

Table 6. Worldwide R&D paid for by the company and performed by the company and others, by business activity: 2024

(Millions of U.S. dollars)

Business activity ^a	Business code ^b	Amount
All business activities	21100–81000	890,002
Oil and gas extraction	21100	958
Mining	21200	112
Support activities for mining, including oil and gas	21300	667
Utilities	22100	1,355
Construction	23000	778
Food manufacturing	31100	8,023
Beverage manufacturing	31210	1,071
Tobacco manufacturing	31220	1,046
Textile, apparel, and leather products manufacturing	31990	877
Wood products manufacturing	32100	393
Paper manufacturing	32200	1,581
Printing and related support activities	32300	493
Petroleum refineries	32401	626
Asphalt paving, roofing, and saturated materials manufacturing	32402	141
Other petroleum and coal products manufacturing, including motor oil, hydraulic fluid, and charcoal	32403	235
Basic chemicals manufacturing	32510	4,315
Resin, synthetic rubber, and artificial synthetic fibers and filaments manufacturing	32520	1,674
Pesticide, fertilizer, and other agricultural chemicals manufacturing	32530	1,843
Pharmaceutical, medicinal, botanical, and biological products (except diagnostic substances) manufacturing	32541	87,635
In vitro diagnostic substances manufacturing	32542	3,558
Biotechnology-based pharmaceutical and biological products (except diagnostic substances)	32543	90,633
Soap, cleaning compound, and toilet preparations manufacturing	32591	3,019
Paint, adhesive, and other chemical manufacturing	32592	1,904
Plastics and rubber products manufacturing	32600	3,289
Clay and glass products manufacturing	32710	1,677
Cement, concrete, lime, gypsum, and other nonmetallic mineral products manufacturing	32790	343
Primary metal manufacturing	33100	1,241
Fabricated metal products manufacturing	33200	3,940
Agricultural machinery and equipment manufacturing	33311	3,142
Construction machinery manufacturing	33312	2,053
Mining, oil, and gas field machinery and equipment manufacturing	33319	1,284
Semiconductor machinery manufacturing	33321	7,558
Industrial machinery manufacturing (except semiconductor machinery)	33322	1,753
Photographic and photocopying equipment manufacturing	33331	79
Commercial, service industry, temperature control, and air-flow control machinery manufacturing	33332	3,226
Digital cameras manufacturing	33333	314
Engine, turbine, and power transmission equipment manufacturing	33360	4,282
Metalworking and other general purpose machinery manufacturing	33390	3,364
Computers and peripheral equipment manufacturing and magnetic and optical media	33412	45,929
Telephone apparatus manufacturing, including routers, modems, and gateways	33421	12,284
Radio, television, and wireless communication equipment manufacturing	33422	3,894
Other communication equipment manufacturing (except radio, television, and wireless communication equipment)	33429	732
Audio and video equipment manufacturing	33430	2,084
Semiconductor and other electronic components manufacturing	33440	75,172
Electromedical, electrotherapeutic, and irradiation apparatus manufacturing	33451	5,114
Search, detection, navigation, guidance, aeronautical, and nautical system and instruments manufacturing	33452	3,464
Measuring and control instruments manufacturing (not listed elsewhere)	33459	6,883
Electrical equipment, appliances, and components manufacturing	33500	7,671
Motor vehicles manufacturing	33610	32,197
Motor vehicle body and trailer manufacturing	33620	283
Motor vehicle parts manufacturing	33630	7,327

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Aircraft manufacturing	33641	7,332	
Aircraft engine and engine parts manufacturing	33642	3,108	
Other aircraft parts and auxiliary equipment manufacturing	33643	2,115	
Guided missiles, space vehicles, and related parts manufacturing	33644	3,408	
Railroad rolling stock manufacturing	33651	D	
Ship and boat building	33660	277	
Motorcycle, bicycle, and parts manufacturing	33691	464	
Military armored vehicle, tank, and tank components manufacturing	33692	224	i
All other transportation equipment manufacturing	33699	660	
Furniture and related products manufacturing	33700	528	
Medical equipment and supplies manufacturing	33910	28,516	
Miscellaneous manufacturing not listed elsewhere (games, office supplies, slot machines, etc.)	33990	3,419	
Merchant wholesalers, durable goods	42300	1,174	
Merchant wholesalers, nondurable goods	42400	677	i
Wholesale electronic markets and agents and brokers (business to business)	42500	D	
Retail trade (except electronic shopping and electronic auctions)	44000	895	
Electronic shopping and electronic auctions	45411	8,160	i
Transportation	48000	8,699	
Couriers, messengers, and express delivery services	49200	D	
Warehousing and storage	49300	32	
Newspaper, periodical, book, and directory publishers (except Internet)	51110	410	i
Software publishers (except Internet)	51120	56,386	
Motion picture and sound recording (except Internet)	51200	91	
Broadcasting (except Internet)	51500	D	
Wired telecommunications carriers	51710	543	
Wireless telecommunications carriers (except satellite)	51720	2,817	
Satellite telecommunications	51740	764	
Other telecommunications (not listed elsewhere)	51790	579	
Data processing, hosting, and related services	51800	19,505	
Cloud computing applications and Internet-based software services	51801	67,187	
Other information services, including Internet publishing, broadcasting, and Web search portals	51910	123,525	
Finance: banking and credit intermediation	52200	19,938	
Securities, commodity contracts, and other financial investments and related activities, including funds and trusts	52310	6,618	
Insurance carriers and related activities	52400	3,165	
Real estate	53100	546	
Rental and leasing services	53200	2,487	
Lessors of nonfinancial intangible assets, including patent licensing	53300	59	
Legal, accounting, tax preparation, bookkeeping, and payroll services	54111	5,110	
Architectural, engineering, and related services	54130	4,100	
Specialized design services	54140	95	r
Computer systems design and related services	54150	27,628	
Management, scientific, and technical consulting services	54160	3,972	
Research and development services in the social sciences and humanities	54172	9	
Research and development services in biotechnology	54173	1,353	
Research and development services in the physical, engineering, and life sciences (except biotechnology)	54174	3,838	
Research and development services in nanotechnology	54175	478	
Advertising and related services	54180	1,398	i
Professional, scientific, and technical services (not listed elsewhere)	54190	1,917	
Management of companies and enterprises	55100	39	
Administrative and support services	56100	5,106	
Waste management and remediation services	56200	73	
Offices of physicians	62110	177	
Medical and diagnostic laboratories	62150	2,122	

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Other ambulatory health care services (ambulance, dental, home health care)	62199	401
Hospitals and nursing care facilities	62200	D
Social assistance services	62400	D
Arts, entertainment, and recreation	71000	185
Accommodation and food services	72000	217
Other services (not listed elsewhere)	81000	634
Undistributed ^c	–	0

D = data withheld to avoid disclosing operations of individual companies; 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 Business activity data are tabulated independent of the industry classification of the company. Companies were asked to report their sales and R&D activity in one or more business activity codes.

^b Business codes and descriptions are based on 2017 North American Industry Classification System industry definitions.

^c Undistributed includes data reported that were not allocated to a business activity.

Note(s):

Detail may not add to total because of rounding. For companies that did not report business codes, the classification used for sampling was assigned. 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.