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Does New York Still Have a Future in Tech?

Amazon might have been the center of a new tech ecosystem in Queens. Here's what the city can do next.

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Amazon's decision on Feb. 14 to cancel its plans in New York City was actually the second time that New York missed its chance to host Amazon headquarters. The first time was in 1994, and what happened then informs what might happen next.

It was the beginning of the internet era, and a 30-year-old Jeff Bezos was living in Manhattan, working for the hedge fund D.E. Shaw on Wall Street. He had big plans for his new company, an online book retailer, but he wasn't sure where to locate it. One thing was clear: New York City's high-tech ecosystem — the engineers and programmers, the venture capitalists, the intellectual property lawyers, the vendors and service providers that specialized in this specific part of the industry — was too small and undeveloped for an internet start-up to thrive.

At that time, people who knew how to create commercial websites were still rare, and he found them in Seattle. Some of the best software engineers and programmers were concentrated there, along with venture capitalists who understood early the potential of the internet. The benefits for Seattle were even greater. Amazon now has more than 45,000 employees there.

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But the impact of Amazon on the regional economy stretches far beyond the direct employment effect. Its presence helped create a new internet cluster in the region, which served as a magnet for innovative companies such as Tableau and Remitly, and other Silicon Valley giants such as

Google, Apple, Facebook and Oracle, which have all opened large offices in Seattle.

A growing body of economic research suggests that a company's success depends on the entire ecosystem that surrounds it, not just the quality of its workers. Having good neighbors, even competitors, improves the productivity and creativity of companies and their workers. Innovative firms have an incentive to locate near other innovative firms. It is a tipping-point dynamic: Once a city attracts some innovative workers and companies, its ecosystem changes in ways that make it even more attractive.

Economists have a term for this: "agglomeration effects."

In my research, which examines the work of one million inventors over the past 40 years, I have found that engineers and scientists are more creative in cities where they are surrounded by other engineers and scientists in the same field. This is not just because places like Seattle and Silicon Valley attract the best and brightest, but also because engineers relocating from a minor to a major cluster of technology companies become significantly more productive, as measured by the number of patents created in a year. The quality of innovation also improves, as measured by the number of subsequent research citations received.

There is something almost magical in the process of generating new ideas. Being around smart people tends to make us smarter, more creative and more productive. While many people think that email, smartphones and the internet have made proximity less important to the creative process, in reality the opposite is true. Location is more important than ever, in part because knowledge spillovers are more important than ever.

This has enormous implications for the economic map of America. Expenditures on research and development and patenting activity are more geographically concentrated today than they were 30 years ago. This trend magnifies the differences between winners and losers among American communities.

Which brings us back to New York's loss. Its regional economy, once dependent on finance, is finally beginning to diversify. But New York's high-tech cluster is still small relative to its West Coast peers. In the past three years, tech jobs in San Francisco and San Jose have grown 13 percent and 12 percent, respectively — twice the rate for New York, which grew by only 6 percent.

The long-run cost of Amazon's retreat will include not just thousands of good jobs but more critically, the forgone agglomeration benefits — the innovative employers that will not locate in New York.

This is a big loss. The tech sector has proved to be the most dynamic engine of earnings growth for American cities, significantly better than the financial sector. Over the past five years, average earnings in high tech in the 10 largest innovation clusters have grown by 18 percent, twice as fast as average earnings in financial services. It's not that the high-tech sector will disappear from New York, of course, but in the coming years and decades its growth will undoubtedly suffer.

Since existing economic studies of agglomeration effects in American cities are typically based on many companies, not just Amazon, and many cities, not just New York, it is difficult to offer predictions of the exact magnitude of the effect. But based on a majority of the existing economic literature, it appears safe to say that the impact on the New York labor market will be noticeable.

What should New York do next? Because the region already has a large base of potential high-tech employees and an ability to attract more, subsidies are not necessarily the best strategy. It may be more effective in the long run to provide spaces for research and development, such as the Cornell Tech campus on Roosevelt Island, which was designed to attract graduate students with a strong interest in working for tech companies or starting their own. Fostering their creativity — and avoiding the bitter political infighting that scares away potential newcomers to the city — should be a top priority.

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Correction: *Feb. 20, 2019*
An earlier version of this article incorrectly described the D.E. Shaw firm in the 1990s. It was a hedge fund, not an investment bank.