

EXPANDING OPPORTUNITIES FOR BROOKLYN RESIDENTS IN THE TECH AND CREATIVE SECTORS

Brooklyn's technology and creative sectors are booming. Over the past decade, the number of technology jobs in Brooklyn increased 56 percent and employment in the borough's creative industries rose 60 percent. Rapid growth in these fields has been a boon to Brooklyn, creating thousands of jobs and diversifying the local economy.

Many of these fast-growing tech companies desperately need talented workers. At the same time, however, too many of the high-quality jobs emerging from these fields remain out of reach for Brooklyn residents from low- and moderate-income backgrounds.

Ensuring that more local residents benefit from the boom is both a major challenge and a vital opportunity for the future of the borough.

Expanding opportunities for Brooklyn residents in the borough's tech and creative sectors provides dual benefits: new pathways for low-income residents and cost-effective workforce solutions for tech companies that need qualified workers. A recent policy symposium convened by the Center for an Urban Future brought many promising ideas to light. Held in summer 2016 at the Wythe Hotel in Williamsburg and made possible with support from Rubenstein Partners, Heritage Equity Partners, Innovation Lab at Industry City, and Newmark Grubb Knight Frank, the forum convened some of the city's leading experts to discuss closing the digital skills gap.

The following experts participated in the forum:

- Lauren Andersen, Executive Director, NYC Tech Talent Pipeline
- Rashid Davis, Principal, Pathways in Technology Early College High School (P-TECH)
- Jackson Gomes, Project Coordinator, Today's Teens Tomorrow's Techies, Brooklyn Public Library
- Jukay Hsu, Founder, Coalition for Queens
- Toby Moskovitz, Founder and CEO, Heritage Equity Partners
- Miguel Pacheco, Director, Web Design and Coding Program, Opportunities for a Better Tomorrow
- Jocelynn Rainey, Chief Administrative Officer and Executive Vice President, Brooklyn Navy Yard Development Corporation
- Kelly Richardson, Managing Director, Per Scholas New York
- Cristal Rivera, Chief of Staff and Director of Community Engagement, Industry City
- Seema Shah, Director of Technology and Innovation Initiatives, LaGuardia Community College
- Sideya Sherman, Interim Executive Vice President for Community Programs and Development, NYCHA
- Karl Stanton, Director of Engineering, Hugel

The discussion made clear that New York City—and, increasingly, Brooklyn—is home to several high-quality programs aimed at expanding the pipeline of residents with the skills required to access jobs in the tech sector.

These programs include the de Blasio administration’s Tech Talent Pipeline, widely acclaimed educational initiatives like P-Tech, programs run by celebrated non-profits such as Per Scholas and Coalition for Queens, and on-site industry training centers at the Brooklyn Navy Yard and Industry City.

But while there is a lot to learn from these model programs, much more needs to be done—by city policymakers as well as tech industry employers, workforce development practitioners, and leaders of academic institutions—to ensure that the high-quality jobs being created in the tech and creative industries are accessible to residents from low-income backgrounds. Five important takeaways emerged from the thought-provoking discussion we held in Brooklyn:

1. Many of the jobs being created don’t require an advanced degree, or even a college education.
2. Employer-driven partnerships should inform training programs.
3. Tech companies should look beyond traditional pipelines and credentials to reach local residents.
4. Successful programs should inform others and scale up.
5. New York City schools need to better prepare students for today’s jobs.

These five ideas are explored in more detail below.

Many of the jobs being created don’t require an advanced degree, or even a college education.

To a greater extent than in many other industries, tech-sector jobs often require highly specialized skills that are typically acquired in advanced degree programs. But plenty of more accessible opportunities exist as well.

“Technology is not just engineering and it’s not just programming,” said Karl Stanton, director of engineering for digital agency Huge, who himself attained a job in the technology sector directly after high school. “There’s so much job opportunity in the technology sector that has nothing to do with engineering or coding, or anything to do with having to understand the intricacies of computers.”

“There is this perception that many tech jobs are super high skilled and that you need a PhD to get them,” said Lauren Andersen, executive director of NYC Tech Talent Pipeline, a de Blasio administration initiative that works to prepare New Yorkers for tech jobs. She noted that the administration is working to improve students’ critical-thinking skills through hands-on technology programs. “There is also this entire swath of jobs that are absolutely accessible to the folks who have the drive, the passion, the determination, the hunger to learn the skills that are needed,” Andersen said. “And they can do it in many cases without a four-year degree. We’ve seen that individuals who have no previous experience, who are eager to learn, who are passionate about tech can acquire these skills in a matter of months not years, and can be super proficient web developers that are working at companies like Etsy, like Kickstarter.”

This project was made possible through the generous support of **Rubenstein Partners, Heritage Equity Partners, Innovation Lab at Industry City, and Newmark Grubb Knight Frank.**

Panelists cited jobs such as product, quality assurance, and community managers, which don’t rely on hard technical skills. Stanton and others suggested that while applicants for these jobs don’t necessarily need a college degree, they will need to show that they can think critically, be creative, and make things. A recent report by HR&A Advisors found that up to 44 percent of jobs in the New York City tech ecosystem do not require a bachelor’s degree, including nearly 12,000 tech jobs in tech industries.

Understanding the multitude of employment opportunities within the tech sector is only half the challenge. Miguel Pacheco, director of the web design and coding program at Opportunities for a Better Tomorrow—a Sunset Park-based nonprofit that provides workforce development services primarily to young adults—recommended that technology

skills-building programs emphasize portfolios over traditional resumes, encouraging participants to demonstrate tangible evidence of their skill, passion, and drive.

“I think that there’s an opportunity for us within the workforce system to really rethink how we assess people,” said Sideya Sherman, the New York City Housing Authority’s interim executive vice president for community programs and development.

Employer-driven partnerships should inform training programs.

The discussion clarified a key element of successful tech training programs: understanding the needs of employers. The workforce training organizations and educational institutions whose curricula are informed by employers are most successful at connecting their students with careers in tech. Job skills and best practices change rapidly in the tech sector, which means that most companies can’t afford to take a chance on applicants with outdated skills.

“When employers are engaged from the get-go in defining the curriculum, they are eager to continue to look at the candidates coming out of the program and lend their employees to teach courses,” said Andersen. “We’ve run several programs where employers have sat down with us every other week for three months to define the curriculum. Coming out of those sessions, they’re like, ‘We can’t wait to meet these people! We know that they’re aligned to our needs and we are excited to host them at job shadowing and look at their resumes.’ When they’re hiring, they are bought into it.”

“The only way you can create jobs is if the employers have buy-in,” added Jocelyne Rainey, chief administrative officer of the Brooklyn Navy Yard Development Corporation, which runs several highly regarded workforce development programs. “And the only way [employers] are going to want to work with you is if you’re giving them the employee that they need for their business. Businesses are trying to keep the wheels on. They don’t have the time to really work with us on just giving someone a job. We need to make sure that the folks that we have coming in through the doors are ready to go into those businesses.”

Workforce providers and universities haven’t always aligned their programs with the current needs of the sector’s employers. But progress is being made. The city’s Tech Talent Pipeline launched ten new programs in the past year, a tremendous effort made possible by their active partnership with employers, who helped to develop applied assessment tasks to prepare new trainees. These assessments directed trainees to practice recently acquired skills in new ways, underscoring the value of thinking creatively in a fast-paced and ever-changing industry.

Many nonprofit training providers and higher education institutions are also rethinking the way they prepare students for future employment. “[We have begun] a ton of curriculum innovation to ensure that our classes are much more projects-based and team-based,” said Seema Shah, director of technology and innovation initiatives at LaGuardia Community College.

For example, faculty members from LaGuardia recently traveled to Google’s Mountain View campus

INTERNSHIPS THAT CONNECT WITH LOCAL SCHOOLS

Toby Moskowitz, founder and CEO of Heritage Equity Partners (HEP), described a partnership between the Williamsburg High School for Architecture and Design and one of HEP’s satellite offices. This public high school teaches computer-aided drafting (CAD) to students in all grades, which enables them to pursue internships at HEP. Students who worked with HEP’s architecture and design partners also participated in a contest to develop an office design for HEP’s 25 Kent space, further bolstering their portfolios after the end of the internship. Citing the success of this partnership, Moskowitz encouraged other companies to reach out to local high schools to harness students’ potential.

to participate in a program where they embedded with one of the technology giant's engineering teams to better understand their organizational culture. According to Shah, sending faculty out into field is vital in order to prepare students for the real world. Many of LaGuardia's instructors "take on the role of being an advisor and mentor to students in addition to teaching the coursework," said Shah, adding that these experiences help align the classroom experience with the expectations and innovations of a tech workplace. This initiative led LaGuardia to increase the number of project- and team-based assignments in their curricula, simulating the collaborative environment that faculty members encountered at Google.

Tech company should look beyond traditional pipelines and credentials to reach local residents.

Although workforce providers undoubtedly can do a better job of aligning their training programs with employer needs, tech companies can do more to recruit prospective employees with different academic and technical experiences.

"There is a ton of talent that exists, people who live in communities that often get overlooked," said Kelly Richardson, managing director of Per Scholas New York, a nonprofit providing technology education in underserved communities. "I think the reason is that there are still a lot of traditional recruitment practices in place. When you have these traditional recruitment

practices, you're screening by degree, you're screening for things that are correlated with having access to a lot of opportunities, which a lot of individuals in lower income communities just don't have."

At the same time, tech employers need to be clearer in communicating exactly what skill sets they are looking for in job applicants. "Part of the challenge is that companies not only have issues articulating recruiting practices, but also communicating what they actually need," said Andersen. "How do companies articulate what skills are needed beyond, 'You need a four-year degree?' The real challenge has been, 'What do companies actually want, what do they actually look for?' To date it's been a challenge for New York City to get an aggregate articulation of what those skills are."

To be sure, a majority of the city's tech firms are small businesses, which typically face greater challenges in the hiring process than larger businesses. Many simply don't have the time or staff to conduct a formalized screening process. And because hiring is often a time consuming and challenging task, small tech firms are often less willing to take risks in the hiring process, out of fear that a candidate will not work out and the job search will begin again.

For these reasons, larger tech firms—and large companies in other industries that are increasingly hiring IT professionals—may offer the best opportunities to increase recruiting in low-income communities. At the same time, it may be worthwhile for city economic and workforce development officials to consider

ON-THE-JOB TRAINING

One valuable strategy to retain promising young workers is a commitment to on-the-job training. An intern who demonstrates a willingness to learn and an ability to solve problems may not necessarily meet traditional hiring criteria, such as a four-year college degree or specific programming skills. Companies should consider creating programs for those promising candidates, putting them to work while supporting professional development with paid training. Lauren Andersen recounted the story of a young man who completed the Tech Talent Pipeline's Web Development Fellowship, a five-month program for out-of-school and out-of-work youth. The young man interned at Foursquare, where he demonstrated his ability to tackle challenging problems, although he lacked the credentials to meet the company's hiring criteria. Rather than reject his application for a full-time position, however, Foursquare created an on-the-job training program to provide the support he needed to realize his full potential. These initiatives can help companies develop ideal employees, while opening up more avenues to success for local residents and nontraditional applicants.

adapting models like the Lower East Side Employment Network (LESEN) to the tech sector. In the promising LESEN model, one job developer works with seven different workforce development organizations to feed candidates to local small businesses.

Successful programs should inform others and scale up.

In Brooklyn and throughout the five boroughs, there are a growing number of effective technology training programs helping residents access decent-paying tech jobs. The problem is that too few of these programs are succeeding at scale.

For instance, Bronx-based Per Scholas served only about 500 students this year. Meanwhile, Access Code, the program run by Coalition for Queens, serves under 100 each year, as does Today's Teens, Tomorrow's Techies, a cohort training program run by Brooklyn Public Library.

Despite clear and compelling outcome data on the effectiveness of many training programs geared towards the tech sector, financial constraints prevent even the most successful providers from meeting the demand. For example, although Per Scholas accepts about one-fifth of all applicants due to rigorous entry requirements, Kelly Richardson noted that the program's "major constraint to admitting more candidates is not the lack of talent . . . it's just having enough seats and space."

Without increased funding from public and private sources, and new employer partnerships, Per Scholas and similar training programs will not be able to serve more participants with high-quality and effective programs.

Jukay Hsu, founder and executive director of Coalition for Queens, a nonprofit focused on increasing opportunities and pathways for tech entrepreneurship and innovation, noted that much of the funding for innovative workforce programs comes from philanthropic foundations. Although foundations are funding innovation, he said, they don't necessarily have the funds to bring programs to scale. As a result, Coalition for Queens' highly successful Access Code program is

now exploring the possibility of developing new revenue from earned income. "To create scale and serve more people, we're trying to move away from philanthropic and grant funding and create earned income," said Hsu. "I think if there are opportunities to create access to pools of capital, that's how you're able to scale programs."

In addition, some organizations need to build capacity internally in order to create the sorts of employer partnerships that show the most promise. "Scaling up is going to require us to hire more people to really be able to go into the businesses, understand the businesses, and then help them create opportunity for people by helping to train them," said Jocelyne Rainey.

Panelists noted that scaling up will require a broad strategy—building public-private partnerships, working with local schools, and seeking city government support—in order to even begin meeting the demand in Brooklyn and across New York City for workforce development services. "Really scaling up [means] doing a better job of linking those private-public partnerships," said Cristal Rivera, chief of staff and director of community engagement at Industry City. "It's about building those relationships . . . for us, scaling up is really local, but opportunities do exist."

New York City schools need to better prepare students for today's jobs.

If the city is going to succeed in expanding the pool of New Yorkers who are prepared to obtain jobs in the tech and creative industries, the city's public schools will need to play a pivotal role. However, as many of the panelists at our forum made clear, the schools will need to do more than just provide computer science education.

Mayor de Blasio deserves significant credit for launching the path-breaking Computer Science for All initiative, under which every public school in the five boroughs will soon be required to offer computer science to all students. But several panelists noted that it may be even more important for public schools to do a better job of equipping students with basic reading,

math, and critical thinking skills. Some noted that students are graduating from high school without the skills necessary to enter established tech-based workforce development programs—much less the workforce itself. Kelly Richardson explained that over half of all applicants to her program are unable to demonstrate tenth-grade proficiency in reading, writing, and mathematics on an admissions test.

“The biggest challenge that we see at Per Scholas, and something that outrages me every day, is [New York City] public education really needs some work before these careers can be more accessible,” Richardson said. “If we’re talking about making a meaningful difference in the amount of Brooklyn residents who are getting these tech jobs, there has to be a foundation of critical thinking skills.”

To ensure that public education exposes students to the skills required for technology jobs, other panelists reiterated that new and improved curricula should develop students’ problem-solving skills, rather than solely teach students to code. “[Exposure to] some form of computer science training early on would help [to strengthen] critical thinking and expose a lot of our kids in New York City to some of the potential tech jobs for the future,” said Miguel Pacheco. “It doesn’t have to be programming or coding, it could be anything related to tech. Tackling that [from] a very early age and exposing [students] to critical thinking and problem solving

will prepare them for a future in technology.”

Fortunately, the city is making strides here. Lauren Andersen noted that the administration is working to improve students’ critical-thinking skills through hands-on technology programs. “When the mayor first convened the Tech Talent Pipeline Advisory Board, which includes 28 of the city’s largest tech employers, the number one thing they said to him is, ‘We’re looking to the future and we see that the 1.1 million students coming out of the public school system don’t have these foundational skills that we need,’” explained Andersen. “And what they were talking about was not programming; they were talking about critical thinking skills. A lot of the fundamental goal of Computer Science for All is to teach not just programming or robotics, but also critical thinking skills and collaboration—which is huge in the tech sector.”

With all signs pointing to additional growth in tech and creative sectors—both in Brooklyn and city-wide—policymakers, educators, workforce practitioners, and tech sector leaders will need to enact new policies and programs that help ensure access to these high-quality jobs for residents from low-income communities. These efforts will both help to diversify tech and creative sector workforces and put more New Yorkers on the path to the middle class.

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