–	100	100	100	–	–	–	100	–	100	–
Manufacture of textiles	50.0	62.5	50.0	25.0	37.5	25.0	12.5	25.0	50.0	50.0	12.5	–
Manufacture of wearing apparel, dressing and dyeing of fur	23.1	38.5	38.5	30.8	38.5	7.7	–	7.7	38.5	7.7	23.1	–

(continued)

	Implementation of new or improved corporate strategy	Introduction of modern ICT-based management techniques	Introduction of new or improved organisational structures	Innovation in the use of shift work	Use of modern systems of quality control, certification of goods and services	Introduction of modern systems of logistics and supply of materials and components	Establishment of specialised units for R&D and practical implementation of S&T achievements	Implementation of corporate knowledge management systems	Personnel development	Implementation of new forms of strategic alliances, partnerships and other cooperative linkages with consumers, suppliers, Russian and foreign manufacturers	Outsourcing	Other organisational innovations
Manufacture of leather, leather products and footwear	16.7	100	16.7	–	50.0	33.3	16.7	16.7	50.0	16.7	50.0	–
Manufacture of wood and of products of wood and cork, except furniture	73.3	66.7	53.3	33.3	80.0	26.7	20.0	–	66.7	13.3	13.3	–
Manufacture of cellulose, wood pulp, paper and cardboard and appropriate paper products	70.0	70.0	70.0	30.0	60.0	40.0	–	20.0	60.0	20.0	30.0	20.0
Publishing and printing, reproduction of recorded media	46.2	69.2	50.0	7.7	26.9	30.8	11.5	19.2	42.3	30.8	30.8	3.8
Manufacture of furniture, manufacturing n.e.c.	35.7	50.0	71.4	21.4	42.9	21.4	–	–	42.9	7.1	14.3	–
Recycling	20.0	20.0	40.0	40.0	40.0	–	–	–	40.0	–	20.0	–
Electricity, gas and water supply	34.2	63.8	50.7	9.2	37.5	20.4	3.9	15.8	60.5	9.2	34.2	3.9

(continued)

	Implementation of new or improved corporate strategy	Introduction of modern ICT-based management techniques	Introduction of new or improved organisational structures	Innovation in the use of shift work	Use of modern systems of quality control, certification of goods and services	Introduction of modern systems of logistics and supply of materials and components	Establishment of specialised units for R&D and practical implementation of S&T achievements	Implementation of corporate knowledge management systems	Personnel development	Implementation of new forms of strategic alliances, partnerships and other cooperative linkages with consumers, suppliers, Russian and foreign manufacturers	Outsourcing	Other organisational innovations
Communications, computer and related activities, research and development, other business activities												
Total	32.6	59.6	54.4	15.6	55.2	17.7	12.0	30.5	70.3	17.4	27.6	4.7
Communications	50.8	72.2	64.3	19.8	55.6	35.7	22.2	54.0	78.6	21.4	47.6	2.4
Computer and related activities	31.4	80.0	60.0	25.7	60.0	8.6	5.7	31.4	74.3	22.9	31.4	5.7
Research and development	...	...	...	...	...	...	...	...	...	...	...	...
Other business activities	22.4	49.3	48.0	11.7	54.3	9.0	7.2	17.0	65.0	14.3	15.7	5.8

(continued)

	Implementation of new or improved corporate strategy	Introduction of modern ICT-based management techniques	Introduction of new or improved organisational structures	Innovation in the use of shift work	Use of modern systems of quality control, certification of goods and services	Introduction of modern systems of logistics and supply of materials and components	Establishment of specialised units for R&D and practical implementation of S&T achievements	Implementation of corporate knowledge management systems	Personnel development	Implementation of new forms of strategic alliances, partnerships and other cooperative linkages with consumers, suppliers, Russian and foreign manufacturers	Outsourcing	Other organisational innovations
2011												
Mining and quarrying, manufacturing, electricity, gas and water supply												
Total	40.7	61.3	57.6	20.4	63.4	31.4	15.3	26.0	69.3	24.5	31.4	7.5
Mining and quarrying	32.8	56.7	56.7	17.9	38.8	23.9	13.4	40.3	74.6	19.4	49.3	7.5
Mining and quarrying of energy producing materials	28.6	62.5	55.4	16.1	42.9	25.0	16.1	41.1	78.6	21.4	55.4	7.1
Mining and quarrying, except energy producing materials	54.5	27.3	63.6	27.3	18.2	18.2	–	36.4	54.5	9.1	18.2	9.1
Manufacturing	42.2	61.1	59.1	22.1	68.2	33.9	17.3	26.1	70.3	27.0	30.6	7.4
High tech	50.4	68.8	65.6	20.0	66.4	20.8	28.0	21.6	69.6	36.8	28.8	8.0
Manufacture of pharmaceuticals	37.5	75.0	62.5	–	75.0	25.0	–	25.0	87.5	12.5	12.5	12.5
Manufacture of office machinery and computers	100	100	100	–	75.0	25.0	75.0	50.0	100	25.0	–	–
Manufacture of radio, television and communication equipment and apparatus	32.4	61.8	58.8	23.5	67.6	17.6	35.3	14.7	52.9	32.4	26.5	8.8

(continued)

	Implementation of new or improved corporate strategy	Introduction of modern ICT-based management techniques	Introduction of new or improved organisational structures	Innovation in the use of shift work	Use of modern systems of quality control, certification of goods and services	Introduction of modern systems of logistics and supply of materials and components	Establishment of specialised units for R&D and practical implementation of S&T achievements	Implementation of corporate knowledge management systems	Personnel development	Implementation of new forms of strategic alliances, partnerships and other cooperative linkages with consumers, suppliers, Russian and foreign manufacturers	Outsourcing	Other organisational innovations
Manufacture of medical, precision and optical instruments, watches and clocks	55.6	64.8	63.0	22.2	66.7	24.1	29.6	18.5	70.4	37.0	24.1	3.7
Manufacture of aircrafts, including spacecrafts	60.0	80.0	76.0	20.0	60.0	16.0	16.0	32.0	80.0	52.0	52.0	16.0
Medium high tech	44.3	61.7	61.7	23.7	75.5	38.3	22.5	26.9	72.3	32.0	32.8	7.5
Manufacture of chemicals and chemical products	43.5	52.2	60.9	10.9	71.7	39.1	32.6	26.1	65.2	23.9	37.0	8.7
Manufacture of machinery and equipment, n.e.c.	44.7	65.0	62.1	30.1	79.6	35.9	16.5	30.1	68.0	35.0	29.1	4.9
Manufacture of electrical machinery and apparatus	42.6	70.4	59.3	25.9	75.9	42.6	33.3	24.1	79.6	35.2	35.2	7.4
Manufacture of motor vehicles, trailers and semi-trailers	40.0	46.7	60.0	13.3	66.7	53.3	16.7	26.7	76.7	30.0	36.7	6.7
Manufacture of other transport vehicles	55.0	65.0	70.0	30.0	75.0	15.0	10.0	20.0	85.0	30.0	30.0	20.0

(continued)

	Implementation of new or improved corporate strategy	Introduction of modern ICT-based management techniques	Introduction of new or improved organisational structures	Innovation in the use of shift work	Use of modern systems of quality control, certification of goods and services	Introduction of modern systems of logistics and supply of materials and components	Establishment of specialised units for R&D and practical implementation of S&T achievements	Implementation of corporate knowledge management systems	Personnel development	Implementation of new forms of strategic alliances, partnerships and other cooperative linkages with consumers, suppliers, Russian and foreign manufacturers	Outsourcing	Other organisational innovations
Medium low tech	38.1	59.8	53.4	20.6	64.0	33.3	12.7	28.6	74.1	25.9	31.7	6.9
Manufacture of coke, refined petroleum products	55.6	83.3	77.8	11.1	77.8	44.4	27.8	66.7	77.8	44.4	61.1	11.1
Manufacture of rubber and plastic products	44.0	52.0	44.0	16.0	80.0	44.0	12.0	28.0	76.0	24.0	28.0	12.0
Manufacture of other non-metallic mineral products	26.0	48.0	42.0	22.0	60.0	28.0	14.0	18.0	70.0	28.0	14.0	2.0
Manufacture of basic metals	32.6	58.1	55.8	23.3	48.8	27.9	7.0	25.6	67.4	20.9	48.8	7.0
Manufacture of fabricated metal products	42.5	67.5	55.0	25.0	65.0	32.5	12.5	30.0	75.0	22.5	27.5	5.0
Construction and repair of vessels	53.8	69.2	69.2	15.4	76.9	38.5	7.7	23.1	100	23.1	23.1	15.4
Low tech	35.5	55.5	55.0	24.5	61.0	36.0	8.5	24.5	62.0	12.5	27.0	5.0
Manufacture of food products and beverages	31.8	52.3	55.1	23.4	72.9	45.8	8.4	28.0	65.4	13.1	31.8	2.8
Manufacture of tobacco products	–	–	100	100	100	–	–	–	100	–	100	–
Manufacture of textiles	42.9	42.9	28.6	42.9	42.9	14.3	14.3	28.6	42.9	28.6	–	–
Manufacture of wearing apparel, dressing and dyeing of fur	10.0	40.0	30.0	–	20.0	–	–	–	40.0	–	20.0	10.0

(continued)

	Implementation of new or improved corporate strategy	Introduction of modern ICT-based management techniques	Introduction of new or improved organisational structures	Innovation in the use of shift work	Use of modern systems of quality control, certification of goods and services	Introduction of modern systems of logistics and supply of materials and components	Establishment of specialised units for R&D and practical implementation of S&T achievements	Implementation of corporate knowledge management systems	Personnel development	Implementation of new forms of strategic alliances, partnerships and other co-operative linkages with consumers, suppliers, Russian and foreign manufacturers	Outsourcing	Other organisational innovations
Manufacture of leather, leather products and footwear	20.0	80.0	20.0	–	40.0	20.0	20.0	20.0	40.0	20.0	40.0	–
Manufacture of wood and of products of wood and cork, except furniture	42.9	64.3	50.0	35.7	64.3	7.1	14.3	14.3	57.1	7.1	21.4	14.3
Manufacture of cellulose, wood pulp, paper and cardboard and appropriate paper products	64.3	85.7	71.4	28.6	57.1	35.7	7.1	35.7	85.7	7.1	28.6	14.3
Publishing and printing, reproduction of recorded media	36.4	59.1	54.5	22.7	36.4	36.4	4.5	36.4	54.5	22.7	22.7	–
Manufacture of furniture, manufacturing n.e.c.	44.4	50.0	77.8	27.8	55.6	33.3	11.1	5.6	55.6	5.6	16.7	11.1
Recycling	50.0	50.0	50.0	50.0	50.0	50.0	–	–	100	–	–	–
Electricity, gas and water supply	35.2	64.8	48.0	10.4	44.8	19.2	3.2	17.6	60.0	11.2	27.2	8.8

(continued)

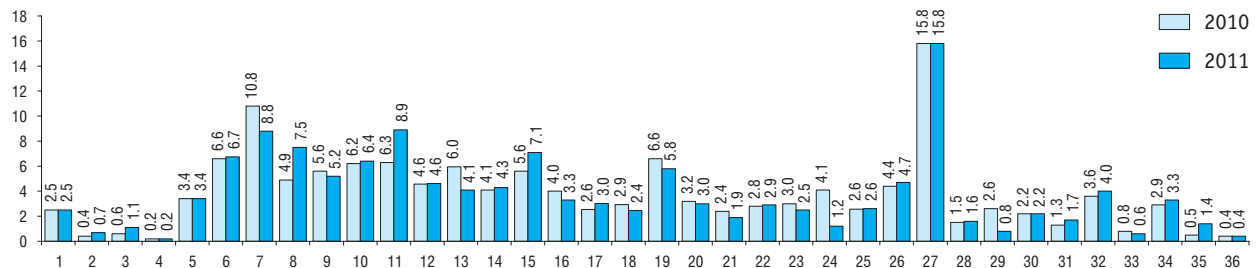
	Implementation of new or improved corporate strategy	Introduction of modern ICT-based management techniques	Introduction of new or improved organisational structures	Innovation in the use of shift work	Use of modern systems of quality control, certification of goods and services	Introduction of modern systems of logistics and supply of materials and components	Establishment of specialised units for R&D and practical implementation of S&T achievements	Implementation of corporate knowledge management systems	Personnel development	Implementation of new forms of strategic alliances, partnerships and other co-operative linkages with consumers, suppliers, Russian and foreign manufacturers	Outsourcing	Other organisational innovations
Communications, computer and related activities, research and development, other business activities												
Total	43.1	63.8	58.6	19.8	56.1	18.1	22.0	35.6	73.1	29.6	29.4	7.9
Communications	60.8	66.7	65.7	24.5	47.1	22.5	11.8	55.9	80.4	24.5	48.0	4.9
Computer and related activities	27.3	63.6	54.5	30.3	51.5	9.1	9.1	27.3	69.7	18.2	27.3	3.0
Research and development	53.0	71.1	69.8	22.1	75.2	22.8	46.3	38.9	81.2	45.6	30.2	10.1
Other business activities	28.1	56.2	46.5	13.5	46.5	13.5	10.3	23.2	63.2	21.6	18.9	8.6



5. Marketing Innovation

5.1. ENTERPRISES ENGAGED IN MARKETING INNOVATION AS A PERCENTAGE OF ALL ENTERPRISES BY ECONOMIC ACTIVITY

Mining and quarrying, manufacturing, electricity, gas and water supply

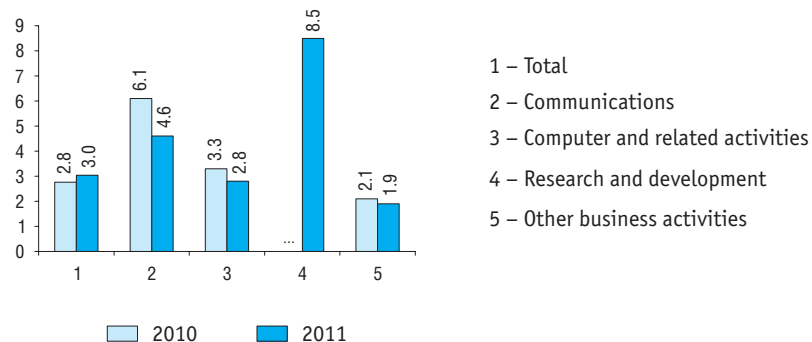


- 1 - Total
- 2 - Mining and quarrying
 - 3 - Mining and quarrying of energy producing materials
 - 4 - Mining and quarrying, except energy producing materials
- 5 - Manufacturing
 - 6 - High tech
 - 7 - Manufacture of pharmaceuticals
 - 8 - Manufacture of office machinery and computers
 - 9 - Manufacture of radio, television and communication equipment and apparatus
 - 10 - Manufacture of medical, precision and optical instruments, watches and clocks
 - 11 - Manufacture of aircrafts, including spacecrafts
 - 12 - Medium high tech
 - 13 - Manufacture of chemicals and chemical products
 - 14 - Manufacture of machinery and equipment, n.e.c.
 - 15 - Manufacture of electrical machinery and apparatus
 - 16 - Manufacture of motor vehicles, trailers and semi-trailers
 - 17 - Manufacture of other transport vehicles
 - 18 - Medium low tech
 - 19 - Manufacture of coke, refined petroleum products

- 20 - Manufacture of rubber and plastic products
- 21 - Manufacture of other non-metallic mineral products
- 22 - Manufacture of basic metals
- 23 - Manufacture of fabricated metal products
- 24 - Construction and repair of vessels
- 25 - Low tech
 - 26 - Manufacture of food products and beverages
 - 27 - Manufacture of tobacco products
 - 28 - Manufacture of textiles
 - 29 - Manufacture of wearing apparel, dressing and dyeing of fur
 - 30 - Manufacture of leather, leather products and footwear
 - 31 - Manufacture of wood and of products of wood and cork, except furniture
 - 32 - Manufacture of cellulose, wood pulp, paper and cardboard and appropriate paper products
 - 33 - Publishing and printing, reproduction of recorded media
 - 34 - Manufacture of furniture; manufacturing n.e.c.
 - 35 - Recycling
- 36 - Electricity, gas and water supply

(continued)

**Communications, computer and related activities, research and development,
other business activities**



5.2. PERCENTAGE DISTRIBUTION OF ENTERPRISES ENGAGED IN MARKETING INNOVATION BY ECONOMIC ACTIVITY

	2010	2011
Mining and quarrying, manufacturing, electricity, gas and water supply		
Total	100	100
Mining and quarrying	1.0	1.6
Mining and quarrying of energy producing materials	0.8	1.5
Mining and quarrying, except energy producing materials	0.2	0.2
Manufacturing	95.2	93.9
High tech	13.5	13.8
Manufacture of pharmaceuticals	2.8	2.5
Manufacture of office machinery and computers	0.3	0.5
Manufacture of radio, television and communication equipment and apparatus	3.0	2.6
Manufacture of medical, precision and optical instruments, watches and clocks	5.9	6.1
Manufacture of aircrafts, including spacecrafts	1.5	2.1
Medium high tech	24.5	25.0
Manufacture of chemicals and chemical products	4.8	3.4
Manufacture of machinery and equipment, n.e.c.	10.4	10.7
Manufacture of electrical machinery and apparatus	5.9	7.6
Manufacture of motor vehicles, trailers and semi-trailers	2.5	2.0
Manufacture of other transport vehicles	1.0	1.3
Medium low tech	17.3	14.6
Manufacture of coke, refined petroleum products	1.2	1.0
Manufacture of rubber and plastic products	3.1	3.0
Manufacture of other non-metallic mineral products	5.6	4.4

(continued)

	2010	2011
Manufacture of basic metals	1.6	1.8
Manufacture of fabricated metal products	4.6	4.1
Construction and repair of vessels	1.2	0.3
Low tech	36.4	36.5
Manufacture of food products and beverages	24.1	25.5
Manufacture of tobacco products	0.5	0.5
Manufacture of textiles	0.8	0.8
Manufacture of wearing apparel, dressing and dyeing of fur	1.6	0.5
Manufacture of leather, leather products and footwear	0.5	0.5
Manufacture of wood and of products of wood and cork, except furniture	1.2	1.5
Manufacture of cellulose, wood pulp, paper and cardboard and appropriate paper products	1.3	1.5
Publishing and printing, reproduction of recorded media	4.1	3.0
Manufacture of furniture, manufacturing n.e.c.	2.1	2.3
Recycling	0.2	0.5
Manufacturing of other materials and substances, n.e.c.	3.5	4.1
Electricity, gas and water supply	3.8	4.4
Communications, computer and related activities, research and development, other business activities		
Total	100	100
Communications	55.7	33.3
Computer and related activities	6.8	4.4
Research and development	...	28.6
Other business activities	37.5	33.7

5.3. CO-OPERATION IN DEVELOPMENT OF MARKETING INNOVATION

(as a percentage of the total number of enterprises having market-ready marketing innovations during the last three years)

	Enterprises with innovations developed					
	mainly by external organisations		jointly with other organisations		mainly in-house	
	2010	2011	2010	2011	2010	2011
Mining and quarrying, manufacturing, electricity, gas and water supply						
Total	9.0	11.4	28.2	32.1	63.2	56.9
Mining and quarrying	–	–	50.0	66.7	50.0	33.3
Mining and quarrying of energy producing materials	–	–	50.0	66.7	50.0	33.3
Mining and quarrying, except energy producing materials	–	–	–	–	–	–
Manufacturing	9.1	11.4	27.7	32.2	63.5	56.9
High tech	6.2	11.1	30.9	25.9	63.0	63.0
Manufacture of pharmaceuticals	8.3	8.3	58.3	58.3	33.3	33.3
Manufacture of office machinery and computers	–	33.3	–	–	100	66.7
Manufacture of radio, television and communication equipment and apparatus	5.3	6.3	36.8	18.8	57.9	75.0
Manufacture of medical, precision and optical instruments, watches and clocks	2.7	15.4	16.2	17.9	81.1	66.7
Manufacture of aircrafts, including spacecrafts	18.2	–	45.5	36.4	36.4	63.6

(continued)

	Enterprises with innovations developed					
	mainly by external organisations		jointly with other organisations		mainly in-house	
	2010	2011	2010	2011	2010	2011
Medium high tech	8.8	4.8	24.7	30.4	66.5	64.9
Manufacture of chemicals and chemical products	6.9	7.7	27.6	42.3	65.5	50.0
Manufacture of machinery and equipment, n.e.c.	10.8	2.8	21.7	23.6	67.5	73.6
Manufacture of electrical machinery and apparatus	2.4	4.4	26.2	35.6	71.4	60.0
Manufacture of motor vehicles, trailers and semi-trailers	5.3	6.3	31.6	18.8	63.2	75.0
Manufacture of other transport vehicles	33.3	11.1	22.2	44.4	44.4	44.4
Medium low tech	7.0	11.2	22.6	26.5	72.2	63.3
Manufacture of coke, refined petroleum products	12.5	–	50.0	83.3	37.5	16.7
Manufacture of rubber and plastic products	–	–	10.0	–	95.0	100
Manufacture of other non-metallic mineral products	10.0	15.2	25.0	21.2	65.0	63.6
Manufacture of basic metals	–	9.1	33.3	45.5	66.7	45.5
Manufacture of fabricated metal products	3.4	6.9	20.7	27.6	79.3	69.0
Construction and repair of vessels	33.3	60.0	–	20.0	66.7	20.0
Low tech	11.8	16.5	29.5	37.3	58.7	46.5
Manufacture of food products and beverages	12.4	14.3	31.7	42.3	55.9	44.0
Manufacture of tobacco products	–	33.3	33.3	66.7	66.7	–
Manufacture of textiles	–	–	22.2	11.1	77.8	88.9
Manufacture of wearing apparel, dressing and dyeing of fur	–	14.3	50.0	42.9	50.0	42.9
Manufacture of leather, leather products and footwear	–	–	33.3	50.0	66.7	50.0

(continued)

	Enterprises with innovations developed					
	mainly by external organisations		jointly with other organisations		mainly in-house	
	2010	2011	2010	2011	2010	2011
Manufacture of wood and of products of wood and cork, except furniture	7.1	30.0	21.4	20.0	71.4	50.0
Manufacture of cellulose, wood pulp, paper and cardboard and appropriate paper products	8.3	15.4	16.7	30.8	75.0	53.8
Publishing and printing, reproduction of recorded media	20.0	36.8	30.0	26.3	50.0	36.8
Manufacture of furniture, manufacturing n.e.c.	23.1	16.7	7.7	22.2	69.2	61.1
Recycling	—	50.0	—	—	100	50.0
Electricity, gas and water supply	8.7	15.0	39.1	25.0	56.5	60.0
Communications, computer and related activities, research and development, other business activities						
Total	12.5	13.9	37.5	31.7	53.4	55.2
Communications	7.0	8.2	39.1	35.5	57.8	57.3
Computer and related activities	19.0	38.5	23.8	30.8	61.9	30.8
Research and development	...	6.4	...	28.2	...	66.7
Other business activities	19.3	25.0	38.6	30.0	44.6	45.0

5.4. SALES OF GOODS AND SERVICES PRODUCED WITH THE USE OF MARKETING INNOVATION BY ECONOMIC ACTIVITY

	Million roubles		As a percentage of total sales	
	2010	2011	2010	2011
Mining and quarrying, manufacturing, electricity, gas and water supply				
Total	428653.0	561396.9	1.8	1.9
Mining and quarrying	357702.6	450996.3	6.4	5.9
Mining and quarrying of energy producing materials	356827.7	449811.8	7.4	6.7
Mining and quarrying, except energy producing materials	874.9	1184.5	0.1	0.1
Manufacturing	51816.4	76395.9	0.4	0.4
High tech	9043.1	15310.2	1.0	1.4
Manufacture of pharmaceuticals	687.5	24.9	0.5	0.02
Manufacture of office machinery and computers	–	30.0	–	0.1
Manufacture of radio, television and communication equipment and apparatus	–	737.7	–	0.3
Manufacture of medical, precision and optical instruments, watches and clocks	8113.2	13092.7	4.3	4.6
Manufacture of aircrafts, including spacecrafts	242.4	1425.0	0.1	0.4
Medium high tech	17654.7	38871.7	0.6	0.9
Manufacture of chemicals and chemical products	12000.7	29958.6	1.2	2.2
Manufacture of machinery and equipment, n.e.c.	3226.9	3457.0	0.4	0.3
Manufacture of electrical machinery and apparatus	2145.5	3278.3	0.6	0.8
Manufacture of motor vehicles, trailers and semi-trailers	281.6	1783.3	0.03	0.1
Manufacture of other transport vehicles	–	394.5	–	0.1
Medium low tech	7379.6	5612.1	0.1	0.1
Manufacture of coke, refined petroleum products	–	–	–	–
Manufacture of rubber and plastic products	402.7	2110.5	0.1	0.5
Manufacture of other non-metallic mineral products	1078.9	511.4	0.2	0.1

(continued)

	Million roubles		As a percentage of total sales	
	2010	2011	2010	2011
Manufacture of basic metals	2378.0	1506.1	0.1	0.05
Manufacture of fabricated metal products	1075.4	1482.6	0.3	0.2
Construction and repair of vessels	2444.5	1.4	2.1	0.001
Low tech	17693.5	16005.3	0.5	0.4
Manufacture of food products and beverages	11590.6	10597.4	0.5	0.4
Manufacture of tobacco products	2273.7	256.5	1.3	0.1
Manufacture of textiles	—	0.7	—	0.001
Manufacture of wearing apparel, dressing and dyeing of fur	1077.2	1111.1	3.0	2.3
Manufacture of leather, leather products and footwear	—	—	—	—
Manufacture of wood and of products of wood and cork, except furniture	1447.4	1602.7	0.9	0.8
Manufacture of cellulose, wood pulp, paper and cardboard and appropriate paper products	911.2	1083.8	0.3	0.3
Publishing and printing, reproduction of recorded media	376.5	697.1	0.2	0.4
Manufacture of furniture, manufacturing n.e.c.	17.0	656.1	0.01	0.4
Recycling	—	—	—	—
Manufacturing of other materials and substances, n.e.c.	45.6	596.7	0.01	0.1
Electricity, gas and water supply	19134.0	34004.6	0.5	1.0
Communications, computer and related activities, research and development, other business activities				
Total	15137.1	19522.4	0.8	0.6
Communications	12019.2	7507.0	1.0	0.5
Computer and related activities	581.5	492.1	0.4	0.3
Research and development	...	5392.6	...	0.8
Other business activities	2536.4	6130.8	0.4	0.7

5.5. EXPENDITURE ON MARKETING INNOVATION BY ECONOMIC ACTIVITY

(million roubles)

	2010	2011
Mining and quarrying, manufacturing, electricity, gas and water supply		
Total	4011.4	1661.0
Mining and quarrying	–	17.2
Mining and quarrying of energy producing materials	–	17.2
Mining and quarrying, except energy producing materials	–	–
Manufacturing	3910.8	1634.6
High tech	1480.2	142.7
Manufacture of pharmaceuticals	25.8	47.6
Manufacture of office machinery and computers	0.7	2.2
Manufacture of radio, television and communication equipment and apparatus	3.7	7.2
Manufacture of medical, precision and optical instruments, watches and clocks	137.1	28.5
Manufacture of aircrafts, including spacecrafts	1313.0	57.3
Medium high tech	530.2	140.9
Manufacture of chemicals and chemical products	80.7	44.2
Manufacture of machinery and equipment, n.e.c.	41.1	18.7
Manufacture of electrical machinery and apparatus	340.3	18.3
Manufacture of motor vehicles, trailers and semi-trailers	61.1	57.2
Manufacture of other transport vehicles	7.0	2.5
Medium low tech	90.2	217.2
Manufacture of coke, refined petroleum products	12.2	136.3
Manufacture of rubber and plastic products	12.0	8.1
Manufacture of other non-metallic mineral products	22.7	35.9

(continued)

	2010	2011
Manufacture of basic metals	7.8	32.6
Manufacture of fabricated metal products	33.4	3.6
Construction and repair of vessels	2.1	0.7
Low tech	1796.3	1093.0
Manufacture of food products and beverages	1694.7	547.0
Manufacture of tobacco products	65.8	–
Manufacture of textiles	0.03	0.6
Manufacture of wearing apparel, dressing and dyeing of fur	3.4	2.0
Manufacture of leather, leather products and footwear	2.9	17.6
Manufacture of wood and of products of wood and cork, except furniture	8.2	1.8
Manufacture of cellulose, wood pulp, paper and cardboard and appropriate paper products	1.3	141.5
Publishing and printing, reproduction of recorded media	7.9	20.7
Manufacture of furniture, manufacturing n.e.c.	12.0	361.7
Recycling	–	0.1
Manufacturing of other materials and substances, n.e.c.	13.9	40.7
Electricity, gas and water supply	100.6	9.2
Communications, computer and related activities, research and development, other business activities		
Total	1491.3	8297.0
Communications	1265.0	8198.3
Computer and related activities	8.5	9.1
Research and development	...	74.4
Other business activities	217.9	15.3

**5.6. EXPENDITURE ON MARKETING INNOVATION PER ENTERPRISE ENGAGED IN MARKETING INNOVATION
BY ECONOMIC ACTIVITY**
(million roubles)

	2010	2011
Mining and quarrying, manufacturing, electricity, gas and water supply		
Total	6.6	2.7
Mining and quarrying	–	1.7
Mining and quarrying of energy producing materials	–	1.9
Mining and quarrying, except energy producing materials	–	–
Manufacturing	6.8	2.9
High tech	18.1	1.7
Manufacture of pharmaceuticals	1.5	3.2
Manufacture of office machinery and computers	0.4	0.7
Manufacture of radio, television and communication equipment and apparatus	0.2	0.5
Manufacture of medical, precision and optical instruments, watches and clocks	3.8	0.8
Manufacture of aircrafts, including spacecrafts	145.9	4.4
Medium high tech	3.6	0.9
Manufacture of chemicals and chemical products	2.8	2.1
Manufacture of machinery and equipment, n.e.c.	0.7	0.3
Manufacture of electrical machinery and apparatus	9.5	0.4
Manufacture of motor vehicles, trailers and semi-trailers	4.1	4.8
Manufacture of other transport vehicles	1.2	0.3
Medium low tech	0.9	2.4
Manufacture of coke, refined petroleum products	1.7	22.7
Manufacture of rubber and plastic products	0.6	0.5
Manufacture of other non-metallic mineral products	0.7	1.3

(continued)

	2010	2011
Manufacture of basic metals	0.8	3.0
Manufacture of fabricated metal products	1.2	0.1
Construction and repair of vessels	0.3	0.4
Low tech	8.1	4.9
Manufacture of food products and beverages	11.6	3.5
Manufacture of tobacco products	21.9	–
Manufacture of textiles	0.01	0.1
Manufacture of wearing apparel, dressing and dyeing of fur	0.3	0.7
Manufacture of leather, leather products and footwear	1.0	5.9
Manufacture of wood and of products of wood and cork, except furniture	1.2	0.2
Manufacture of cellulose, wood pulp, paper and cardboard and appropriate paper products	0.2	15.7
Publishing and printing, reproduction of recorded media	0.3	1.2
Manufacture of furniture, manufacturing n.e.c.	0.9	25.8
Recycling	–	0.04
Electricity, gas and water supply	4.4	0.3
Communications, computer and related activities, research and development, other business activities		
Total	7.8	30.4
Communications	6.6	90.1
Computer and related activities	0.1	0.8
Research and development	...	1.0
Other business activities	16.8	0.2

5.7. ENTERPRISES ENGAGED IN MARKETING INNOVATION BY INNOVATION TYPE AND ECONOMIC ACTIVITY

(as a percentage of the total number of enterprises having market-ready marketing innovations during the last three years)

	Significant changes in design of goods or services	Significant changes in packaging	New strategies for market expansion	New techniques for product promotion	New distribution channels	New methods for product presentation	New methods of pricing goods or services	Other marketing innovations
2010								
Mining and quarrying, manufacturing, electricity, gas and water supply								
Total	51.6	49.8	68.1	66.0	50.2	58.1	54.5	8.3
Mining and quarrying	–	–	50.0	50.0	–	50.0	50.0	–
Mining and quarrying of energy producing materials	–	–	50.0	50.0	–	50.0	50.0	–
Mining and quarrying, except energy producing materials	–	–	–	–	–	–	–	–
Manufacturing	53.4	51.3	68.5	66.3	50.9	58.9	55.0	8.3
High tech	49.4	43.2	70.4	71.6	64.2	71.6	56.8	13.6
Manufacture of pharmaceuticals	83.3	66.7	91.7	83.3	58.3	75.0	58.3	16.7
Manufacture of office machinery and computers	100	50.0	100	100	100	100	100	–
Manufacture of radio, television and communication equipment and apparatus	10.5	26.3	68.4	57.9	63.2	47.4	36.8	15.8

(continued)

	Significant changes in design of goods or services	Significant changes in packaging	New strategies for market expansion	New techniques for product promotion	New distribution channels	New methods for product presentation	New methods of pricing goods or services	Other marketing innovations
Manufacture of medical, precision and optical instruments, watches and clocks	62.2	54.1	64.9	73.0	62.2	75.7	64.9	8.1
Manufacture of aircrafts, including spacecrafts	27.3	9.1	63.6	72.7	72.7	90.9	54.5	27.3
Medium high tech	44.5	40.1	76.9	75.3	54.9	67.6	58.8	4.9
Manufacture of chemicals and chemical products	55.2	65.5	75.9	72.4	62.1	69.0	75.9	–
Manufacture of machinery and equipment, n.e.c.	42.2	25.3	79.5	72.3	55.4	72.3	57.8	8.4
Manufacture of electrical machinery and apparatus	50.0	54.8	1.4	81.0	59.5	64.3	59.5	–
Manufacture of motor vehicles, trailers and semi-trailers	36.8	31.6	84.2	78.9	31.6	63.2	52.6	10.5
Manufacture of other transport vehicles	22.2	44.4	66.7	77.8	55.6	44.4	22.2	–
Medium low tech	41.7	42.6	67.0	55.7	50.4	60.0	62.6	8.7
Manufacture of coke, refined petroleum products	62.5	50.0	87.5	50.0	75.0	62.5	50.0	–
Manufacture of rubber and plastic products	45.0	40.0	55.0	55.0	30.0	45.0	50.0	5.0
Manufacture of other non-metallic mineral products	42.5	55.0	72.5	60.0	60.0	67.5	70.0	7.5
Manufacture of basic metals	25.0	33.3	75.0	41.7	41.7	50.0	66.7	33.3
Manufacture of fabricated metal products	44.8	37.9	58.6	58.6	48.3	62.1	65.5	6.9
Construction and repair of vessels	16.7	–	66.7	50.0	50.0	66.7	50.0	–

(continued)

	Significant changes in design of goods or services	Significant changes in packaging	New strategies for market expansion	New techniques for product promotion	New distribution channels	New methods for product presentation	New methods of pricing goods or services	Other marketing innovations
Low tech	64.9	65.7	62.7	63.1	43.5	47.6	49.4	8.5
Manufacture of food products and beverages	68.3	75.8	62.9	62.4	42.5	42.5	52.2	8.6
Manufacture of tobacco products	100	100	33.3	33.3	33.3	33.3	33.3	–
Manufacture of textiles	66.7	55.6	55.6	77.8	33.3	66.7	44.4	22.2
Manufacture of wearing apparel, dressing and dyeing of fur	80.0	50.0	50.0	80.0	50.0	90.0	50.0	10.0
Manufacture of leather, leather products and footwear	66.7	33.3	66.7	66.7	66.7	33.3	100	–
Manufacture of wood and of products of wood and cork, except furniture	35.7	50.0	71.4	42.9	42.9	42.9	50.0	–
Manufacture of cellulose, wood pulp, paper and cardboard and appropriate paper products	66.7	33.3	58.3	75.0	33.3	50.0	50.0	16.7
Publishing and printing, reproduction of recorded media	50.0	35.0	75.0	65.0	55.0	60.0	35.0	–
Manufacture of furniture, manufacturing n.e.c.	53.8	38.5	61.5	69.2	53.8	69.2	30.8	7.7
Recycling	–	–	–	–	–	–	–	100
Electricity, gas and water supply	4.3	8.7	56.5	56.5	34.8	34.8	39.1	8.7

(continued)

	Significant changes in design of goods or services	Significant changes in packaging	New strategies for market expansion	New techniques for product promotion	New distribution channels	New methods for product presentation	New methods of pricing goods or services	Other marketing innovations
Communications, computer and related activities, research and development, other business activities								
Total	37.1	15.5	74.1	76.3	57.8	57.3	64.2	6.0
Communications	39.8	19.5	85.2	86.7	72.7	71.9	82.0	5.5
Computer and related activities	52.4	23.8	76.2	85.7	42.9	57.1	66.7	—
Research and development	...	...	...	...	...	...	...	...
Other business activities	28.9	7.2	56.6	57.8	38.6	34.9	36.1	8.4

(continued)

	Significant changes in design of goods or services	Significant changes in packaging	New strategies for market expansion	New techniques for product promotion	New distribution channels	New methods for product presentation	New methods of pricing goods or services	Other marketing innovations
2011								
Mining and quarrying, manufacturing, electricity, gas and water supply								
Total	50.8	51.0	69.4	65.4	51.8	57.1	53.7	7.9
Mining and quarrying	–	–	100	33.3	–	–	33.3	–
Mining and quarrying of energy producing materials	–	–	100	33.3	–	–	33.3	–
Mining and quarrying, except energy producing materials	–	–	–	–	–	–	–	–
Manufacturing	52.4	52.8	70.2	66.6	52.8	58.0	54.9	7.1
High tech	43.2	42.0	70.4	74.1	61.7	67.9	59.3	12.3
Manufacture of pharmaceuticals	66.7	66.7	66.7	75.0	58.3	50.0	50.0	8.3
Manufacture of office machinery and computers	33.3	66.7	66.7	100	66.7	66.7	33.3	–
Manufacture of radio, television and communication equipment and apparatus	6.3	12.5	75.0	68.8	50.0	50.0	43.8	18.8

(continued)

	Significant changes in design of goods or services	Significant changes in packaging	New strategies for market expansion	New techniques for product promotion	New distribution channels	New methods for product presentation	New methods of pricing goods or services	Other marketing innovations
Manufacture of medical, precision and optical instruments, watches and clocks	53.8	46.2	64.1	74.4	64.1	74.4	69.2	10.3
Manufacture of aircrafts, including spacecrafts	36.4	36.4	90.9	72.7	72.7	90.9	63.6	18.2
Medium high tech	41.7	44.0	79.8	69.0	59.5	66.7	57.7	6.0
Manufacture of chemicals and chemical products	53.8	65.4	76.9	69.2	65.4	61.5	73.1	3.8
Manufacture of machinery and equipment, n.e.c.	34.7	31.9	80.6	69.4	59.7	76.4	58.3	5.6
Manufacture of electrical machinery and apparatus	53.3	55.6	86.7	68.9	62.2	55.6	57.8	4.4
Manufacture of motor vehicles, trailers and semi-trailers	37.5	37.5	75.0	81.3	50.0	68.8	50.0	18.8
Manufacture of other transport vehicles	11.1	33.3	55.6	44.4	44.4	55.6	22.2	–
Medium low tech	40.8	48.0	71.4	71.4	56.1	58.2	54.1	7.1
Manufacture of coke, refined petroleum products	50.0	50.0	66.7	66.7	83.3	50.0	66.7	–
Manufacture of rubber and plastic products	42.9	50.0	78.6	71.4	50.0	42.9	50.0	14.3
Manufacture of other non-metallic mineral products	57.6	63.6	66.7	72.7	54.5	69.7	63.6	–
Manufacture of basic metals	18.2	54.5	81.8	63.6	45.5	63.6	27.3	27.3
Manufacture of fabricated metal products	27.6	34.5	72.4	72.4	55.2	55.2	51.7	3.4
Construction and repair of vessels	40.0	–	60.0	80.0	80.0	40.0	60.0	20.0

(continued)

	Significant changes in design of goods or services	Significant changes in packaging	New strategies for market expansion	New techniques for product promotion	New distribution channels	New methods for product presentation	New methods of pricing goods or services	Other marketing innovations
Low tech	66.9	64.6	63.5	61.9	42.7	48.8	51.2	5.0
Manufacture of food products and beverages	76.0	77.7	65.7	64.0	42.3	44.0	53.7	4.0
Manufacture of tobacco products	100	100	33.3	33.3	33.3	33.3	33.3	–
Manufacture of textiles	33.3	55.6	66.7	66.7	55.6	77.8	66.7	11.1
Manufacture of wearing apparel, dressing and dyeing of fur	57.1	42.9	42.9	57.1	42.9	71.4	42.9	14.3
Manufacture of leather, leather products and footwear	50.0	25.0	50.0	50.0	75.0	50.0	75.0	–
Manufacture of wood and of products of wood and cork, except furniture	20.0	30.0	80.0	60.0	50.0	50.0	40.0	10.0
Manufacture of cellulose, wood pulp, paper and cardboard and appropriate paper products	53.8	46.2	53.8	61.5	30.8	30.8	61.5	7.7
Publishing and printing, reproduction of recorded media	57.9	21.1	68.4	57.9	47.4	73.7	47.4	5.3
Manufacture of furniture, manufacturing n.e.c.	50.0	38.9	50.0	55.6	38.9	66.7	27.8	5.6
Recycling	–	–	50.0	50.0	–	–	–	–
Electricity, gas and water supply	10.0	–	40.0	35.0	25.0	35.0	20.0	35.0

(continued)

	Significant changes in design of goods or services	Significant changes in packaging	New strategies for market expansion	New techniques for product promotion	New distribution channels	New methods for product presentation	New methods of pricing goods or services	Other marketing innovations
Communications, computer and related activities, research and development, other business activities								
Total	31.7	13.5	73.0	72.2	49.8	60.1	56.6	6.4
Communications	34.5	16.4	86.4	86.4	70.0	70.9	81.8	4.5
Computer and related activities	38.5	23.1	69.2	76.9	38.5	76.9	69.2	7.7
Research and development	34.6	17.9	69.2	66.7	43.6	64.1	44.9	6.4
Other business activities	23.8	3.8	58.8	57.5	30.0	38.8	31.3	8.8

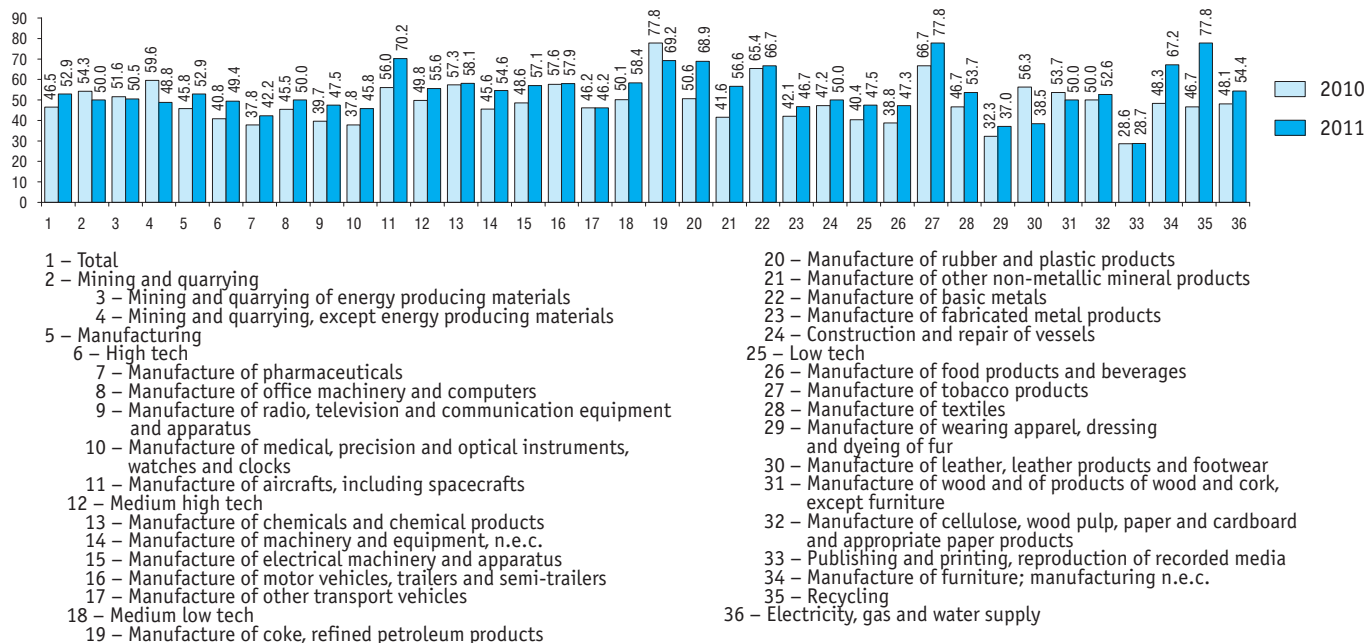


6. Ecological Innovation

6.1. ENTERPRISES ENGAGED IN ECOLOGICAL INNOVATION

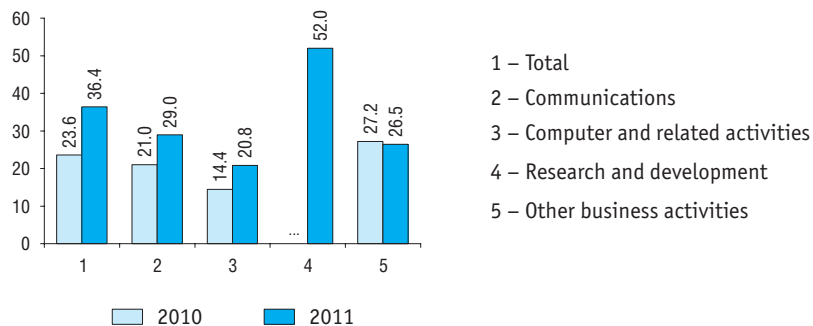
(as a percentage of all enterprises having market-ready innovations during the last three years)

Mining and quarrying, manufacturing, electricity, gas and water supply



(continued)

**Communications, computer and related activities, research and development,
other business activities**



6.2. ENTERPRISES HAVING INTRODUCED INNOVATION WITH ENVIRONMENTAL BENEFITS FROM THE PRODUCTION OF GOODS OR SERVICES

(as a percentage of all enterprises engaged in ecological innovation)

	Reduced material use per unit of output	Reduced energy use per unit of output	Reduced CO ₂ 'footprint' ^z (total CO ₂ production)	Replaced materials with less polluting or hazardous substitutes	Reduced soil, water, noise, or air pollution	Recycled waste, water, or materials
2010						
Mining and quarrying, manufacturing, electricity, gas and water supply						
Total	55.5	58.4	36.9	39.0	67.6	43.0
Mining and quarrying	47.4	44.7	38.2	19.7	72.4	51.3
Mining and quarrying of energy producing materials	47.9	43.8	52.1	22.9	75.0	45.8
Mining and quarrying, except energy producing materials	46.4	46.4	14.3	14.3	67.9	60.7
Manufacturing	58.4	60.7	38.2	40.9	68.6	45.7
High tech	62.0	62.0	38.0	44.6	66.3	39.8
Manufacture of pharmaceuticals	47.1	47.1	29.4	52.9	76.5	52.9
Manufacture of office machinery and computers	60.0	60.0	60.0	40.0	100	40.0
Manufacture of radio, television and communica- tion equipment and apparatus	66.7	66.7	29.2	43.8	60.4	41.7
Manufacture of medical, precision and optical instruments, watches and clocks	67.6	66.2	36.8	44.1	60.3	33.8
Manufacture of aircrafts, including spacecrafts	50.0	53.6	57.1	42.9	78.6	42.9

(continued)

	Reduced material use per unit of output	Reduced energy use per unit of output	Reduced CO ₂ ‘footprint’ (total CO ₂ production)	Replaced materials with less polluting or hazardous substitutes	Reduced soil, water, noise, or air pollution	Recycled waste, water, or materials
Medium high tech	62.3	62.8	37.4	45.5	74.3	50.1
Manufacture of chemicals and chemical products	65.9	67.1	31.7	43.9	79.3	63.4
Manufacture of machinery and equipment, n.e.c.	61.1	60.4	44.3	42.3	75.2	46.3
Manufacture of electrical machinery and apparatus	63.5	63.5	32.9	44.7	64.7	47.1
Manufacture of motor vehicles, trailers and semi-trailers	66.0	71.7	37.7	62.3	79.2	56.6
Manufacture of other transport vehicles	45.8	41.7	29.2	37.5	75.0	25.0
Medium low tech	52.5	57.8	35.8	34.8	65.2	49.6
Manufacture of coke, refined petroleum products	53.6	46.4	39.3	32.1	67.9	46.4
Manufacture of rubber and plastic products	52.4	66.7	38.1	38.1	59.5	78.6
Manufacture of other non-metallic mineral products	50.0	54.1	28.4	24.3	58.1	37.8
Manufacture of basic metals	50.0	58.8	35.3	32.4	83.8	58.8
Manufacture of fabricated metal products	64.2	69.8	43.4	45.3	54.7	39.6
Construction and repair of vessels	35.3	29.4	35.3	52.9	64.7	29.4
Low tech	58.0	60.3	39.7	37.4	63.5	39.9
Manufacture of food products and beverages	51.3	57.8	41.2	34.2	65.8	37.2
Manufacture of tobacco products	83.3	83.3	83.3	50.0	83.3	50.0
Manufacture of textiles	76.2	66.7	28.6	42.9	57.1	57.1
Manufacture of wearing apparel, dressing and dyeing of fur	80.0	50.0	30.0	50.0	40.0	10.0

(continued)

	Reduced material use per unit of output	Reduced energy use per unit of output	Reduced CO ₂ ‘footprint’ (total CO ₂ production)	Replaced materials with less polluting or hazardous substitutes	Reduced soil, water, noise, or air pollution	Recycled waste, water, or materials
Manufacture of leather, leather products and footwear	55.6	77.8	33.3	44.4	88.9	55.6
Manufacture of wood and of products of wood and cork, except furniture	59.1	59.1	40.9	36.4	68.2	59.1
Manufacture of cellulose, wood pulp, paper and cardboard and appropriate paper products	61.1	44.4	61.1	44.4	66.7	61.1
Publishing and printing, reproduction of recorded media	67.9	71.4	25.0	39.3	50.0	17.9
Manufacture of furniture, manufacturing n.e.c.	60.7	64.3	32.1	46.4	50.0	32.1
Recycling	85.7	71.4	42.9	14.3	85.7	85.7
Electricity, gas and water supply	39.9	48.9	27.7	34.6	58.5	21.8
Communications, computer and related activities, research and development, other business activities						
Total	51.9	41.0	18.4	26.4	32.1	14.6
Communications	55.4	46.2	21.5	33.8	32.3	10.8
Computer and related activities	40.0	60.0	13.3	0.0	26.7	26.7
Research and development	...	...	...	...	...	...
Other business activities	51.5	36.4	17.4	23.5	32.6	15.2

(continued)

	Reduced material use per unit of output	Reduced energy use per unit of output	Reduced CO ₂ ‘footprint’ (total CO ₂ production)	Replaced materials with less polluting or hazardous substitutes	Reduced soil, water, noise, or air pollution	Recycled waste, water, or materials
2011						
Mining and quarrying, manufacturing, electricity, gas and water supply						
Total	57.1	59.6	36.3	38.3	66.3	42.2
Mining and quarrying	43.8	43.8	39.7	23.3	74.0	47.9
Mining and quarrying of energy producing materials	45.3	50.9	49.1	28.3	75.5	45.3
Mining and quarrying, except energy producing materials	40.0	25.0	15.0	10.0	70.0	55.0
Manufacturing	59.4	60.8	37.0	39.6	66.6	45.6
High tech	58.6	62.1	32.5	44.3	63.5	37.4
Manufacture of pharmaceuticals	36.8	36.8	15.8	36.8	73.7	42.1
Manufacture of office machinery and computers	100	100	16.7	33.3	83.3	33.3
Manufacture of radio, television and communica- tion equipment and apparatus	63.2	63.2	29.8	45.6	61.4	40.4
Manufacture of medical, precision and optical instruments, watches and clocks	64.2	65.4	33.3	48.1	63.0	33.3
Manufacture of aircrafts, including spacecrafts	45.0	60.0	45.0	40.0	60.0	40.0

(continued)

	Reduced material use per unit of output	Reduced energy use per unit of output	Reduced CO ₂ ‘footprint’ (total CO ₂ production)	Replaced materials with less polluting or hazardous substitutes	Reduced soil, water, noise, or air pollution	Recycled waste, water, or materials
Medium high tech	60.1	60.5	38.1	44.0	70.3	48.8
Manufacture of chemicals and chemical products	63.3	60.8	30.4	41.8	82.3	64.6
Manufacture of machinery and equipment, n.e.c.	61.5	63.1	40.2	39.7	65.9	47.5
Manufacture of electrical machinery and apparatus	51.5	55.7	36.1	47.4	61.9	43.3
Manufacture of motor vehicles, trailers and semi-trailers	66.1	61.3	43.5	54.8	75.8	46.8
Manufacture of other transport vehicles	58.3	58.3	41.7	41.7	83.3	33.3
Medium low tech	54.3	57.9	36.6	31.1	66.2	52.1
Manufacture of coke, refined petroleum products	66.7	55.6	40.7	33.3	70.4	51.9
Manufacture of rubber and plastic products	54.9	66.7	41.2	37.3	62.7	64.7
Manufacture of other non-metallic mineral products	48.0	48.0	30.6	25.5	57.1	57.1
Manufacture of basic metals	55.4	63.5	37.8	28.4	79.7	55.4
Manufacture of fabricated metal products	57.8	64.1	40.6	37.5	62.5	35.9
Construction and repair of vessels	50.0	42.9	28.6	28.6	78.6	28.6
Low tech	63.5	62.0	37.8	38.3	61.7	40.6
Manufacture of food products and beverages	58.1	62.3	38.1	37.3	61.9	39.4
Manufacture of tobacco products	71.4	100	100	42.9	85.7	57.1
Manufacture of textiles	68.2	54.5	22.7	36.4	50.0	54.5
Manufacture of wearing apparel, dressing and dyeing of fur	80.0	70.0	50.0	50.0	70.0	30.0

(continued)

	Reduced material use per unit of output	Reduced energy use per unit of output	Reduced CO ₂ ‘footprint’ (total CO ₂ production)	Replaced materials with less polluting or hazardous substitutes	Reduced soil, water, noise, or air pollution	Recycled waste, water, or materials
Manufacture of leather, leather products and footwear	60.0	100	40.0	60.0	60.0	40.0
Manufacture of wood and of products of wood and cork, except furniture	64.7	58.8	29.4	41.2	70.6	64.7
Manufacture of cellulose, wood pulp, paper and cardboard and appropriate paper products	70.0	45.0	40.0	35.0	60.0	65.0
Publishing and printing, reproduction of recorded media	81.5	70.4	40.7	40.7	63.0	18.5
Manufacture of furniture, manufacturing n.e.c.	70.7	56.1	31.7	41.5	56.1	24.4
Recycling	71.4	57.1	28.6	14.3	71.4	85.7
Electricity, gas and water supply	46.0	57.3	29.9	35.1	61.1	17.1
Communications, computer and related activities, research and development, other business activities						
Total	51.6	55.0	25.3	36.7	53.0	26.9
Communications	45.1	43.9	29.3	35.4	43.9	22.0
Computer and related activities	38.1	61.9	14.3	28.6	19.0	14.3
Research and development	58.5	63.9	26.0	42.6	62.5	31.8
Other business activities	42.6	41.0	23.0	25.4	43.4	21.3

6.3. ENTERPRISES HAVING INTRODUCED INNOVATION WITH ENVIRONMENTAL BENEFITS FROM THE AFTER SALES USE OF A GOOD OR SERVICE BY THE END USER

(as a percentage of all enterprises engaged in ecological innovation)

	Reduced energy use or energy loss	Reduced air, water, soil or noise pollution	Improved recycling of product after use
2010			
Mining and quarrying, manufacturing, electricity, gas and water supply			
Total	50.1	50.4	22.5
Mining and quarrying	34.2	46.1	18.4
Mining and quarrying of energy producing materials	31.3	50.0	22.9
Mining and quarrying, except energy producing materials	39.3	39.3	10.7
Manufacturing	50.9	51.9	24.8
High tech	52.4	50.6	18.1
Manufacture of pharmaceuticals	35.3	52.9	23.5
Manufacture of office machinery and computers	60.0	80.0	20.0
Manufacture of radio, television and communication equipment and apparatus	52.1	47.9	16.7
Manufacture of medical, precision and optical instruments, watches and clocks	58.8	48.5	19.1
Manufacture of aircrafts, including spacecrafts	46.4	53.6	14.3
Medium high tech	55.0	56.7	26.5
Manufacture of chemicals and chemical products	45.1	56.1	35.4
Manufacture of machinery and equipment, n.e.c.	57.0	54.4	25.5
Manufacture of electrical machinery and apparatus	65.9	57.6	25.9
Manufacture of motor vehicles, trailers and semi-trailers	54.7	66.0	20.8
Manufacture of other transport vehicles	37.5	50.0	16.7

(continued)

	Reduced energy use or energy loss	Reduced air, water, soil or noise pollution	Improved recycling of product after use
Medium low tech	47.5	47.9	23.8
Manufacture of coke, refined petroleum products	42.9	64.3	21.4
Manufacture of rubber and plastic products	61.9	45.2	31.0
Manufacture of other non-metallic mineral products	36.5	43.2	17.6
Manufacture of basic metals	45.6	47.1	29.4
Manufacture of fabricated metal products	60.4	47.2	20.8
Construction and repair of vessels	35.3	52.9	23.5
Low tech	49.1	49.1	27.0
Manufacture of food products and beverages	49.7	49.2	27.6
Manufacture of tobacco products	66.7	83.3	33.3
Manufacture of textiles	52.4	47.6	42.9
Manufacture of wearing apparel, dressing and dyeing of fur	50.0	40.0	10.0
Manufacture of leather, leather products and footwear	66.7	55.6	33.3
Manufacture of wood and of products of wood and cork, except furniture	45.5	54.5	22.7
Manufacture of cellulose, wood pulp, paper and cardboard and appropriate paper products	50.0	50.0	50.0
Publishing and printing, reproduction of recorded media	53.6	39.3	14.3
Manufacture of furniture, manufacturing n.e.c.	32.1	46.4	14.3
Recycling	42.9	57.1	28.6
Electricity, gas and water supply	51.6	42.6	9.6

(continued)

	Reduced energy use or energy loss	Reduced air, water, soil or noise pollution	Improved recycling of product after use
Communications, computer and related activities, research and development, other business activities			
Total	46.7	28.3	12.7
Communications	46.2	16.9	9.2
Computer and related activities	40.0	20.0	26.7
Research and development	...	...	...
Other business activities	47.7	34.8	12.9

(continued)

	Reduced energy use or energy loss	Reduced air, water, soil or noise pollution	Improved recycling of product after use
2011			
Mining and quarrying, manufacturing, electricity, gas and water supply			
Total	50.2	47.6	21.9
Mining and quarrying	31.5	41.1	21.9
Mining and quarrying of energy producing materials	35.8	41.5	24.5
Mining and quarrying, except energy producing materials	20.0	40.0	15.0
Manufacturing	50.6	49.2	23.6
High tech	54.7	45.3	19.2
Manufacture of pharmaceuticals	31.6	36.8	15.8
Manufacture of office machinery and computers	66.7	83.3	16.7
Manufacture of radio, television and communication equipment and apparatus	63.2	49.1	21.1
Manufacture of medical, precision and optical instruments, watches and clocks	58.0	44.4	19.8
Manufacture of aircrafts, including spacecrafts	45.0	40.0	17.5
Medium high tech	50.8	53.7	24.0
Manufacture of chemicals and chemical products	43.0	54.4	30.4
Manufacture of machinery and equipment, n.e.c.	55.3	51.4	20.7
Manufacture of electrical machinery and apparatus	52.6	52.6	24.7
Manufacture of motor vehicles, trailers and semi-trailers	53.2	61.3	29.0
Manufacture of other transport vehicles	29.2	54.2	12.5

(continued)

	Reduced energy use or energy loss	Reduced air, water, soil or noise pollution	Improved recycling of product after use
Medium low tech	50.0	46.3	24.7
Manufacture of coke, refined petroleum products	48.1	77.8	25.9
Manufacture of rubber and plastic products	62.7	49.0	31.4
Manufacture of other non-metallic mineral products	42.9	40.8	18.4
Manufacture of basic metals	47.3	37.8	27.0
Manufacture of fabricated metal products	56.3	48.4	28.1
Construction and repair of vessels	42.9	50.0	14.3
Low tech	47.7	46.7	24.7
Manufacture of food products and beverages	50.8	48.3	26.7
Manufacture of tobacco products	42.9	42.9	14.3
Manufacture of textiles	50.0	45.5	27.3
Manufacture of wearing apparel, dressing and dyeing of fur	60.0	50.0	20.0
Manufacture of leather, leather products and footwear	60.0	40.0	–
Manufacture of wood and of products of wood and cork, except furniture	41.2	41.2	17.6
Manufacture of cellulose, wood pulp, paper and cardboard and appropriate paper products	60.0	55.0	45.0
Publishing and printing, reproduction of recorded media	40.7	40.7	18.5
Manufacture of furniture, manufacturing n.e.c.	29.3	39.0	12.2
Recycling	28.6	57.1	42.9
Electricity, gas and water supply	54.0	39.3	10.4

(continued)

	Reduced energy use or energy loss	Reduced air, water, soil or noise pollution	Improved recycling of product after use
Communications, computer and related activities, research and development, other business activities			
Total	58.0	47.6	17.3
Communications	46.3	25.6	9.8
Computer and related activities	66.7	19.0	9.5
Research and development	63.2	58.8	22.7
Other business activities	52.5	41.8	11.5

6.4. PERCENTAGE DISTRIBUTION OF ENTERPRISES ENGAGED IN ECOLOGICAL INNOVATION BY PURPOSE AND ECONOMIC ACTIVITY

	Complying with the existing environmental regulations or taxes on pollution	Complying with the environmental regulations or taxes expected to be introduced in the future	Availability of government grants, subsidies or other financial incentives for environmental innovation	Current or expected market demand from customers for environmental innovations	Voluntary codes or agreements for environmental good practice within sector
2010					
Mining and quarrying, manufacturing, electricity, gas and water supply					
Total	75.9	38.8	10.4	39.6	68.6
Mining and quarrying	78.9	50.0	7.9	36.8	71.1
Mining and quarrying of energy producing materials	85.4	47.9	8.3	39.6	77.1
Mining and quarrying, except energy producing materials	67.9	53.6	7.1	32.1	60.7
Manufacturing	75.6	39.1	11.1	41.4	69.2
High tech	79.5	44.6	8.4	36.7	72.3
Manufacture of pharmaceuticals	94.1	58.8	5.9	41.2	76.5
Manufacture of office machinery and computers	100	60.0	–	20.0	100
Manufacture of radio, television and communication equipment and apparatus	79.2	37.5	8.3	35.4	72.9
Manufacture of medical, precision and optical instruments, watches and clocks	75.0	48.5	13.2	38.2	67.6
Manufacture of aircrafts, including spacecrafts	78.6	35.7	–	35.7	75.0
Medium high tech	79.6	44.0	12.5	46.1	72.5
Manufacture of chemicals and chemical products	78.0	41.5	17.1	46.3	73.2
Manufacture of machinery and equipment, n.e.c.	77.9	45.0	10.1	40.3	71.8

(continued)

	Complying with the existing environmental regulations or taxes on pollution	Complying with the environmental regulations or taxes expected to be introduced in the future	Availability of government grants, subsidies or other financial incentives for environmental innovation	Current or expected market demand from customers for environmental innovations	Voluntary codes or agreements for environmental good practice within sector
Manufacture of electrical machinery and apparatus	83.5	37.6	14.1	56.5	65.9
Manufacture of motor vehicles, trailers and semi-trailers	86.8	52.8	11.3	56.6	79.2
Manufacture of other transport vehicles	66.7	50.0	8.3	20.8	83.3
Medium low tech	73.0	38.3	8.5	43.6	68.1
Manufacture of coke, refined petroleum products	82.1	75.0	14.3	60.7	60.7
Manufacture of rubber and plastic products	71.4	26.2	11.9	57.1	71.4
Manufacture of other non-metallic mineral products	64.9	28.4	6.8	43.2	64.9
Manufacture of basic metals	82.4	42.6	5.9	36.8	70.6
Manufacture of fabricated metal products	69.8	35.8	7.5	35.8	71.7
Construction and repair of vessels	70.6	41.2	11.8	35.3	64.7
Low tech	69.8	33.0	11.8	36.5	64.9
Manufacture of food products and beverages	67.8	33.7	14.6	34.7	67.3
Manufacture of tobacco products	66.7	83.3	16.7	66.7	66.7
Manufacture of textiles	81.0	33.3	9.5	23.8	61.9
Manufacture of wearing apparel, dressing and dyeing of fur	40.0	40.0	–	30.0	50.0
Manufacture of leather, leather products and footwear	66.7	11.1	–	33.3	77.8
Manufacture of wood and of products of wood and cork, except furniture	72.7	31.8	4.5	50.0	68.2
Manufacture of cellulose, wood pulp, paper and cardboard and appropriate paper products	100	44.4	–	44.4	66.7
Publishing and printing, reproduction of recorded media	67.9	21.4	3.6	35.7	46.4

(continued)

	Complying with the existing environmental regulations or taxes on pollution	Complying with the environmental regulations or taxes expected to be introduced in the future	Availability of government grants, subsidies or other financial incentives for environmental innovation	Current or expected market demand from customers for environmental innovations	Voluntary codes or agreements for environmental good practice within sector
Manufacture of furniture, manufacturing n.e.c.	71.4	25.0	14.3	39.3	67.9
Recycling	57.1	42.9	42.9	42.9	57.1
Electricity, gas and water supply	76.6	31.9	6.9	29.3	63.8
Communications, computer and related activities, research and development, other business activities					
Total	58.5	28.8	9.4	44.3	58.5
Communications	52.3	23.1	7.7	40.0	60.0
Computer and related activities	66.7	46.7	20.0	46.7	80.0
Research and development	...	...	...	...	...
Other business activities	60.6	29.5	9.1	46.2	55.3

(continued)

	Complying with the existing environmental regulations or taxes on pollution	Complying with the environmental regulations or taxes expected to be introduced in the future	Availability of government grants, subsidies or other financial incentives for environmental innovation	Current or expected market demand from customers for environmental innovations	Voluntary codes or agreements for environmental good practice within sector
2011					
Mining and quarrying, manufacturing, electricity, gas and water supply					
Total	77.9	38.2	10.4	42.5	71.4
Mining and quarrying	75.3	47.9	12.3	31.5	75.3
Mining and quarrying of energy producing materials	79.2	49.1	13.2	35.8	83.0
Mining and quarrying, except energy producing materials	65.0	45.0	10.0	20.0	55.0
Manufacturing	78.1	38.4	10.4	44.7	72.1
High tech	78.8	40.4	9.4	38.4	69.0
Manufacture of pharmaceuticals	84.2	57.9	10.5	36.8	63.2
Manufacture of office machinery and computers	100	50.0	16.7	16.7	100
Manufacture of radio, television and communication equipment and apparatus	77.2	31.6	8.8	35.1	63.2
Manufacture of medical, precision and optical instruments, watches and clocks	75.3	45.7	8.6	44.4	69.1
Manufacture of aircrafts, including spacecrafts	82.5	32.5	10.0	35.0	75.0
Medium high tech	80.7	43.1	10.0	48.1	75.1
Manufacture of chemicals and chemical products	83.5	44.3	13.9	45.6	79.7
Manufacture of machinery and equipment, n.e.c.	78.8	40.8	7.8	45.8	74.3

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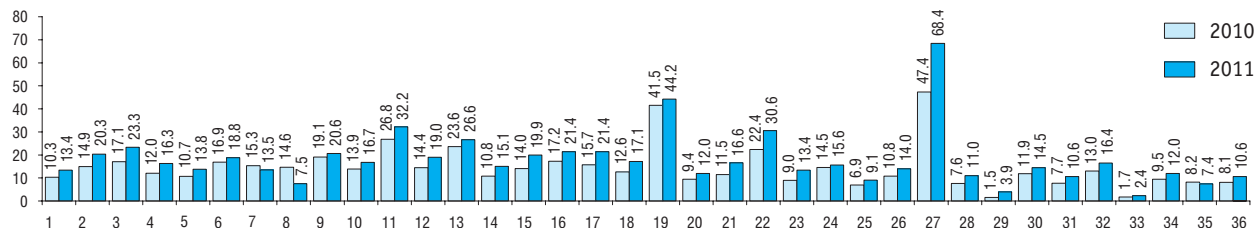
	Complying with the existing environmental regulations or taxes on pollution	Complying with the environmental regulations or taxes expected to be introduced in the future	Availability of government grants, subsidies or other financial incentives for environmental innovation	Current or expected market demand from customers for environmental innovations	Voluntary codes or agreements for environmental good practice within sector
Manufacture of electrical machinery and apparatus	80.4	37.1	12.4	55.7	70.1
Manufacture of motor vehicles, trailers and semi-trailers	82.3	56.5	8.1	51.6	75.8
Manufacture of other transport vehicles	83.3	45.8	8.3	33.3	83.3
Medium low tech	77.1	35.1	7.9	47.0	71.0
Manufacture of coke, refined petroleum products	92.6	74.1	14.8	70.4	74.1
Manufacture of rubber and plastic products	78.4	29.4	5.9	49.0	70.6
Manufacture of other non-metallic mineral products	65.3	23.5	2.0	43.9	64.3
Manufacture of basic metals	87.8	41.9	13.5	50.0	82.4
Manufacture of fabricated metal products	75.0	32.8	9.4	40.6	67.2
Construction and repair of vessels	78.6	35.7	7.1	28.6	71.4
Low tech	74.0	33.9	13.0	43.1	70.4
Manufacture of food products and beverages	73.3	35.6	15.7	42.8	67.8
Manufacture of tobacco products	100	57.1	–	85.7	100
Manufacture of textiles	68.2	22.7	9.1	27.3	63.6
Manufacture of wearing apparel, dressing and dyeing of fur	70.0	50.0	10.0	40.0	80.0
Manufacture of leather, leather products and footwear	80.0	20.0	–	60.0	100
Manufacture of wood and of products of wood and cork, except furniture	94.1	35.3	23.5	64.7	64.7
Manufacture of cellulose, wood pulp, paper and cardboard and appropriate paper products	90.0	35.0	5.0	50.0	75.0
Publishing and printing, reproduction of recorded media	77.8	22.2	3.7	44.4	81.5

(continued)

	Complying with the existing environmental regulations or taxes on pollution	Complying with the environmental regulations or taxes expected to be introduced in the future	Availability of government grants, subsidies or other financial incentives for environmental innovation	Current or expected market demand from customers for environmental innovations	Voluntary codes or agreements for environmental good practice within sector
Manufacture of furniture, manufacturing n.e.c.	61.0	29.3	9.8	31.7	73.2
Recycling	57.1	42.9	14.3	42.9	57.1
Electricity, gas and water supply	77.3	33.6	9.5	31.3	64.9
Communications, computer and related activities, research and development, other business activities					
Total	74.1	36.7	12.2	45.8	71.1
Communications	63.4	28.0	1.2	26.8	73.2
Computer and related activities	57.1	42.9	14.3	38.1	57.1
Research and development	82.3	39.4	16.6	53.1	74.4
Other business activities	65.6	35.2	9.0	43.4	64.8

6.5. ENTERPRISES HAVING UTILISED SYSTEMS OF ENVIRONMENTAL POLLUTION CONTROL AS A PERCENTAGE OF ALL ENTERPRISES

Mining and quarrying, manufacturing, electricity, gas and water supply

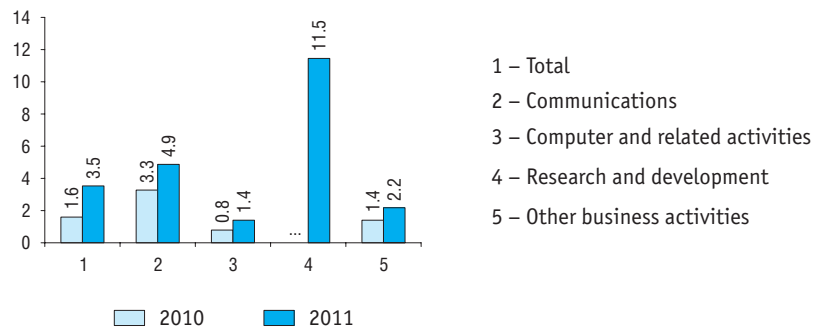


- 1 – Total
- 2 – Mining and quarrying
 - 3 – Mining and quarrying of energy producing materials
 - 4 – Mining and quarrying, except energy producing materials
- 5 – Manufacturing
 - 6 – High tech
 - 7 – Manufacture of pharmaceuticals
 - 8 – Manufacture of office machinery and computers
 - 9 – Manufacture of radio, television and communication equipment and apparatus
 - 10 – Manufacture of medical, precision and optical instruments, watches and clocks
 - 11 – Manufacture of aircrafts, including spacecrafts
 - 12 – Medium high tech
 - 13 – Manufacture of chemicals and chemical products
 - 14 – Manufacture of machinery and equipment, n.e.c.
 - 15 – Manufacture of electrical machinery and apparatus
 - 16 – Manufacture of motor vehicles, trailers and semi-trailers
 - 17 – Manufacture of other transport vehicles
 - 18 – Medium low tech
 - 19 – Manufacture of coke, refined petroleum products

- 20 – Manufacture of rubber and plastic products
- 21 – Manufacture of other non-metallic mineral products
- 22 – Manufacture of basic metals
- 23 – Manufacture of fabricated metal products
- 24 – Construction and repair of vessels
- 25 – Low tech
 - 26 – Manufacture of food products and beverages
 - 27 – Manufacture of tobacco products
 - 28 – Manufacture of textiles
 - 29 – Manufacture of wearing apparel, dressing and dyeing of fur
 - 30 – Manufacture of leather, leather products and footwear
 - 31 – Manufacture of wood and of products of wood and cork, except furniture
 - 32 – Manufacture of cellulose, wood pulp, paper and cardboard and appropriate paper products
 - 33 – Publishing and printing, reproduction of recorded media
 - 34 – Manufacture of furniture; manufacturing n.e.c.
 - 35 – Recycling
- 36 – Electricity, gas and water supply

(continued)

**Communications, computer and related activities, research and development,
other business activities**



6.6. EXPENDITURE ON ECOLOGICAL INNOVATION

	Expenditure on ecological innovation				Expenditure on ecological innovation per enterprise, <i>million roubles</i>	
	Million roubles		Per cent			
	2010	2011	2010	2011	2010	2011
Mining and quarrying, manufacturing, electricity, gas and water supply						
Total	23668.4	23861.5	100	100	54.5	51.8
Mining and quarrying	6965.9	9066.7	29.4	38.0	278.6	259.0
Mining and quarrying of energy producing materials	6939.0	8957.4	29.3	37.5	385.5	308.9
Mining and quarrying, except energy producing materials	26.9	109.4	0.1	0.5	3.8	18.2
Manufacturing	15620.8	13838.5	66.0	58.0	43.0	36.3
High tech	246.9	258.1	1.0	1.1	5.0	4.4
Manufacture of pharmaceuticals	13.1	12.3	0.1	0.1	2.2	2.0
Manufacture of office machinery and computers	4.3	0.1	0.02	0.0003	1.4	0.1
Manufacture of radio, television and communication equipment and apparatus	35.6	81.7	0.2	0.3	2.5	4.5
Manufacture of medical, precision and optical instruments, watches and clocks	11.0	68.6	0.05	0.3	0.7	3.8
Manufacture of aircrafts, including spacecrafts	182.9	95.4	0.8	0.4	16.6	6.4
Medium high tech	2913.9	2173.3	12.3	9.1	25.6	19.9
Manufacture of chemicals and chemical products	2550.3	1617.2	10.8	6.8	87.9	59.9
Manufacture of machinery and equipment, n.e.c.	44.8	62.3	0.2	0.3	1.3	1.9
Manufacture of electrical machinery and apparatus	49.3	100.3	0.2	0.4	1.9	3.6
Manufacture of motor vehicles, trailers and semi-trailers	198.1	253.5	0.8	1.1	10.4	15.8
Manufacture of other transport vehicles	71.4	140.1	0.3	0.6	14.3	28.0

(continued)

	Expenditure on ecological innovation				Expenditure on ecological innovation per enterprise, <i>million roubles</i>	
	Million roubles		Per cent			
	2010	2011	2010	2011	2010	2011
Medium low tech	9444.1	10340.1	39.9	43.3	113.8	104.4
Manufacture of coke, refined petroleum products	1585.2	2596.0	6.7	10.9	198.1	216.3
Manufacture of rubber and plastic products	43.7	9.6	0.2	0.04	3.1	0.7
Manufacture of other non-metallic mineral products	198.4	134.2	0.8	0.6	11.7	4.8
Manufacture of basic metals	7596.1	7575.9	32.1	31.7	245.0	270.6
Manufacture of fabricated metal products	2.2	21.2	0.01	0.1	0.3	1.5
Construction and repair of vessels	18.6	3.1	0.1	0.01	3.7	0.8
Low tech	1704.2	587.1	7.2	2.5	18.5	6.8
Manufacture of food products and beverages	122.7	156.9	0.5	0.7	2.7	3.1
Manufacture of tobacco products	3.0	10.1	0.01	0.04	3.0	5.1
Manufacture of textiles	7.4	5.3	0.03	0.02	1.2	0.8
Manufacture of wearing apparel, dressing and dyeing of fur	0.1	0.2	0.001	0.001	0.04	0.1
Manufacture of leather, leather products and footwear	28.7	–	0.1	–	9.6	–
Manufacture of wood and of products of wood and cork, except furniture	93.4	114.6	0.4	0.5	15.6	16.4
Manufacture of cellulose, wood pulp, paper and cardboard and appropriate paper products	1425.5	296.3	6.0	1.2	158.4	49.4
Publishing and printing, reproduction of recorded media	1.4	0.4	0.01	0.002	0.2	0.1

(continued)

	Expenditure on ecological innovation				Expenditure on ecological innovation per enterprise, <i>million roubles</i>	
	Million roubles		Per cent			
	2010	2011	2010	2011	2010	2011
Manufacture of furniture, manufacturing n.e.c.	20.0	3.2	0.1	0.01	2.9	0.6
Recycling	1.8	0.2	0.01	0.001	0.6	0.2
Electricity, gas and water supply	1081.7	956.3	4.6	4.0	23.5	21.3
Communications, computer and related activities, research and development, other business activities						
Total	2948.0	269.9	100	100	75.6	2.8
Communications	2.8	44.9	0.1	16.6	0.3	3.0
Computer and related activities	0.004	—	0.0001	—	0.002	—
Research and development	...	159.3	...	59.0	...	2.8
Other business activities	2945.2	65.7	99.9	24.4	113.3	2.4

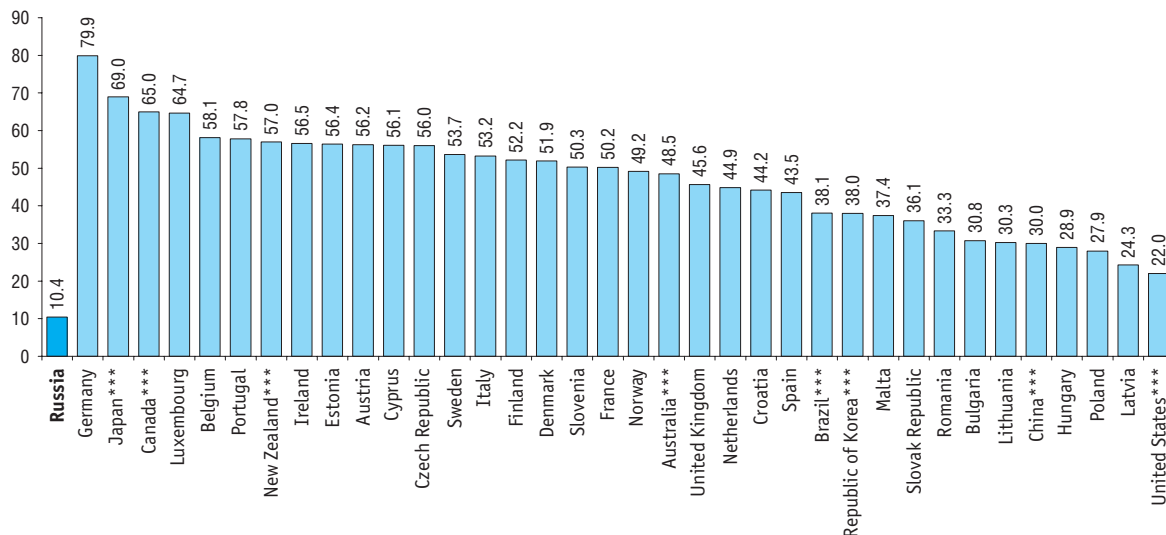


7. International Comparisons

7.1. INNOVATIVE ACTIVITY OF ENTERPRISES*

(enterprises engaged in technological, organisational, marketing innovation as a percentage of all enterprises)

2011**

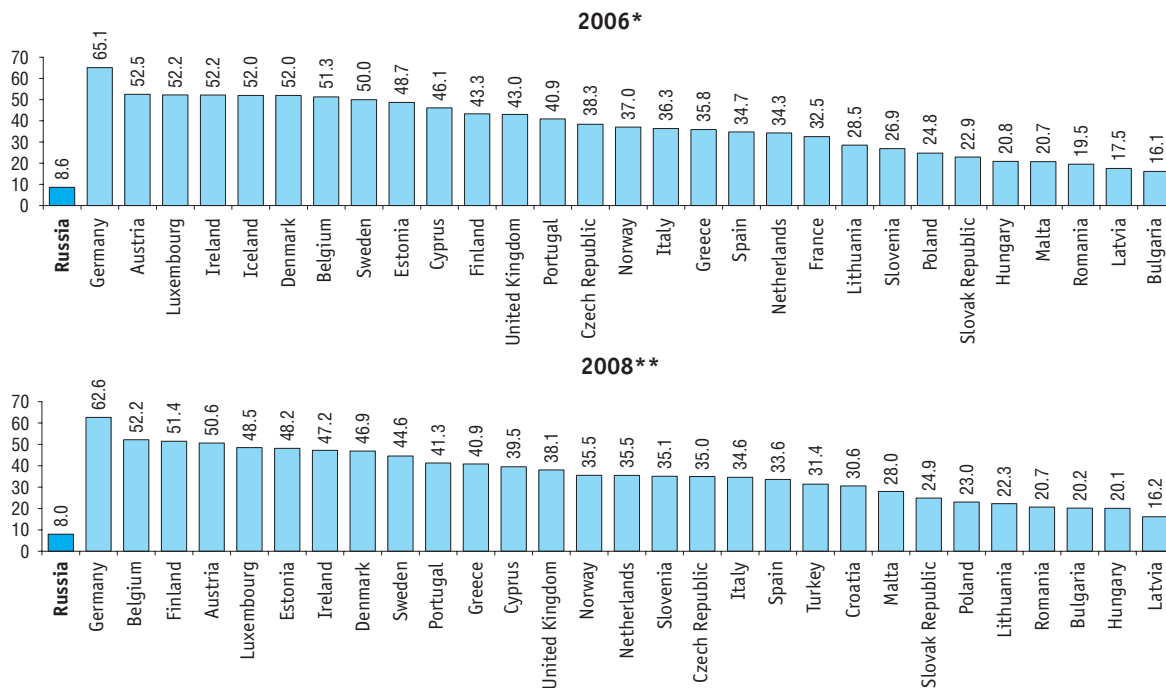


* This section summarises data on enterprises engaged in the following economic activities: mining and quarrying, manufacturing, electricity, gas and water supply, and services.

** Data for the EU countries, Norway and Croatia is based on results of the Community Innovation Survey 2006–2008 (source – Eurostat).

*** Data for Australia, Brazil, Canada, China, Korea, New Zealand, the USA and Japan on technological innovation (the USA – product innovation): Brazil (2006–2008) – industry, Australia (2008–2009), Canada (2002–2004), China (2004–2006), Republic of Korea (2001), New Zealand (2009), the USA (2006–2008), Japan (2006–2008) – manufacturing (source – national statistical agencies).

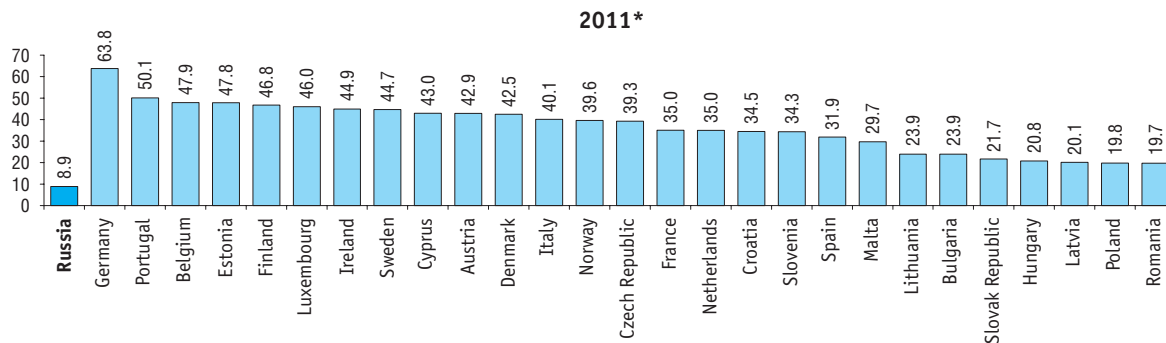
7.2. ENTERPRISES ENGAGED IN TECHNOLOGICAL INNOVATION AS A PERCENTAGE OF ALL ENTERPRISES



* Here and below innovation data for the EU countries, Iceland, Norway is based on the results of the Community Innovation Survey 2002–2004 (source – Eurostat).

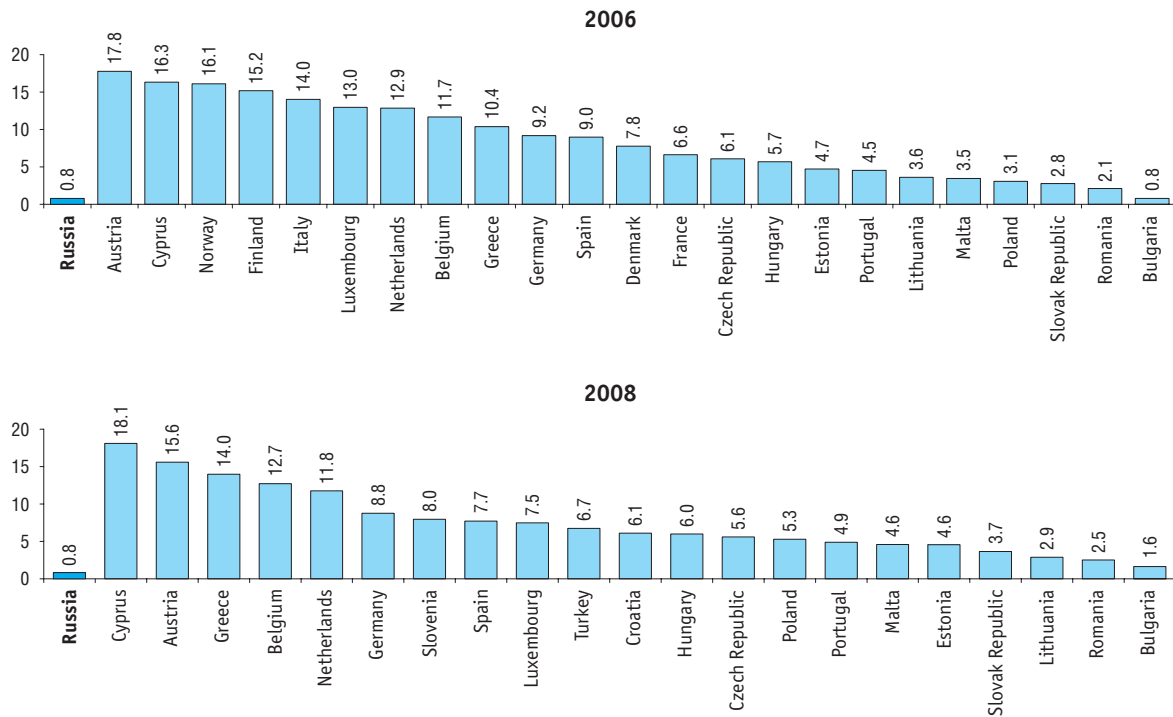
** Here and below innovation data for the EU countries, Iceland, Norway, Turkey and Croatia is based on the results of the Community Innovation Survey 2004–2006 (source – Eurostat).

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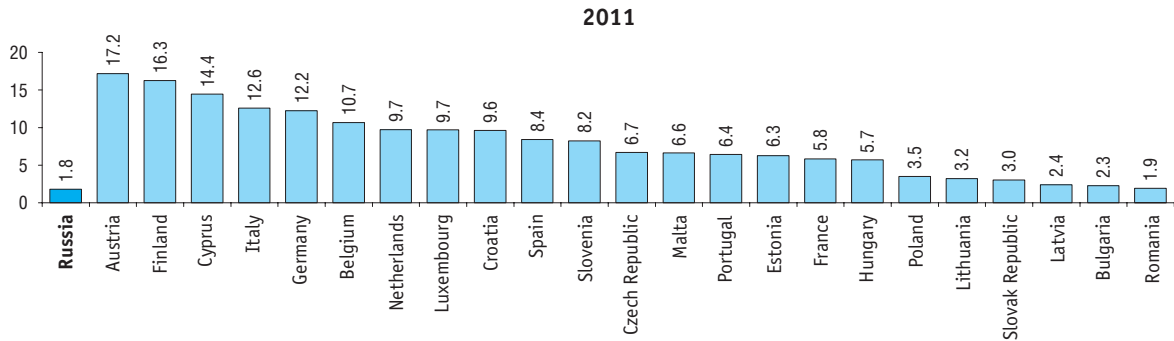


* Here and below innovation data for the EU countries, Norway and Croatia is based on the results of the Community Innovation Survey 2006–2008 (*source* – Eurostat).

7.3. ENTERPRISES HAVING RECEIVED FEDERAL BUDGET APPROPRIATIONS AS A PERCENTAGE OF ALL ENTERPRISES

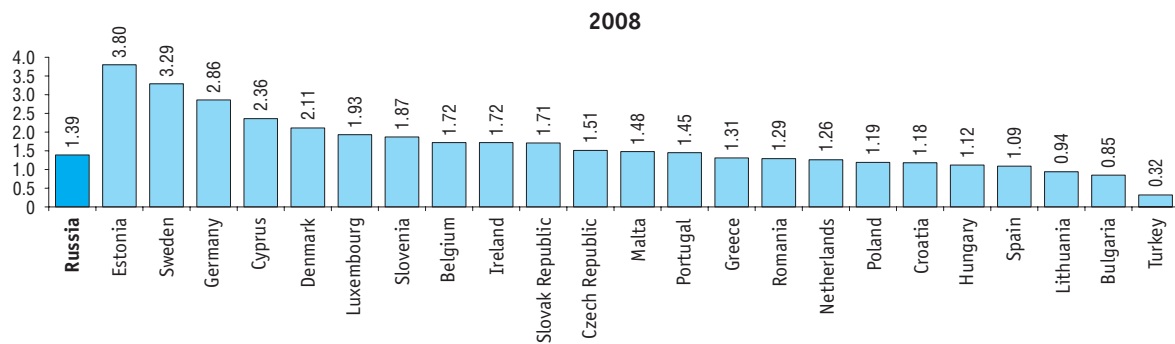
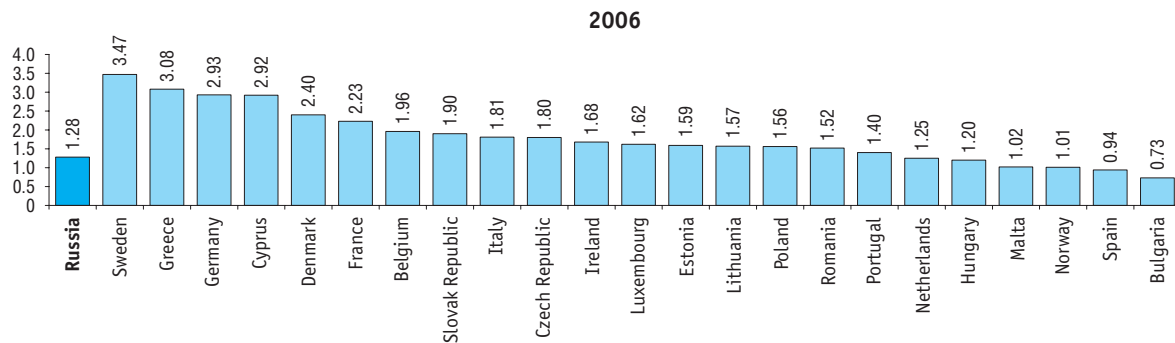


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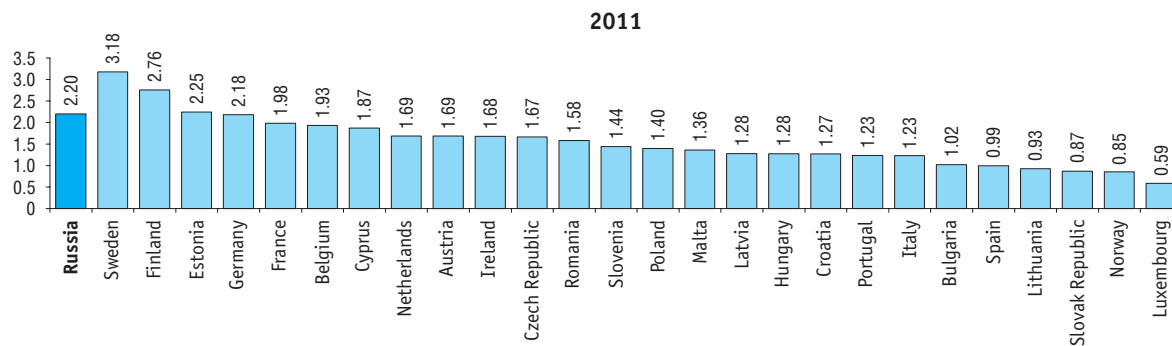


7.4. INTENSITY OF EXPENDITURE ON TECHNOLOGICAL INNOVATION

(expenditure on technological innovation as a percentage of total sales)

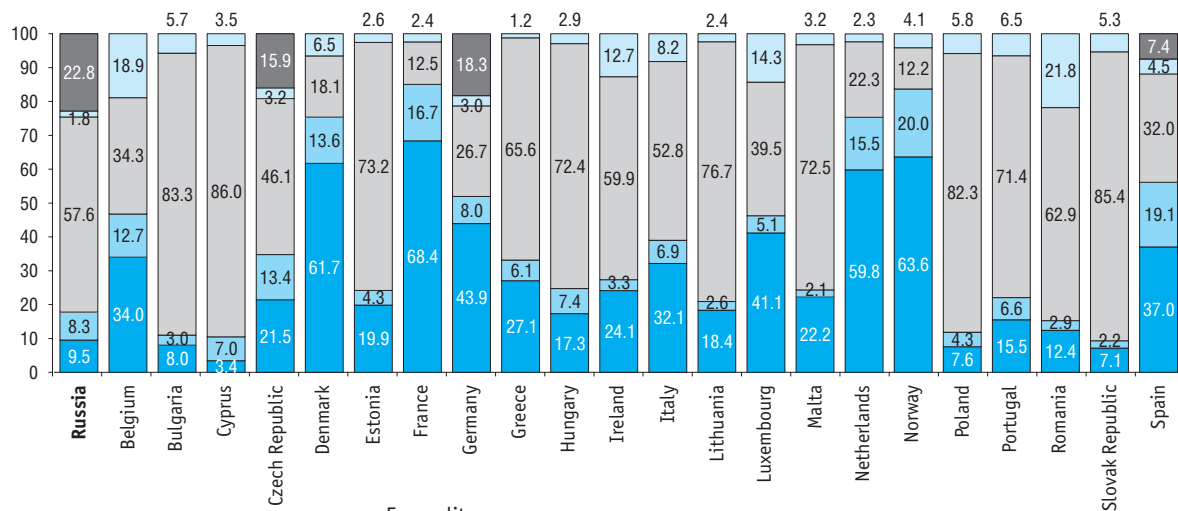


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7.5. PERCENTAGE DISTRIBUTION OF EXPENDITURE ON TECHNOLOGICAL INNOVATION BY INNOVATIVE ACTIVITY

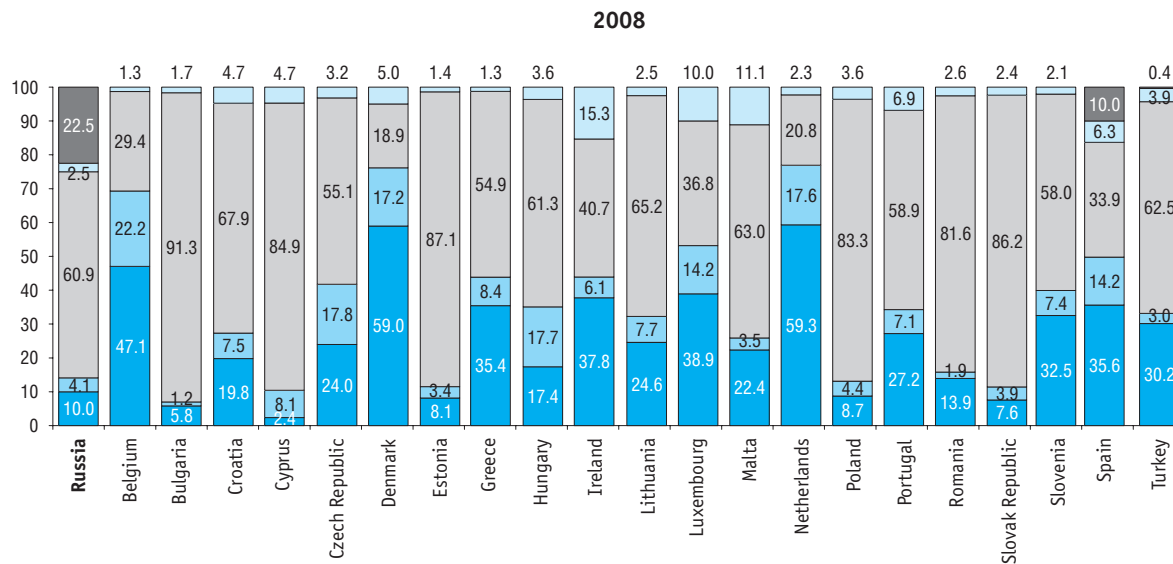
2006



Expenditure on:

- intramural R&D
- extramural R&D
- acquisition of machinery, equipment, software
- acquisition of technology
- other expenditure on technological innovation

(continued)



Expenditure on:

■ intramural R&D

■ extramural R&D

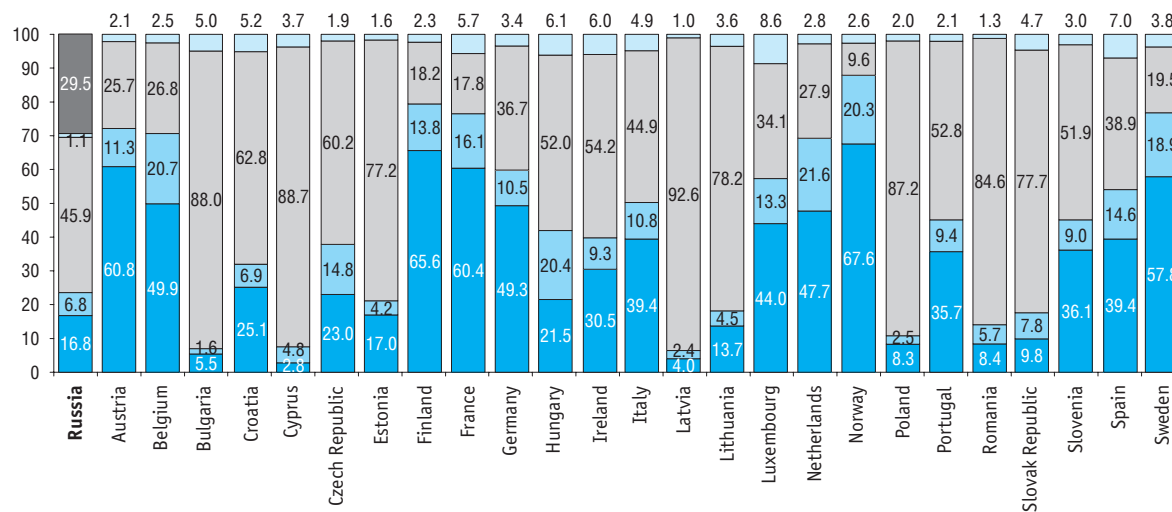
■ acquisition of machinery, equipment, software

■ acquisition of technology

■ other expenditure on technological innovation

(continued)

2011



Expenditure on:

■ intramural R&D

■ extramural R&D

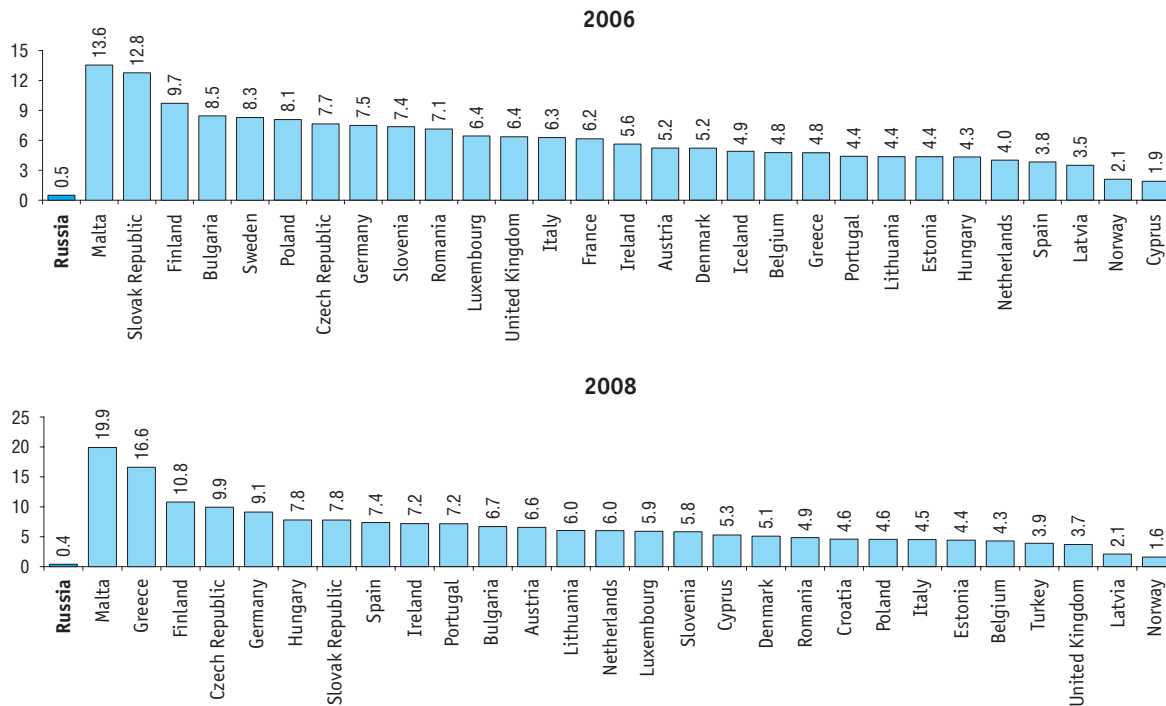
■ acquisition of machinery, equipment, software

■ acquisition of technology

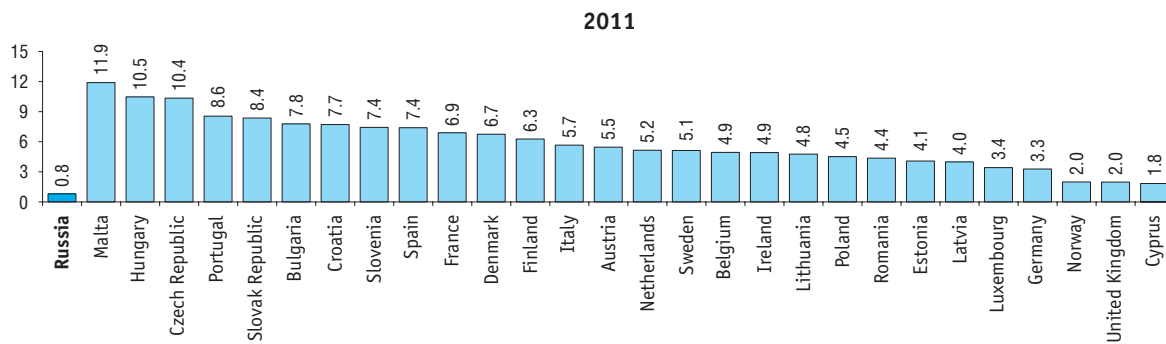
■ other expenditure on technological innovation

7.6. TECHNOLOGICALLY NEW OR SIGNIFICANTLY IMPROVED INNOVATIVE GOODS AND SERVICES

NEW TO THE MARKET

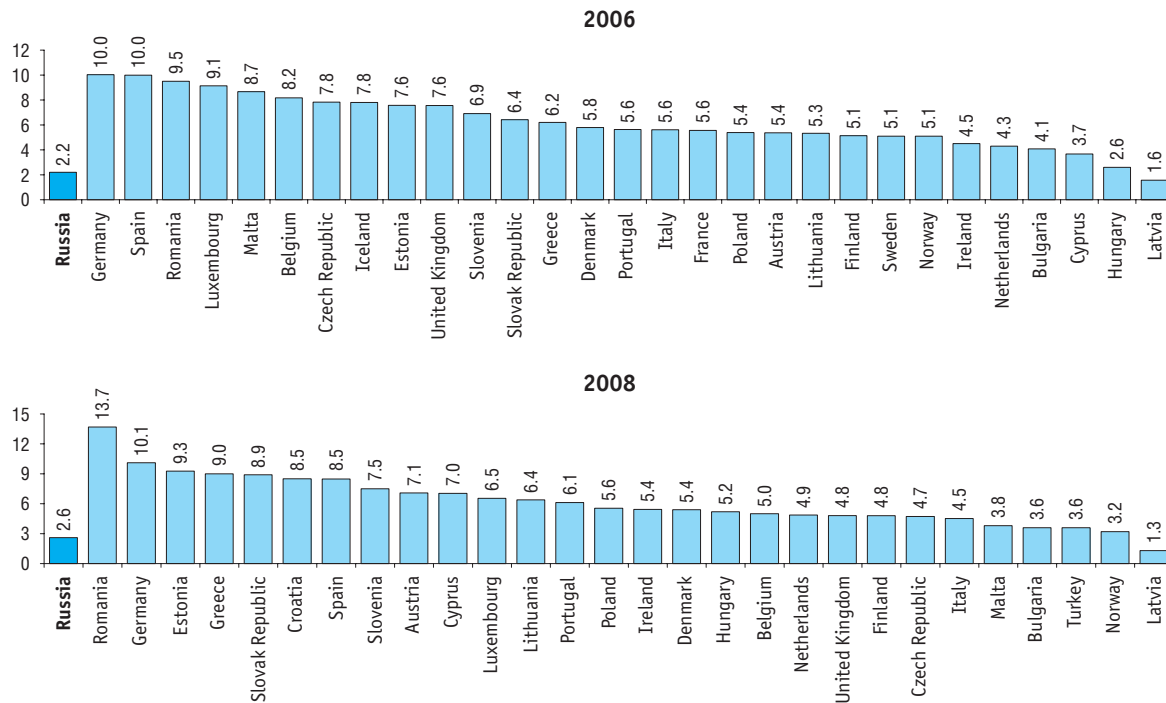
(as a percentage of total sales)

(continued)

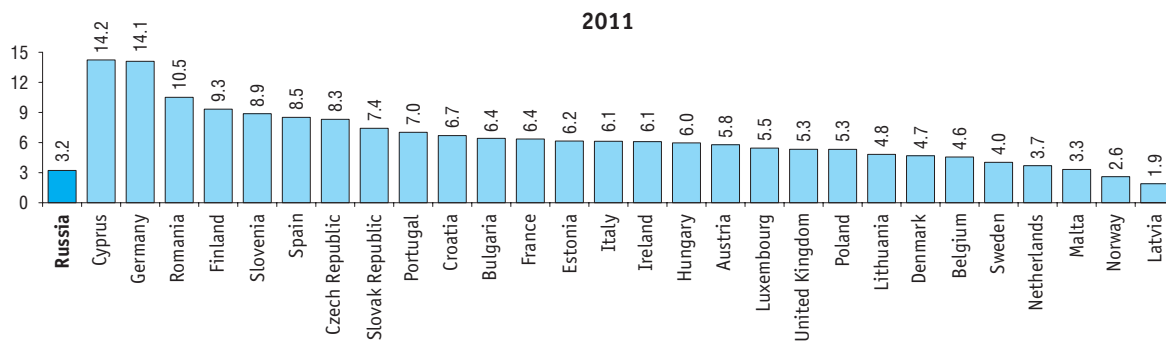


7.7. TECHNOLOGICALLY NEW OR SIGNIFICANTLY IMPROVED INNOVATIVE GOODS AND SERVICES NEW TO THE ENTERPRISE

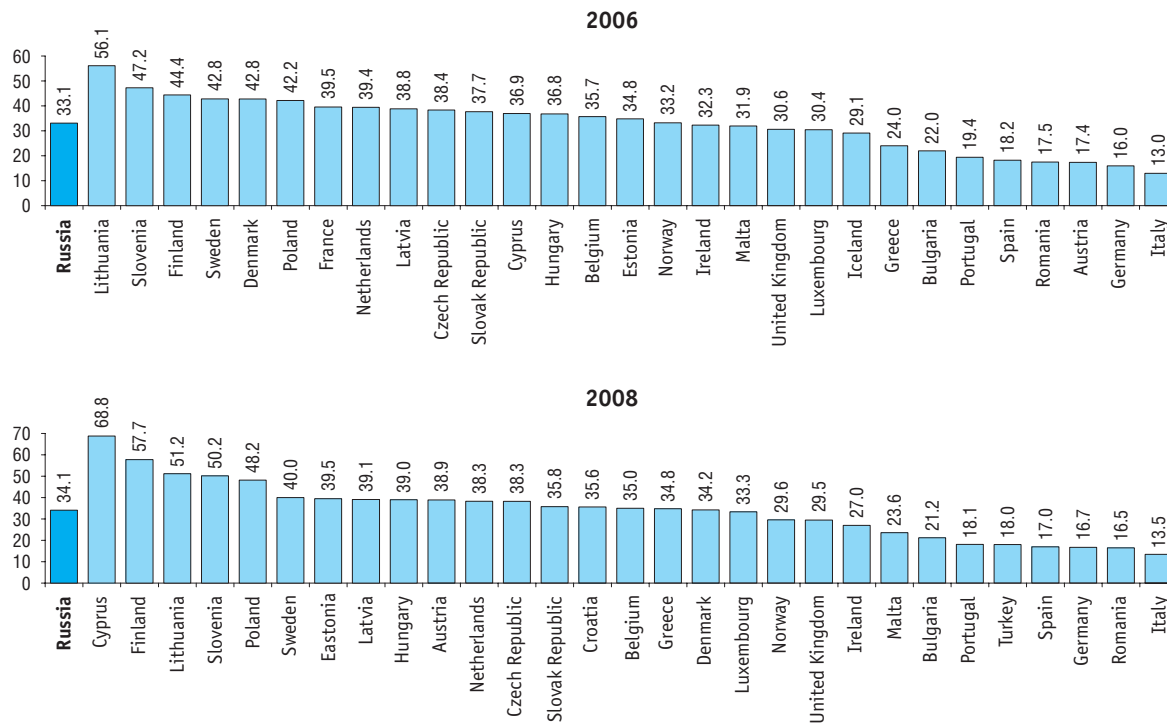
(as a percentage of total sales)



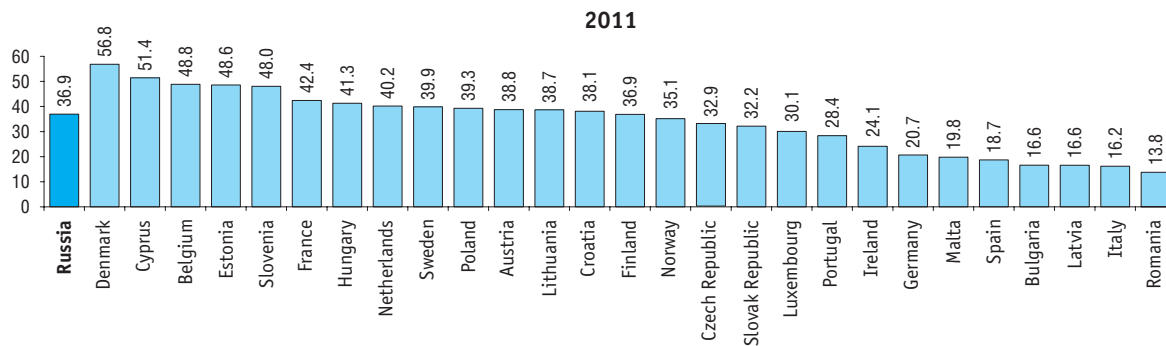
(continued)



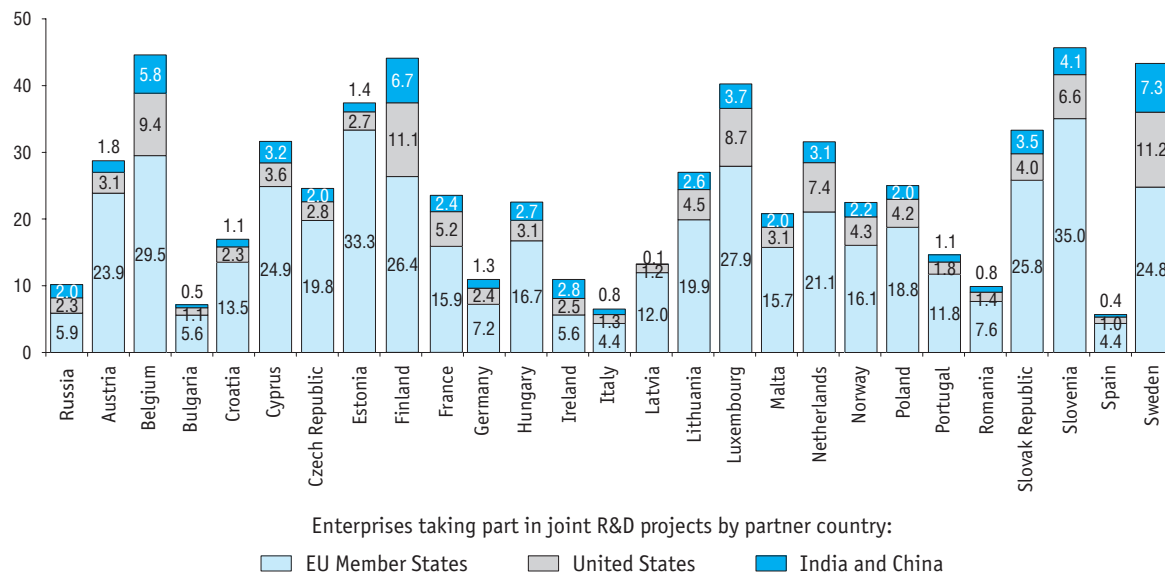
7.8. ENTERPRISES TAKING PART IN JOINT R&D PROJECTS AS A PERCENTAGE OF ALL ENTERPRISES ENGAGED IN TECHNOLOGICAL INNOVATION



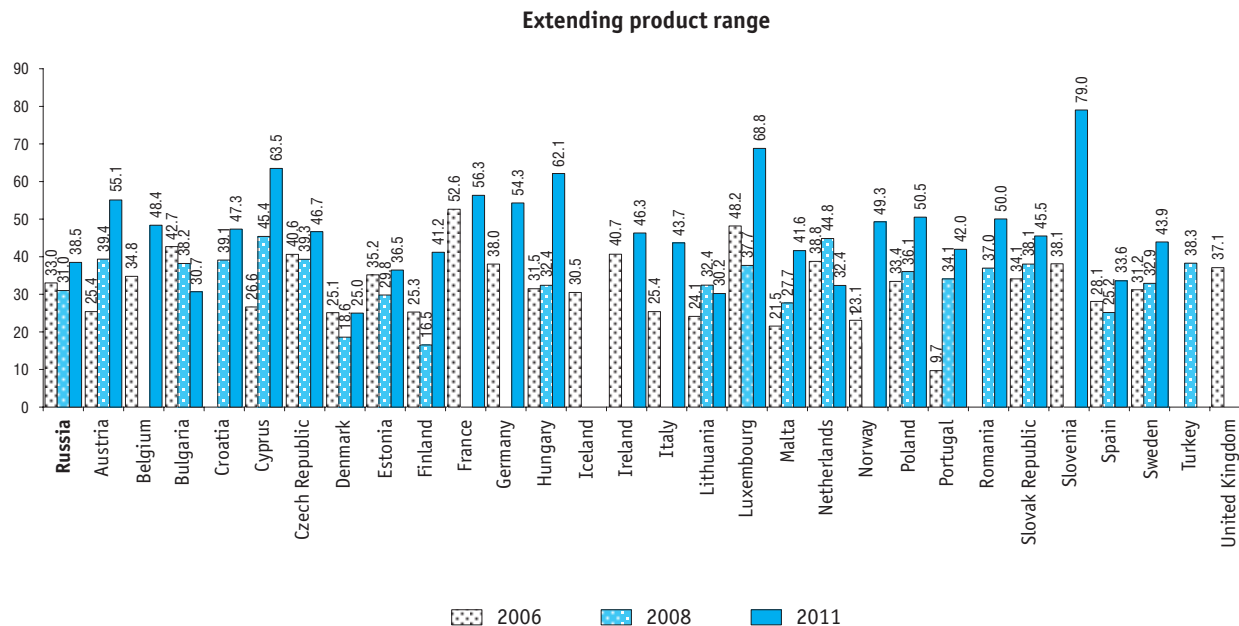
(continued)



7.9. ENTERPRISES TAKING PART IN JOINT R&D PROJECTS AS A PERCENTAGE OF ALL ENTERPRISES ENGAGED IN TECHNOLOGICAL INNOVATION BY PARTNER COUNTRY: 2011

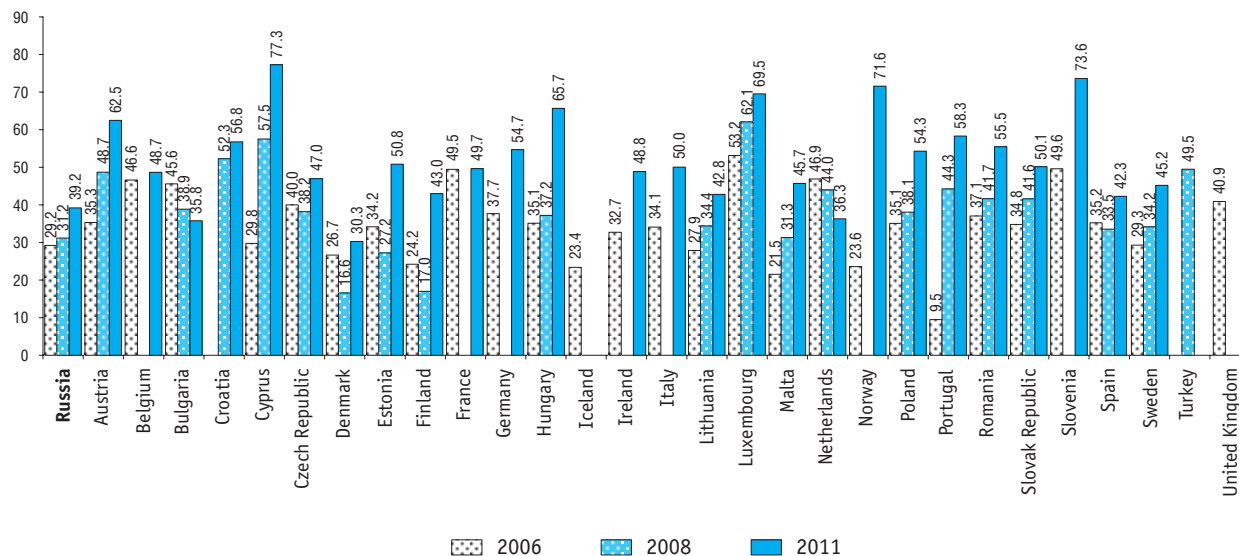


7.10. ENTERPRISES WITH HIGH DEGREE OF IMPACT OF INNOVATION AS A PERCENTAGE OF ALL ENTERPRISES*



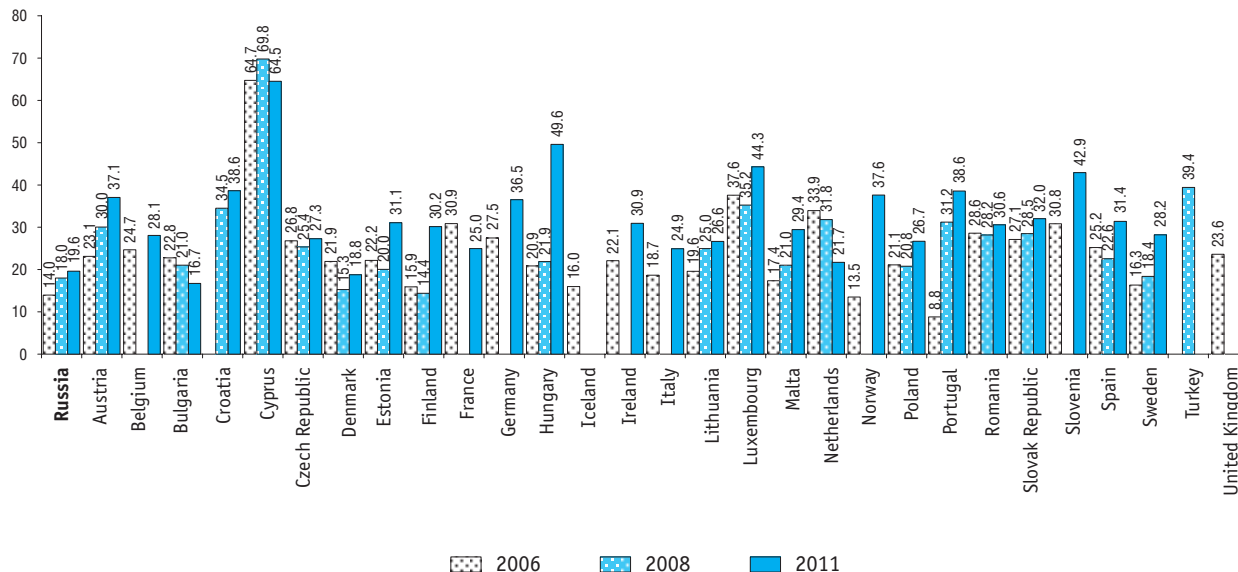
(continued)

Improving product quality



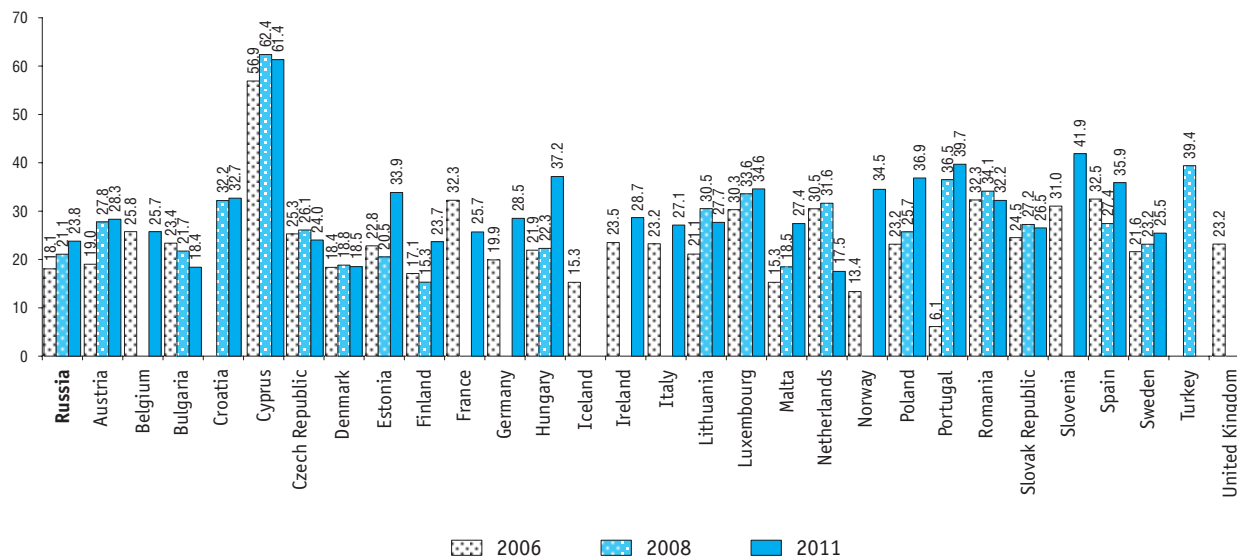
(continued)

Increasing flexibility of production



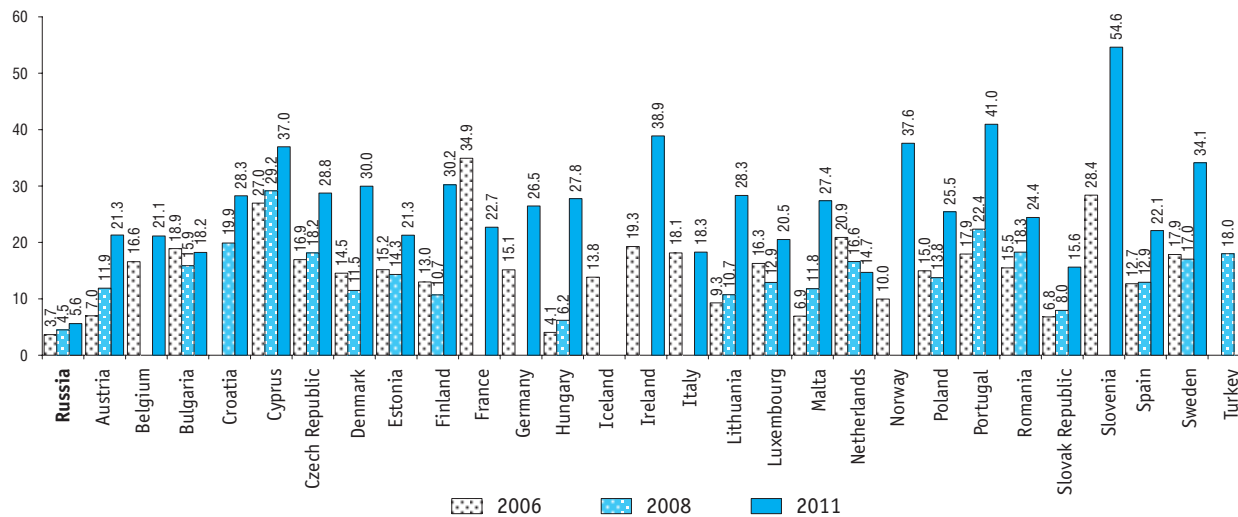
(continued)

Increasing industrial capacity



(continued)

Reducing labour costs



7.11. ENTERPRISES ENGAGED IN ECOLOGICAL INNOVATION BY COUNTRY AND INNOVATION TYPE: 2009-2011

(as a percentage of all enterprises having market-ready innovations during the last three years)

	Environmental benefits from the production of goods or services within an enterprise						Environmental benefits from the after sales use of a good or service by the end user		
	Reduced material use per unit of output	Reduced energy use per unit of output	Reduced CO ₂ 'footprint' (total CO ₂ production) by enterprise	Replaced materials with less polluting or hazardous substitutes	Reduced soil, water, noise, or air pollution	Recycled waste, water, or materials	Reduced energy use or energy loss	Reduced air, water, soil or noise pollution	Improved recycling of product after use
Russia	26.8	28.1	16.2	18.2	30.4	18.6	24.9	22.9	10.0
Austria	26.9	30.7	25.1	27.4	30.9	23.6	28.9	23.1	17.2
Belgium	22.8	30.3	26.6	25.7	28.8	35.7	27.0	20.8	24.0
Bulgaria	11.6	13.6	6.0	10.0	10.5	8.6	8.8	8.1	6.1
Croatia	28.8	32.7	18.1	30.4	39.2	36.1	32.6	36.1	31.2
Cyprus	10.8	13.6	8.6	8.2	13.5	13.2	5.4	6.1	5.6
Czech Republic	28.6	33.1	17.1	20.1	27.0	41.3	30.7	27.5	29.7
Estonia	27.4	11.7	13.4	22.3	10.0	10.6	15.0	10.2	10.4
Finland	32.0	32.9	25.9	24.0	22.8	32.2	33	20.3	22.2
France	27.6	28.2	21.0	26.5	24.7	38.8	23.9	17.6	17.7
Germany	38.8	46.4	38.5	25.5	41.7	41.2	44.0	35.5	30.8
Hungary	31.8	36.3	17.3	29.4	27.6	26.1	19.1	16.9	13.4
Ireland	28.2	33.5	33.1	30.9	27.1	54.3	33.1	23.8	37.1
Italy	13.0	16.5	13.4	15.3	23.8	25.8	23.5	23.5	23.3
Latvia	19.9	23.5	11.5	19.7	27.9	14.3	21.7	27.9	12.6
Lithuania	29.3	29.3	20.7	25.6	21.3	18.2	22.9	20.0	18.7
Luxembourg	20.8	24.8	27.1	26.6	22.6	41.4	30.1	18.3	29.2
Malta	23.0	27.0	13.7	19.8	12.5	27.8	19.8	6.9	16.9
Netherlands	17.1	21.1	15.9	22.3	19.3	21.5	19.8	15.9	13.8
Poland	23.5	25.3	16.1	24.9	28.2	23.7	24.8	25.3	17.0
Portugal	37.8	41.5	31.5	41.3	46.2	58.5	39.1	38.8	41.8
Romania	31.3	32.8	22.7	21.1	31.5	32.3	30.3	29.6	20.1
Slovak Republic	20.2	23.7	9.2	19.5	21.9	29.3	26.2	21.0	19.0
Sweden	24.0	28.6	23.7	24.2	23.0	21.8	28.1	23.6	18.5

Innovative activity of an enterprise characterises the degree of involvement an enterprise has in innovation in general, or in specific innovative activities, within a certain period. The level of innovative activity is generally defined as the ratio of enterprises engaged in technological, organisational, and marketing innovations to the total of enterprises surveyed in the country, sector, region, etc. within a specific period of time.

Innovative activities are all types of economic activities related to the transformation of ideas (usually the results of research and development or other scientific achievements) into technologically new or significantly improved goods and services, introduced to the market, as well as new or significantly improved technological processes used in service production (transfer) or implemented in manufacturing modes. Innovation activities incorporate scientific, technological, organisational, financial and commercial actions that lead to innovation.

In statistics the following basic **types of innovative activities** are distinguished:

- research and development;
- an instrumental prearrangement and organisation of production, covering acquisition of production equipment and instruments and changes in them as well as in the procedures, methods and standards of production and quality control needed to manufacture a new product or implement a new process;
- industrial design, graphic design and other developments (non-R&D) of new products, services, and methods of manufacturing (transfer), new processes, including the preparation of plans and drawings provided to determine the production procedures,

technical specifications, operational characteristics needed to create the concept, design, manufacturing and marketing of new products, processes, and services;

- acquisition of machinery and equipment for technological purposes related to technological innovation and other innovations;
- acquisition of technologies in the form of patents, licenses (contracts) for the utilisation of inventions, prototypes, utility models, know-how, and technological services as well as acquisition of software related to technological innovation;
- personnel training for the purposes of technological innovation;
- market research.

Innovative goods and services are products (goods and services) that have undergone technological modification in the last three years. These include newly introduced (or technologically modified) and improved products.

Technologically new or significantly improved goods and services are goods and services, based on new (including principally new) technologies or a combination of new and existing technologies. Range of application, operational characteristics, features, constructive implementation and composition of materials and components of products must be new or considerably different from previous products.

Improved goods and services are based on the introduction of new or significantly improved production methods involving the use of new production equipment, new methods of production or a combination of both.

Classification of innovative goods and services is developed according to the degree of novelty and market position. Types of novelty in the market of innovative goods and services include those that are entirely new to the firm's market or new to the firm, but not new to the market.

Expenditure on innovation is the actual expenditure related to implementation of various types of innovative activity performed within an enterprise (a sector, region, country). Innovation expenditure comprises current and capital expenditure. Innovation statistics covers the expenditure of technological, organisational and marketing innovations.

Marketing innovation includes newly implemented or significantly improved marketing methods that incorporate major changes in product package and design, innovative sales as well as the presentation and promotion of products, and new pricing strategies. Marketing innovations are aimed at better addressing customer needs and the expansion of consumer goods and services, and developing new markets with the objective of increasing a range of sales.

Nanotechnology – a set of methods and techniques for the analysis, design, and manufacture of nanostructures, devices, and systems, including targeted control and modification of the shape, size, interaction, and integration of the nanoscale elements that constitute them (about 1–100 nm at least in one dimension), which either bring improvement or induce the emergence of additional performance and / or consumer properties of the obtained products.

Enterprises engaged in innovative activity are those involved in development and introduction of technologically new or improved products or services, technologically new or improved processes or techniques of service production (transfer), and other types of innovative activities.

Organisational innovations is the implementation of a new organisational method in a firm's business practices, workplace organisation or external relations. Organisational innovations are aimed at increasing organisational performance by reducing administrative and transaction costs, improving workplace organisation (working time) and thereby increasing labour productivity, gaining access to the market assets, and reducing supply costs.

Ratings of the results of innovative activity, sources of information for technological innovation, methods used to protect value of innovation, and factors hampering technological innovation are calculated from assessments of enterprises of industry and services.

Technological innovations are the final result of innovative activities, embodied in a technologically new or improved product or service introduced on a market, a technologically new or improved process or technique of service production (transfer) used in practice. An accomplished innovation is one introduced to the market or implemented into the production process.

Technology exchange – technologies or individual technical achievements acquired (transferred) by an enterprise in a reference year (or in a one year period). Technology exchange includes the acquisition and transfer of scientific and technical knowledge and experience to provide knowledge-based services, to use technological process, and to produce goods and services on a non-contractual basis or in terms determined by an agreement between the parties.

Environmental innovation covers novelties that improve the environmental safety and reduce or prevent environmental impact and damage within completed technological, organisational and marketing innovation projects.