Table 1. Business Enterprise Research and Development Survey aggregate estimates, by questionnaire reference: 2024

(Millions of U.S. dollars and thousands of employees)

Question	Survey item	Aggregate amount
Millions of U.S. dollars		
Company and financial information		
1.12	Worldwide net sales and operating revenues	19,503,626
1.13	Net sales and operating revenues from domestic operations	15,135,435
R&D paid for by the company and performed by the company and others		
2.1	Worldwide R&D paid for by the company (expense), total	965,311
2.3	Worldwide R&D paid for by the company (expense), adjustments	75,309
2.4/ 2.7c	Worldwide R&D paid for by the company and performed by the company and others	890,002
2.7a	Domestic R&D paid for by the company and performed by the company and others	728,519
2.7b	Foreign R&D paid for by the company and performed by the company and others	161,483
2.5	Indirect R&D charges to be recouped from the U.S. federal government (independent R&D [IR&D])[a]	6,908
2.8m(1)	Domestic R&D paid for by the company and performed by the company and others	728,519
2.8a(1)	Salaries, wages, and fringe benefits	358,050
2.8b(1)	Stock-based compensation	91,483
2.8c(1)	Leased or temporary staffing, including on-site contractors, working on R&D	27,961
2.8d(1)	Expensed equipment (not capitalized)	11,828
2.8e(1)	Materials and supplies	37,867
2.8f(1)	Leased facilities and equipment	11,808
2.8g(1)	Depreciation and amortization on R&D property, plant, equipment, and intangible assets	29,313
2.8h(1)	Royalties and licensing fees	3,924
2.8i(1)	Collaborative R&D payments	7,160
2.8j(1)	Contract R&D	41,988
2.8k(1)	Other purchased services	25,386
2.8l(1)	All other costs	81,752
2.9(3)	Worldwide R&D paid for by the company and performed by others	60,433
2.9(1)	Domestic R&D paid for by the company and performed by others	49,148
2.9(2)	Foreign R&D paid for by the company and performed by others	11,285
2.10(3)	Worldwide R&D paid for and performed by the company	829,569
2.10(1)	Domestic R&D paid for and performed by the company	679,371
2.10(2)	Foreign R&D paid for and performed by the company	150,198
2.9(3) + 2.10(3) + 3.4(3) + 3.5(3)	Worldwide R&D paid for by the company and others and performed by the company and others	1,001,685
2.10(3) + 3.5(3)	Worldwide R&D paid for by the company and others and performed by the company	929,809
2.9(1) + 2.10(1) + 3.4(1) + 3.5(1)	Domestic R&D paid for by the company and others and performed by the company and others	824,765
2.10(1) + 3.5 (1)	Domestic R&D paid for by the company and others and performed by the company	765,082
Domestic R&D paid for and performed by the company		
2.14	Performed at largest domestic location	384,400
2.16	Performed at second-largest domestic location	57,805
2.18	Domestic R&D paid for by foreign operations or subsidiaries and performed by the company[a]	39,057
2.19	Foreign R&D paid for by domestic operations or subsidiaries and performed by the company[a]	30,463
Projected worldwide R&D expense paid for and performed by the company in 2025		
2.20(3)	Worldwide R&D to be paid for and performed by the company	971,546
2.20(1)	Domestic R&D to be paid for and performed by the company	805,512
2.20(2)	Foreign R&D to be paid for and performed by the company	166,035
2.21	Projected R&D services and projected payments for collaborative R&D	59,373
3.1j/ 3.2c	Worldwide R&D paid for by others and performed by the company and others	111,682
3.1a	R&D reimbursed by the company's foreign parent or owner	24,752
3.1b	Collaborative R&D reimbursed by business partners	9,800
3.1c	R&D paid for by grants (government or private foundation)	4,847
3.1d	Defense R&D goods or services provided as a prime contractor or subcontractor to the federal government and/ or government contractors	29,137

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(Millions of U.S. dollars and thousands of employees)

Question	Survey item	Aggregate amount	
3.1e	Medical clinical trial Phase I–III services provided to others not owned by the company	30,676	i
3.1f	Medical R&D services, other than clinical trials, provided to others not owned by the company	5,257	
3.1g	Nondefense custom software development or computer systems designed for others not owned by the company	449	
3.1h	Prototype development, production, and testing for customer's products	769	
3.1i	All other R&D services provided to the federal government or to others not owned by the company	5,996	i
3.2c/ 3.1j	Worldwide R&D paid for by others and performed by the company and others	111,682	
3.2a	Domestic R&D paid for by others and performed by the company and others	96,246	
3.2b	Foreign R&D paid for by others and performed by the company and others	15,436	
3.3m(1)	Domestic R&D paid for by others and performed by the company and others	96,246	
3.3a(1)	Salaries, wages, and fringe benefits	47,712	
3.3b(1)	Stock-based compensation	2,023	
3.3c(1)	Leased or temporary staffing, including on-site contractors	2,046	
3.3d(1)	Expensed equipment (not capitalized)	751	i
3.3e(1)	Materials and supplies	9,384	i
3.3f(1)	Leased facilities and equipment rental payments	1,211	
3.3g(1)	Depreciation and amortization on R&D property, plant, equipment, and intangible assets	2,608	
3.3h(1)	Royalties and licensing fees	438	
3.3i(1)	Collaborative R&D payments	1,385	i
3.3j(1)	Contract R&D	9,151	
3.3k(1)	Other purchased services	4,813	i
3.3l(1)	All other costs	14,725	i
3.4(3)	Worldwide R&D paid for and performed by others	11,442	
3.4(1)	Domestic R&D paid for and performed by others	10,535	
3.4(2)	Foreign R&D paid for and performed by others	907	
3.5(3)	Worldwide R&D paid for by others and performed by the company	100,240	
3.5(1)	Domestic R&D paid for by others and performed by the company	85,711	
3.5(2)	Foreign R&D paid for by others and performed by the company	14,529	
3.8a	Other companies in the United States	27,442	
3.8b	Your company's foreign parent or owner	23,767	
3.8c	Other companies outside the United States	2,519	
3.8d/ 3.11j/ 3.12c	U.S. federal government agencies or laboratories	30,995	
3.8e	U.S. state and local government agencies or laboratories	153	
3.8f	Foreign government agencies or laboratories	171	
3.8g	U.S. universities, colleges, and academic researchers	47	
3.8h	Universities, colleges, and academic researchers outside the United States	7	r
3.8i	All other organizations in the United States	554	
3.8j	All other organizations outside the United States	56	i
3.8d	Federally funded R&D performed by the company	30,995	
3.9/ 3.8a + 3.8b + 3.8c	Domestic R&D paid for by other companies and performed by the company	53,727	
Domestic R&D paid for by others and performed by the company			
3.10/ 3.8k - 3.8d	Domestic R&D paid for by nonfederal sources and performed by the company	54,716	
3.13	Performed at largest domestic location	39,596	
3.15	Performed at second-largest domestic location	6,595	
3.16	Domestic R&D paid for by U.S. federal government agencies or laboratories and performed by others	2,385	
Projected R&D to be paid for by others and performed by the company in 2025			
3.17	Worldwide R&D to be paid for by others and performed by the company	117,337	i
3.18	Domestic R&D to be paid for by others and performed by the company	92,811	i
3.19	Domestic R&D to be paid for by the U.S. federal government and performed by the company	33,888	i
4.1d	Total value of assets owned or leased	14,973,468	
4.1a	Property, plant, and equipment	7,339,111	
4.1b	Goodwill	4,774,062	

Table 1. Business Enterprise Research and Development Survey aggregate estimates, by questionnaire reference: 2024

(Millions of U.S. dollars and thousands of employees)

Question	Survey item	Aggregate amount	
4.1c	Identifiable intangible assets	2,860,295	
4.2c	Worldwide expenditures for capitalized assets	1,349,873	
4.2a	Property, plant, and equipment	1,224,642	
4.2b	Identifiable intangible assets	125,231	
4.3c(1)	Domestic expenditures for capitalized assets	1,107,042	
4.3a(1)	Property, plant, and equipment	998,703	
4.3b(1)	Identifiable intangible assets	108,339	
4.3c(2)	Foreign expenditures for capitalized assets	242,831	
4.3a(2)	Property, plant, and equipment	225,939	
4.3b(2)	Identifiable intangible assets	16,892	i
4.4c/ 4.5g	Domestic capital expenditures for R&D	44,908	
4.4a	Property, plant, and equipment	38,950	
4.4b	Identifiable intangible assets	5,958	
4.5a	Land acquisition	109	
4.5b	Buildings and land improvement	5,743	
4.5c	Machinery and equipment	27,488	
4.5d	Capitalized software	4,153	
4.5e	Other intellectual property	3,368	
4.5f	All other capital expenditures for R&D operations	4,047	
5.1	Worldwide R&D paid for and performed by the company and others directed toward business areas or product lines new to the company	137,828	
5.2/ 2.10(1)	Domestic R&D paid for and performed by the company	679,371	
Type of R&D (character of work)			
5.4b	Basic research	34,856	
5.4a	Applied research	95,812	
5.3b	Development	548,704	
Technology focus areas			
5.5	Software products and software embedded in other projects or products	305,788	i
5.6	Biotechnology	115,278	
5.7	Nanotechnology	36,916	i
5.8	Artificial intelligence	68,501	
5.10c/ 5.9	Foreign R&D paid for and performed by the company	150,198	
5.10a	Research	21,335	
5.10b	Development	128,863	
5.11/ 3.5(1)	Domestic R&D paid for by others and performed by the company	85,711	
Type of R&D (character of work)			
5.13b	Basic research	5,674	
5.13a	Applied research	20,546	
5.12b	Development	59,490	
Technology focus areas			
5.14	Software products and software embedded in other projects or products	16,425	
5.15	Biotechnology	23,358	
5.16	Nanotechnology	2,052	i
5.17	Artificial intelligence	3,430	i
5.18/ 3.8d	Federally funded R&D performed by the company	30,995	
Type of R&D (character of work)			
5.20b	Basic research	2,204	i
5.20a	Applied research	6,132	
5.19b	Development	22,658	
Technology focus areas			
5.21	Federally funded R&D performed by the company for software products and software embedded in other projects or products	5,046	
5.23c/ 5.22	Foreign R&D paid for by others and performed by the company	14,529	

Table 1. Business Enterprise Research and Development Survey aggregate estimates, by questionnaire reference: 2024

(Millions of U.S. dollars and thousands of employees)

Question	Survey item	Aggregate amount	
5.23a	Research	4,723	
5.23b	Development	9,807	
Employees (thousands)			
Worldwide			
1.8/ 1.9(3)/ 6.1c(3)	Total employees	34,779	
6.1b(3)	Non-R&D employees	31,481	
6.1a(3)	R&D employees	3,298	
6.4a(3)	Female	1,000	
6.4b(3)	Male	2,298	
6.5a(3)	Researchers	2,290	
6.5b(3)	Technicians	723	
6.5c(3)	Support staff	286	
Domestic			
1.9(1)/ 6.1c(1)	Total employees	23,145	
6.1b(1)	Non-R&D employees	21,015	
6.1a(1)	R&D employees	2,130	
6.4a(1)	Female	635	
6.4b(1)	Male	1,495	
6.5a(1)	Researchers	1,462	
6.5b(1)	Technicians	470	
6.5c(1)	Support staff	198	
Foreign			
1.9(2)/ 6.1c(2)	Total employees	11,634	
6.1b(2)	Non-R&D employees	10,466	
6.1a(2)	R&D employees	1,168	
6.4a(2)	Female	365	
6.4b(2)	Male	803	
6.5a(2)	Researchers	828	
6.5b(2)	Technicians	252	
6.5c(2)	Support staff	88	
Researchers with PhD			
6.6(3)	Worldwide	201	i
6.6(1)	Domestic	153	
6.6(2)	Foreign	48	i
Full-time equivalent			
6.7d	R&D employees	1,937	
6.7a	Full-time R&D employees	1,668	
6.7b	Full-time employees not solely working on R&D	242	
6.7c	Part-time employees working on R&D	28	
6.8d	Researchers	1,288	
6.8a	Full-time R&D employees	1,140	
6.8b	Full-time employees not solely working on R&D	134	
6.8c	Part-time employees working on R&D	14	i
6.9	Non-U.S. citizens employed as researchers under temporary visa[a]	51	
6.10d(1)	Total leased and temporary employees working on R&D	291	i
6.10a(1)	Researchers	198	i
6.10b(1)	Technicians	61	i
6.10c(1)	Support staff	32	i
U.S. patents (number)[a]			
7.1	Patents applied for, total	151,573	
7.2	Nonprovisional utility patents applied for	102,955	
7.3	Nonprovisional utility patent applications filed or planned in foreign jurisdictions	50,413	

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(Millions of U.S. dollars and thousands of employees)

Question	Survey item	Aggregate amount	
7.4	Nonprovisional utility patent applications originated from organized R&D activities	83,666	
7.6	Utility patents issued	101,145	
U.S. patents (US$millions)[a]			
Revenue received			
7.7	From sale of utility patents	698	
7.8	From licensing utility patents	28,899	
Amount paid			
7.10	To purchase patents	2,015	
7.11	To license patents	10,749	

i = more than 50% of the estimate is a combination of imputation and reweighting to account for nonresponse; r = relative standard error is more than 50%.

[a] Statistics are based on companies in the United States that reported to the survey. No systematic item imputation was applied. These statistics include an adjustment to the weight to account for unit nonresponse.

Note(s):
Detail may not add to total because of rounding. Statistics are representative of companies located in the United States that performed or funded $50,000 or more of R&D.

Source(s):
National Center for Science and Engineering Statistics and Census Bureau, Business Enterprise Research and Development Survey, 2024.