

Start-up City:

Growing New York City's
Entrepreneurial Ecosystem For All

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Borough President

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EXECUTIVE SUMMARY

For generations, the Statue of Liberty has stood at the entrance to New York Harbor, beckoning people from around the globe to the “Golden Door” of New York City. Disembarking on New York’s shores has never come with a guarantee of riches, but rather with something far more elementary and profound: an equal opportunity to succeed.

That opportunity has created an engine of entrepreneurship unlike any the world has ever seen, transforming a small trading post at the tip of the Battery into the entrepreneurial capital of the world—from finance, fashion, and food to marketing and media.

Despite this rich history, it is clear that large swaths of today’s entrepreneurial ecosystem lie beyond the reach of millions of working class New Yorkers, contributing to an unemployment rate of nearly 10 percent and to rising poverty that now encompasses one in five New Yorkers. In short, while new businesses are emerging every day, too many working class New Yorkers lack the resources and skills necessary to take part in this remarkable growth.

Only one in five start-ups in New York City is founded by a woman. Further, the latest Census data shows that while 54 percent of employed White New Yorkers work in the “creative economies”—management, business, science and the arts—only 29 percent of employed Blacks and 20 percent of employed Latinos work in those sectors.

This report will discuss ways that the City can help to ensure that the benefits of the entrepreneurial ecosystem are available to all and that existing businesses—big and small—have the support they need to grow and expand. The recommendations in this report are based on interviews with key New York City stakeholders as well as successful strategies already at work in other cities across the country and around the world.

One important area of focus is the City’s emerging tech sector, which could offer a gateway to the middle class for thousands of New Yorkers—but only if the city ensures that workers have the skills needed to fill those jobs. Unlike other growth areas of the economy, an entry-level coding job at a start-up tech firm can pay as much as \$65,000 a year, well above the city’s median household income.

If New York wants to remain a middle class city, then government must do everything it can to foster the entrepreneurial ecosystem and create a pipeline of jobs for working families. This report focuses on five major challenges:

- I. Talent Shortage:** Companies are struggling to fill a range of jobs, from low- to mid-level coding, to marketing positions and high-tech engineering slots.
- II. Bureaucratic Inefficiency:** Entrepreneurs are saddled with red tape and lengthy delays in getting their businesses off the ground.
- III. Consistent Connectivity:** For a city that is an established leader in the technology revolution, New York has slow, spotty internet access—even in Midtown Manhattan—and many communities lack multiple options to create redundant connections.

- IV. Inferior Infrastructure:** As entrepreneurs flock to job corridors outside the Manhattan Core, there is a significant need for improvements in the City's public transportation network to connect emergent job centers. Superstorm Sandy only increased the need for significant investment in this critical infrastructure.
- V. An (Un)Affordable Atmosphere:** It is becoming increasingly difficult for people to find affordable places to live and work in New York City. New York risks allowing the next generation of entrepreneurs to choose cities like Austin, Boulder and Portland if it cannot find a way to provide affordable housing and office space.

Government is not going to build the entrepreneurial economy in New York City. The ingenuity of New Yorkers and the drive of people who come to the five boroughs are the keys to economic success in the 21st century. But government is responsible for creating the environment and infrastructure to support robust economic growth.

Some of the recommendations in this report require Congressional action, including comprehensive immigration reform and reforming the U.S. Small Business Administration's Microloan program. However, the majority of the programs designed to boost the entrepreneurial economy of New York can be developed right here in the Empire State. Those recommendations include:

- 1. A Curriculum for Tomorrow, Today:** As part of ensuring that all New York City public school students have the skills they need to succeed, the Department of Education (DOE) should offer expanded computer science curricula in schools throughout the City. To support this effort, the Mayor should convene a group of entrepreneurs from a variety of fields to help inform a curriculum of skills that can be used to prepare all of our students for the jobs of tomorrow. These skills—from computer technology and marketing to financial literacy and the “language” of business—will serve all of our students well regardless of their future career goals. Teachers and representatives from teacher-training programs throughout the City must also be at the table to ensure that they have the resources they need to effectively equip students with the skills of tomorrow.
- 2. Create a Municipal Fiber Network:** New York should explore the creation of a municipal fiber network by using publicly-owned assets—including transportation and utility infrastructure—as conduits for sparking competition among Internet Service Providers (Time Warner, Verizon, Cablevision, etc.) and improving internet connectivity.
- 3. Build Out NYC Digital to Match the Office of Film/TV:** NYC Digital/NYC Business Express should be a true one-stop shop for budding businesses, with an emphasis on fully-integrated online applications for permits and licenses, as well as “digital expeditors” on hand who can address the unique needs of the emerging tech industry.
- 4. The Empire Engineers Initiative:** The City should launch a joint City-State financial aid program for students who major in engineering and promise to work in New York City/State for at least five years after graduation.
- 5. Streamline the Department of Buildings:** Relieving the Department of Buildings (DOB) of its responsibility over building inspection and remediation would allow it to focus on the business of business—ensuring that entrepreneurs can get permits, plans, and licenses in a reasonable time frame and allow the agency to provide valuable customer service to innovators throughout the five boroughs.

- 6. Launch the Mayor's Cabinet for Emerging Business Development:** To help bridge the gap between a fast-moving private sector and a slow-moving government, New York City should establish a Cabinet for Emerging Business Development made up of local entrepreneurs to advise the Mayor's Office on how City government can provide timely support to local business people.
- 7. Embrace Crowdsourcing for Office Space:** Medium-sized businesses often have difficulty finding affordable, attractive office space. Too big for incubators, but too small to rent an entire floor of Class A space, these growing businesses are often left in the lurch. Enter NYC Sharespace—an online, crowd-sourced, bulletin board for start-ups to join forces in the search for viable office space. In addition, real estate companies could use ShareSpace to post available square footage in their buildings, opening up their business to the next generation of entrepreneurs driving the 21st century economy.
- 8. Reform Parking Minimums on Residential Property Near Transit:** Requirements that developers devote scarce land to provide parking spaces often reduces the size and number of housing units they can build, making projects less affordable.
- 9. Continue Experimenting with Micro-Zoning:** The City should consider further modifications to zoning laws and building codes to allow for development of small, affordable apartments that attract young, creative class professionals to the City.
- 10. The STEM Cell:** CUNY should develop a dedicated STEM (science, technology, engineering, and math) program that enrolls a wide array of high school graduates in science and math. By offering two-year degrees, the STEM Cell will enable graduates from populations that are severely under-represented in the local tech industry to quickly fill the gap in coding and other “middle-skill” jobs.
- 11. Use Light Rail and Bus Rapid Transit to Connect Burgeoning Job Corridors:** The 21st century economy is emerging throughout the five boroughs, and we need a transit system that reflects where people live and work today, not 100 years ago.

There is no doubt that the emergence of New York's diverse, entrepreneurial economy is something to be celebrated. But going forward, it is essential that the City expand the base of opportunity by investing in education and infrastructure, assuring that all New Yorkers can share in this remarkable growth.

“Cities are central to innovation and new technology. They act as giant petri dishes, where creative types and entrepreneurs rub up against each other, combining and recombining to spark new ideas, new inventions, new businesses and new industries.”

— Professor Richard Florida,
NYU/ University of Toronto¹

New York City’s history of entrepreneurship dates back to its founding as New Amsterdam—a port of entry to the New World and a place of exchange for ideas and innovation. However, as the Internet revolution dawned at the beginning of this century, and New York and other metropolitan areas struggled with high crime rates, many believed that cities would cease to be epicenters of commerce.

In 1997, Frances Cairncross published *The Death of Distance: How the Communications Revolution Will Change Our Lives*,² arguing that the Internet/telecom revolution would create “a world in which... distance is irrelevant.”³ Because of the speed and low-cost of communications, Cairncross declared, companies would locate a service where it could be best produced, rather than near its end market. And more importantly, employees would “gain more freedom to live far from their employers,” thanks to the projected growth in telecommuting and e-business.⁴

In the fifteen years since *The Death of Distance*, the prediction that employees would work remotely and companies relocate far away from their markets has turned out to be false.⁵ In fact, in 2011, for the first time in human history, a majority of the world’s population lived in cities.

Thus, rather than pulling people apart, the IT revolution at the heart of the modern entrepreneurial economy has brought people together more than ever before, strengthening cities that are centers of innovation.⁶

As perhaps *the* entrepreneurial capital of the world—from finance and fashion to marketing and media—

New York City has staked out a significant presence in this new entrepreneurial economy.⁷ Tech-rich entrepreneurial businesses offer a gateway to the middle class for thousands of New Yorkers. Unlike other growth areas of the economy, an entry-level coding job at a start-up tech firm can pay as much as \$65,000 a year.

However, as this report will examine, the benefits of this economic boom have been concentrated among those few New Yorkers with the resources and skills—both technical and entrepreneurial—to take advantage of new opportunities. The City can do more to ensure that jobs in these industries are truly accessible to all, while also supporting the expansion of existing entrepreneurial businesses.

New York’s Entrepreneurial Ecosystem

While tech start-ups receive a significant amount of publicity, the entrepreneurial ecosystem goes far beyond social media and information technology to touch practically every sector of New York City’s economy.⁸

The PITCH NYC 2012 Conference featured entrepreneurs who have started companies in health, fashion, entertainment, sports and journalism, among other fields.⁹ Mobile health apps—designed to improve public health—are expected to bring in \$1.3 billion in revenue in 2012, nearly double last year’s \$718 million.¹⁰

As Steven Rosenbaum, the New York City Economic Development Corporation’s (EDC) first ever “Entrepreneur at Large,” said, “[New York] is fertile ground for a whole series of tech enabled industries. There’s advertising tech, there’s fashion tech, there’s financial tech, media tech and more.”¹¹ Andrew Rasiej, the current chairman of the New York Tech Meetup, added, “Technology is not a slice of the pie, but the pan.”¹²

The City’s technology sector is setting the pace for job creation. According to an analysis of New York State Labor Department data by the Center for an

Urban Future, 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 60 percent increase.¹³

The EDC reported that there were 90,273 people working at “high-tech” companies in 2010, a 30 percent gain in employment from 2005—a growth rate ten times the overall change in city employment in the same period.¹⁴

Many of these jobs are in new small businesses—the segment of the economy that has long driven employment growth. Nationwide, new companies added more than 2.9 million jobs annually from 1996 to 2008; while older companies consistently shed jobs.¹⁵ Even in the midst of the Great Recession, new businesses created 2.33 million jobs, while older businesses eliminated more than 7 million jobs.¹⁶

A report from TechNet found that the “App Economy” alone has created over 450,000 jobs nationwide since 2007, with New York City accounting for nearly 10 percent of the total—the highest share in the nation.¹⁷

As Jeff Bussgang, a general partner at the Boston venture capital firm Flybridge Capital Partners, said, “The broader story is that New York was irrelevant five years ago and now it’s incredibly relevant. We are big believers in the New York ecosystem.”¹⁸

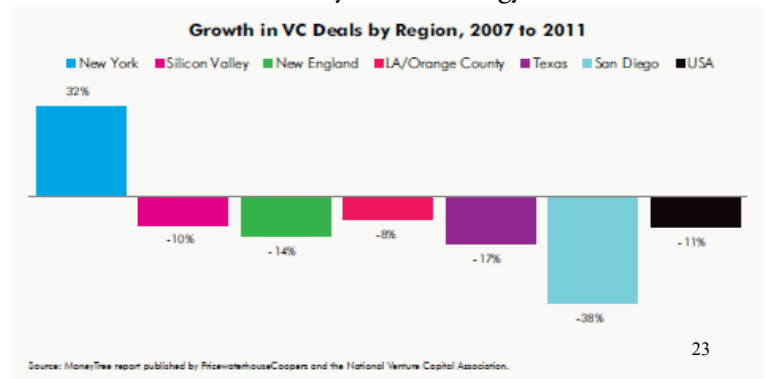
Fabian Pfortmueller, co-Founder of Holstee, added, “We have been considering a move to [Silicon Valley], but believe that because our company is at the intersection of sustainability, ecommerce and design, it makes more sense to be in NYC. Plus, we just love it here.”¹⁹

Signs of strong and sustained growth underscore the growing perception that technology and content-based applications have the potential to be a central pillar of the New York City economy for decades to come:

- 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.²⁰

- NY Tech Meetup, a group launched in 2004 to support the tech community in the City, has grown from 7,500 members in October 2008 to nearly 27,000 as of September 2012.²¹
- From 2007-2011, venture capital (VC) deals increased by 32 percent in New York City, leading New York to leapfrog Massachusetts to become the #2 state in the country for technology-related VC.²²



- The entrepreneurial economy isn’t just being fueled by small start-ups. Large companies have also flocked to New York in recent years, including Google, Facebook, and Twitter. The City needs to continue to encourage large companies in this sector to relocate to the five boroughs, bringing employment opportunities for thousands of New Yorkers.

The Promise and the Peril

With the incredible growth of the entrepreneurial economy in New York, there exists a growing tendency to believe that the boom can and will become “self-sustaining”—as if all digital roads will always lead to New York.

However, history teaches otherwise. America’s great manufacturing metropolises have seen jobs disappear as globalization has taken root. The financial and legal industries, long headquartered in New York City, are increasingly being drawn to Brazil, Russia, India, China and other emerging powers. Meanwhile, other cities in the U.S., recognizing the value of the new economy, are fighting hard to draw entrepreneurs to their municipalities.

Thus, while New York City is home to thousands of new businesses, including more than 500 start-up companies in “Silicon Alley” alone, other urban centers are booming as well. From London’s “Silicon Roundabout”²⁴ and Los Angeles’ “Silicon Beach,”²⁵ to Seattle’s South Lake Union District²⁶ and Boston’s Innovation District²⁷—cities across the country and around the world are offering skilled workers and young entrepreneurs the “live, work, play” environment conducive to economic growth.

The truth is that more than at any time in history, small businesses are easily uprooted and moved to a new municipality. Therein lies both the promise and peril of New York City’s entrepreneurial boom—the companies fueling it are as mobile as the technology they exploit. That is why it is critical that New York City continues to foster an entrepreneurial ecosystem throughout the five boroughs.

Mayor Bloomberg’s administration has taken several important steps to do just that. In addition to the historic competition to attract a new applied science and engineering campus to New York (won by Cornell-Technion) and the creation of the NYU Center for Urban Science and Progress in Downtown Brooklyn, the Bloomberg Administration and the City Council have:

- Appointed the City’s first Chief Digital Officer.
- Provided financial support for tech incubators and workshare spaces, as well as underwriting the BigApps and Next Idea competitions/hackathons.
- Launched NYC Venture Connect, an online forum of business resources for entrepreneurs.²⁸
- Partnered with FirstMark Capital to create the New York City Entrepreneurial Fund—a \$22 million fund to provide promising New York City-based technology start-up companies with early-stage capital.²⁹
- Created the Advanced Software Development Program at the CUNY Institute for Software Design

and Development, which will offer 20 students advanced classes in partnership with Tipping Point Partners and other local tech companies, and launched NYC Generation Tech to give more young people access to tech-related training.³⁰

A New Gateway to the Middle Class

Given how mobile many new start-ups are, the City needs to continue to support the growth of emergent industries while taking concrete steps to ensure that the entrepreneurial ecosystem provides opportunities for millions of working class New Yorkers.

As Kay Hymowitz, a contributing editor of *City Journal* noted last year, the emerging economy of New York is all too often bifurcated between haves and have-nots. “At the top, the college-educated are doing interesting, motivating work during the day and bicycling home to enjoy gourmet beer and grass-fed beef after hours. At the bottom, matters are very different.”³¹

James Parrott of the Fiscal Policy Institute added that even as the entrepreneurial economy of New York City has grown, “Thousands have lost the tenuous grip they had on the middle rungs and have slipped down the economic ladder.”³²

Indeed, New York City’s unemployment rate remains stuck near 10 percent, with more than one in five people living in poverty.³³ 54 percent of employed Non-Latino White New Yorkers work in “management, business, science and the arts,” while only 29 percent of employed Blacks and 20 percent of employed Latinos work in those sectors.³⁴ The “Information” industry, which includes media and telecommunications, employs over six percent of White New Yorkers, but less than three percent of Black and Latino New Yorkers.

A major cause of this difference in access to the entrepreneurial economy is the skills gap, which is manifested in differences in educational attainment. Nearly 25 percent of White New Yorkers hold a graduate or professional degree. However, only 7.5 percent and 4.9 percent of Black and Latino residents, respectively, hold those degrees.³⁵

With figures like this, it is no surprise that there is a “strong negative correlation between high-tech concentrations and the percentage of the population that is non-white.”³⁶

Not only are Black and Latino New Yorkers being left behind by the entrepreneurial economy, but women are as well. Women represent 43 percent of the American workforce, but make up only 23 percent of scientists and engineers. Only 24 percent of STEM jobs and 14 percent of engineering positions are held by women.³⁷ And while women are twice as likely to start new companies in New York City as they are in Silicon Valley, only 1 in 5 start-ups in the City is founded by a woman.³⁸

Thus, while the City has done an extraordinary job incubating the tech industry over the last decade, we must do even more to ensure that the fruits of the entrepreneurial economy reach all New Yorkers, particularly women and people of color. This report will discuss ways to ensure that the benefits of the entrepreneurial ecosystem are available to all by focusing on five major areas of concern expressed by business leaders:

- I. Talent Shortage:** Companies are struggling to fill a range of jobs, from low- to mid-level coding, to marketing positions and high-tech engineering slots.
- II. Bureaucratic Inefficiency:** Entrepreneurs are saddled with red tape and lengthy delays in getting their businesses off the ground.
- III. Consistent Connectivity:** For a city that is an established leader in the technology revolution, New York has appallingly slow, spotty Internet access—even in Midtown Manhattan—and lacks multiple options to create redundant connections. Using City assets to boost private competition—including the construction of a municipal fiber network—would offer benefits to all New Yorkers.

IV. Inferior Infrastructure: As entrepreneurs flock to job corridors outside the Manhattan Core, there is a significant need for improvements in the City’s public transportation network to connect emergent job centers.

V. An (Un)Affordable Atmosphere: It is becoming increasingly difficult for people to find affordable places to live and work in New York City. While the cultural diversity and nightlife of the City is unparalleled and is a significant draw to the “creative class,” New York risks allowing the next generation of entrepreneurs to choose other cities like Austin, Boulder, Portland, and Detroit if it cannot find a way to provide affordable housing. Similarly, while shared spaces and incubators have blossomed in New York City, offering small start-ups space to develop their ideas and interact with other business owners, many have trouble finding suitable office space when they “graduate” from incubators. Creating a mechanism for these mid-sized businesses to secure office space is essential to shepherding them from the start-up stage to the Fortune 500.

Government is not going to build the entrepreneurial economy in New York City. The ingenuity of New Yorkers and the drive of people who come to the five boroughs from across the country and around the world are the keys to economic growth in the 21st century, just as they were when the City was a small port in Lower Manhattan in the 17th century.

However, government is responsible for creating the environment and infrastructure to support robust economic growth. This means supporting schools that prepare New York City’s youth for the industries of tomorrow. It means planning a transportation network that enables the fast and reliable movement of people and goods throughout the metropolitan region. It means creating a regulatory regime that encourages efficient construction and predictable planning. And it means ensuring that the City is a place where people want to and can afford to live, work, and play.³⁹

REPORT RECOMMENDATIONS

I. FILLING THE TALENT GAP—PREPARING A 21st CENTURY WORKFORCE AND KEEPING SKILLED WORKERS IN NEW YORK CITY

“The U.S. can best lay the foundation for long-term entrepreneurship by improving education, so that more Americans acquire the knowledge needed for technological innovation.”

— Professor Edward Glaesar,
Harvard University⁴⁰

Defining the Problem: The number one concern of entrepreneurs interviewed by the Manhattan Borough President’s Office was the shortage of talent to fill the jobs of the 21st century economy. As shown in the chart below from Startup Genome, New York City’s greatest entrepreneurial weakness relative to domestic competitors is talent.⁴¹

New York City



Goal: Developing and attracting a labor force that has the skills to succeed in the entrepreneurial ecosystem of the 21st century and making it easier for firms to hire qualified employees from abroad. This effort will require improvements in K-12, college, and continuing education.

Background: A recent survey found that 39 percent of teenagers are interested in starting a business. As people enter their 20s, the desire to be involved in the entrepreneurial economy grows even stronger.⁴²

However, the sad truth is that many of these young people lack the technical skills and entrepreneurial training they need to succeed in this new economy.

In fact, a recent report from the Brookings Institution found that in the 100 largest metropolitan areas in the U.S., 43 percent of job openings typically require at least a bachelor’s degree, but just 32 percent of adults 25 and older have earned one.⁴³ According to Deloitte, more than 600,000 jobs in manufacturing—a resurgent field in New York City—went unfilled in 2011 due to a skills shortage.⁴⁴

As Gabriel Shaoolian, chief executive of Blue Fountain Media, a web design and marketing company with 85 employees in New York City told the New York Times, “If you’re a professional developer, Web designer or online marketing specialist, you can pick the company you work for. There is a shortage where demand severely outstrips supply.”⁴⁵

It is not necessary to have a Ph.D. in engineering or even a four-year college degree to take advantage of the entrepreneurial economy. In fact, as a recent study by the National Skills Coalition found, “middle-skill jobs—those that require more than a high school diploma but not a four-year degree—account for nearly half of all current jobs in New York, and a substantial share of future job openings.”⁴⁶

Most importantly, these jobs can support a family. As the Daily News reported, starting salaries for web developers, even those without college degrees, are around \$65,000.⁴⁷

The U.S. Department of Labor also noted the importance of focusing beyond engineering degrees in STEM (science, technology, engineering and math) fields:

The STEM workforce pipeline challenge is not just about the supply and quality of the baccalaureate and advance degree earners. A large percentage of the workforce in industries and occupations that rely on STEM knowledge and skills are technicians, including others

who enter and advance in their field through sub-baccalaureate degrees and certificates or through workplace training. Creating interest and preparing more Americans to be productive in STEM-related jobs will require attention to segments of the workforce that are often overlooked in STEM discussions: incumbent workers who need skills upgrading, dislocated workers who are trying to find new jobs in industries with a future, and individuals from groups traditionally underrepresented in STEM fields.⁴⁸

Furthermore, advertising companies are in need of employees with *both* pure quantitative skills, and an understanding of how the advertising technology business works.⁴⁹

As the National Skills Coalition concluded, if New York is to sustain its increasingly important entrepreneurial economy, the City must develop “a truly comprehensive innovation agenda that addresses the demand for both highly educated innovation professionals and the middle-skill workers needed to implement their innovations.”⁵⁰ The proposals below are designed to do just that.

Recommendations:

1. Expand Opportunities in New York City Public Schools: A Curriculum for Tomorrow, Today

We need to ensure that all our students—over 1.1 million in public schools⁵¹—have the opportunity to engage with innovative curricula that prepare them for college and the modern workforce.⁵²

To that end, the Department of Education (DOE) should offer expanded computer science curricula in schools throughout the City and convene a group of entrepreneurs from a variety of fields to help inform a series of recommendations for a curriculum that prepares all of our students for the jobs of tomorrow. These skills—from computer technology and coding to financial literacy and the basics of business—will serve all of our students well regardless of their chosen career path.

A central part of this effort is ensuring that teachers have the resources and training they need to equip our students with these innovative skills. That’s why teachers and representatives from teacher-training programs throughout the City must also be at the table with entrepreneurs and other advocates in crafting a curriculum for the 21st century that integrates technology and financial literacy in the classroom.

In 2011, the DOE, CUNY, and IBM collaborated on a curriculum for a new school called Pathways in Technology Early College High School (or P-TECH).⁵³ Located on the border of Crown Heights and Bedford-Stuyvesant, P-TECH is a grades 9-14 school where students not only study the traditional core subjects, but also receive an education in computer science and complete two years of college work. DOE worked with IBM to develop the curriculum, choose the principal, equip the school with computers, and provide individual IBM mentors for each student at the school.

The best part for many students is that they graduate with an Associate’s Degree in computer systems technology or electro-mechanical engineering technology and a qualified record, putting them “first in line” for a job with IBM.⁵⁴ As Stanley S. Litow, the president of IBM’s International Foundation and a former deputy schools chancellor in New York, told the New York Times, a P-TECH education can be “the difference between a low-wage job with no career and the solid wages and skills to have a productive middle-class job.”⁵⁵

This fall, the City opened the Academy for Software Engineering (AFSE), a high school located in the Washington Irving High School that offers advanced software engineering and computer science classes designed to prepare students for today’s tech economy.⁵⁶

It is too early to tell if P-TECH and AFSE will succeed in preparing students for college or a career. Nevertheless, the City should be prepared to expand the model to other boroughs, particularly in communities of color where students often lack the resources

to be able to find employment in the 21st century economy.

In addition to helping propose a modern curriculum for all New York City public school students, this group of entrepreneurs can help lobby the federal government to provide greater flexibility in the use of Title V “Well-Rounded” funds under the Elementary and Secondary Education Act (ESEA).

Title V allows local and state education officials to target federal funding for “innovative assistance programs.” However, under current law, entrepreneurial education is ineligible for Title V funding.

As Amy Rosen, President and CEO of the Network for Teaching Entrepreneurship, said, “Entrepreneurship education keeps young people in school by talking to them about something they care about — money. It reaches them in a different way and prepares them with the adaptable skills and entrepreneurial mindset needed to be successful in our rapidly changing economic landscape.”⁵⁷

With more and more young people interested in starting their own businesses, government at all levels—federal, state, and local—must work together to ensure that our youth have the skills and training they need to succeed.

2. Create the “STEM Cell”—a CUNY-Sponsored Initiative Dedicated to Science, Technology, Engineering, and Math

New York City shouldn’t stop training students for the jobs of tomorrow upon graduation from high school. Instead, we should provide students a path forward by working with CUNY to ensure that its facilities and faculty are prepared to offer practical training for the current economy to college students and adults seeking to continue their education.⁵⁸

DOE and City College have already developed the Stem Institute, a challenging academic enrichment program designed to encourage talented, but under-represented/disadvantaged high school students enrolled in the 9th, 10th, and 11th grades to pursue

careers in the field of engineering, computer science, science, business management, entrepreneurship, and math.⁵⁹

However, while it is important to provide “gifted and talented” programs, New York City must develop a primary and secondary education system that enables all students to take advantage of the opportunities of the entrepreneurial economy.

Enter the STEM Cell—an initiative designed to enroll a wide array of high school graduates in a STEM curriculum that prepares students to take advantage of the growing class of “middle-skill” jobs.⁶⁰

The STEM Cell—which could be housed at one or more of CUNY’s existing campuses—is designed to offer two-year degrees, enabling graduates from populations that are severely under-represented in the local tech industry to quickly fill the gap in coding and other “middle-skill” jobs in demand by today’s tech industry, while also serving as a stepping stone to a four-year or advanced degree.

The STEM Cell plan is similar to the “College to Careers” (CTC) program unveiled by Chicago Mayor Rahm Emanuel last year.⁶¹ That program, run through the City Colleges of Chicago, is designed to ensure that Chicago residents are ready for jobs in high growth industries—from health care and transportation logistics to business and technology. These are jobs that are available today but remain unfilled because of a skills gap.⁶²

By bringing together City Colleges, corporations, and organizational partners, Chicago hopes to both improve the workforce readiness of its people while increasing the competitiveness of its business community.

CUNY has already taken concrete steps to prepare New York City residents for growth in certain fields, including allied health training at Hostos Community College in the Bronx. The STEM Cell will build on these efforts, by embracing a forward-looking curriculum that both prepares students for jobs in today’s economy while remaining flexible enough

to support jobs, companies and even industries that have yet to be conceived.⁶³

As *New York Times* columnist Thomas Friedman said, “In 2004, Facebook didn’t exist; Twitter was a sound; the cloud was in the sky; 4G was a parking place; LinkedIn was a prison; applications were what you sent to college; and Skype for most people was a typo.”⁶⁴ In other words, loading up our workforce with skills designed to serve businesses in 2012 will be of limited use in 2020. Thus, our goal should be to ensure that students have skills that will provide them with the flexibility to adapt to new technologies and changing economies.

Lastly, City DOE should work with CUNY to develop a link between the City’s Career and Technical Education (CTE) schools and the STEM Cell. CTEs serve a self-selected student population that is already technically inclined, but for whom college readiness and enrollment have traditionally lagged.⁶⁵ If students at CTE schools could engage with the STEM Cell while still in high school—for instance, in an advanced program for coding—they may be more likely to enroll in the STEM Cell or another institution to continue building their skills.

3. The Empire Engineers Initiative: Encourage Talented Students to Start Their Careers in New York City

In addition to making sure that the doors of the entrepreneurial economy are open to all students from the five boroughs, the City should also do more to retain students who come to New York from around the country and the world for college and graduate school.

One way to do this is to launch the Empire Engineers Initiative (EEI), a joint City-State financial aid program for students who major in engineering and commit to work in New York City/State for at least five years after graduation.

EEI is designed to both encourage New Yorkers to enter engineering programs and to attract young en-

gineers to New York. It will do this by providing loan repayment assistance to:

1. Individuals attending SUNY/CUNY who major in STEM fields and promise to work in a qualifying engineering capacity for at least five years in New York State/City following graduation. They would have up to 50 percent of their loans repaid by the State/City.
2. New Yorkers who go out of state for school, major in STEM fields, and carry significant student loan debt. They will be given a credit for the same amount of money (50 percent of tuition at CUNY/SUNY) if they return to New York after graduation and work in a qualifying engineering capacity for at least five years in the State.

The program would be open to all students whose families make less than \$200,000/year. Using existing loan forgiveness programs as a model, EEI would extend a periodic “loan” for the paying back of debt, which is then forgiven if certain conditions are met—namely, gainful employment as an engineer in New York City/State, with a possible public service requirement.

The City/State should seek private partners to help underwrite the costs of EEI, particularly from engineering companies that already have a footprint in New York and stand to benefit from the program.

EEI will also encourage students who will soon graduate from new campuses on Roosevelt Island (Cornell-Technion) and Downtown Brooklyn (NYU) to keep their talents right here in New York City.

4. Open the Golden Door: Immigration Reform and City-Sponsored Visas

“As our competitors press ahead with strategic policies suited to a global century, how much longer can America afford to drift with an immigration regime built in 1965?”

- The Partnership for New York City and the Partnership for a New American Economy⁶⁶

The talent shortage in New York would be considerably less severe if the federal government passed comprehensive, common-sense immigration reform. Tumblr founder David Karp told the Center for an Urban Future that his company has waited over nine months to get top-level employees cleared for visas.⁶⁷ Collective[i] founder Heidi Messer lost one of her top engineers to a competitor in Canada.⁶⁸

Immigration reform is not only important as a means to increase the talent pool available to entrepreneurial enterprise, but is also important to the sustainability of the entrepreneurial ecosystem itself. The Fiscal Policy Institute recently found that while 29 percent of the New York City metropolitan area's population is foreign-born, 36 percent of business owners are foreign-born.⁶⁹ In addition, immigrants make up 49 percent of all self-employed workers in the City, compared with 25 percent in New York State and only 12 percent in the U.S.

The statistics bear out this backward policy:

- In 1990, the number of employment-based (EB) permanent visas was capped at 140,000 per year. This number hasn't changed since, even though the U.S. economy has grown by 66 percent and the competition for global talent has grown sharply.⁷⁰
- The U.S. has a skilled worker visa—the H-1B. However, the number of H-1B visas is capped at 65,000 annually.⁷¹ The cap for FY 2013 was reached in just three months, the fastest of any year since the depths of the recession in 2009.⁷² H-1B professionals have a tremendous history of job creation. In 2008, Bill Gates testified that for every H-1B visa holder hired by Microsoft, the company adds four additional employees to support him/her in various capacities.⁷³
- Businesses in the New York City metropolitan area requested nearly 53,000 H-1B visas, by far the most of any location in the country.⁷⁴ Moreover, as one op-ed recently noted in the *New York Times*, applying for an H-1B visa can take months and the employer is required to

shell out thousands of dollars in legal fees to pay for sponsorship.⁷⁵

- Only about 15 percent of U.S. Green Cards are awarded based on employment needs, and half of those go to the spouses and children of employees.⁷⁶ This means only 7 percent of Green Cards go to individuals based on economic need, one of the lowest rates of economic-based immigration in the world. In Spain, South Korea and Switzerland more than 75 percent of immigrant visas are awarded on the basis of employment.⁷⁷
- Other countries have positioned themselves to benefit from the talent the U.S. is turning away. Australia allows in almost as many skilled workers annually as the U.S., despite having a fraction of the population, and Canada has aggressively courted highly-skilled immigrants, nearly quadrupling the percentage of permanent visas it grants for employment.⁷⁸

The UK, Singapore, and Chile have established start-up visas for investors who will create new jobs and support the economy. In Singapore, qualified entrepreneurs can obtain a visa in only five weeks with a minimum \$50,000 investment. Startup Chile lures entrepreneurs to that country by offering not only an expedited one-year visa, but also temporary workspace and an investment of \$40,000.⁷⁹

- In 2011, immigrants contributed to three-quarters of the patents that came out of the ten most prolific research universities in the U.S.

After years of playing defense on immigration, the United States needs to switch to offense and reaffirm our nation as a welcoming place for entrepreneurs from all corners of the globe. As James Surowiecki of *The New Yorker* stated, instead of “help[ing] global talent develop the skills needed to beat us,” we need to press Washington to open the doors to immigrants who can contribute to economic growth on day one.⁸⁰

Comprehensive immigration reform should include:

1. Keeping talented foreign students with science and technology degrees here in the U.S.

A bipartisan group of Senators recently put forth “Startup Act 2.0,” which would create two new types of visas, one for foreign students who obtain graduate degrees in STEM fields from American universities, and another that offers permanent residence to immigrants who start successful companies and create jobs in the United States.⁸¹

2. Awarding more Green Cards based on economic needs. Senator Charles Schumer’s BRAINS Act would create 55,000 new Green Cards per year for foreign students who graduate from U.S. universities with advanced degrees in STEM fields.⁸²

3. Creating a visa for foreign entrepreneurs to build their firms in the U.S. Currently, the U.S. has EB-5 employment-creation immigrant visas, which are Green Cards given to foreigners who invest \$500,000 or \$1 million earmarked to create 10 U.S. jobs.⁸³ In the past 22 years, the EB-5 program has spurred the creation of tens of thousands of new jobs and the injection of billions of dollars into the U.S. economy.

4. Eliminating or significantly raising the cap on H-1B visas.⁸⁴ Increasing the cap on these “skilled worker” visas will provide a significant boost to the economy of the New York City metropolitan area, which applies for more H-1B’s than any other region of the country.

5. Passing the DREAM Act and Creating a Pathway to Citizenship for All. We need federal legislation to encourage undocumented youth to continue their education and to create pathways to permanent residency and citizenship for millions of immigrants who contribute to the American economy and our way of life.

6. Allowing local governments to recruit more immigrants to meet regional needs. A novel idea discussed by the NYU Stern Urbanization Project, among others, is the issuance of City-based visas.⁸⁵ While some U.S. cities are likely to rebuff efforts to direct immigrants to their municipalities, other cities, particularly those cities losing population or in need of additional skilled labor, such as New York City, may choose to sponsor a class of new Americans.

City-based visas could be temporary and renewable, with a path to permanent residency and eventually citizenship. In order to secure political support for the idea, the sponsoring cities would have to address some of the primary concerns of immigration opponents, including ensuring that visa holders are not a drain on the federal government, do not commit crimes, and maintain their residency in the participating city.⁸⁶

Elected officials from New York City and other like-minded municipalities that would benefit from a City-based visa should press Congress and the President to authorize a limited pilot program as part of comprehensive immigration reform.

II. RED TAPE CITY: STREAMLINING THE BUREAUCRACY OF BUILDING BUSINESSES

“The process of getting a building permit is considered so complicated and time-consuming that an entire industry has been spawned to deal with it, even to the point where expeditors hire their own expeditors.”

– “A New York Trade Thrives on Red Tape,”
The New York Times (Sep. 13, 1991)⁸⁷

Defining the Problem: Despite the efforts of the Mayor to streamline the building and permitting process for entrepreneurs, many new business owners find it next to impossible to navigate the system without an expeditor.

Would-be business owners who lack the capital to spend on expeditors are routinely forced to wait months for floor plans, permits, and licenses. For many businesses rooted in the fast-evolving tech world, these delays can sink a business before it ever gets off the ground.

Goal: Make starting a business in New York City easier and make government more responsive to the ongoing needs of the entrepreneurial economy.

Background: Twenty years ago, the *New York Times* published a front page story on a profession that relied, for its very existence, on the woeful inefficiency and Gordian complexity of the City's Department of Buildings (DOB): expeditors. Expeditors' familiarity with building codes, permit requirements, and the eccentricities of particular building examiners make them uniquely able to navigate the dark recesses of a creaky bureaucracy.

In 1991, the Times reported that there were 300 to 400 expeditors operating in New York City. By 1998, there were over 1,500 registered expeditors—known officially as “filing processors” operating in the five boroughs, much to the chagrin of some at DOB.⁸⁸ As then-Deputy Commissioner Stewart O'Brien bluntly told the *New York Times*, “There shouldn't be a need for expeditors.”⁸⁹

Today, thousands of registered expeditors remain vital cogs in the antiquated machinery of New York City's Byzantine approach to buildings. *Crain's New York* recently reported that expeditor fees associated with a moderate-size project could total up to \$40,000.⁹⁰

Recommendations:

1. Build Out NYC Digital to Match the Office of Film/TV

NYC Digital, part of the Mayor's Office of Media and Entertainment, focuses on initiatives that help boost the digital economy of New York. Along with NYC Business Express, a one-stop shop for applications for permits and licenses, NYC Digital should enable an online/mobile chat system for entrepreneurs to have

questions answered, following the model set out by the New York Public Library.⁹¹ NYC Digital should also employ “digital expeditors” who “speak the language” of this new generation of entrepreneurs and can help address the unique needs of this increasingly important set of innovators.

A terrific model already exists for NYC Digital in The Mayor's Office of Film, Television, and Broadcasting (MOFTB). MOFTB has been immensely successful in drawing business to the five boroughs, in part by easing the application process for shooting film in the City.⁹² Last year, MOFTB unveiled a new online permit application system, promising to process applications within 48 hours.⁹³ As Katherine Oliver, commissioner of MOFTB said, “More and more, time is money, so we wanted to simplify the process to eliminate in-person office visits and allow the industry to focus on producing films and TV.”⁹⁴

“Time is money” is a maxim that applies to all industries, not just film and TV. It makes little sense that film producers can submit applications online and be shooting in the streets within 48 hours, but many entrepreneurs, including those operating in the digital arena, still have to wade through old paper applications, costing them precious time and money as they seek to get their businesses off the ground.

NYC Digital could also create a corps of “entrepreneurial ambassadors”—young business people or college students who can promote entrepreneurship on their campuses, canvass start-ups to determine their needs, and otherwise act as liaisons between youth in business and City government.

2. Reform the Department of Buildings

The New York City Department of Buildings (DOB) is saddled with a sprawling array of duties. In FY2012, it reviewed over 65,000 construction plans, issued over 147,000 new and renewed permits, performed more than 291,000 inspections and issued 25 types of license and registration classes.⁹⁵

Perhaps as a result of its wide-ranging mandate, DOB struggles to promptly respond to reported violations.

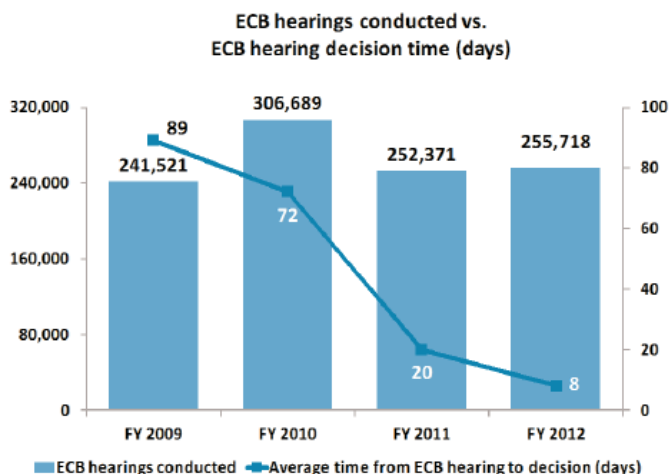
As the 2012 Mayor’s Management Report concluded, the average response time of DOB inspectors to non-emergencies grew by nearly two weeks to 41 days, despite a decrease in the number of complaints received. In addition, the number of accidents, injuries and fatalities rose at construction sites.⁹⁶

Most importantly for the purposes of this report, while the average time to complete initial reviews for new buildings and major renovations improved last year from 12 days to 11 days, it still takes nearly twice as long as it did in FY2008, prior to the onset of the Great Recession.⁹⁷ Entrepreneurs interviewed by the Manhattan Borough President’s Office were frequently exasperated by these delays and cited them as a major impediment to opening or expanding a business in the City.

Reforming DOB won’t be easy, but it starts by dividing the agency into two separate entities—something Borough President Stringer has been calling for since 2010.⁹⁸ DOB should be relieved of its responsibility over building inspection and remediation, and those duties should be handed over to a new, independent Office of Inspection (OOI).

That would allow DOB to focus on the business of business—ensuring that entrepreneurs could get permits, plans, and licenses in a reasonable time frame and allow DOB to provide valuable customer service to innovators throughout the five boroughs.⁹⁹

We have seen similar reforms work in other parts of City government. As the Mayor’s Management Report found, the time it takes to get a decision from the Environmental Control Board (ECB) on sanitation and other summonses has declined from an average of 89 days in 2007 to eight in 2012, a decline of over 90 percent. This is at least partly due to improved efficiency that resulted from transferring the ECB’s operations from the Department of Environmental Protection to the Office of Administrative Trials and Hearings, which is specifically designed to conduct hearings.¹⁰⁰



Another model for DOB to consider is the “100 Days of Solar” initiative.¹⁰¹ Piloted by Sustainable CUNY in partnership with ConEd, the goal of the initiative is to reduce the approval time for solar panels from nearly one year to 100 days or less.

In addition to focusing on the needs of entrepreneurs and developers, DOB should continue to embrace technology as a means to streamlining services. One concrete step it could take is to digitize blueprints of buildings. Many would-be business owners wait months to access floor plans in paper form. A central repository of these plans would enable entrepreneurs to better select the space that is right for them, while reducing storage and retrieval costs for DOB.

While DOB has taken critical steps to streamline the development process through its innovative NYC Development Hub—where documents are submitted electronically, conferences are conducted via web video, and the verdict is rendered by email in as little as three months—continued reform of DOB is needed to ensure that existing businesses are able to grow and new entrepreneurs are able to put down roots throughout the five boroughs.¹⁰²

3. Create the Mayor’s Cabinet for Emerging Business Development

To help bridge the gap between a fast-moving private sector and a slow-moving government, New York

City should establish a Cabinet for Emerging Business Development to advise the Mayor's Office on how City government can provide timely support to local business people.

The cabinet could be chaired by a Deputy Mayor and would include members from local business sectors. The composition of the cabinet would change biennially in order to reflect economic changes and to ensure a diverse array of viewpoints. In order to remain relevant, each cabinet would be required to submit a formal proposal to the Mayor outlining the scope of the next cabinet. This would ensure that the cabinet is always focused on emerging business issues. To keep ideas fresh, no person or company could participate in the cabinet more than once during any Mayor's term.

Many groups already exist to connect entrepreneurs in various industries. Spark brings together independent and freelance graphic designers to discuss issues relevant to their studios.¹⁰³ NYTech Meetup supports tech businesses throughout the City by providing monthly demo nights where entrepreneurs can show off their work, learn about barriers they may encounter, and advocate for the interests of the community with elected officials.¹⁰⁴ Other similar groups include the New York Minority Professionals Meetup (over 1,700 members), Entrepreneurs Roundtable (over 1,000 members and a specialized accelerator), the Today Group (over 2,800 members), the NYC Entrepreneurs Meetup (over 3,000 members), and the NY Entrepreneurs Business Network (over 12,000 members).¹⁰⁵

By providing a direct line between business leaders and elected officials, the Cabinet will cut through red tape and make government more responsive to the changing needs of the 21st century entrepreneurial economy.

4. Reform the U.S. Small Business Administration's Microloan Program and Create the New York City Small Business Growth and Retention Fund

While New York City is blessed with a significant venture capital community¹⁰⁶ making critical investments in the start-up economy, there is more that government can do to improve access to capital for young entrepreneurs.¹⁰⁷

It starts by taking a critical look at the Federal Small Business Administration's (SBA) Microloan Program.¹⁰⁸ This program provides reduced-interest loans to small businesses that allow entrepreneurs to start or build out their businesses. These funds support:

- Working capital
- The purchase of inventory or supplies
- The purchase of furniture or fixtures
- The purchase of machinery or equipment

However, the program is funneled through intermediary lenders who frequently require collateral, co-signers, and, in some cases, a year's worth of sales history. Thus, many first-time entrepreneurs, particularly young people without significant credit histories, are shut out of the program.

Young entrepreneurs should not be tied up in red tape when they look to launch a business.

Instead, the SBA should take steps to ensure that the Microloan program is available to young entrepreneurs with limited credit histories, perhaps by requiring that intermediaries provide a certain percentage of loans available to first-time entrepreneurs with low incomes/assets. In addition, SBA should perform outreach in communities of color and other neighborhoods that are often on the outside looking in at the entrepreneurial economy.

Further, as promoted by Young Invincibles and the Young Entrepreneur Council, national organizations representing the interests of young business people, the SBA could create a separate mechanism—the "Young Entrepreneur Lending Program."¹⁰⁹

In addition to pressing Washington for additional small business assistance, New York City must develop its own system for targeting City residents who are committed to building their businesses in the five boroughs but do not have access to credit.

That's why Borough President Stringer has proposed the creation of the New York City Small Business Growth and Retention Fund.¹¹⁰ This fund would be modeled after a successful program in Philadelphia

and would have an initial capitalization of \$20 million. Using that investment, the City could leverage even more capital from the private sector and target the dollars at selected neighborhoods with both high needs and high potential for job growth.

If the entrepreneurial economy is to be open to all, the lifeblood of any business—working capital to grow and expand—must be more accessible.

III. THE “FOURTH UTILITY”: IMPROVING INTERNET CONNECTIVITY IN NEW YORK CITY

“It’s like the elephant in the room is that bandwidth here sucks... There has to be ways for the city to construct much better bandwidth availability for start-ups.”

– David Pakman, Partner, Venrock¹¹¹

Defining the Problem: New York’s lack of reliable, high-speed internet is limiting the growth of Tech 2.0. Though entrepreneurs in New York have access to broadband, many of those we interviewed said that the City’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. In fact, many start-ups that have looked for affordable space in former industrial districts outside of Manhattan have had to abandon those plans after discovering high-speed internet connections were not available.¹¹²

Goal: Improve internet speed and reliability by increasing competition throughout the five boroughs and opening up government property to fiber optic cable.

Background: Internet connectivity is a national problem. A 2011 study by Pando Networks found that U.S. internet speed was 26th in the world.¹¹³

Within the U.S., New York City’s connectivity lags behind some of its major competitors, including Austin, San Francisco, Boston, and Seattle.¹¹⁴

Not only do New Yorkers endure slower internet service than similar cities in other parts of the world, but they also pay higher prices for that substandard service, according to a study by the Open Technology Institute at the New America Foundation.¹¹⁵ Tokyo residents enjoy speeds that are eight times faster than New York’s, for a lower price. And Hong Kong residents enjoy speeds that are 20 times faster, for the equivalent price.

In New York, frequent outages, limited redundancy, and slow speeds wreak havoc on businesses. According to Tom Pinckney, Co-Founder and VP of Engineering at Hunch, every hour without internet access costs about \$1,000 of salary.¹¹⁶ Chris Dixon, Co-Founder and CEO of Hunch, added, “It’s embarrassing how bad internet access in Manhattan is.”¹¹⁷

Competition (or the lack thereof) may be a major cause of New York’s slow speeds. As the Open Technology Institute found, while broadband connectivity in San Francisco lags behind global cities like Seoul and Hong Kong, access in the Bay Area remains “faster, more affordable, and far more flexible in comparison to other large U.S. cities like New York.”¹¹⁸

One of San Francisco’s key advantages is the presence of local Internet Service Providers (ISPs). As the report notes, the Bay Area broadband market is “the most diverse, boasting several popular local ISPs that deliver high-speed wireless and fiber access to residences and businesses. In addition to offering faster speeds than Comcast and Verizon, these ISPs tend to have lower prices and do not bind their customers to lengthy contracts.” Put simply, the ISPs have injected a “competitive, innovative element to San Francisco’s broadband market.”¹¹⁹

One government policy that has a significant impact on the ability of small ISPs to develop is “unbundling,” also known as open access. Open access policies require that broadband providers offer to lease capacity on their networks to new entrants selling competing internet services to consumers. These policies are credited with stimulating competition during the dawn of the broadband revolution in the last decade.¹²⁰

Internet access is not just important for start-ups and tech companies. It is critical for the long-term viability of the financial services industry in New York City. As the Wall Street Journal reported, “In a stock market transformed by cutting-edge computer and data-networking power, speed has emerged as an obsession and an overriding competitive advantage.”¹²¹

Just as importantly, reliable broadband access at home and in the classroom has been shown to improve education, particularly in math skills that are crucial to success in the entrepreneurial ecosystem.

Last year, CFY, a not-for-profit organization, provided home computers (and arranged for discounted broadband access) to every sixth grade student at the Bea Fuller Rodgers Middle School in Washington Heights.¹²² In addition, CFY trained the students and their parents on a web-based platform called PowerMyLearning, which contains thousands of digital learning activities. The results were remarkable: the percentage of students with learning disabilities who met or exceeded standards in math increased by 36 percent, while the percentage of students who were below standard decreased from 23 percent to zero.

The Mayor recently announced a series of steps to improve broadband service in the City.¹²³ These steps include:

- **ConnectNYC:** A competition to build out fiber wiring for commercial and industrial buildings.
- **WiredNYC:** A grading program for connectivity in city buildings and a crowdsourced digital map showcasing wired buildings citywide.
- **NYC Broadband Connect Map:** A crowdsourced, dynamic website in which businesses can learn about connectivity availability and capabilities in a given building or neighborhood.
- **Broadband Express:** A program to streamline the process for broadband-related permits and regulatory issues.

- **CitizenConnect:** A competition to develop mobile applications that will help City residents access workforce development opportunities, job listings and worker support programs such as childcare, healthcare, and transportation.

While these are important steps to improving the physical footprint of the internet in New York City and the information available to consumers, even more must be done.

Recommendations:

1. Explore a Municipal Fiber Network/Using Municipal Assets to Boost Competition

“We need to wire up this city from Staten Island to the Bronx, from Harlem to Rockaway Beach. And we need to own this fiber plant and we need it to be the best in the world.”

– Fred Wilson,
Venture Capitalist/Principal, Union Square Ventures¹²⁴

New York City should explore the creation of a city-wide municipal fiber network and an increased use of publicly-owned assets—including subway and rail lines owned and operated by the MTA and utility assets owned by ConEd and National Grid—as conduits for sparking competition among ISPs and improving internet connectivity for all.

Instead of waiting for cable companies to build out modern fiber networks, many cities have successfully built municipal fiber networks through partnerships with utility companies. These cities recognize that—like water, electricity, and gas—internet access is an essential utility of the modern age—critical infrastructure for economic development.

Lafayette, Louisiana has built a municipal fiber-optic network called LUS Fiber.¹²⁵ Backed by a bond sale approved by voters in 2005, LUS Fiber is now cash-positive and operates as a not-for-profit.¹²⁶

Not only have the people of Lafayette benefited from the service at home, but business is also booming. California-based visual effects house Pixel Magic opened a studio in Lafayette two years ago and more tech companies continue moving in. As Director of LUS Fiber, Terry Huval said, “We’ve built the infrastructure of the future.”¹²⁷

Chattanooga, Tennessee has seen similar success with its municipal network.¹²⁸ Working with the public electric company (which needed a fiber network to reliably transmit data in real time to monitor its grid), Chattanooga’s network now links 150,000 homes and businesses, supporting the city’s role as a hotbed for high-tech entrepreneurship.¹²⁹ Hackathons in Chattanooga have taken advantage of the gigabit connection to develop:

- Instant universal translation
- Facial recognition in real time at a point of sale or security point
- A better, easier way to use electric systems for the home that incorporate the smart grid as well as device management for consumers
- Workstation apps as a service, such as delivering Photoshop or other CPU-intensive applications via the cloud

Each of these innovations, fueled by the municipal network, lays the groundwork for future economic growth.

Municipal fiber isn’t limited to small cities. Washington D.C. is using federal stimulus funds to upgrade and augment the District’s existing 293-mile fiber network with over 170 new fiber miles. This “Community Access Network” (DC-CAN) delivers affordable, value-added broadband services to over 250 health, educational, public safety, and other community institutions in underserved areas of the District, while leasing access to the network to local ISP’s who plan to bring service to as many as 248,000 households and 30,500 businesses.¹³⁰

A similar model is in use in Virginia, where county and municipal governments developed the “The Wired Road,” a regional open access, multi-service

telecommunications network.¹³¹ The municipalities do not sell broadband services directly, but instead operate the broadband network as a “public access digital roadway.” As with conventional transportation roadways, the city builds and maintains the digital roads, but private businesses use the system to deliver broadband services directly to the end-user, whether businesses or homes.

The Wired Road, which cost roughly \$42 million to install, provides service to 54,000 people in the rural southwest corner of Virginia through private sector partnerships.¹³² Service providers that use the network to deliver goods and services share a portion of their revenue with the network, in direct proportion to the amount of network capacity that a particular company uses. The connection speeds run from 100 megabytes/second to 1 gigabyte/second—significantly faster than prevailing speeds available in New York City.¹³³

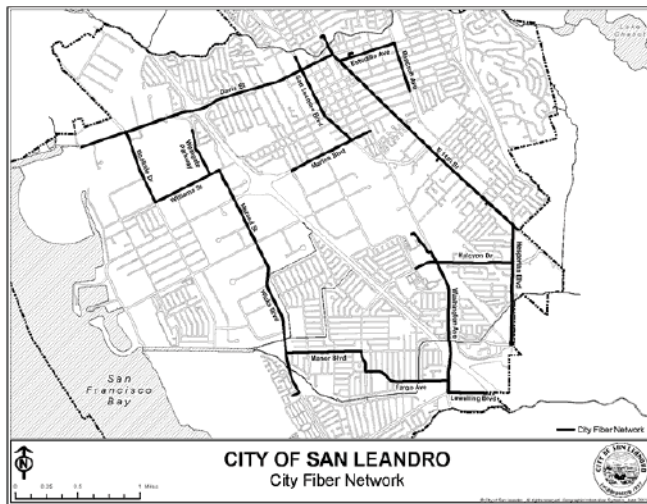
All told, more than 150 local governments across the country have built or are planning to build networks, according to Christopher Mitchell of the Institute for Local Self-Reliance.¹³⁴

The City, along with the MTA, Con Ed and other public utilities, should carefully study the success of networks across the country to determine whether such a network could be built in New York. It may be the case that a municipal fiber plant in New York can only be cost-effective in dense parts of the City with many potential customers.¹³⁵ Note, however, that the Wired Road and other networks described above operate in much less dense areas than New York.

If a city-wide municipal network is not feasible, the City, the MTA, and the utilities should still consider whether opening government-owned property to private development could spur competition.

For instance, many cities have partnered with private enterprises to lease City-owned space to lay fiber cable. J. Patrick Kennedy, CEO of the software company OSIsoft, pushed the City of San Leandro, California to install a municipal fiber network when it dug up streets to connect its traffic lights.¹³⁶ While

the city declined to spend public dollars on the network, it agreed to rent space to Kennedy to build a network that would be accessible to any businesses in the city's commercial/industrial loop (see map).

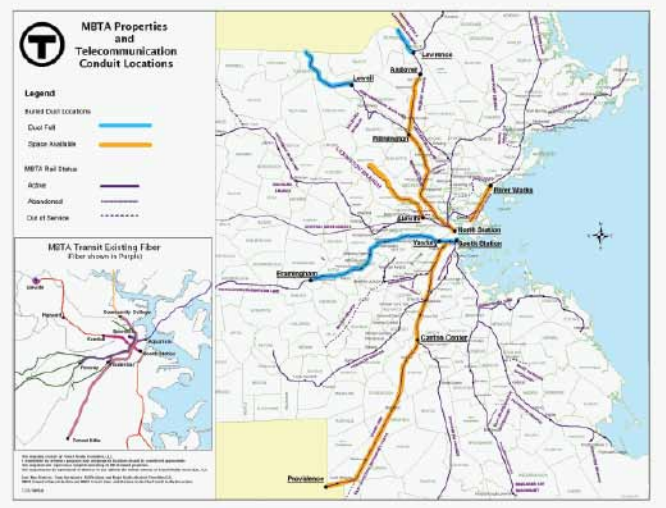
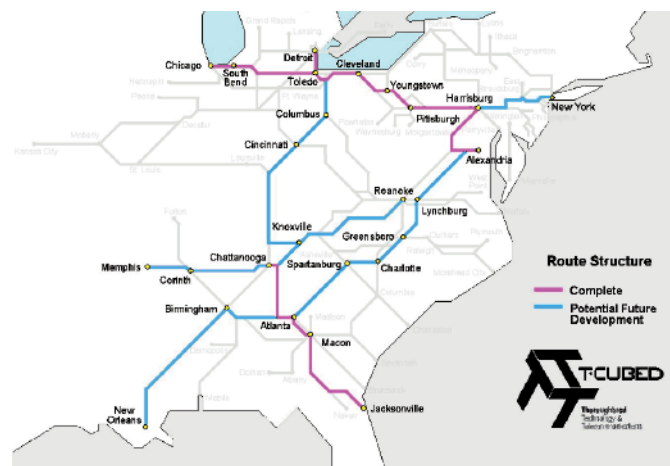


The project will increase the speed of internet from about 1.5 megabits per second to 10 gigabits per second, or about 666 times faster than before.

In addition, transportation agencies have used their existing physical infrastructure to build fiber networks—both expanding internet availability and raising money for ongoing transit operations.

For example, Norfolk Southern Railroad created a subsidiary, Thoroughbred Technology and Telecommunications (T-Cubed), to lease fiber-optic ducts the company built along its rights of way throughout the Eastern United States.¹³⁷

The Massachusetts Bay Transportation Authority has taken a similar tactic, opening up over 400 miles of vacant fiber optic ducts along their rights of way in Eastern Massachusetts to private enterprise.¹³⁸



In San Francisco/Oakland, the Bay Area Rapid Transit (BART) built its own fiber optic network along its 104 miles of right of way, leasing access to private ISPs to raise revenue for transit operations.¹³⁹ As of 2009, BART brought in \$4.2 million per year in revenues from 14 commercial carriers.¹⁴⁰ BART also recently partnered with a private firm to use the network to provide WiFi service to the 43 stations in the system.¹⁴¹

New York has long partnered with private companies to use public space to expand fiber networks. For instance, the MTA contracts with vendors to operate and maintain fiber optic cable running between Manhattan and Brooklyn through its tunnels.¹⁴²

However, given the remarkable breadth of the MTA's footprint in the Manhattan Core and in other burgeoning job corridors, there is clearly room for expanding this effort, both underground and along above-ground Metro-North and Long Island Rail Road lines. In fact, such an effort would allow the MTA to wire subway tunnels themselves with WiFi, dramatically improving productivity for commuters and students, many of whom spend hours underground every day.

By encouraging competition through a municipal fiber network and/or maximizing the value of our municipal assets by opening up space for competition, the City can improve internet access to individuals and businesses alike.

2. Expand Municipal WiFi via Business Improvement Districts and Chambers of Commerce

Entrepreneurs interviewed for this report unanimously cited the density and diversity of New York City street life as one of the preeminent factors drawing people to the five boroughs.

One technology that has added to the vitality of our streets and neighborhoods is the use of municipal WiFi.

The City recently joined forces with AT&T to provide free WiFi service at 26 locations in 20 New York City parks across the five boroughs.¹⁴³ However, much more can be done to build out WiFi hot-spots.

One idea is to forge new partnerships with the City's Chambers of Commerce and Business Improvement Districts (BIDs). Some BIDs, including the Downtown Alliance, Union Square Partnership, Bryant Park Corporation, and DUMBO, have already created small municipal WiFi hot-spots.¹⁴⁴

DUMBO Wi-Fi was launched via a public-private partnership between the neighborhood's largest real estate holder, Two Trees, and the DUMBO BID. Alexandria Sica, Executive Director of the DUMBO BID, summed up the benefits of neighborhood WiFi, stating:

DUMBO is the epicenter for digital start-ups and production companies. Wi-Fi is one more way to inspire the workforce we have and help attract new talent to the Brooklyn Waterfront. In DUMBO, you can put together a proposal while gazing at the Brooklyn Bridge and all of Manhattan. Creativity can literally flow into the streets. Businesses will be born in Brooklyn Bridge Park. The next Etsy could be thought up right under the Manhattan Bridge!¹⁴⁵

Other BIDs/neighborhood groups, particularly in heavily-trafficked pedestrian malls like Roosevelt Avenue (Queens), Fulton Street (Brooklyn), and Coney Island (Brooklyn), and burgeoning entrepreneurial hotspots like the Brooklyn Army Terminal in Sunset Park, should follow suit. Expanding WiFi will enable the flourishing of commerce and culture on streets, sidewalks, parks and piers throughout the five boroughs.

IV. TRANSPORTATION: BRINGING THE ENTREPRENEURIAL ECOSYSTEM TO ALL CORNERS OF THE CITY

"Whether it's computer-operated machinery, film post-production or high-end design, 21st Century manufacturing at the [Brooklyn] Navy Yard is being driven by technology innovation. Our growth is only confined by the lack of space and access to mass transit."

– Andrew Kimball,
CEO, Brooklyn Navy Yard Development Corporation¹⁴⁶

Defining the Problem: The growth of the entrepreneurial economy is intimately connected with the scope of the City's public transit network. One of the major issues in transit today is the emergence

of so-called “transportation deserts”—areas generally far away from the Manhattan Core that do not have ready access to bus and/or subway transit.

Goal: Expand New York City Transit’s network to serve growing job corridors in the Bronx, Queens, Brooklyn, and Staten Island.

Background: While Manhattan will continue to be at the heart of the region’s economy, more and more New Yorkers are living and working in the Bronx, Brooklyn, Queens, and Staten Island. In fact, in recent years, jobs in those boroughs have grown at a much faster clip than in Manhattan.¹⁴⁷

However, when transit planners first set forth our public transportation infrastructure over a century ago, they did so with one primary goal in mind: getting New Yorkers to the Manhattan Central Business Districts and back as quickly as possible. Back then, many of the bustling neighborhoods that are now a cherished part of this City were little more than grass fields.

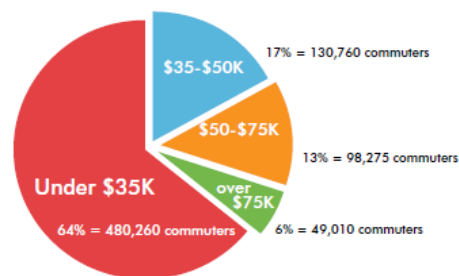
While our ancestors had the faith that building trains into the fields of Queens, Brooklyn, and the Bronx would act as a magnet bringing working class families to New York, they could not have possibly anticipated the enormous growth witnessed over the past century, growth that has left many New Yorkers far afield from our transit system.

As a result, while we are fortunate to have a magnificent 24-hour subway system—468 stations and over 200 miles of track carrying over 1.6 billion riders a year—that grand system does not serve all boroughs and neighborhoods adequately. Indeed, our City is full of neighborhoods that are not served by the subway and have infrequent or unreliable access to the MTA’s bus network. Here are just a few examples:

- In City Island in the Bronx, the average commute exceeds 60 minutes and many Island residents depend on an express bus that takes 75 minutes to reach Midtown.

- On the North Shore of Staten Island, commuters endure a painfully slow bus ride to connect to the ferry. All the while, the North Shore Rail Line goes unused, waiting for light rail or bus rapid transit that could speed up travel in the area by over 60 percent.
- In Beechhurst and College Point in Queens, commute times are just as long. Moreover, these neighborhoods, situated far from the subway system, are densely populated with elderly New Yorkers who need reliable, accessible transportation.
- The story is the same in Mill Basin, Brooklyn, a neighborhood that is served by an express bus that takes over an hour to reach Midtown at more than double the cost of a subway fare.

758,270 TOTAL NEW YORK CITY RESIDENTS WITH COMMUTES OVER AN HOUR
Breakdown by Annual Income



Data Source: Pratt Center for Community Development, US Census CTPP 2000

These are just a handful of the “transit deserts” in our City that not only disproportionately affect residents outside Manhattan, but also have a profound impact on working class New Yorkers.

Of the over 750,000 people in New York City who commute more than an hour to work, nearly two-thirds earn less than \$35,000 in family income and only 6 percent make over \$75,000 a year.¹⁴⁸

If the transit system is to remain the economic engine of the City in the 21st century as it was in the 20th, we need to continue to make targeted, disciplined investments in capital expansion.

Recommendations:

1. Use Light Rail and Bus Rapid Transit to Connect Burgeoning Job Corridors

Our transit network was constructed in an era when all roads and all business led to Manhattan. As the Pratt Center noted in a recent report, “Major centers of employment, including industrial parks, airports and medical centers, are not easily reached by a subway system designed to funnel riders into Manhattan’s central business district.”¹⁴⁹

The 21st century economy is emerging throughout the five boroughs, and we need a transit system that reflects where people live and work today, not 100 years ago.

Take the Brooklyn Navy Yard—one of the most exciting areas for entrepreneurial development in New York. A 300-acre industrial park on the Brooklyn waterfront, the Navy Yard now houses more than 275 businesses, employing 6,000 workers, up from 230 businesses and 3,600 workers in 2001.¹⁵⁰

This explosive growth has occurred despite the fact that no City buses traverse the Navy Yard and the Yard is a twenty-minute walk from the nearest subway. This has led the Brooklyn Navy Yard Development Corporation to run private buses from transit hubs to the Yard.¹⁵¹ However, the relative infrequency of the shuttles may dissuade many New Yorkers from exploring this burgeoning neighborhood, limiting its economic potential.

The MTA recently announced a new bus service, starting in September 2013, to connect Downtown Brooklyn, DUMBO, Vinegar Hill and the Navy Yard.¹⁵² This service promises to link several important hotspots of entrepreneurial innovation, including NYU-Polytech. However, the service would be enhanced significantly if it connected Williamsburg—a hotbed of creative class talent¹⁵³—to these neighborhoods as well.¹⁵⁴

A light rail/bus line connecting Clark St. (2/3), High St. (A/C), York St. (F) subway stations, to the Marcy Avenue subway station (J/M/Z) in South Williamsburg via the Navy Yard would connect the Yard to multiple transit lines, making waterfront neighborhoods more accessible for residents and businesses alike.¹⁵⁵ The NYC Digital Jobs Map reinforces the concentration of business along this corridor and the relative lack of transit accessibility.¹⁵⁶

The Navy Yard is a particularly exciting place for light rail/Select Bus Service because the components could be constructed right in the City itself. Last year a conference sponsored by a coalition of unions, policy organizations, and sustainable-living advocates called for a large-scale initiative to expand transit manufacturing in the state and city. “Why couldn’t our brake parts and headlights and signal equipment, even our rail cars and buses, be made here?”¹⁵⁷

The new service would thus represent the classic win-win scenario—boosting the manufacturing industry in the City while enhancing the Navy Yard’s appeal for entrepreneurs of all industries.

The Brooklyn Navy Yard is not alone in needing improvements in public transit accessibility to fuel continued growth. Rather, we must continue to expand the reach of our system by continuing the rollout of Bus Rapid Transit (BRT), also known as “Select Bus Service.”¹⁵⁸

New BRT routes along Fordham Road in the Bronx and 34th Street and First and Second Avenues in Manhattan have cut travel time and increased ridership dramatically.

The MTA and City DOT have already begun to map where BRT should be expanded. Other advocacy groups, such as the Pratt Institute, have proposed additional routes, like the one connecting the Sunset Park Waterfront to JFK Airport.



These new routes will serve growing job centers, from Hunts Point and Flushing to Flatbush and Hylan Boulevard. The idea is to transform Silicon Alley—now confined to Midtown Manhattan—into Silicon City, opening up neighborhoods in all five boroughs to the entrepreneurial economy fueling New York’s future.



V. AFFORDABLE HOUSING/OFFICE SPACE FOR A NEW GENERATION OF NEW YORK ENTREPRENEURS

“Middle class people are the ones who start small businesses, which employ many New Yorkers. You need to make the city a place where people can build business and afford to stay here.”

– David Giles, Center for an Urban Future¹⁵⁹

Defining the Problem: Entrepreneurial economies need innovative professionals, and innovative profes-

sionals need places to live and work that meet their personal and professional lifestyle. However, New York City lacks both adequate affordable housing and commercial workspace for mid-sized start-ups.

Goal: Increase and secure the affordable housing stock in New York City and experiment with housing that caters specifically to the needs of people fueling the entrepreneurial economy.

Create a mechanism for medium-sized businesses to come together to find suitable office space in the existing real estate stock and explore ways to create new spaces that cater specifically to the needs of these burgeoning businesses.

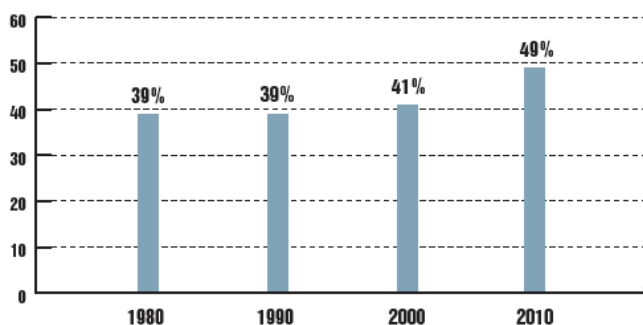
Background: Our diverse urban fabric—from culture and the arts to the culinary delicacies of our many neighborhoods—is clearly one of the City’s greatest strengths. As Tumblr CEO David Karp said, many companies are starting in or moving to the City because it is just plain “cooler than Palo Alto.”¹⁶⁰

This “cool” factor has led to a torrent of young people migrating to the five boroughs. According to a recent report from the Empire Center for New York State Policy, the City attracted 300,000 new residents in the 20 to 34-year-old bracket between 2000 and 2010 alone.¹⁶¹

However, we can never take for granted the fact that the creative class will flock to the City. As Richard Florida writes, “Talent is a highly mobile factor of production — it flows, concentrating more in some places than others. The cities that excel the most at attracting and retaining skilled, entrepreneurial talent, enjoy a critical economic advantage.”¹⁶²

To that end, few things are more important to ensuring the long-term viability of the City as a haven for entrepreneurs than the affordability of our housing stock. Census data shows that nearly half of New Yorkers are now paying “unaffordable” rents, defined as more than 30 percent of their income. Nearly one-third of all New Yorkers pay more than 50 percent of their income toward rent.

Chart 1: Percentage of New Yorkers Paying Unaffordable Rents



Source: U.S. Census Bureau 1980-2010

Many entrepreneurs not only struggle to find an affordable place to live, but also to secure an affordable place to grow their businesses. New York City has seen a huge expansion in shared spaces over the past 15 years. Today there are more than a half-dozen companies offering co-working spaces in the City, which have housed more than 400 early stage start-ups.¹⁶³ These spaces—such as General Assembly, Projective Spaces, New Work City, and WeWork Labs—operate space for brand new start-ups, ranging from one outlet to a room.

Meanwhile, established media/tech firms are using more commercial real estate than ever before. Last year, media/information and computer/tech sectors leased about six million square feet of office space in Manhattan, nearly double the figure from one year earlier, with the tech/media sector alone accounting for 13 percent of Manhattan leasing overall, up from 11 percent in 2005.¹⁶⁴

The most difficult transition, as identified by entrepreneurs we interviewed, is when new start-ups “graduate” to the “middle school” phase of development (10-30 employees). At that stage, many businesses are no longer small enough to be housed by incubators, but not yet large enough to strike a deal on their own with a commercial real estate owner.

Recommendations:

1. Continue to Experiment with Micro-Zoning

In July 2012, the Department of City Planning and the Mayor announced a plan for “micro apartments” on a plot of City-owned land at 27th Street and 1st

Avenue in Kips Bay.¹⁶⁵ This plan, called the adAPT program, modifies zoning regulations to permit the construction of 300-square-foot apartments that are affordable and cater to young people who want to put down roots in New York City.¹⁶⁶

This micro-zoning is designed to appeal to young people who need affordable housing and are willing to accept smaller quarters and a more social, dorm-style way of life. These developments are similar to single-room occupancy apartments, which serve as a stable means of providing affordable housing to low- and moderate- income individuals. A study by the Cambridge Innovation Center confirmed that young people in Boston/Cambridge are seeking more affordable housing options downtown and are willing to live in dormitory-inspired housing arrangements to do so, if the price is right.¹⁶⁷ As a result, Boston is building thousands of these “micro-units” in its “Innovation District” on the South Boston waterfront.

Cities across the country and around the world, from San Francisco and Seattle to Tokyo and Paris, have all embraced additional zoning for micro-apartments.¹⁶⁸ These cities have all recognized the importance of affordable, simple living for the next generation of young entrepreneurs. As Patrick Kennedy, a Bay Area developer of micro-apartments, told Atlantic Cities, “tiny apartments are particularly well-suited for... active, car-free, single Millennials”—a population that is booming in New York City.¹⁶⁹

Further, in many New York City neighborhoods young individuals have long chosen to occupy large apartments, as the cost can be lower per-person when shared with multiple roommates. While these units in effect become micro-housing, the shared occupancy has the negative effect of removing larger units from the market. Large units are necessary for New York City to retain families who need multiple bedrooms and their continued loss has the potential to hurt New York City’s competitiveness on a regional level. Targeting construction of the micro-units to appropriate areas would not only increase the stock of affordable housing, but should increase the supply of available larger units.

As with any zoning change, appropriate consideration must be made of the unique conditions of a neighborhood, to ensure it can absorb the increased population density. However, given the potential benefits the City should study making the modifications to zoning laws and building codes to allow for this type of innovative project in targeted neighborhoods. Further, the City should work to identify additional City-owned property where micro-apartments can be developed.

2. Reform NYC Code to Allow Accessory Dwelling Units

“Accessory Dwelling Units” (ADU) are extra living units on a property, complete with their own kitchen, bathroom and sleeping facilities. While other cities/states have modified their regulations to legalize these units, New York City has not.

Nevertheless, as a report from the Immigrant Housing Collaborative (IHC) showed, thousands of units in New York City are illegally subdivided or otherwise converted.¹⁷⁰ These units include private homes transformed into rooming houses, two-family homes with unauthorized basement apartments, unapproved residential conversions of commercial lofts, and other types of unlawful construction. According to the Pratt Center and Chhaya, there are more than 100,000 unofficial housing units in basements and cellars across the city, 35 percent of which are configured in ways that would make it possible to legalize them with minor changes in codes and regulations.¹⁷¹

The proliferation of these illegally converted units—95 percent of which are in the Bronx, Queens, and Brooklyn—carry a host of concerns for tenants, first responders, and the neighborhoods as a whole. For tenants, the units are often in violation of the fire code and habitability rules. They have none of the protections afforded to tenants in legal housing. For first responders, the presence of these unauthorized units creates a layout that is drastically different from official floor plans, jeopardizing their ability to find safe egress in the event of a fire or other emergency. For neighborhoods, the unexpected popula-

tion growth can lead to crowded schools, insufficient sanitation, and congestion.

Maintaining the status quo is dangerous and unacceptable. Thousands of ADUs are on-line and occupied now and their impact is already known. If they remain illegal, it is unlikely that they will ever be brought up to code, and may continue to violate fire, egress and other life-safety regulations. A new process must be created that will legalize the apartments.

Many cities and states have already taken steps to improve and expand ADU housing through incentives and common-sense reform. For instance, Santa Cruz, California, a city with a large immigrant population and soaring housing costs, instituted reforms in the early 2000s that were designed to both “encourage development of small-scale neighborhood compatible housing and to discourage the proliferation of poorly-constructed illegal ADUs.”¹⁷²

In addition to opening up the code for new construction, the city provided loans to homeowners, incentives for keeping the units affordable, and manuals, design guides, and workshops for homeowners who wished to take advantage of the one-time “grace period” to bring their illegal units up to code without penalty.

Using Santa Cruz as a model, New York City could add ADUs as a new category of residence to the building, housing, and zoning codes. As stated by IHC, such a program would “allow units that receive sufficient light and air to exist legally, even in areas that are currently zoned to limit housing to single-family residences.”¹⁷³

Working with communities, New York City’s Department of City Planning could identify neighborhoods with sufficient capacity to assume new units and create stricter enforcement mechanisms for neighborhoods which cannot absorb the new population. Using such a model, the city could create thousands of new units without unnecessarily burdening communities with overcrowded schools, streets or other critical infrastructure.

In addition, New York City should add a certification process through the Department of Buildings that will

allow the department to evaluate the units based on safety regulations and waive any technically non-compliant aspects of the apartments *provided that the department finds the units safe and habitable*.

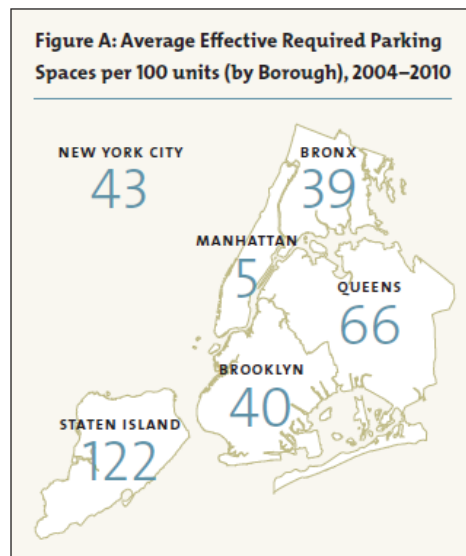
All told, this reform would take the 100,000+ illegally-converted units in the five boroughs out of the shadows, while ensuring that they remain a critical part of the City's affordable housing stock.

3. Reform Parking Minimums on Residential Property Near Transit

Lastly, we can improve the affordability of New York City's housing stock by bringing our building codes into the 21st century and allowing developers to respond to the demands of the market by prioritizing living space over parking space.

After World War II, as suburban car culture boomed, street parking became increasingly hard to find in New York City. As a result, in 1950, New York City began requiring that new residential developments include off-street parking. These requirements were expanded in the City's 1961 Zoning Resolution.¹⁷⁴

Under current rules, developers are required to provide, on average, 43 new off-street parking spaces for every 100 new housing units constructed in New York City.¹⁷⁵ However, no parking is required in Community Districts 1-8 in Manhattan or portions of Community Districts 1 and 2 in Queens. Additionally, the zoning includes many exemptions, particularly for small lots. High density districts have lower parking requirements and they are often mapped closer to transportation hubs. As such, developments near transit hubs have lower minimums. Lots within a half mile walk of a rail station entrance require, on average, 29 new off-street parking spaces for every 100 new housing units, compared to 72 spaces for those further than a half mile from a rail station entrance. However, the regulations still present an obstacle to the construction of additional units.¹⁷⁶



The Furman Center for Real Estate and Urban Policy at NYU recently released a report that found that developers would build significantly fewer parking spaces (and more units of housing) without minimum parking requirements. In effect, minimums reduce the size and number of housing units that developers can build by forcing them to devote scarce land or permitted building area to parking. As a result, the study concluded that the minimums may make some projects unprofitable, so that builders pass them up entirely, increasing housing costs for all neighborhood residents.¹⁷⁷

For instance, *Crain's* reported that two new buildings in transit-rich Downtown Brooklyn—Avalon Fort Greene and 80 DeKalb Avenue—have full buildings, but half-empty garages.¹⁷⁸ As Fred Harris, senior vice president at developer AvalonBay Communities Inc., said, “The reason people live at Avalon Fort Greene is to be close to mass transit, not to own a car. The garage is not something we would have built if we were not required to.”¹⁷⁹

As the table shows, the majority of developers already seek waivers from the parking minimums and the vast majority of those who do not secure waivers build the absolute minimum number of spaces.

Table 2. Developer Response to Minimum Parking Requirements, 2000-2010

	Number of Developments	% of Total	% of Total (no waiver)
Under or Equal to Requirement	206	21%	65%
In excess <25%	39	4%	12%
In excess >=25%	72	7%	23%
Requirement waived	686	68%	—
Total	1,003	100%	100%

Put simply, “The evidence is more solid than ever that the city’s parking minimums are a major factor making New York City less affordable.”¹⁸⁰ This conclusion matches that of the Brookings Institution, which issued a report in July that concluded that municipalities should amend mandatory parking minimums to make construction easier and more cost-effective.¹⁸¹

The City should carefully examine where parking minimums can be reduced, particularly for developments that include a substantial amount of affordable housing. Brooklyn Borough President Marty Markowitz recently announced his support for reductions in the parking regulations in Downtown Brooklyn, with a further reduction being offered to buildings with at least 20 percent affordable housing.¹⁸²

While some neighborhoods, due to a lack of adequate mass transit, have residents who need cars and therefore parking, this is not true of all neighborhoods. New York City should reexamine its parking regulations and create a regulatory framework based not only on density requirements of zoning districts, but rather one based on specific neighborhoods’ parking needs in light of mass transit access.

In lieu of or in addition to reducing or eliminating parking minimums near transit hubs, the City could take other steps to allow private developers to follow the market in determining whether to build parking or to make payments to a community transit fund, a model that has been proposed in Vancouver.¹⁸³

Taken together these steps will modernize New York’s building stock—replacing space for cars that sits empty with homes for more New Yorkers—while providing significant benefits to the environment and the economy.

4. Establish NYC ShareSpace—A Bulletin Board for Office Space Crowdsourcing

“New York is still the province of the large vertical corporation or the mom-and-pop and very little in between.”

— Dan Huttenlocher, Founding Dean,
Cornell-Technion NYC Campus¹⁸⁴

Small, rapidly growing companies rebuild themselves every year or two, moving into new office space as they grow. Each time, the company must work out insurance, desks, internet, wiring crews, and permits. Many innovators in the City noted how this is particularly challenging for medium-sized businesses that have outgrown incubators, but are not yet large enough to sign leases with large corporate real estate owners.

To help this group and ensure their continued growth, New York City should embrace crowdsourcing for office space. If Start-up A (12 employees) had a seamless way to find Start-up B (15 employees) and Start-up C (23 employees), they could work together to negotiate a lease for space for 50 people that none of them could manage on their own.

This is where NYC ShareSpace can help. NYC ShareSpace would be a website serving as a bulletin board for start-ups to join forces in the search for viable office space. In addition, real estate companies could use ShareSpace to post available square footage in their buildings, opening up their business to the next generation of entrepreneurs driving the 21st century economy.

ShareSpace need not be limited to entrepreneurs of medium-sized businesses. It could also reach the more than 30 percent of the nation’s workers who now work on their own.¹⁸⁵ The Freelancers Union has nearly 170,000 members nationwide, with over 93,000 members in the five boroughs alone, and over 300,000 New York City households report self-employment income.¹⁸⁶ These independent women and men could use ShareSpace to connect with fellow freelancers to share office/studio space or simply build their professional network. This is particularly important in an era in which finding a workspace is becoming increasingly competitive.¹⁸⁷

CONCLUSION

New York City's history of entrepreneurship dates back to its founding as New Amsterdam—a port of entry to the New World and a place of exchange for ideas and innovation. As Edward Glaesar put it, “New York’s port gave it access to the world and attracted an abundance of entrepreneurs.”¹⁸⁸

These entrepreneurs continue to be the drivers of economic growth. Nationwide, new companies added more than 2.9 million jobs annually from 1996 to 2008, while older companies consistently shed jobs.¹⁸⁹ Even in the midst of the Great Recession, new businesses created 2.33 million jobs, while older businesses eliminated more than 7 million jobs.¹⁹⁰

However, while there is much to celebrate in the diversification of New York’s economy and the success of the entrepreneurial ecosystem, many New York-

ers remain unable to take advantage of this critical ladder to the middle class. With a city-wide poverty rate near 20 percent (30 percent for youth), an unemployment rate hovering near 10 percent, and the greatest income inequality in the nation, the entrepreneurial economy is clearly not open to all.

Simply put, we are failing to live up to the promise of opportunity that has made New York City a bastion of middle-class life.

By charting the reforms outlined in this report, we will take concrete steps toward living up to the most fundamental of all our ideals: that no matter where you come from or who your parents are, no matter what your race, sex, or creed, New York City will offer you an equal opportunity to succeed.



ENDNOTES

- 1 http://online.wsj.com/article/SB10000872396390444914904577619441778073340.html?mod=wsj_share_tweet.
- 2 <http://www.amazon.com/The-Death-Distance-Communications-Revolution/dp/0875848060>.
- 3 <http://hbswk.hbs.edu/archive/2234.html>.
- 4 Francis Cairncross, *The Death of Distance: How the Communications Revolution Will Change Our Lives*, London, UK: Harvard Business Review Press, 1997, 3.
- 5 Id. at 4.
- 6 Edward Glaeser and Giacomo Ponzetto, "Did the Death of Distance Hurt Detroit and Help New York?" Harvard University (2007), Available: <http://www.economics.harvard.edu/faculty/glaeser/files/disdeath.pdf>.
- 7 Benjamin Chinitz, *American Economic Review, Papers and Proceedings*, v.51 (1961), pp. 279-289, reproduced at: <http://www.sjsu.edu/faculty/watkins/chinitz01.htm>; New York has long enjoyed a spirit of entrepreneurship. In 1961, economist Benjamin Chinitz argued that that spirit, in contrast to Pittsburgh and other industrial giants of the mid-20th century, would allow the City to more flexibly adapt to changes in economic conditions.
- 8 <http://www1.cuny.edu/mu/forum/2012/04/26/why-nyc%E2%80%99s-recession-was-shorter-than-usa%E2%80%99s/>; According to Greg David, Director of the Business and Economics reporting program at the CUNY Graduate School of Journalism and a guest blogger for Crain's, the entrepreneurial economy is one of three emerging sectors (higher education and film and TV production are the others) that are diversifying the city's economy while creating good-paying jobs.
- 9 <http://www.women2.com/pitch-nyc-conference-2012/>; In turn, the City has responded by partnering with the Fashion Institute of Technology (FIT) to create Design Entrepreneurs NYC, a free, intensive, classroom-style "mini-MBA" program that will equip select New York City based fashion designers with the skills needed to successfully run a fashion label. A similar program is available for artists, through a partnership between the New York Foundation for the Arts and the Lower Manhattan Cultural Council. See: <http://designentrepreneursnyc.com/>; <http://www.nycdc.com/program/artist-entrepreneur>.
- 10 <http://www.craigslist.com/article/20120928/SMALLBIZ/120929896#ixzz283YSe6Aj>; 2012 witnessed the birth of New York City's first consumer health and wellness incubator as well as the creation of the New York Digital Health Accelerator, a joint venture of the New York eHealth Collaborative and the New York City Investment Fund which will provide \$300,000 each to a dozen start-ups working in health care technology.
- 11 <http://www.youngentrepreneur.com/blog/new-york-the-city-that-never-disconnects/>.
- 12 Center for an Urban Future, "New Tech City," (May 2012) available: http://www.nycfuture.org/images_pdfs/pdfs/NewTechCity.pdf, p. 26.
- 13 New Tech City, p. 6; The New York City Economic Development Corporation (EDC), using a more expansive definition of the tech sector, reveals that there were 90,273 people working at 7,147 "high-tech" companies in 2010, a 30 percent gain in employment from 2005—a rate of growth ten times faster than the City as a whole.
- 14 New Tech City, p. 6.
- 15 Edward Glaeser, "Unleash the Entrepreneurs," *City Journal* 21.4 (Autumn 2011), available: http://www.city-journal.org/2011/21_4_entrepreneurs.html.
- 16 <http://www.bloomberg.com/news/2012-03-26/fire-up-america-s-jobs-factory-with-aid-for-startups.html>.
- 17 <http://www.technet.org/wp-content/uploads/2012/02/TechNet-App-Economy-Jobs-Study.pdf>.
- 18 <http://www.bostonglobe.com/business/2012/11/20/new-york-outtranks-boston-start-growth/Gx9RMbsoSv2wq9T9kt1c2O/story.html#>.
- 19 http://dl.dropbox.com/u/3653347/Startup%20Ecosystem%20Report%202012%20Part%20I%20vers%201_1.pdf, p.37.
- 20 New Tech City, p. 11.
- 21 <http://www.meetup.com/ny-tech/>.
- 22 NYC Digital Roadmap (Aug. 2012), available: <http://www.nyc.gov/html/digital/downloads/pdf/digitalroadmap2012.pdf>, p. 34.
- 23 New Tech City, p. 5; There were 165 tech-related VC deals in New York City in 2011, nearly as many as in 2006 and 2007 combined (172).
- 24 <http://www.siliconroundabout.org.uk/>.
- 25 http://www.cnn.com/id/48082442/Silicon_Valley_vs_Silicon_Beach_Tech_Start_Ups_Flock_to_I_A.
- 26 <http://www.discoverlu.com/>.
- 27 <http://www.innovationdistrict.org/>.
- 28 <http://www.nycdc.com/program/nyc-venture-connect>.
- 29 <http://www.nycdc.com/program/nyc-entrepreneurial-fund>.
- 30 <http://www.thirteen.org/metrofocus/2012/07/queens-with-support-from-speaker-quinn-makes-a-push-for-tech/>; <http://nycgenerationtech.com/>.
- 31 Kay Hymowitz, "How Brooklyn Got Its Groove Back," *City Journal* 12.1 (Autumn 2011), available: http://www.city-journal.org/2011/21_4_brooklyn.html; see also <http://www.thenation.com/print/article/158100/boom-town-and-bust-city-tale-two-new-yorks> ("Such are the stories of recession and recovery wafting up from New York's sidewalks these days. On the one side are tales of prosperity and excess, of New York as the poster child for an economic comeback so robust that Manhattan is now the fastest growing local economy in the country. On the other side are privation and struggle."); New York City is not the only tech hub to struggle with ensuring that the population as a whole has a chance to be part of the entrepreneurial economy. While Palo Alto, California is a tech hub in the heart of Silicon Valley, just down the road in East Palo Alto, 96 percent of kids qualify for free or reduced lunch at school. See: <http://www.theatlanticcities.com/technology/2012/09/how-technology-fueling-urban-inequality/3421/>.
- 32 http://www.nypost.com/p/news/business/econ_crushing_ny_middle_class_x85a0fePXTsScd2JUbdKBO.
- 33 Jonathan Bowles, the Executive Director of the Center for an Urban Future, told the Huffington Post that "part of the reason New York's tech boom is having a limited effect on the city's overall unemployment is that recent hires at start-ups have tended to be people who relocated to the city or who left jobs in other local industries, such as finance, fashion and media." http://www.huffingtonpost.com/2012/05/16/new-york-tech-sector-boom-jobless-rate-digital-map_n_1518875.html.
- 34 United States Census Bureau. 2006-2010 American Community Survey Selected Population Tables, "Selected Economic Characteristics," DP03; In this report, "Whites" refer to "Non-Latino Whites."
- 35 United States Census Bureau. 2011 American Community Survey 1-Year Estimates, "Selected Population Profile in the United States," S0201; These numbers mimic national statistics, which show that Blacks and Latinos together represent about 30 percent of our workforce, but make up only 7 percent of all scientists and engineers; and Blacks and Latinos receive less than 5 percent of all doctorates in mathematics, physics, chemistry and computer science combined. See: <http://www.gillibrand.senate.gov/agenda/ensuring-america-competitiveness-creating-high-tech-jobs>; <http://wadhw.com/2012/02/02/inc-the-face-of-success-part-4-blacks-in-silicon-valley/>.
- 36 <http://www.theatlanticcities.com/jobs-and-economy/2012/06/race-gender-and-creative-class/2225/>.
- 37 <http://www.esa.doc.gov/sites/default/files/reports/documents/womenin-stemagapinnovation8311.pdf>, p. 3; While despite 57 percent of college graduates in the U.S. are women, only 14 percent of computer science and engineering degrees are awarded to women. See: <http://mashable.com/2012/06/26/girls-who-code/>; <http://www.gillibrand.senate.gov/agenda/ensuring-america-competitiveness-creating-high-tech-jobs>; <http://wadhw.com/2012/02/02/inc-the-face-of-success-part-4-blacks-in-silicon-valley/>.
- 38 <http://www.thirteen.org/metrofocus/2012/05/job-growth-soars-in-nyc-but-for-whom/>; http://dl.dropbox.com/u/3653347/Startup%20Ecosystem%20Report%202012%20Part%20I%20vers%201_1.pdf.
- 39 All of the reforms outlined in this report will only be as effective as the City's efforts to communicate their availability to young entrepreneurs on the outlets they read and use. Therefore, the City and its agencies should continue to improve their digital communications strategy, engaging with social networks like Twitter, Facebook, Tumblr, and Foursquare, while emphasizing the importance of open data as a bulwark of transparent, effective government.
- 40 <http://www.bloomberg.com/news/2012-03-26/fire-up-america-s-jobs-factory-with-aid-for-startups.html>.
- 41 http://dl.dropbox.com/u/3653347/Startup%20Ecosystem%20Report%202012%20Part%20I%20vers%201_1.pdf, p. 34; The chart shows that while New York City enjoys significant funding/startup output, relative to competitor cities, it lacks the talent base that may competitors enjoy.
- 42 Kauffman Foundation, *Youth Entrepreneurship Survey 2010*, available at <http://www.kauffman.org/entrepreneurship/youthentrepreneurship-survey-2010.aspx>.
- 43 <http://www.brookings.edu/~media/Research/Files/Papers/2012/8/29%20education%20gap%20rothwell/29%20education%20gap%20rothwell.pdf>.

44 <http://online.wsj.com/article/SB10000872396390444517304577653383308386956.html>.

45 <http://www.nytimes.com/2012/06/28/business/smallbusiness/even-with-high-unemployment-some-small-businesses-struggle-to-fill-positions.html?pagewanted=all>.

46 National Skills Coalition, “New York’s Forgotten Middle-Skill Jobs: Meeting the Demands of a 21st Century Economy,” (Mar. 2011), available: [http://www.fmsworkforcesolutions.org/Middle-Skills%20Jobs%20report%20\(r\).pdf](http://www.fmsworkforcesolutions.org/Middle-Skills%20Jobs%20report%20(r).pdf).

47 <http://www.nydailynews.com/news/money/job-squeeze-demand-tech-whiz-kids-reaching-fever-pitch-article-1.1128398#ixzz23796fc1A>.

48 U.S. Department of Labor. Notice of Availability of Funds and Solicitation for Grant Applications (SGA) for the Science, Technology, Engineering, and Mathematics (STEM) Opportunities in the Workforce System Initiative. Catalog of Federal Assistance Number: 17.268. (Washington, D.C., 2009).

49 <http://www.nytimes.com/2011/10/31/business/media/ad-companies-face-a-widening-talent-gap.html?pagewanted=all>.

50 National Skills Coalition, p. 12.

51 <http://schools.nyc.gov/AboutUs/default.htm>.

52 Other laudable City efforts that have limited reach include the NYC Steps program, which has taught email, business writing, and software skills to dozens of New Yorkers, and the MOUSE program, which provides hundreds of students with tech skills and leadership training. See: <http://www.nyc.gov/html/doitt/html/policy/steps.shtml>; <http://www.mouse.org/programs/mouse-locations/new-york-city>.

53 <http://www.ptechnyc.org/site/default.aspx?PageID=1>.

54 <http://www.forbes.com/sites/sap/2011/09/19/ibm-targets-teens-via-edgy-brooklyn-startup/>.

55 <http://www.nytimes.com/2012/10/22/nyregion/pathways-in-technology-early-college-high-school-takes-a-new-approach-to-vocational-education.html?pagewanted=all>.

56 <http://afsenyc.org/>.

57 http://www.rollcall.com/issues/57_68/amy_rosen_entrepreneurship_bill_key_creating_jobs-210758-1.html.

58 By creating a directory of existing adult education opportunities—through private groups such as General Assembly, Skillshare, and Girl Develop It, and public college such as CUNY—the City can ensure that all New Yorkers are able to survey available resources and choose the program(s) that is right for them.

59 <http://www.ccny.cuny.edu/engineering/stem/about.html>.

60 The Stem Cell need not require a new physical campus, but rather can use existing CUNY facilities to bring together students who are committed to STEM fields and who require remedial assistance.

61 <http://www.ccc.edu/menu/pages/college-to-careers.aspx>; <http://www.chicagobusiness.com/article/20111213/BLOGS02/111219953>; <http://www.suntimes.com/news/9403027-452/city-colleges-program-can-lead-the-way-in-lowering-crime-rate.html>.

62 <http://www.ccc.edu/menu/Pages/College-to-Careers-Hiring-Incentive.aspx>; In addition, the City of Chicago has invested over \$500 million in capital improvements to its City College system, as well as creating a “College to Careers” fund that underwrites the salaries of CC graduates employed by Chicago companies for up to six months, provided those businesses keep the individuals employed for at least 6 months after the incentive expiration date.

63 Borough President Stringer recently announced a \$440,000 grant to CUNY for a new entrepreneurship center at CUNY’s Grove School of Engineering. See: <http://www1.cuny.edu/mu/forum/2012/08/21/ccny%E2%80%99s-grove-school-to-open-entrepreneurship-center-2/>.

64 <http://www.npr.org/2011/09/06/140214150/thomas-friedman-on-how-america-fell-behind>.

65 http://schools.nyc.gov/NR/rdonlyres/25DC86E5-BBE0-4E0C-8F8A-05B954B99238/0/2010_2011_All_ProgressReportResults_2012_02_24.xlsx.

66 <http://www.renewoureconomy.org/sites/all/themes/pnac/not-coming-to-america.pdf>.

67 New Tech City, p. 37.

68 Id.

69 Fiscal Policy Institute, “Immigrant Small Business Owners: A Significant and Growing Part of the Economy,” (Jun. 2012), available: <http://fiscalspolicy.org/immigrant-small-business-owners-FPI-20120614.pdf>, p. 22.

70 <http://www.uscis.gov/portal/site/uscis/menuitem.eb1d4c2a3e5b9ac89243c6a7543f6d1a?vgnextoid=13ad2f8b69583210VgnVCM100000082ca60aRCRD&vgnnextchannel=13ad2f8b69583210VgnVCM100000082ca60aRCRD>; Each fiscal year there are approximately 140,000 employment-based visa numbers

available, with a per-country limitation set at 7 percent of the total and each employment-based preference classification allocated a certain percentage of the total. The EB-1 (Treaty Traders/Investors), EB-2 (CMNI Investors), and EB-3 (Specialty Occupations for Australian nationals) preference categories are each allocated 28.6 percent of the total. Visa numbers are made available according to priority date order. When the immigrant visa demand exceeds the 7 percent per-country limit, the visa numbers are allocated within the oversubscribed country’s preference categories. The Immigration and Nationality Act provides that if total demand in a calendar quarter will be insufficient to use all available numbers in an employment preference category, then the unused numbers may be made available without regard to the annual per-country limits.

71 <http://www.uscis.gov/portal/site/uscis/menuitem.eb1d4c2a3e5b9ac89243c6a7543f6d1a?vgnextoid=73566811264a3210VgnVCM100000b92ca60aRCRD&vgnnextchannel=73566811264a3210VgnVCM100000b92ca60aRCRD>; The 65,000 cap does not include the first 20,000 petitions filed on behalf of beneficiaries with a U.S. master’s degree or higher and workers who are petitioned for or employed at an institution of higher education or its affiliated or related nonprofit entities or a nonprofit research organization, or a government research organization.

72 <http://www.nytimes.com/2012/09/04/opinion/special-visas-for-abused-women-hit-a-ceiling.html?src=recg>; Note that other visa categories are also “maxing out.” For the third consecutive year, the U.S. reached the annual 10,000 limit on special visas for undocumented immigrants who are victims of domestic violence and sexual assaults and who also assist in investigations or prosecutions. While a reauthorization of the Violence Against Women Act (VAWA) approved by the Senate includes provisions to raise the yearly U visa cap from 10,000 to 15,000, that bill has not been passed by the House of Representatives.

73 <http://www.forbes.com/sites/realspin/2012/06/19/drive-business-back-to-the-u-s-reform-h-1b-visa-laws/>; The National Foundation for American Policy reported that, on average, every H-1B filing requested by U.S. technology companies with fewer than 5000 employees led to an increase of employment of 7.5 workers.

74 <http://www.brookings.edu/research/reports/2012/07/18-h1b-visas-labor-immigration#geography>; Los Angeles was second with just over 18,000 requests.

75 <http://www.nytimes.com/2012/08/19/opinion/sunday/home-is-where-the-green-card-is.html?hp&pagewanted=all>.

76 <http://www.aier.org/article/7698-talent-drain>.

77 <http://www.bloomberg.com/news/2012-08-13/obama-romney-immigration-silence-hurts-economy.html>.

78 <http://immigrationimpact.com/2012/06/04/america-losing-high-skilled-workers-to-australia-canada-and-china-report-says/>; <http://www.canada-workvisa.ca/info/itwkr.php>; <http://www.cic.gc.ca/english/immigrate/skilled/apply-who-instructions.asp>; Canada recently passed a new immigration law that provides more flexibility to adjust the way immigration applications are processed without consulting Parliament, allowing the minister to quickly respond to the changing needs of the country. The system also allows provinces and territories to recruit immigrants to meet their specific economic needs, and grants three-year work visas to graduates of Canadian colleges, even before they secure a job offer.” Canada has also instituted an “Information Technology Workers Visa,” which allows qualified immigrants to work in Canada in the IT field for between 6 months and 2 years, as well as a Federal Skilled Worker Program.

79 <http://www.bcbusinessonline.ca/2011/04/04/welcoming-entrepreneurs-to-canada>.

80 http://www.newyorker.com/talk/financial/2012/08/27/120827ta_talk_sur-owiecki.

81 http://www.washingtonpost.com/business/on-small-business/senators-beck-on-immigrant-entrepreneurs-and-workers-with-startup-act-2012/05/22/gIQAtpIcJU_story.html.

82 <http://www.schumer.senate.gov/record.cfm?id=337649&c>.

83 <http://www.newyorklawjournal.com/PubArticleFriendlyNY.jsp?id=1202568141057>; The EB-5 program began under the Immigration Act of 1990. At that time, Congress decided that up to 10,000 foreign investors per year (including one’s spouse and minor children) could gain a green card in a two-step sequence over at least two years. This process, which is still in place today, requires the non-citizen to invest or be actively proceeding to invest at least \$1 million in lawfully attained funds to establish a “new commercial enterprise” or invest in a “troubled business” that directly employs 10 U.S. citizens (none of whom may be close relatives of the investor) on a full-time basis within two

years or in a reasonable time thereafter. A lesser sum, \$500,000, can be invested if the job-creating business activity is located in “targeted employment areas”—locales suffering unemployment at 150 percent of the national average—or in rural areas.

In 1993, Congress created a pilot program, essentially a second, parallel program, allowing “regional centers”—entities authorized by the immigration authorities to accept investors’ funds in return for a qualified promise by the center to create the 10 jobs per investor directly or indirectly. The most important difference with the pilot program is the less challenging job-creation standard wherein jobs created indirectly across one or more geographic areas and industries can be calculated in theory without the need to identify the actual jobs or workers in such jobs. Moreover, as a practical matter, virtually all regional centers are in targeted employment areas, so the de facto investment threshold is \$500,000, rather than \$1 million.

This program has led to a surge in successful applications. The “regional centers” program faces a sunset on Sept. 30, 2012. However, a bill to reauthorize the EB-5 regional center program, S. 3245, recently passed the Senate, and prospects for House passage are promising.

84 The cap on H-1B visas for FY 2013 was reached in June 2012, the earliest of any year since 2009. See: <http://www.mondaq.com/unitedstates/x/182882/work+visas/Fiscal+Year+2013+H1B+Cap+Reached+EB2+Retrogresses+for+All+Countries>.

85 <http://urbanizationproject.org/blog/city-based-visas/>; <http://urbanizationproject.org/blog/more-on-city-based-visas/>; <http://www.theatlanticcities.com/jobs-and-economy/2012/09/case-city-based-visas/2946/>.

86 <http://www.nationalreview.com/agenda/314256/brandon-fuller-city-based-visas-reihan-salam>; Reihan Salam of the National Review suggests that the city-based visas would be particularly practical if they were restricted to “skilled immigrants” who could be easily employed and are less likely to require substantial public assistance.

87 <http://www.nytimes.com/1991/09/13/nyregion/a-new-york-trade-thrives-on-red-tape.html?pagewanted=all>.

88 <http://www.nytimes.com/1998/08/08/nyregion/consultants-investigated-over-bribes-for-buildings.html>.

89 <http://www.nytimes.com/1991/11/21/nyregion/the-day-the-expediters-needed-some-expediters.html>.

90 http://www.crainnewyork.com/article/20121007/REAL_ESTATE/310079970#ixzz2CDgarssp.

91 <http://www.nypl.org/ask-nypl>.

92 <http://www.nyc.gov/html/film/html/index/index.shtml>.

93 <https://nyceventpermits.nyc.gov/film/>; http://www.nyc.gov/html/film/html/news/100111_mofib_online_system.shtml.

94 <http://www.hollywoodreporter.com/news/new-york-film-tv-office-244586>.

95 http://www.nyc.gov/html/ops/downloads/pdf/mmr0912/0912_mmr.pdf, p. 145.

96 *Id.* at 145-146.

97 *Id.* at 148.

98 http://www.mbp.org/uploads/policy_reports/mbp/buildingreportfinal.pdf; Borough President Stringer first proposed this reform in a 2010 report, “Falling Apart at the Seams: A Critical Analysis of New York City’s Failure to Enforce its Building Code and a Roadmap to Reform.”

99 One entrepreneur reported that customer service at DOB was so poor that she thought, “I’m not a panhandler. I’m here to transact business.”

100 http://www.nyc.gov/html/ops/downloads/pdf/mmr0912/0912_mmr.pdf, p. 40.

101 <http://www.cuny.edu/about/resources/sustainability/solar-summit/solar-summit-2010/DeniseNelson.pdf>.

102 http://www.nyc.gov/html/dob/html/development/development_main.shtml.

103 <http://www.sparknyc.org/index.php>.

104 <http://www.meetup.com/ny-tech/>.

105 <http://www.linkedin.com/groups/Entrepreneurs-Roundtable-New-York-2651255>; <http://www.meetup.com/TheTodayGroup/>; <http://www.meetup.com/NYProfessionals/>; <http://www.meetup.com/entrepreneur-23/>; <http://erany.com/>; <http://www.ny-entrepreneur-network.com/>.

106 Despite the concentration of finance in New York, many start-ups still struggle to find capital at the second stage of development. As noted by Startup Genome, NYC has 70 percent less funding than Silicon Valley in the second stage before product market fit, probably due to a lack of super angels.

107 <http://www.goldmansachs.com/citizenship/10000-small-businesses/index.html>; Private sector action, like Goldman Sachs’ 10,000 Small Businesses Initiative, also promise to provide additional avenues to capital for young business owners.

108 <http://www.sba.gov/content/microloan-program>.

109 <http://theyec.org/wp-content/uploads/Youth-Entrepreneurship-Act-Policy-Brief.pdf>.

110 http://www.mbp.org/release_details.asp?id=1910&page=1.

111 New Tech City, p. 38.

112 *Id.* at 10.

113 <http://dl.dropbox.com/u/33013/pandoglobalstudy.pdf>; <http://bits.blogs.nytimes.com/2011/09/20/america-land-of-the-slow/>.

114 <http://techcrunch.com/2012/03/23/austin-tops-san-francisco-in-study-of-fastest-download-speeds/>.

115 http://www.newamerica.net/publications/policy/the_cost_of_connectivity.

116 <http://cdixon.org/2011/12/02/getting-broadband-in-manhattan/>.

117 *Id.*

118 http://www.newamerica.net/publications/policy/the_cost_of_connectivity.

119 *Id.*

120 For more information on open access policies worldwide, see The Berkman Center for Internet & Society at Harvard University, “Next Generation Connectivity: A Review of Broadband Internet Transitions and Policy Worldwide,” (Feb. 2010), available: <http://cyber.law.harvard.edu/pubrelease/broadband/>, Section 4; Under the 1996 Telecommunications Act, local telephone companies were required to lease access to their copper wiring to competitors. According to the Open Technology Institute, this policy “helped usher in new competition for telephone services, as well as enabling Internet service upstarts AOL and Compuserve to bring the first dial-up service to consumers. As a result, there were over 9,000 ISPs in the U.S. in the year 2000.”

121 <http://online.wsj.com/article/SB10000872396390443524904577651450485707824.html>.

122 <http://opinionator.blogs.nytimes.com/2012/09/19/a-digital-tool-to-unlock-learning/?hp>.

123 <http://betabeat.com/2012/06/mayor-bloombergs-big-plan-to-improve-broadband/>.

124 http://www.avc.com/a_vc/2011/01/talent-and-bandwidth.html.

125 <http://www.lusfiber.com/>.

126 <http://arstechnica.com/tech-policy/2010/05/louisiana-fiber-network-running-despite-cable-telco-lawsuits/>; <http://www.governing.com/topics/economic-dev/Bandwidth-on-the-Bayou.html>.

127 <http://www.usatoday.com/news/nation/story/2012-02-01/broadband-telecom-lafayette/52920278/1>.

128 <http://chattanoogaagig.com/>; <http://www.readwriteweb.com/enterprise/2012/08/how-chattanooga-transformed-itself-into-americas-first-gig-city.php>; <http://stopthecap.com/2012/05/30/chattanoogas-gigabit-fiber-network-part-of-citys-digital-transformation-job-growth/>.

129 <http://businessclimate.com/tennessee-economic-development/gig-city-and-widespread-fiber-optic-network-give-chattanooga-tech-edg>.

130 <http://dcnet.dc.gov/DC/DCNET/DC-CAN>.

131 <http://www.thewiredroad.net/content/benefits-you>.

132 <http://muninetworks.org/tags-291>; It is notable that the service was rolled out in a low-density area, where private companies often lack the incentive to invest capital in building out a fiber network. In New York City, density is not an issue, but access to space underground to construct such a network presents a unique challenge.

133 Similar open-access networks exists in Danville, VA (<http://www.ndanville.net/>) and Monticello, Minnesota (<http://monticellofiber.com/index.cfm>). Danville’s network is now operationally in the black—revenues exceed the cost of managing and maintaining the network—and it has led Ikea, CBN, and other major businesses to relocate to Danville.

134 <http://www.usatoday.com/news/nation/story/2012-02-01/broadband-telecom-lafayette/52920278/1>.

135 The cost of constructing municipal fiber networks has declined in recent years, in part due to the advent of “microtrenching,” a technology that allows cities to build out networks without tearing up entire streets. In fact, microtrenching allows fiber to be installed on sidewalks as well as streets. See generally: <http://corp.sonic.net/ceo/2010/07/14/micro-trenching-at-sonic-net/>.

136 <http://www.litsanleandro.com/>; <http://www.theatlanticcities.com/technology/2012/03/how-one-man-built-his-city-fiber-optic-network/1493/>.

137 <http://www.t3inc.com/>.

138 <http://www.transitrealty.com/opportunities/telecom/>.

- 139 <http://www.theatlanticcities.com/technology/2012/03/how-one-man-built-his-city-fiber-optic-network/1493/>.
- 140 http://urgentcomm.com/networks_and_systems/mag/improve-underground-communication-200911/; BART also receives an additional \$1.7 million per year from cell-site revenue.
- 141 http://news.cnet.com/8301-1035_3-10154093-94.html.
- 142 http://www.mta.info/mta/news/books/pdf/120725_0930_Board.pdf, p. 9; see p.49+ for the contract with Transit Wireless for WiFi and cellular service underground.
- 143 <http://www.nycgovparks.org/highlights/places-to-go/wi-fi>; A map of WiFi hotspots throughout the five boroughs can be found at: <https://nycopendata.socrata.com/Media/Wifi-Hotspot-Locations/ehc4-fktp>.
- 144 <http://www.downtownnyc.com/programs/free-public-wifi>; <http://nycwireless.net/>; <http://www.nytimes.com/2011/06/02/nyregion/free-wi-fi-network-starting-for-dumbo-neighborhood.html>; <http://www.unionsquarenyc.org/park/usp-in-the-park/257>; <http://www.bryantpark.org/plan-your-visit/wireless.html>.
- 145 <http://dumbonyc.com/2011/06/02/dumbo-brooklyn-first-to-offer-free-wireless-access/>.
- 146 <http://brooklynheightsblog.com/archives/44058#more-44058>.
- 147 <http://wagner.nyu.edu/rudincenter/files/ManhattanCommuting.pdf>; http://www.nycfuture.org/images_pdfs/BehindtheCurb.pdf.
- 148 Id.; According to the Tri-State Transportation campaign (<http://www.tstc.org/reports/cpfactsheets.php>), car-owning households in New York City are significantly wealthier than non-car-owning households. This differential makes addressing transportation deserts all the more urgent. Even in communities with relatively high car ownership rates, few people commute to the CBS using private vehicles. For instance, in District 27, where 70 percent of residents own cars, only 6 percent commute to the CBD via private car.
- 149 <http://prattcenter.net/sites/default/files/publications/PrattCenter-BRT-IssueBrief.pdf>.
- 150 <http://www.governor.ny.gov/press/05182012Brooklyn-Navy-Yard>.
- 151 <http://www.brooklynnavyyard.org/ShuttleSchedule-3.pdf>.
- 152 http://www.mta.info/mta/2012_13_investment.html.
- 153 http://www.city-journal.org/2011/21_4_brooklyn.html; The number of college-educated residents in Williamsburg increased by 80 percent between 2000 and 2008.
- 154 http://www.city-journal.org/2011/21_4_brooklyn.html; The number of college-educated residents in Williamsburg increased by 80 percent between 2000 and 2008. The B62 currently links Queensboro Plaza with Downtown Brooklyn via Williamsburg. However, the B62 is a local service that takes over an hour from end-to-end, and over 40 minutes to travel from Williamsburg to Downtown Brooklyn. Perhaps as a result, the B62, which split off from the B61 in 2010, saw a 7 percent decline in ridership in 2011, despite population growth along its route. See: http://www.mta.info/nyct/facts/ridership/ridership_bus.htm.
- 155 Real estate executives are certainly clamoring for better transit in this area. See: <http://www.crainsnewyork.com/article/20120812/TRANSPORTATION/308129978>.
- 156 <http://www.nyc.gov/html/digital/html/news/digitalnycmap.html>.
- 157 http://www.nytimes.com/2011/10/16/nyregion/a-push-to-return-transit-manufacturing-to-new-york.html?_r=1.
- 158 <http://www.mta.info/mta/planning/sbs/>.
- 159 <http://www.nytimes.com/2012/09/26/realestate/commercial/manufacturing-space-in-brooklyn-retools-for-the-modern-tenant.html?pagewanted=all>.
- 160 <http://www.mta.info/mta/planning/sbs/>.
- 161 <http://www.thirteen.org/metrofocus/2012/07/will-affordable-housing-plan-leave-middle-class-new-yorkers-out-in-the-cold/>.
- 162 <http://www.youngentrepreneur.com/blog/tumblr-david-karp-on-why-nyc-beats-silicon-valley/>.
- 163 <http://www.empirecenter.org/pb/2012/08/migration3081612.cfm>.
- 164 <http://www.theatlanticcities.com/jobs-and-economy/2012/09/where-high-growth-company-founders-start-out-and-where-they-end/3281/>.
- 165 New Tech City, p. 23.
- 166 New Tech City, p. 15; <http://www.nytimes.com/2012/08/29/realestate/commercial/tech-firms-in-manhattan-trade-trendy-lofts-for-midtown-bargains.html?pagewanted=all>; Despite the significant increase in office space dedicated to the entrepreneurial economy of New York, commercial real estate companies remain rigorous in vetting potential tenants in the wake of the financial crisis and the dot-com bust of 2000. John Fletcher, a Bloomingdale Properties vice president, told the New York Times that he would not take a chance with a tenant unless it was established and could prove a steady revenue stream. “We’re looking for companies that are mature, that aren’t just building the latest app.”
- 167 <http://observer.com/2012/07/would-you-ditch-your-squalid-share-for-a-300-square-foot-micro-apartment/>; see also <http://www.nytimes.com/2011/11/17/arts/design/jonathan-kirschenfeld-reimagines-the-sro-in-the-bronx.html?hp=&pagewanted=all>; <http://www.bostonglobe.com/business/2011/12/13/waterfront-housing-formula-views-viable-rents-very-little-space/Qye00OdXNMV3DI5NESi50K/story.html>; http://www.boston.com/realestate/news/articles/2012/07/27/developer_begins_build_micro_housing_in_seaport/.
- 168 Currently, construction codes only allow a certain number of apartment units per building, none of which can be smaller than 400 square feet (smaller units currently in use in the City were built under old codes and grandfathered in).
- 169 <http://www.bostonglobe.com/opinion/editorials/2011/12/22/right-price-tiny-apartments-could-fuel-big-hopes-boston/mAQoOpfg7Knkq6liUvutK/story.html>.
- 170 <http://www.theatlanticcities.com/housing/2012/11/micro-apartments-so-nice-youll-wish-your-place-was-small/3932/>.
- 171 Id.
- 172 http://www.newpartners.org/2010/docs/presentations/friday/np10_fujioka2.pdf.
- 173 <http://prattcenter.net/sites/default/files/publications/Housing%20Underground.pdf>.
- 174 <http://www.cityofsantacruz.com/index.aspx?page=1150>.
- 175 http://www.newpartners.org/2010/docs/presentations/friday/np10_fujioka2.pdf.
- 176 http://furmancenter.org/files/publications/furman_parking_requirements_policy_brief_3_21_12_final.pdf.
- 177 http://furmancenter.org/files/publications/furman_parking_requirements_policy_brief_3_21_12_final.pdf; As noted by the Furman Center, “Average requirements differ widely across boroughs, from five spaces in Manhattan (most of which is exempt) to 122 spaces in Staten Island.”
- 178 Id.
- 179 http://furmancenter.org/files/publications/furman_parking_requirements_policy_brief_3_21_12_final.pdf; This is not new news. A 2003 report by the New York chapter of the American Institute of Architects found that many of its members had to cancel projects because parking requirements made them uneconomical. See <http://aiany.org/committees/Housing/Statements/housingcode.pdf>.
- 180 http://www.crainsnewyork.com/article/20111002/REAL_ES-TATE/310029977/1072.
- 181 <http://www.streetsblog.org/2011/02/11/parking-minimums-make-nyc-housing-more-expensive-nyu-report-finds/>.
- 182 <http://www.brookings.edu/-/media/Research/Files/Papers/2012/7/transit%20labor%20to%20mer/11%20transit%20labor%20to%20mer%20full%20paper.pdf>, p. 11.
- 183 http://www.brooklyn-usa.org/press/2012/aug14_MA.html.
- 184 <http://www.citevanancouver.org/quad/presentations/City%20of%20Vancouver%20Parking%20Presentation-Wali%20Memon%20-ITE%20Quad%20.pdf>.
- 185 New Tech City, p. 15.
- 186 <http://www.npr.org/2012/04/10/150286116/for-freelancers-landing-a-workspace-gets-harder>.
- 187 United States Census Bureau, 2011 American Community Survey 1-Year Estimates, “Self Employment Income in the Past 12 Months for Households,” B19053; <http://www.freelancersunion.org/index.html>.
- 188 <http://www.npr.org/2012/04/10/150286116/for-freelancers-landing-a-workspace-gets-harder>.
- 189 Edward Glaeser, Stuart Rosenthal, and William Strange, “Urban Economics and Entrepreneurship,” National Bureau of Economic Research (Nov. 2009), available: <http://www.economics.harvard.edu/faculty/glaeser/files/Urban%20Economics.pdf>.
- 190 Edward Glaeser, “Unleash the Entrepreneurs,” City Journal 21.4 (Autumn 2011), available: http://www.city-journal.org/2011/21_4_entrepreneurs.html.
- 191 <http://www.bloomberg.com/news/2012-03-26/fire-up-america-s-jobs-factory-with-aid-for-startups.html>.



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