



Ministry of Education and Science
of the Russian Federation



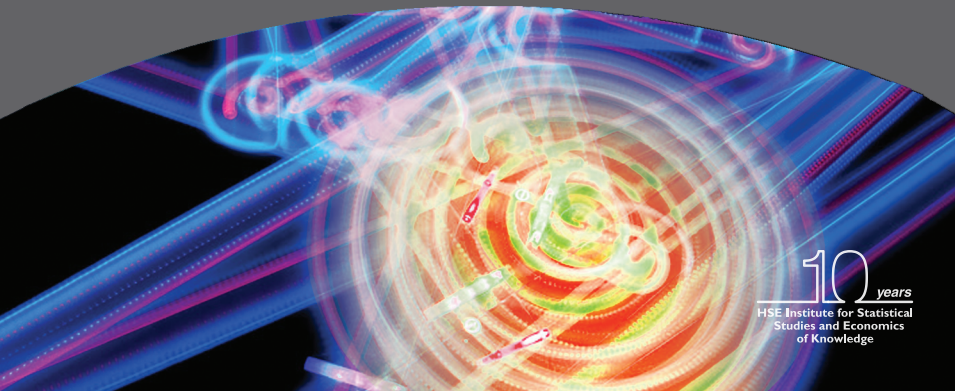
Federal Service
for State Statistics



HIGHER SCHOOL OF ECONOMICS
NATIONAL RESEARCH UNIVERSITY

Science and Technology. Innovation. Information Society

Pocket Data Book



10 years

HSE Institute for Statistical
Studies and Economics
of Knowledge



Ministry of Education and Science
of the Russian Federation



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for State Statistics



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NATIONAL RESEARCH UNIVERSITY

Science and Technology. Innovation. Information Society

Pocket Data Book

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The pocket data book contains main indicators characterizing S&T and innovation potential of the Russian Federation.

The data book includes information of the Federal Service for State Statistics, Federal Service for Intellectual Property, Patents and Trademarks, Organisation for Economic Co-operation and Development (OECD), Eurostat, UNESCO, World Intellectual Property Organisation, national statistical services of foreign countries, and results of own methodological and analytical studies of the HSE Institute for Statistical Studies and Economics of Knowledge.

In some cases, data for 2011 is preliminary.

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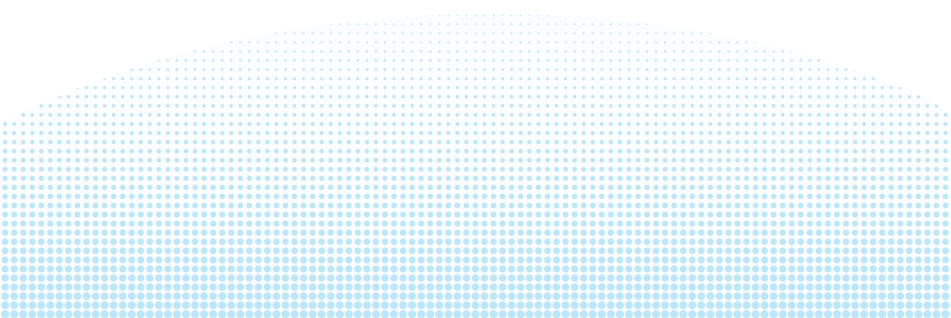
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Symbols used in tables are:

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

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

1. Institutions

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1.1. R&D institutions by type

	1991	2000	2009	2010	2011
Total	4564	4099	3536	3492	3682
Research institutes	1831	2686	1878	1840	1782
Design organisations	930	318	377	362	364
Construction project and exploration organisations	559	85	36	36	38
Experimental enterprises	15	33	57	47	49
Higher education institutions	450	390	506	517	581
Industrial enterprises	400	284	228	238	280
Others	379	303	454	452	588

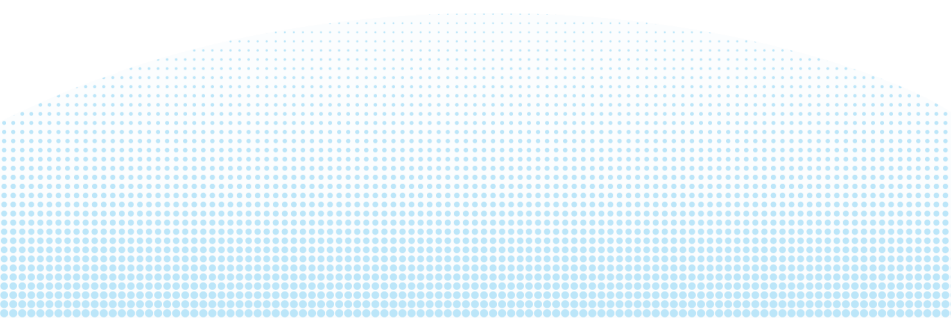
1.2. R&D institutions by sector of performance

	1991	2000	2009	2010	2011
Total	4564	4099	3536	3492	3682
Sectors of performance:					
government	992	1247	1406	1400	1457
business enterprise	3009	2278	1446	1405	1450
higher education	537	526	603	617	696
private non-profit	26	48	81	70	79

1.3. Number of R&D institutions in state academies of sciences

	1991	2000	2009	2010	2011
State academies of sciences – total	594	831	864	857	873
Russian Academy of Sciences	321	454	469	472	483
Russian Academy of Agricultural Sciences	213	291	302	294	295
Russian Academy of Medical Sciences	52	62	67	64	65
Russian Academy of Architecture and Construction Sciences	–	5	5	5	7
Russian Academy of Education	7	17	20	20	21
Russian Academy of Arts	1	2	1	2	2

2. R&D Personnel

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2.1. R&D personnel

(head-count)

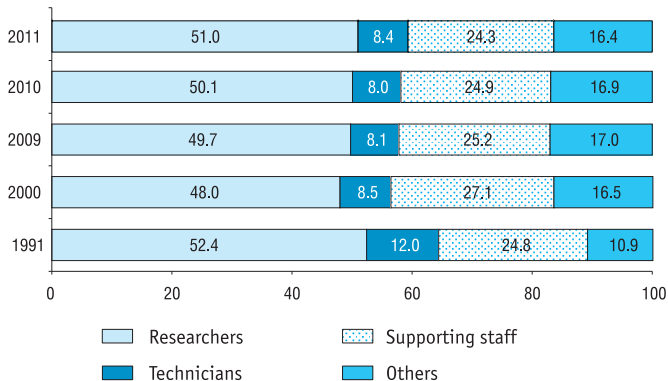
	1991	2000	2009	2010	2011
Total	1677784	887729	742433	736540	735273
Research institutes	970565	718434	443702	435304	420031
Design organisations	287504	56488	163764	157146	159620
Construction project and exploration organisations	149833	6811	6738	6324	6466
Experimental enterprises	19495	6145	1588	1558	1817
Higher education institutions	90550	31110	41767	46776	53944
Industrial enterprises	118414	54721	49042	51807	52004
Others	41423	14020	35832	37625	41391

2.2. R&D personnel by occupation

(head-count)

	1991	2000	2009	2010	2011
Total	1677784	887729	742433	736540	735273
Researchers	878482	425954	369237	368915	374791
Technicians	200606	75184	60045	59276	61562
Supporting staff	416590	240506	186995	183713	178449
Others	182106	146085	126156	124636	120471

2.3. Percentage distribution of R&D personnel by occupation



2.4. R&D personnel by sector of performance

(head-count)

	1991	2000	2009	2010	2011
Total	1677784	887729	742433	736540	735273
Sectors of performance:					
government	294500	255850	260360	259007	254896
business enterprise	1269200	590646	432415	423112	419752
higher education	112700	40787	48498	53290	59454
private non-profit	1400	446	1160	1131	1171

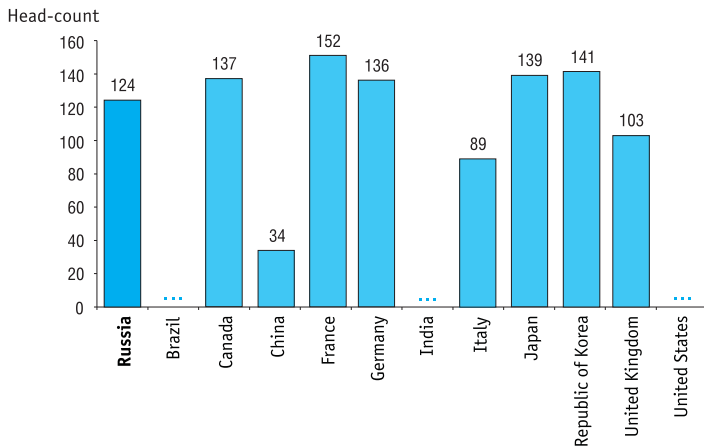
2.5. R&D personnel by country

(thousand person-years; in full-time equivalent)

	1994	2000	2011*
Russia	1264.1	1007.3	839.2
Brazil	...	133.0	265.2
Canada	143.6	167.9	234.7
China	783.2	922.1	2553.8
France	315.2	327.5	390.4
Germany	...	484.7	549.0
India	...	318.4	391.1
Italy	143.8	150.1	218.8
Japan	945.8	896.8	878.0
Republic of Korea	...	138.1	335.2
United Kingdom	267.8	288.6	319.5
United States	...	...	...

* Or nearest years for which data is available.

2.6. R&D personnel per 10 000 employment by country: 2011*



* Or nearest years for which data is available. Calculated by employment in full-time equivalent.

2.7. Researchers by sector of performance

(head-count)

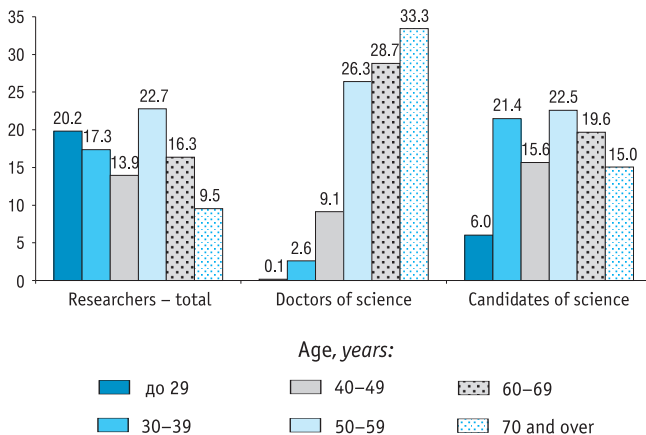
	1991	2000	2009	2010	2011
Total	878482	425954	369237	368915	374791
Sectors of performance:					
government	166100	129725	132955	131734	128717
business enterprise	637200	267640	201668	197785	202185
higher education	74300	28325	33847	38640	43121
private non-profit	900	264	767	756	768

2.8. Researchers with scientific degrees

(head-count)

	1991	2000	2009	2010	2011
Researchers with scientific degrees	134176	105911	101275	105114	109493
Doctors of science	16165	21949	25295	26789	27675
Candidates of science	118011	83962	75980	78325	81818

2.9. Percentage distribution of researchers by age: 2011



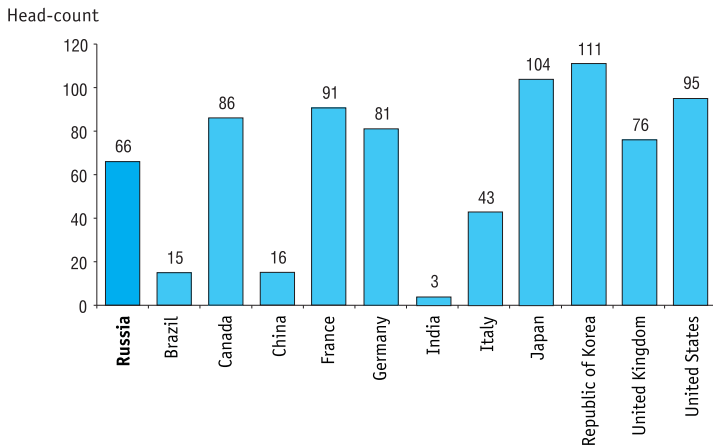
2.10. Researchers by country

(thousand person-years; in full-time equivalent)

	1994	2000	2011*
Russia	621.8	506.4	447.6
Brazil	...	73.9	137.2
Canada	85.9	107.9	146.3
China	552.0	695.1	1210.8
France	149.2	172.1	234.2
Germany	...	257.9	327.2
India	...	115.9	154.8
Italy	75.7	66.1	105.8
Japan	658.9	647.6	656.0
Republic of Korea	...	108.4	264.1
United Kingdom	134.0	170.6	235.4
United States	...	1293.6	1412.6

* Or nearest years for which data is available.

2.11. Researchers per 10 000 employment by country: 2011*

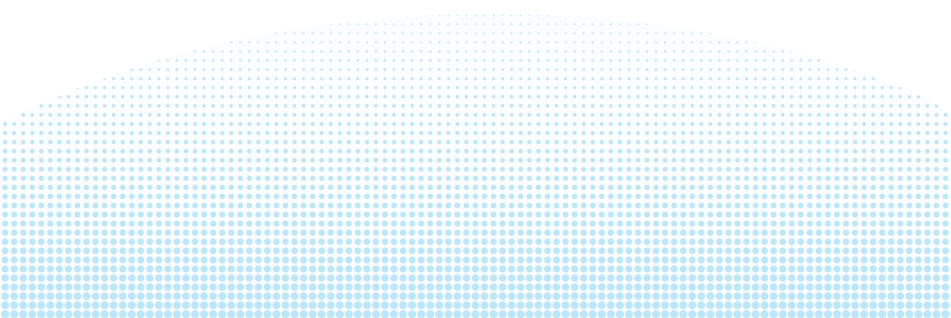


* Or nearest years for which data is available. Calculated by employment in full-time equivalent.

**2.12. R&D personnel in state academies of sciences
by occupation: 2011**
(head-count)

	Total	Researchers	Technicians	Supporting and other staff
State academies of sciences – total	135838	74940	13666	47232
Russian Academy of Sciences	94945	53702	9340	31903
Russian Academy of Agricultural Sciences	26723	12273	3156	11294
Russian Academy of Medical Sciences	11940	7378	1089	3473
Russian Academy of Architecture and Construction Sciences	558	382	58	118
Russian Academy of Education	1344	1044	19	281
Russian Academy of Arts	328	161	4	163

3. R&D Funding

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3.1. Gross domestic expenditure on R&D

(thousand roubles)

	2000	2008	2009	2010	2011
Gross domestic expenditure on R&D:					
at current prices	76697100.5	431073185.2	485834338.2	523377233.9	610426680.6
at constant 1989 prices	3321.2	5490.8	6067.0	5856.5	5898.6

3.2. Gross domestic expenditure on R&D by country

(million current PPP \$)

	1991	2000	2011*
Russia	19991.3	10726.9	33725.2
Brazil	...	12451.2	26016.5
Canada	8632.9	16689.7	24345.9
China	7535.9	27207.3	178980.7
France	24375.9	32967.0	49990.8
Germany	39563.8	52357.7	86299.4
India	...	12275.6	24324.7
Italy	12505.4	15251.2	24269.2
Japan	73377.7	98896.4	140832.8
Republic of Korea	7140.8	18558.5	53184.9
United Kingdom	19346.8	27863.3	39137.8
United States	161387.8	268121.0	401576.0

* Or nearest years for which data is available.

3.3. Gross domestic expenditure on R&D as a per cent of GDP by country

	1991	2000	2011*
Russia	1.43	1.05	1.12
Brazil	...	1.02	1.19
Canada	1.57	1.91	1.74
China	0.73	0.90	1.77
France	2.32	2.15	2.25
Germany	2.47	2.47	2.82
India	...	0.77	0.76
Italy	1.19	1.04	1.26
Japan	2.89	3.00	3.26
Republic of Korea	1.80	2.30	3.74
United Kingdom	2.03	1.81	1.76
United States	2.72	2.71	2.90

* Or nearest years for which data is available.

3.4. Federal budget appropriations on civil-purpose science and technology

	1998	2000	2009	2010	2011	2012*	2013*
Federal budget appropriations on civil-purpose science and technology,							
<i>million roubles</i>	6239.4	17091.7	219053.4	237644.0	313899.3	328183.0	329782.8
Basic research	2829.3	7866.2	83198.0	82172.0	91684.5	85691.9	85740.7
Applied research	3410.1	9225.5	135855.4	155472.0	222214.8	242491.2	244042.1
As a per cent:							
of GDP	0.24	0.23	0.56	0.53	0.58	...	...
of total federal budget appropriations	1.32	1.66	2.27	2.35	2.87	2.93	2.89

* Provisional.

3.5. Government budget appropriations on R&D by country

(million current PPP \$)

	1991	2000	2011*
Russia**	25840.0	4784.6	27088.6
Brazil***	...	6738.1	13344.7
Canada	3701.7	4574.3	8268.8
China***	...	9089.3	36085.8
France	13919.6	14742.5	18744.1
Germany	15740.1	16811.3	28422.4
India***	...	9856.2	16060.7
Italy	7631.6	9371.7	11859.2
Japan	10777.0	21223.1	32201.5
Republic of Korea	...	5024.7	14501.6
United Kingdom	8017.2	10360.7	14081.3
United States	65897.0	83612.5	148448.0

* Or nearest years for which data is available.

** Federal budget appropriations on science and technology.

*** Gross domestic expenditure on R&D financed by the government.

3.6. Gross domestic expenditure on R&D by source of funds

(million roubles; 1994 – billion roubles)

	1994	2000	2009	2010	2011
Gross domestic expenditure on R&D	5146.1	76697.1	485834.3	523377.2	610426.7
Government*	3205.6	42035.7	322889.2	368191.8	409449.4
Business enterprise sector	1814.3	25208.4	129171.0	133499.0	168957.6
Higher education sector	19.8	213.0	1896.2	2436.6	4664.5
Private non-profit sector	5.6	67.6	471.8	682.4	1209.7
Funds from abroad	100.8	9172.4	31406.2	18567.5	26145.5

*Including federal budget appropriations, general university funds, and government sector institutions' funds (e.g. own funds of R&D-performing institutions).

3.7. Percentage distribution of gross domestic expenditure on R&D by source of funds and country: 2011*

	Gross domestic expenditure on R&D	Government	Business enterprise sector	Funds from abroad	Other funds from national sources
Russia	100	67.1**	27.7	4.3	1.0
Brazil	100	52.7	45.4	–	1.9
Canada	100	34.3	46.5	7.3	11.9
China	100	24.0	71.7	1.3	...
France	100	39.7	51.0	7.3	2.0
Germany	100	29.7	66.1	3.8	0.3
India	100	66.1	33.9	–	–
Italy	100	42.1	44.2	9.4	4.3
Japan	100	17.2	75.9	0.4	6.4
Republic of Korea	100	26.7	71.8	0.2	1.2
United Kingdom	100	32.1	45.1	16.4	6.3
United States	100	31.3	61.6	–	7.1

* Or nearest years for which data is available.

** Including federal budget appropriations, general university funds, and government sector institutions' funds (e.g. own funds of R&D-performing institutions).

3.8. Percentage distribution of gross domestic expenditure on R&D by sector of performance and country: 2011*

	Gross domestic expenditure on R&D	Government sector	Business enterprise sector	Higher education sector	Private non-profit sector
Russia	100	29.8	61.0	9.0	0.2
Brazil	100	21.3	40.2	38.4	0.1
Canada	100	9.8	52.3	37.6	0.4
China	100	18.1	73.4	8.5	–
France	100	16.4	61.2	21.3	1.2
Germany	100	14.8	67.2	18.0	–
India	100	61.7	33.9	4.4	–
Italy	100	14.3	53.6	29.0	3.2
Japan	100	9.0	76.5	12.9	1.6
Republic of Korea	100	12.7	74.8	10.8	1.7
United Kingdom	100	9.4	60.9	27.2	2.4
United States	100	11.7	70.3	13.5	4.4

* Or nearest years for which data is available.

3.9. Gross domestic expenditure on R&D by priority S&T areas: 2011

(million roubles)

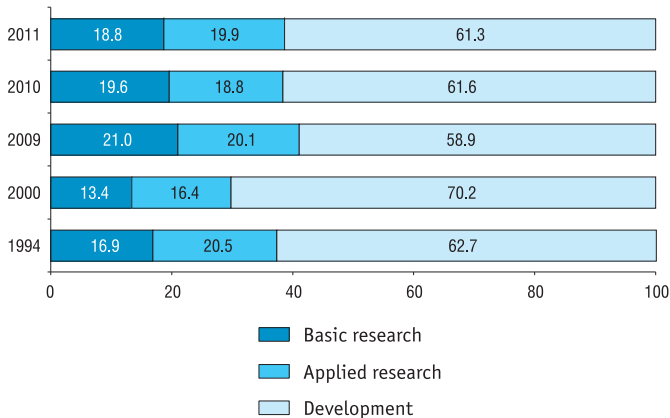
	Total	Of which funding from the federal budget
Gross domestic expenditure on R&D by priority S&T areas	361603.7	204909.3
Information and Telecommunications Systems	46609.9	28242.3
Industry of Nanosystems and Materials	23451.7	15952.3
Living Systems	19918.8	15889.6
Rational Nature Utilization	29033.5	15249.5
Power Engineering and Energy Saving	37318.8	14720.9
Transport, Aviation and Space Systems	148970.1	83327.4

3.10. Intramural current expenditure on R&D by type of activity

(million roubles; 1994 – billion roubles)

	1994	2000	2009	2010	2011
Intramural current expenditure on R&D	4996.9	73873.3	461006.2	489450.8	568386.7
Basic research	842.0	9875.7	96809.1	95881.4	106924.0
Applied research	1021.9	12117.5	92557.1	92010.7	113096.8
Development	3133.0	51880.2	271640.0	301558.8	348366.0

3.11. Percentage distribution of intramural current expenditure on R&D by type of activity



3.12. Gross domestic expenditure on R&D in state academies of sciences

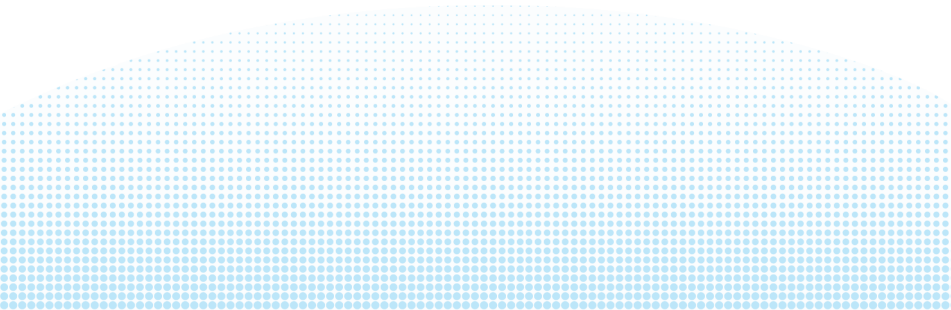
(million roubles; 1994 – billion roubles)

	1994	2000	2009	2010	2011
State academies of sciences – total	743.4	9091.9	78818.0	78636.4	86974.1
Russian Academy of Sciences	552.3	7449.3	61370.7	62471.8	67408.9
Russian Academy of Agricultural Sciences	126.4	1065.9	9705.2	8775.4	9701.0
Russian Academy of Medical Sciences	58.1	506.5	6688.5	6105.9	8403.1
Russian Academy of Architecture and Construction Sciences	...	16.3	408.2	385.6	487.3
Russian Academy of Education	6.1	50.7	613.4	578.0	594.0
Russian Academy of Arts	0.5	3.1	32.1	319.7	379.8

3.13. Average monthly salaries of R&D personnel

	1995	2000	2009	2010	2011
Average monthly salaries, roubles; 1995 – thousand roubles	305.3	2322.9	22104.3	25043.5	28387.5
As a per cent of that:					
in the national economy (=100%)	64.6	104.5	118.6	119.5	121.5
in manufacturing (=100%)	67.3	98.2	133.3	131.3	130.3
in construction (=100%)	52.0	88.0	122.0	118.3	119.9

4. R&D Output

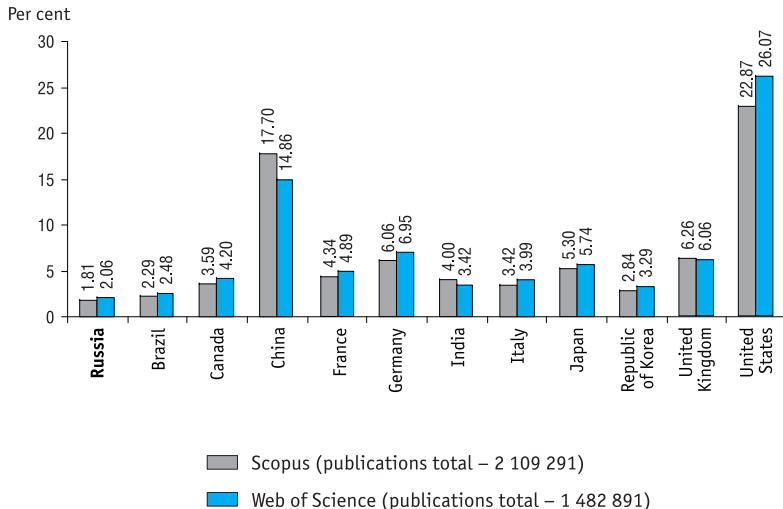


4.1. Publications in scientific journals indexed in international databases by country*

	Scopus		Web of Science	
	2000	2011	2000	2011
Russia	30620	38195	31270	30500
Brazil	13170	48373	12409	36841
Canada	38113	75790	39710	62257
China	44617	373382	37447	220376
France	55991	91562	55838	72562
Germany	77247	127824	78416	103062
India	22596	84414	18518	50684
Italy	38104	72206	37341	59233
Japan	90322	111754	85941	85135
Republic of Korea	16655	59939	16285	48824
United Kingdom	82246	132124	70698	89799
United States	304735	482476	311178	386658

* Here and below including articles, reviews and conference papers (as of September 3, 2012).

4.2. Country shares in the total number of publications in scientific journals indexed in international databases: 2011



4.3. Patent applications and patents granted

	1995	2000	2010	2011
Patent applications filed in the Russian Federation	22202	28688	42500	41414
By residents	17551	23377	28722	26495
By non-residents	4651	5311	13778	14919
Patents granted with the indication of the Russian Federation	31556*	17592	30322	29999
To residents	20861	14444	21627	20339
To non-residents	4772	3148	8695	9660
Patents valid with the indication of the Russian Federation	76186	144325	181904	168558

* Including patents granted in exchange for author certificates.

4.4. Patent applications by country*

	1995	2000	2011**
Russia	22202	28688	41414
Brazil	7448	17376	22686
Canada	26592	39622	35449
China	18699	51906	391177
France	15896	17353	16580
Germany	46158	62142	59245
India	6566	8538	34287
Italy	...	9273	9723
Japan	368831	419543	344598
Republic of Korea	78499	102010	170101
United Kingdom	27521	32747	21929
United States	228142	295895	490226

* All patent applications filed by residents and non-residents in national patent agencies.

** Or nearest years for which data is available.

Source: WIPO Statistics Database, October 2012.

4.5. Patent applications filed by residents and non-residents by country: 2011*

	Patent applications filed in the country		
	total	of which	
		by residents	by non-residents
Russia	41414	26495	14919
Brazil	22686	2705	19981
Canada	35449	4550	30899
China	391177	293066	98111
France	16580	14748	1832
Germany	59245	47047	12198
India	34287	7262	27025
Italy	9723	8877	846
Japan	344598	290081	54517
Republic of Korea	170101	131805	38296
United Kingdom	21929	15490	6439
United States	490226	241977	248249

* Or nearest years for which data is available.

Source: WIPO Statistics Database, October 2012.

4.6. Patents granted with the indication of the Russian Federation by section of the International Patent Classification*

	1995	2000	2010	2011
Total	25633	17592	30322	29999
A. Human necessities	4207	4347	8468	8907
B. Performing operations; transporting	6129	2905	4711	4412
C. Chemistry; metallurgy	4529	3332	5167	5512
D. Textiles; paper	437	197	320	301
E. Fixed constructions	2042	1156	1977	1603
F. Mechanical engineering; lighting; heating; weapons; blasting	3033	2144	3062	2761
G. Physics	3083	2172	3734	3881
H. Electricity	2173	1339	2883	2622

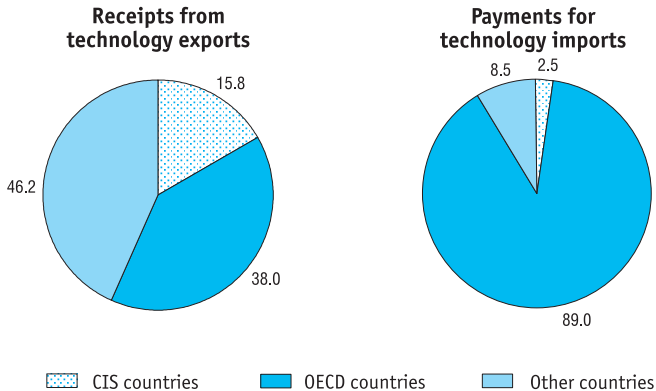
* Patents granted to resident and non-resident applicants.

4.7. Technology balance of payments by category of contracts: 2011

(million US \$)

	Receipts from exports	Payments for imports	Balance of payments
Total	584.7	1862.6	-1277.9
Invention patents	0.1	3.5	-3.4
Unpatented inventions	0.2	–	0.2
Patent licenses	20.3	71.8	-51.4
Utility models	0.7	2.3	-1.6
Know-how	4.9	92.2	-87.3
Trademarks	1.3	406.7	-405.4
Industrial designs	2.3	0.0	2.3
Engineering services	382.2	692.5	-310.3
Research and development	111.5	72.7	38.8
Others	61.2	521.0	-459.8

4.8. Percentage distribution of technology exports and imports in Russia by country groups: 2011



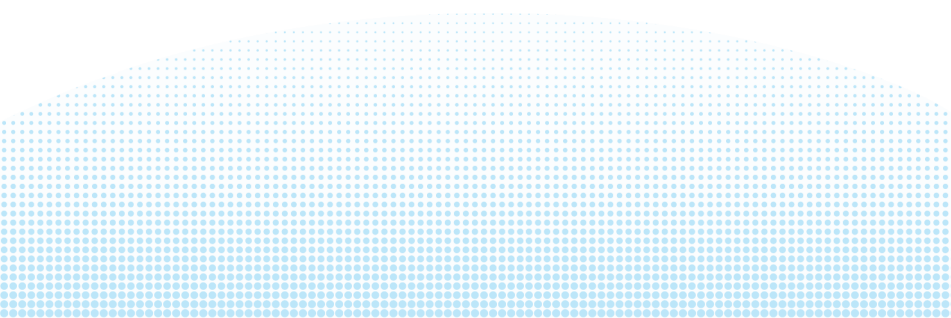
4.9. Technology balance of payments by country: 2011*

(million US \$)

	Receipts from exports	Payments for imports	Balance of payments
Russia	584.7	1862.6	-1277.9
Brazilia	—	—	—
Canada	2661.6	1059.0	1602.6
China	—	—	—
France	5188.3	3233.5	1954.8
Germany	55382.1	45841.0	9541.2
India	—	—	—
Italy	9821.7	15774.7	-5953.0
Japan	27758.5	6038.6	21719.9
Republic of Korea	3581.9	8438.1	-4856.2
United Kingdom	43677.3	24083.0	19594.3
United States	96400.0	66030.0	30370.0

* Or nearest years for which data is available.

5. Nanotechnology

A decorative graphic at the bottom of the slide consisting of a dense grid of small blue dots. The dots are arranged in a pattern that tapers towards the top, creating a semi-circular or wave-like shape that spans the width of the slide.

5.1. Nanotechnology R&D

	Total		As a per cent of the national total	
	2010	2011	2010	2011
Institutions engaged in nanotechnology R&D	480	485	13.7	13.2
Researchers engaged in nanotechnology R&D, <i>head-count</i>	17928	21166	4.9	5.6
Gross domestic expenditure on nanotechnology R&D, <i>million roubles</i>	21283.7	26086.0	4.1	4.3

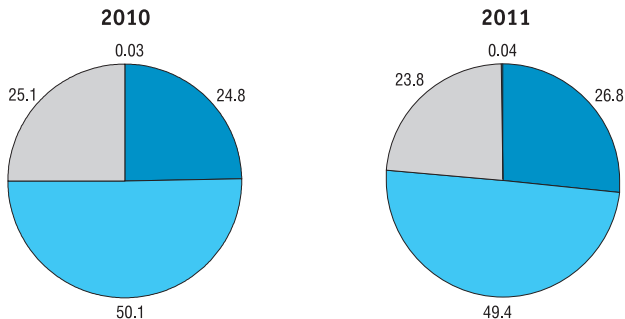
5.2. Nanotechnology R&D by type of institution

	Number of researchers engaged in nanotechnology R&D, <i>head-count</i>		Gross domestic expenditure on nanotechnology R&D, <i>million roubles</i>	
	2010	2011	2010	2011
Total	17928	21166	21283.7	26086.0
Research institutes	10453	11862	8470.6	10207.1
Design organisations	547	426	890.9	945.2
Construction project and exploration organisations	–	7	–	2.8
Experimental enterprises	35	7	6.3	2.7
Higher education institutions	4497	6159	4819.0	5821.1
Industrial enterprises	459	635	744.4	1814.2
Others	1937	2070	6352.5	7292.9

5.3. Nanotechnology R&D by sector of performance

	Number of researchers engaged in nanotechnology R&D, <i>head-count</i>		Gross domestic expenditure on nanotechnology R&D, <i>million roubles</i>	
	2010	2011	2010	2011
Total	17928	21166	21283.7	26086.0
Sectors of performance:				
government	7267	7711	5283.9	6993.0
business enterprise	5608	6668	10659.5	12877.2
higher education	5022	6719	5334.4	6205.8
private non-profit	31	68	5.9	10.0

5.4. Percentage distribution of gross domestic expenditure on nanotechnology R&D by sector of performance



Sectors of performance:

government

higher education

business enterprise

private non-profit

5.5. Development and use of nanotechnology by economic activity: 2011

	Number of nanotechnologies developed	Number of nanotechnologies used
Total	258	526
Mining and quarrying	–	1
Manufacturing	28	146
Electricity, gas and water supply	1	14
Transport and communications	–	8
Real estate, renting and business activities	128	279
Research and development	127	206
Other business activities	1	73
Education	101	78
Higher education	101	78

5.6. Innovative nanotechnology-related goods and services

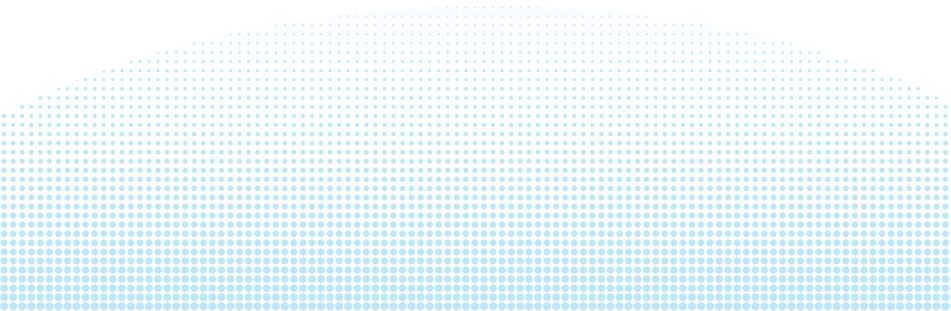
(million roubles)

	Innovative nanotechnology-related products and services		Of which exports			
			total		to CIS countries	
	2010	2011	2010	2011	2010	2011
Manufacturing	53402.6	63752.1	23867.2	12360.3	245.9	1184.2
High tech	2578.1	3399.5	77.9	125.8	21.1	17.5
Medium high tech	1491.6	15879.4	260.1	1465.6	133.4	1139.5
Medium low tech	48213.5	43334.7	23521.3	10768.2	89.1	27.3
Low tech	1119.4	1138.4	7.9	0.6	2.3	–

5.7. Sales of nanotechnology-related goods and services by economic activity

	Sales of nanotechnology-related goods and services: January–December 2011		As a per cent of the respective period of the previous year
	Million roubles	As a per cent of total	
Total	154804.8	100	131.3
Mining and quarrying	18.3	0.01	–
Manufacturing	148904.8	96.2	129.3
Electricity, gas and water supply	3.0	0.002	124.7
Wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods	34.0	0.02	95.3
Transport and communications	21.0	0.01	151.7
Real estate, renting and business activities	5599.3	3.6	214.4
Research and development	5939.7	3.5	214.4
Education	224.3	0.1	273.3
Higher education	224.3	0.1	273.3

6. Innovation



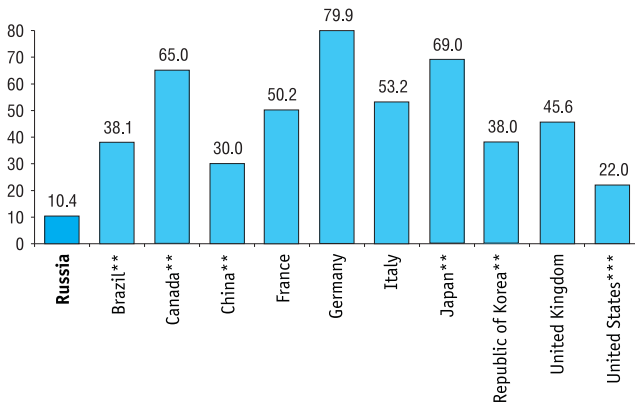
6.1. Main indicators of innovation in industry

	2000	2005	2007	2009	2010	2011
Enterprises engaged in technological innovation as a per cent of all industrial enterprises	10.6	9.3	9.4	9.4	9.3	9.6
Sales of innovative goods and services, <i>million roubles</i>	154135.0	545540.0	916131.6	877684.8	1165747.6	1847370.4
At constant 1995 prices	32626.7	52546.2	67309.7	53576.8	63764.4	87260.7
As a per cent of total sales	4.4	5.0	5.5	4.6	4.9	6.1
Expenditure on technological innovation, <i>million roubles</i>	49428.0	125678.2	207499.2	358861.1	349763.3	469442.2
At constant 1995 prices	10462.7	12105.3	15245.3	21906.1	19131.5	22174.1
As a per cent of total sales	1.4	1.2	1.2	1.9	1.5	1.5

6.2. Innovative activity: 2011

	Enterprises engaged in innovation as a per cent of all enterprises			
	Total	Technological	Organisational	Marketing
Industry	11.1	9.6	3.5	2.5
Mining and quarrying	8.4	6.8	3.9	0.7
Manufacturing	13.3	11.6	4.1	3.4
High tech	30.1	28.0	9.3	6.7
Medium high tech	19.7	17.6	6.3	4.6
Medium low tech	13.1	11.5	3.9	2.4
Low tech	7.7	6.3	2.2	2.6
Electricity, gas and water supply	5.6	4.7	1.6	0.4
Services	9.2	7.8	3.0	1.9

6.3. Enterprises engaged in technological, organisational or marketing innovation as a per cent of all enterprises by country: 2011*



* Or nearest years for which data is available.

** Enterprises engaged in technological innovation as a per cent of all enterprises.

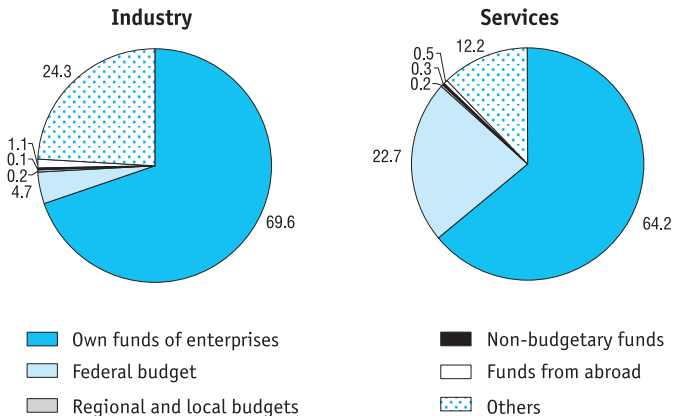
*** Enterprises engaged in product innovation as a per cent of all enterprises.

6.4. Expenditure on technological innovation: 2011

	Total, <i>million roubles</i>	Of which, <i>per cent</i>		
		R&D	Acquisition of machinery and equip- ment	Acquisition of technology
Industry	469442.2	14.9	60.9	0.7
Mining and quarrying	70239.3	15.5	76.4	0.3
Manufacturing	370006.0	14.5	59.3	0.5
High tech	38460.7	39.0	41.2	0.2
Medium high tech	66501.1	20.0	44.6	1.0
Medium low tech	213314.3	5.8	70.4	0.5
Low tech	26347.8	8.7	61.4	0.3
Electricity, gas and water supply	29196.9	17.5	43.4	4.1
Services	264373.7	39.0	16.2	1.8

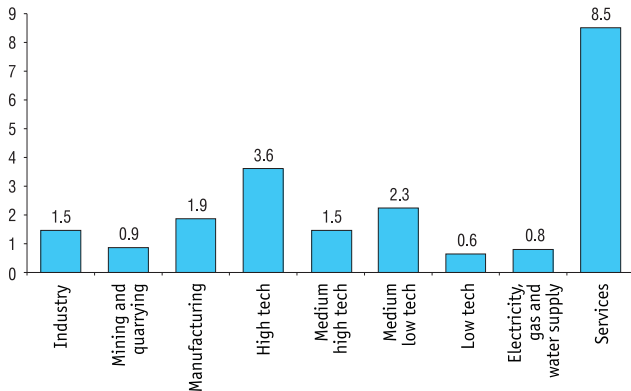
6.5. Expenditure on technological innovation by source of funds: 2011

(per cent)



6.6. Intensity of expenditure on technological innovation: 2011

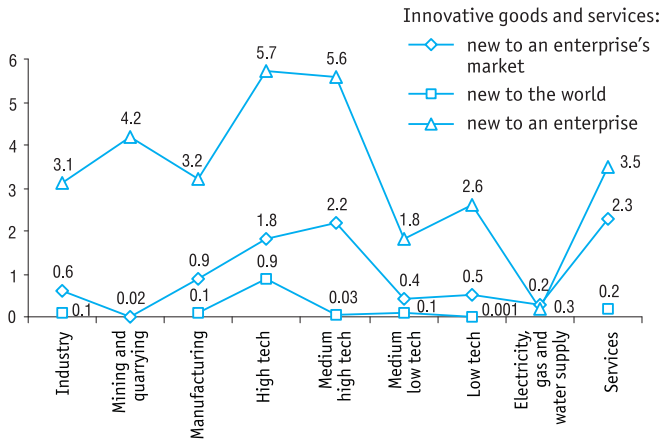
(ratio of expenditure to total sales of enterprises engaged in technological innovation; per cent)



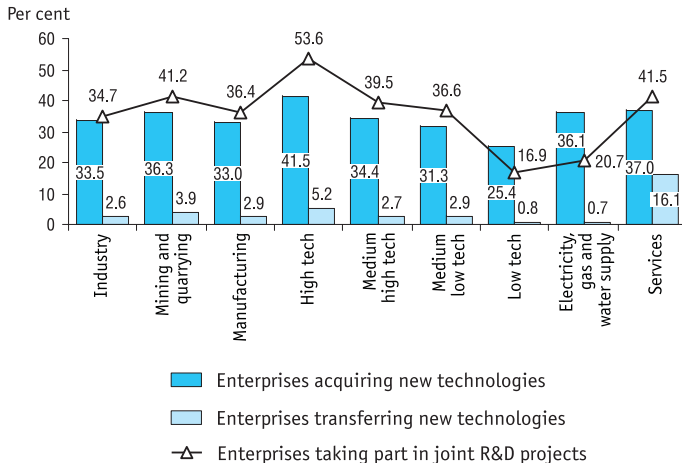
6.7. Sales of innovative goods and services: 2011

	Million roubles	As a per cent of total sales
Industry	1847370.4	6.1
Mining and quarrying	516779.7	6.7
Manufacturing	1309228.6	6.8
High tech	128342.9	12.1
Medium high tech	559925.7	12.8
Medium low tech	392457.2	4.3
Low tech	166260.9	4.1
Electricity, gas and water supply	21362.1	0.6
Services	259370.3	8.3

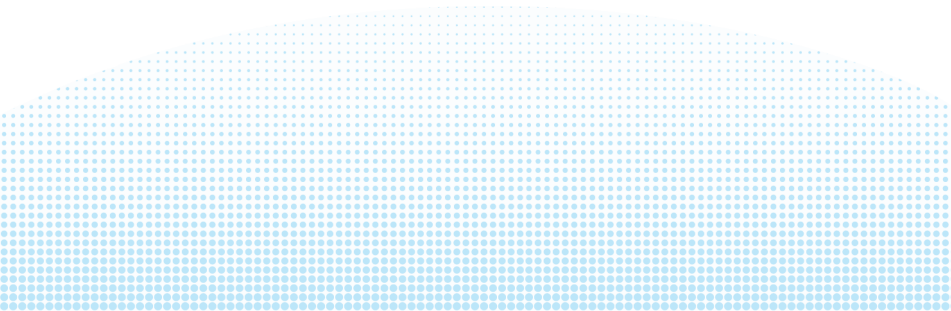
6.8. Technologically new or significantly improved goods and services as a per cent of total sales: 2011



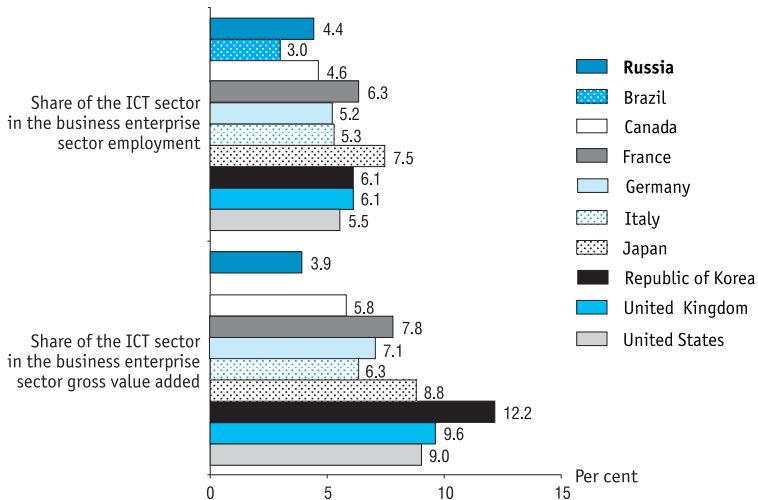
6.9. Co-operation links of enterprises engaged in technological innovation: 2011



7. Information Society



7.1. Main indicators of the ICT sector by country: 2011*

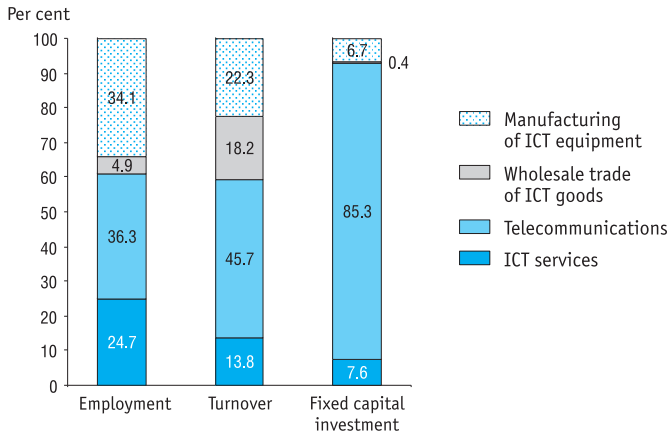


* For foreign countries – data for 2008 or nearest years.

7.2. The ICT sector in Russia

	2005	2010	2011
Employment:			
thousand	1347	1306	1260
as a per cent of the national employment total	2.8	2.8	2.7
Gross value added:			
billion roubles	660	1362	1481
as a per cent of GDP	3.6	3.5	3.2
Fixed capital investment:			
billion roubles	271	273	351
as a per cent of the fixed capital investment total	7.5	3.0	4.4
Foreign investment in the ICT sector:			
million US dollars	3520	5389	5920
as a per cent of foreign investment total	6.6	4.7	3.1

7.3. Main indicators of the ICT sector by economic activity: 2011



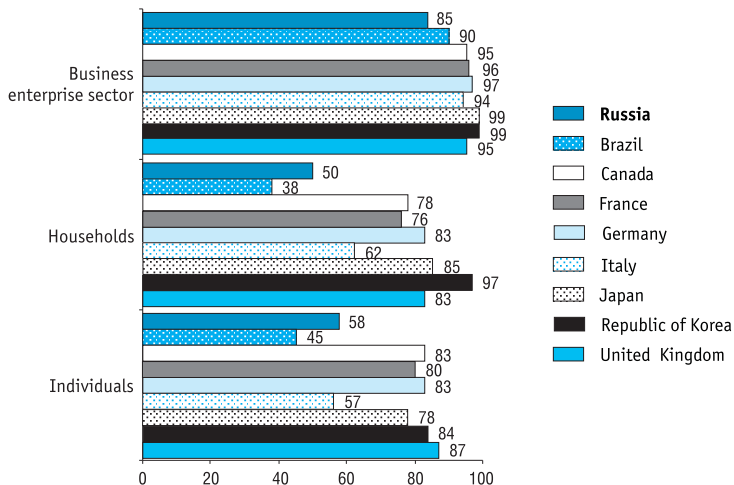
7.4. Enterprises using ICT by economic activity

(as a per cent of all enterprises)

	Personal computers		Internet		Of which broadband	Website	
	2005	2011	2005	2011	2011	2005	2011
Total	91.1	94.1	53.3	84.8	63.4	14.8	33.0
Business enterprise sector	90.0	92.4	59.5	85.4	68.7	18.1	36.0
R&D	96.3	97.6	85.0	94.7	82.7	41.8	64.8
Higher education	98.1	98.8	91.0	97.6	87.7	50.4	79.1
Health and social work	95.3	97.9	47.8	94.4	68.1	7.4	31.6
Recreational, cultural and sporting activities	77.6	86.4	39.6	62.6	39.9	11.2	18.6
Financial intermediation	96.0	97.1	83.3	93.9	86.0	38.8	57.2
Public administration; compulsory social security	93.3	98.3	41.0	87.6	58.9	8.2	30.5

7.5. Internet usage by country: 2011*

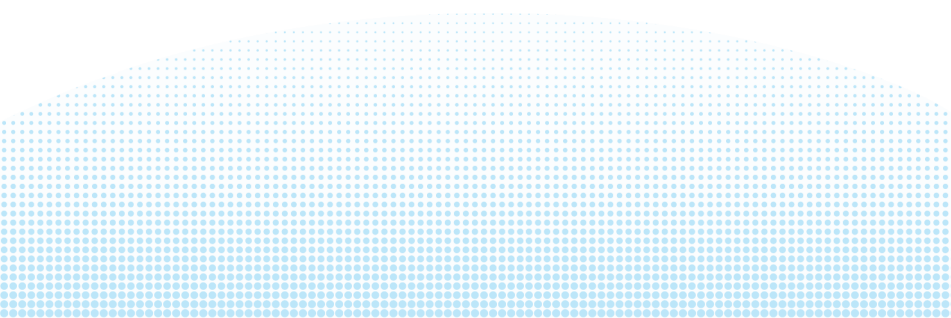
(as a per cent of all enterprises by country / households / individuals**)



* Or nearest years for which data is available.

** Individuals aged 16–74 are taken into account. Data for Brazil covers individuals aged 10 and above, Canada – 16 and above, Republic of Korea – 3 and above, Japan – 6 and above.

8. Public Attitudes toward Science, Technology, and Innovation



8.1. Social status of S&T occupations: 2011*

(as a per cent of respondents**)

<i>What occupations is the most respected in Russia now?</i>		<i>And what occupations is the most respected by you personally?</i>	
Advocate, lawyer	38	Doctor	41
Politician	33	Teacher	37
Businessman	26	Skilled worker	33
Doctor	24	Farmer	23
Programmer	24	Engineer	20
Artist, actor, writer	21	Scientist	19
Journalist	20	Soldier	17
Scientist	17	Programmer	16
Teacher	16	Advocate, lawyer	14
Skilled worker	14	Businessman	13
Soldier	13	Artist, actor, writer	10
Priest	12	Priest	10
Engineer	11	Journalist	9
Farmer	7	Politician	5
Tradesman	6	Tradesman	3

* Here and below the results of representative surveys of Russia's population aged 18 and above are presented (for 2011 and 2009 the number of respondents was 1600 for each of years respectively, for 2006 and 2003 – 2107, and for 1997 – 2322).

** The sum exceeds 100% because respondents could give several answers.

8.2. Public opinion on the level of S&T, innovation, education development: 2011

(as a per cent of respondents)

Is Russia stronger or weaker in comparison with other advanced countries in the following areas?

	Much stronger	Stronger	At the same level	Weaker	Much weaker	Don't know
Scientific research	5	19	37	29	4	6
Professional level of Russian scientists	9	32	35	16	2	6
Introduction of new technologies in industry	3	8	27	42	13	7
Introduction of technological advances (innovation) in the daily life	2	8	24	42	16	8
Availability of personal computers, Internet development	2	9	35	37	9	8
Education system	4	22	27	32	8	8

8.3. Forecasts of technological development

(as a per cent of respondents)

How soon can Russia achieve the technological level of advanced countries?

	2003	2006	2009	2011
Russia's level of technological development is not lower than that in advanced countries	9	13	10	11
In less than 10 years	9	13	16	12
In 10–20 years	19	23	27	27
After more than 20 years	17	18	23	22
Never	15	10	10	14
Don't know	31	23	14	15

8.4. Factors of economic growth

(as a per cent of respondents*)

What will be the key factor for economic growth in Russia?

	2003	2006	2009	2011
Discipline, law and order	43	42	53	41
Russia's natural resources	29	39	39	35
Introduction of new technologies	25	26	35	31
Initiative and entrepreneurship	25	25	30	34
Strong national leader	35	32	27	34
Russian science	13	18	22	22
Development of education	15	13	18	15
Computerisation, Internet	5	5	8	8
Aid from the West	5	4	4	5
Others	1	1	1	2
Don't know	16	11	5	4

* The sum exceeds 100% because respondents could give several answers.

Technical Notes

Bibliometric indicators are calculated on the basis of Scopus and Web of Science databases. Publications considered include scientific articles, conference papers and reviews. A publication is associated with a country if it is listed in the affiliated address of author or one of co-authors.

Federal budget appropriations on civil S&T – federal budget funds allocated for civil-purpose basic and applied scientific research.

Gross domestic expenditure on R&D – expressed in a monetary form actual expenditure on research and development performed by organisations during the reference year irrespective of financing sources.

Information and communication technologies (ICT) – the types of technologies using microelectronics for collection, storage, processing, retrieval, transmission, and presentation of data, texts, images, and sounds.

Marketing innovation is the implementation of a new or significantly improved marketing method involving significant changes in product design or packaging, product placement, product promotion or pricing.

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.

Number of personnel in full-time equivalent is the indicator which reflects the sum of timeshares really spending by R&D personnel on R&D activities and is measured in person-years.

Organisational innovation is the implementation of a new organisational method in the firm's business practices, workplace organisation or external relations.

R&D personnel is a population of persons whose creative activities are aimed at the advancement of scientific knowledge or search for new areas of its application, as well as direct services related to performance of R&D.

Researchers are professionals engaged in R&D and immediately performing the creation of new knowledge, products, processes, methods, and systems, as well as in the management of these activities. Researchers usually have higher education (university or equivalent) degrees.

Technological innovations are the final result of innovative activities, embodied in a technologically new or improved good or service introduced on a market, a technologically new or improved process or technique of service production (transfer) used in practice.

**Science and Technology.
Innovation. Information Society**

Pocket Data Book

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