

Table 1. Business Enterprise Research and Development Survey aggregate estimates, by questionnaire reference: 2023

(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 | 18,569,231 |
| 1.13 | Net sales and operating revenues from domestic operations | 14,019,323 |
| 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 | 897,519 |
| 2.3 | Worldwide R&D paid for by the company (expense), adjustments | 65,849 |
| 2.4/ 2.7c | Worldwide R&D paid for by the company and performed by the company and others | 831,670 |
| 2.7a | Domestic R&D paid for by the company and performed by the company and others | 680,780 |
| 2.7b | Foreign R&D paid for by the company and performed by the company and others | 150,890 |
| 2.5 | Indirect R&D charges to be recouped from the U.S. federal government (independent R&D [IR&D]) ^a | 7,361 |
| 2.8m(1) | Domestic R&D paid for by the company and performed by the company and others | 680,780 |
| 2.8a(1) | Salaries, wages, and fringe benefits | 338,912 |
| 2.8b(1) | Stock-based compensation | 83,324 |
| 2.8c(1) | Leased or temporary staffing, including on-site contractors, working on R&D | 27,861 |
| 2.8d(1) | Expensed equipment (not capitalized) | 11,106 |
| 2.8e(1) | Materials and supplies | 36,891 |
| 2.8f(1) | Leased facilities and equipment | 10,958 |
| 2.8g(1) | Depreciation and amortization on R&D property, plant, equipment, and intangible assets | 24,138 |
| 2.8h(1) | Royalties and licensing fees | 4,021 |
| 2.8i(1) | Collaborative R&D payments | 7,847 |
| 2.8j(1) | Contract R&D | 37,455 |
| 2.8k(1) | Other purchased services | 20,390 |
| 2.8l(1) | All other costs | 77,877 |
| 2.9(3) | Worldwide R&D paid for by the company and performed by others | 58,801 |
| 2.9(1) | Domestic R&D paid for by the company and performed by others | 45,302 |
| 2.9(2) | Foreign R&D paid for by the company and performed by others | 13,498 |
| 2.10(3) | Worldwide R&D paid for and performed by the company | 772,869 |
| 2.10(1) | Domestic R&D paid for and performed by the company | 635,478 |
| 2.10(2) | Foreign R&D paid for and performed by the company | 137,392 |
| 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 | 942,495 |
| 2.10(3) + 3.5(3) | Worldwide R&D paid for by the company and others and performed by the company | 873,593 |
| 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 | 776,368 |
| 2.10(1) + 3.5(1) | Domestic R&D paid for by the company and others and performed by the company | 721,792 |
| Domestic R&D paid for and performed by the company | | |
| 2.14 | Performed at largest domestic location | 369,735 |
| 2.16 | Performed at second-largest domestic location | 53,648 |
| 2.18 | Domestic R&D paid for by foreign operations or subsidiaries and performed by the company ^a | 34,114 |
| 2.19 | Foreign R&D paid for by domestic operations or subsidiaries and performed by the company ^a | 29,202 |
| 2.9(1)/ 2.20i | Domestic R&D paid for by the company and performed by others | 45,302 |
| 2.20a | Companies in United States | 38,544 |
| 2.20b | Your company's foreign parent or owner | 355 |
| 2.20c | Companies outside United States | 4,787 |
| 2.20d | U.S. federal government agencies or laboratories | 716 |
| 2.20e | U.S. state and local government agencies or laboratories | 2 |
| 2.20f | U.S. universities, colleges, and academic researchers | 355 |
| 2.20g | All other organizations in the United States | 445 |
| 2.20h | All other organizations outside the United States | 98 |
| 2.22 | Monetary gifts made by the company to U.S. universities and colleges ^a | 53 |
| Projected worldwide R&D expense paid for and performed by the company in 2024 | | |

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| 2.23(3) | Worldwide R&D to be paid for and performed by the company | 879,355 |
| 2.23(1) | Domestic R&D to be paid for and performed by the company | 726,979 |
| 2.23(2) | Foreign R&D to be paid for and performed by the company | 152,375 |
| 2.24 | Projected R&D services and projected payments for collaborative R&D | 51,703 |
| 3.1j/ 3.2c | Worldwide R&D paid for by others and performed by the company and others | 110,826 |
| 3.1a | R&D reimbursed by the company's foreign parent or owner | 22,150 |
| 3.1b | Collaborative R&D reimbursed by business partners | 10,742 |
| 3.1c | R&D paid for by grants (government or private foundation) | 8,418 |
| 3.1d | Defense R&D goods or services provided as a prime contractor or subcontractor to the federal government and/ or government contractors | 25,814 |
| 3.1e | Medical clinical trial Phase I–III services provided to others not owned by the company | 30,960 |
| 3.1f | Medical R&D services, other than clinical trials, provided to others not owned by the company | 4,771 |
| 3.1g | Nondefense custom software development or computer systems designed for others not owned by the company | 499 |
| 3.1h | Prototype development, production, and testing for customer's products | 1,286 |
| 3.1i | All other R&D services provided to the federal government or to others not owned by the company | 6,186 |
| 3.2c/ 3.1j | Worldwide R&D paid for by others and performed by the company and others | 110,826 |
| 3.2a | Domestic R&D paid for by others and performed by the company and others | 95,588 |
| 3.2b | Foreign R&D paid for by others and performed by the company and others | 15,237 |
| 3.3m(1) | Domestic R&D paid for by others and performed by the company and others | 95,588 |
| 3.3a(1) | Salaries, wages, and fringe benefits | 48,692 |
| 3.3b(1) | Stock-based compensation | 1,415 |
| 3.3c(1) | Leased or temporary staffing, including on-site contractors | 2,726 |
| 3.3d(1) | Expensed equipment (not capitalized) | 668 |
| 3.3e(1) | Materials and supplies | 8,610 |
| 3.3f(1) | Leased facilities and equipment rental payments | 984 |
| 3.3g(1) | Depreciation and amortization on R&D property, plant, equipment, and intangible assets | 2,481 |
| 3.3h(1) | Royalties and licensing fees | 445 |
| 3.3i(1) | Collaborative R&D payments | 2,323 |
| 3.3j(1) | Contract R&D | 6,952 |
| 3.3k(1) | Other purchased services | 4,954 |
| 3.3l(1) | All other costs | 15,339 |
| 3.4(3) | Worldwide R&D paid for and performed by others | 10,102 |
| 3.4(1) | Domestic R&D paid for and performed by others | 9,274 |
| 3.4(2) | Foreign R&D paid for and performed by others | 828 |
| 3.5(3) | Worldwide R&D paid for by others and performed by the company | 100,723 |
| 3.5(1) | Domestic R&D paid for by others and performed by the company | 86,314 |
| 3.5(2) | Foreign R&D paid for by others and performed by the company | 14,409 |
| 3.8a | Other companies in the United States | 27,738 |
| 3.8b | Your company's foreign parent or owner | 22,643 |
| 3.8c | Other companies outside the United States | 2,874 |
| 3.8d/ 3.11j/ 3.12c | U.S. federal government agencies or laboratories | 32,008 |
| 3.8e | U.S. state and local government agencies or laboratories | 230 |
| 3.8f | Foreign government agencies or laboratories | 104 |
| 3.8g | U.S. universities, colleges, and academic researchers | 53 |
| 3.8h | Universities, colleges, and academic researchers outside the United States | 4 |
| 3.8i | All other organizations in the United States | 609 |
| 3.8j | All other organizations outside the United States | 53 |
| 3.8d | Federally funded R&D performed by the company | 32,008 |
| 3.9/ 3.8a + 3.8b + 3.8c | Domestic R&D paid for by other companies and performed by the company | 53,255 |
| Domestic R&D paid for by others and performed by the company | | |
| 3.11j/ 3.8d/ 3.12c | Federally funded R&D performed by the company | 32,008 |

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| Question | Survey item | Aggregate amount |
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| 3.11a | Department of Defense | 24,991 |
| 3.11b | Department of Energy | 953 |
| 3.11c | National Aeronautics and Space Administration | 3,130 i |
| 3.11d | National Institutes of Health | 694 i |
| 3.11e | Department of Homeland Security | 77 |
| 3.11f | Department of Transportation | 18 |
| 3.11g | Environmental Protection Agency | 4 |
| 3.11h | National Science Foundation | 42 |
| 3.11i | Other U.S. federal agencies | 2,098 |
| 3.12c/ 3.8d/ 3.11j | Federally funded R&D performed by the company by type of agreement | 32,008 |
| 3.12a | Contracts | 30,824 |
| 3.12b | Grants and all other agreements | 1,184 |
| 3.13/ 3.8k - 3.8d | Domestic R&D paid for by nonfederal sources and performed by the company | 54,307 |
| 3.16 | Performed at largest domestic location | 40,631 |
| 3.18 | Performed at second-largest domestic location | 6,934 |
| 3.19 | Domestic R&D paid for by U.S. federal government agencies or laboratories and performed by others | 2,809 |
| Projected R&D to be paid for by others and performed by the company in 2024 | | |
| 3.20 | Worldwide R&D to be paid for by others and performed by the company | 109,880 |
| 3.21 | Domestic R&D to be paid for by others and performed by the company | 88,011 |
| 3.22 | Domestic R&D to be paid for by the U.S. federal government and performed by the company | 34,841 |
| 4.1d | Total value of assets owned or leased | 14,532,849 |
| 4.1a | Property, plant, and equipment | 6,997,579 |
| 4.1b | Goodwill | 4,607,365 |
| 4.1c | Identifiable intangible assets | 2,927,905 |
| 4.2c | Accumulated depreciation and amortization on owned or leased assets | 6,913,661 |
| 4.2a | Property, plant, and equipment | 5,431,836 |
| 4.2b | Identifiable intangible assets | 1,481,824 |
| 4.3d | Reduction in asset value due to impairment, changes, disposal, or retirement | 353,635 |
| 4.3a | Property, plant, and equipment | 190,505 |
| 4.3b | Goodwill | 102,385 |
| 4.3c | Identifiable intangible assets | 60,745 |
| 4.4d | Book value of assets acquired through mergers and acquisitions | 426,975 |
| 4.4a | Property, plant, and equipment | 76,262 |
| 4.4b | Goodwill | 174,703 |
| 4.4c | Identifiable intangible assets | 176,010 |
| 4.5c | Worldwide expenditures for capitalized assets | 1,127,069 |
| 4.5a | Property, plant, and equipment | 1,033,255 |
| 4.5b | Identifiable intangible assets | 93,814 |
| 4.6c(1) | Domestic expenditures for capitalized assets | 909,958 |
| 4.6a(1) | Property, plant, and equipment | 829,063 |
| 4.6b(1) | Identifiable intangible assets | 80,896 |
| 4.6c(2) | Foreign expenditures for capitalized assets | 217,110 |
| 4.6a(2) | Property, plant, and equipment | 204,192 |
| 4.6b(2) | Identifiable intangible assets | 12,918 |
| 4.7c/ 4.8g | Domestic capital expenditures for R&D | 38,025 |
| 4.7a | Property, plant, and equipment | 32,871 |
| 4.7b | Identifiable intangible assets | 5,155 |
| 4.8a | Land acquisition | 238 i |
| 4.8b | Buildings and land improvement | 4,870 |
| 4.8c | Machinery and equipment | 23,455 |
| 4.8d | Capitalized software | 2,703 |

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

| Question | Survey item | Aggregate amount |
|---------------------------------|---|------------------|
| 4.8e | Other intellectual property | 3,173 |
| 4.8f | All other capital expenditures for R&D operations | 3,587 |
| 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 | 131,858 |
| 5.2/ 2.10(1) | Domestic R&D paid for and performed by the company | 635,478 |
| Type of R&D (character of work) | | |
| 5.4b | Basic research | 36,926 |
| 5.4a | Applied research | 89,755 |
| 5.3b | Development | 508,797 |
| Application areas | | |
| 5.5 | Energy applications | 39,401 |
| 5.6 | Environmental protection applications, including pollution abatement | 10,252 i |
| 5.7 | Defense applications | 15,224 |
| 5.8 | Health or medical applications | 145,296 |
| 5.9 | Agricultural applications | 8,239 |
| Technology focus areas | | |
| 5.10 | Software products and software embedded in other projects or products | 286,268 i |
| 5.11 | Biotechnology | 114,262 |
| 5.12 | Nanotechnology | 37,019 i |
| 5.13 | Artificial intelligence | 62,399 i |
| 5.15c/ 5.14 | Foreign R&D paid for and performed by the company | 137,392 |
| 5.15a | Research | 21,064 |
| 5.15b | Development | 116,327 |
| 5.16/ 3.5(1) | Domestic R&D paid for by others and performed by the company | 86,314 |
| Type of R&D (character of work) | | |
| 5.18b | Basic research | 6,539 |
| 5.18a | Applied research | 20,172 |
| 5.17b | Development | 59,603 |
| Application areas | | |
| 5.19 | Energy applications | 3,012 |
| 5.20 | Environmental protection applications, including pollution abatement | 1,000 i |
| 5.21 | Defense applications | 29,968 |
| 5.22 | Health or medical applications | 34,550 i |
| 5.23 | Agricultural applications | 749 i |
| Technology focus areas | | |
| 5.24 | Software products and software embedded in other projects or products | 16,136 |
| 5.25 | Biotechnology | 21,867 |
| 5.26 | Nanotechnology | 1,707 i |
| 5.27 | Artificial intelligence | 2,411 i |
| 5.28/ 3.8d | Federally funded R&D performed by the company | 32,008 |
| Type of R&D (character of work) | | |
| 5.30b | Basic research | 2,070 i |
| 5.30a | Applied research | 5,367 |
| 5.29b | Development | 24,571 |
| Technology focus areas | | |
| 5.31 | Federally funded R&D performed by the company for software products and software embedded in other projects or products | 5,413 |
| 5.33c/ 5.32 | Foreign R&D paid for by others and performed by the company | 14,409 i |
| 5.33a | Research | 4,758 i |
| 5.33b | Development | 9,652 i |
| Employees (thousands) | | |
| Worldwide | | |

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

| Question | Survey item | Aggregate amount |
|----------------------|---|------------------|
| 1.8/ 1.9(3)/ 6.1c(3) | Total employees | 34,928 |
| 6.1b(3) | Non-R&D employees | 31,665 |
| 6.1a(3) | R&D employees | 3,262 |
| 6.4a(3) | Female | 995 |
| 6.4b(3) | Male | 2,267 |
| 6.5a(3) | Researchers | 2,244 |
| 6.5b(3) | Technicians | 746 |
| 6.5c(3) | Support staff | 273 |
| Domestic | | |
| 1.9(1)/ 6.1c(1) | Total employees | 23,003 |
| 6.1b(1) | Non-R&D employees | 20,876 |
| 6.1a(1) | R&D employees | 2,126 |
| 6.4a(1) | Female | 634 |
| 6.4b(1) | Male | 1,493 |
| 6.5a(1) | Researchers | 1,437 |
| 6.5b(1) | Technicians | 502 |
| 6.5c(1) | Support staff | 187 |
| Foreign | | |
| 1.9(2)/ 6.1c(2) | Total employees | 11,925 |
| 6.1b(2) | Non-R&D employees | 10,789 |
| 6.1a(2) | R&D employees | 1,136 |
| 6.4a(2) | Female | 361 |
| 6.4b(2) | Male | 775 |
| 6.5a(2) | Researchers | 807 |
| 6.5b(2) | Technicians | 243 |
| 6.5c(2) | Support staff | 86 |
| Researchers with PhD | | |
| 6.6(3) | Worldwide | 192 |
| 6.6(1) | Domestic | 148 |
| 6.6(2) | Foreign | 44 i |
| Full-time equivalent | | |
| 6.7d | R&D employees | 1,951 |
| 6.7a | Full-time R&D employees | 1,700 |
| 6.7b | Full-time employees not solely working on R&D | 229 |
| 6.7c | Part-time employees working on R&D | 21 |
| 6.8d | Researchers | 1,299 |
| 6.8a | Full-time R&D employees | 1,161 |
| 6.8b | Full-time employees not solely working on R&D | 129 |
| 6.8c | Part-time employees working on R&D | 9 |
| 6.9 | Non-U.S. citizens employed as researchers under temporary visa ^a | 53 |
| 6.10d(1) | Total leased and temporary employees working on R&D | 280 i |
| 6.10a(1) | Researchers | 175 i |
| 6.10b(1) | Technicians | 73 i |
| 6.10c(1) | Support staff | 32 i |

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

^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, 2023.