

TABLE 8. Worldwide R&D paid for by others and performed by the company and others, by industry and company size: 2011
(Millions of U.S. dollars)

Industry and company size	NAICS code	Total	Performed by the company	Performed by others
All industries	21–23, 31–33, 42–81	72,185	59,517	12,667
Manufacturing industries	31–33	49,081	39,320	9,762 i
Food	311	209	198	11
Beverage and tobacco products	312	D	D	1
Textile, apparel, and leather products	313–316	42	34	8
Wood products	321	9	9	*
Paper	322	26	23	3
Printing and related support activities	323	2	1	1
Petroleum and coal products	324	D	D	5
Chemicals	325	8,346	5,563	2,783
Basic chemicals	3251	D	D	21
Resin, synthetic rubber, and artificial synthetic fibers and filaments	3252	15	13	3
Pesticide, fertilizer, and other agricultural chemical	3253	D	D	3
Pharmaceuticals and medicines	3254	7,801	5,051	2,750
Soap, cleaning compound, and toilet preparation	3256	6	6	*
Paint, coating, adhesive, and other chemicals	3255, 3259	47	40	7
Plastics and rubber products	326	327 i	312 i	14
Nonmetallic mineral products	327	37	34	3
Primary metals	331	71	65	7
Fabricated metal products	332	125	115	9
Machinery	333	1,567	1,292	275
Agricultural implement	33311	30	24	6
Semiconductor machinery	333295	156	144	11
Engine, turbine, and power transmission equipment	3336	1,059	D	D
Other machinery	other 333	322	D	D
Computer and electronic products	334	9,761	9,361	401
Communications equipment	3342	1,888	1,868 i	20
Semiconductor and other electronic components	3344	1,385	1,318	67
Navigational, measuring, electromedical, and control instruments	3345	5,897	5,588	309
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	258	247	10
Search, detection, navigation, guidance, aeronautical, and nautical systems and instruments	334511	5,512	5,221	291
Other measuring and controlling device	other 3345	127	119	7
Other computer and electronic products	other 334	591	586	5
Electrical equipment, appliances, and components	335	198	180	18
Transportation equipment	336	27,331 i	21,135 i	6,195 i
Motor vehicles, bodies, trailers, and parts	3361, 3362, 3363	D	D	290
Aerospace products and parts	3364	24,602 i	18,700 i	5,903 i
Aircraft, aircraft engine, and aircraft parts	336411–13	23,582 i	17,711 i	5,871 i
Guided missile, space vehicle, and related parts	336414–15, 336419	1,020	989	31
Military armored vehicle, tank, and tank component	336992	3	2	*
Other transportation equipment	other 336	D	D	3
Furniture and related products	337	2	2	*
Miscellaneous manufacturing	339	D	D	26
Medical equipment and supplies	3391	D	D	D
Other miscellaneous manufacturing	3399	D	D	9
Nonmanufacturing industries	21–23, 42–81	23,103	20,197	2,906
Mining, extraction, and support activities	21	329	324	5
Utilities	22	135	99	35
Wholesale trade	42	318	249	69 i
Electronic shopping and electronic auctions	454111–12	1	*	1
Transportation and warehousing	48–49	1	*	*
Information	51	920	900	20
Publishing	511	742	733	9
Newspaper, periodical, book, and directory publishers	5111	1	1	0
Software publishers	5112	741	732	9

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Telecommunications	517	118	117	*
Data processing, hosting, and related services	518	30	29	1
Other information	other 51	30	20	10
Finance and insurance	52	146	146	0
Real estate and rental and leasing	53	0	0	0
Lessors of nonfinancial intangible assets (except copyrighted works)	533	0	0	0
Other real estate and rental and leasing	other 53	0	0	0
Professional, scientific, and technical services	54	20,292	17,646	2,646
Architectural, engineering, and related services	5413	2,415	D	D
Computer systems design and related services	5415	1,766	1,568	198
Scientific research and development services	5417	13,128	11,167	1,961
Biotechnology research and development	541711	D	1,920	D
Physical, engineering, and life sciences (except biotechnology) research and development	541712	9,931	8,647	1,285
Social sciences and humanities research and development	541720	D	601	D
Other professional, scientific, and technical services	other 54	2,983	D	D
Health care services	621-23	259	D	D
Other nonmanufacturing	23, 44-45 (excluding 454111-12), 55-56, 624, 71-72, 81	703	D	D
All companies (number of domestic employees)	-	72,185	59,517	12,667
Small companies ^a				
5-499	-	12,340	10,479	1,861
5-99	-	7,564	6,504	1,060
5-49	-	5,403	4,615	788
5-9	-	1,458	1,267	191
10-24	-	2,269	1,896	373
25-49	-	1,677	1,453	224
50-99	-	2,161	1,889	272
100-249	-	2,625	2,121	504
250-499	-	2,150	1,854	297
Medium and large companies				
500-999	-	1,481	1,331	151
1,000-4,999	-	10,223	8,201	2,022
5,000-9,999	-	10,103	8,798	1,305
10,000-24,999	-	7,926	7,003	923
25,000 or more	-	30,112 i	23,706 i	6,406 i

* = amount < \$500,000; 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.

NAICS = 2007 North American Industry Classification System.

^a Upper bound based on U.S. Small Business Administration's definition of a small business; Business R&D and Innovation Survey does not include companies with fewer than five domestic employees.

NOTES: Detail may not add to total because of rounding. Industry classification based on dominant business code for domestic R&D performance where available. For companies that did not report business codes, classification used for sampling was assigned. Statistics are representative to 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.