

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: 2021

(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					
								Total		Federally funded			
		Companies ^a (number)	Amount	Companies ^b (number)	Amount	Companies ^b (number)	Amount	Companies ^b (number)	Amount	Companies ^b (number)	Amount		
All industries	21-23, 31-33, 42-81	31,490	602,499	14,140	257,030	13,380	243,879	1,540	13,151	700	5,468		
Manufacturing industries	31-33	15,620	326,060	4,330	50,012	4,170	45,884	360	4,128	80	2,675		
Food	311	890	5,266	80	279	80	275	10	4	0	0		
Beverage and tobacco products	312	190	1,247	10	1	10	1	0	0	0	0		
Textile, apparel, and leather products	313-16	310	829	20	29	20	29	0	0	0	0		
Wood products	321	150	444	10	0 - 297	10	0 - 297	0	0	0	0		
Paper	322	120	1,139	10	65	10	65	0	0	0	0		
Printing and related support activities	323	170	204	70	120	70	120	0	0	0	0		
Petroleum and coal products	324	110	957	10	17	10	17	0	0	0	0		
Chemicals	325	2,250	109,490	220	1,442	190	1,385	40	58	10	6		
Basic chemicals	3251	250	2,713	10	11	10	6	10	4	0	0		
Resin, synthetic rubber, and artificial synthetic fibers and filaments	3252	130	1,389	20	0 - 109	20	0 - 109	0	0	0	0		
Pesticide, fertilizer, and other agricultural chemicals	3253	100	1,157	10	0 - 126	10	0 - 109	10	0 - 18	0	0		
Pharmaceuticals and medicines	3254	1,210	100,220	130	1,290	100	1,254	40	36	10	5		
Soap, cleaning compound, and toilet preparations	3256	290	2,740	20	16 - 36	10	17	10	0 - 18	0	0		
Paint, coating, adhesive, and other chemicals	3255, 3259	300	1,271	60	0 - 111	60	0 - 109	10	1	10	1		
Plastics and rubber products	326	920	3,144	130	181	130	181	10	*	0	0		
Nonmetallic mineral products	327	340	1,533	40	39	40	39	0	0	0	0		
Primary metals	331	260	912	20	0 - 297	20	0 - 297	0	0	0	0		
Fabricated metal products	332	2,310	4,291	480	169	450	162	50	7	0	0		
Machinery	333	2,170	17,730	880	2,392	870	2,350	30	42	10	26		
Agricultural implement	33311	150	1,867	50	106	50	106	10	*	10	*		
Semiconductor machinery	333242	60	5,349	40	768	40	758	10	10	10	4		
Engine, turbine, and power transmission equipment	3336	80	1,374	30	156	30	140	10	17	10	17		
Other machinery	other 333	1,900	9,140	770	1,362	770	1,347	20	15	10	5		
Computer and electronic products	334	2,130	101,063	1,370	32,906	1,310	31,252	140	1,654	40	680		
Communications equipment	3342	280	12,557	210	7,283	210	7,229	10	54	10	0 - 55		
Semiconductor and other electronic components	3344	660	47,396	300	9,270	240	8,816	90	454	10	9		
Navigational, measuring, electromedical, and control instruments	3345	960	13,644	710	4,081	700	2,993	40	1,088	20	618		
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	180	3,087	110	482	110	394	10	88	10	*		
Search, detection, navigation, guidance, aeronautical, and nautical system and instruments	334511	190	5,301	150	2,086	150	1,154	20	932	20	549 - 619		

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		Companies ^a (number)	Amount	Companies ^b (number)	Amount	Companies ^b (number)	Amount	Companies ^b (number)	Amount	Companies ^b (number)	Amount	Companies ^b (number)	Amount
Other measuring and controlling devices	other 3345	600	5,256	450	1,512	450	1,445	20	67	10	0 - 68		
Other computer and electronic products	other 334	240	27,465	170	12,271	170	12,214	10	58	10	0 - 55		
Electrical equipment, appliances, and components	335	580	5,494	300	1,200	290	1,094	20	107	10	1		
Transportation equipment	336	1,150	50,760	350	7,717	340	5,485	60	2,231	20	1,955		
Motor vehicles, bodies, trailers, and parts	3361-63	570	26,391	190	4,254	170	4,084	40	170	10	3		
Aerospace products and parts	3364	350	21,468	110	3,363	110	1,333	20	2,030	10	1,950		
Aircraft, aircraft engine, and aircraft parts	336411-13	310	19,845	100	3,317	100	1,290	20	2,026	10	1,946		
Guided missile, space vehicle, and related parts	336414-15, 336419	40	1,623	20	46	20	43	10	3	10	3		
Military armored vehicle, tank, and tank components	336992	20	21 - 25	0	0	0	0	0	0	0	0		
Other transportation	other 336	220	2,875 - 2,880	60	101	60	69	10	31	10	2		
Furniture and related products	337	230	426	40	105	40	105	0	0	0	0		
Miscellaneous	339	1,450	21,133	390	3,059 - 3,357	370	3,034 - 3,332	40	25	20	7		
Medical equipment and supplies	3391	820	18,438	300	3,057	290	3,035	40	22	20	7		
Other miscellaneous manufacturing	3399	640	2,695	90	2 - 301	90	0 - 297	10	3	10	*		
Nonmanufacturing industries	21-23, 42-81	15,880	276,439	9,820	207,017	9,210	197,995	1,180	9,022	620	2,792		
Mining, quarrying, oil and gas extraction, and support activities	21	180	1,260 - 1,334	50	245	40	218	10	27	0	0		
Utilities	22	40	168 - 17,997	30	3 - 17,966	20	0 - 17,961	10	4	0	0		
Wholesale trade	42	1,810	1,745 - 1,855	420	229	420	215	10	14	0	0		
Electronic shopping and electronic auctions	454111-12	180	5,936 - 24,040	160	0 - 24,034	160	0 - 24,034	0	0	0	0		
Transportation and warehousing	48-49	80	7,208	30	0 - 7,200	30	0 - 7,200	0	0	0	0		
Information	51	3,450	147,855	3,270	134,216	3,210	133,195	190	1,021	40	220		
Publishing	511	1,420	39,152	1,370	32,932	1,350	32,341	100	590	10	13		
Newspaper, periodical, book, and directory publishers	5111	60	103	10	5	10	5	0	0	0	0		
Software publishers	5112	1,370	39,049	1,360	32,926	1,350	32,336	100	590	10	13		
Telecommunications	517	170	3,835	140	1,503	140	1,405 - 1,502	10	1 - 98	10	2		
Data processing, hosting, and related services	518	1,700	45,192	1,630	43,677	1,600	43,343	90	334	30	204		

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								Companies ^b (number)	Amount	Companies ^b (number)	Amount		
Other information	other 51	180	59,676	140	56,104	140	56,007 - 56,105	10	0 - 97	0	0		
Finance and insurance	52	530	20,947	490	18,558	490	18,525	10	32	0	0		
Real estate and rental and leasing	53	50	2,096	20	1,922	20	1,922	0	0	0	0		
Lessors of nonfinancial intangible assets (except copyrighted works)	533	10	5 - 8	10	1	10	1	0	0	0	0		
Other real estate and rental and leasing	other 53	40	2,088 - 2,091	20	1,921	20	1,921	0	0	0	0		
Professional, scientific, and technical services	54	7,050	66,496	5,090	25,158	4,560	17,239	970	7,919	580	2,572		
Architectural, engineering, and related services	5413	1,430	4,560	490	746	330	375	230	372	160	294		
Computer systems design and related services	5415	3,390	20,409	3,320	12,875	3,160	10,006	380	2,869	170	442		
Scientific research and development services	5417	1,370	34,142	560	5,733	390	1,723	300	4,010	220	1,304		
Research and development in nanotechnology	541713	70	228	20	9	20	8	10	1	10	1		
Research and development in biotechnology (except nanobiotechnology)	541714	310	9,039	50	81	40	27	20	54	10	5		
Research and development in the physical, engineering, and life sciences (except nanotechnology and biotechnology)	541715	980	24,312	490	5,614	340	1,681	280	3,933	210	1,276		
Research and development in the social sciences and humanities	541720	30	563	10	29	10	6	10	23	10	23		
Other professional, scientific, and technical services	other 54	870	7,385	730	5,804	690	5,136	70	668	40	531		
Health care services	621-23	590	2,060 - 2,138	80	318	80	318	0	0	0	0		
Other nonmanufacturing	23, 44-45 (excluding 454111-12), 55-56, 624, 71-72, 81	1,980	2,564 - 3,199	230	4 - 3,141	230	0 - 3,136	10	5	10	1		
All companies (number of domestic employees)	-	31,490	602,499	14,140	257,030	13,380	243,879	1,540	13,151	700	5,468		
Small companies													
10-19 ^c	-	5,690	5,477	2,870	1,824	2,640	1,558	470	267	230	126		
20-49	-	9,210	15,061	4,630	4,658	4,390	4,172	470	486	230	232		
Medium companies													
50-99	-	5,760	14,540	2,340	4,407	2,220	3,816	210	591	100	259		
100-249	-	5,570	24,023	2,030	7,692	1,930	6,640	190	1,053	80	561		
Large companies													
250-499	-	2,050	23,932	840	8,358	810	7,330	70	1,028	30	379		
500-999	-	1,290	27,432	530	10,663	510	9,839	40	824	20	441		

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		Companies ^a		Companies ^b		Companies ^b		Total		Federally funded					
		(number)	Amount	(number)	Amount	(number)	Amount	(number)	Amount	(number)	Amount				
1,000–4,999	–	1,350	94,615	610	44,879	600	44,147	60	732	i	20	178			
5,000–9,999	–	270	62,817	140	22,484	130	21,526	30	958	i	10	100			
10,000–24,999	–	210	104,607	120	25,201	i	110	21,388	i	30	3,814	20	458		
25,000 or more	–	130	229,995	80	126,862	i	70	123,464	i	20	3,398	i	10	2,734	i

* = amount < \$500,000; 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. An estimate range may be displayed in place of a single estimate to avoid disclosing operations of individual companies.

Source(s):

National Center for Science and Engineering Statistics and Census Bureau, Business Enterprise Research and Development Survey, 2021.