Martin Prosperity Institute Mapping Micro-Clusters of Capital-Backed Startups umm

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RISE OF THE URBAN STARTUP NEIGHBORHOOD

Mapping Micro-Clusters of Venture Capital-Backed Startups

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Executive Summary

Venture capital is the fuel that powers high-tech innovation and entrepreneurial startup companies. Previous research has been hampered by a lack of data, or more specifically, by the availability of only highly aggregated data at the state or metro level. This study overcomes this hurdle by using more detailed zip code-level data to identify microclusters of venture capital investment and startup activity at the neighborhood level.

Its main findings are as follows.

The top 20 neighborhoods or zip codes for venture investment include nine in San Francisco, five in San Jose, three in Boston-Cambridge (one in suburban Waltham and two in Cambridge close to MIT) and one each in San Diego (close to the University of California, San Diego), Dallas, and New York (close to New York University).

These top 20 neighborhoods account for more than \$10 billion, nearly a third of the total venture capital. Furthermore, less than one percent (0.2 percent) of all zip codes, or 83 zip codes, attracted more than \$100 million in venture capital investment. These neighborhoods account for 60.7 percent of all venture capital investment.

There are two billion dollar venture capital neighborhoods, both in downtown San Francisco: South of Market/Mission District (94103) and Rincon Hill (94105). Palo Alto, neighboring Stanford University, is a close third with \$988 million in venture capital investment. Three more neighborhoods – two in San Francisco and one in San Diego, close to the University of California, San Diego, received more than half a billion in venture capital investment.

When it comes to industry, venture capital investment breaks down as follows.

Software: Fifteen of the top 20 neighborhoods are located in the San Francisco Bay Area, eight in San Francisco and seven in San Jose. These top 20 zip codes account for \$5.2 billion or 43.5 percent of all software investment.

Biotech: Eight of the top 20 neighborhoods are located in San Francisco, five in Boston, two in San Diego, and two in Washington, D.C. Venture investment in biotechnology is often located near universities or research centers. These top 20 neighborhoods account for \$3 billion or over half of all biotech investment.

Media and Entertainment: Six of the top 20 neighborhoods are located in San Francisco, four are located in New York, three in San Jose, and two in Los Angeles. These top 20 neighborhoods attract nearly \$2 billion or nearly two-thirds (62.9 percent) of all venture investment in media and entertainment.

Medical Devices: Three metros — San Francisco, Boston-Cambridge, and Los Angeles — each have three neighborhoods in the top 20. These 20 leading neighborhoods attract \$1.1 billion or nearly half (46.5 percent) of all venture investment in medical devices.

Information Technology Services: Eight of the top 20 neighborhoods are in San Francisco with three each in San Jose and New York. These top 20 neighborhoods attract more than \$1 billion or over half of all venture investment in information technology services.

Comparing these industries, neighborhoodlevel venture capital investment shows clear evidence of an urban shift back to downtown areas, while investment in biotechnology is more clustered around major universities and research institutes.

Venture capital investment and startup activity are spiky — tightly concentrated not just in cities and metro regions, but in distinct neighborhood micro-clusters across the United States.

Introduction

Venture capital is the fuel that powers high-tech innovation and the entrepreneurial startup companies that create and define whole new industries, from Intel in semiconductors and Apple in personal computers and smart phones to Twitter and Facebook in social media and Uber in the sharing economy. Venture capital investment has long flowed to regions like Silicon Valley and the suburban areas outside Boston. But recent years have seen a pronounced urban shift in venture capital investment and startups to cities and urban areas like downtown San Francisco and Lower Manhattan in New York.¹

Previous research on venture capital investment and startup activity has been hampered by a lack of data, or more specifically, by the availability of only highly aggregated data at the state or metro level. This study overcomes this hurdle by using more detailed neighborhood-level data based on zip codes for venture capital investment and startup activity (see the Appendix for a description of this data).

A body of literature dating back to Alfred Marshall and running through the work of Jane Jacobs, Michael Porter, Edward Glaeser, and our own research identifies the clustering of innovative and entrepreneurial activity.² But this research has tended to focus on clustering at the metro level. Other case study research has pointed to the

tighter clustering of innovative and entrepreneurial activity in more localized areas.³ Our research allows us to look systematically at what we refer to as micro-clusters of venture capital investment in innovative and entrepreneurial startups at the neighborhood level across the United States. Our data enables us to do this overall (across all industries receiving investment) and also by leading industrial sector.

This report is part of a larger and ongoing Martin Prosperity Institute research project on the new geography of venture capital and start-up activity. It is organized as follows. The first section looks at the leading neighborhoods or micro-clusters of venture capital overall. Then we examine the leading venture capital neighborhoods or micro-clusters by leading industry, covering software, biotechnology, media and entertainment, medical devices and equipment, and information technology services. We summarize and discuss our major findings in the concluding section. The Appendix includes details on our data, research, and methodology.

The Geography of Venture Capital Investment by Neighborhood

We begin by mapping the geography of venture capital by neighborhood or zip code across the United States (*Exhibit 1*).

On the map, the largest purple circles highlight the zip codes that attract the most venture capital investment. Note the large circles in the San Francisco Bay Area, around Los Angeles and San Diego in Southern California, the New York-Boston-Washington Corridor on the East Coast and elsewhere across the country, indicating large levels of investment.

Exhibit 2 provides additional detail listing the top 20 neighborhoods for venture capital investment across the United States.

There are two billion dollar venture capital neighborhoods — both in downtown San Francisco: South of Market/Mission District

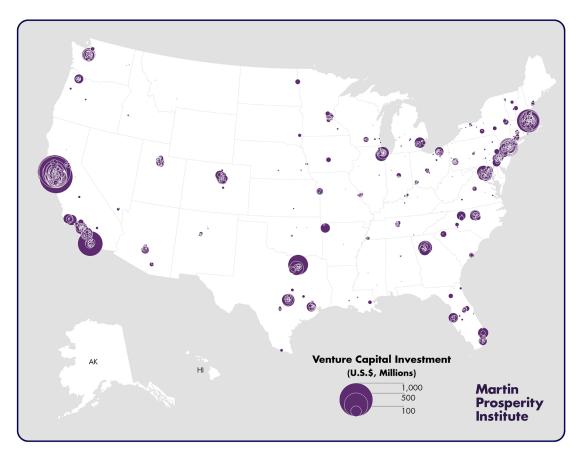


Exhibit 1: Venture Capital Investment in the United States by Zip Code

Rank	Zip Code	Neighborhood	Metro	Venture Capital Investment*	Share of Venture Capital Investment
1	94103	South of Market/Mission District	San Francisco	\$1,057	3.20%
2	94105	Rincon Hill	San Francisco	\$1,004	3.04%
3	94301	Palo Alto	San Jose	\$998	3.02%
4	94107	Potrero Hill/Dogpatch/South Beach	San Francisco	\$885	2.68%
5	92121	Sorrento Valley	San Diego	\$568	1.72%
6	94080	South San Francisco	San Francisco	\$501	1.52%
7	02451	Waltham	Boston-Cambridge	\$484	1.46%
8	94104	Financial District	San Francisco	\$481	1.45%
9	94025	Menlo Park	San Francisco	\$426	1.29%
10	94043	Mountain View	San Jose	\$402	1.22%
11	94041	Old Mountain View	San Jose	\$392	1.19%
12	94063	Redwood City	San Francisco	\$378	1.14%
13	02139	Cambridge/MIT	Boston-Cambridge	\$377	1.14%
14	94065	Redwood Shores	San Francisco	\$369	1.12%
15	75034	Frisco	Dallas	\$368	1.11%
16	94085	Sunnyvale	San Jose	\$351	1.06%
17	02142	MIT	Boston-Cambridge	\$320	0.97%
18	95054	Santa Clara	San Jose	\$313	0.95%
19	10012	Soho/NYU	New York	\$310	0.94%
20	94111	Financial District/Embarcadero	San Francisco	\$306	0.93%
Top 10	Zip Cod	es		\$6,807	20.60%
Top 20	Zip Cod	es		\$10,291	31.14%

^{*}In millions of U.S. dollars

Exhibit 2: Top 20 Zip Codes by Venture Capital Investment

(94103) and Rincon Hill (94105). Zip code 94301 in Palo Alto, neighboring Stanford University, is a close third with \$988 million in venture capital investment. Three more neighborhoods — two in San Francisco and one in San Diego, close to the University of California, San Diego, receive more than half a billion in venture capital investment.

The top 20 include nine neighborhoods in San Francisco, five in San Jose, three in Boston-Cambridge (one in suburban Waltham and two in Cambridge, close to MIT) and one each in San Diego (close to the University of California, San Diego), Dallas, and New York (close to New York University).

The Geography of Venture Capital Investment by Industry

We now turn to the micro-geography of venture capital investment by major industry, mapping investment by zip code for the five leading high-tech sectors: software, biotechnology, media and entertainment, medical devices and equipment, and information technology services.

Software

Software is the leading industry for venture capital investment across the United States, attracting \$12 billion or 36 percent of all venture capital investment. *Exhibit 3* maps the leading micro-clusters for venture capital investment in software.

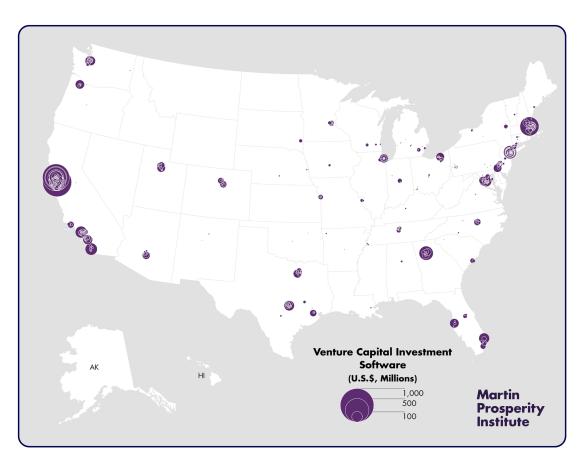


Exhibit 3: Venture Capital Investment in Software by Zip Code

Again, we see big dots in the Bay Area and across the New York-Boston-Washington Corridor, while smaller dots appear in Los Angeles and Southern California, Seattle, Portland, Atlanta, and Austin, and several other areas.

Exhibit 4 shows the 20 leading neighborhoods for venture capital investment in software.

Palo Alto (94301) tops the list with \$750 million or 6.3 percent of the total. Three San Francisco neighborhoods are next — Rincon Hill (94105), Potrero Hill/Dogpatch/South Beach (94107), and South of Market/Mission District (94103) with \$389 million or 3.3 percent.

Rank	Zip Code	Neighborhood	Metro	Venture Capital Investment*	Share of Venture Capital Investment
1	94301	Palo Alto	San Jose	\$750	6.27%
2	94105	Rincon Hill	San Francisco	\$652	5.45%
3	94107	Potrero Hill/Dogpatch/South Beach	San Francisco	\$444	3.72%
4	94103	South of Market/Mission District	San Francisco	\$389	3.26%
5	02451	Waltham	Boston-Cambridge	\$321	2.69%
6	94104	Financial District	San Francisco	\$231	1.93%
7	94022	Los Altos Hills	San Jose	\$210	1.76%
8	94041	Old Mountain View	San Jose	\$202	1.69%
9	94404	Foster City	San Francisco	\$198	1.66%
10	94065	Redwood Shores	San Francisco	\$192	1.61%
11	94085	Sunnyvale	San Jose	\$185	1.55%
12	30338	Dunwoody	Atlanta	\$179	1.50%
13	95054	Santa Clara (north)	San Jose	\$166	1.39%
14	94043	Mountain View	San Jose	\$165	1.38%
15	94111	Embarcadero/Financial District	San Francisco	\$165	1.38%
16	10010	Gramercy Park	New York	\$164	1.37%
17	94303	East Palo Alto	San Jose	\$156	1.30%
18	94108	Chinatown	San Francisco	\$152	1.27%
19	10036	Times Square/Hell's Kitchen	New York	\$150	1.25%
20	92121	Sorrento Valley	San Diego	\$133	1.11%
Top 10	Zip Cod	es		\$3,591	30.03%
Top 20	Zip Cod	es		\$5,205	43.52%
	fo. 1				

^{*}In millions of U.S. dollars

Exhibit 4: Top 20 Zip Codes for Venture Capital Investment in Software

Fifteen of the top 20 neighborhoods for venture capital investment in software are located in the San Francisco Bay Area — eight in San Francisco and seven in San Jose. Outside of the Bay Area, two neighbourhoods in New York fall in the top 20 (Gramercy Park and Times Square/Hell's Kitchen) as one each in Boston (Waltham), Atlanta (Dunwoody), and San Diego (Sorrento Valley).

Venture capital investment in software is highly clustered at the neighborhood level. The top 20 zip codes account for \$5.2 billion or nearly half of the national total (43.5 percent) and the top 10 account for \$3.6 billion or 30 percent of all software investment.

Biotechnology

We next turn to biotechnology. Nationally, \$5.7 billion in venture capital is invested in the sector, 17 percent of all venture capital investment.

Exhibit 5 charts the leading neighborhoods for venture investment in biotechnology.

Here again we see the same basic clustering across the Bay Area, Southern California, and the New York-Boston-Washington Corridor, as well as Seattle and Detroit.

Exhibit 6 lists the 20 leading neighborhoods for investment in biotechnology across the country.

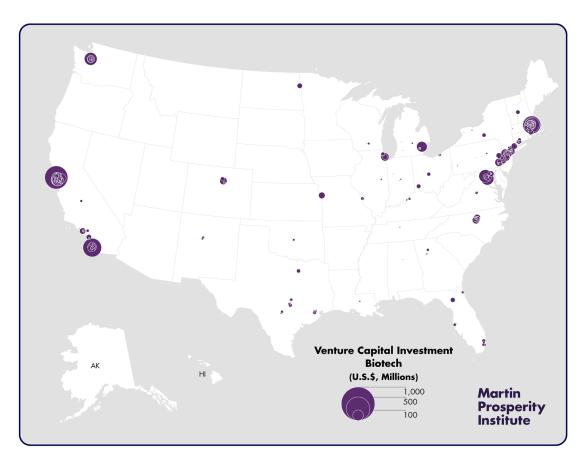


Exhibit 5: Venture Capital Investment in Biotechnology by Zip Code

Topping the list is South San Francisco (94080) with \$474 million or 8.3 percent of total biotechnology investment. Next in line is Sorrento Valley in San Diego (92121) with \$310 million or 5.4 percent. Two neighborhoods near MIT (02139 and 02142) and Chevy Chase/Bethesda

(20815), close to the National Institutes of Health, round out the top five. Note the clustering of biotechnology investment around major universities and research centers, a pattern which is different from the more urban clustering in software.

Rank	Zip Code	Neighborhood	Metro	Venture Capital Investment*	Share of Venture Capital Investment
1	94080	South San Francisco	San Francisco	\$474	8.31%
2	92121	Sorrento Valley	San Diego	\$310	5.43%
3	02139	Cambridge/MIT	Boston-Cambridge	\$285	5.00%
4	02142	MIT	Boston-Cambridge	\$199	3.48%
5	20815	Chevy Chase, Bethesda	Washington, D.C.	\$150	2.63%
6	20876	Germantown	Washington, D.C.	\$150	2.63%
7	98109	West Lake/Queen Anne	Seattle	\$145	2.54%
8	94070	San Carlos	San Francisco	\$138	2.41%
9	94063	Redwood City	San Francisco	\$129	2.26%
10	94065	Redwood Shores	San Francisco	\$126	2.21%
11	2421	Lexington	Boston-Cambridge	\$123	1.92%
12	94545	Russel City/Eden Shores	San Francisco	\$108	1.88%
13	94025	Menlo Park	San Francisco	\$104	1.82%
14	48170	Plymouth	Detroit	\$97	1.70%
15	02451	Waltham	Boston-Cambridge	\$85	1.49%
16	94588	Pleasanton	San Francisco	\$84	1.47%
17	94005	Brisbane	San Francisco	\$82	1.44%
18	02472	Watertown	Boston-Cambridge	\$75	1.31%
19	92130	Carmel Valley	San Diego	\$71	1.24%
20	7921	Bedminster Township	New York	\$67	1.18%
Top 10	Zip Cod	es		\$2,106	36.90%
Top 20	Zip Cod	es		\$3,003	52.36%

^{*}In millions of U.S. dollars

Exhibit 6: Top 20 Zip Codes for Venture Capital Investment in Biotechnology

Eight of the top 20 neighborhoods are located in San Francisco, five in Boston (Cambridge, MIT, Lexington, Waltham, and Watertown), two in San Diego (Sorrento Valley and Carmel Valley), and two in Washington, D.C. (Chevy Chase/Bethesda and Georgetown). Seattle (West Lake/Queen Anne), Detroit (Plymouth), and New York (Bedminster Township) have one each. Venture capital investment in biotechnology is often located near universities or research centers. Biotechnology investment also flows to suburban areas.

Venture capital investment in biotechnology is highly clustered. The top 10 zip codes account for \$2.1 billion or more than a third (36.9 percent) of total investment, while the top 20 account for \$3 billion or over 50 percent (52.4 percent).

Media and Entertainment

We now turn to venture capital investment in media and entertainment. Investment in the sector totals \$3.2 billion and accounts for almost 10 percent of total venture capital investment.

Exhibit 7 charts the leading neighborhoods for venture capital investment in media and entertainment, which is heavily concentrated in the Bay Area, greater Los Angeles, and New York with smaller clusters around, Seattle, Denver, Washington, D.C., and Miami.

Exhibit 8 lists the 20 leading neighborhoods for investment in media and entertainment across the United States.

At the top of the list is South of Market/Mission District (94103) with \$481 million or 15.3 percent of all investment which includes a \$425 million investment in Pinterest, the largest single investment in our entire dataset. Rounding out the top five are Rincon Hill (94105), SOHO/NYU (10012), Potrero Hill/Dogpatch/South Beach (94107), and Palo Alto (94301).

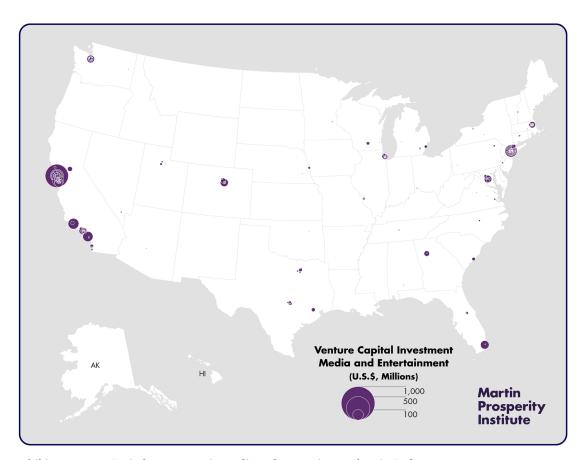


Exhibit 7: Venture Capital Investment in Media and Entertainment by Zip Code

Six of the top 20 neighborhoods are located in San Francisco; four are located in New York, three in San Jose, and two in Los Angeles. The top 20 also includes single neighborhoods in Santa Barbara, Miami, Denver, Washington, D.C., and Seattle. The great bulk of these are urban neighborhoods.

Investment in media and entertainment is highly concentrated. The top 10 zip codes account for \$1.5 billion or nearly half (45.9 percent) of all investment, while the top 20 account for \$2 billion or nearly two thirds (62.9 percent).

Rank	Zip Code	Neighborhood	Metro	Venture Capital Investment*	Share of Venture Capital Investment
1	94103	South of Market/Mission District	San Francisco	\$481	15.25%
2	94105	Rincon Hill	San Francisco	\$154	4.89%
3	10012	Soho/NYU	New York	\$130	4.11%
4	94107	Potrero Hill/Dogpatch/South Beach	San Francisco	\$124	3.92%
5	94301	Palo Alto	San Jose	\$119	3.76%
6	93013	Carpinteria	Santa Barbara	\$103	3.27%
7	10001	Chelsea	New York	\$93	2.96%
8	92612	UC Irvine	Los Angeles	\$90	2.86%
9	94102	Hayes Valley/ Civic Center	San Francisco	\$86	2.73%
10	10003	Gramercy Park/ East Village	New York	\$68	2.15%
11	10011	Chelsea	New York	\$66	2.08%
12	33133	Coconut Grove	Miami	\$65	2.06%
13	94040	Cuesta Park/Blossom Valley	San Jose	\$63	2.00%
14	95070	Saratoga	San Jose	\$60	1.90%
15	80202	Lodo	Denver	\$54	1.72%
16	20036	Dupont Circle	Washington, D.C.	\$51	1.62%
17	98121	Belltown	Seattle	\$50	1.59%
18	94104	Financial District	San Francisco	\$44	1.38%
19	90401	Santa Monica	Los Angeles	\$43	1.36%
20	94108	Chinatown	San Francisco	\$39	1.25%
Top 10	Zip Cod	es		\$1,448	45.90%
Top 20	Zip Cod	es		\$1,982	62.86%

^{*}In millions of U.S. dollars

Exhibit 8: Top 20 Zip Codes for Venture Capital Investment in Media and Entertainment

Medical Devices and Equipment

Next we look at investment in medical devices and equipment. Investment in the sector totals \$2.4 billion, roughly 7 percent of total venture capital investment in the country.

Clusters of venture capital investment in medical devices and equipment can be seen in the San Francisco Bay Area, Boston, Southern California, New York, Minneapolis-St. Paul, and North Carolina (*Exhibit 9*). Clustering in the Bay Area is less pronounced here than in other industries.

Exhibit 10 lists the 20 leading neighborhoods for investment in medical devices and equipment.

San Francisco's Menlo Park (94025) leads with

\$162 million or 6.9 percent of total venture capital, more than twice the investment in the next zip code. Venture capital investment in medical devices and equipment is less clustered or urban than other sectors. Still, three metros each boast three of the top 20 neighborhoods: Boston-Cambridge, San Francisco, and Los Angeles, with two neighborhoods each in San Jose and Minneapolis-St. Paul. There is one neighborhood each in greater Winston-Salem, San Diego, Durham-Chapel Hill, Atlanta, New York, Santa Rosa, and Cleveland.

The top 10 zip codes for investment in medical devices and equipment account for \$700 million or nearly 30 percent, while the top 20 zip codes account for \$1.1 billion or nearly half (46.4 percent).

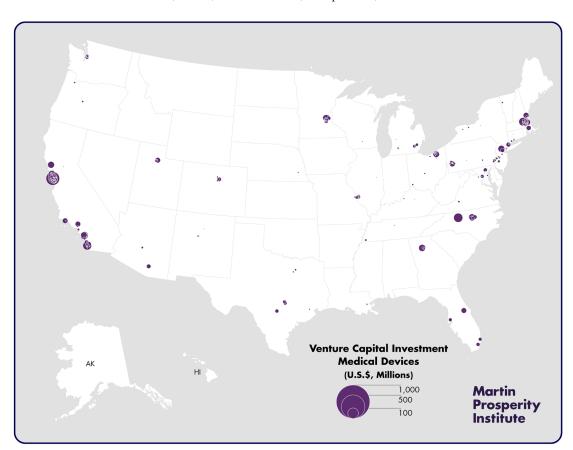


Exhibit 9: Venture Capital Investment in Medical Devices and Equipment by Zip Code

Rank	Zip Code	Neighborhood	Metro	Venture Capital Investment*	Share of Venture Capital Investment
1	94025	Menlo Park	San Francisco	\$162	6.87%
2	27103	Atwood/Hanes	Winston-Salem, NC	\$74	3.15%
3	94063	Redwood City	San Francisco	\$69	2.90%
4	92121	Sorrento Valley	San Diego	\$66	2.79%
5	01730	Bedford	Boston-Cambridge	\$62	2.64%
6	01460	Littleton	Boston-Cambridge	\$62	2.64%
7	94043	Mountain View	San Jose	\$59	2.48%
8	92630	Lake Forest	Los Angeles	\$55	2.32%
9	92653	Laguna Hills	Los Angeles	\$48	2.03%
10	27713	Blands /Genlee	Durham-Chapel Hill	\$43	1.83%
11	30009	Alpharetta	Atlanta	\$43	1.82%
12	94103	South of Market/Mission District	San Francisco	\$43	1.81%
13	02451	Waltham	Boston-Cambridge	\$42	1.78%
14	55445	Brooklyn Park	Minneapolis-St. Paul	\$42	1.76%
15	7950	Morris Plains	New York	\$40	1.69%
16	95403	Santa Rosa/Larkfield-Wikiup	Santa Rosa	\$40	1.68%
17	94085	Sunnyvale	San Jose	\$40	1.68%
18	55369	Maple Grove (northeast)	Minneapolis-St. Paul	\$38	1.60%
19	92656	Aliso Viejo	Los Angeles	\$36	1.50%
20	44146	Bedford	Cleveland	\$35	1.48%
Top 10	Zip Cod	es		\$700	29.65%
Top 20	Top 20 Zip Codes				46.45%

^{*}In millions of U.S. dollars

Exhibit 10: Top 20 Zip Codes for Venture Capital Investment in Medical Devices and Equipment

Information Technology Services

Finally, we look at investment in information technology services. The sector attracts \$2 billion or 6 percent of all U.S. venture capital investment.

Exhibit 11 maps venture capital investment in information technology services with clusters in the San Francisco Bay Area, Boston, New York City, Washington, D.C., Seattle, and Atlanta.

Exhibit 12 lists the 20 leading neighborhoods for investment in information technology services.

Three San Francisco neighborhoods top the list: Potrero Hill/Dogpatch/South Beach (94107),

Rincon Hill (94105), and the Financial District (94104). With eight of the top 20 neighborhoods, investment is clustered in San Francisco with a further three in nearby San Jose. New York also has three neighborhoods in the top 20: Chelsea, Gramercy Park/East Village, and Grammercy Park. Baltimore, Atlanta, Boston, Denver, Washington D.C., and Bridgeport, CT each claim a single neighborhood.

Overall, the top 10 neighborhoods account for \$736 million or 37.1 percent of venture investment, while the top 20 account for more than \$1 billion or more than half (51.5 percent) of all venture investment in information technology services.

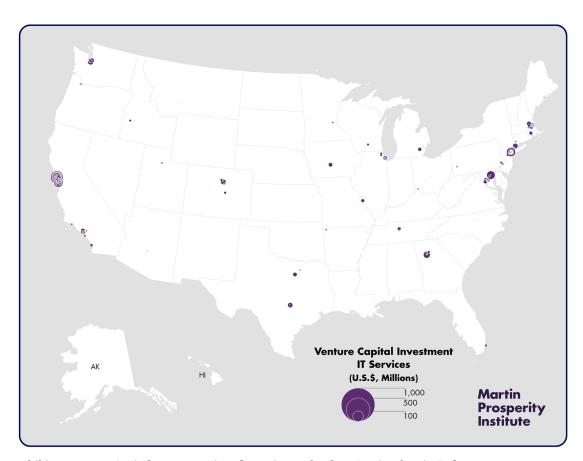


Exhibit 11: Venture Capital Investment in Information Technology Services by Zip Code

Rank	Zip Code	Neighborhood	Metro	Venture Capital Investment*	Share of Venture Capital Investment
1	94107	Potrero Hill/Dogpatch/South Beach	San Francisco	\$139	7.01%
2	94105	Rincon Hill	San Francisco	\$98	4.96%
3	94104	Financial District	San Francisco	\$83	4.17%
4	94040	Cuesta Park/Blossom Valley	San Jose	\$73	3.67%
5	94108	Chinatown	San Francisco	\$70	3.51%
6	10011	Chelsea	New York	\$70	3.51%
7	21230	Westport/Lakeland	Baltimore	\$60	3.02%
8	94111	Embarcadero / Financial District	San Francisco	\$54	2.71%
9	94306	Palo Alto (South)	San Jose	\$51	2.55%
10	30308	Midtown / Old Fourth Ward	Atlanta	\$40	2.02%
11	94043	Mountain View	San Jose	\$39	1.95%
12	2140	North Cambridge	Boston-Cambridge	\$33	1.64%
13	10003	Gramercy Park/ East Village	New York	\$32	1.59%
14	10010	Gramercy Park	New York	\$30	1.50%
15	94103	South of Market/Mission District	San Francisco	\$29	1.44%
16	80021	Broomfield	Denver	\$25	1.26%
17	22102	McLean	Washington DC	\$25	1.26%
18	94005	Brisbane	San Francisco	\$25	1.26%
19	6851	Norwalk	Bridgeport-Stamford	\$25	1.26%
20	94608	Emeryville	San Francisco	\$24	1.23%
Top 10	Zip Cod	es		\$736	37.12%
Top 20	Top 20 Zip Codes			\$1,022	51.52%

^{*}In millions of U.S. dollars

Exhibit 12: Top 20 Zip Codes for Venture Capital Investment in Information Technology Services

Conclusion

This report has examined the geography of venture capital investment at the zip code or neighborhood level. It goes beyond previous research, which focused on broad metro-level clusters of venture capital and investment and startup activity, enabling us to identify the tighter micro-clusters of venture capital investment and startup activity at the neighborhood level.

There are two billion dollar venture capital neighborhoods in the United States — both in downtown San Francisco. Nearby 94301 in Palo Alto, neighbouring Stanford University, comes close with \$988 million in venture capital. Three more neighborhoods — two in San Francisco and one in San Diego, close to the University of California, San Diego, received more than half a billion in venture capital investment.

Overall, 14 of the top 20 zip codes are found in the Bay Area — nine in San Francisco and five in Silicon Valley. In addition, three of the top 20 zip codes are found in Boston-Cambridge, as well as one each in New York, San Diego, and Dallas.

Venture capital investment and startup activity in software and media and entertainment shows clear evidence of an urban shift back to downtown areas, while investment in biotechnology is more clustered around major universities and research institutes.

Overall, the top 20 zip codes for venture investment account for more than \$10 billion, nearly a third (31.1 percent) of the total, while just the top 10 account for \$6.8 billion, a fifth (20.6 percent) of the total. Furthermore, less than one percent (0.2 percent) or 83 zip codes attracted more than \$100 million in venture capital investment, and these neighborhoods account for 60.7 percent of all venture capital investment. In fact, less than three percent (2.7 percent) of all zip codes (1146 of 43,191 total zip codes) received any venture capital investment at all; and of these, roughly half (545) attracted less than \$5 million each.

Venture capital investment and startup activity are spiky — tightly concentrated not just in cities and metro regions, but in distinct neighborhood micro-clusters across the United States.

Appendix: Variables, Data and Methodology

This report is based on detailed data on venture capital from <u>Thomson Reuters</u> from 2013. It provides granular data on venture capital investments, including the name of the recipient company, the total dollar value of the investment, the number of deals completed, the industry sector of the investment, and geographic location information including city and zip code.

We downloaded the data by address and location including identifiers for metropolitan area and zip code. We identified venture capital investments in 1,339 zip codes. This zip code data was assigned to Zip Code Tabulation Areas (ZCTAs). ZCTAs are the representation of zip codes used by the U.S. Census. In aggregating zip code data, we used Census conversions to convert the point-based data set of addresses into a polygon data set for ZCTAs. (This conversion was done with help from the Missouri Census Data Center's Zip Code to ZCTA cross walk for 2010.5) After this conversion, 1,339 zip codes became 1,302 ZCTAs receiving venture capital investment. Ultimately, we identified venture capital investments in roughly four percent (3.9 percent) of all 33,144 ZCTAs across the United States. We note that totals by different geographies may vary as the Thomson Reuters data is subject to frequent updates.

Industry/Sector Definitions:

We also examine venture capital investment by neighborhood or zip code for the five leading industries or technology sectors receiving venture capital overall: software, biotechnology, media and entertainment, medical devices and equipment, and information technology services. Our technology and industry <u>definitions</u> are based on those used by Pricewaterhouse-Coopers in their quarterly <u>MoneyTree Report</u> of venture capital investment in the United States.

Software: Producers of bundled and/or unbundled software applications for business or consumer use including software created for systems, graphics, communications and networking, security, inventory, home use, educational, or recreational. Also included is software developed for specific industries such as banking, manufacturing, transportation, or healthcare.

Biotechnology: Developers of technology promoting drug development, disease treatment, and a deeper understanding of living organisms. Includes human, animal, and industrial biotechnology products and services. Also included are biosensors, biotechnology equipment, and pharmaceuticals.

Media and Entertainment: Creators of products or providers of services designed to inform or entertain consumers including movies, music, consumer electronics such as TVs/stereos/games, sports facilities and events, recreational products or services. Online providers of consumer content are also included in this category (e.g., medical, news, education, and legal).

Medical Devices and Equipment: Manufactures and/or sells medical instruments and devices including medical diagnostic equipment (e.g., X-ray, CAT scan, and MRI), medical therapeutic devices (drug delivery, surgical instruments, pacemakers, artificial organs), and other health

related products such as medical monitoring equipment, handicap aids, reading glasses, and contact lenses.

Information Technology Services: Providers of computer and Internet-related services to businesses and consumers including computer repair, software consulting, computer training, machine leasing/rental, disaster recovery, web design, data input and processing, Internet security, e-commerce services, web hosting, and systems engineering.

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