



Ministry of Education and Science  
of the Russian Federation



Federal State  
Statistics Service



HIGHER SCHOOL OF ECONOMICS  
NATIONAL RESEARCH UNIVERSITY

# Science and Technology. Innovation. Information Society

Pocket Data Book





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NATIONAL RESEARCH UNIVERSITY

# Science and Technology. Innovation. Information Society

Pocket Data Book

Moscow 2016

УДК 001(470+571)(083.41)

ББК 72(2Рос)я2

540

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The pocket data book contains main indicators characterizing S&T, innovation and Information Society in the Russian Federation.

The data book includes information of the Federal State Statistics Service, Federal Service for Intellectual Property, 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, the presented data specify those published earlier.

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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 to the totals  
because of rounding.

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The background features a light blue graphic. At the top, there are several concentric, semi-circular lines. Below these, a stylized figure is depicted with a circular head and a body that branches out into three vertical stems, each ending in a circular shape. The bottom portion of the graphic consists of several curved, parallel lines that resemble a stylized base or a series of steps.

# 1. Institutions

## 1.1. R&amp;D institutions by type

	1991	2000	2010	2013	2014
<b>Total</b>	<b>4564</b>	<b>4099</b>	<b>3492</b>	<b>3605</b>	<b>3604</b>
Research institutes	1831	2686	1840	1719	1689
Design organisations	930	318	362	331	317
Construction project and exploration organisations	559	85	36	33	32
Experimental enterprises	15	33	47	53	53
Higher education institutions	450	390	517	673	700
Industrial enterprises	400	284	238	266	275
Others	379	303	452	530	538

## 1.2. R&D institutions by sector of performance

	1991	2000	2010	2013	2014
<b>Total</b>	<b>4564</b>	<b>4099</b>	<b>3492</b>	<b>3605</b>	<b>3604</b>
Sectors of performance:					
government	992	1247	1400	1495	1494
business enterprise	3009	2278	1405	1269	1265
higher education	537	526	617	762	775
private non-profit	26	48	70	79	70

## 1.3. R&amp;D institutions by ownership

	1995	2000	2010	2013	2014
<b>Total</b>	<b>4059</b>	<b>4099</b>	<b>3492</b>	<b>3605</b>	<b>3604</b>
Ownership:					
public	2979	2938	2610	2526	2520
private	198	388	470	607	614
joint	832	635	304	300	296
of state corporations	...	...	6	65	64
foreign and joint (with both Russian and foreign participation)	25	64	56	63	66
others	25	74	46	44	49

The background features a large, light blue circular logo with a stylized 'S' or 'M' shape inside. Below the logo are several curved lines that resemble a circuit board or a stylized landscape. The text '2. R&D Personnel' is centered in a bold, blue font.

## 2. R&D Personnel

## 2.1. R&D personnel

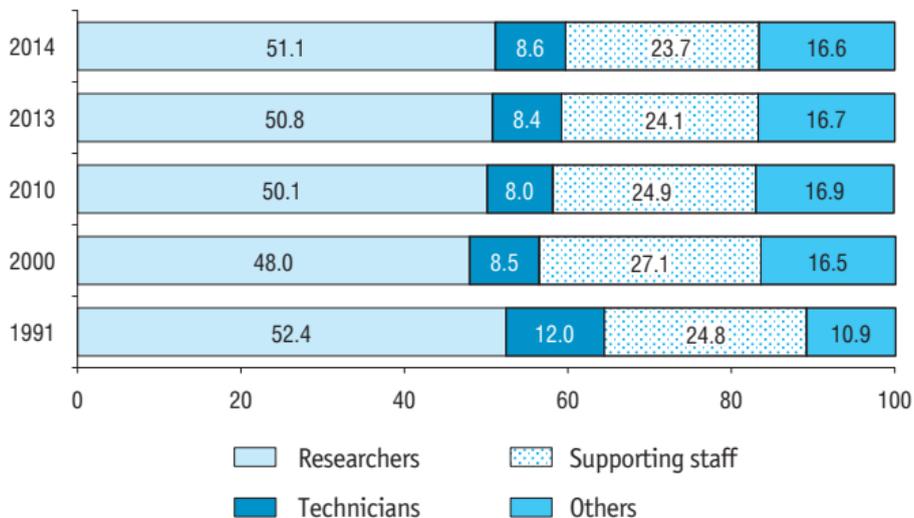
(headcount)

	1991	2000	2010	2013	2014
<b>Total</b>	<b>1677784</b>	<b>887729</b>	<b>736540</b>	<b>727029</b>	<b>732274</b>
Research institutes	970565	718434	435304	434243	435129
Design organisations	287504	56488	157146	137098	139608
Construction project and exploration organisations	149833	6811	6324	4907	4776
Experimental enterprises	19495	6145	1558	2384	2653
Higher education institutions	90550	31110	46776	54092	58456
Industrial enterprises	118414	54721	51807	52232	49358
Others	41423	14020	37625	42073	42294

## 2.2. R&D personnel by occupation (headcount)

	1991	2000	2010	2013	2014
<b>Total</b>	<b>1677784</b>	<b>887729</b>	<b>736540</b>	<b>727029</b>	<b>732274</b>
Researchers	878482	425954	368915	369015	373905
Technicians	200606	75184	59276	61401	63168
Supporting staff	416590	240506	183713	175365	173554
Others	182106	146085	124636	121248	121647

### 2.3. Percentage distribution of R&D personnel by occupation



## 2.4. R&D personnel by sector of performance (headcount)

	1991	2000	2010	2013	2014
<b>Total</b>	<b>1677784</b>	<b>887729</b>	<b>736540</b>	<b>727029</b>	<b>732274</b>
Sectors of performance:					
government	294500	255850	259007	261869	263841
business enterprise	1269200	590646	423112	405268	405529
higher education	112700	40787	53290	59247	62283
private non-profit	1400	446	1131	645	621

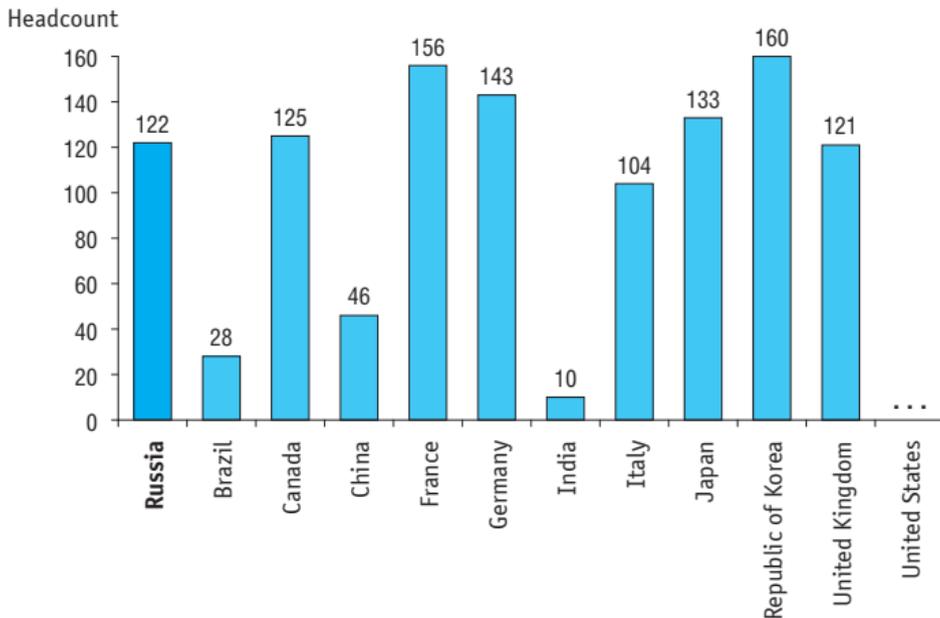
## 2.5. R&D personnel by country

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

	1994	2000	2014*
<b>Russia</b>	1264.1	1007.3	829.2
Brazil	...	133.0	266.7
Canada	143.6	167.9	223.9
China	783.2	922.1	3532.8
France	315.2	327.5	420.6
Germany	...	484.7	603.9
India	...	318.4	441.1
Italy	143.8	150.1	252.6
Japan	828.0	896.8	865.5
Republic of Korea	...	138.1	401.4
United Kingdom	267.8	288.6	362.1
United States	...	...	...

\* Or nearest years for which data is available.

## 2.6. R&D personnel per 10 000 employment by country: 2014\*



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

## 2.7. Researchers by sector of performance

(headcount)

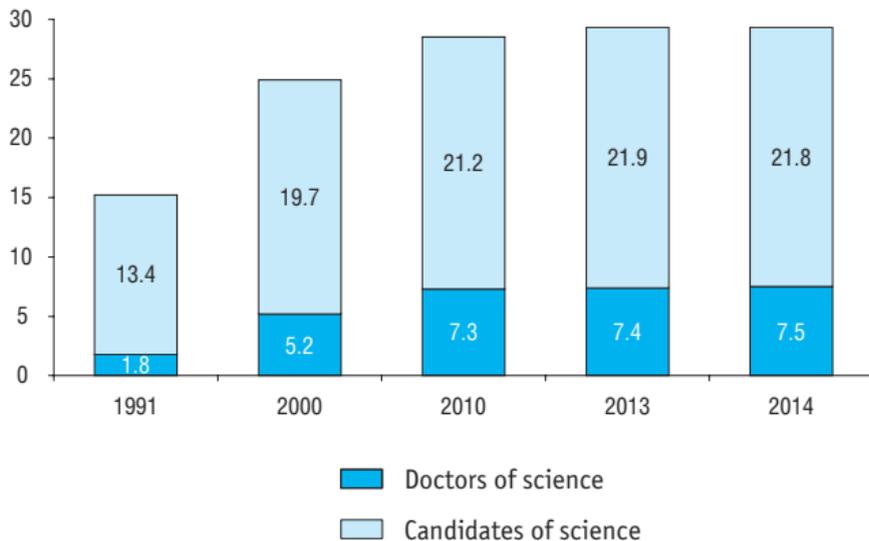
	1991	2000	2010	2013	2014
<b>Total</b>	<b>878482</b>	<b>425954</b>	<b>368915</b>	<b>369015</b>	<b>373905</b>
Sectors of performance:					
government	166100	129725	131734	132117	132796
business enterprise	637200	267640	197785	193736	196320
higher education	74300	28325	38640	42692	44342
private non-profit	900	264	756	470	447

## 2.8. Researchers with scientific degrees

(headcount)

	1991	2000	2010	2013	2014
<b>Researchers with scientific degrees</b>	<b>134176</b>	<b>105911</b>	<b>105114</b>	<b>108248</b>	<b>109598</b>
Doctors of science	16165	21949	26789	27485	27969
Candidates of science	118011	83962	78325	80763	81629

## 2.9. Researchers with scientific degrees as a per cent of the total number of researchers

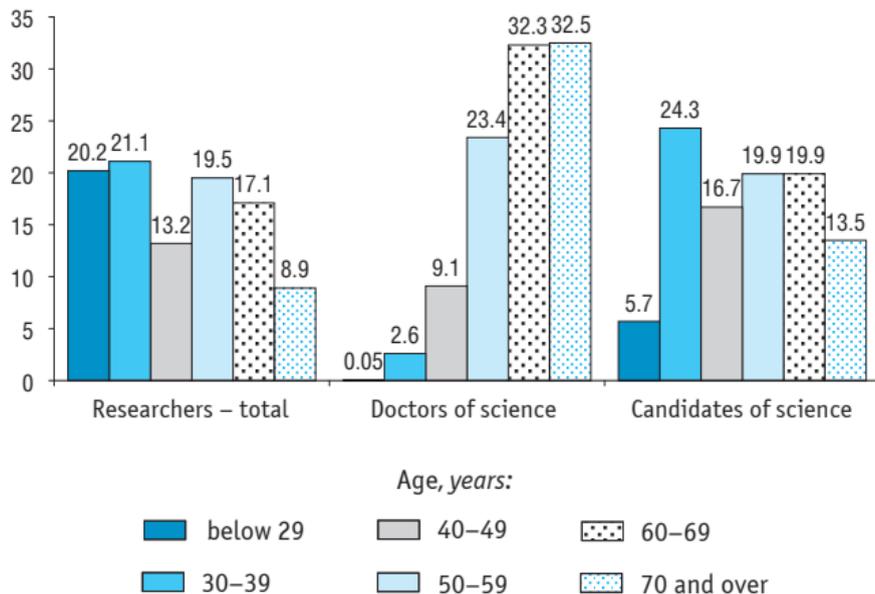


## 2.10. Researchers by field of science and technology: 2014

(headcount)

	Researchers	Of whom	
		doctors of science	candidates of science
<b>Total</b>	<b>373905</b>	<b>27969</b>	<b>81629</b>
Natural sciences	88370	12312	33943
Engineering	226682	4874	21248
Medical sciences	15714	3907	6961
Agricultural sciences	11869	1570	4763
Social sciences	18705	2875	8775
Humanities	12565	2431	5939

## 2.11. Percentage distribution of researchers by age: 2014



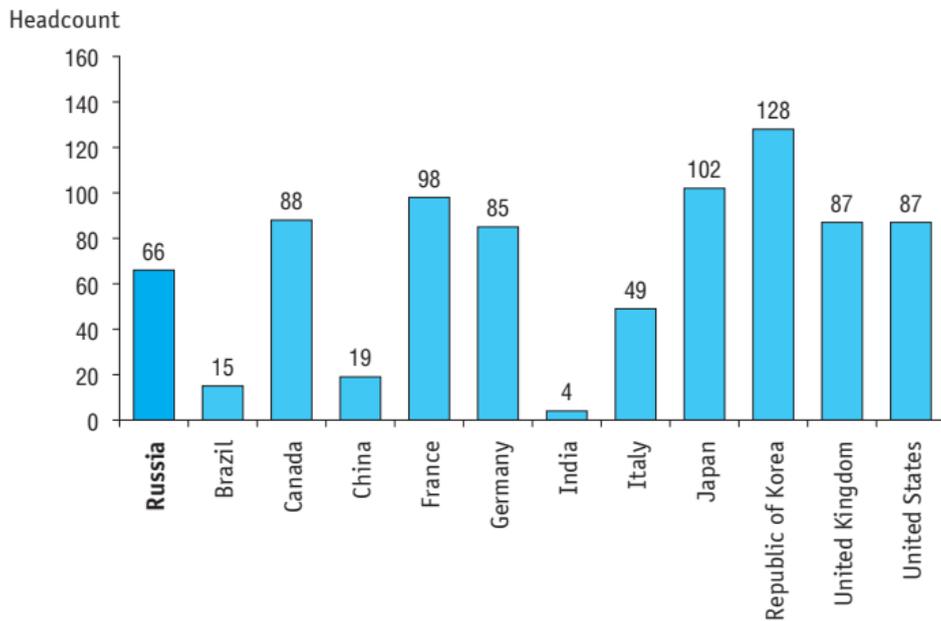
## 2.12. Researchers by country

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

	1994	2000	2014*
<b>Russia</b>	621.8	506.4	444.9
Brazil	...	73.9	138.7
Canada	85.9	107.9	156.6
China	552.0	695.1	1484.0
France	149.2	172.1	265.2
Germany	...	257.9	360.4
India	...	115.9	192.8
Italy	75.7	66.1	118.0
Japan	541.0	647.6	660.5
Republic of Korea	...	108.4	321.8
United Kingdom	134.0	170.6	259.3
United States	773.1	983.2	1265.1

\* Or nearest years for which data is available.

## 2.13. Researchers per 10 000 employment by country: 2014\*



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

## 2.14. Flows of R&D personnel

(headcount)

	Inflow – total	Of which		Outflow – total	Of which	
		graduates from higher education institutions	from other research institutes		at own initiative	due to staff reduction
1995	108335	6498	23402	226585	141776	29747
2001	132757	14122	21549	137932	93587	3542
2005	109973	13495	15618	122773	81623	6598
2009	93526	13235	13529	97071	58295	5776
2011	94939	13725	11881	100849	62848	2973
2013	54550	11075	13210	93112	59214	2015



### **3. R&D Funding**

### 3.1. Gross domestic expenditure on R&D

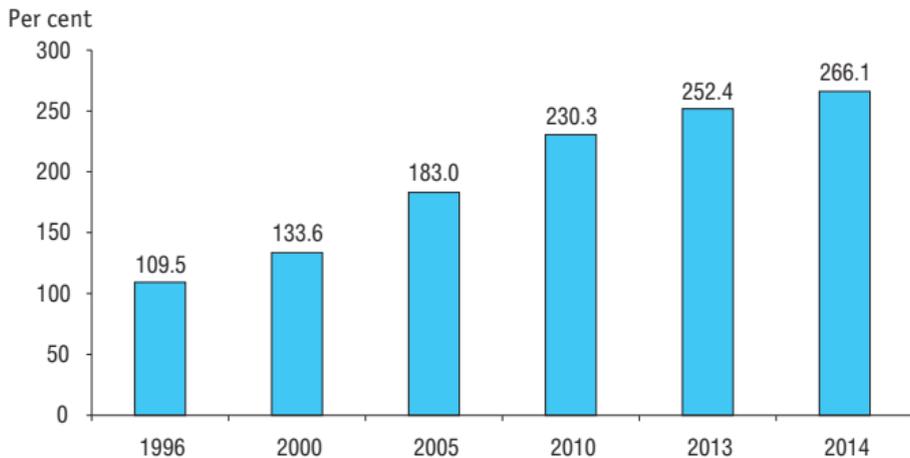
*(thousand roubles)*

	2000	2008	2013	2014
<b>Gross domestic expenditure on R&amp;D:</b>				
at current prices	76697100.5	431073185.2	749797638.8	847526992.9
at constant 1989 prices	3321.2	5490.8	6273.2	6614.6

### 3.2. Trends in gross domestic expenditure on R&D

(at constant 1989 prices)

1995 = 100%



### 3.3. Gross domestic expenditure on R&D by country

(million current PPP \$)

	1991	2000	2014*
<b>Russia</b>	19991.3	10726.9	43440.6
Brazil	...	12505.2	27430.0
Canada	8696.3	16746.6	24565.4
China	8975.4	32646.6	336495.4
France	24263.2	32978.2	55218.1
Germany	39381.9	52375.4	100991.4
India	...	12046.4	36195.5
Italy	12475.1	15256.4	26520.4
Japan	68799.5	98758.0	160246.8
Republic of Korea	7140.3	18541.7	68937.0
United Kingdom	19656.6	27872.8	39858.8
United States	161387.8	269513.0	456977.0

\* Or nearest years for which data is available.

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

	1991	2000	2014*
<b>Russia</b>	1.43	1.05	1.19
Brazil	...	1.02	1.21
Canada	1.55	1.87	1.62
China	0.73	0.90	2.08
France	2.27	2.08	2.23
Germany	2.40	2.40	2.85
India	...	0.74	0.81
Italy	1.15	1.01	1.26
Japan	2.71	3.00	3.47
Republic of Korea	1.74	2.18	4.15
United Kingdom	1.87	1.73	1.63
United States	2.61	2.62	2.73

\* Or nearest years for which data is available.

### 3.5. Federal budget appropriations on civil-purpose science and technology

	1998	2000	2012*	2013*	2014*	2015**
<b>Federal budget appropriations on civil-purpose science and technology, million roubles</b>	<b>6239.4</b>	<b>17091.7</b>	<b>355921.1</b>	<b>425301.7</b>	<b>437273.3</b>	<b>354841.9</b>
Basic research	2829.3	7866.2	86623.2	112230.9	121599.5	115148.8
Applied research	3410.1	9225.5	269297.9	313070.8	315673.8	239693.2
As a per cent:						
of GDP	0.24	0.23	0.57	0.64	0.61	...
of total federal budget appropriations	1.32	1.66	2.76	3.19	2.95	2.92

\* The source of 2012, 2013, 2014 data are reports on the execution of the consolidated budget of the Russian Federation and budgets of state extra-budgetary funds (according to the Russian Federal Treasury).

\*\* In accordance with the Federal Law «On the Federal Budget for 2015 and the planning period of 2016 and 2017» (as amended).

### 3.6. Government budget appropriations on R&D by country

(million current PPP \$)

	1991	2000	2014*
<b>Russia**</b>	25840.0	4784.6	36976.4
Brazil***	...	6761.5	14440.1
Canada	3728.8	4589.9	7736.3
China***	...	10904.0	71000.5
France	13855.3	14747.5	17872.4
Germany	15667.7	16817.0	32666.2
India	...	...	...
Italy	7613.1	9374.8	11084.6
Japan	10767.4	21193.4	34685.2
Republic of Korea	...	5020.2	19933.5
United Kingdom	8145.5	10520.2	13744.3
United States	65897.0	83612.5	135665.0

\* 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.

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

(million roubles; 1994 – billion roubles)

	1994	2000	2013	2014
<b>Gross domestic expenditure on R&amp;D</b>	<b>5146.1</b>	<b>76697.1</b>	<b>749797.6</b>	<b>847527.0</b>
Government*	3205.6	42035.7	507197.6	586661.4
Business enterprise sector	1814.3	25208.4	211136.0	229444.7
Higher education sector	19.8	213.0	7820.7	9069.2
Private non-profit sector	5.6	67.6	896.4	1369.3
Funds from abroad	100.8	9172.4	22747.0	20982.4

\* 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 source of funds and country: 2014\*

	Gross domestic expenditure on R&D	Government	Business enterprise sector	Funds from abroad	Other funds from national sources
<b>Russia</b>	100	69.2**	27.1	2.5	1.2
Brazil	100	52.6	45.2	...	2.1
Canada	100	34.9	46.4	6.0	12.7
China	100	21.1	74.6	0.9	...
France	100	35.0	55.4	7.6	2.0
Germany	100	29.8	65.2	4.4	0.3
India	100	...	...	...	...
Italy	100	42.5	44.3	9.5	3.7
Japan	100	17.3	75.5	0.5	6.7
Republic of Korea	100	22.8	75.7	0.3	1.2
United Kingdom	100	27.0	46.5	20.6	5.8
United States	100	27.7	60.9	4.5	6.9

\* 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).

### 3.9. Percentage distribution of gross domestic expenditure on R&D by sector of performance and country: 2014\*

	Gross domestic expenditure on R&D	Government sector	Business enterprise sector	Higher education sector	Private non-profit sector
<b>Russia</b>	100	30.5	59.6	9.8	0.1
Brazil	100	...	...	...	...
Canada	100	9.2	50.5	39.8	0.5
China	100	16.2	76.6	7.2	...
France	100	13.1	64.8	20.7	1.4
Germany	100	15.1	66.9	18.0	...
India	100	60.5	35.5	4.1	...
Italy	100	14.9	54.0	28.2	2.9
Japan	100	9.2	76.1	13.5	1.3
Republic of Korea	100	10.9	78.5	9.2	1.3
United Kingdom	100	7.3	64.5	26.3	1.9
United States	100	11.2	70.6	14.2	4.1

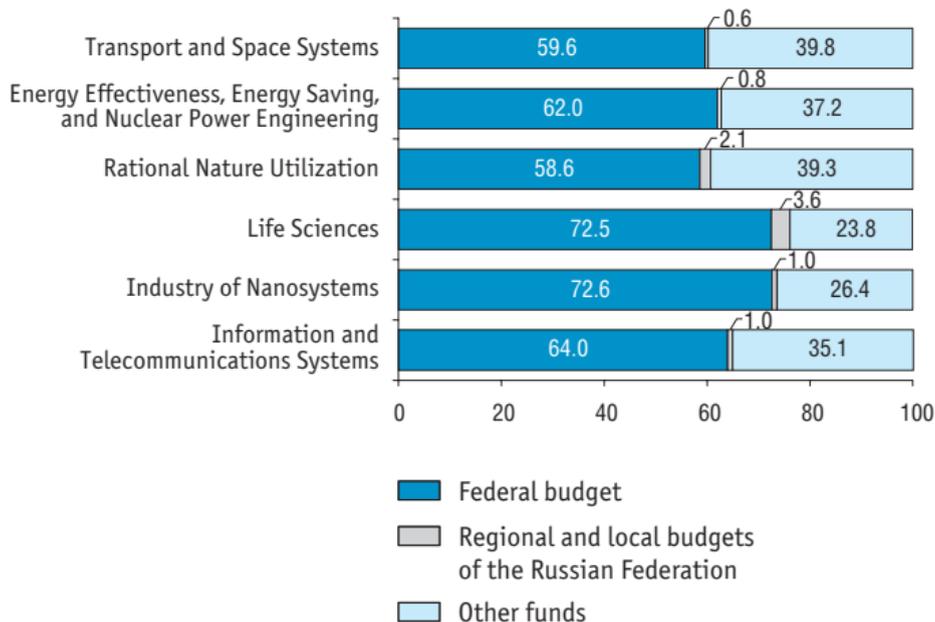
\* Or nearest years for which data is available.

### 3.10. Gross domestic expenditure on R&D by priority S&T areas: 2014

(million roubles)

	Total	Of which funding from the federal budget
<b>Gross domestic expenditure on R&amp;D by priority S&amp;T areas</b>	<b>575588.6</b>	<b>352649.5</b>
Information and Telecommunications Systems	70631.5	45184.0
Industry of Nanosystems	24361.9	17693.6
Life Sciences	35944.7	26067.2
Rational Nature Utilization	40831.1	23928.1
Energy Effectiveness, Energy Saving, and Nuclear Power Engineering	84069.4	52163.1
Transport and Space Systems	206461.3	123028.0

### 3.11. Percentage distribution of gross domestic expenditure on R&D by priority S&T areas and source of funds: 2014



### 3.12. Grants and competitive R&D financing

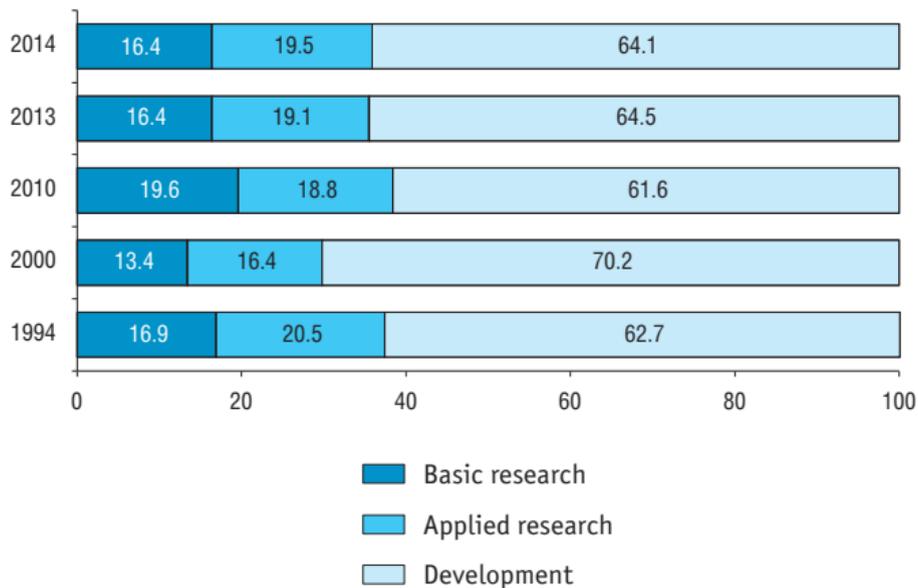
	Grants (non-repayable subsidies)	Competitive (programme) financing
<b>Total, million roubles</b>		
2010	7229.2	49583.9
2012	19758.1	100108.2
2013	32617.9	99182.2
2014	40083.0	94464.3
As a per cent of gross domestic expenditure on R&D		
2010	1.4	9.5
2012	2.8	14.3
2013	4.4	13.2
2014	4.7	11.1

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

*(million roubles; 1994 – billion roubles)*

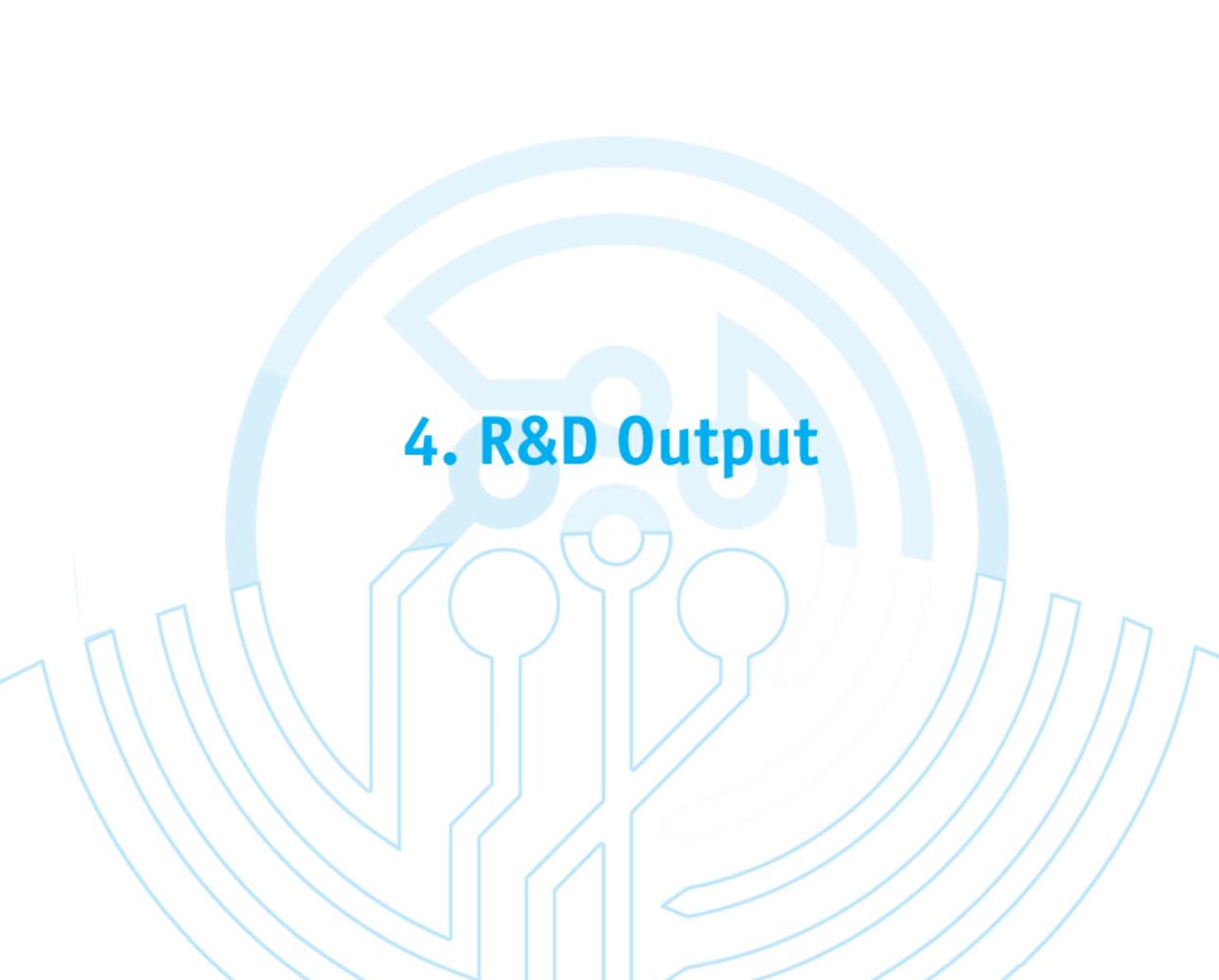
	1994	2000	2013	2014
<b>Intramural current expenditure on R&amp;D</b>	<b>4996.9</b>	<b>73873.3</b>	<b>699948.9</b>	<b>795407.9</b>
Basic research	842.0	9875.7	114829.1	130618.0
Applied research	1021.9	12117.5	133788.0	155231.4
Development	3133.0	51880.2	451331.8	509558.4

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



### 3.15. Average monthly salaries of R&D personnel

	1995	2000	2013	2014
<b>Average monthly salaries, roubles;</b> <i>1995 – thousand roubles</i>	<b>305.3</b>	<b>2322.9</b>	<b>35618.8</b>	<b>39549.4</b>
As a per cent of that:				
in the national economy (=100%)	64.6	104.5	119.6	121.3
in manufacturing (=100%)	67.3	98.2	131.7	134.1
in construction (=100%)	52.0	88.0	128.6	134.1

The background features a large, light blue magnifying glass icon centered in the upper half. Below it, there are several concentric, semi-circular lines that resemble a stylized sun or a signal wave. At the bottom, there are circuit-like lines forming a central vertical structure with two circular nodes on either side, resembling a microchip or a stylized figure.

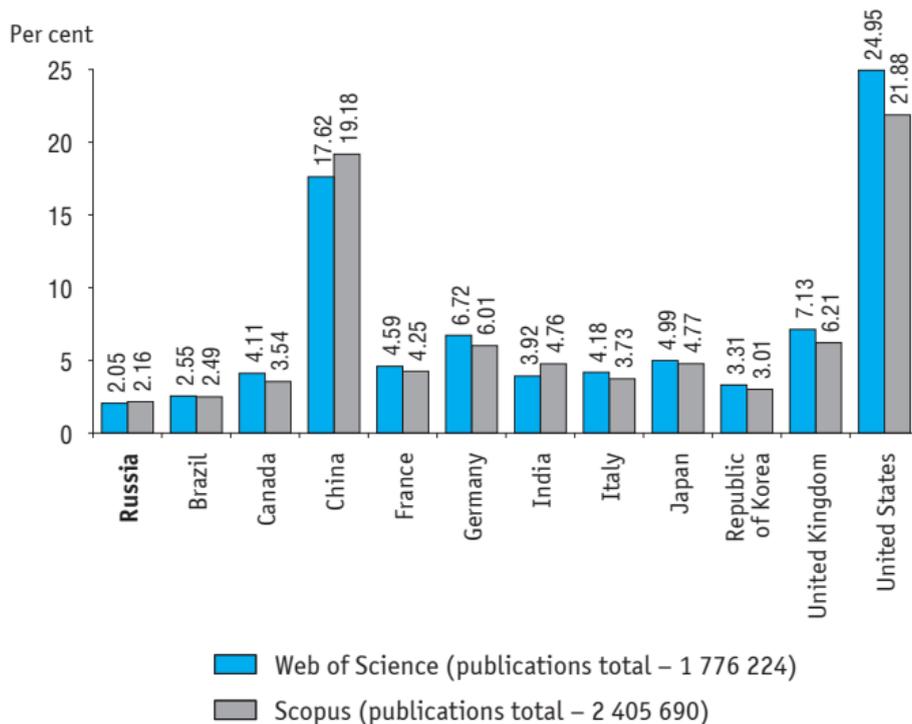
## **4. R&D Output**

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

	Web of Science		Scopus	
	2004	2014	2004	2014
<b>Russia</b>	28919	36077	35972	51981
Brazil	18138	45207	21841	59979
Canada	46430	73074	54048	85238
China	77901	312953	107488	461488
France	58448	81463	69582	102202
Germany	82805	119276	98418	144576
India	24689	69668	32832	114506
Italy	45564	74280	52419	89612
Japan	89695	88642	105477	114832
Republic of Korea	28007	58792	31117	72432
United Kingdom	85291	126634	99563	149338
United States	337485	443177	397643	526393

\* Here and below including articles, reviews and conference papers (as of September 10, 2015).

## 4.2. Country shares in the total number of publications in scientific journals indexed in international databases: 2014



## 4.3. Patent applications and patents granted

	1995	2000	2010	2012	2013	2014
Patent applications filed in the Russian Federation	22202	28688	42500	44211	44914	40308
By residents	17551	23377	28722	28701	28765	24072
By non-residents	4651	5311	13778	15510	16149	16236
Patents granted with the indication of the Russian Federation	31556*	17592	30322	32880	31638	33950
To residents	20861	14444	21627	22481	21378	23065
To non-residents	4772	3148	8695	10399	10260	10885
Patents valid with the indication of the Russian Federation	76186	144325	181904	181515	194248	208320

\* Including patents granted in exchange for author certificates.

#### 4.4. Patent applications by country\*

	1995	2000	2010	2013
<b>Russia</b>	22202	28688	42500	44914
Brazil	7448	17376	22686	30884
Canada	26592	39622	35449	34741
China	18699	51906	391177	825136
France	15896	17353	16580	16886
Germany	46158	62142	59245	63167
India	6566	8538	34287	43031
Italy	8574	9273	9723	9212
Japan	368831	419543	344598	328436
Republic of Korea	78499	102010	170101	204589
United Kingdom	27521	32747	21929	22938
United States	228142	295895	490226	571612

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

Source: WIPO Statistics Database, September 2015.

#### 4.5. Patent applications filed by residents and non-residents by country: 2013

	Patent applications filed in the country		
	Total	Of which	
		by residents	by non-residents
<b>Russia</b>	44914	28765	16149
Brazil	30884	4959	25925
Canada	34741	4567	30174
China	825136	704936	120200
France	16886	14690	2196
Germany	63167	47353	15814
India	43031	10669	32362
Italy	9212	8307	905
Japan	328436	271731	56705
Republic of Korea	204589	159978	44611
United Kingdom	22938	14972	7966
United States	571612	287831	283781

Source: WIPO Statistics Database, September 2015.

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

	1995	2000	2010	2012	2013	2014
<b>Total</b>	<b>25633</b>	<b>17592</b>	<b>30322</b>	<b>32880</b>	<b>31638</b>	<b>33950</b>
A. Human necessities	4207	4347	8468	9506	8042	9890
B. Performing operations; transporting	6129	2905	4711	4969	4965	5331
C. Chemistry; metallurgy	4529	3332	5167	5524	5779	5154
D. Textiles; paper	437	197	320	274	271	305
E. Fixed constructions	2042	1156	1977	1898	1807	2033
F. Mechanical engineering; lighting; heating; weapons; blasting	3033	2144	3062	3246	3453	3459
G. Physics	3083	2172	3734	4381	4285	4484
H. Electricity	2173	1339	2883	3082	3036	3294

\* Patents granted to resident and non-resident applicants.

#### 4.7. Development of advanced manufacturing technologies by type and degree of novelty: 2014

	Total	Of which technologies	
		new to the country	radically new
<b>Advanced manufacturing technologies</b>	<b>1409</b>	<b>1245</b>	<b>164</b>
Of which:			
Design and engineering	445	390	55
Fabrication, processing and assembling	506	450	56
Automated material handling	22	20	2
Automated inspection and/or testing equipment	110	84	26
Communications and control	202	187	15
Manufacturing information systems	65	59	6
Integrated management and control	59	55	4

## 4.8. Use of advanced manufacturing technologies by type and duration: 2014

	Total	Of which technologies used during the period of		
		less than 1 year	1–5 years	6 years and over
<b>Advanced manufacturing technologies</b>	<b>204546</b>	<b>16179</b>	<b>84182</b>	<b>104185</b>
Of which:				
Design and engineering	38598	3712	16461	18425
Fabrication, processing and assembling	58111	4893	20635	32583
Automated material handling	1983	192	757	1034
Automated inspection and/or testing equipment	12263	1234	6294	4735
Communications and control	84730	5539	36411	42780
Manufacturing information systems	5555	379	2425	2751
Integrated management and control	3306	230	1199	1877

#### 4.9. Technology balance of payments by category of contracts: 2014

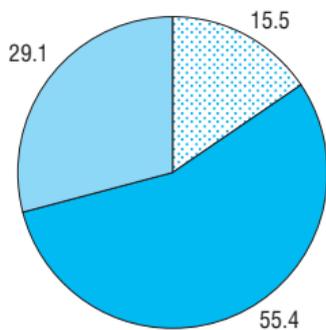
(million US \$)

	Receipts from exports	Payments for imports	Balance of payments
<b>Total</b>	<b>1279.2</b>	<b>2455.8</b>	<b>-1176.6</b>
Invention patents	0.1	20.9	-20.8
Unpatented inventions	-	-	-
Patent licenses	26.6	100.8	-74.2
Utility models	0.0	4.1	-4.1
Know-how	11.5	121.7	-110.2
Trademarks	2.8	381.2	-378.4
Industrial designs	2.0	0.2	1.8
Engineering services	707.7	1147.9	-440.2
Research and development	356.5	151.5	205.0
Others	172.0	527.6	-355.6

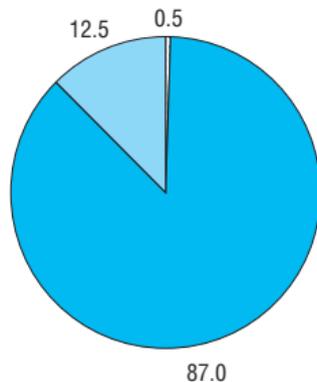
#### 4.10. Percentage distribution of technology exports and imports in Russia by country groups: 2014

(per cent)

Receipts from technology exports



Payments for technology imports



 CIS countries

 OECD countries

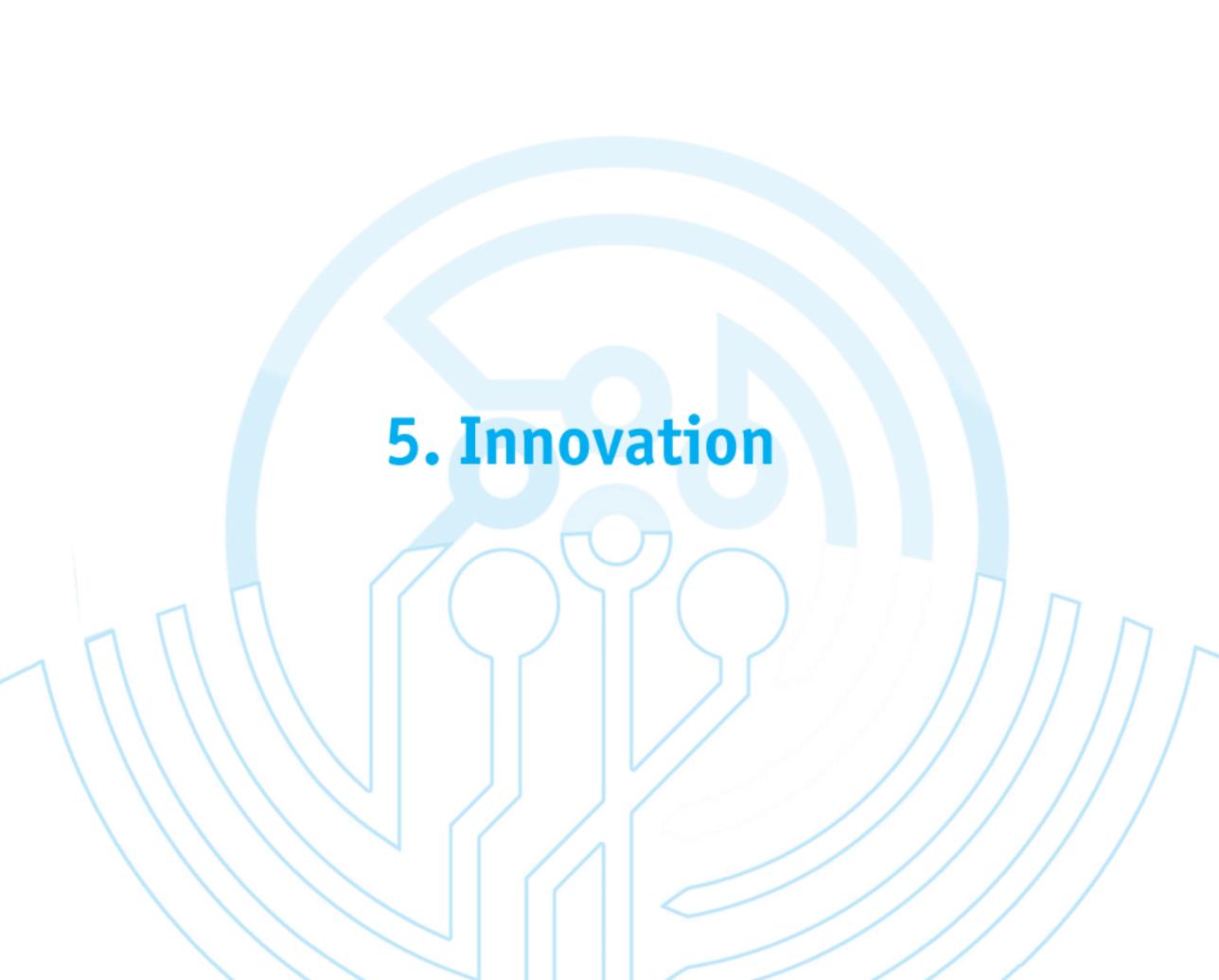
 Other countries

## 4.11. Technology balance of payments by country: 2014\*

*(million US \$)*

	Receipts from exports	Payments for imports	Balance of payments
<b>Russia</b>	1279.2	2455.8	-1176.6
Brazil	-	-	-
Canada	2620.9	1227.4	1393.5
China	-	-	-
France	5188.3	3233.5	1954.8
Germany	66620.7	54193.1	12427.7
India	-	-	-
Italy	14847.3	13516.9	1330.4
Japan	34788.2	5919.8	28868.4
Republic of Korea	6845.7	12038.4	-5192.7
United Kingdom	38845.6	12677.0	26168.6
United States	126517.0	87617.0	38900.0

\* Or nearest years for which data is available.



## 5. Innovation

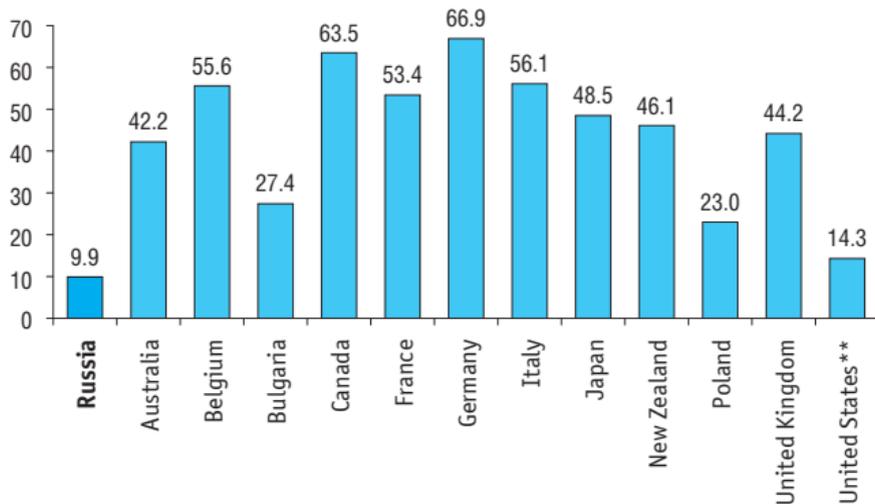
## 5.1. Main indicators of innovation in industry

	2000	2005	2010	2012	2013	2014
Enterprises engaged in technological innovation as a per cent of all industrial enterprises	10.6	9.3	9.3	9.9	9.7	9.7
Sales of innovative goods and services, <i>million roubles</i>	154135.0	545540.0	1165747.6	2509604.4	3072530.8	3037407.3
At constant 1995 prices	32626.7	52546.2	62312.8	107768.0	125658.2	115878.5
As a per cent of total sales	4.4	5.0	4.9	7.8	8.9	8.2
Expenditure on technological innovation, <i>million roubles</i>	49428.0	125678.2	349763.3	583660.6	746778.2	762774.1
At constant 1995 prices	10462.7	12105.3	18695.9	25063.7	30541.2	29100.2
As a per cent of total sales	1.4	1.2	1.5	1.8	2.2	2.1

## 5.2. Innovative activity: 2014

	Enterprises engaged in innovation as a per cent of all enterprises			
	total	technological	marketing	organisational
Industry	10.9	9.7	3.0	2.0
Mining and quarrying	7.5	6.5	2.3	0.5
Manufacturing	13.6	12.2	3.6	2.8
High tech	32.0	30.6	9.0	5.8
Medium high tech	18.9	17.4	5.2	3.1
Medium low tech	12.6	10.9	3.4	2.3
Low tech	7.8	6.5	1.7	2.3
Electricity, gas and water supply	5.1	4.5	1.5	0.3
Services	8.5	7.6	2.7	1.3

### 5.3. Enterprises engaged in technological, marketing or organisational innovation as a per cent of all enterprises by country: 2014\*



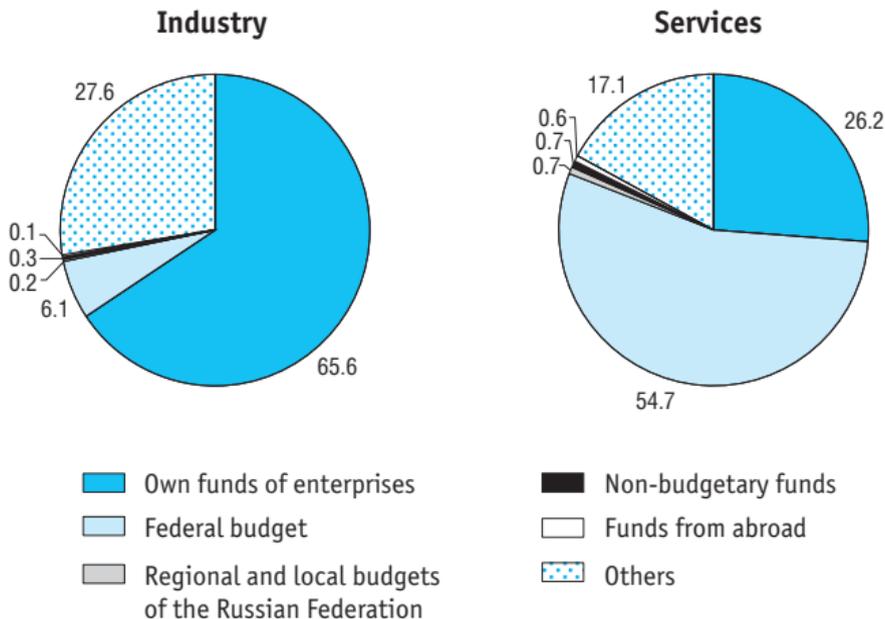
\* Or nearest years for which data is available.

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

## 5.4. Expenditure on technological innovation: 2014

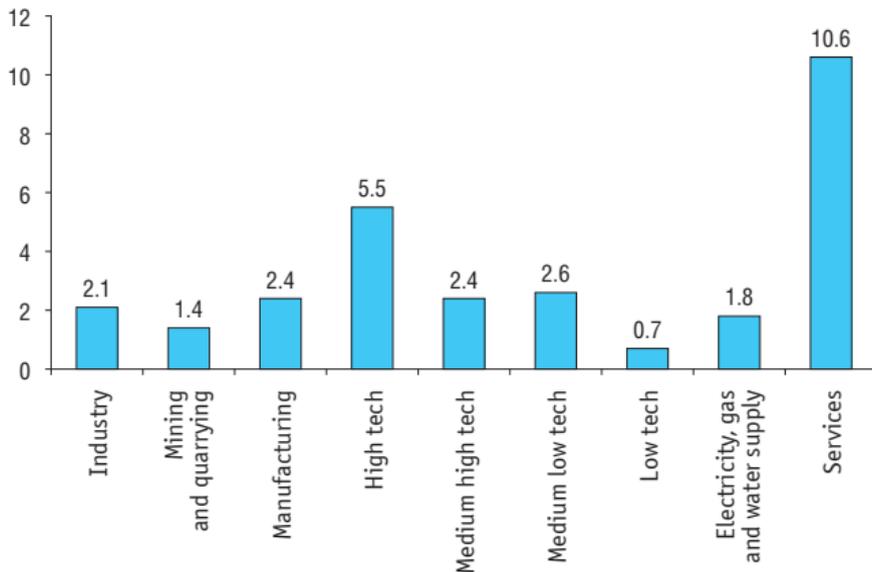
	Total, <i>million roubles</i>	Of which, <i>per cent</i>		
		R&D	acquisition of machinery and equipment	acquisition of technology
Industry	762774.1	25.0	47.2	2.2
Mining and quarrying	123898.8	17.4	64.6	1.0
Manufacturing	565581.1	25.0	44.2	2.7
High tech	85307.2	39.8	34.1	4.7
Medium high tech	123105.7	21.0	37.2	8.5
Medium low tech	282565.2	20.8	48.6	0.2
Low tech	36605.9	6.3	70.6	0.6
Electricity, gas and water supply	73294.2	38.2	40.3	0.1
Services	449123.0	74.9	12.5	0.7

## 5.5. Expenditure on technological innovation by source of funds: 2014 (per cent)



## 5.6. Intensity of expenditure on technological innovation: 2014

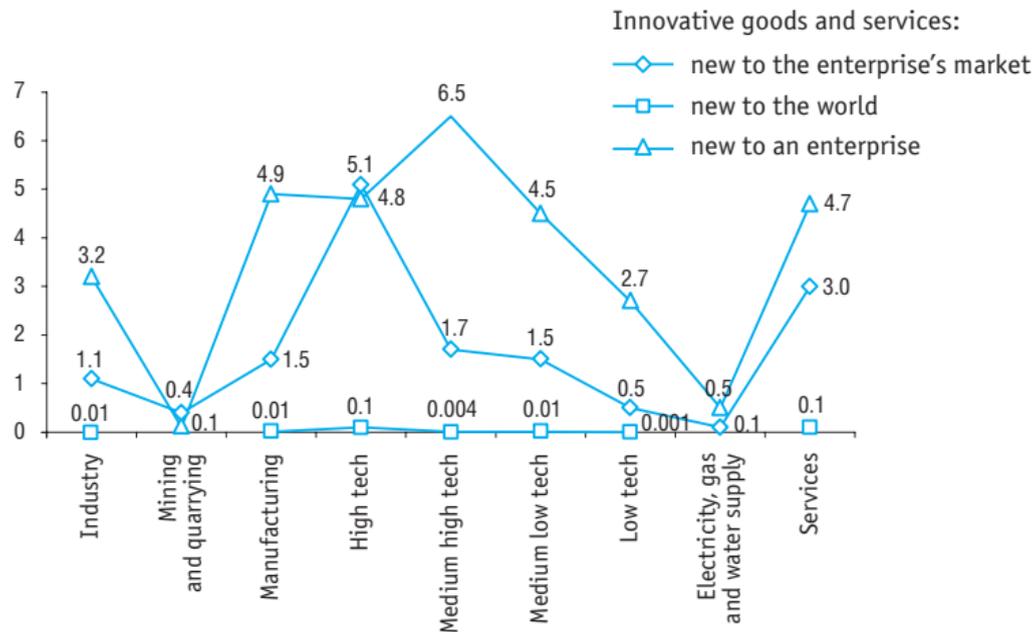
*(ratio of expenditure to total sales of enterprises engaged in technological innovation; per cent)*



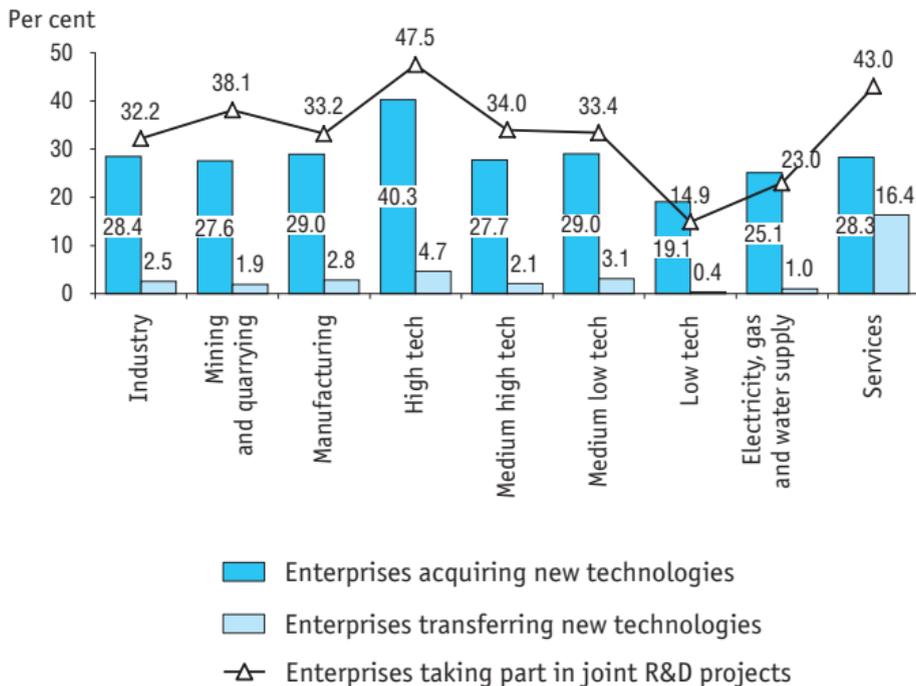
## 5.7. Sales of innovative goods and services: 2014

	Million roubles	As a per cent of total sales
Industry	3037407.3	8.2
Mining and quarrying	648533.0	7.2
Manufacturing	2362387.8	9.9
High tech	274801.7	17.7
Medium high tech	753460.7	14.8
Medium low tech	968228.4	8.8
Low tech	226598.4	4.1
Electricity, gas and water supply	26486.5	0.6
Services	542516.5	12.8

## 5.8. Technologically new or significantly improved goods and services as a per cent of total sales: 2014



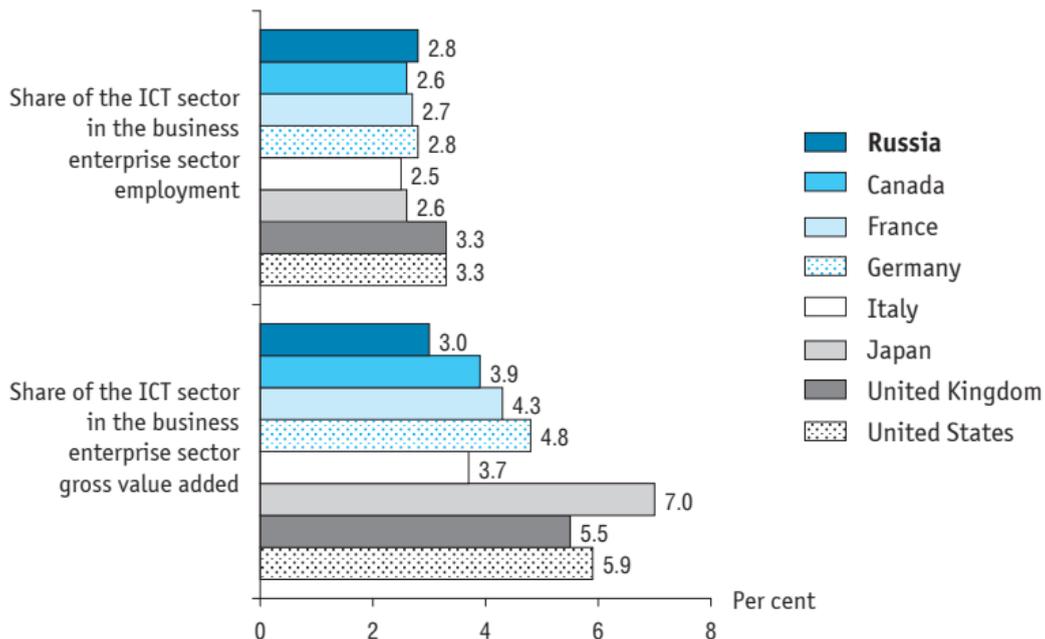
## 5.9. Co-operation links of enterprises engaged in technological innovation: 2014





## **6. Information Society**

## 6.1. Main indicators of the ICT sector by country: 2014\*



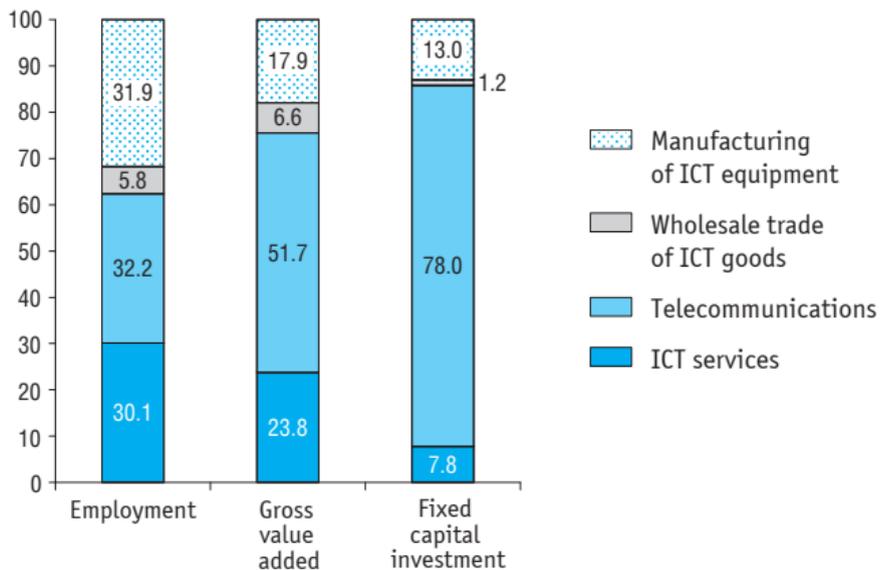
\* Or nearest years for which data is available. Excluding data about wholesale trade of ICT goods.

## 6.2. The ICT sector in Russia

	2005	2010	2012	2013	2014
Employment:					
thousand	1347	1306	1294	1323	1336
as a per cent of the national employment					
total	2.8	2.8	2.8	2.9	2.9
Gross value added:					
billion roubles	660	1354	1795	1825	1940
as a per cent of GDP	3.6	3.4	3.4	3.2	3.2
Fixed capital investment:					
billion roubles	271	297	409	398	447
as a per cent of the fixed capital investment					
total	7.5	3.2	3.2	3.0	3.3

### 6.3. Main indicators of the ICT sector by economic activity: 2014

Per cent



## 6.4. Enterprises using ICT by economic activity

*(as a per cent of all enterprises)*

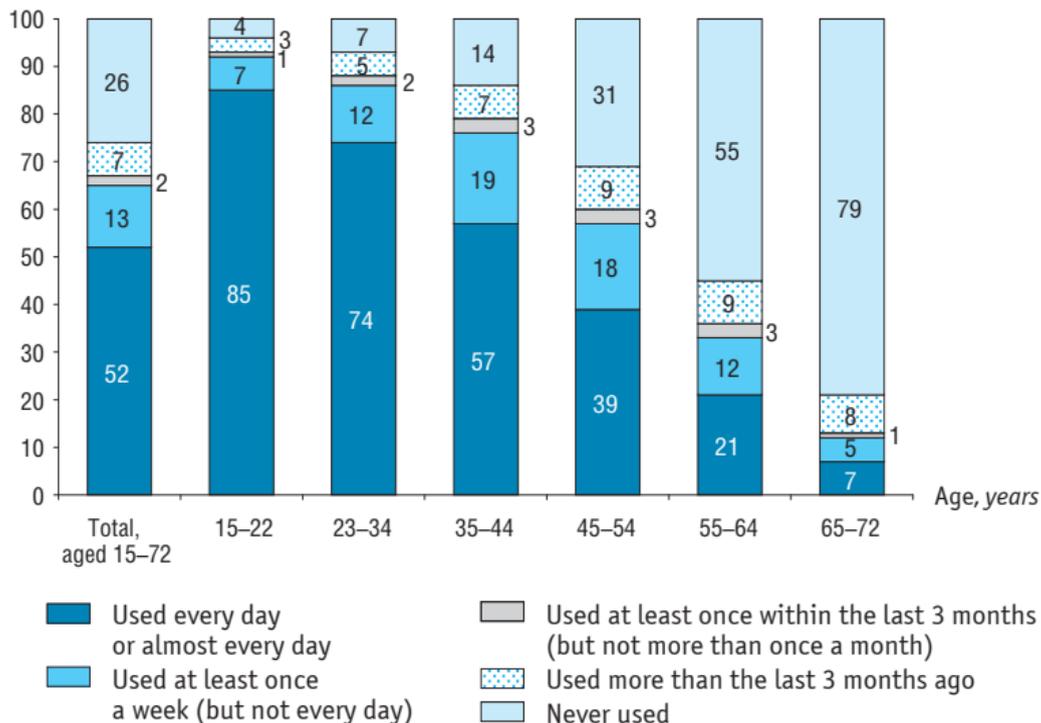
	Personal computers		Internet		Website	
	2005	2014	2005	2014	2005	2014
<b>Total</b>	<b>91.1</b>	<b>93.8</b>	<b>53.3</b>	<b>89.0</b>	<b>14.8</b>	<b>40.3</b>
Business enterprise sector	90.0	91.3	59.5	87.0	18.1	39.7
R&D	96.3	96.8	85.0	95.6	41.8	64.5
Higher education	98.1	98.5	91.0	97.6	50.4	77.2
Health and social work	95.3	98.2	47.8	96.7	7.4	52.7
Recreational, cultural and sporting activities	77.6	91.4	39.6	79.3	11.2	27.7
Financial intermediation	96.0	95.5	83.3	93.6	38.8	60.7
Public administration; compulsory social security	93.3	97.3	41.0	93.6	8.2	39.3

## 6.5. Enterprises using a broadband access to the Internet by economic activity: 2014

(as a per cent of all enterprises)

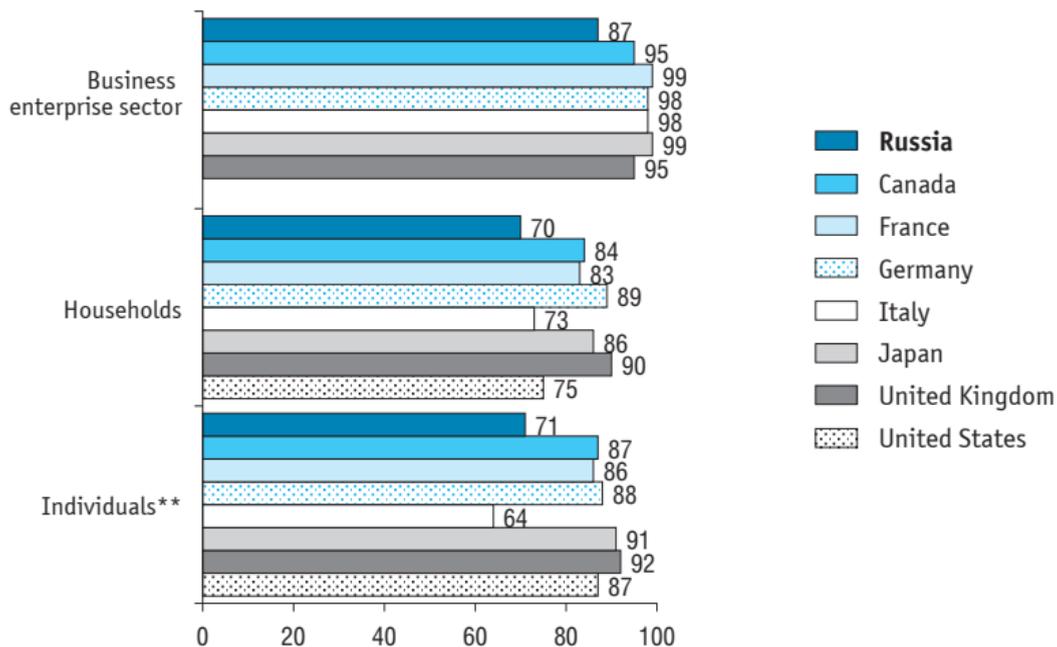
	Total	Of which top Internet connection speed			Broadband connection	
		256 Kbps – 1.9 Mbps	2.0–30.0 Mbps	Over 30 Mbps	Fixed	Mobile
<b>Total</b>	<b>81.2</b>	<b>30.3</b>	<b>29.6</b>	<b>21.3</b>	<b>78.4</b>	<b>31.4</b>
Business enterprise sector	81.4	25.4	31.6	24.4	78.3	35.9
R&D	91.8	17.1	35.3	39.4	89.3	39.0
Higher education	94.6	17.2	42.8	34.6	92.7	44.9
Health and social work	89.1	36.4	34.3	18.4	86.5	27.7
Recreational, cultural and sporting activities	68.1	35.9	16.9	15.3	65.6	23.7
Financial intermediation	91.9	17.9	49.7	24.3	90.3	37.6
Public administration; compulsory social security	82.2	36.1	27.4	18.7	79.7	26.8

## 6.6. Frequency of the Internet usage by Individuals: 2014 (as a per cent of individuals in appropriate age group)



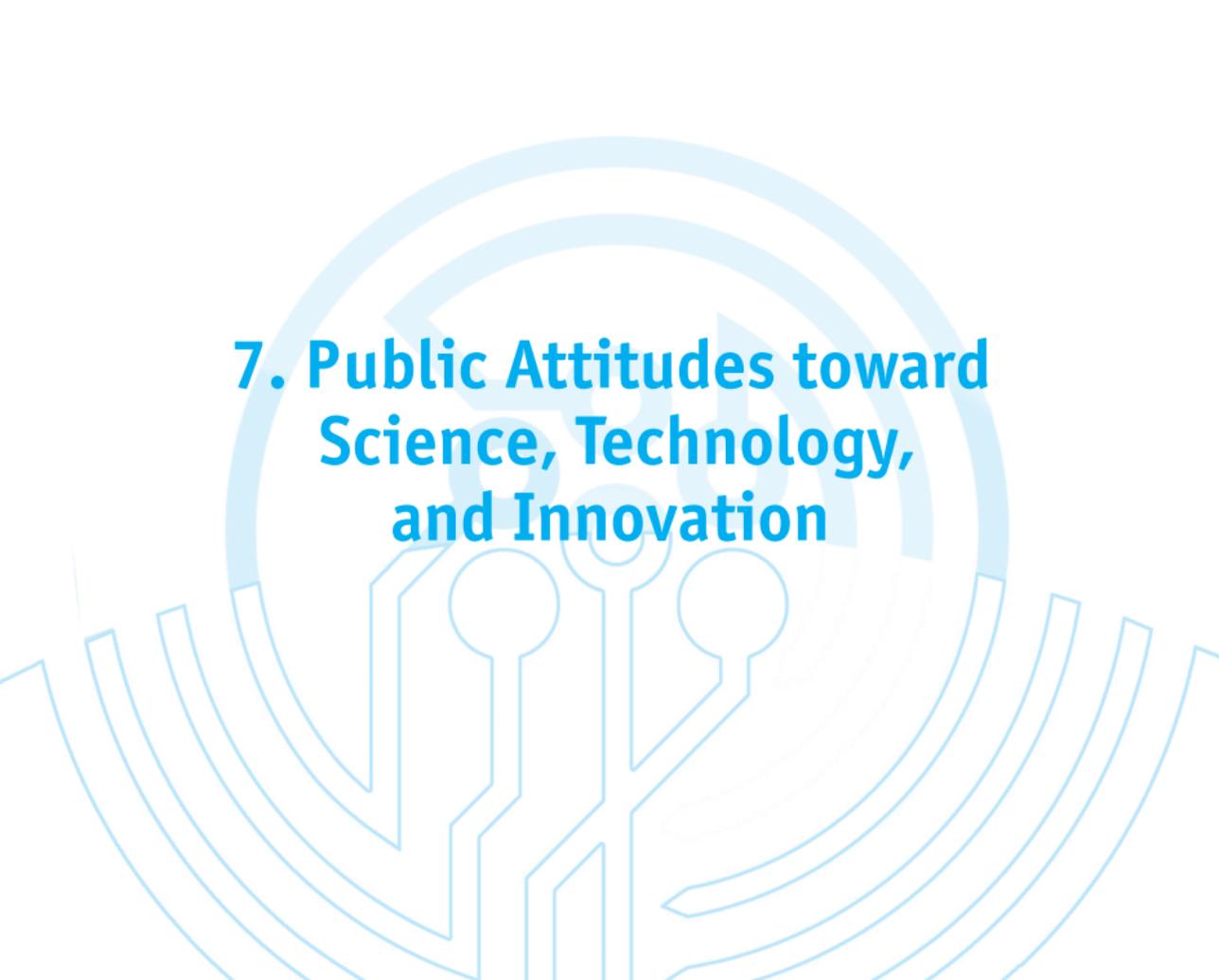
## 6.7. Internet usage by country: 2014\*

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



\* Or nearest years for which data is available.

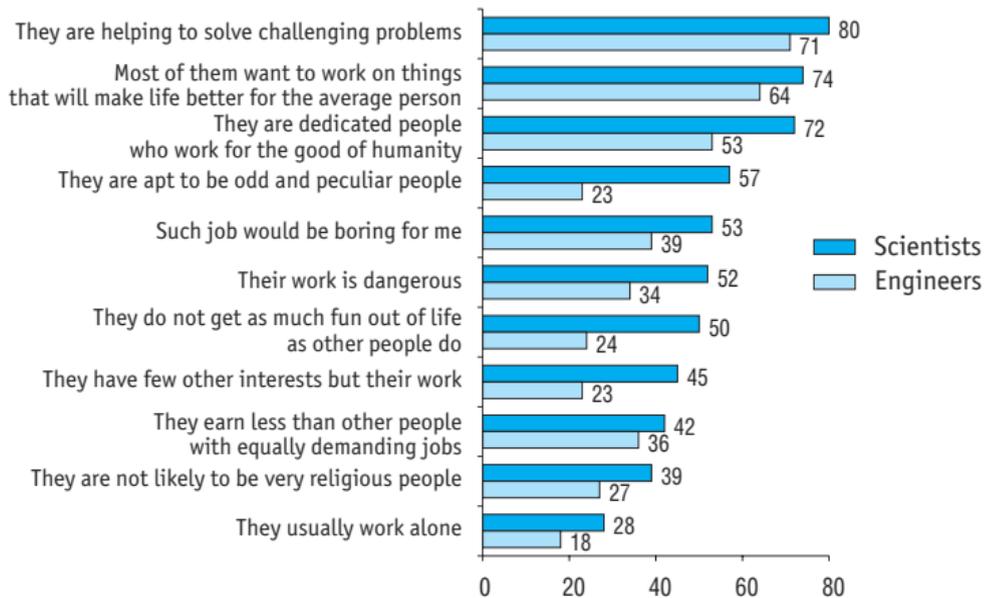
\*\* Internet usage within the last 12 months is considered.

The background features a light blue graphic consisting of several concentric circles at the top, transitioning into a stylized circuit board or network diagram with vertical lines and circular nodes at the bottom. The text is centered over this graphic.

## **7. Public Attitudes toward Science, Technology, and Innovation**

## 7.1. Public perception of science and engineering occupations: 2014\*

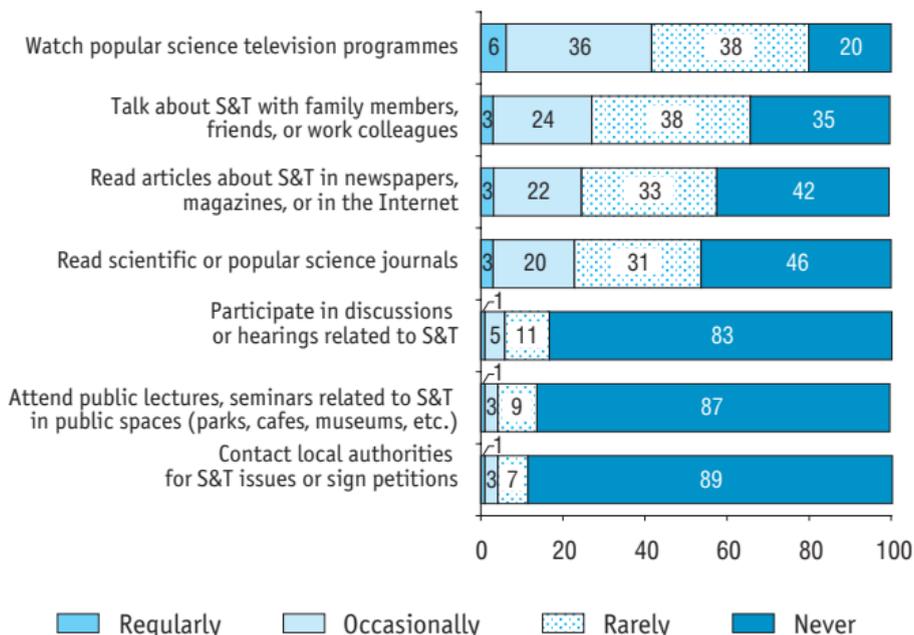
(as a per cent of the total number of respondents)



\* This section presents data derived from the public opinion surveys of Russian population aged 16 and over, conducted by the HSE Institute for Statistical Studies and Economics of Knowledge within the framework of the HSE Basic Research Programme.

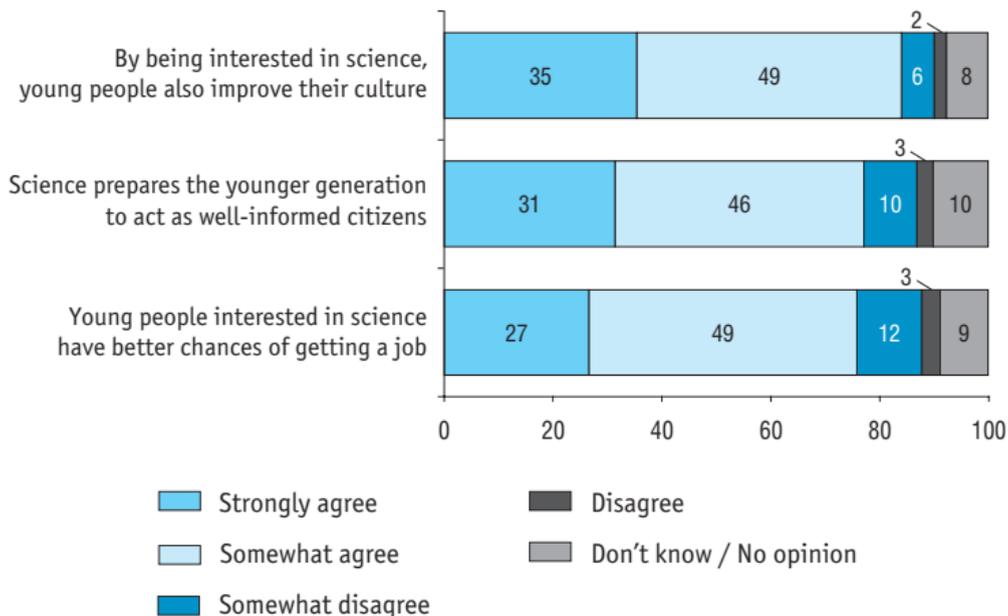
## 7.2. Public engagement in S&T: 2014

(as a per cent of the total number of respondents)



### 7.3. Benefits of science education on young people

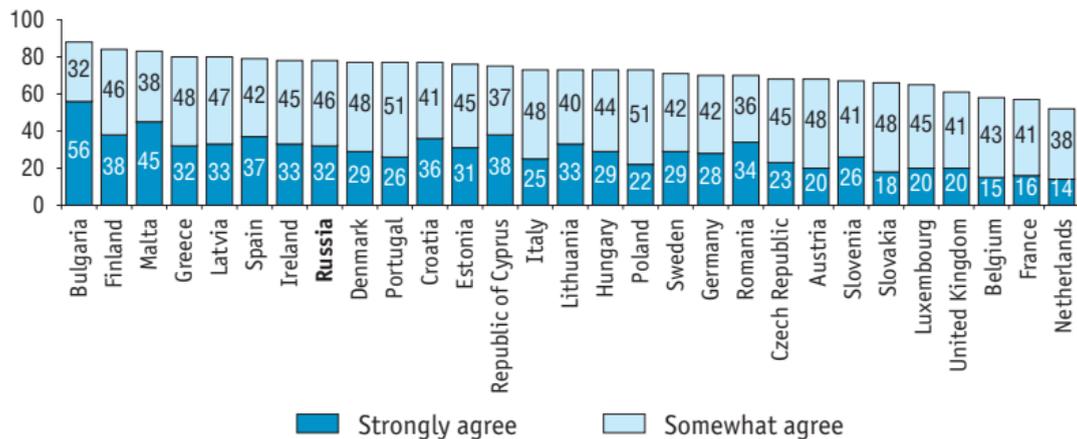
(as a per cent of the total number of respondents)



## 7.4. Benefits of science education on young people's decision-making: 2014\*

(as a per cent of the total number of respondents)

*How much do you agree or disagree with the following statement: «Science prepares the younger generation to act as well-informed citizens?»*



\* Data source for European countries: Special Eurobarometer 401: Responsible Research and Innovation, Science and Technology. European Commission, 2013.

## 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.

**Competitive** research funding (programme financing) – funds received by the organisation, which took the first place according to the decision of the competition commission made on the basis of summarizing the results of the competition of scientific, technical programmes, innovation and other projects related to the implementation of scientific research and development, on the basis of the best conditions for the implementation of the competitive project presented by the organisation in comparison with other participants.

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

**Grants** are cash and other assets that are provided free of charge and irrevocably by persons and legal entities, including foreign citizens and foreign legal entities and international organisations which have the right to provide grants to the Russian Federation in accordance with the procedures laid down by the Government of the Russian Federation, to realise specific S&T programmes and projects, innovation projects, to conduct specific research under the conditions attached by grant-makers.

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

**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.

**Number of personnel in full-time equivalent** is the indicator which reflects the sum of timeshares actually spent 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** are professionals 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.

**The technology balance of payments** registers the volume of commercial transactions related to international technology and other intangible assets transfers (exports and imports).

## Science and Technology. Innovation. Information Society

Pocket Data Book

Edited by *D. Beylina*

Design *P. Shelegeda*

Desk-top publishing *V. Parshina*

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