

## 1790 Analytics Patent Scorecard (2019) - Aerospace & Defense

Industry	Rank	Organization (Parent)	Country	2019 US Patents	Pipeline Growth Index	Pipeline Impact	% Self-Citations	Adjusted Pipeline Impact	Pipeline Generality	Pipeline Originality	Pipeline Power
Aerospace and Defense	1	Raytheon Co.	USA	2835	1.20	0.95	41.8%	0.84	1.39	1.03	4100.11
Aerospace and Defense	2	Honeywell International Inc.	USA	1033	0.96	5.00	91.0%	1.95	1.98	1.03	3907.36
Aerospace and Defense	3	Boeing Co.	USA	1416	1.13	0.89	27.5%	0.89	1.44	1.07	2208.83
Aerospace and Defense	4	Rolls Royce Holdings Plc	UK	609	1.49	0.84	16.6%	0.84	1.30	0.99	975.35
Aerospace and Defense	5	Lockheed Martin Corp.	USA	323	1.26	1.17	23.7%	1.17	1.80	1.08	928.75
Aerospace and Defense	6	Collins Aerospace (Raytheon)	USA	145	1.01	1.39	16.5%	1.39	2.43	1.03	506.92
Aerospace and Defense	7	Sikorsky (Lockheed Martin)	USA	152	2.14	0.74	35.6%	0.70	1.33	1.01	305.67
Aerospace and Defense	8	Goodrich Corp. (Raytheon)	USA	416	1.06	0.66	57.7%	0.48	1.22	1.05	268.08
Aerospace and Defense	9	Northrop Grumman Corp	USA	160	0.90	1.07	14.9%	1.07	1.67	0.97	250.08
Aerospace and Defense	10	Hamilton Sundstrand (Raytheon)	USA	374	1.23	0.64	53.4%	0.49	0.97	1.09	238.94
Aerospace and Defense	11	Pratt & Whitney (Raytheon)	USA	173	1.43	0.98	62.7%	0.66	1.42	1.02	237.56
Aerospace and Defense	12	Safran S.A.	France	493	1.07	0.55	15.5%	0.55	0.69	1.02	204.77
Aerospace and Defense	13	BAE Systems Plc.	UK	194	1.13	0.84	5.4%	0.84	0.97	1.09	194.58
Aerospace and Defense	14	Airbus SE	France	638	1.07	0.43	19.4%	0.43	0.49	0.98	140.37
Aerospace and Defense	15	Thales	France	198	1.08	0.37	6.0%	0.37	0.51	0.96	38.26

## 1790 Analytics Patent Scorecard (2019) - Automotive & Parts

Industry	Rank	Organization (Parent)	Country	2019 US Patents	Pipeline Growth Index	Pipeline Impact	% Self-Citations	Adjusted Pipeline Impact	Pipeline Generality	Pipeline Originality	Pipeline Power
Automotive and Parts	1	Ford Motor Co.	USA	2521	1.18	1.30	45.1%	1.11	1.73	1.01	5736.07
Automotive and Parts	2	Magna International Inc.	Canada	311	1.16	2.33	49.8%	1.87	3.42	1.10	2529.69
Automotive and Parts	3	General Motors Corp	USA	1316	1.21	1.14	22.8%	1.14	1.21	1.02	2249.74
Automotive and Parts	4	Waymo LLC (Google Inc.)	USA	134	1.49	2.73	14.5%	2.73	3.54	1.04	1995.44
Automotive and Parts	5	Toyota Motor Corp	Japan	2471	1.05	0.60	16.4%	0.60	0.76	1.07	1257.87
Automotive and Parts	6	Volkswagen A.G. (Porsche)	Germany	711	1.39	0.85	16.5%	0.85	1.06	1.02	918.72
Automotive and Parts	7	Porsche Automobil Holding	Germany	711	1.39	0.85	16.5%	0.85	1.06	1.02	916.87
Automotive and Parts	8	Johnson Controls Inc	USA	183	1.31	1.52	19.5%	1.52	1.97	1.01	724.79
Automotive and Parts	9	Bosch (Robert) GmbH	Germany	1283	0.98	0.70	7.0%	0.70	0.70	1.06	659.68
Automotive and Parts	10	Honda Motor Co. Ltd.	Japan	1115	1.15	0.59	13.8%	0.59	0.76	1.07	614.05
Automotive and Parts	11	Hyundai Motor Co.	S.Korea	1548	1.09	0.68	25.0%	0.68	0.54	1.00	612.83
Automotive and Parts	12	Hitachi Automotive (Hitachi)	Japan	320	1.36	0.89	15.0%	0.89	1.32	1.09	554.85
Automotive and Parts	13	Denso Corp	Japan	1223	1.04	0.50	13.9%	0.50	0.67	1.06	453.65
Automotive and Parts	14	Kia Motors Corp.	S.Korea	919	2.63	0.40	22.7%	0.40	0.48	0.96	444.97
Automotive and Parts	15	Aptiv Plc	UK	109	3.00	1.00	8.3%	1.00	1.26	1.05	435.46
Automotive and Parts	16	Mazda Motor Corp.	Japan	201	1.27	0.92	17.0%	0.92	1.39	1.09	355.77
Automotive and Parts	17	Comp Gen des Est Michelin	France	169	1.18	0.98	48.3%	0.80	2.05	1.06	346.86
Automotive and Parts	18	ZF Friedrichshafen AG	Germany	334	1.25	1.04	17.9%	1.04	0.85	0.83	302.74
Automotive and Parts	19	Valeo S.A.	France	396	1.20	0.69	15.6%	0.69	0.82	1.01	267.53
Automotive and Parts	20	Nissan Motor Co. Ltd.	Japan	472	1.08	0.57	19.7%	0.57	0.84	0.99	239.58

## 1790 Analytics Patent Scorecard (2019) - Biotechnology & Pharmaceuticals

Industry	Rank	Organization (Parent)	Country	2019 US Patents	Pipeline Growth Index	Pipeline Impact	% Self-Citations	Adjusted Pipeline Impact	Pipeline Generality	Pipeline Originality	Pipeline Power
Biotechnology and Pharma	1	Johnson & Johnson	USA	1463	1.33	5.00	94.4%	1.78	1.55	0.85	4609.72
Biotechnology and Pharma	2	Bristol-Myers Squibb Co.	USA	225	1.07	1.73	60.5%	1.20	2.21	0.87	555.11
Biotechnology and Pharma	3	Bayer AG	Germany	776	1.08	1.67	82.4%	0.79	0.79	0.72	381.33
Biotechnology and Pharma	4	Roche Holding Ltd.	Switzerland	501	0.97	0.65	43.1%	0.56	1.34	0.99	362.68
Biotechnology and Pharma	5	AbbVie Inc.	USA	214	0.85	1.55	43.7%	1.33	1.61	0.91	354.48
Biotechnology and Pharma	6	Pfizer Inc	USA	117	1.12	1.39	30.4%	1.39	2.10	0.84	323.30
Biotechnology and Pharma	7	Life Tech (Thermo Fisher)	USA	150	1.01	1.58	66.6%	1.00	1.94	1.07	313.78
Biotechnology and Pharma	8	Abbott Laboratories	USA	481	0.94	0.66	20.4%	0.66	1.03	0.96	293.32
Biotechnology and Pharma	9	Janssen Pharma (J&J)	Sweden	149	0.99	1.71	61.4%	1.17	1.85	0.86	275.99
Biotechnology and Pharma	10	Allergan Plc (AbbVie Inc.)	Ireland	153	1.15	1.27	47.1%	1.05	1.46	0.95	258.61
Biotechnology and Pharma	11	Merck KGaA (Germany)	Germany	263	1.03	0.69	44.4%	0.59	1.25	1.04	205.53
Biotechnology and Pharma	12	Novartis AG	Switzerland	241	1.07	0.56	28.5%	0.56	0.96	1.08	149.25

## 1790 Analytics Patent Scorecard (2019) - Chemicals

Industry	Rank	Organization (Parent)	Country	2019 US Patents	Pipeline Growth Index	Pipeline Impact	% Self-Citations	Adjusted Pipeline Impact	Pipeline Generality	Pipeline Originality	Pipeline Power
Chemicals	1	Degussa (RAG Foundation)	Germany	161	1.00	2.03	83.2%	0.95	3.51	1.01	545.27
Chemicals	2	Evonik (RAG Foundation)	Germany	196	1.03	1.74	79.8%	0.88	2.92	0.99	510.11
Chemicals	3	LG Chem Ltd.	S.Korea	797	1.27	0.57	42.3%	0.50	0.72	1.05	384.73
Chemicals	4	BASF SE	Germany	612	1.20	0.62	40.9%	0.55	0.82	0.98	326.56
Chemicals	5	Saudi Basic Industries	Saudi Arabia	208	1.26	1.05	40.9%	0.93	1.30	0.89	283.29
Chemicals	6	Dow Chemical Co.	USA	460	0.95	0.69	48.6%	0.56	1.12	0.95	261.99
Chemicals	7	Arkema Inc	USA	159	1.03	1.51	85.2%	0.68	1.90	0.95	200.71
Chemicals	8	Asahi Kasei Corp.	Japan	230	1.17	0.60	33.7%	0.58	0.96	1.01	152.35
Chemicals	9	Zeon Corp.	Japan	130	1.86	0.60	46.2%	0.50	0.83	1.07	106.97
Chemicals	10	Kuraray Co. Ltd.	Japan	100	1.15	0.79	20.8%	0.79	1.08	0.94	91.78
Chemicals	11	Nitto Denko Corp.	Japan	162	1.01	0.59	46.6%	0.49	0.95	1.04	80.32
Chemicals	12	DuPont de Nemours	USA	199	0.90	0.49	20.0%	0.49	0.85	1.01	74.29
Chemicals	13	Kaneka Corp.	Japan	107	1.41	0.60	6.5%	0.60	0.72	1.07	69.25
Chemicals	14	Solvay S.A.	Belgium	133	1.08	0.60	14.7%	0.60	0.53	1.02	45.94
Chemicals	15	Mitsubishi Chemical	Japan	185	1.14	0.43	24.7%	0.43	0.48	0.99	43.11
Chemicals	16	L'Air Liquide S.A.	France	116	1.10	0.64	10.9%	0.64	0.30	1.07	26.50

## 1790 Analytics Patent Scorecard (2019) - Communication/Internet Equipment

Industry	Rank	Organization (Parent)	Country	2019 US Patents	Pipeline Growth Index	Pipeline Impact	% Self-Citations	Adjusted Pipeline Impact	Pipeline Generality	Pipeline Originality	Pipeline Power
Communication/Internet Equipment	1	Qualcomm Inc	USA	2395	1.01	0.87	11.9%	0.87	1.14	0.96	2312.56
Communication/Internet Equipment	2	Cisco Systems Inc.	USA	1109	1.24	1.58	41.9%	1.39	1.36	0.83	2172.40
Communication/Internet Equipment	3	Corning Inc.	USA	564	1.11	1.89	44.3%	1.62	1.83	0.92	1705.67
Communication/Internet Equipment	4	Commscope Inc.	USA	555	1.19	1.58	41.9%	1.40	1.59	0.89	1295.37
Communication/Internet Equipment	5	Huawei Technologies Co Ltd.	China	2967	1.35	0.54	15.3%	0.54	0.52	1.00	1112.60
Communication/Internet Equipment	6	Juniper Networks Inc.	USA	315	1.09	1.93	15.4%	1.93	2.02	0.77	1028.49
Communication/Internet Equipment	7	Ericsson	Sweden	1624	1.18	0.53	11.0%	0.53	0.60	1.02	614.21
Communication/Internet Equipment	8	Motorola Mobility (Lenovo)	USA	194	1.44	1.08	5.8%	1.08	1.50	1.10	499.61
Communication/Internet Equipment	9	Nokia Corp	Finland	958	1.03	0.58	3.9%	0.58	0.61	1.06	369.47
Communication/Internet Equipment	10	Motorola Solutions Inc.	USA	228	1.42	0.76	22.4%	0.76	1.30	1.03	329.01
Communication/Internet Equipment	11	Ciena Corp	USA	123	1.28	0.94	56.2%	0.69	2.06	0.91	204.93
Communication/Internet Equipment	12	CenturyLink Inc	USA	181	1.18	0.86	27.0%	0.86	0.92	0.89	149.23
Communication/Internet Equipment	13	Mellanox Technologies Ltd	Israel	104	1.30	1.08	28.4%	1.08	1.07	0.82	128.29
Communication/Internet Equipment	14	EchoStar Corp	USA	119	0.65	1.07	8.6%	1.07	1.42	0.97	113.91
Communication/Internet Equipment	15	ARRIS Group (Commscope)	USA	172	1.19	0.61	14.5%	0.61	0.82	1.00	103.39
Communication/Internet Equipment	16	Avaya Inc	USA	116	0.94	0.74	7.6%	0.74	0.78	1.02	65.27
Communication/Internet Equipment	17	Nokia Solut & Networks (Nokia)	Finland	231	1.15	0.52	2.4%	0.52	0.42	1.12	65.05
Communication/Internet Equipment	18	Level 3 Comms (CenturyLink)	USA	101	1.38	0.62	21.1%	0.62	0.79	0.84	58.09
Communication/Internet Equipment	19	Rohde & Schwarz	Germany	124	1.43	0.34	28.6%	0.34	0.62	1.02	38.32

## 1790 Analytics Patent Scorecard (2019) - Communication/Internet Services

Industry	Rank	Organization (Parent)	Country	2019 US Patents	Pipeline Growth Index	Pipeline Impact	% Self-Citations	Adjusted Pipeline Impact	Pipeline Generality	Pipeline Originality	Pipeline Power
Communication/Internet Services	1	Amazon.com Inc.	USA	2487	1.18	3.02	32.6%	2.94	3.52	0.99	29843.04
Communication/Internet Services	2	Google Inc.	USA	2528	1.04	1.59	13.9%	1.59	2.24	1.03	9595.35
Communication/Internet Services	3	Facebook Inc	USA	1329	1.78	1.26	40.2%	1.13	1.63	1.10	4809.80
Communication/Internet Services	4	Snap Inc	USA	132	2.49	5.00	92.6%	1.87	5.00	1.08	3311.57
Communication/Internet Services	5	AT&T Inc	USA	1442	1.11	2.64	80.6%	1.31	1.09	0.96	2192.14
Communication/Internet Services	6	T-Mobile (Deutsche Telekom)	Germany	248	1.80	1.21	33.8%	1.16	1.79	1.04	967.55
Communication/Internet Services	7	Softbank Corp	Japan	644	0.93	1.01	37.2%	0.94	1.64	0.94	862.63
Communication/Internet Services	8	Deutsche Telekom AG	Germany	287	1.61	1.01	27.7%	1.01	1.42	1.03	684.20
Communication/Internet Services	9	Comcast Corp	USA	291	1.16	1.99	69.4%	1.20	1.54	0.94	587.96
Communication/Internet Services	10	Verizon Communications Inc	USA	629	1.00	0.68	6.7%	0.68	0.93	1.12	440.26
Communication/Internet Services	11	Siemens Aktiengesellschaft	Germany	1614	1.12	0.35	17.6%	0.35	0.65	1.01	417.32
Communication/Internet Services	12	TiVo Corp	USA	187	0.95	1.49	12.2%	1.49	1.95	0.77	399.60
Communication/Internet Services	13	InterDigital Inc	USA	350	1.23	0.96	12.5%	0.96	0.81	0.89	298.24
Communication/Internet Services	14	Sprint Corp. (Softbank Corp)	USA	253	0.64	1.04	29.8%	1.04	1.77	0.94	279.23
Communication/Internet Services	15	eBay Inc	USA	267	1.20	0.76	48.8%	0.62	1.31	0.96	249.39
Communication/Internet Services	16	Charter Communications Inc	USA	104	0.95	1.21	32.1%	1.18	2.01	1.00	233.45
Communication/Internet Services	17	Blackberry Ltd.	Canada	355	0.98	0.78	11.5%	0.78	0.89	0.94	225.73
Communication/Internet Services	18	Nippon Telegraph & Telephone	Japan	306	1.17	0.40	13.1%	0.40	0.38	1.03	55.23
Communication/Internet Services	19	ZTE Microelectronics Tech	China	403	0.81	0.34	6.0%	0.34	0.31	1.08	36.78
Communication/Internet Services	20	KT Corp.	S.Korea	115	1.02	0.42	9.8%	0.42	0.48	1.06	25.01

## 1790 Analytics Patent Scorecard (2019) - Computer Peripherals & Storage

Industry	Rank	Organization (Parent)	Country	2019 US Patents	Pipeline Growth Index	Pipeline Impact	% Self-Citations	Adjusted Pipeline Impact	Pipeline Generality	Pipeline Originality	Pipeline Power
Computer Peripherals & Storage	1	PURE Storage Inc	USA	207	3.00	5.00	71.7%	2.91	2.73	0.96	4741.56
Computer Peripherals & Storage	2	Dell EMC Corp. (Dell Tech)	USA	957	1.14	3.64	59.7%	2.56	1.74	0.76	3672.07
Computer Peripherals & Storage	3	Immersion Corp.	USA	185	1.30	2.81	27.5%	2.81	4.08	1.04	2860.28
Computer Peripherals & Storage	4	Western Digital Corp.	USA	742	1.02	1.34	46.1%	1.12	1.51	0.76	976.09
Computer Peripherals & Storage	5	Ricoh Co. Ltd.	Japan	998	0.94	0.42	37.8%	0.38	0.73	1.08	285.24
Computer Peripherals & Storage	6	Seiko Epson Corporation	Japan	1348	1.04	0.34	35.7%	0.32	0.48	1.12	242.00
Computer Peripherals & Storage	7	Seagate Technology Plc	USA	392	0.98	0.89	58.0%	0.64	1.13	0.79	219.30
Computer Peripherals & Storage	8	Netapp Inc	USA	175	1.48	1.50	11.5%	1.50	0.82	0.68	216.82
Computer Peripherals & Storage	9	Synaptics Inc.	USA	150	0.77	1.12	12.2%	1.12	1.14	1.09	161.71
Computer Peripherals & Storage	10	Brother Industries Ltd	Japan	787	1.28	0.43	61.0%	0.29	0.44	0.95	123.78
Computer Peripherals & Storage	11	Zebra Technologies Corp.	USA	103	1.21	0.65	28.7%	0.65	1.31	1.10	117.05
Computer Peripherals & Storage	12	Toshiba Tec Corp (Toshiba)	Japan	369	0.89	0.42	55.8%	0.31	0.69	1.07	75.72
Computer Peripherals & Storage	13	Konica Minolta Inc	Japan	675	1.02	0.25	17.3%	0.25	0.25	1.16	49.64
Computer Peripherals & Storage	14	Fuji Xerox (Fuji Film)	Japan	545	1.04	0.27	13.5%	0.27	0.28	1.14	48.27
Computer Peripherals & Storage	15	Maxell Izumi Co Ltd	Japan	116	1.84	0.62	20.7%	0.62	0.25	1.01	33.19
Computer Peripherals & Storage	16	AU Optronics Corp.	Taiwan	160	1.07	0.34	11.8%	0.34	0.39	0.95	21.42
Computer Peripherals & Storage	17	Okii Electric Industry	Japan	103	0.96	0.25	13.2%	0.25	0.25	1.30	8.04

## 1790 Analytics Patent Scorecard (2019) - Computer Software

Industry	Rank	Organization (Parent)	Country	2019 US Patents	Pipeline Growth Index	Pipeline Impact	% Self-Citations	Adjusted Pipeline Impact	Pipeline Generality	Pipeline Originality	Pipeline Power
Computer Software	1	Microsoft Corporation	USA	3142	1.32	1.02	25.8%	1.02	1.45	0.93	5719.69
Computer Software	2	Palantir Technologies	USA	139	1.45	5.00	72.5%	2.88	5.00	1.01	2920.88
Computer Software	3	VMWare Inc (Dell)	USA	720	1.37	1.62	38.5%	1.48	1.92	0.86	2401.20
Computer Software	4	Splunk Inc	USA	160	1.60	4.50	70.1%	2.69	2.59	0.91	1630.02
Computer Software	5	Symantec Corp.	USA	215	1.41	1.92	6.8%	1.92	2.23	0.99	1273.79
Computer Software	6	Oracle Corporation	USA	900	1.22	0.92	29.1%	0.92	1.01	0.79	810.63
Computer Software	7	Sap SE	Germany	659	1.38	0.84	37.7%	0.78	0.80	0.95	533.80
Computer Software	8	Adobe Inc.	USA	478	1.37	0.68	1.6%	0.68	1.10	1.09	532.86
Computer Software	9	DropBox Inc	USA	150	1.29	1.34	33.5%	1.30	1.71	1.10	472.81
Computer Software	10	Rovi Corporation (TiVo)	USA	163	0.98	1.70	10.3%	1.70	2.15	0.72	418.37
Computer Software	11	Cadence Design Systems	USA	194	1.90	1.41	42.4%	1.24	0.87	0.77	307.72
Computer Software	12	Citrix Systems Inc	USA	138	1.13	1.21	13.4%	1.21	1.67	0.92	289.72
Computer Software	13	Commvault Systems Inc.	USA	112	1.27	5.00	84.5%	2.27	1.74	0.43	242.49
Computer Software	14	McAfee Inc	USA	104	0.98	1.35	23.2%	1.35	1.72	0.86	204.40
Computer Software	15	CA Inc (Broadcom Ltd)	USA	175	0.91	0.87	7.1%	0.87	0.96	1.02	134.96
Computer Software	16	Tata Consultancy (Tata)	India	133	1.36	0.81	1.1%	0.81	0.61	0.95	84.96
Computer Software	17	Red Hat Inc (IBM)	USA	320	1.04	0.60	28.1%	0.60	0.61	0.65	78.97



## 1790 Analytics Patent Scorecard (2019) - Computer Systems

Industry	Rank	Organization (Parent)	Country	2019 US Patents	Pipeline Growth Index	Pipeline Impact	% Self-Citations	Adjusted Pipeline Impact	Pipeline Generality	Pipeline Originality	Pipeline Power
Computer Systems	1	Dell Technologies Inc	USA	2432	1.17	2.24	53.4%	1.72	1.47	0.87	6281.99
Computer Systems	2	IBM Corp	USA	9587	1.02	0.65	39.7%	0.59	0.68	0.83	3236.62
Computer Systems	3	Lenovo Group Ltd	Hong Kong	657	1.13	0.62	6.8%	0.62	0.88	1.11	454.38
Computer Systems	4	Hewlett Packard Enterprises	USA	798	1.71	0.54	16.0%	0.54	0.62	0.89	407.77
Computer Systems	5	HP Inc	USA	931	1.27	0.55	13.0%	0.55	0.67	0.93	401.73
Computer Systems	6	NEC Corp	Japan	1070	1.20	0.36	14.1%	0.36	0.32	0.99	149.26
Computer Systems	7	Fujitsu Limited	Japan	1214	0.98	0.27	9.1%	0.27	0.28	1.07	97.05

## 1790 Analytics Patent Scorecard (2019) - Conglomerates

Industry	Rank	Organization (Parent)	Country	2019 US Patents	Pipeline Growth Index	Pipeline Impact	% Self-Citations	Adjusted Pipeline Impact	Pipeline Generality	Pipeline Originality	Pipeline Power
Conglomerates	1	United Technologies (Raytheon)	USA	2441	1.20	1.09	47.1%	0.90	1.56	1.03	4213.03
Conglomerates	2	General Electric Company	USA	2398	1.15	0.58	31.3%	0.58	1.09	1.01	1756.21
Conglomerates	3	3M Co	USA	692	0.99	0.76	29.6%	0.76	1.41	1.13	825.18
Conglomerates	4	Dover Corp	USA	146	1.16	1.18	42.2%	1.04	2.31	1.01	411.62
Conglomerates	5	Mitsubishi Electric Corp	Japan	1335	1.12	0.44	18.0%	0.44	0.50	1.01	330.99
Conglomerates	6	Toshiba Corp	Japan	1401	1.10	0.37	16.1%	0.37	0.44	1.00	248.24
Conglomerates	7	Textron Inc.	USA	205	1.34	0.88	39.9%	0.79	1.07	0.92	216.15
Conglomerates	8	Rockwell Automation Inc	USA	159	0.92	0.78	17.6%	0.78	1.49	1.12	190.71
Conglomerates	9	Danaher Corp.	USA	246	0.93	0.47	28.0%	0.47	0.79	0.90	77.20

## 1790 Analytics Patent Scorecard (2019) - Electronics

Industry	Rank	Organization (Parent)	Country	2019 US Patents	Pipeline Growth Index	Pipeline Impact	% Self-Citations	Adjusted Pipeline Impact	Pipeline Generality	Pipeline Originality	Pipeline Power
Electronics	1	Apple Inc	USA	2525	1.14	2.00	37.8%	1.84	2.25	0.98	11690.79
Electronics	2	Magic Leap Inc	USA	121	2.20	5.00	78.5%	2.58	5.00	1.12	3854.93
Electronics	3	Sonos Inc	USA	173	0.92	3.87	69.9%	2.33	4.37	1.46	2368.10
Electronics	4	LG Electronics Inc.	S.Korea	2854	1.13	0.71	15.9%	0.71	0.80	1.12	2058.47
Electronics	5	Sony Corp	Japan	2727	1.25	0.63	23.7%	0.63	0.78	1.06	1776.17
Electronics	6	Lutron Electronics Co	USA	104	1.20	2.86	11.2%	2.86	4.09	0.89	1293.37
Electronics	7	GoPro Inc	USA	152	1.28	1.86	47.4%	1.54	3.42	1.10	1123.72
Electronics	8	LG Display Co Ltd	S.Korea	871	1.27	0.73	16.8%	0.73	0.84	1.26	849.43
Electronics	9	Panasonic Corporation	Japan	2065	1.12	0.53	19.1%	0.53	0.60	1.07	788.07
Electronics	10	HandHeld Products (Honeywell)	USA	105	0.86	5.00	97.8%	1.61	5.00	1.08	784.41
Electronics	11	Canon Inc	Japan	4109	1.14	0.43	65.3%	0.28	0.54	1.00	707.11
Electronics	12	TDK Corporation	Japan	542	1.36	0.88	28.7%	0.88	0.78	1.11	560.11
Electronics	13	Samsung SDI Co Ltd	S.Korea	2358	0.99	0.43	32.3%	0.42	0.46	1.08	480.90
Electronics	14	Hitachi Ltd	Japan	1423	1.21	0.42	11.1%	0.42	0.62	1.05	471.71
Electronics	15	Koninklijke Philips N.V.	Netherlands	1093	1.18	0.40	10.9%	0.40	0.88	0.97	440.09
Electronics	16	Dolby Laboratories Inc	USA	338	1.14	0.92	48.0%	0.75	1.32	0.94	360.32
Electronics	17	Hon Hai Precision Industry	Taiwan	1428	1.19	0.41	16.8%	0.41	0.45	1.07	336.99
Electronics	18	Sharp Corp (Hon Hai Precision)	Japan	871	1.27	0.48	14.4%	0.48	0.56	1.10	325.83
Electronics	19	TE Connectivity Ltd	USA	305	1.16	1.11	19.2%	1.11	1.02	0.79	316.64
Electronics	20	Xerox Corp	USA	407	0.91	0.71	19.3%	0.71	1.04	1.08	296.31

## 1790 Analytics Patent Scorecard (2019) - Government Agencies

Industry	Rank	Organization (Parent)	Country	2019 US Patents	Pipeline Growth Index	Pipeline Impact	% Self-Citations	Adjusted Pipeline Impact	Pipeline Generality	Pipeline Originality	Pipeline Power
Government Agencies	1	United States Navy	USA	365	1.05	0.64	17.7%	0.64	1.06	1.01	266.40
Government Agencies	2	NASA	USA	134	1.23	0.78	11.2%	0.78	1.43	1.07	196.91
Government Agencies	3	US Dept of Energy	USA	146	1.26	0.65	23.6%	0.65	1.24	1.17	172.28
Government Agencies	4	United States Army	USA	161	1.05	0.69	22.6%	0.69	1.21	1.08	152.86
Government Agencies	5	Comm A L'Energie Atomique	France	423	0.98	0.45	13.7%	0.45	0.70	1.08	139.83
Government Agencies	6	Centre Nat Rech Scientific	France	323	1.17	0.35	15.5%	0.35	0.49	1.07	70.73
Government Agencies	7	US Health & Human Services	USA	187	1.09	0.44	23.9%	0.44	0.65	1.07	61.71
Government Agencies	8	Agency Sci Tech & Research	Singapore	116	1.04	0.49	18.3%	0.49	0.61	1.09	39.28

## 1790 Analytics Patent Scorecard (2019) - Medical Equipment/Instruments

Industry	Rank	Organization (Parent)	Country	2019 US Patents	Pipeline Growth Index	Pipeline Impact	% Self-Citations	Adjusted Pipeline Impact	Pipeline Generality	Pipeline Originality	Pipeline Power
Medical Equipment/Instruments	1	Medtronic Inc	USA	1376	1.05	2.03	12.7%	2.03	1.02	0.83	2498.27
Medical Equipment/Instruments	2	Ethicon Inc (J&J)	USA	531	1.75	5.00	98.0%	1.60	2.23	0.68	2245.75
Medical Equipment/Instruments	3	Intuitive Surgical Inc.	USA	174	1.30	2.77	10.3%	2.77	2.26	1.02	1440.54
Medical Equipment/Instruments	4	Covidien PLC (Medtronic)	Ireland	633	1.06	2.85	12.5%	2.85	0.86	0.67	1105.44
Medical Equipment/Instruments	5	Becton Dickinson and Co.	USA	505	1.29	0.99	45.7%	0.83	1.76	0.88	845.56
Medical Equipment/Instruments	6	Edwards Lifesciences Corp	USA	162	1.41	2.86	37.0%	2.66	1.54	0.77	719.80
Medical Equipment/Instruments	7	Stryker Corp.	USA	378	1.32	0.62	16.2%	0.62	1.71	0.93	490.75
Medical Equipment/Instruments	8	Boston Scientific Corp.	USA	621	1.13	0.54	27.7%	0.54	0.95	0.87	311.68
Medical Equipment/Instruments	9	General Hospital (Partners Health)	USA	193	1.20	0.69	17.5%	0.69	1.46	1.08	252.05
Medical Equipment/Instruments	10	Terumo Corp.	Japan	217	1.32	0.63	12.7%	0.63	1.31	1.00	238.26
Medical Equipment/Instruments	11	Hill-Rom Holdings Inc	USA	128	1.25	0.74	22.7%	0.74	1.73	1.08	220.71
Medical Equipment/Instruments	12	C.R. Bard (Becton Dickinson)	USA	163	1.51	0.89	59.0%	0.63	1.66	0.83	212.19
Medical Equipment/Instruments	13	Smith & Nephew Plc.	UK	146	0.92	0.84	28.1%	0.84	1.92	0.96	208.76
Medical Equipment/Instruments	14	St. Jude Medical (Abbott Labs)	USA	244	1.02	0.74	8.1%	0.74	1.14	0.91	189.16
Medical Equipment/Instruments	15	Zimmer Biomet Holdings	USA	245	0.96	0.65	55.2%	0.48	1.83	0.86	177.88
Medical Equipment/Instruments	16	Siemens Healthineers (Siemens)	Germany	543	1.93	0.25	21.4%	0.25	0.61	1.06	168.95
Medical Equipment/Instruments	17	Biomet Inc. (Zimmer Biomet)	USA	114	1.09	0.76	68.1%	0.47	2.09	0.87	106.06
Medical Equipment/Instruments	18	DePuySynthes Co (J&J)	USA	246	1.17	0.35	46.5%	0.30	1.17	0.97	97.43
Medical Equipment/Instruments	19	DePuy Orthopedics (J&J)	USA	288	1.12	0.35	49.9%	0.28	1.12	0.94	96.40
Medical Equipment/Instruments	20	Baxter International Inc.	USA	101	1.20	0.57	19.7%	0.57	1.07	1.06	78.67

## 1790 Analytics Patent Scorecard (2019) - Semiconductor Equipment Manufacturing

Industry	Rank	Organization (Parent)	Country	2019 US Patents	Pipeline Growth Index	Pipeline Impact	% Self-Citations	Adjusted Pipeline Impact	Pipeline Generality	Pipeline Originality	Pipeline Power
Semiconductor Equipment Mfg	1	Applied Materials Inc.	USA	733	1.25	3.84	85.1%	1.73	2.38	1.01	3806.79
Semiconductor Equipment Mfg	2	Lam Research Corp.	USA	260	0.94	2.83	43.5%	2.45	4.57	1.05	2861.13
Semiconductor Equipment Mfg	3	ASM International N.V.	Netherlands	137	1.52	5.00	97.9%	1.60	5.00	1.06	1771.53
Semiconductor Equipment Mfg	4	KLA-Tencor Corp.	USA	249	1.28	1.33	64.1%	0.88	2.20	1.10	679.58
Semiconductor Equipment Mfg	5	Tokyo Electron Limited	Japan	415	1.06	1.10	11.0%	1.10	0.97	1.23	576.20
Semiconductor Equipment Mfg	6	ASML Holding NV	Netherlands	319	1.27	0.83	59.4%	0.59	1.20	0.94	269.76
Semiconductor Equipment Mfg	7	ASE Technology Holding	Taiwan	142	1.10	0.66	9.9%	0.66	0.68	1.01	70.76
Semiconductor Equipment Mfg	8	Screen Holdings Co Ltd	Japan	112	1.24	0.55	26.5%	0.55	0.80	1.11	68.04
Semiconductor Equipment Mfg	9	Winbond Electronics Corp.	Taiwan	171	1.66	0.34	10.3%	0.34	0.43	0.87	35.66

## 1790 Analytics Patent Scorecard (2019) - Semiconductor Manufacturing

Industry	Rank	Organization (Parent)	Country	2019 US Patents	Pipeline Growth Index	Pipeline Impact	% Self-Citations	Adjusted Pipeline Impact	Pipeline Generality	Pipeline Originality	Pipeline Power
Semiconductor Mfg	1	Intel Corporation	USA	3672	1.07	0.82	23.9%	0.82	0.96	0.96	2931.24
Semiconductor Mfg	2	Samsung Electronics Co Ltd	S.Korea	6826	1.10	0.58	22.4%	0.58	0.66	0.92	2678.56
Semiconductor Mfg	3	Taiwan Semiconductor Mfg Co.	Taiwan	2329	0.94	1.80	73.0%	1.02	1.19	0.75	1995.09
Semiconductor Mfg	4	Micron Technology Inc.	USA	1282	1.37	0.87	65.5%	0.56	0.97	0.93	894.62
Semiconductor Mfg	5	Semiconductor Energy Lab	Japan	712	0.81	1.39	83.8%	0.64	2.75	0.81	832.79
Semiconductor Mfg	6	Skyworks Solutions Inc	USA	305	1.34	1.04	53.8%	0.79	2.25	0.98	717.07
Semiconductor Mfg	7	Cirrus Logic Inc.	USA	163	1.39	1.39	55.6%	1.03	2.77	1.10	713.57
Semiconductor Mfg	8	Xilinx Inc.	USA	186	1.25	1.16	42.0%	1.02	2.24	0.99	524.73
Semiconductor Mfg	9	Xperi Corporation	USA	157	0.99	2.60	76.7%	1.39	2.77	0.88	521.22
Semiconductor Mfg	10	Infineon Technologies AG	Germany	956	0.96	0.63	20.6%	0.63	0.90	0.95	490.81
Semiconductor Mfg	11	Seoul Viosys (Seoul Semic)	S.Korea	125	1.18	1.86	65.7%	1.19	2.95	0.94	487.85
Semiconductor Mfg	12	Murata Manufacturing Co. Ltd.	Japan	844	1.11	0.57	26.2%	0.57	0.88	0.99	469.19
Semiconductor Mfg	13	AMS AG	Austria	528	1.43	0.63	30.8%	0.62	0.89	1.11	462.38
Semiconductor Mfg	14	SanDisk (Western Digital)	USA	322	0.85	1.62	44.8%	1.38	1.63	0.71	435.98
Semiconductor Mfg	15	BOE Technology Group Ltd	China	2187	1.33	0.36	41.1%	0.32	0.40	1.18	432.21
Semiconductor Mfg	16	Texas Instruments Inc	USA	896	1.13	0.56	22.1%	0.56	0.72	0.95	388.54
Semiconductor Mfg	17	Qorvo	USA	200	0.89	1.55	40.3%	1.39	1.61	0.93	371.08
Semiconductor Mfg	18	Rambus Inc.	USA	193	1.25	1.11	27.0%	1.11	1.34	1.02	365.67
Semiconductor Mfg	19	STMicroelectronics	Netherlands	744	1.04	0.65	20.3%	0.65	0.71	0.93	335.30
Semiconductor Mfg	20	Seoul Semiconductor Co Ltd	S.Korea	158	1.06	1.50	60.1%	1.05	2.00	0.94	331.36

## 1790 Analytics Patent Scorecard (2019) - Universities/Education/Training

Industry	Rank	Organization (Parent)	Country	2019 US Patents	Pipeline Growth Index	Pipeline Impact	% Self-Citations	Adjusted Pipeline Impact	Pipeline Generality	Pipeline Originality	Pipeline Power
Universities/Education/Training	1	Harvard University	USA	182	1.17	3.52	21.5%	3.52	3.67	1.05	2889.84
Universities/Education/Training	2	Massachusetts Inst of Technology	USA	402	1.15	1.64	15.0%	1.64	2.66	1.08	2183.61
Universities/Education/Training	3	University of California	USA	698	1.20	0.81	29.7%	0.81	1.56	1.05	1109.99
Universities/Education/Training	4	University of Illinois	USA	109	1.07	2.82	32.1%	2.76	2.34	1.04	781.05
Universities/Education/Training	5	Stanford University	USA	246	1.01	1.06	38.4%	0.97	2.71	1.02	659.81
Universities/Education/Training	6	California Inst of Technology	USA	186	1.06	1.05	32.6%	1.02	2.19	1.06	466.36
Universities/Education/Training	7	Arizona State University	USA	140	1.08	1.58	79.4%	0.80	3.35	1.08	436.69
Universities/Education/Training	8	University of Texas	USA	313	1.53	0.62	21.5%	0.62	1.31	1.04	407.56
Universities/Education/Training	9	King Fahd Univ Petrol & Minerals	Saudi Arabia	238	1.09	1.22	21.2%	1.22	1.22	1.00	386.05
Universities/Education/Training	10	University of Colorado	USA	105	1.81	0.98	40.4%	0.88	1.71	1.08	308.35
Universities/Education/Training	11	University of Pennsylvania	USA	107	0.86	1.36	21.2%	1.36	1.95	1.11	269.41
Universities/Education/Training	12	Northwestern University	USA	145	1.36	0.87	28.3%	0.87	1.25	1.06	227.18
Universities/Education/Training	13	Cornell University	USA	113	1.06	0.81	12.3%	0.81	1.71	1.12	184.97
Universities/Education/Training	14	Columbia University	USA	110	0.96	0.87	32.8%	0.85	1.68	1.03	155.21
Universities/Education/Training	15	University of Michigan	USA	182	1.18	0.50	32.8%	0.48	1.29	1.11	148.12
Universities/Education/Training	16	University of Florida	USA	126	1.26	0.65	10.9%	0.65	1.26	1.09	143.27
Universities/Education/Training	17	Johns Hopkins University	USA	185	1.19	0.48	11.2%	0.48	1.00	1.13	119.56
Universities/Education/Training	18	University of Tokyo	Japan	118	1.42	0.83	37.7%	0.76	0.82	1.09	113.99
Universities/Education/Training	19	University of Minnesota	USA	116	1.09	0.57	25.3%	0.57	1.38	1.06	106.11