

TABLE 19

Companies with domestic R&D paid for by the company and others and performed by the company in the software products and embedded software technology focus area, by industry and company size: 2022

(Millions of U.S. dollars and number of companies)

Industry and company size	NAICS code	Domestic R&D		Software products and embedded software R&D									
				Total		Paid for by the company		Paid for by others					
		Companies ^a (number)	Amount	Companies ^b (number)	Amount	Companies ^b (number)	Amount	Total		Federally funded			
								Companies ^b (number)	Amount	Companies ^b (number)	Amount		
All industries	21-23, 31-33, 42-81	29,990	691,547	15,440	291,661	14,570	276,644	1,660	15,016	680	5,141		
Manufacturing industries	31-33	14,850	372,459	4,990	56,589	4,840	51,929	400	4,660	70	1,903		
Food	311	960	7,143	150	565	140	561	10	4	0	0		
Beverage and tobacco products	312	160	767	10	3	10	3	0	0	0	0		
Textile, apparel, and leather products	313-16	260	635	60	D	60	D	0	0	0	0		
Wood products	321	110	259	20	19	20	19	0	0	0	0		
Paper	322	100	1,005	20	29	20	29	0	0	0	0		
Printing and related support activities	323	140	165	110	44	110	44	0	0	0	0		
Petroleum and coal products	324	80	860	10	16	10	16	0	0	0	0		
Chemicals	325	2,320	125,728	360	1,632	350	1,571	20	61	10	29		
Basic chemicals	3251	320	2,860	50	99	50	98	10	*	0	0		
Resin, synthetic rubber, and artificial synthetic fibers and filaments	3252	200	1,493	20	4	20	3	10	1	0	0		
Pesticide, fertilizer, and other agricultural chemicals	3253	70	1,193	20	D	20	D	10	D	0	0		
Pharmaceuticals and medicines	3254	1,130	116,073	140	1,382	140	D	10	D	10	28		
Soap, cleaning compound, and toilet preparations	3256	270	2,886	120	50	120	D	10	D	0	0		
Paint, coating, adhesive, and other chemicals	3255, 3259	350	1,223	30	D	30	D	10	1	10	1		
Plastics and rubber products	326	840	3,470	170	251	170	250	10	1	0	0		
Nonmetallic mineral products	327	260	1,464	30	33	30	32	10	1	0	0		
Primary metals	331	270	1,120	20	4	20	4	0	0	0	0		
Fabricated metal products	332	1,870	3,526	410	639	360	581	60	58	0	0		
Machinery	333	2,050	19,464	970	2,333	960	2,258	30	75	10	57		
Agricultural implement	33311	160	2,287	90	141	90	141	0	0	0	0		
Semiconductor machinery	333242	50	5,438	30	786	30	780	10	6	10	1		
Engine, turbine, and power transmission equipment	3336	110	3,026	40	187	40	137	10	50	10	50		
Other machinery	other 333	1,740	8,713	820	1,220	820	1,201	30	19	10	6		
Computer and electronic products	334	2,370	104,718	1,550	36,487	1,490	34,316	170	2,170	40	601		
Communications equipment	3342	340	11,665	300	8,251	300	8,170	10	81	10	56		
Semiconductor and other electronic components	3344	510	49,330	310	13,067	290	11,678	40	1,389	10	6		
Navigational, measuring, electromedical, and control instruments	3345	1,030	12,777	750	3,389	710	2,724	120	665	30	516		
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	190	4,578	130	693	130	610	10	83	10	3		
Search, detection, navigation, guidance, aeronautical, and nautical system and instruments	334511	110	4,146	90	1,686	90	1,142	10	544	10	503		
Other measuring and controlling devices	other 3345	740	4,053	530	1,010	500	972	100	38	20	11		

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				Companies ^b (number)	Amount	Companies ^b (number)	Amount	Total		Federally funded			
								Companies ^b (number)	Amount	Companies ^b (number)	Amount		
Other computer and electronic products	other 334	500	30,946	210	11,780	210	11,744	10	36	10	23		
Electrical equipment, appliances, and components	335	520	7,086	280	1,029	280	1,012	10	17	0	0		
Transportation equipment	336	1,100	71,259	370	8,930	360	6,705	60	2,225	20	1,204		
Motor vehicles, bodies, trailers, and parts	3361-63	600	32,881	220	3,540	210	3,209	50	331	10	3		
Aerospace products and parts	3364	270	35,356	110	5,070	100	3,178	20	1,892	10	1,199		
Aircraft, aircraft engine, and aircraft parts	336411-13	230	24,571	90	3,090	90	2,415	20	675	10	533		
Guided missile, space vehicle, and related parts	336414-15, 336419	40	10,785	20	1,980	20	763	10	1,217	10	666		
Military armored vehicle, tank, and tank components	336992	10	30	10	1	10	1	0	0	0	0		
Other transportation	other 336	230	2,992	50	319	50	317	10	2	10	2		
Furniture and related products	337	210	410	40	107	40	107	0	0	0	0		
Miscellaneous	339	1,330	23,382	510	D	490	D	60	47	10	12		
Medical equipment and supplies	3391	820	20,394	420	3,579	400	3,540	60	39	10	12		
Other miscellaneous manufacturing	3399	510	2,989	90	D	90	D	10	8	0	0		
Nonmanufacturing industries	21-23, 42-81	15,150	319,088	10,450	235,072	9,740	224,716	1,260	10,356	620	3,238		
Mining, quarrying, oil and gas extraction, and support activities	21	140	D	50	283	40	261	10	22	0	0		
Utilities	22	50	D	30	123	30	123	10	*	0	0		
Wholesale trade	42	1,600	D	530	484	520	477	10	7	0	0		
Electronic shopping and electronic auctions	454111-12	120	D	100	D	100	D	0	0	0	0		
Transportation and warehousing	48-49	70	9,395	40	3,171	40	3,171	0	0	0	0		
Information	51	3,500	182,340	3,270	157,931	3,220	157,061	170	869	80	142		
Publishing	511	1,440	50,367	1,350	34,683	1,340	33,996	110	687	60	102		
Newspaper, periodical, book, and directory publishers	5111	40	72	10	4	10	4	0	0	0	0		
Software publishers	5112	1,410	50,295	1,350	34,679	1,330	33,992	110	687	60	102		
Telecommunications	517	270	3,690	190	1,943	190	D	10	D	10	7		
Data processing, hosting, and related services	518	1,530	49,407	1,480	47,396	1,440	47,264	60	132	20	33		
Other information	other 51	280	78,876	260	73,909	260	D	10	D	0	0		
Finance and insurance	52	530	17,222	510	16,217	510	16,173	10	44	0	0		
Real estate and rental and leasing	53	70	2,398	30	2,161	30	2,161	0	0	0	0		
Lessors of nonfinancial intangible assets (except copyrighted works)	533	20	5	10	*	10	*	0	0	0	0		
Other real estate and rental and leasing	other 53	50	2,393	30	2,161	30	2,161	0	0	0	0		
Professional, scientific, and technical services	54	7,280	74,773	5,340	28,776	4,690	19,369	1,080	9,407	550	3,095		
Architectural, engineering, and related services	5413	1,430	3,883	620	734	430	394	290	340	160	225		

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Computer systems design and related services	5415	3,360	22,534	3,250	i 13,716	3,030	i 10,437	410	i 3,279	120	i 765		
Scientific research and development services	5417	1,450	39,625	i 640	i 7,673	i 420	i 2,556	350	i 5,117	i 260	i 1,530		
Research and development in nanotechnology	541713	100	282	40	i 13	20	i 4	30	i 9	30	i 8		
Research and development in biotechnology (except nanobiotechnology)	541714	340	10,226	90	i 391	i 70	i 116	i 40	i 275	i 10	i 126		
Research and development in the physical, engineering, and life sciences (except nanotechnology and biotechnology)	541715	1,020	28,420	i 520	i 7,228	i 340	i 2,411	290	i 4,817	i 220	1,380		
Research and development in the social sciences and humanities	541720	20	698	10	40	10	24	10	16	10	16	i	
Other professional, scientific, and technical services	other 54	1,050	8,730	850	i 6,653	820	i 5,983	50	i 670	30	575		
Health care services	621-23	310	2,855	160	i 710	160	i 708	10	2	10	2		
Other nonmanufacturing	23, 44-45 (excluding 454111-12), 55-56, 624, 71-72, 81	1,550	3,394	450	r D	450	r D	10	6	0	0		
All companies (number of domestic employees)	-	29,990	691,547	15,440	i 291,661	i 14,570	i 276,644	i 1,660	i 15,016	680	i 5,141		
Small companies													
10-19 ^c	-	5,890	5,277	3,470	i 1,931	i 3,140	i 1,450	i 520	i 482	i 200	i 193	i	
20-49	-	8,200	14,695	4,510	i 5,451	4,260	i 4,940	560	i 511	230	i 278		
Medium companies													
50-99	-	5,110	15,265	2,460	i 4,956	2,350	i 4,461	210	i 496	100	i 267		
100-249	-	5,190	27,847	2,370	i 10,009	2,260	i 9,146	180	i 863	100	479		
Large companies													
250-499	-	2,160	29,549	940	9,849	920	9,034	60	814	i 20	217		
500-999	-	1,410	31,802	660	13,251	640	12,300	40	951	10	204		
1,000-4,999	-	1,440	104,505	710	48,864	690	47,135	50	1,729	20	479		
5,000-9,999	-	270	58,709	160	22,098	i 160	21,777	i 20	321	10	180		
10,000-24,999	-	220	121,142	120	31,933	i 120	26,683	i 30	5,249	i 20	678		
25,000 or more	-	140	282,756	90	143,319	i 90	139,718	i 20	3,601	10	2,166		

* = amount < \$500,000; 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%.

NAICS = 2017 North American Industry Classification System.

^a Beginning in survey year 2018, these statistics include an adjustment to the weight to account for unit nonresponse; beginning in survey year 2019, these company count estimates reflect a change in rounding methodology.

^b Beginning in survey year 2018, these statistics include an adjustment to the weight to account for unit nonresponse; beginning in survey year 2019, these company count estimates reflect a change in rounding methodology. These company count estimates also reflect an imputation process implemented for survey year 2014. This change has affected the comparability of these company count estimates with estimates published for years prior to 2014.

^c The Business Enterprise Research and Development Survey does not include companies with fewer than 10 domestic employees.

Note(s):

Detail may not add to total because of rounding. Industry classification is based on the dominant business code for domestic R&D performance, where available. 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 and are not comparable with estimates published for years prior to 2018. Companies could report R&D in one, more than one, or no application area.

Source(s):

National Center for Science and Engineering Statistics and Census Bureau, Business Enterprise Research and Development Survey, 2022.