

# IEEE SPECTRUM TOP 100 R&D SPENDERS

IEEE SPECTRUM TOP 100 R&D SPENDERS			R&D EXPENDITURES (US \$ MILLIONS, LESS IN-PROCESS)*			SALES (\$ MILLIONS)		R&D INTENSITY (%**)		R&D EXPENDITURES PER EMPLOYEE (\$ THOUSANDS)	
2004	2003	COMPANY NAME, COUNTRY	2004	2003	% Change	2004	2003	2004	2003	2004	2003
1	2	FORD MOTOR CO., U.S.	7400	7500	-1.3	171 652	164 196	4.3	4.6	23	23
2	4	DAIMLERCHRYSLER AG, Germany	7187	7076	1.6	180 448	173 307	4.0	4.1	19	20
3	6	TOYOTA MOTOR CORP., Japan	7052	6372	10.7	173 254	161 517	4.1	3.9	27	24
4	3	PFIZER INC., U.S.	6613	7131	-7.3	52 516	45 188	12.6	15.8	58	58
5	7	GENERAL MOTORS CORP., U.S.	6500	5700	14.0	190 812	182 005	3.4	3.1	20	17
6	5	SIEMENS AG, Germany	6431	6436	-0.1	95 480	94 293	6.7	6.8	15	15
7	1	MICROSOFT CORP., U.S.	6184	7779	-20.5	39 788	36 835	15.5	21.1	108	136
8	8	MATSUSHITA ELECTRIC INDUSTRIAL CO., Japan	5748	5409	6.3	81 377	69 854	7.1	7.7	17	19
9	9	GLAXOSMITHKLINE PLC, United Kingdom	5251	5162	1.7	37 655	39 656	13.9	13	53	50
10	13	JOHNSON & JOHNSON, U.S.	5203	4684	11.1	47 348	41 862	11.0	11.2	47	42
11	10	INTERNATIONAL BUSINESS MACHINES CORP., U.S.	5167	5068	2.0	96 293	89 131	5.4	5.7	16	16
12	14	VOLKSWAGEN AG, Germany	4823	4479	7.7	113 004	110 705	4.3	4.0	14	13
13	15	INTEL CORP., U.S.	4778	4360	9.6	34 209	30 141	14.0	14.5	56	55
14	12	NOKIA CORP., Finland	4742	4776	-0.7	37 176	37 415	12.8	12.8	85	93
15	11	SONY CORP., Japan	4688	4805	-2.4	66 864	70 009	7.0	6.9	31	30
16	25	SAMSUNG ELECTRONICS CO., Korea	4529	3337	35.7	77 494	61 284	5.8	5.4	73	60
17	16	HONDA MOTOR CO., Japan	4368	4193	4.2	80 784	76 231	5.4	5.5	32	32
18	20	NOVARTIS AG, Switzerland	4207	3756	12.0	28 247	24 864	14.9	15.1	52	48
19	17	ROCHE HOLDING AG, Switzerland	4192	3925	6.8	25 742	25 698	16.3	15.3	65	62
20	29	MERCK & CO., U.S.	3885	3178	22.2	23 430	22 486	16.6	14.1	62	50
21	23	ASTRAZENECA PLC, United Kingdom	3803	3451	10.2	21 426	18 849	17.7	18.3	59	56
22	28	NISSAN MOTOR CO., Japan	3718	3309	12.4	80 094	69 382	4.6	4.8	22	28
23	24	ROBERT BOSCH GMBH, Germany	3681	3366	9.4	50 818	46 182	7.2	7.3	15	15
24	22	HITACHI LTD., Japan	3630	3472	4.5	84 304	80 619	4.3	4.3	10	11
25	21	HEWLETT-PACKARD CO., U.S.	3506	3652	-4.0	79 905	73 061	4.4	5.0	23	26
26	26	KONINKLIJKE PHILIPS ELECTRONICS NV, Netherlands	3219	3324	-3.2	38 512	36 884	8.4	9.0	20	20
27	31	CISCO SYSTEMS INC., U.S.	3192	3135	1.8	22 045	18 878	14.5	16.6	94	92
28	30	BAE SYSTEMS PLC, United Kingdom	3181	3168	0.4	16 821	15 512	18.9	20.4	43	46
29	32	TOSHIBA CORP., Japan	3145	3096	1.6	52 107	52 820	6.0	5.9	19	19
30	54	SANOFI-AVENTIS, France	3060	1672	83.1	19 108	10 223	16.0	16.4	32	51
31	19	MOTOROLA INC., U.S.	3060	3771	-18.9	31 323	27 058	9.8	13.9	45	43
32	27	NIPPON TELEGRAPH & TELEPHONE CORP., Japan	2971	3314	-10.4	100 917	103 622	2.9	3.2	15	16
33	35	BAYERISCHE MOTOREN WERKE AG, Germany	2965	2726	8.8	56 316	52 746	5.3	5.2	28	26
34	18	TELEFONAKTIEBOLAGET LM ERICSSON, Sweden	2903	3776	-23.1	18 365	16 385	15.8	23	57	73
35	34	EUROPEAN AERONAUTIC DEFENCE & SPACE CO. EADS NV, Netherlands	2701	2781	-2.9	40 344	38 276	6.7	7.3	24	25
36	39	ELI LILLY & CO., U.S.	2691	2350	14.5	13 858	12 583	19.4	18.7	60	51
37	33	BAYER GROUP, Germany	2676	3066	-12.7	37 800	36 287	7.1	8.5	24	27
38	38	NEC CORP., Japan	2571	2397	7.3	45 342	45 825	5.7	5.2	17	17
39	37	CANON INC., Japan	2571	2420	6.2	32 386	29 867	7.9	8.1	24	24
40	41	BRISTOL-MYERS SQUIBB CO., U.S.	2500	2279	9.7	19 380	20 894	12.9	10.9	58	52
41	45	WYETH, U.S.	2461	2094	17.5	17 358	15 851	14.2	13.2	48	40
42	44	GENERAL ELECTRIC CO., U.S.	2443	2103	16.2	151 299	133 585	1.6	1.6	8	7
43	36	PSA PEUGEOT CITROEN SA, France	2363	2665	-11.3	71 266	69 110	3.3	3.9	11	13
44	42	ISTITUTO FINANZIARIO INDUSTRIALE SPA, Italy	2321	2219	4.6	65 897	67 969	3.5	3.3	13	12
45	42	FIAT SPA, Italy	2299	2219	3.6	59 051	61 411	3.9	3.6	14	14
46	40	FUJITSU LTD., Japan	2243	2343	-4.3	44 480	44 518	5.0	5.3	15	15
47	47	DENSO CORP., Japan	2225	2007	10.9	26 149	23 930	8.5	8.4	21	21
48	49	DELPHI CORP., U.S.	2100	2000	5.0	28 622	28 096	7.3	7.1	11	11
49	56	AMGEN INC., U.S.	2028	1655	22.5	10 550	8 356	19.2	19.8	141	128
50	46	ALCATEL, France	2016	2023	-0.4	15 579	15 894	12.9	12.7	36	33

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2004	2003	COMPANY NAME, COUNTRY	2004	2003	% Change	2004	2003	2004	2003	2004	2003
51	52	TEXAS INSTRUMENTS INC., U.S.	1978	1725	14.7	12 580	9834	15.7	17.5	56	51
52	48	NORTEL NETWORKS CORP., Canada	1938	2001	-3.1	9529	10 613	20.3	18.9	57	57
53	57	BOEING CO., U.S.	1879	1651	13.8	52 457	50 485	3.6	3.3	12	11
54	-	FINMECCANICA SPA, Italy	1876	-	-	9564	9523	19.6	-	37	-
55	55	PROCTER & GAMBLE CO., U.S.	1802	1665	8.2	51 407	43 373	3.5	3.8	16	17
56	50	SUN MICROSYSTEMS INC., U.S.	1785	1926	-7.3	11 071	11 185	16.1	17.2	55	59
57	59	GEORGES RENAULT SA, France	1757	1579	11.3	51 718	47 665	3.4	3.3	13	12
58	51	ABBOTT LABORATORIES, U.S.	1697	1733	-2.1	19 680	19 681	8.6	8.8	28	24
59	61	SCHERING-PLOUGH CORP., U.S.	1607	1469	9.4	8272	8 334	19.4	17.6	53	48
60	58	FUJI PHOTO FILM CO., Japan	1569	1619	-3.1	23 603	23 912	6.6	6.8	21	22
61	63	INFINEON TECHNOLOGIES AG, Germany	1548	1383	11.9	9139	7814	16.9	17.7	44	44
62	69	STMICROELECTRONICS NV, Netherlands	1532	1238	23.7	8756	7234	17.5	17.1	31	27
63	67	ORACLE CORP., U.S.	1491	1278	16.7	11 799	10 156	12.6	12.6	30	31
64	62	BASF AG, Germany	1490	1403	6.2	47 680	42 377	3.1	3.3	18	16
65	66	SHARP CORP., Japan	1383	1296	6.7	23 720	21 081	5.8	6.1	30	28
66	65	E.I. DUPONT DE NEMOURS & CO., U.S.	1333	1349	-1.2	27 491	27 137	4.8	5.0	22	17
67	64	UNILEVER GROUP, Netherlands	1321	1353	-2.3	51 024	54 230	2.6	2.5	6	6
68	70	TAKEDA PHARMACEUTICAL CO., Japan	1321	1211	9.1	10 487	10 146	12.6	11.9	91	83
69	68	SAP AG, Germany	1296	1263	2.6	9545	8923	13.6	14.2	40	43
70	53	MITSUBISHI ELECTRIC CORP., Japan	1275	1676	-24	30 909	33 985	4.1	4.9	13	17
71	60	LUCENT TECHNOLOGIES INC., U.S.	1270	1488	-14.7	9045	8470	14.0	17.6	40	43
72	78	UNITED TECHNOLOGIES CORP., U.S.	1256	1027	22.3	36 977	31 059	3.4	3.3	6	5
73	72	SANYO ELECTRIC CO., Japan	1231	1169	5.3	24 156	24 281	5.1	4.8	13	14
74	-	LG ELECTRONICS INC., Korea	1168	-	-	40 891	33 654	2.9	-	37	-
75	71	SCHERING AG, Germany	1167	1174	-0.5	6233	6133	18.7	19.1	45	44
76	80	NESTLE SA, Switzerland	1163	992	17.3	71 423	72 419	1.6	1.4	5	4
77	74	DEUTSCHE TELEKOM AG, Germany	1143	1143	0	73 521	70 927	1.6	1.6	5	5
78	76	3M CO., U.S.	1143	1102	3.7	20 011	18 232	5.7	6.0	17	16
79	73	NTT DOCOMO INC., Japan	1143	1163	-1.7	45 244	47 144	2.5	2.5	53	55
80	75	AKZO NOBEL NV, Netherlands	1045	1127	-7.2	16 117	16 578	6.5	6.8	17	17
81	88	RICOH CO., Japan	1032	864	19.4	16 942	16 626	6.1	5.2	14	12
82	81	DOW CHEMICAL CO., U.S.	1022	981	4.2	40 161	32 632	2.5	3.0	24	21
83	83	NEC ELECTRONICS CORP., Japan	1008	929	8.5	6612	6649	15.2	14.0	42	38
84	82	AB VOLVO, Sweden	1007	950	5.9	29 280	25 507	3.4	3.7	13	13
85	84	APPLIED MATERIALS INC., U.S.	992	921	7.7	8013	4477	12.4	20.6	81	76
86	79	FREESCALE SEMICONDUCTOR INC., U.S.	965	1005	-4.0	5715	4864	16.9	20.7	43	45
87	85	LOCKHEED MARTIN CORP., U.S.	962	903	6.5	35 526	31 824	2.7	2.8	7	7
88	89	MEDTRONIC INC., U.S.	951	852	11.7	10 055	9 087	9.5	9.4	29	28
89	89	ADVANCED MICRO DEVICES INC., U.S.	935	852	9.7	5001	3519	18.7	24.2	59	60
90	98	CATERPILLAR INC., U.S.	928	669	38.7	30 251	22 763	3.1	2.9	12	10
91	77	AGILENT TECHNOLOGIES INC., U.S.	917	1051	-12.7	7181	6056	12.8	17.4	33	36
91	95	HONEYWELL INTERNATIONAL INC., U.S.	917	751	22.1	25 601	23 103	3.6	3.3	8	7
93	85	VISTEON CORP., U.S.	896	903	-0.8	18 657	17 660	4.8	5.1	13	13
94	92	AISIN SEIKI CO., Japan	892	832	7.3	17 082	14 992	5.2	5.5	17	17
95	87	COMPAGNIE GENERALE DES ETABLISSEMENTS MICHELIN, France	856	902	-5.2	19 928	19 523	4.3	4.6	7	7
96	94	MAZDA MOTOR CORP., Japan	848	820	3.5	25 174	27 234	3.4	3.0	24	23
96	97	EMC CORP., U.S.	848	718	18.0	8229	6237	10.3	11.5	37	36
98	96	EASTMAN KODAK CO., U.S.	839	750	11.9	13 517	13 317	6.2	5.6	15	12
99	93	MITSUBISHI CHEMICAL CORP., Japan	833	827	0.8	20 447	17 981	4.1	4.6	25	25
100	91	SEIKO EPSON CORP., Japan	832	845	-1.6	13 819	13 198	6.0	6.4	10	10

\* "Less In-Process" means that R&D expenditures accrued as a result of a merger or an acquisition have been subtracted. \*\* The ratio of R&D spending to sales. SOURCE: Standard & Poor's  
For every company listed, we provide the most recent numbers in current dollars. Because companies have restated figures for 2003, rankings may differ from those published in last year's report.