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## APPRENTICESHIPS ON THE RISE AT NEW YORK TECH AND FINANCE FIRMS

*Long associated with manufacturing and construction, apprenticeships help companies train hire and diversify workforces*

By Kate King  
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Apprenticeships have long been associated with manufacturing and construction jobs. But some New York City tech and finance companies have started to use apprenticeships as a way to train new hires and diversify their workforces.

While these efforts were growing in number, Mayor Bill de Blasio last year announced a new initiative to establish 450 apprenticeships in the industrial, health and tech industries by 2020. The city will use models already pioneered by some tech companies to encourage other businesses to hire apprentices.

Joshua Ortiz was always interested in computers, but after getting an associate degree in applied science, the Bronx native found even entry-level technology positions required certifications he couldn't afford.

A relative suggested he enroll at Per Scholas, a nonprofit technical school in the South Bronx, where he took a free, 15-week course that helped him get the qualifications he needed. In 2013, he landed a spot in Barclays PLC's first apprenticeship program in New York City, and two years later he was hired full-time in the firm's information-technology department.

"I was underqualified before coming here," said Mr. Ortiz, 26, who is now an engineer in the bank's IT department in Midtown Manhattan. "It was tough learning the infrastructure as a person without experience."

Apprenticeships generally last longer than internships and come with a job offer at the end, as long as the apprentice performs well. They are paid positions and typically offer gradually increasing salaries, according to a new report by the Center for an Urban Future, or CUF, an independent nonprofit.

Gregg Bishop, commissioner of the New York City Department of Small Business Services, said employers are looking to expand beyond their usual recruitment pools.

"If you're only going to one particular source, you're facing stiff competition," Mr. Bishop said. "It is becoming very difficult to not only find talent, because of the low unemployment rate, but you also want to have diversity in that talent pool as well."

New York State had 762 apprenticeship programs registered with the Labor Department last year, about 96 percent of which were in building or manufacturing, according to the CUF report. In New York City, 89 percent of the 94 registered apprenticeship programs as of June were in those trades.

But the actual number is likely higher because not all apprenticeship programs, particularly in tech, are registered with the state, the report says.

International Business Machines Corp. has rapidly expanded its apprenticeship program from its first class of 13 in October 2017 to more than 120 nationwide today, said Kelli Jordan, who oversees nontraditional hires at IBM. The company employs about two dozen apprentices in New York and plans to add an additional 12 this month.

The program was developed primarily to train employees in the specific skills needed for technology jobs at IBM, including software engineering, cybersecurity, data analytics, mainframe administration and product management.

"The fact is that there's just not enough workers with the right skills in the U.S. today," Ms. Jordan said.

IBM apprentices, who range from teenagers to people in their late 50s, receive more than 200 hours of classroom instruction as well as job experience under a mentor. In the New York area, they can earn \$50,000-\$70,000 a year depending on their area of expertise, and they stand to earn more after being hired full-time.

Barclays, which provided funding for the CUF report, established its first apprenticeship program in the U.K. in 2010 as a pipeline for technology jobs. The company expanded it to the U.S. three years later. More than 30 apprentices have participated in Barclays's two-year program in New York, and all have been offered full-time jobs in IT, said a company spokeswoman.

Wayne Kunow, director of cybersecurity and information-security governance at Barclays, said the apprenticeship program is a cost-effective way of recruiting beyond colleges and finding more diverse candidates.

"Financial-services firms are all competing for [graduates from] the same types of schools," he said. "We're looking for things that maybe other people were overlooking."

At Stack Overflow, a website for developers based in the financial district, an apprenticeship program was developed to help diversify a small engineering team, said principal developer, Jon Chan.

"We want to bring in more diverse talent, especially from groups that are underrepresented in the industry," he said.

More than 600 people applied within one week for Stack Overflow's most recent apprenticeship program, Mr. Chan said. The company hired four apprentices, all women who had participated in coding boot camps but didn't have formal computer-science degrees.

Jonathan Bowles, CUF's executive director, said apprentices are an important way for New York to expand economic opportunity and reduce income inequality.

"In today's economy, where so much of the job growth or the growth in good jobs requires highly specialized skills or college degrees," he said, "apprenticeships are a proven strategy to lift people into the middle class."