

TABLE 66

## Product innovating companies and partners, by industry: 2017–19

(Number and percent)

| Industry   | NAICS code              | All companies | Any cooperation partner | Parent, affiliated, or subsidiary business | Suppliers | Other businesses | Federal, state, or local government | Customers | Consultants or commercial laboratories | Universities, colleges, or other institutions of higher education | Nonprofit organizations | Households or individuals |
|--|-------------------------|---------------|-------------------------|--|-----------|------------------|-------------------------------------|-----------|--|---|-------------------------|---------------------------|
| All industries   | 11, 21–23, 31–33, 42–81 | 530,124       | 69.7                    | 12.1                                       | 40.8      | 31.3             | 7.0                                 | 40.1      | 12.9                                   | 6.4   | 6.4                     | 17.7                      |
| Manufacturing industries   | 31–33                   | 35,277        | 75.1                    | 11.1                                       | 46.1      | 33.6             | 5.5                                 | 48.8      | 13.1                                   | 7.1   | 4.0                     | 10.8                      |
| Food   | 311                     | 2,419         | 67.0                    | 9.0  | 31.8      | 25.1             | 4.1                                 | 37.9      | 14.5                                   | 8.4   | 7.0                     | 21.3                      |
| Beverage and tobacco products                                    | 312                     | 1,604         | 62.7                    | 4.1  | 29.2      | 33.2             | 4.3                                 | 24.0      | 12.5                                   | 3.1   | 7.2                     | 14.3                      |
| Textile, apparel, and leather products                           | 313–16                  | 1,619         | 70.0                    | 10.0 r                                     | 42.3      | 32.1             | 5.9 r                               | 47.9 r    | 8.2                                    | 5.0   | 4.6                     | 13.1                      |
| Wood products  | 321                     | 960           | 73.4                    | 17.0                                       | 48.0      | 39.4             | 4.1                                 | 49.1      | 6.6                                    | 5.4 r   | 3.5 r                   | 19.6                      |
| Paper  | 322                     | 253           | 79.4                    | 24.1 r                                     | 49.8      | 20.2             | 2.4                                 | 66.4      | 9.1                                    | 5.1 r   | 1.2                     | 1.2 r                     |
| Printing and related support activities                          | 323                     | 3,354         | 77.9                    | 8.8  | 58.0      | 33.4             | 2.8                                 | 47.1      | 3.0                                    | 3.9   | 8.5                     | 13.6                      |
| Petroleum and coal products                                      | 324                     | 27 r          | 70.4 r                  | 22.2 r                                     | 22.2 r    | 59.3 r           | 0.0                                 | 70.4 r    | 3.7 r                                  | 7.4   | 0.0                     | 0.0                       |
| Chemicals  | 325                     | 1,566         | 76.1                    | 21.1                                       | 42.8      | 33.3             | 5.2                                 | 51.8      | 26.9                                   | 12.1  | 2.7                     | 6.6                       |
| Pesticide, fertilizer, and other agricultural chemical           | 3253                    | 72            | 70.8                    | 12.5                                       | 33.3 r    | 62.5             | 0.0                                 | 55.6      | 23.6                                   | 13.9  | 2.8 r                   | 25.0 r                    |
| Pharmaceuticals and medicines                                    | 3254                    | 357           | 75.4                    | 19.9                                       | 35.9      | 32.2             | 4.2                                 | 45.7      | 35.9                                   | 20.4  | 6.2 r                   | 8.1 r                     |
| Soap, cleaning compound, and toilet preparation                  | 3256                    | 363           | 73.3                    | 10.2 r                                     | 36.6      | 31.1             | 6.3                                 | 54.5      | 30.9                                   | 8.5 r   | 3.0 r                   | 7.7 r                     |
| Other chemicals  | other 325               | 775           | 78.2                    | 27.2                                       | 49.9      | 32.4             | 5.5                                 | 52.8      | 21.7                                   | 9.9   | 0.6                     | 3.6                       |
| Plastics and rubber products                                     | 326                     | 1,310         | 82.5                    | 14.8                                       | 60.4      | 43.6             | 3.5                                 | 57.9      | 19.5                                   | 4.4   | 2.7                     | 10.1                      |
| Nonmetallic mineral products                                     | 327                     | 953           | 72.1                    | 6.7  | 31.0      | 36.0             | 1.8 r                               | 43.4      | 10.9                                   | 12.8 r  | 9.9 r                   | 11.4                      |
| Primary metals   | 331                     | 342           | 78.7                    | 25.4 r                                     | 46.8      | 36.8 r           | 0.6 r                               | 64.0      | 15.2                                   | 24.9 r  | 1.5                     | 2.0                       |
| Fabricated metal products  | 332                     | 6,111         | 77.4                    | 9.5  | 45.9      | 35.8             | 7.2                                 | 52.4      | 8.7                                    | 6.2   | 3.0                     | 10.6                      |
| Machinery  | 333                     | 4,182         | 77.5                    | 10.8                                       | 50.0      | 35.2             | 4.7                                 | 54.5      | 12.5                                   | 8.5   | 1.7 r                   | 5.3                       |
| Computer and electronic products                                 | 334                     | 2,928         | 79.7                    | 14.1                                       | 47.3      | 34.5             | 11.6                                | 52.0      | 20.4                                   | 12.0  | 2.5                     | 5.9                       |
| Communications equipment   | 3342                    | 394           | 71.1                    | 15.2                                       | 45.7      | 34.0             | 7.4                                 | 46.7      | 20.8                                   | 6.9   | 3.3 r                   | 10.4                      |
| Semiconductor and other electronic components                    | 3344                    | 724           | 82.7                    | 13.5                                       | 57.9      | 35.1             | 6.6                                 | 59.8      | 18.5                                   | 12.2  | 1.1 r                   | 5.9 r                     |
| Navigational, measuring, electromedical, and control instruments | 3345                    | 1,370         | 78.2                    | 14.1                                       | 39.3      | 30.5             | 17.4                                | 48.1      | 22.8                                   | 14.1  | 1.5                     | 3.5                       |
| Other computer and electronic products                           | other 334               | 438           | 86.5                    | 14.4 r                                     | 56.2      | 46.3             | 5.5 r                               | 56.2      | 16.0                                   | 10.0  | 6.4 r                   | 9.6 r                     |
| Electrical equipment, appliances, and components                 | 335                     | 1,041         | 76.3                    | 11.7                                       | 42.9      | 35.2             | 9.5                                 | 57.5      | 18.4                                   | 7.0   | 3.4 r                   | 4.6                       |
| Transportation equipment   | 336                     | 1,510         | 80.0                    | 18.8                                       | 57.2      | 39.7             | 7.3                                 | 56.6      | 17.0                                   | 7.3   | 2.8                     | 10.9                      |
| Automobiles, bodies, trailers, and parts                         | 3361–63                 | 877           | 81.5                    | 23.9                                       | 60.8      | 43.4             | 5.6                                 | 60.0      | 13.2                                   | 6.8   | 1.8 r                   | 12.0                      |

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| Aerospace products and parts   | 3364             | 214           | 84.1                    | 16.8                                       | 41.1      | 38.3             | 19.2                                | 61.2      | 22.9                                   | 16.8  | 7.5                     | 10.7                      |
| Other transportation   | other 336        | 418           | 75.4                    | 9.1  | 58.1      | 33.3             | 4.5                                 | 47.4      | 22.0                                   | 3.8   | 3.1                     | 9.1                       |
| Furniture and related products                                       | 337              | 1,555         | 71.4                    | 9.5  | 39.5      | 25.3             | 4.8                                 | 43.7      | 6.6                                    | 1.5   | 1.6                     | 13.1                      |
| Miscellaneous  | 339              | 3,536         | 72.2                    | 7.9  | 47.2      | 29.4             | 3.8                                 | 44.1      | 19.7                                   | 6.2   | 3.1                     | 11.1                      |
| Medical equipment and supplies                                       | 3391             | 1,537         | 65.2                    | 9.4  | 52.7      | 31.8             | 4.2                                 | 37.9      | 33.6                                   | 8.1   | 1.1                     | 6.1                       |
| Other miscellaneous manufacturing                                    | 3399             | 2,000         | 77.6                    | 6.9  | 42.9      | 27.6             | 3.5                                 | 48.8      | 9.0                                    | 4.7   | 4.6                     | 15.0                      |
| Nonmanufacturing industries  | 11, 21–23, 42–81 | 494,848       | 69.3                    | 12.2                                       | 40.4      | 31.1             | 7.1                                 | 39.5      | 12.9                                   | 6.3   | 6.6                     | 18.2                      |
| Agriculture, forestry, fishing, and hunting                          | 11               | 1,314         | 77.1                    | 18.3                                       | 52.7      | 18.1             | 7.1                                 | 52.4      | 11.7                                   | 4.0   | 3.2                     | 21.3                      |
| Mining, extraction, and support activities                           | 21               | 527           | 77.8                    | 27.1                                       | 49.0      | 56.5             | 11.6                                | 50.3      | 24.5                                   | 7.8   | 4.6                     | 22.8                      |
| Utilities  | 22               | 186           | 84.9                    | 22.0                                       | 64.5      | 36.0             | 22.6                                | 17.7      | 32.3                                   | 15.6  | 4.8                     | 32.3                      |
| Construction   | 23               | 40,173        | 63.1                    | 9.5  | 44.8      | 28.6             | 5.9                                 | 38.3      | 7.1                                    | 3.6   | 4.2                     | 25.2                      |
| Wholesale trade  | 42               | 40,944        | 77.7                    | 18.1                                       | 54.4      | 37.5             | 2.8                                 | 43.3      | 12.9                                   | 4.0   | 3.5                     | 8.4                       |
| Retail trade   | 44–45            | 64,657        | 66.8                    | 10.7                                       | 40.9      | 29.6             | 5.5                                 | 37.1      | 6.9                                    | 4.1   | 6.2                     | 20.9                      |
| Transportation and warehousing                                       | 48–49            | 11,860        | 72.6                    | 13.0                                       | 40.8      | 35.2             | 10.2                                | 48.3      | 9.2                                    | 4.3   | 3.9                     | 19.8                      |
| Information  | 51               | 15,608        | 74.3                    | 13.2                                       | 36.7      | 38.5             | 4.4                                 | 45.1      | 16.2                                   | 8.2   | 10.4                    | 11.6                      |
| Publishing   | 511              | 5,746         | 74.5                    | 13.5                                       | 36.1      | 36.8             | 5.1                                 | 48.2      | 20.9                                   | 11.8  | 11.0                    | 8.2                       |
| Newspaper, periodical, book, and directory publishers                | 5111             | 1,953         | 77.0                    | 12.0                                       | 41.8      | 46.3             | 4.8                                 | 38.9      | 21.0                                   | 9.9   | 17.7                    | 12.1                      |
| Software publishers  | 5112             | 3,794         | 73.2                    | 14.2                                       | 33.2      | 31.8             | 5.2                                 | 53.0      | 20.9                                   | 12.8  | 7.6                     | 6.1                       |
| Telecommunications   | 517              | 1,517         | 70.1                    | 18.4                                       | 52.3      | 35.2             | 6.5                                 | 35.2      | 14.2                                   | 2.0   | 4.6                     | 18.5                      |
| Data processing, hosting, and related services                       | 518              | 2,547         | 74.6                    | 13.1                                       | 34.7      | 32.1             | 4.0                                 | 54.6      | 16.1                                   | 5.5   | 10.1                    | 9.5                       |
| Other information  | other 51         | 5,796         | 75.2                    | 11.6                                       | 34.0      | 43.8             | 3.2                                 | 40.4      | 12.1                                   | 7.5   | 11.4                    | 14.1                      |
| Finance and insurance  | 52               | 21,490        | 66.5                    | 25.4                                       | 28.9      | 31.9             | 5.6                                 | 28.0      | 11.5                                   | 3.3   | 4.4                     | 16.9                      |
| Real estate and rental and leasing                                   | 53               | 18,708        | 71.3                    | 14.0                                       | 41.9      | 39.8             | 5.5                                 | 42.6      | 13.1                                   | 5.8   | 6.0                     | 25.4                      |
| Lessors of nonfinancial intangible assets (except copyrighted works) | 533              | 322           | 86.6                    | 0.0  | 59.3      | 29.8             | 0.0                                 | 40.4      | 16.1                                   | 13.7  | 13.4                    | 0.0                       |
| Other real estate and rental and leasing                             | other 53         | 18,386        | 71.0                    | 14.2                                       | 41.6      | 39.9             | 5.6                                 | 42.6      | 13.1                                   | 5.7   | 5.8                     | 25.9                      |
| Professional, scientific, and technical services                     | 54               | 93,425        | 72.0                    | 10.2                                       | 34.9      | 36.1             | 9.3                                 | 44.4      | 21.0                                   | 8.6   | 9.1                     | 11.3                      |
| Legal services   | 5411             | 6,920         | 64.2                    | 6.7  | 28.9      | 34.6             | 10.8                                | 31.9      | 16.8                                   | 5.0   | 8.2                     | 17.7                      |
| Accounting, tax preparation, bookkeeping, and payroll services       | 5412             | 6,772         | 63.9                    | 7.8  | 31.0      | 24.6             | 8.8                                 | 36.2      | 12.3                                   | 4.7   | 7.2                     | 13.4                      |

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| Architectural, engineering, and related services                         | 5413       | 11,587        | 72.9                    | 8.7  | 39.7      | 38.8             | 15.3                                | 47.6      | 23.8                                   | 11.7  | 7.6                     | 8.8                       |
| Specialized design services  | 5414       | 4,190         | 70.5                    | 6.1  | 37.5      | 35.6             | 7.6                                 | 44.2      | 12.2                                   | 8.3   | 16.9                    | 27.0                      |
| Computer systems design and related services                             | 5415       | 24,132        | 75.4                    | 9.6  | 38.8      | 37.8             | 9.0                                 | 50.1      | 23.0                                   | 6.8   | 8.2                     | 8.6                       |
| Management, scientific, and technical consulting services                | 5416       | 22,828        | 73.1                    | 13.8                                       | 27.3      | 37.4             | 8.2                                 | 47.9      | 24.2                                   | 9.1   | 10.4                    | 10.7                      |
| Scientific research and development services                             | 5417       | 2,615         | 84.5                    | 16.8                                       | 36.9      | 44.1             | 24.2                                | 52.0      | 39.2                                   | 35.0  | 13.4                    | 8.1                       |
| Advertising, public relations, and related services                      | 5418       | 4,219         | 76.5                    | 12.3                                       | 38.7      | 45.0             | 6.2                                 | 42.3      | 14.0                                   | 5.9   | 11.3                    | 13.4                      |
| Other professional, scientific, and technical services                   | 5419       | 10,166        | 67.0                    | 8.0  | 40.3      | 29.2             | 3.0                                 | 32.6      | 16.1                                   | 7.8   | 6.4                     | 9.7                       |
| Management of companies and enterprises                                  | 55         | 170           | 98.8                    | 47.1 r                                     | 51.2 r    | 51.2 r           | 0.0                                 | 48.8 r    | 22.9 r                                 | 0.0   | 0.0                     | 0.0                       |
| Administrative and support and waste management and remediation services | 56         | 26,537        | 66.8                    | 11.0                                       | 40.3      | 29.2             | 6.5                                 | 38.9      | 8.0                                    | 4.3   | 4.7                     | 19.0                      |
| Educational services   | 61         | 10,107        | 71.6                    | 14.1                                       | 21.8      | 32.7             | 10.9                                | 44.9      | 15.9                                   | 13.9  | 14.5                    | 19.5                      |
| Health care and social assistance  | 62         | 59,925        | 68.0                    | 10.2                                       | 42.7      | 25.2             | 12.5                                | 29.0      | 19.9                                   | 12.1  | 8.6                     | 18.8                      |
| Health care services   | 621–23     | 51,378        | 66.5                    | 7.5  | 44.2      | 25.3             | 8.9                                 | 25.2      | 21.1                                   | 10.6  | 6.4                     | 16.3                      |
| Social assistance  | 624        | 8,546         | 77.0                    | 26.4                                       | 33.4      | 24.4             | 34.0                                | 51.5      | 12.4                                   | 21.2  | 21.9                    | 34.0                      |
| Arts, entertainment, and recreation                                      | 71         | 10,031        | 68.0                    | 12.5                                       | 33.3      | 34.5             | 4.0                                 | 37.8      | 8.0                                    | 6.5   | 8.4                     | 21.7                      |
| Accommodation and food services  | 72         | 41,222        | 67.2                    | 14.2                                       | 39.7      | 23.3             | 6.9                                 | 44.0      | 8.2                                    | 4.7   | 6.6                     | 29.0                      |
| Other services   | 81         | 37,962        | 66.6                    | 8.2  | 43.7      | 25.9             | 4.5                                 | 38.7      | 7.8                                    | 3.7   | 3.7                     | 18.7                      |

r = relative standard error &gt; 50%.

NAICS = 2017 North American Industry Classification System.

**Note(s):**

Detail may not add to total because of rounding or unavailable NAICS detail for select records beyond the 4-digit industry classification. Industry classification is based on dominant establishment payroll. Statistics are representative of companies located in the United States.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, 2020 Annual Business Survey: Data Year 2019.