

TABLE 25. Domestic R&D paid for by the company and others and performed by the company, by business activity: 2008–13

(Millions of U.S. dollars)

Business activity ^a	Business code ^b	2008 ^c	2009 ^d	2010 ^d	2011	2012	2013
All business activities	21100–81000	NA	NA	NA	290,240	302,759	322,528
Oil and gas extraction	21100	NA	NA	NA	D	D	D
Mining	21200	NA	NA	NA	83	88	80
Support activities for mining, including oil and gas	21300	NA	NA	NA	D	1,860	1,869
Utilities	22100	NA	NA	NA	298	434	340
Construction	23000	NA	NA	NA	752	756	248
Food manufacturing	31100	NA	NA	NA	3,769	3,565	5,163
Beverage manufacturing	31210	NA	NA	NA	D	D	628
Tobacco manufacturing	31220	NA	NA	NA	D	140	163
Textile, apparel, and leather products manufacturing	31990	NA	NA	NA	623	688	688
Wood products manufacturing	32100	NA	NA	NA	202	278	234
Paper manufacturing	32200	NA	NA	NA	755	982	1,169
Printing and related support activities	32300	NA	NA	NA	244	305 i	390
Petroleum refineries	32401	NA	NA	NA	D	596	438
Asphalt paving, roofing, and saturated materials manufacturing	32402	NA	NA	NA	38	41	117 i
Other petroleum and coal products manufacturing, including motor oil, hydraulic fluid, and charcoal	32403	NA	NA	NA	285	218	256
Basic chemicals manufacturing	32510	NA	NA	NA	3,099	3,228	2,976
Resin, synthetic rubber, and artificial synthetic fibers and filaments manufacturing	32520	NA	NA	NA	815	1,093	928
Pesticide, fertilizer, and other agricultural chemicals manufacturing	32530	NA	NA	NA	D	1,951	2,108 i
Pharmaceutical, medicinal, botanical, and biological products (except diagnostic) manufacturing ^e	32541	NA	NA	NA	42,381	43,672	41,812
In-vitro diagnostic substances manufacturing ^e	32542	NA	NA	NA	1,110	1,044 i	834
Biotechnology-based pharmaceutical and biological products (except diagnostics)	32543	NA	NA	NA	NA	NA	7,694
Soap, cleaning compound, and toilet preparations manufacturing	32591	NA	NA	NA	2,344	2,261	2,322
Paint, adhesive, and other chemical manufacturing	32592	NA	NA	NA	1,552	1,630	1,471
Plastics and rubber products manufacturing	32600	NA	NA	NA	2,669	3,277	3,013
Clay and glass products manufacturing	32710	NA	NA	NA	801 i	987 i	974 i
Cement, concrete, lime, gypsum, and other nonmetallic mineral product manufacturing	32790	NA	NA	NA	303	367	461 i
Primary metal manufacturing	33100	NA	NA	NA	552	750	621
Fabricated metal products manufacturing	33200	NA	NA	NA	D	2,236	2,553 i
Agricultural machinery and equipment manufacturing	33311	NA	NA	NA	989	1,175	1,193
Construction machinery manufacturing	33312	NA	NA	NA	655	675	1,353
Mining, oil, and gas field machinery and equipment manufacturing	33319	NA	NA	NA	1,735	1,999	1,445 i
Semiconductor machinery manufacturing	33321	NA	NA	NA	2,207	1,308 i	3,146
Industrial machinery manufacturing (except semiconductor machinery)	33322	NA	NA	NA	945	850	882
Photographic and photocopying equipment manufacturing	33331	NA	NA	NA	656	23 i	459
Commercial, service industry, temperature control, and air-flow control machinery manufacturing	33332	NA	NA	NA	D	1,182	1,379
Engine, turbine, and power transmission equipment manufacturing	33360	NA	NA	NA	3,257	3,603	2,368

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Metalworking and other general purpose machinery manufacturing	33390	NA	NA	NA	1,832	1,607	1,889
Computers and peripheral equipment manufacturing and magnetic and optical media	33412	NA	NA	NA	10,311	10,893	10,449
Telephone apparatus manufacturing, including routers, modems, and gateways	33421	NA	NA	NA	7,006	5,101	5,534
Radio, television, and wireless communication equipment manufacturing	33422	NA	NA	NA	4,182	5,851	7,657
Other communication equipment manufacturing (except radio, television, and wireless communication equipment)	33429	NA	NA	NA	871	1,937	1,730
Audio and video equipment manufacturing	33430	NA	NA	NA	798	865	884
Semiconductor and other electronic components manufacturing	33440	NA	NA	NA	24,580	28,983	31,111
Electromedical, electrotherapeutic, and irradiation apparatus manufacturing	33451	NA	NA	NA	2,787	2,868 i	3,195 i
Search, detection, navigation, guidance, aeronautical, and nautical system and instrument manufacturing	33452	NA	NA	NA	5,666	6,403	6,550
Measuring and control instruments manufacturing (not listed elsewhere)	33459	NA	NA	NA	3,191	3,465	3,586
Electrical equipment, appliances, and components manufacturing	33500	NA	NA	NA	3,007	3,391	4,207
Motor vehicles manufacturing	33610	NA	NA	NA	9,320	11,314	11,692
Motor vehicle body and trailer manufacturing	33620	NA	NA	NA	69	91 i	98 i
Motor vehicle parts manufacturing	33630	NA	NA	NA	3,010	D	4,554
Aircraft manufacturing	33641	NA	NA	NA	5,853	15,380 i	16,517 i
Aircraft engine and engine parts manufacturing	33642	NA	NA	NA	1,636	1,296	1,578
Other aircraft parts and auxiliary equipment manufacturing	33643	NA	NA	NA	1,896	2,655	3,431
Guided missiles, space vehicles, and related parts manufacturing	33644	NA	NA	NA	3,526	2,850	2,703
Railroad rolling stock manufacturing	33651	NA	NA	NA	136	177	175
Ship and boat building	33660	NA	NA	NA	D	D	1,107
Motorcycle, bicycle, and parts manufacturing	33691	NA	NA	NA	212 i	176 i	210
Military armored vehicle, tank, and tank components manufacturing	33692	NA	NA	NA	D	122	215
All other transportation equipment manufacturing	33699	NA	NA	NA	415	D	358
Furniture and related products manufacturing	33700	NA	NA	NA	300	382	384
Medical equipment and supplies manufacturing	33910	NA	NA	NA	10,141	10,703	11,500
Miscellaneous manufacturing not listed elsewhere (games, office supplies, slot machines, etc.)	33990	NA	NA	NA	2,593	D	2,541
Merchant wholesalers, durable goods	42300	NA	NA	NA	505	1,461 i	438 i
Merchant wholesalers, nondurable goods	42400	NA	NA	NA	429	651 i	275 i
Wholesale electronic markets and agents and brokers (business to business)	42500	NA	NA	NA	54	182 i	D
Retail trade (except electronic shopping and electronic auctions)	44000	NA	NA	NA	52	101 i	105 i
Electronic shopping and electronic auctions	45411	NA	NA	NA	940 i	1,239	994
Transportation	48000	NA	NA	NA	123	D	D
Couriers, messengers, and express delivery services	49200	NA	NA	NA	D	D	80
Warehousing and storage	49300	NA	NA	NA	15	15	17

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Newspaper, periodical, book, and directory publishers (except Internet)	51110	NA	NA	NA	345 i	229 i	316 i
Software publishers (except Internet) ^f	51120	NA	NA	NA	22,635	23,803	28,602
Motion picture and sound recording (except Internet)	51200	NA	NA	NA	61	73 i	93
Broadcasting (except Internet)	51500	NA	NA	NA	94	36	53
Wired telecommunications carriers	51710	NA	NA	NA	867	1,482 i	1,061 i
Wireless telecommunications carriers (except satellite)	51720	NA	NA	NA	391 i	739 i	1,649 i
Satellite telecommunications	51740	NA	NA	NA	D	195	106
Other telecommunications (not listed elsewhere)	51790	NA	NA	NA	495	383	322
Data processing, hosting, and related services ^f	51800	NA	NA	NA	4,922	3,997	4,008
Cloud computing applications and Internet-based software services	51801	NA	NA	NA	NA	NA	2,279
Other information services, including Internet publishing, broadcasting, and Web search portals ^f	51910	NA	NA	NA	D	11,397	13,483
Finance: banking and credit intermediation	52200	NA	NA	NA	1,365	1,601	1,836
Securities, commodity contracts, and other financial investments and related activities, including funds and trusts	52310	NA	NA	NA	1,148	893	1,159
Insurance carriers and related activities	52400	NA	NA	NA	D	1,141	1,458
Real estate	53100	NA	NA	NA	13	26 i	59
Rental and leasing services	53200	NA	NA	NA	27	D	69
Lessors of nonfinancial intangible assets, including patent licensing	53300	NA	NA	NA	319	369	74
Legal, accounting, tax preparation, bookkeeping, and payroll services	54111	NA	NA	NA	578 i	417 i	492 i
Architectural, engineering, and related services	54130	NA	NA	NA	2,028	4,206 i	3,398
Specialized design services	54140	NA	NA	NA	271	207 i	98
Computer systems design and related services ^f	54150	NA	NA	NA	11,129	12,390 i	11,283 i
Management, scientific, and technical consulting services	54160	NA	NA	NA	1,745	2,280	1,993
Research and development services in social sciences and humanities	54172	NA	NA	NA	D	601	792
Research and development services in biotechnology ^e	54173	NA	NA	NA	6,030	7,146	4,141
Research and development services in physical, engineering, and life sciences (except biotechnology)	54174	NA	NA	NA	7,196	9,427	9,467
Advertising and related services	54180	NA	NA	NA	80	377 i	444 i
Professional, scientific, and technical services (not listed elsewhere)	54190	NA	NA	NA	1,316	2,463 i	1,958
Management of companies and enterprises	55100	NA	NA	NA	20	40	55
Administrative and support services	56100	NA	NA	NA	338	436	599 i
Waste management and remediation services	56200	NA	NA	NA	19 i	D	39 i
Offices of physicians	62110	NA	NA	NA	24	73 i	74 i
Medical and diagnostic laboratories	62150	NA	NA	NA	764	1,027	957
Other ambulatory health care services (ambulance, dental, home health care)	62199	NA	NA	NA	11	41 i	51 i
Hospitals and nursing care facilities	62200	NA	NA	NA	2	2 i	2
Social assistance services	62400	NA	NA	NA	7	36	38
Arts, entertainment, and recreation	71000	NA	NA	NA	105	108	31

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Accommodation and food services	72000	NA	NA	NA	74	131 i	123 i
Other services (not listed elsewhere)	81000	NA	NA	NA	366	553	367
Undistributed	–	NA	NA	NA	28,583 i	1,689 i	401 i

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; NA = not available.

NAICS = 2007 North American Industry Classification System. For survey year 2008, industry classification was based on the 2002 NAICS.

^a 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.

^b Business codes and descriptions based on 2007 NAICS industry definitions.

^c Data were collected as domestic R&D performed by the company and paid for by others and domestic R&D performance for survey year 2008.

^d Data were collected as worldwide R&D paid for by others and performed by the company for survey years 2009 and 2010.

^e Estimates for this business code may not be comparable to those from prior years due to the introduction of a related business code for survey year 2013: 32543, Biotechnology-based pharmaceutical and biological products (except diagnostics).

^f Estimates for this business code may not be comparable to those from prior years due to the introduction of a related business code for survey year 2013: 51801, Cloud computing applications and Internet-based software services.

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. For companies that did not report business codes, classification used for sampling was assigned.

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