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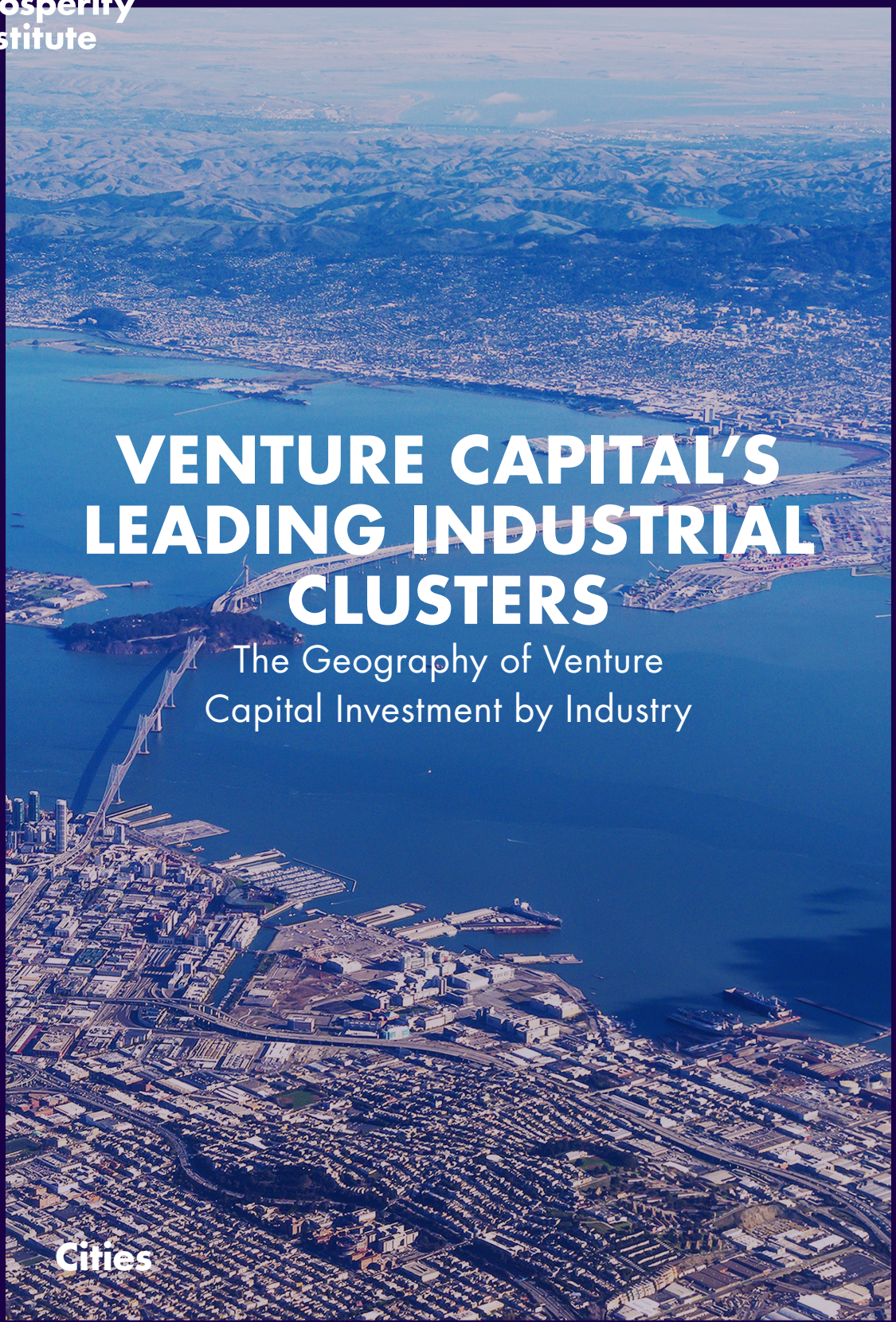

VENTURE CAPITAL'S LEADING INDUSTRIAL CLUSTERS

The Geography of Venture Capital Investment by Industry

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VENTURE CAPITAL'S LEADING INDUSTRIAL CLUSTERS

The Geography of Venture Capital Investment by Industry

Richard Florida
Karen M. King

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Executive Summary

Venture capital financing fuels breakthrough innovations and entrepreneurial startup companies. From Intel and Apple to Google and Twitter, venture capital-backed companies give rise to the great gales of creative destruction that create entire new industries and redefine existing ones.

This report uses detailed data from Thomson Reuters to examine geographic clusters of venture capital investment and startup activity across five leading industries: software, biotechnology, media and entertainment, medical devices and equipment, and information technology services. It identifies the leading metros for venture capital investment as well as the leading neighborhoods or zip codes where such investment is clustered.

Its main findings are as follows:

Venture capital is highly concentrated by industry. The top five industries receive $25 billion in venture capital investment, more than three-quarters of all venture investment.

- Software is the leading industry, attracting nearly $12 billion, roughly a third of all venture investment (36.2 percent).
- Biotechnology is second with $5.7 billion, 17.3 percent of total investment.
- Media and entertainment is third with $3.2 billion, 9.5 percent.
- Medical devices and equipment is fourth with $2.3 billion, 7.1 percent.
- Information technology services is fifth with $2 billion, 6 percent.

Venture capital investment by industry is also concentrated in a relatively small number of geographic clusters.

Software: San Francisco tops the list with $3.3 billion, more than a quarter of all venture investment in the software industry. San Jose is second with $2.4 billion, 20 percent of the sector's total. Together these two Bay Area metros account for $5.7 billion, nearly half of all venture investment in software. New York is third ($978 million, 8.2 percent) and Boston fourth ($907 million, 7.6 percent). Together, the metros that comprise the Boston-New York-Washington, D.C. Corridor account for $2.7 billion dollars, 23 percent of venture capital investment in software.

Software investment is also clustered and concentrated at the neighbourhood or zip code level. The leading zip code, in Palo Alto (94301), attracts $750 million, more than 6 percent of venture investment in software. Other leading neighborhoods are in and around downtown San Francisco: Rincon Hill ($652 million), Potrero Hill/Dogpatch/South Beach ($444 million), and South of Market/Mission Hill ($389 million). The top 10 zip codes account for $3.6 billion in investment, 30 percent of all venture capital investment in the sector.

Biotechnology: San Francisco also tops the list for biotechnology investment with $1.8 billion (30.8 percent), followed by Boston ($1.0 billion, 18.1 percent), San Diego ($477 million, 8.3 percent), New York ($407 million, 7.1 percent), and Washington, D.C. ($310 million, 5.4 percent).

Biotechnology investment is clustered in three broad regions. The Boston-New York-Washington, D.C. Corridor has a combined $2.3 billion in investment, roughly 40 percent of the sector's total. The San Francisco Bay Area (which includes San Francisco and San Jose) accounts for an additional $1.9 billion, 32.4 percent of investment. Southern California accounts for $563 million, roughly 10 percent of investment in this sector.

Investment in biotechnology is also concentrated by neighbourhood or zip code. The leading neighborhoods are in San Francisco, San Diego, Boston-Cambridge, Washington, D.C., and Seattle. The top 10 zip codes alone account for 36.9 percent of all biotechnology investment.

Media and Entertainment: San Francisco again tops the list with $1.1 billion in investment (36 percent), followed by New York ($556 million, 17.6 percent), San Jose ($294 million, 9.3 percent), and Los Angeles ($294 million, 9.3 percent). The Bay Area is the biggest center with $1.4 billion, 45 percent of the industry total. A second cluster spans the Boston-New York-Washington, D.C. Corridor with $764 million, roughly a quarter of all venture investment in this sector.

Investment in media and entertainment is heavily concentrated by neighbourhood as well. A

single zip code in San Francisco (94103, South of Market/Mission Hill) alone accounts for $481 million, 15.3 percent of total investment. Other neighbourhoods with a large amount of investment include Rincon Hill (94105) in San Francisco ($154 million, 4.9 percent) and SoHo/NYU (10012) in New York ($130 million, 4.1 percent). Five of the top ten zip codes are located in the Bay Area, three in New York, and one each in Los Angeles and Santa Barbara. The top ten neighborhoods or zip codes account for more than 45 percent of total investment in media and entertainment.

Medical Devices and Equipment: Boston is the leading center for venture investment in the medical devices and equipment industry with $370 million, 15.8 percent of the sector's total. San Francisco follows close behind with $366 million (15.6 percent). Venture capital investment in medical equipment spans three main clusters. The San Francisco Bay Area (San Francisco and San Jose) accounts for $634 million, 27 percent of the national total. The Boston-New York-Washington, D.C. Corridor has a total of $550 million in investment, nearly a quarter of the industry total. Southern California accounts for an additional $375 million, 16 percent of all venture investment in medical devices and equipment.

Venture capital investment in medical devices is also clustered by neighbourhood. The leading zip codes are found in the Bay Area, the North Carolina Research Triangle, Boston, and Southern California. Overall, three of the top 10 are located in the Bay Area, two in North Carolina, two in greater Boston, and three in Southern California. The top 10 zip codes account for roughly 30 percent of venture investment in medical devices and equipment.

Information Technology Services: San Francisco once again tops the list, and this time by a large margin, with $666 million in investment, a third of the sector's total. San Jose is second ($283 million, 14.2 percent) followed by New York ($246 million, 12.4 percent), Boston ($156 million, 7.9 percent), and Seattle ($95 million, 4.8 percent).

Venture investment in information technology and services is again concentrated in two broad clusters: the San Francisco Bay Area, which accounts for nearly half ($949 million, 47.7 percent) of all investment and the Boston-New York-Washington, D.C. Corridor, which makes up another quarter ($604 million, 30.4 percent) of total investment.

Investment in information technology services is again clustered by neighborhood. Seven of the top 10 zip codes in the sector are located in the Bay Area with five in San Francisco proper, and one each in New York, Baltimore, and Atlanta. The top ten neighborhoods account for 37 percent of venture investment in information technology and services.

San Francisco dominates venture capital investment across these five leading industries, topping the list in four out of five sectors — software, biotechnology, media and entertainment, and information technology services — while placing second in medical devices and equipment. San Jose falls in the top three in four industries: software, media and entertainment, medical devices and equipment, and information technology services. New York falls in the top three in software, media and entertainment, and information technology services. Boston is first in investment in medical devices and equipment and second in biotechnology.

Venture capital investment is also concentrated and clustered at the neighbourhood level, with several zip codes placing highly across industries. These leading zip codes are mainly

clustered in and around downtown San Francisco, including 94105 (Rincon Hill) and 94107 (Potrero Hill/Dogpatch/South Beach), 94103 (South of Market/Mission District), and 94104 (Financial District). Other leading zip codes include 94063 in Redwood City and 94301 (Palo Alto), both in the Bay Area, and 92121 (Sorrento Valley, San Diego) near the University of California, San Diego.

Venture capital investment by industry is spiky, clustered, and concentrated in a relatively small number of metros and zip codes in the Bay Area and the Boston-New York-Washington, D.C. corridor.

Introduction

Venture capital is the form of finance that fuels breakthrough innovations and entrepreneurial startup companies. From Intel and Apple to Google and Twitter, venture capital-backed companies give rise to the great gales of creative destruction that create entire new industries and redefined existing ones.[1]

Despite its importance to technological innovation, industry evolution, and regional economic development, research on venture capital has been hampered by access to data. Most of the available data on venture capital investment is highly aggregated, making it nearly impossible to track investments as they overlap industry and geography.

This report overcomes those limitations by utilizing detailed data from Thomson Reuters to examine the industrial geography of venture capital investment across the United States. These data provide granular information on the location of venture capital investments by industry, metro, and zip code, allowing us to examine patterns of venture capital investment by industry and location.

This research goes beyond previous studies that use measures such as new business formations or the concentration of high tech establishments to identify clusters of startups or high-tech business.[2]

Venture capital investment provides a much more targeted and accurate measure of significant Schumpeterian startup activity and clustering by industry and location.

Our research focuses on the intersection of industry and geography for venture capital investment. It identifies the leading geographic clusters for key industries or technology sectors shaped by venture capital including software, biotechnology, media and entertainment, medical devices and equipment, and information technology services. It does so both by metro and by zip code location.

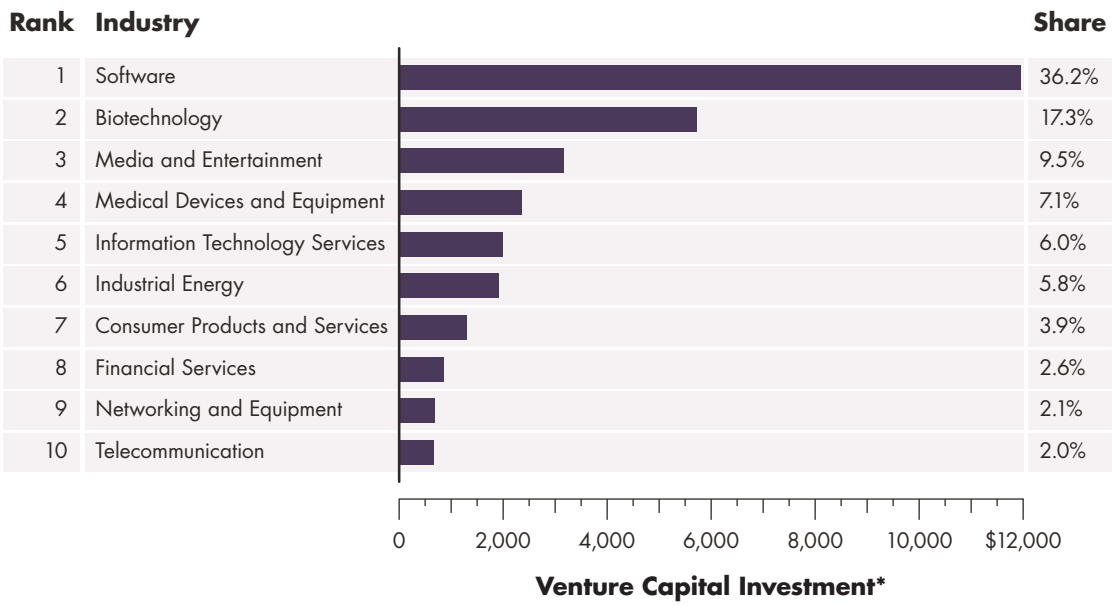
The rest of the report is organized as follows. We begin by identifying the five leading industries or technology sectors that receive venture capital investment: software, biotechnology, media and entertainment, medical devices and equipment, and information technology services. We then present our maps of the key clusters of venture capital investment in these five industries by metro and zip code. The conclusion summarizes our key findings. This report is the fifth instalment of a larger and ongoing Martin Prosperity Institute research project on the urban geography of venture capital and start-up activity.[3]

Venture Capital Investment by Industry

Venture capital investment is quite concentrated by industry, as *Exhibit 1* shows. The top ten industries account for more than 90 percent (92.6 percent) of all venture capital investment, and just the top five account for more than three-quarters (76.3 percent).

Software receives by far the largest amount of venture capital investment, attracting nearly $12 billion, more than a third of the national total (36.2 percent). Biotechnology follows with roughly 5.7 billion or 17.3 percent. Media and entertainment is third with $3.2 billion (9.5 percent), medical devices and equipment is fourth with $2.3 billion (7.1 percent), and information technology services is fifth with $2.0 billion (6.0 percent).

We now turn to the geography of venture capital investment across the five industries with the highest levels of venture investment: software, biotechnology, media and entertainment, medical devices and equipment, and information technology services. Our analysis is structured around maps of venture capital investment in these industries both by metro and by zip code.



*In millions of U.S. dollars

Exhibit 1: Top 10 Industry Sectors for Venture Capital Investment

Software

The map below (*Exhibit 2*) tracks the geography of venture capital investment in software by metro.

The biggest dots are around the San Francisco Bay Area and the Boston-New York-Washington, D.C. Corridor. Smaller, but still significant concentrations are seen in the Pacific Northwest around Seattle, as well as Los Angeles, Atlanta, Chicago, and Miami. Additional clustering is seen around Austin and Dallas, Salt Lake City and Provo, Denver and Boulder, Phoenix, and Minneapolis-Saint Paul.

Exhibit 3 lists the top 10 metros for venture capital investment in software.

San Francisco tops the list with $3.3 billion, more than a quarter (27.6 percent) of all venture investment in the software industry. San Jose is second with $2.4 billion (20.2 percent). Together, these two Bay Area metros account for $5.7 billion or nearly half (47.9 percent) of all venture investment in software.

New York is third with $978 million (8.2 percent) and Boston fourth with $907 million (7.6 percent). Together, the metros that make up the Boston-New York-Washington, D.C. Corridor

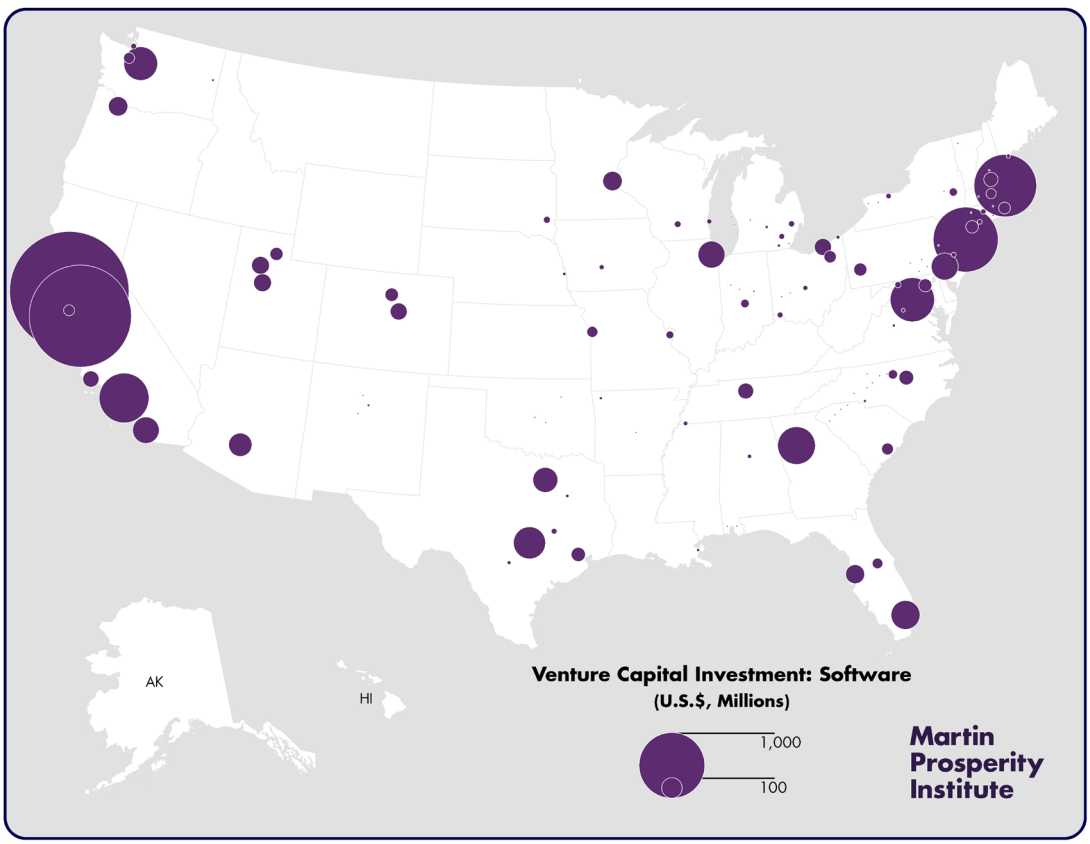


Exhibit 2: Venture Capital Investment in Software

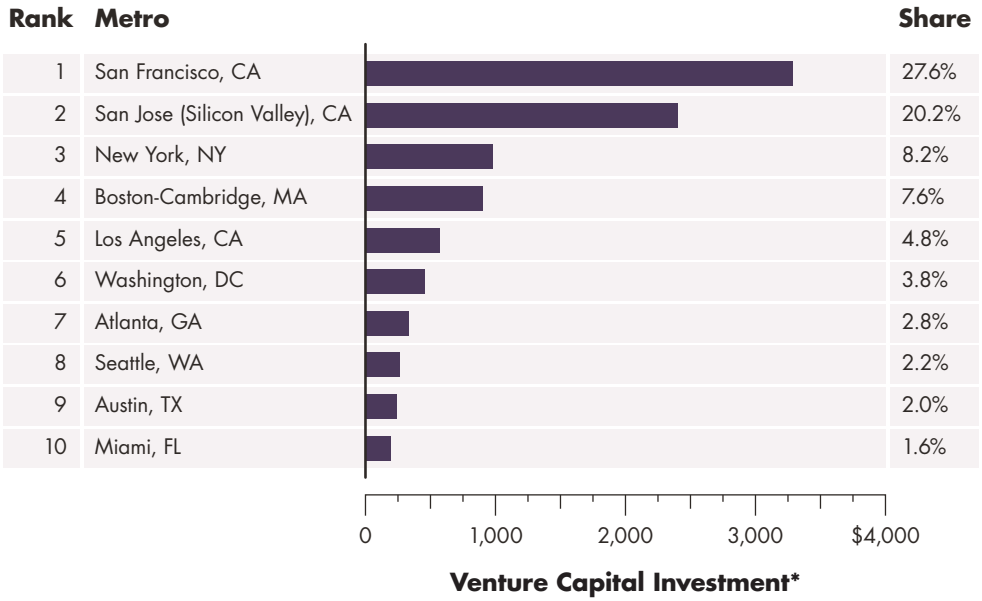


Exhibit 3: Top 10 Metros for Venture Capital Investment in Software

account for $2.7 billion dollars, 23.0 percent of venture capital investment in software.

The rest of the top 10 is made up of Los Angeles ($576 million, 4.8 percent), Washington, D.C. ($455 million, 3.8 percent), Atlanta ($333 million, 2.8 percent), Seattle ($265 million, 2.2 percent), Austin ($242 million, 2.0 percent), and Miami ($196 million, 1.6 percent).

Exhibit 4 charts venture capital investment in software at the zip code level. The biggest dots, indicating the most substantial clusters, are in and around the Bay Area and along the Boston-New York-Washington, D.C. Corridor. However, additional clustering is seen in Southern California (San Diego, Los Angeles, San Mateo), Texas, (particularly in Austin, but also in Dallas and Houston), Atlanta, Southern Florida (Miami, Boca Raton, Tampa), and the Pacific Northwest (Seattle, Portland), as well as Chicago, Utah (Salt Lake City, Provo), Colorado (Denver, Boulder), and Northeast Ohio around Cleveland.

Exhibit 5 lists the top 10 zip codes for software investment. Palo Alto (94301) tops the list with $750 million in investment, 6.3 percent of the national total. The next three zip codes are all in urban areas in San Francisco: Rincon Hill (94105), Potrero Hill/ Dogpatch/South Beach (94107), and South of Market/Mission District (94103). Waltham (02451), outside of Boston, is fifth with $321 million. The remainder of the top ten includes three zip codes in San Francisco (94104 in the Financial District, 94404 in Foster City, and 94065 in Redwood Shore), and two in the San Jose metro (94022 in Los Altos Hills and 94041 in Old Mountain View).

Overall, nine of the top 10 zip codes for software investment are in the San Francisco Bay Area — six in San Francisco and three in the San Jose metro — for a total of $3.3 billion, 27.3 percent of total investment in the industry. The top 10 zip codes make up 30.0 percent of total venture capital investment in software.

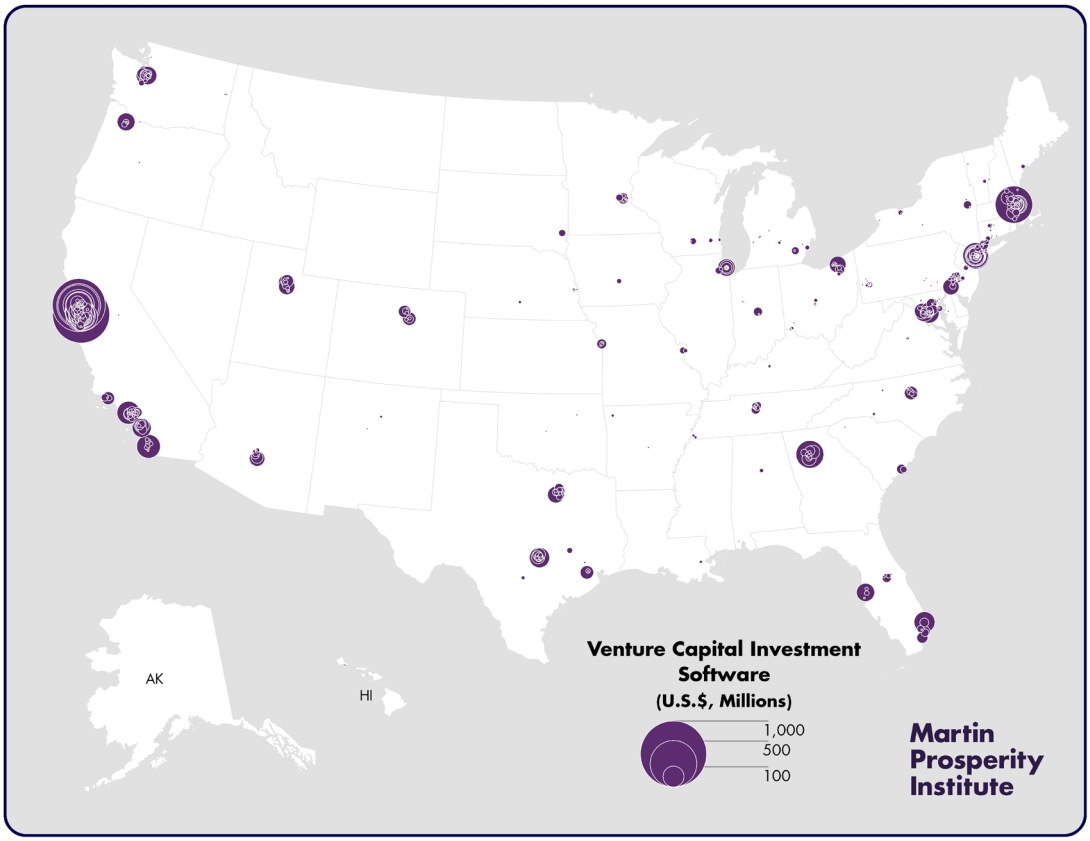


Exhibit 4: Venture Capital Investment in Software by Zip Code

Rank	Zip Code	Neighborhood	Metro	Venture Capital Investment*	Share
1	94301	Palo Alto	San Jose	$750	6.3%
2	94105	Rincon Hill	San Francisco	$652	5.5%
3	94107	Potrero Hill/ Dogpatch/South Beach	San Francisco	$444	3.7%
4	94103	South of Market/Mission District	San Francisco	$389	3.3%
5	02451	Waltham	Boston	$321	2.7%
6	94104	Financial District	San Francisco	$231	1.9%
7	94022	Los Altos Hills	San Jose	$210	1.8%
8	94041	Old Mountain View	San Jose	$202	1.7%
9	94404	Foster City	San Francisco	$198	1.7%
10	94065	Redwood Shores	San Francisco	$192	1.6%

*In millions of U.S. dollars

Exhibit 5: Top 10 Zip Codes for Venture Capital Investment in Software

Biotechnology

The map below (*Exhibit 6*) charts the geography of venture capital investment in biotechnology by metro.

The biggest concentrations of biotechnology venture capital investment are found in the San Francisco Bay Area, as well as in the Boston-New York-Washington, D.C. Corridor, especially in Boston. Other centers of investment can be seen in Southern California (San Diego, Los Angeles), the North Carolina Research Triangle (Raleigh and Durham), Seattle, Chicago, and around Detroit as well as around Denver, Minneapolis, Kansas City, Houston, Dallas and Austin, and Miami.

Exhibit 7 lists the top 10 leading metros for biotechnology investment.

San Francisco tops the list with $1.8 billion in investment (30.8 percent). It is followed by Boston ($1.0 billion, 18.1 percent), San Diego ($477 million, 8.3 percent), and New York ($407 million, 7.1 percent). Washington, D.C. ($310 million, 5.4 percent) rounds out the top five.

Seattle ($238 million, 4.1 percent) is sixth, followed by Philadelphia ($206 million, 3.6 percent), Raleigh ($128 million, 2.2 percent), Chicago ($96 million, 1.7 percent), and San Jose ($91 million, 1.6 percent).

Venture capital investment in the biotechnology industry is clustered in three broad regions. The

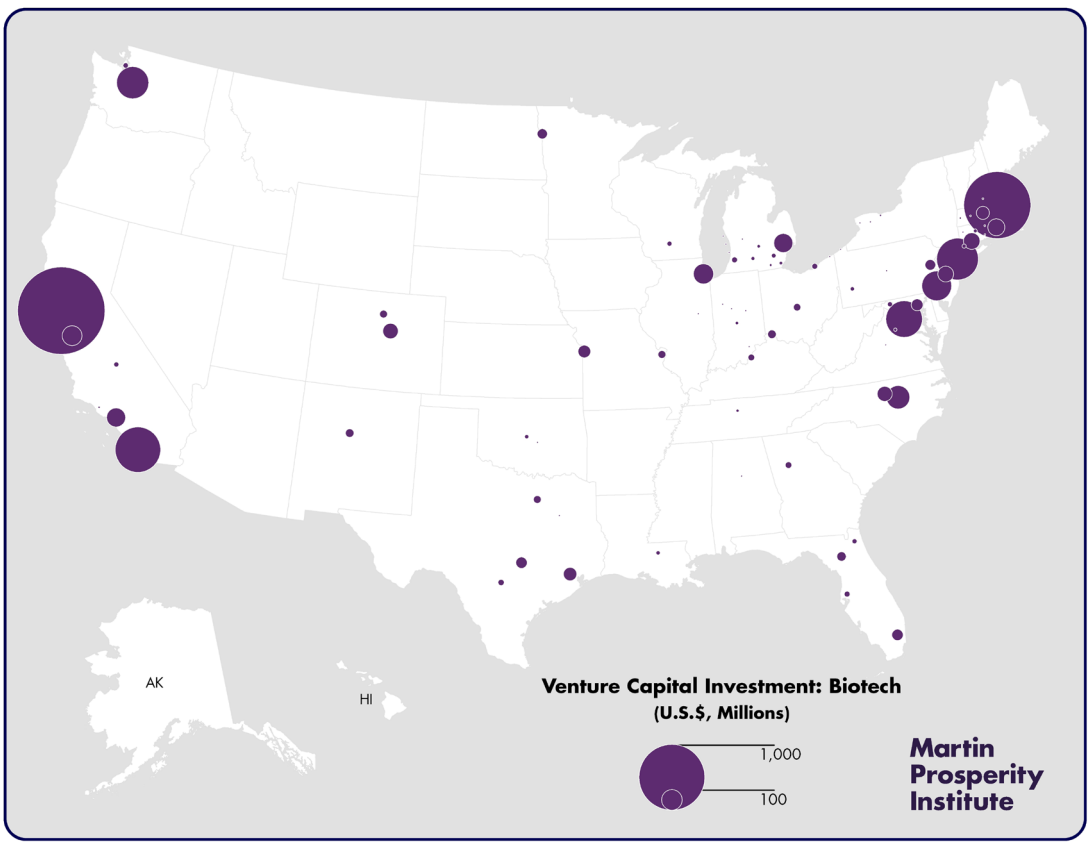


Exhibit 6: Venture Capital Investment in Biotechnology

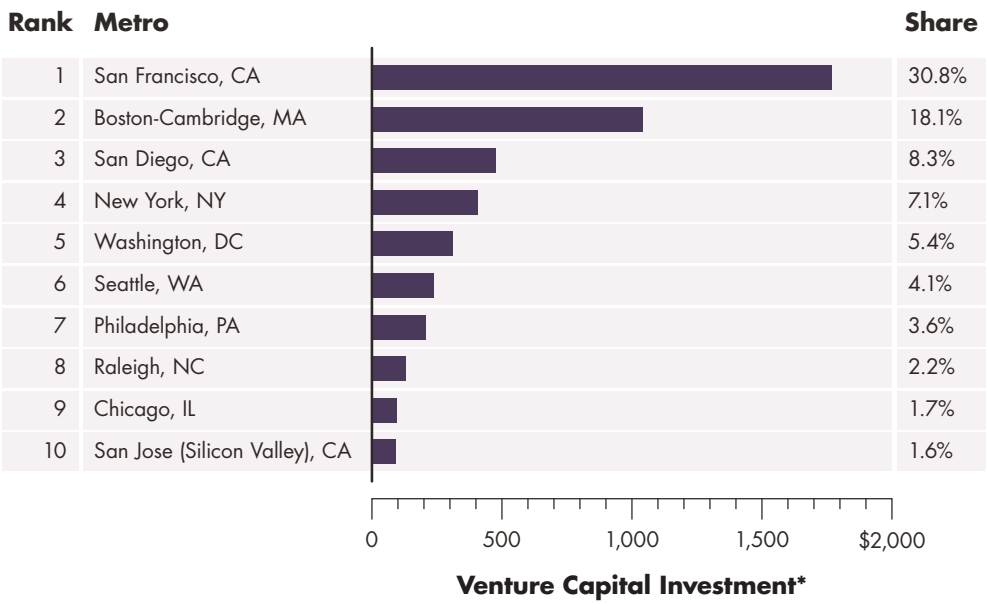
Boston-New York-Washington, D.C. Corridor has a combined $2.3 billion in investment, roughly 40 percent of the sector. The San Francisco Bay Area (which includes San Francisco and San Jose) accounts for an additional $1.9 billion, 32.4 percent of investment. Finally, Southern California accounts for $563 million, roughly 10 percent of investment in this sector.

Taken together, the top 10 metros account for nearly $5 billion and more than 80 percent of venture investment in biotechnology.

Exhibit 8 maps biotechnology investment at the zip code level. Again, we see larger dots around San Francisco, San Diego, Boston, New York, and Washington, D.C., and smaller but significant clusters around Seattle, Detroit, Durham, and Chicago as well as Denver, Kansas City, and Minneapolis.

Exhibit 9 lists the top 10 zip codes for investment in biotechnology. The top zip code is in South San Francisco, between the city's downtown and Silicon Valley, with $474 million, 8.3 percent of total investment in biotechnology. Sorrento Valley (92121), in close proximity to the University of California, San Diego, is second. It is followed by two zip codes in Cambridge, Massachusetts around MIT (02139 and 02142), and two more in close proximity of the National Institutes of Health in greater Washington, D.C. (20815 in Chevy Chase/Bethesda and 20876 in Germantown). The West Lake and Queen Anne neighbourhood (98109) in Seattle is seventh. The rest of the top 10 is rounded out by three zip codes in San Francisco: San Carlos (94070), Redwood City (94063), and Redwood Shores (94065).

Overall, these top 10 zip codes account for $2.1 billion dollars, 36.9 percent of total investment in the industry. Many of the top zip codes in biotechnology are located around leading universities and research centers.



*In millions of U.S. dollars

Exhibit 7: Top 10 Metros for Venture Capital Investment in Biotechnology

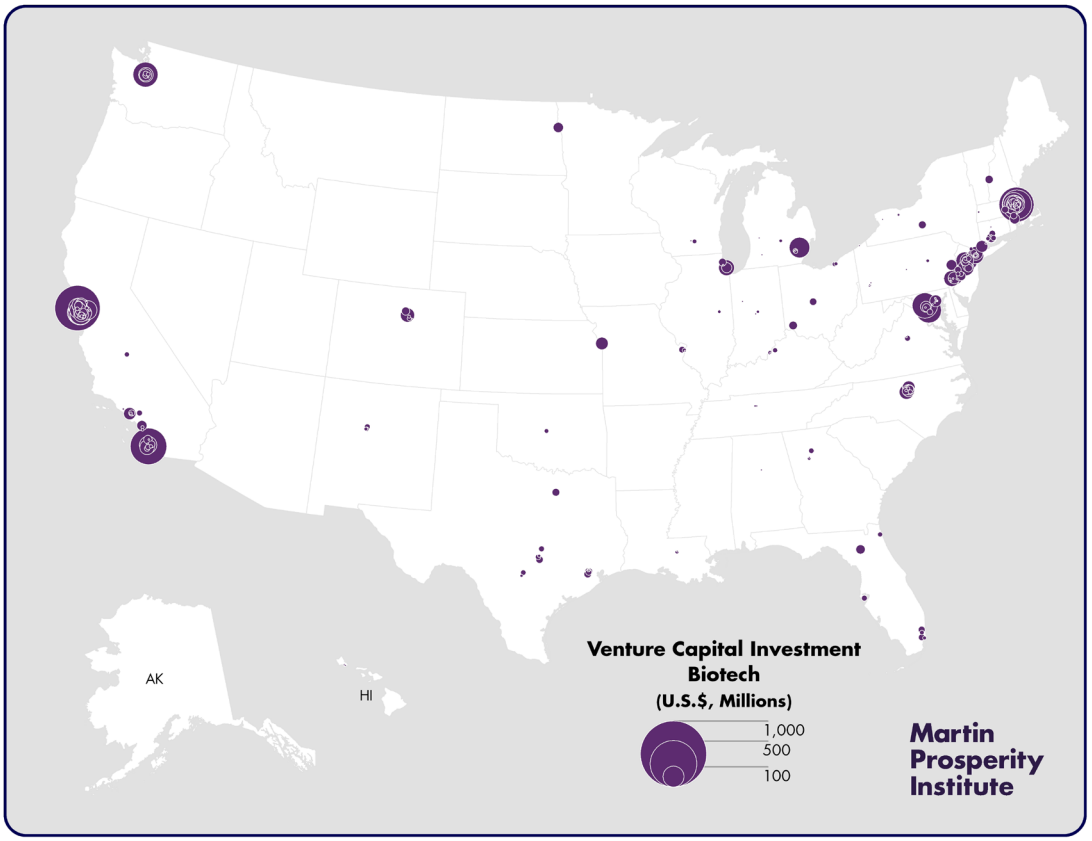


Exhibit 8: Venture Capital Investment in Biotechnology by Zip Code

Rank	Zip Code	Neighborhood	Metro	Venture Capital Investment*	Share
1	94080	South San Francisco	San Francisco	$474	8.3%
2	92121	Sorrento Valley	San Diego	$310	5.4%
3	02139	Cambridge/MIT	Boston	$285	5.0%
4	02142	MIT	Boston	$199	3.5%
5	20815	Chevy Chase, Bethesda	Washington, DC	$150	2.6%
6	20876	Germantown	Washington, DC	$150	2.6%
7	98109	West Lake/Queen Anne	Seattle	$145	2.5%
8	94070	San Carlos	San Francisco	$138	2.4%
9	94063	Redwood City	San Francisco	$129	2.3%
10	94065	Redwood Shores	San Francisco	$126	2.2%

*In millions of U.S. dollars

Exhibit 9: Top 10 Zip Codes for Venture Capital Investment in Biotechnology

Media and Entertainment

The map below (*Exhibit 10*) charts the geography of venture capital investment in media and entertainment across metro areas.

Media and entertainment investment is highly concentrated, with the largest dots indicating the largest clusters of investment in the San Francisco Bay Area and New York. Other significant clusters are seen in Southern California (Los Angeles, Santa Barbara) and Seattle, while somewhat smaller clusters are visible around Denver, Chicago, Boston, Washington, D.C., and Miami.

Exhibit 11 lists the top ten metros in media and entertainment. San Francisco tops the list with $1.1 billion in investment (35.7 percent), followed by New York ($556 million, 17.6 percent), San Jose ($294 million, 9.3 percent), and Los Angeles ($294 million, 9.3 percent). The rest of the top 10 is made up of Seattle ($139 million, 4.4 percent), Santa Barbara ($114 million, 3.6 percent), Boston ($87 million, 2.8 percent), Denver ($87 million, 2.8 percent), Washington, D.C. ($76 million, 2.4 percent), and Chicago ($70 million, 2.2 percent).

These top metros are highly clustered on the West Coast, with four metros in California (San Francisco, San Jose, Los Angeles, and Santa Barbara), as well as fifth ranked Seattle. The Bay Area is the biggest center with $1.4 billion in investment, 45 percent of the indus-

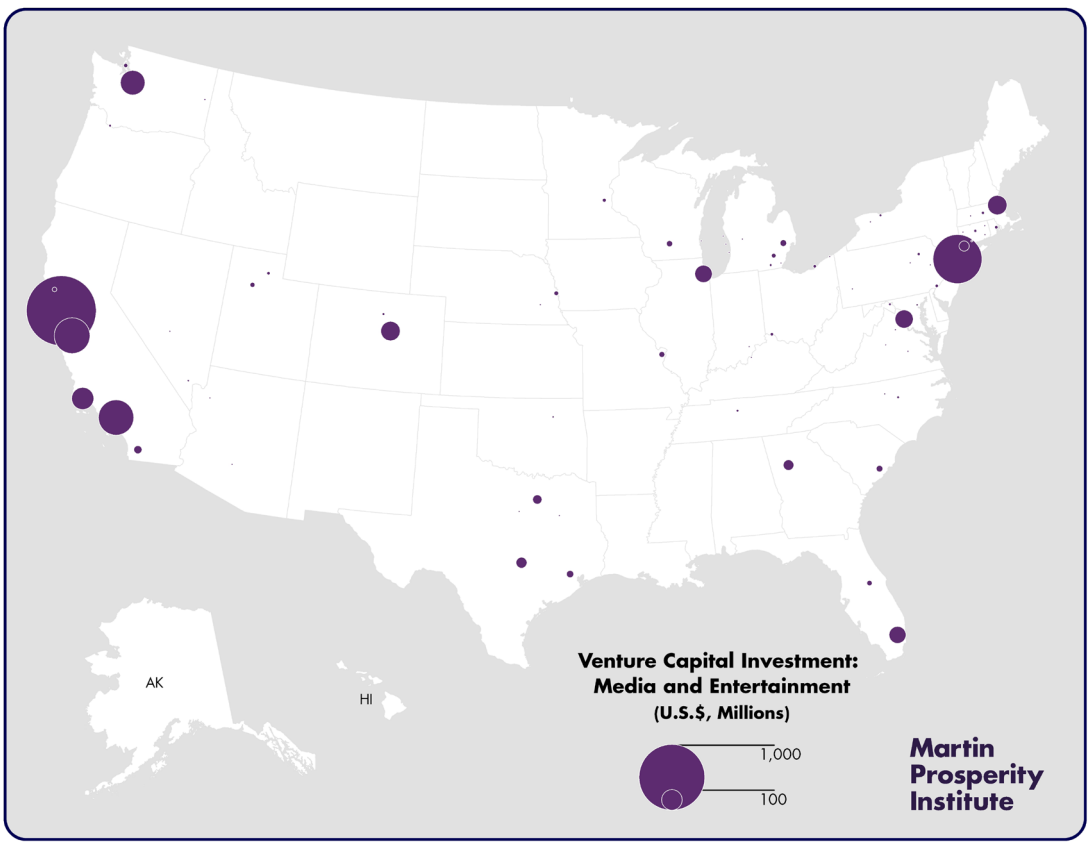
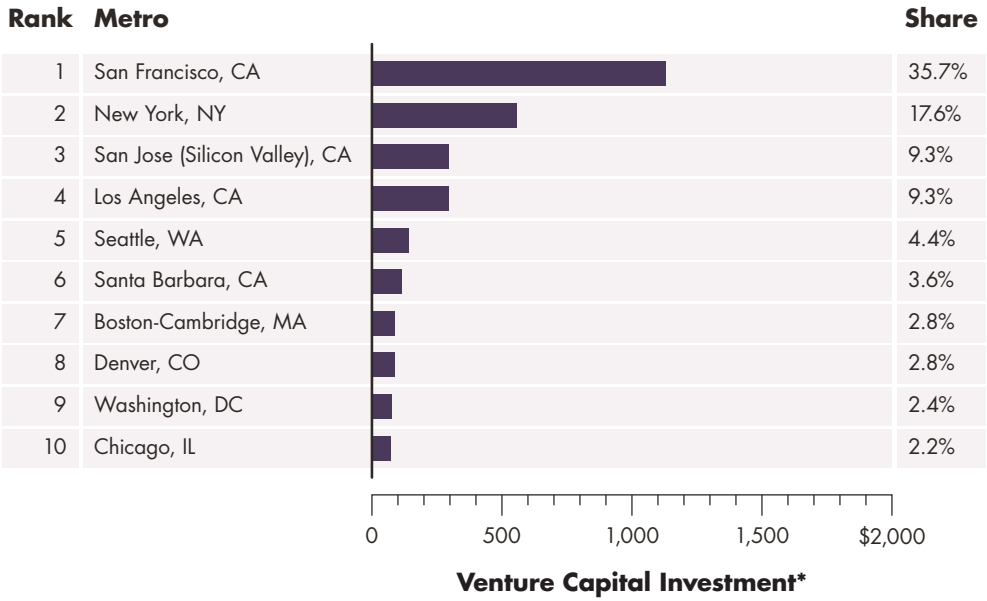


Exhibit 10: Venture Capital Investment in Media and Entertainment



*In millions of U.S. dollars

Exhibit 11: Top 10 Metros for Venture Capital Investment in Media and Entertainment

try total. A second cluster stretches along the Boston-New York-Washington, D.C. Corridor with $764 million investment, roughly a quarter of the total. The top 10 metros account for $2.8 million, more than 90 percent of all venture capital investment in media and entertainment.

Exhibit 12 charts media and entertainment investment at the zip code level. The biggest cluster of zip codes is seen in the San Francisco Bay Area around San Francisco and San Jose. There are also substantial clusters in New York, Los Angeles, and Miami, with smaller clusters around Denver, Seattle, Washington, D.C., and Boston.

Exhibit 13 lists the top 10 zip codes for media and entrainment investment. The top two zip codes are located in downtown San Francisco — 94103 which makes up parts of South of Market and the Mission District, and 94105 in Rincon Hill. The remainder of the top 10 is made up of zip codes in the Bay Area, New York, and Southern California. They include zip codes in SoHo/NYU (10012), Potrero Hill/Dogpatch/South Beach in San Francisco (94107), Palo Alto (94301), Carpinteria (93013) in Santa Barbara, 10001 in New York's Chelsea, 92612 around the University of California, Irvine, 94102 in Hayes Valley/Civic Center in San Francisco, and 10003 in New York's Gramercy Park and East Village.

Four of the top 10 neighbourhoods are located in downtown San Francisco and account for $845 million in investment, more than a quarter of the industry total. Another three are in Lower Manhattan, accounting for $291 million in investment, almost 10 percent of the industry total. Overall, the top 10 zip codes in the industry make up nearly half (46 percent) of total venture capital investment in media and entertainment.

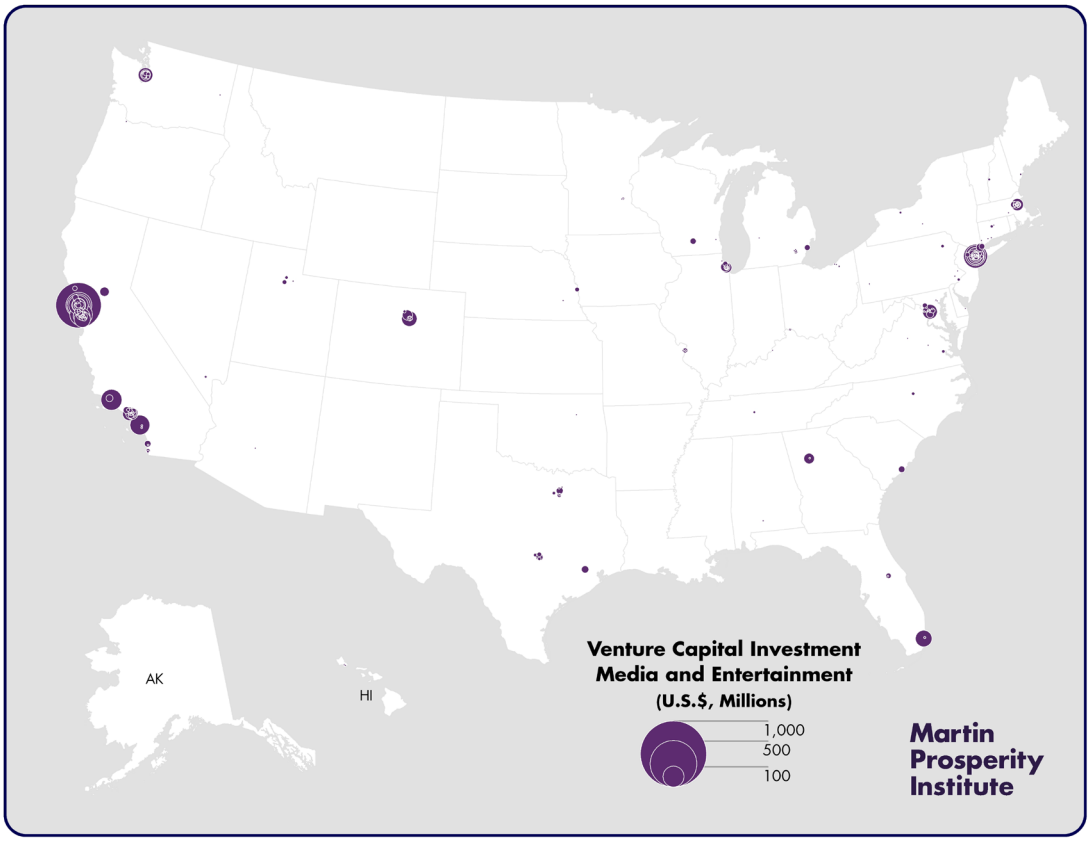


Exhibit 12: Venture Capital Investment in Media and Entertainment by Zip Code

Rank	Zip Code	Neighborhood	Metro	Venture Capital Investment*	Share
1	94103	South of Market / Mission District	San Francisco	$481	15.3%
2	94105	Rincon Hill	San Francisco	$154	4.9%
3	10012	SOHO / NYU	New York	$130	4.1%
4	94107	Potrero Hill / Dogpatch / South Beach	San Francisco	$124	3.9%
5	94301	Palo Alto	San Jose	$119	3.8%
6	93013	Carpinteria	Santa Barbara	$103	3.3%
7	10001	Chelsea	New York	$93	3.0%
8	92612	UC Irvine	Los Angeles	$90	2.9%
9	94102	Hayes Valley / Civic Center	San Francisco	$86	2.7%
10	10003	Gramercy Park / East Village	New York	$68	2.2%

*In millions of U.S. dollars

Exhibit 13: Top 10 Zip Codes for Venture Capital Investment in Media and Entertainment

Medical Devices and Equipment

The map below (*Exhibit 14*) charts venture capital investment in the medical devices and equipment industry across U.S. metros.

The largest clusters are in the Bay Area, around San Francisco and San Jose, in Southern California, around Los Angeles and San Diego, around Boston, and Minneapolis-Saint Paul. Smaller, but still significant, clusters of investment are seen in New York, Cleveland, Atlanta, St. Louis, Pittsburgh, and around the North Carolina Research Triangle.

Exhibit 15 lists the top 10 metros for venture capital investment in medical devices and equipment. Boston tops the list with $370 million, 15.8 percent of total investment. San Francisco follows close behind with $366 million (15.6 percent). Other significant centers of investment are San Jose ($228 million, 9.7 percent), Los Angeles ($216 million, 9.2 percent), Minneapolis ($168 million, 7.1 percent), and sixth place San Diego ($132 million, 5.6 percent). Rounding out the top 10 are New York ($61 million, 2.6 percent), Raleigh, NC ($57 million, 2.4 percent), Atlanta ($54 million, 2.3 percent), and Cleveland ($53 million, 2.3 percent).

Venture capital investment in medical equipment spans three main clusters. The San Francisco Bay Area accounts for $634 million, 27.0

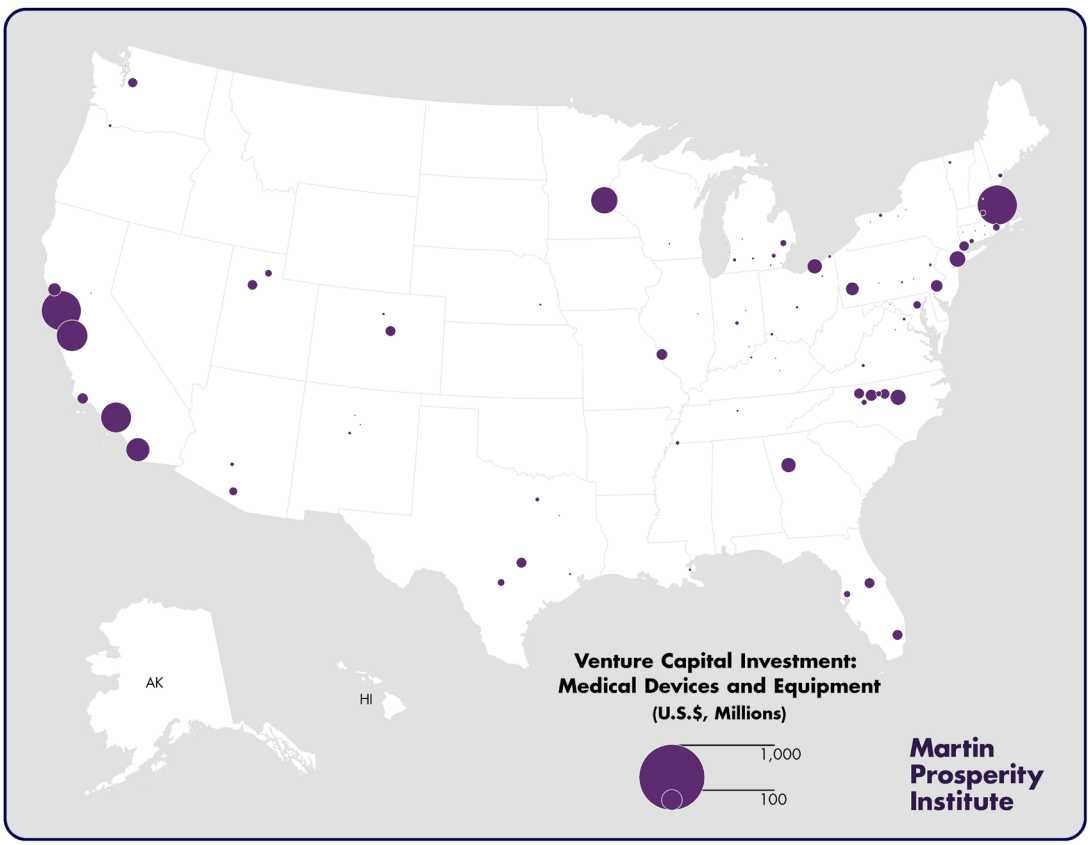
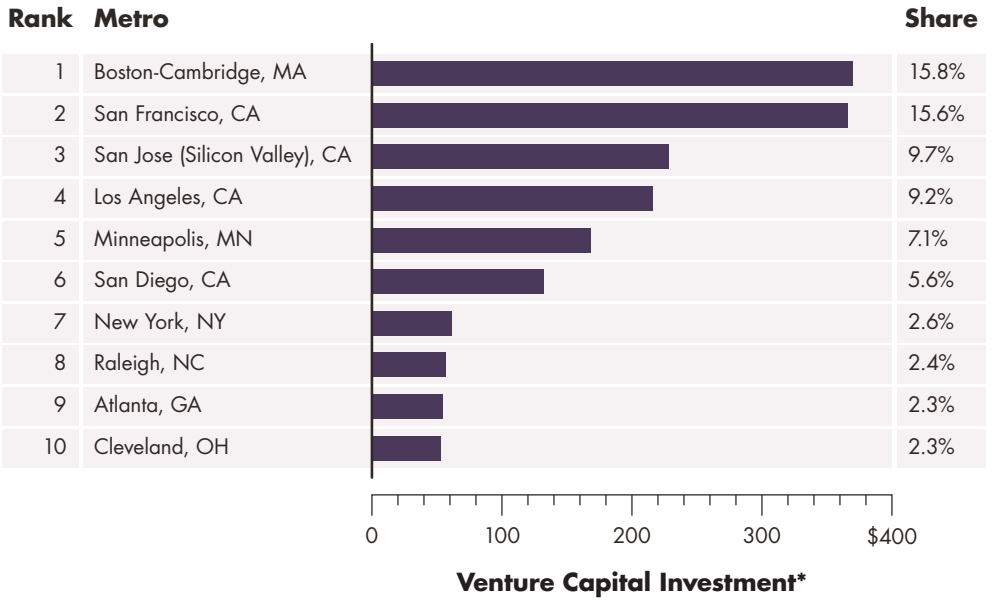


Exhibit 14: Venture Capital Investment in Medical Devices and Equipment



*In millions of U.S. dollars

Exhibit 15: Top 10 Metros for Venture Capital Investment in Medical Devices and Equipment

percent of the national total. The Boston-New York-Washington, D.C. Corridor has a total of $550 million in investment, 23.4 percent of the industry total. Southern California accounts for an additional $375 million in investment, 16.0 percent of the sector. Taken together, the top 10 metros account for nearly three quarters (72.6 percent) of all venture investment in medical equipment and devices.

Exhibit 16 charts the geography of investment for the medical devices and equipment at the zip code level. The largest cluster is in the Bay Area, with smaller but still substantial clusters in Southern California, around San Diego, Los Angeles, and Santa Barbara, as well as Boston, New York, Philadelphia, the North Carolina Research Triangle, Atlanta, Southern Florida, Texas, Minneapolis-Saint Paul, Pittsburgh, and Cleveland.

Exhibit 17 lists the top 10 zip codes for medical devices and equipment. Zip code 94025 in Menlo Park leads with $162 million, roughly 6.9 percent of investment in this sector. It is followed by 27103 (Atwood/Hanes, Winston-Salem), 94063 (Redwood City in San Francisco), 92121 (Sorrento Valley, San Diego), 01730 (Bedford, MA), 01460 (Littleton, MA) in the suburbs of Boston, 94043 (Mountain View in Silicon Valley), 92630 and 92653 (Lake Forest and Laguna Hills in Orange County, Southern California), and 27713 in Durham-Chapel Hill. Taken together, the top 10 zip codes account for $700 million in investment, roughly 30 percent of total investment in this sector.

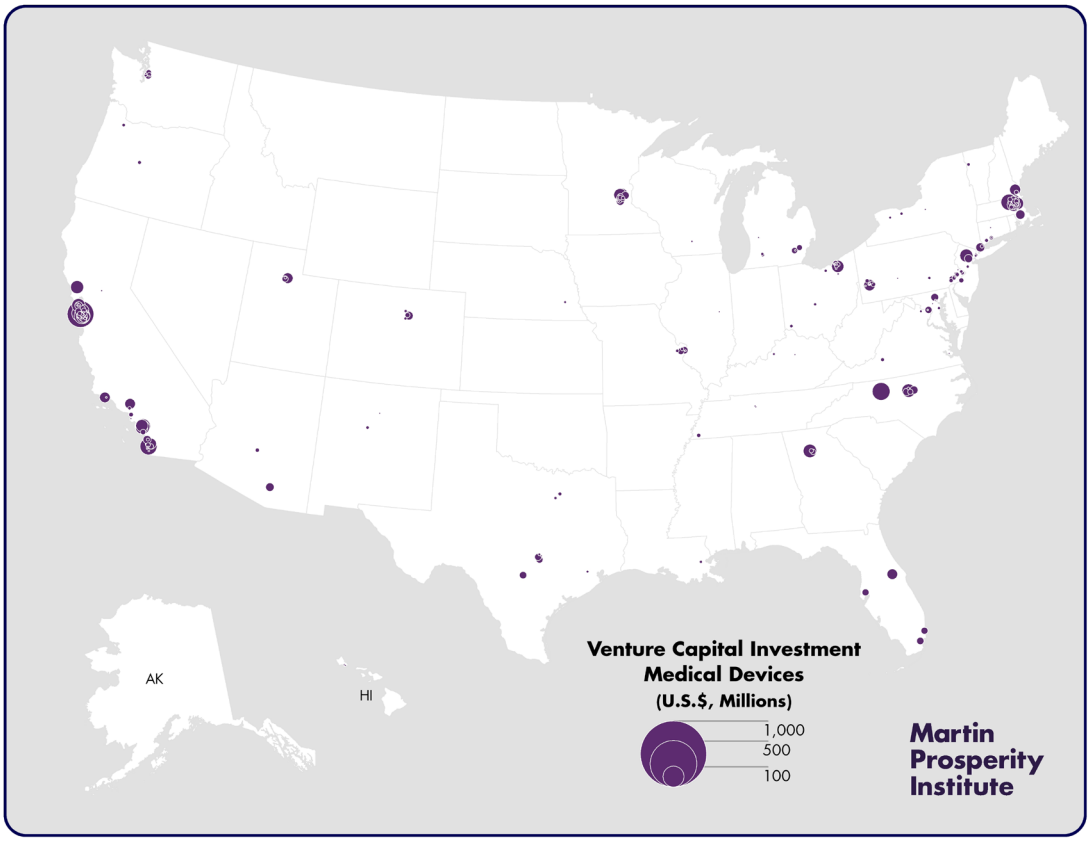


Exhibit 16: Venture Capital Investment in Medical Devices and Equipment by Zip Code

Rank	Zip Code	Neighborhood	Metro	Venture Capital Investment*	Share
1	94025	Menlo Park	San Francisco	$162	6.9%
2	27103	Atwood / Hanes	Winston-Salem	$74	3.1%
3	94063	Redwood City	San Francisco	$69	2.9%
4	92121	Sorrento Valley	San Diego	$66	2.8%
5	01730	Bedford	Boston	$62	2.6%
6	01460	Littleton	Boston	$62	2.6%
7	94043	Mountain View	San Jose	$59	2.5%
8	92630	Lake Forest	Los Angeles	$55	2.3%
9	92653	Laguna Hills	Los Angeles	$48	2.0%
10	27713	Blands / Genlee	Durham-Chapel Hill	$43	1.8%

*In millions of U.S. dollars

Exhibit 17: Top 10 Zip Codes for Venture Capital Investment in Medical Devices and Equipment

Information Technology services

The map below (*Exhibit 18*) charts venture capital investment in information technology services across U.S. metros.

The largest dots, indicating the largest investments, are in and around the San Francisco Bay Area and the Boston-New York-Washington, D.C. Corridor, with smaller but still significant clusters in Seattle, Atlanta, Chicago, Los Angeles, and Denver.

Exhibit 19 lists the top 10 metros for venture capital investment in information technology services. San Francisco tops the list by a large margin, with $666 million in investment, a third of the sector's total. San Jose is second ($283 million, 14.2 percent) followed by New York ($246 million, 12.4 percent). The top five is rounded out by Boston ($156 million, 7.9 percent) and Seattle ($95 million, 4.8 percent).

Rounding out the top 10 are Washington, D.C. ($66 million, 3.3 percent), Baltimore ($65 million, 3.3 percent), Atlanta ($53 million, 2.6 percent), Los Angeles ($48 million, 2.4 percent), and Denver ($34 million, 1.7 percent).

Investment in this sector is concentrated in two broad clusters: the San Francisco Bay Area, which accounts for nearly half (47.7 percent, $949 million) of all investment, and the Boston-New York-Washington, D.C. Corridor which makes up another quarter (30.4 percent,

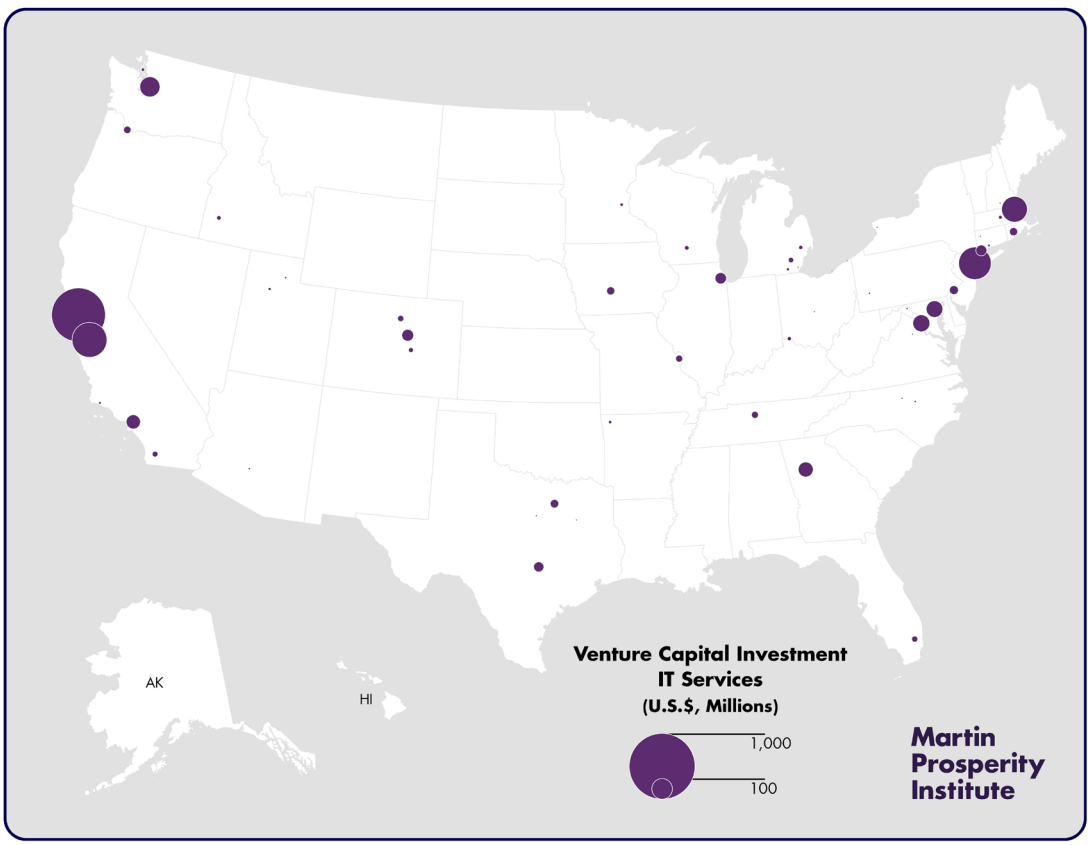
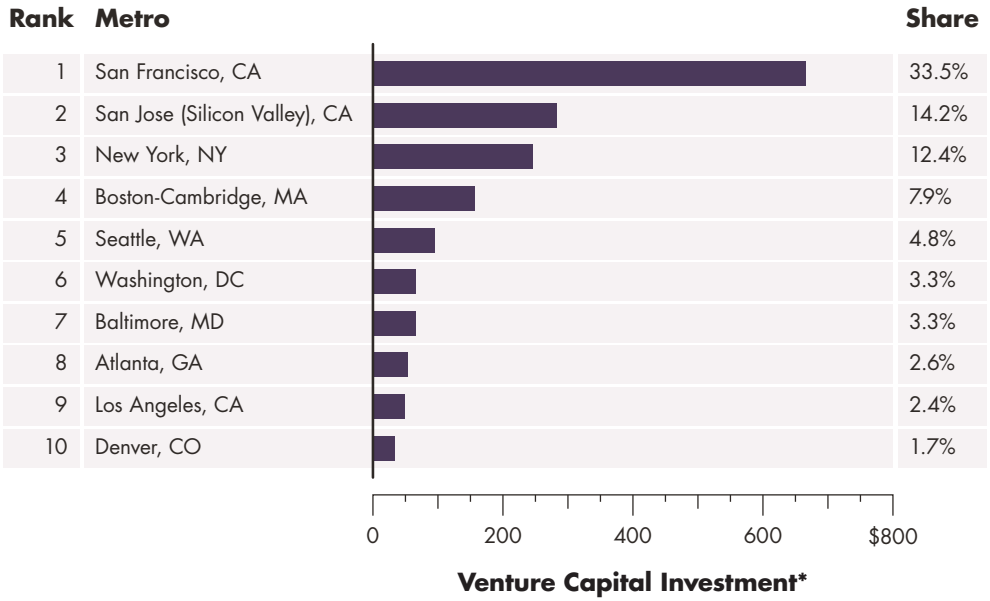


Exhibit 18: Venture Capital Investment in Information Technology Services



*In millions of U.S. dollars

Exhibit 19: Top 10 Metros for Venture Capital Investment in Information Technology Services

$604 million). The top 10 metros account for a combined 86.1 percent share of all investment in information technology services.

Exhibit 20 charts the geography of investment for the information technology services sector at the zip code level. The biggest dots are in and around the San Francisco Bay Area and the Boston-New York-Washington, D.C. Corridor, with smaller clusters in and around Seattle, Atlanta, and Denver.

Exhibit 21 lists the top ten zip codes for venture capital investment in information technology services. Three neighborhoods in downtown San Francisco top the list — 94107 (Potrero Hill/Dogpatch/South Beach), 94105 (Rincon Hill), and 94104 (the Financial District). The fourth ranked zip code is in Silicon Valley (94040, Cuesta Park/Blossom Valley), with the fifth also in downtown San Francisco (94108, Chinatown). The top 10 is rounded out by zip code 10011 in New York's Chelsea, 21230 in Baltimore's Westport/Lakeland, 94111 in San Francisco's Embarcadero/Financial District, 94306 in Palo Alto, and 30308 in Atlanta's Midtown. Five of the top 10 zip codes, accounting for more than a fifth (22.4 percent) of venture capital investment in information technology services, are in downtown San Francisco. Together, these top 10 zip codes account for nearly 40 percent ($736 million, 37.1 percent) of venture investment in information technology services.

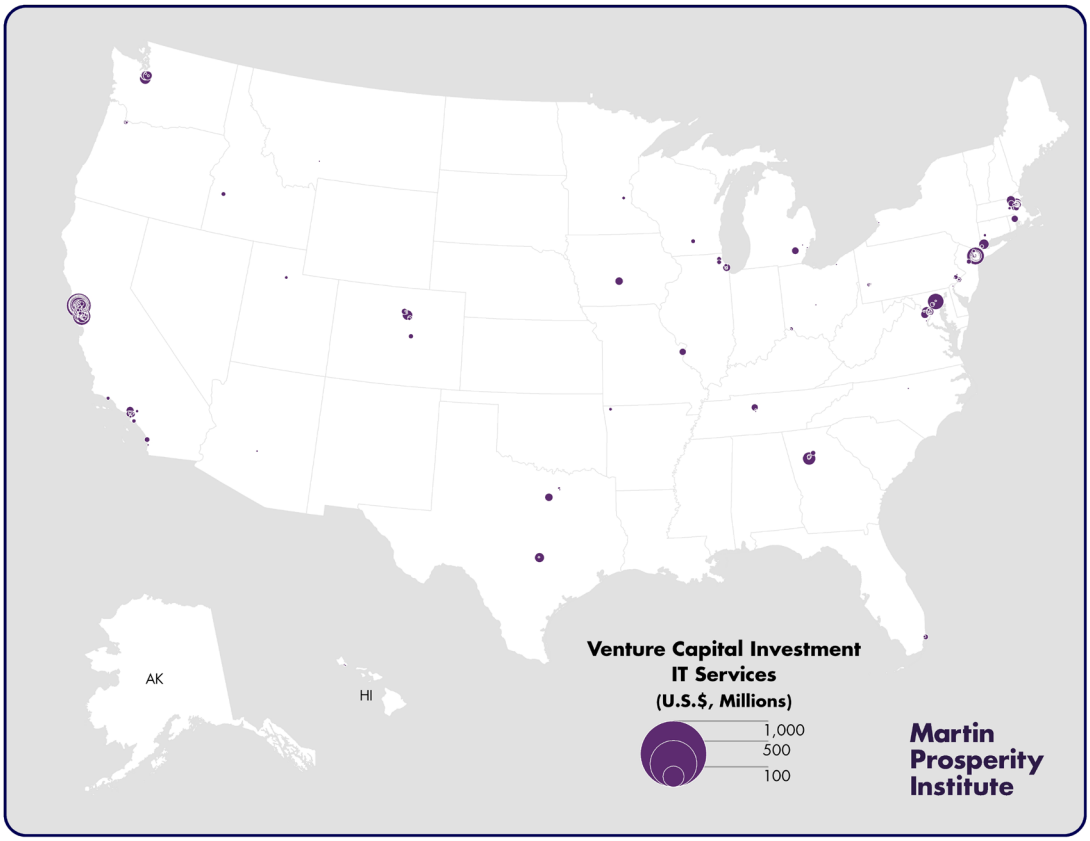


Exhibit 20: Venture Capital Investment in Information Technology Services by Zip Code

Rank	Zip Code	Neighborhood	Metro	Venture Capital Investment*	Share
1	94107	Potrero Hill / Dogpatch / South Beach	San Francisco	$139	7.0%
2	94105	Rincon Hill	San Francisco	$98	5.0%
3	94104	Financial District	San Francisco	$83	4.2%
4	94040	Cuesta Park / Blossom Valley	San Jose	$73	3.7%
5	94108	Chinatown	San Francisco	$70	3.5%
6	10011	Chelsea	New York	$70	3.5%
7	21230	Westport/Lakeland	Baltimore	$60	3.0%
8	94111	Embarcadero / Financial District	San Francisco	$54	2.7%
9	94306	Palo Alto (South)	San Jose	$51	2.6%
10	30308	Midtown / Old Fourth Ward	Atlanta	$40	2.0%

*In millions of U.S. dollars

Exhibit 21: Top 10 Zip Codes for Venture Capital Investment in Information Technology Services

Conclusion

This report has examined the industrial geography of venture capital investment in the United States. It is based on detailed, granular data from Thomson Reuters for both metro areas and neighborhoods or zip codes. Its key findings are as follows:

Venture capital is highly concentrated by industry. The top five industries that receive venture capital investment account for $25 billion, three-quarters of all venture investment dollars. Software is the leading industry, followed by biotechnology, media and entertainment, medical devices and equipment, and information technology services.

Our research further documents the tight geographic clustering of venture capital investment by industry.

San Francisco dominates venture capital investment across these five leading industries, topping the list in four out of five sectors — software, biotechnology, media and entertainment, and information technology services — while placing second in medical devices and equipment. San Jose ranks in the top three in four industries: software, media and entertainment, medical devices and equipment, and information technology services. New York makes the top three in software, media and entertainment and information technology services.

Boston is first in investment in medical devices and equipment and second for biotechnology.

Venture capital investments are concentrated and clustered at the neighbourhood level, with several zip codes placing highly across industries. These leading zip codes are mainly clustered in and around downtown San Francisco: 94105 (Rincon Hill), 94107 (Potrero Hill/Dogpatch/South Beach), 94103 (South of Market/Mission District), and 94104 (Financial District). Other leading zip codes include 94063 (Redwood City) and 94301 (Palo Alto) in the Bay Area and 92121 (Sorrento Valley, San Diego) near the University of California, San Diego.

Venture capital investment by industry is spiky, concentrated in a relatively small number of metros and zip codes in the Bay Area and the Boston-New York-Washington, D.C. Corridor.

Appendix: Variables, Data, and Methodology

This report is based on detailed data on venture capital from Thomson Reuters. 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 that received the investment, and geographic location information, including city and zip code.

We downloaded the data by address and location, including identifiers for metro area and zip code. The metro identifier was for the Metropolitan Statistical Area (MSA) or Primary Metropolitan Statistical Area (PMSA). We standardized this by converting all to the current 2012 definition of Core Based Statistical Areas (CBSAs) using the MABLE/Geocorr2K geographic correspondence engine weighted by 2009 population.[4] (Venture investment in Charleston, SC was placed in Charleston-North Charleston, SC, Lexington-Fayetteville, KY was moved to Lexington, KY, and Phoenix, AZ to Phoenix-Mesa, AZ.) Using the attributed table of census TigerLine Shapefiles, the 2008 CBSAs were matched to the updated 2012 CBSAs by code and name. Though there are several instances of code or name changes, the geographies were verified and remain the same. The final analysis was done using venture capital data that fell within a 2012 CBSA. Micropolitan areas and San Juan, Puerto Rico were excluded from the analysis.

We ultimately identified 4,164 investments in 180 metros, nearly half (49.2 percent) of all 366 metro areas. We excluded one investment, a $2.1 billion dollar investment in the established computer hardware company Dell which does not qualify as a conventional venture capital investment.[5]

On a more granular scale, we identified venture capital investments in 1,339 zip codes. This zip code data was assigned to Zip Code Tabulation Areas (ZCTAs). ZCTAs are a generalized representation of U.S. Postal Service zip code areas used by the U.S. census. In generalizing and aggregating zip code data, the census is able to convert a point-based data set (addresses) into a polygon data set (ZCTAs). This conversion was done with help from the Missouri Census Data Center's Zip to ZCTA cross walk 2010.[6] After conversion, 1339 zip codes became 1302 Zip Code Tabulation Areas. This represents roughly four percent (3.9 percent) of all 33,144 zip code tabulation areas across the United States. Totals by different geographies may vary as the Thomson Reuters data is subject to constant updates and varies by day to day download rates.

Industry/Sector Definitions

We use the industry or sector definitions used by PricewaterhouseCoopers in their quarterly MoneyTree Report 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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