

TABLE 6

Worldwide R&D paid for by the company and performed by the company and others, by business activity: 2016

(Millions of U.S. dollars)

Business activity ^a	Business code ^b	Amount
All business activities	21100-81000	435,403
Oil and gas extraction	21100	1,089
Mining	21200	63
Support activities for mining, including oil and gas	21300	1,380
Utilities	22100	515
Construction	23000	274
Food manufacturing	31100	6,178
Beverages manufacturing	31210	787
Tobacco manufacturing	31220	732
Textiles, apparel, and leather products manufacturing	31990	1,332
Wood products manufacturing	32100	288
Paper manufacturing	32200	1,544
Printing and related support activities	32300	340
Petroleum refineries	32401	625
Asphalt paving, roofing, and saturated materials manufacturing	32402	93
Other petroleum and coal products manufacturing, including motor oil, hydraulic fluid, and charcoal	32403	452
Basic chemicals manufacturing	32510	3,472
Resins, synthetic rubber, and artificial synthetic fibers and filaments manufacturing	32520	1,402
Pesticides, fertilizers, and other agricultural chemicals manufacturing	32530	2,336
Pharmaceutical, medicinal, botanical, and biological products (except diagnostic substances) manufacturing	32541	70,246
In vitro diagnostic substances manufacturing	32542	1,340
Biotechnology-based pharmaceutical and biological products (except diagnostic substances) manufacturing	32543	24,603
Soaps, cleaning compounds, and toilet preparations manufacturing	32591	3,361
Paints, adhesives, and other chemicals manufacturing	32592	2,121
Plastics and rubber products manufacturing	32600	3,935
Clay and glass products manufacturing	32710	1,203
Cement, concrete, lime, gypsum, and other nonmetallic mineral products manufacturing	32790	664
Primary metal manufacturing	33100	720
Fabricated metal products manufacturing	33200	2,613
Agricultural machinery and equipment manufacturing	33311	1,977
Construction machinery manufacturing	33312	1,464
Mining, oil, and gas field machinery and equipment manufacturing	33319	1,529
Semiconductor machinery manufacturing	33321	3,688
Industrial machinery manufacturing (except semiconductor machinery)	33322	894
Photographic and photocopying equipment manufacturing	33331	59
Commercial, service industry, temperature control, and air-flow control machinery manufacturing	33332	2,232
Digital cameras manufacturing	33333	519
Engine, turbine, and power transmission equipment manufacturing	33360	2,637
Metalworking and other general purpose machinery manufacturing	33390	2,574
Computers and peripheral equipment manufacturing and magnetic and optical media	33412	23,133
Telephone apparatus manufacturing, including routers, modems, and gateways	33421	10,717
Radio, television, and wireless communication equipment manufacturing	33422	2,786
Other communication equipment manufacturing (except radio, television, and wireless communication equipment)	33429	1,660
Audio and video equipment manufacturing	33430	1,535
Semiconductor and other electronic components manufacturing	33440	40,595
Electromedical, electrotherapeutic, and irradiation apparatus manufacturing	33451	4,125
Search, detection, navigation, guidance, aeronautical, and nautical systems and instruments manufacturing	33452	2,615
Measuring and control instruments manufacturing (not listed elsewhere)	33459	5,663
Electrical equipment, appliances, and components manufacturing	33500	5,920
Motor vehicles manufacturing	33610	20,365
Motor vehicle body and trailer manufacturing	33620	119

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Motor vehicle parts manufacturing	33630	7,394
Aircraft manufacturing	33641	5,639
Aircraft engine and engine parts manufacturing	33642	D
Other aircraft parts and auxiliary equipment manufacturing	33643	3,048
Guided missiles, space vehicles, and related parts manufacturing	33644	954
Railroad rolling stock manufacturing	33651	224
Ship and boat building	33660	618
Motorcycle, bicycle, and parts manufacturing	33691	335
Military armored vehicles, tanks, and tank components manufacturing	33692	130
All other transportation equipment manufacturing	33699	478
Furniture and related products manufacturing	33700	490
Medical equipment and supplies manufacturing	33910	15,602
Miscellaneous manufacturing not listed elsewhere (games, office supplies, slot machines, etc.)	33990	3,124
Merchant wholesalers, durable goods	42300	647
Merchant wholesalers, nondurable goods	42400	219
Wholesale electronic markets and agents and brokers (business to business)	42500	24
Retail trade (except electronic shopping and electronic auctions)	44000	121
Electronic shopping and electronic auctions	45411	D
Transportation	48000	123
Couriers, messengers, and express delivery services	49200	394
Warehousing and storage	49300	0
Newspaper, periodical, book, and directory publishers (except Internet)	51110	87
Software publishers (except Internet)	51120	34,806
Motion picture and sound recording (except Internet)	51200	20
Broadcasting (except Internet)	51500	347
Wired telecommunications carriers	51710	1,180
Wireless telecommunications carriers (except satellite)	51720	1,458
Satellite telecommunications	51740	746
Other telecommunications (not listed elsewhere)	51790	362
Data processing, hosting, and related services	51800	6,865
Cloud computing applications and Internet-based software services	51801	11,690
Other information services, including Internet publishing, broadcasting, and Web search portals	51910	27,567
Finance: banking and credit intermediation	52200	5,171
Securities, commodity contracts, and other financial investments and related activities, including funds and trusts	52310	1,683
Insurance carriers and related activities	52400	1,444
Real estate	53100	440
Rental and leasing services	53200	31
Lessors of nonfinancial intangible assets, including patent licensing	53300	45
Legal, accounting, tax preparation, bookkeeping, and payroll services	54111	1,051
Architectural, engineering, and related services	54130	1,968
Specialized design services	54140	26
Computer systems design and related services	54150	15,240
Management, scientific, and technical consulting services	54160	1,668
Research and development services in social sciences and humanities	54172	D
Research and development services in biotechnology	54173	1,275
Research and development services in physical, engineering, and life sciences (except biotechnology)	54174	2,839
Advertising and related services	54180	372
Professional, scientific, and technical services (not listed elsewhere)	54190	621
Management of companies and enterprises	55100	21
Administrative and support services	56100	588
Waste management and remediation services	56200	8

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Offices of physicians	62110	70
Medical and diagnostic laboratories	62150	904
Other ambulatory health care services (ambulance, dental, home health care)	62199	23
Hospitals and nursing care facilities	62200	6
Social assistance services	62400	2
Arts, entertainment, and recreation	71000	45
Accommodation and food services	72000	76
Other services (not listed elsewhere)	81000	D
Undistributed	-	0

D = data withheld to avoid disclosing operations of individual companies; i = > 50% of the estimate is a combination of imputation and reweighting to account for nonresponse.

NAICS = 2012 North American Industry Classification System.

^a 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 2012 NAICS industry definitions.

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 R&D.

Source(s)

National Science Foundation, National Center for Science and Engineering Statistics, and U.S. Census Bureau, Business R&D and Innovation Survey, 2016.