

# R&D in the Business enterprise sector 1987

20.2.1988

## R&D growth rate has slowed down

About 13500 R&D man years were performed in the enterprises in 1987. Compared with 1985, the annual growth rate was 6%. Between 1983 and 1985, the corresponding growth rate was almost 12%. Growth in R&D man-years has fallen somewhat from the level at the beginning of the eighties, when the growth rate was 7-8%.

## R&D expenditure in enterprises FIM 4000 million.

The proportion of R&D expenditure in GDP has grown steadily from 0.86% in 1984 to 0.92% in 1985 and 1.02% in 1987

## The proportion of Uusimaa province in the R&D expenditure has decreased

R&D in industries is heavily concentrated in the Helsinki area. The area accounted for almost 40% of the R&D expenditure. Regional concentration has, however, diminished somewhat: as the proportion of Uusimaa province (of which the Helsinki region is a part) in the R&D expenditure fell by more than 2% from 1985 to 1987.

FIGURE 1. R&D MAN-YEARS IN 1977-1987

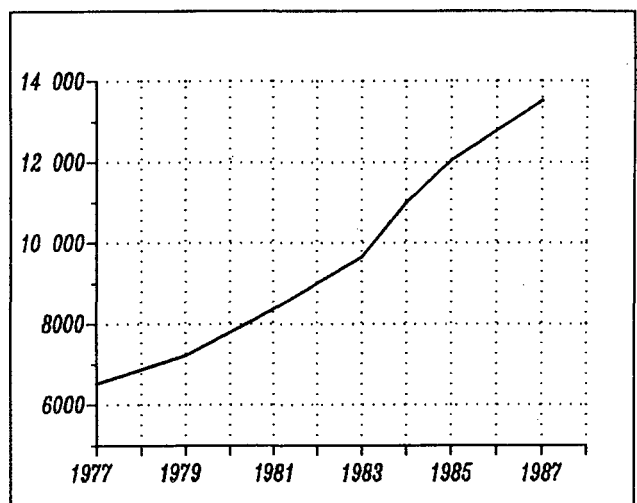


TABLE 1. R&D EXPENDITURE BY PROVINCE IN 1983-1987

	1983 %	1985 %	1987 %
Uusimaa	54.3	53.0	50.8
- of which:			
Helsinki area 1)	..	..	39.5
Turku and Pori	16.0	17.1	17.1
Aland	0.0	0.0	0.0
Häme	10.4	11.1	11.9
Kymi	3.6	3.7	3.9
Mikkeli	0.7	1.0	0.9
Northern Karelia	0.8	0.6	0.7
Kuopio	2.0	1.3	1.7
Central Finland	3.1	3.7	3.4
Vaasa	4.2	3.8	4.4
Oulu	3.4	3.7	4.1
Lapland	1.5	1.0	1.1
Total (%)	100.0	100.0	100.0
(FIM mill.)	2060.6	3082.4	4002.1

1) Helsinki, Espoo, Vantaa, Kauniainen

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Continued increase in the number of companies performing R&D

Between 1985 and 1987, the number of companies performing R&D has increased by about 100. This is about one third of the increase during the previous two year period, when the increase was unusually high.

One-fourth of R&D personnel women

About 34% of the R&D personnel had a university degree in 1987. In 1985 the corresponding proportion was 32%. The proportion of R&D personnel with a technician's diploma decreased from 17.6% in 1987 to 14.8 % in 1985.

Women participating in R&D were concentrated in the lower educational categories. Only one in six of the university graduates was a women, while the sex distribution in the groups 'other vocational education' and 'no vocational education' was more even.

Distribution by product group stable

Compared with 1985, there were no great changes in the distribution of the R&D expenditure across major product fields. The biggest group in 1987 was electrical products, followed by machinery and chemical products.

Continued increase in the relative contribution to value added

The relative contribution of R&D expenditure to the value added was 3.7% in 1987, compared with 3.0% in 1985.

FIGURE 2. COMPANIES PERFORMING R&D: NUMBERS IN 1981-1987

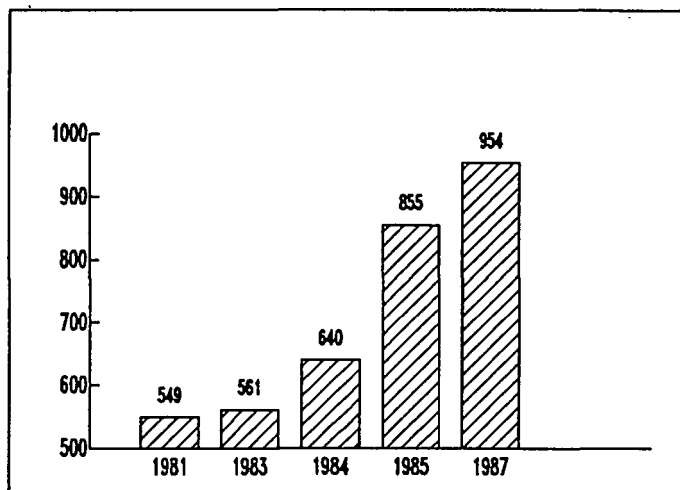


FIGURE 3. PROPORTION OF WOMEN IN R&D-PERSONNEL BY EDUCATION IN 1987

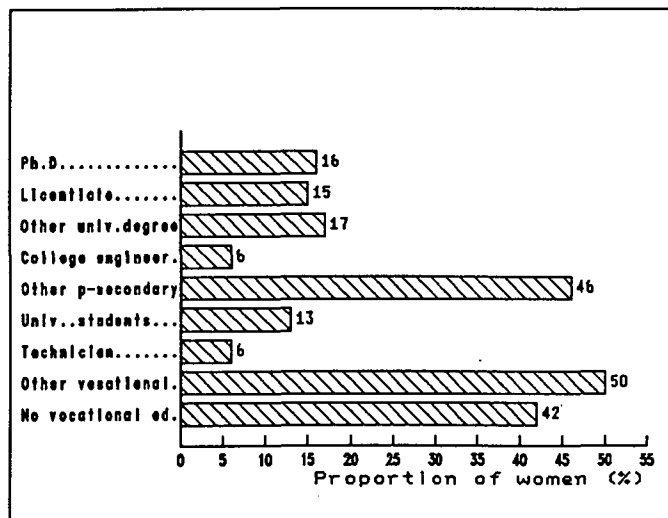
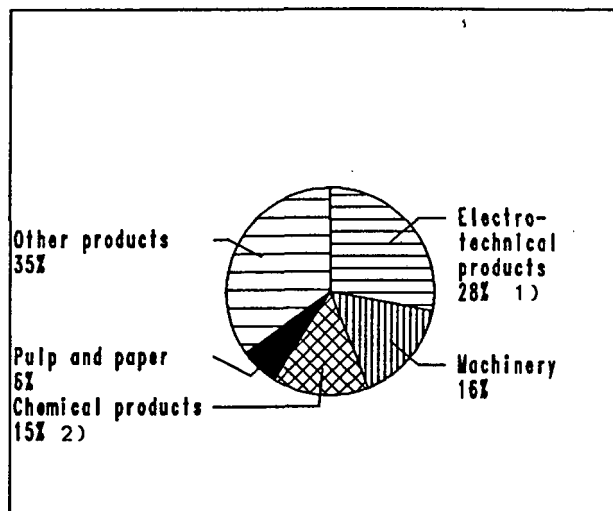


FIGURE 4. R&D BY PRODUCT GROUPS IN 1987



1) Incl. instruments, electronic equipment and components, computers  
 2) Incl. drugs

TABLE 2. R&amp;D IN THE BUSINESS ENTERPRISE SECTOR IN 1987

MAIN ACTIVITY	R&D PERSONNEL		MAN-YEARS		INTRAMURAL R&D EXPENDITURE (MILL. FIM)	R&D OF WHICH: EXTER- NALLY FUNDED (%)	NUMBER OF UNITS
	TOTAL	WOMEN	TOTAL	SHARE OF UNIVER- SITY GRADUATES (%)			
TOTAL	17830	3972	13514	34	4002	10	1099
AGRICULTURE, FORESTRY, FISHING	56	19	43	15	15	10	13
MINING AND QUARRYING	136	31	73	43	19	11	13
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MANUFACTURING, TOTAL	13821	3062	10874	31	3185	7	764
FOOD, DRINK, TOBACCO	634	309	438	37	107	5	44
TEXTILES, CLOTHING, LEATHER	221	115	136	26	40	8	40
WOOD, CORK, FURNITURE	261	15	178	23	47	10	52
PAPER AND GRAPHIC PRODUCTS TOTAL	958	320	669	33	195	5	48
PULP, PAPER, PAPER PRODUCTS	918	309	637	34	189	5	37
GRAPHIC PRODUCTS	40	11	32	16	6	2	11
CHEMICAL, PETROLEUM, COAL, RUBBER AND PLASTIC PRODUCTS TOTAL	2580	1268	2310	36	694	3	77
CHEMICALS	713	335	653	28	183	2	21
OTHER CHEMICAL PRODUCTS	1600	880	1445	41	452	4	33
PLASTIC, RUBBER	267	53	212	27	59	2	23
CLAY, GLASS AND STONE PRODUCTS TOTAL	374	66	298	31	88	4	26
GLASS, GLASS PRODUCTS	49	10	23	12	6	1	7
OTHER CLAY AND STONE PRODUCTS	325	56	275	32	82	4	19
METALS TOTAL	595	89	507	37	146	8	13
IRON, STEEL AND FERROALLOYS	342	43	267	47	67	4	7
OTHER METALS	253	46	240	27	80	10	6
METAL PRODUCTS TOTAL	8162	880	6318	29	1862	9	450
METAL PRODUCTS	525	29	301	16	75	12	112
MACHINERY	2163	197	1555	28	498	12	167
ELECTROTECHNICAL PRODUCTS	3801	497	3034	31	896	4	81
TRANSPORT EQUIPMENT	1028	46	876	22	242	16	44
INSTRUMENTS	645	111	552	40	151	16	46
OTHER MANUFACTURING PRODUCTS	36	0	20	15	6	25	14
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ELECTRICITY, GAS AND WATER	588	128	261	48	127	2	14
CONSTRUCTION	156	7	81	34	22	16	25
TRADE, RESTAURANTS AND HOTELS	840	191	695	46	193	10	67
TRANSPORT, STORAGE AND COMMUNICATIONS	336	42	305	45	105	4	9
BANKING, ENGINEERING AND COMPUTER SERVICES TOTAL	1299	225	679	49	200	30	155
BANKING, INSURANCE	72	16	36	76	13	18	6
ENGINEERING AND COMPUTER SERVICES	1227	209	643	47	187	31	149
RESEARCH INSTITUTES, ASSOCIATIONS	598	267	503	44	136	52	39
TOTAL	17830	3972	13514	34	4002	10	1099

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OSF Official Statistics of Finland

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The data of the publication are based on a survey of industries conducted by The Central Statistical Office of Finland.  
Detailed definitions appear from the set of statistical tables compiled on R&D in the Business enterprise sector (available only in Finnish).

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Available from:  
Central Statistical Office of Finland  
P.O.Box 504  
00101 Helsinki  
Tel. (90) 173 41

Price  
FIM 15

ISSN 0784-8242  
=Education and Research  
ISSN 0785-7365