

TABLE 7. Worldwide R&D paid for by the company and performed by the company and others, by business activity: 2011  
(Millions of U.S. dollars)

Business activity <sup>a</sup>	Business code <sup>b</sup>	Amount
All business activities	21100-81000	341,335
Oil and gas extraction	21100	1,313
Mining	21200	252
Support activities for mining, including oil and gas	21300	1,382
Utilities	22100	686
Construction	23000	291
Food manufacturing	31100	4,974
Beverage manufacturing	31210	931
Tobacco manufacturing	31220	717
Textile, apparel, and leather products manufacturing	31990	736
Wood products manufacturing	32100	208
Paper manufacturing	32200	1,149
Printing and related support activities	32300	260
Petroleum refineries	32401	598
Asphalt paving, roofing, and saturated materials manufacturing	32402	37
Other petroleum and coal products manufacturing, including motor oil, hydraulic fluid, and charcoal	32403	415
Basic chemicals manufacturing	32510	3,856
Resin, synthetic rubber, and artificial synthetic fibers and filaments manufacturing	32520	1,349
Pesticide, fertilizer, and other agricultural chemical manufacturing	32530	2,332
Pharmaceutical, medicinal, botanical, and biological products (except diagnostic) manufacturing	32541	67,753
In-vitro diagnostic substances manufacturing	32542	1,499
Soap, cleaning compound, and toilet preparation manufacturing	32591	3,431
Paint, adhesive, and other chemical manufacturing	32592	2,009
Plastics and rubber products manufacturing	32600	3,688
Clay and glass products manufacturing	32710	921
Cement, concrete, lime, gypsum, and other nonmetallic mineral product manufacturing	32790	589
Primary metal manufacturing	33100	776
Fabricated metal products manufacturing	33200	2,435
Agricultural machinery and equipment manufacturing	33311	1,430
Construction machinery manufacturing	33312	888
Mining, oil, and gas field machinery and equipment manufacturing	33319	2,210
Semiconductor machinery manufacturing	33321	2,574
Industrial machinery manufacturing, except semiconductor machinery	33322	1,114
Photographic and photocopying equipment manufacturing	33331	760
Commercial, service industry, temperature control, and air-flow control machinery manufacturing	33332	1,139
Engine, turbine, and power transmission equipment manufacturing	33360	3,643
Metalworking and other general purpose machinery manufacturing	33390	2,351
Computers and peripheral equipment manufacturing and magnetic and optical media	33412	13,315
Telephone apparatus manufacturing including routers, modems, and gateways	33421	10,266
Radio, television, and wireless communication equipment manufacturing	33422	3,740
Other communication equipment manufacturing, except radio, television, and wireless communication equipment	33429	1,121
Audio and video equipment manufacturing	33430	1,015
Semiconductor and other electronic components manufacturing	33440	32,256
Electromedical, electrotherapeutic, and irradiation apparatus manufacturing	33451	3,179
Search, detection, navigation, guidance, aeronautical, and nautical systems and instruments manufacturing	33452	2,169
Measuring and control instruments manufacturing (not listed elsewhere)	33459	4,658
Electrical equipment, appliances, and components manufacturing	33500	4,827
Motor vehicles manufacturing	33610	17,015
Motor vehicle body and trailer manufacturing	33620	73
Motor vehicle parts manufacturing	33630	4,683

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Aircraft manufacturing	33641	4,512
Aircraft engine and engine parts manufacturing	33642	2,136
Other aircraft parts and auxiliary equipment manufacturing	33643	1,723
Guided missiles, space vehicles and parts manufacturing	33644	1,060
Railroad rolling stock manufacturing	33651	166
Ship and boat building	33660	154
Motorcycle, bicycle, and parts manufacturing	33691	234
Military armored vehicle, tank, and tank component manufacturing	33692	116
All other transportation equipment manufacturing	33699	359
Furniture and related products manufacturing	33700	345
Medical equipment and supplies manufacturing	33910	13,864
Miscellaneous manufacturing not listed elsewhere (games, office supplies, slot machines, etc.)	33990	2,716
Merchant wholesalers, durable goods	42300	715
Merchant wholesalers, nondurable goods	42400	618
Wholesale electronic markets and agents and brokers (business to business)	42500	67
Retail trade, except electronic shopping and electronic auctions	44000	74
Electronic shopping and electronic auctions	45411	D
Transportation	48000	117
Couriers, messengers, and express delivery services	49200	1
Warehousing and storage	49300	16
Newspaper, periodical, book, and directory publishers (except Internet)	51110	471 i
Software publishers (except Internet)	51120	29,487
Motion picture and sound recording (except Internet)	51200	67
Broadcasting (except Internet)	51500	115
Wired telecommunications carriers	51710	987
Wireless telecommunications carriers (except satellite)	51720	149
Satellite telecommunications	51740	114
Other telecommunications (not listed elsewhere)	51790	459
Data processing, hosting, and related services	51800	4,408
Other information services including Internet publishing, broadcasting, and Web search portals	51910	9,437
Finance: banking and credit intermediation	52200	1,705
Securities, commodity contracts, and other financial investments and related activities (including funds and trusts)	52310	1,313
Insurance carriers and related activities	52400	871
Real estate	53100	10
Rental and leasing services	53200	128
Lessors of nonfinancial intangible assets (including patent licensing)	53300	385
Legal, accounting, tax preparation, bookkeeping, and payroll services	54111	709
Architectural, engineering, and related services	54130	1,492
Specialized design services	54140	283
Computer systems design and related services	54150	15,990
Management, scientific, and technical consulting services	54160	1,634
Research and development services in social sciences and humanities	54172	22
Research and development services in biotechnology	54173	6,646
Research and development services in physical, engineering, and life sciences (except biotechnology)	54174	2,765
Advertising and related services	54180	1,416
Professional, scientific, and technical services (not listed elsewhere)	54190	1,161
Management of companies and enterprises	55100	43
Administrative and support services	56100	354
Waste management and remediation services	56200	20
Offices of physicians	62110	36
Medical and diagnostic laboratories	62150	433
Other ambulatory health care services (ambulance, dental, home health care)	62199	72
Hospitals and nursing care facilities	62200	4
Social assistance services	62400	13

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Arts, entertainment, and recreation	71000	92
Accommodation and food services	72000	85
Other services (not listed elsewhere)	81000	418
Undistributed		D

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

<sup>a</sup> Data 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.

<sup>b</sup> Business codes and descriptions based on industry definitions from the 2007 North American Industry Classification System.

NOTES: Detail may not add to total because of rounding. Statistics are representative of companies located in the United States that performed or funded R&D.

SOURCE: National Science Foundation/National Center for Science and Engineering Statistics and U.S. Census Bureau, Business R&D and Innovation Survey, 2011.