

Report - May 2012

New Tech City

Riding a wave of start-ups, New York has emerged as a national leader in fields that leverage the Internet and mobile technologies—a development that has provided a key economic boost and left the city well positioned for future tech growth

by Jonathan Bowles and David Giles

This is an excerpt. Click here to read the full report (PDF).

Click here to view the 2012 tech index (PDF).

Ever since his initial year in office, Mayor Bloomberg has been sounding the alarm that New York City is overly dependenton Wall Street and needs to diversify its economy. But finding that new engine of job growth has proved difficult.

Until now.

In just a few short years, New York's tech sector has emerged as an increasingly powerful economic driver for the city. At a time when few other industries were growing in New York, more than a thousand new tech start-ups were formed in the city. This burst of tech company formation has created thousands of good paying jobs in the five boroughs, attracted large amounts of capital from outside the city, pumped new life in the city's entrepreneurial economy, and lured some of the world's smartest and most innovative people to New York at a time when the most competitive cities are the ones with the best human capital and greatest capacity for innovation.

The flood of digital start-ups in recent years has also transformed the city from a second-rate tech center to literally the nation's second leading hub for technology companies. And as this report shows, there is ample evidence that what's happening in New York's tech scene today is no flash in the pan. Though a number of the recent Internet start-ups will ultimately fail, New York appears to be building a sustainable tech sector—one that is benefiting from a much stronger local tech ecosystem than existed in the city's first wave of tech growth in the 1990s and taking advantage of several big

technology trends that play to New York's natural strengths.



The latest in a long line of Center for an Urban Future reports focusing on opportunities to grow and diversify the city's economy, this study provides a comprehensive examination of New York's fast-growing tech sector, focusing on the companies in the city that are enabled by the rapid evolution of the Internet and mobile platforms. The report documents the size and scope of this sector, details the growth that has taken place in the past few years, assesses what factors have fostered this rapid expansion, analyzes which tech subsectors in New York are strongest and offer the most potential for future growth, identifies critical challenges that should be addressed if the city is to keep the momentum going. Based on an extensive data analysis and interviews with more than 50 start-up founders, veteran tech executives, investors, academics, local economic development officials and leaders from the city's business and real estate communities, the report also makes recommendations on what should be done to support the continued growth of this sector.

The report is accompanied by a New York City Digital Start-up Index, an analysis of tech businesses formed in the city since 2007 which have received some form of outside investment from angel investors, seed funders or venture capital firms. We also break down these businesses by subsector, level of funding, employment and geographic location within the five boroughs.

What's clear from our research is that New York City's tech sector has come a long way in the last few years. A decade after the bust of the dot com bubble left most serious venture capitalists and entrepreneurs highly skeptical that New York could ever become a major hub of tech activity, the city has produced a wave of wildly successful start-ups, attracted entrepreneurs that previously would have almost certainly bypassed New York for Boston and the West Coast, and positioned itself at the vanguard of the fast-growing digital media, Internet and social networking sectors.

> "In 2006, I wouldn't have put New York anywhere on the map [of leading tech hubs]. Now it is literally number two."

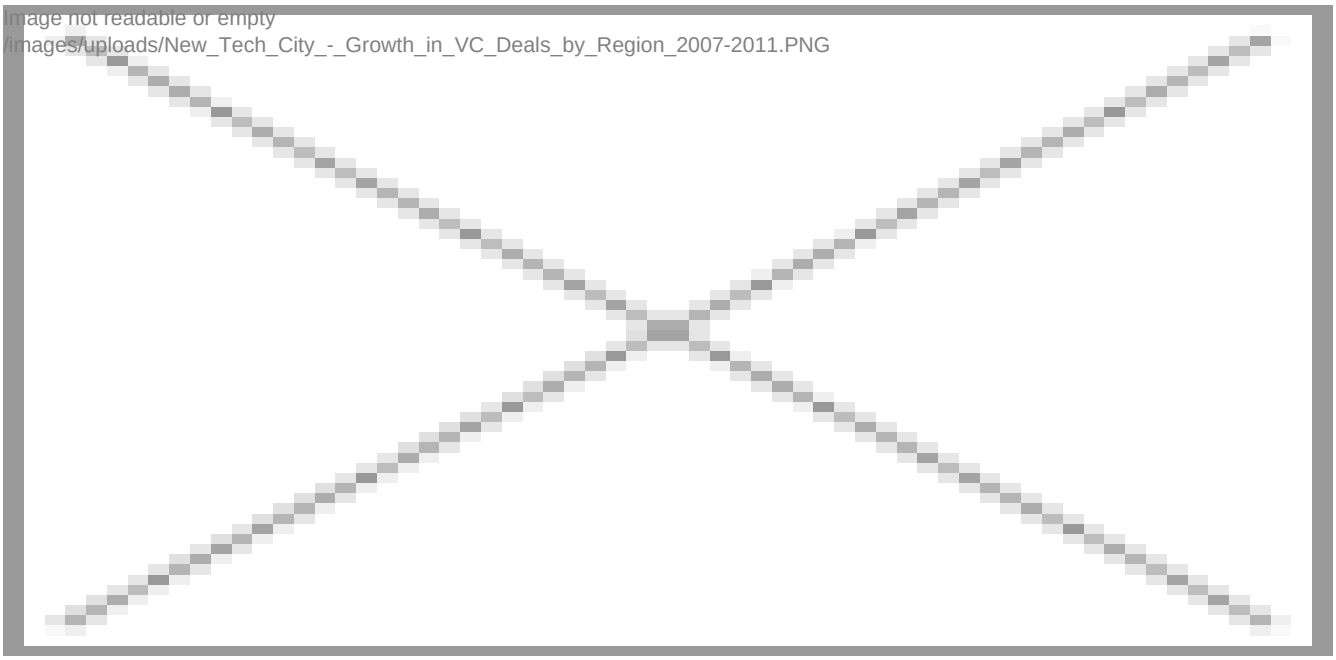
As recently as five or six years ago, New York was very much considered an also-ran in the pantheon of tech hubs. Although

there were pockets of excellence here, few of the nation's pre-eminent tech entrepreneurs or investors spoke about New York in the same breath as Silicon Valley or the Greater Boston area, the nation's two longstanding tech hotbeds. The city was not producing a steady stream of tech start-ups, there were huge gaps in the investment community and there was no meaningful tech ecosystem. "In 2004 or 2005, we were still very much a distant third in terms of dollars invested in the start-up economies," says Jim Robinson IV, a principal with RRE Ventures, the New York City-based venture capital firm. "Silicon Valley was obviously first, Boston the pretty clear second and New York was a distant third, a pretty big step down from number two. That was true in every measure: it was true in capital formation, in commitments, in bodies and in company launches."

"In 2006, I wouldn't have put New York anywhere on the map [of leading tech hubs]," adds Vivek Wadhwa, a national expert on tech entrepreneurship. "Now it is literally number two. If there is any second to Silicon Valley, it's now New York, not Boston." Even prominent Silicon Valley entrepreneurs like Paul Graham now acknowledge that New York has surpassed Boston.

It's not that tech start-ups magically appeared on the scene in New York in the past few years. The roots of today's tech boom were firmly planted in the early and mid-1990s, when the rise of dot com companies and digital media firms provided the first indication that New York could become a legitimate tech hub.

But in the last three to five years, New York has clearly taken things to a new level. Any way you measure it—companies, jobs, investment or community—New York has experienced stunning growth and appears well on its way to developing a sustainable digital economy.



Our digital start-up index identifies 486 tech start-ups formed in the city since 2007 that have received some investment from angels, VC firms or other private investors.

While this is itself a remarkable figure, it only scratches the surface of tech start-up activity in recent years. After all, we didn't count tech start-ups that didn't receive funding. Since new start-ups here seem to emerge every other day, it is difficult to get a complete picture of the number of tech firms based in New York today. Based on our data analysis and interviews with entrepreneurs and investors in the city, we estimate that well over 1,000 tech start-ups have been created in the past five years.

Even this is likely a gross undercount. Just look at the number of applications to TechStars New York, the start-upaccelerator

program that came to New York a little more than a year ago. According to David Tisch, managing director of the program, there were about 1,600 applicants to its most recent program, which started in March 2012. This is nearly triple the 600 applicants TechStars had for its initial New York program in January 2011 and significantly more than the 1,100 applications for its second class in July 2011.

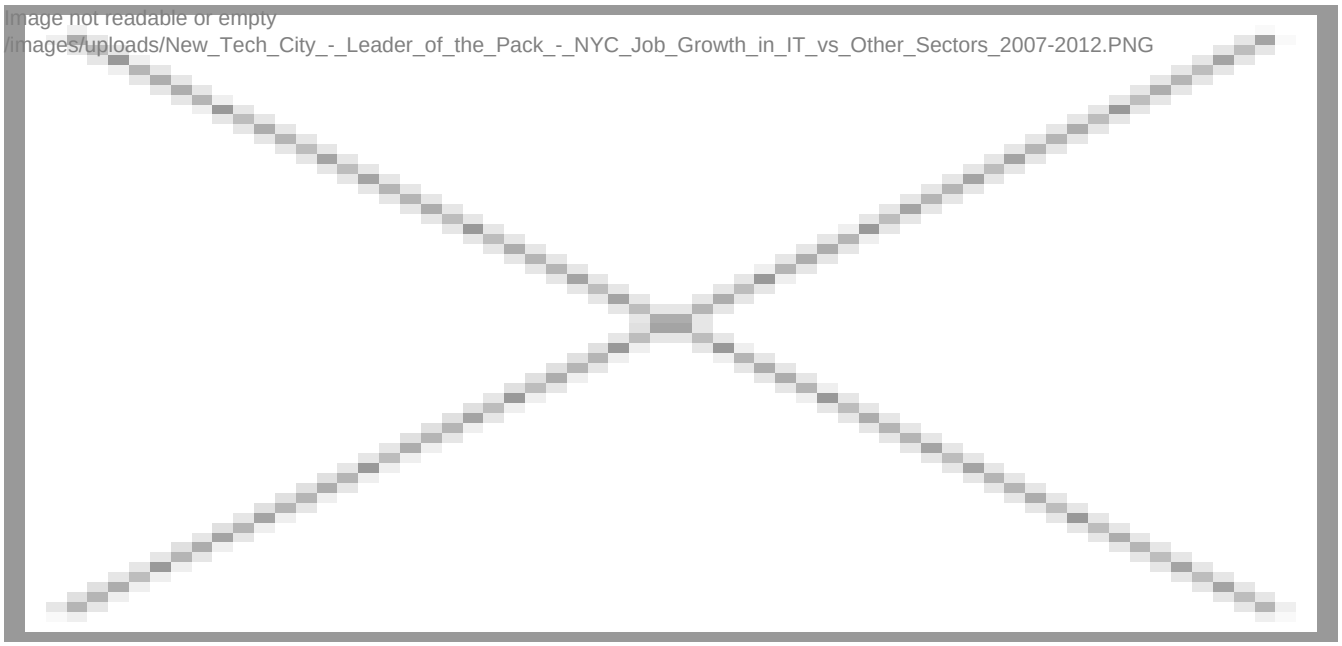
And TechStars is just one of at least a dozen accelerator programs for tech start-ups in New York today. Prior to 2009, there were no accelerators in the city. At least two of these accelerators focus solely on start-ups in the relatively small but growing health tech field. StartUp Health, one of those programs, has received 600 applications to its health tech academy in the last nine months, according to co-founder Unity Stoakes, who says that roughly half of those are from the New York City area.

“It’s not being hyperbolic to say that the early stage business formation in the tech sector in New York has exploded,” says Thatcher Bell, a principal at Manhattan-based VC firm DFJ Gotham Ventures.

And while most of these early stage companies remain fairly small today, an increasing number of tech start-ups in NewYork have begun to achieve significant growth—including Foursquare, Gilt Groupe, Kickstarter, Tumblr, ZocDoc and Etsy. Of the tech start-ups founded in New York since 2007, 15 have raised more than $50 million in investments, 27 have investments of at least $25 million and 81 have raised at least $10 million.

All of this has led to a fairly dramatic increase in local employment, much of which occurred during a period when few other parts of the city’s economy were adding jobs.

There has never been a widely accepted barometer for measuring employment in the city’s tech sector, but no matter how you look at it, it’s clear that New York has experienced considerable job growth in this area. Data we analyzed from the New York State Department of Labor shows that the number of information technology jobs in the five boroughs has risen from 33,000 in February 2003 to 52,900 in February 2012—a remarkable 60 percent increase. Even in the last two years, a period of sluggish growth in the city, this sector added 7,900 jobs—an 18 percent spike. Using a more expansive definition of the tech sector, data from the New York City Economic Development Corporation (EDC) reveals that there were 90,273 people working at 7,147 “high-tech” companies in 2010, a 30 percent gain in employment from 2005. Notably, this sector grew ten times faster than the overall change in city employment in the same period.



There are many other indications of New York’s stunning gains in tech.

There are now more than 23,000 members of New York Tech Meetup, the membership organization for those involved in the

city's tech community. This is double the number of members in December 2009 (11,500) and nearly triple the figure from October 2008 (7,500).

Of the seven leading technology regions in the United States, New York was the only one to see an increase in the numberof VC deals between 2007 and 2011, according to data from the MoneyTree report published by PricewaterhouseCoopers and the National Venture Capital Association. Amazingly, the number of deals shot up by 32 percent in New York during this period. In contrast, venture activity was down significantly in every other region, including Silicon Valley (-10 percent), New England (-14 percent), LA/Orange County (-8 percent), Texas (-17 percent) and San Diego (-38 percent). Nationally, there was an 11 percent decline in VC deals.

There were almost as many tech-related VC deals in New York City in 2011 (165) as in 2006 and 2007 combined (172), according to data from SeedTable. And the number of digital companies in New York that exited, or got acquired by other firms, was actually larger in 2011 (55) than in 2008 and 2009 combined (54).

Most of the nation's largest tech companies are now planting roots in New York, something that didn't seem likely five or six years ago but has lent legitimacy to the city's upstart tech industry. Google opened a major office in New York in 2006, and made a deeper commitment in 2010 when it purchased its office building, 111 Eighth Avenue, for $1.8 billion. But even more recently, Facebook has committed to building an engineering campus near Grand Central while Twitter, eBay, LinkedIn, and Yelp have all announced plans to develop major offices here.

Importantly, start-ups are also relocating here. We identified well over a dozen established tech start-ups that have moved to New York in recent years from the San Francisco Bay Area, Boston and other locations. James Wahba, founder of Projective Space, says that "a good 30 percent" of the start-up founders working out of his coworking facilities moved to New York to create their company. And at least 28 New York-based tech start-ups were founded by students from Harvard Business School. This is noteworthy because even a few years ago, HBS graduates who moved to New York were mainly doing so to work on Wall Street. And those who were opting to go the entrepreneurial route were often doing so in Boston or on the West Coast. Now they are literally flocking to New York to become tech entrepreneurs. Indeed, in April, Boston-based venture capitalist Jeff Bussgang said that about a third of students surveyed in his Harvard Business School entrepreneurship class expect to relocate to the Big Apple.

> Of the seven leading technology regions in the U.S., New York was the only one to see an increase in the number of VC deals between 2007 and 2011.

The flood of tech start-ups in New York is on display at the dozen or so incubators and coworking spaces that have openedin the city in the past few years. By our count, these shared spaces have already housed nearly 500 tech start-ups. General Assembly, perhaps the city's best known tech incubator, opened its New York campus in January 2011. A little more than a year later, GA has 350 members, representing upwards of 100 early stage start-ups. Already, 16 of its dedicated member start-ups have graduated from the space over the past year. GA also attracts 3,000 attendees each month for classes, events and other events. "People move to New York to take our classes," says Brad Hargreaves, one of GA's founders.

Five or six years ago, New York-based entrepreneurs routinely complained about the difficulty attracting financing, whether from venture capital firms or angel investors. Early stage financing was particularly lacking in the city. Indeed, in June 2008, Mayor Bloomberg noted that "many smaller start-up companies have difficulty accessing seed capital to get off the ground."

But today, the city is awash in capital for startups. "There was no structured institutional seed capital in the city pre-2008," says Owen Davis, managing director of NYCSeed, which was created in 2008 to provide seed-stage funding. "By 2010 there was more capital than ever for seed investing in the city."

Local angels and venture funds have greatly increased their level of funding for local start-ups. Robinson says that 70 to 75 percent of the investments made by RRE Ventures today are in New York, compared to under 50 percent in 2004 and 15 to 20 percent in the mid-1990s. The same has happened with New York Angels, the most prominent angel investment group in the city. “Several years ago we were doing probably 40 percent of our deals in New York,” says David Rose, founder of New York Angels. “Now, I think it is closer to 70 or 80 percent.”

While the availability of capital has been crucial to the growth of the city’s tech economy, the strides New York has made in developing a tech “community” or ecosystem have arguably been even more important. Indeed, this was one of the critical missing pieces in New York during the go-go days of Silicon Alley in the late 1990s. “The New York New Media Association had 8,000 members at the height of the boom,” says Rose, speaking of the major industry association for the city’s dot com companies. “But the problem was that there was no ecosystem. It was like grass that was growing on concrete.”

Even in the mid-2000s, New York still lacked a robust tech ecosystem. A 2007 article about the city’s tech scene concluded that “finding tech culture in New York in 2006 took a little bit of digging.”

That’s all changed. There is a growing community of technologists in the city, in part because entrepreneurs, developers and engineers are moving here in droves. Amazingly, about half of Tumblr’s 103 employees are “relos,” according to David Karp, the company’s founder. All of these techies are now finding a welcoming and supportive ecosystem at every turn. There are routinely more than a dozen tech-related meetups a day, in addition to hackathons, start-up weekends and tech-related events. Meanwhile, a growing number of organizations provide aspiring entrepreneurs with advice, connections and the opportunity to pitch ideas to investors. At the same time, the number of successful tech entrepreneurs in New York has multiplied in recent years, and many of them are making angel investments in other start-ups and serving as mentors.

“It’s a very vibrant community that’s growing and multiplying rapidly,” says Divya Gugnani, the founder of fashion tech company Send the Trend. “What’s so amazing is that there are networks of entrepreneurs in New York now. In 2008, I knew five entrepreneurs in New York that I could call and have a conversation with. Now, I can call 500 people in New York. Literally, from 2008 to 2012, that’s how much my network has grown on the tech side, because there just so many more companies and so many more people starting businesses.”

From an economic perspective, the best news for New York is that this does not appear to be a temporary blip. While it’s likely that a good number of the recent start-up companies in New York will not succeed, virtually everyone interviewed for this report—including several people based outside the city—believes that New York is extremely well-positioned for even more tech sector growth in the future.

“New York is well suited to where tech is going,” says Jalak Jobanputra, managing director for venture firm RTP Ventures. “Maybe Silicon Valley will continue to build the next chip sets, hardware, and certain types of apps, but the expertise we have in New York is well-suited to the next generation of tech companies.”

The future is bright for New York in part because of the ecosystem that has developed here in recent years, which has leftthe city with much stronger foundation to build upon than was the case in the late 1990s. But more importantly, so many trends in the tech world today play to New York’s strengths.

The early days of technology growth was driven by semiconductors and computer hardware, products that depended on a deep roster of engineering talent and required large amounts of physical space to develop—neither of which favored New York. In contrast, today’s growth is being fueled by the Internet and smart phones, and the creation of new ways of taking advantage of these now widely used platforms to deliver content, sell products, deliver services, play games and simplify life for individuals and businesses. New York’s rich pool of creative, marketing and business talent is well-suited for creating and running these new businesses, all of which can be built with comparatively few engineers. At the same time, today’s technology revolution is much less about creating the infrastructure and plumbing for the Internet, but about applying

technology to traditional industries like advertising, media, finance, fashion and health. New York is natural for this wave of technology growth because it is a market leader in most if not all of these sectors, and boasts an unmatched concentration of talent in each of these fields.

On top of these advantages, New York's startup boom has benefited from a precipitous decline in the cost of developing an Internet business and the availability of new platforms where entrepreneurs who aren't coders can go to get a Website built for a small amount of money.

Our research suggests that there is considerable room for additional growth in the years ahead. On one level, individual consumers and businesses are still in the earliest stages of using and adopting the innovative Internet and mobile technologies being created in New York and elsewhere. Most analysts expect that demand will only increase, especially as the use of smart phones explodes in the coming years. Some technology sub-sectors that are strong here, like financial technology and social media, still have a lot of growth ahead of them. Meanwhile, other traditional industries like health care and energy have only begun to be disrupted by technology. Many of those interviewed for this report believe that health tech could be next to take off, and New York is already positioning itself as one of the two or three leading regions in this field. Others say that media applications using video have real potential for growth here.

Moreover, the proliferation of successful tech start-ups, the emergence of serial entrepreneurs and creation of a sustainable ecosystem in New York is likely to feed on itself in the coming years, just as Silicon Valley evolved and grew over decades—not years—when successful tech entrepreneurs started second and third companies, became angel investors in other start-ups and even started VC firms. With every successive generation, the city is building up more of a critical mass of experienced technology entrepreneurs and talent, more mentors and more capital. And with each success, the city is building buzz and creating an impression among investors, entrepreneurs and engineers based elsewhere that this is one of the leading places to build a tech company.

While there is clear cause for optimism, there is also a lot that New York's tech sector hasn't yet achieved. None of the major tech IPOs in the last couple of years—including Facebook, LinkedIn, Groupon and Angie's List—involved New York companies. Even the Boston region has about 30 tech companies with billion dollar market capitalizations, while New York has just a few.

In addition, some of the highest flying tech companies in the city have recently hit some rough patches. Gilt Groupe,arguably the largest Internet start-up in the city with about 900 employees, trimmed 10 percent of its staff earlier this year. SecondMarket, the online private equity market, recently announced it would lay off 15 of its 130 jobs. Lot18, the high-flying online wine and gourmet food seller, cut its workforce by 15 percent in January after growing from six employees to 90 in about a year.2 Flash sales aggregator MyNines shut down last year.

There are also a number of challenges that could inhibit this sector's future growth. Chief among them is a shortage of talent: every entrepreneur we spoke to for this report says that hiring the engineers they need is exceedingly difficult. Though far more engineers are moving to New York today than even a few years ago, it is still not enough to meet the demand as so many tech start-ups here look to add employees and large companies like Facebook and Twitter plan to greatly expand their engineering presence in the city. Connected to this is the difficulty that individuals from abroad with tech expertise have in getting the visas needed to move to the U.S. or to stay here after attending college in this country. No other city is as well positioned as New York to attract engineers or entrepreneurs from abroad, but the nation's backwards immigration and visa policies are greatly hampering New York's tech sector and making the companies that are here spend too much of their time and energy on immigration lawyers and filling out visa applications.

Though entrepreneurs in most parts of the city can access a fast broadband connection today, many of those we interviewed said that New York's telecom infrastructure is well behind where it should be for a city vying to be one of the nation's two leading technology hubs. Some start-ups that have looked for affordable space in former industrial districts outside of

Manhattan have had to abandon those plans after discovering that high-speed Internet connections weren't possible.

> With every successive generation, the city is building up more of a critical mass of experienced technology entrepreneurs and talent, more mentors and more capital.

While real estate is not generally a problem today, especially given the number of incubators and accelerators offering inexpensive space, that could change quickly. Much of the tech sector's growth has occurred in the last few years when the rest of city's economy was barely growing; when other sectors start clicking again, space may become much harder to come by, especially for firms that are graduating from incubators. This was a major problem at the height of the last tech boom in New York City.

The good news is that Mayor Bloomberg has championed the city's tech sector at every turn and his administration has launched an array of ambitious programs and policies to support its growth, from the creation of a new applied sciences campus on Roosevelt Island and the development of several incubators to the hiring of a chief digital officer.

There is still much work to be done to ensure that the tech sector continues on the upward trajectory of the past few years. But this report concludes that there is ample reason to be bullish about New York.

Even tech experts from the West Coast are optimistic about what's happening here. "It's a very opportune moment for New York," says Anna Lee Saxenian, dean of U.C. Berkeley's School of Information and the author of the definitive book about the development of tech clusters and the what led to Silicon Valley long-term success. "New York is extremely well positioned. The web has really opened up the door."

Key Findings

In the past few years, there has been an explosion of tech start-ups in New York City, most of which are companies that leverage the Internet and mobile technologies.

- We identified 486 digital start-ups formed in the city since 2007 that have received angel, seed or VC funding.
- Overall, there are well over 1,000 Web-based technology start-ups in the city, most of which have not secured investment capital.
- As one indication of the growth in early stage companies, roughly 1,600 start-ups applied to TechStars New York for its most recent program in March 2012—up from 600 applicants in the initial class, in January 2011.
- We identified well over a dozen established tech start-ups that have moved to New York in recent years from the San Francisco Bay Area, Boston and other locations.
- At least 28 New York-based tech start-ups were founded by students from Harvard Business School.

Although it is still well behind Silicon Valley as a tech hub, New York City has the nation's fastest growing tech sector and has surpassed Boston as the number two tech center in the U.S.

- Of the seven leading technology regions in the United States, New York City was the only one to see an increase in the number of VC deals between 2007 and 2011, according to data from the MoneyTree report published by PricewaterhouseCoopers and the National Venture Capital Association.
- The number of deals shot up by 32 percent in New York during this period whereas venture activity was down significantly in every other region, including Silicon Valley (-10 percent), New England (-14 percent), LA/Orange County (-8 percent), Texas (-17 percent) and San Diego (-38 percent). Nationally, there was an 11 percent decline in VC deals.

- New York is either the clear leader or one of the leading centers of activity in several tech subsectors that are growing today, including ad tech, fashion tech, fin tech, digital media, ed tech and health tech.

More and more New York-based tech start-ups are achieving significant growth.

- Of the tech start-ups founded in New York since 2007, 15 have raised more than $50 million in investments, 27 have investments of at least $25 million and 81 have raised at least $10 million.
- More of the city's digital companies got acquired by other firms in 2011 (55) than in 2008 and 2009 combined (54).

The city's tech sector has created thousands of jobs in the past few years, giving New York's economy a much-needed boost at a time when few other industries have been growing.

- In the last five years, information technology jobs in the city have increased by 28.7 percent, from 41,100 to 52,900.
- During the same period, private sector jobs in the five boroughs grew by just 3.6 percent while employment was down considerably in several of the city's traditionally-strong industries, including the securities industry (down 5.9 percent), publishing (down 15.8 percent), legal services (down 7.0 percent) and manufacturing (down 29.5 percent).
- Nearly half (47 percent) of the 298 tech start-ups on New York Tech Meetup's "Made in New York City" list indicated that they are currently hiring in April 2012.

Unlike the fleeting dot com boom in the 1990s, New York now appears to be building a sustainable tech sector that has significant potential for future growth

- Today's tech start-ups are less about building new technology than applying technology to traditional industries like advertising, media, fashion, finance and health care—all of which New York excel in.
- Dramatic increases in people using the Internet and mobile devices have created huge demand for companies that create content, sell products and provide services online—all of which play to the city's strengths.

The city lacked a strong tech ecosystem during Silicon Alley's first wave of tech growth in the 1990s, but that couldn't be more different today.

- There are now more than 23,300 members of New York Tech Meetup, more than twice the number of members in December 2009 (11,500) and nearly triple the figure from October 2008 (7,500).
- There are more than 12 incubators and coworking spaces that house digital start-ups today, up from only a few priorto 2009. By our count, these shared spaces have already housed nearly 500 tech start-ups.
- Prior to 2009, there were no accelerator programs for tech start-ups in New York. Today, there are at least a dozen accelerator programs in the city.

Until four or five years ago, tech entrepreneurs in New York struggled mightily to access investment capital, but that has changed in a big way, particularly for early stage companies.

- There were almost as many tech-related VC deals in New York City in 2011 (165) as in 2006 and 2007 combined (172), according to data from SeedTable.

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