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## A PORTAL TO SCIENCE AND TECHNOLOGY IN FINLAND

Finland is one of the most research-intensive countries in the world. National spending on research and development totals nearly 6 billion euros, or 3.5 per cent of the GDP.

The number of doctorates has nearly doubled in Finland in the last ten years and Finland ranks among the most active European

Union member states developing human resources in research. Finnish research personnel represent the highest percentage of the employed labour force in the OECD countries.

Finland is also one of the world's biggest science publishers, relative to population and GDP.

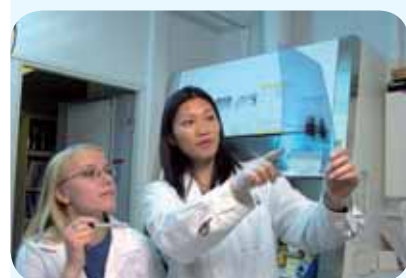
## FAST FACTS ABOUT FINLAND

- The Finnish higher education sector is composed of 21 universities and 30 polytechnics. Geographically this network covers the different parts of Finland. About 50 per cent of the age group start their studies at the higher education level.
- There are 21 state research institutes in Finland. The largest institutes are VTT Technical Research Center of Finland, the Forest Research Institute, the MTT Agrifood Research, the National Public Health Institute, the Institute of Occupational Health, and the Finnish Environment Institute.
- Networking is an essential element of innovativeness in Finland. Numerous research and technology programmes create lasting partnerships between companies, universities and research institutes.

## LEARN MORE ABOUT FINNISH RESEARCH AND INNOVATION

Research.fi, the Finnish Science and Technology Information Service offers news and up-to-date statistics about Finnish science and innovations.

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## THE COMPETITIVENESS OF FINLAND

Sources: IMD, The World Competitiveness Yearbook 2006 and WEF, The Global Competitiveness Report 2006-2007

	WEF Global competitiveness		WEF Business competitiveness	IMD Total competitiveness
	2005	2006	2006	2006
Switzerland	4	1	4	8
Finland	2	2	3	10
Sweden	7	3	7	14
Denmark	3	4	5	5
Singapore	5	5	11	3
USA	1	6	1	1

Finland has one of the most innovative business environments in the world, particularly critical to driving productivity in the country. This is coupled with a very healthy macroeconomic environment, at a time when many other industrial countries are struggling in this area. A well functioning education system, good public administration and cooperation between industry and universities are listed as Finland's strengths.

## R&D EXPENDITURE AND GDP SHARE

Presented as %  
\* incl. PNP (private non-profit sector)  
\*\* Preliminary data  
Source: Statistics Finland, Science and Technology Statistics

	Business enterprises	Public sector*	Higher education sector	GDP share of R&D
2002	70	11	19	3.5
2003	70	10	19	3.5
2004	70	10	20	3.5
2005	71	10	19	3.5
2006**	71	10	19	3.4

A total of EUR 5 736 million was spent on research and development in Finland in 2006. R&D expenditure has been growing since the early 1990s, mainly owing to business enterprises but in recent years also due to risen expenditure in the higher education sector. Business enterprises nowadays account for 71 per cent of R&D expenditure. R&D expenditure is expected to reach 4 per cent of the GDP in the next few years.

## FINNISH PATENT APPLICATIONS

Source: Statistics Finland, Science and Technology Statistics

The number of Finnish patent applications was at its highest at the turn of the millennium,

	Individual	Business/organisation	Total
2001	627	1 764	2 391
2002	550	1 606	2 156
2003	467	1 506	1 973
2004	443	1 567	2 010
2005	464	1 371	1 835

but it has fallen notably since then. The proportion of applications filed by businesses and organisations has risen and totalled 75 per cent in 2005. Foreign applicants nowadays apply for a patent in Finland mainly through the European Patent Office. According to the division based on the International Patent Classification IPC, the biggest share of Finnish applications filed in Finland in 2005, i.e. nearly 22 per cent, belonged to the group of performing operations and transporting. The second largest class was electricity.

## R&D PERSONNEL

Source: Statistics Finland, Science and Technology Statistics

	2001	2002	2003	2004	2005
Business enterprises	37 971	39 239	40 089	40 674	40 802
Public sector	10 300	10 756	10 635	10 715	10 680
Higher education sector	21 517	23 126	24 049	25 297	25 793
Total	69 788	73 121	74 773	76 687	77 275

In 2005, there were over 77 000 persons employed in R&D. Over one half of the research personnel worked for business enterprises. The number of research personnel grew in the higher education sector by 500, but in business enterprises only by a hundred. In the public sector, however, the number of personnel went down slightly. In all, one third, 26 400, of the R&D personnel were women. In the public and higher education sectors, women made up nearly one half of the research personnel, in business enterprises only good one fifth.

## EQUAL OPPORTUNITY IN RESEARCH

Presented as % of women  
\* for master's degree  
\*\* incl. associate professors  
Source: Ministry of Education, KOTA-database

	New students*	Master's	Doctorates	Senior assistants	Professors**
1990	54	54	32	26	13
1994	55	56	36	30	15
1998	53	57	40	30	18
2002	55	59	46	37	21
2006	57	60	47	37	23

In Finland, measures are taken to promote equal opportunity in all sectors of society. Women have been a majority in university admissions since the 1970s. The number of women PhDs has grown; 47 per cent of new PhDs were women in 2006. Similarly, the number of women in R&D posts has grown steadily.