The Tyranny of Geography

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The software industry is more regional than one would think; most jobs in the field are centered in nine US cities.

When Matt’s job search reached its third year, his family became convinced that his studying computer science in college was a mistake. “If computer science is such a good thing to study,” his grandmother sniffed, “why can’t it get him a job?” I wasn’t an intimate friend of Matt’s, but as his neighbor, I’d seen him grow from toddler to teenager to tech geek. As a gesture to the family, I offered to meet with the young man to see what I could learn about his job prospects.

The idea that someone might have made a bad career choice by studying computer science is almost heretical in the modern world. But even though statistics point to strong demand and high salaries for software developers, I regularly see recent graduates move out of the field after a single job, or even fail to secure an initial position in the industry. As students, they talked freely about their career aspirations, but found something thwarting those ideals during their job search.

When Matt and I met, he blamed his jobless status on the economy. “Jobs are hard to find,” he remarked. Indeed, the economy was still recovering from the recent recession and wasn’t creating many new jobs.

As Matt described the kind of position he desired, I realized he was actually fighting the tyranny of geography. He outlined the qualities he wanted in a job, preferring one in a region that was close to family and friends, recreation, and his favorite sports teams. But as far as I could tell, that region had few jobs such as he described.

In spite of its global reach, the software industry is more regional than its advocates profess. If you look at software development positions in the US, you’ll find that 40 percent are found in just nine cities. Even within those nine, the jobs are unevenly dispersed. Roughly 10 percent of all system software jobs are located around the San Francisco Bay Area. Approximately the same percentage of application programmers work near Puget Sound in Washington State. Finally, about 12.5 percent of all positions in computer security—the most rapidly growing category of software jobs—are a short drive from the Potomac River Basin in Washington, DC.

Perhaps it isn’t surprising that computing jobs are concentrated in specific regions. Since the start of the industrial economy, we have seen regions become centers for specific kinds of products: Chicago for meat, Detroit for automobiles, North Carolina for furniture. However, these regions became industry centers because they provided some key input that wasn’t readily available in other parts of the country: hogs in Chicago, steel in Detroit, wood in North Carolina. Software requires no such input. It depends only on ideas, skills, and access to computers, all of which are now widely available. Indeed, the early pioneers of the Internet argued that computer networks would “make every local resource available” to a worldwide audience.

Yet, for the moment, networks haven’t broken the tyranny of geography. Regional centers are of “striking importance” to national wealth, argues economist Michael Porter. Programming skills don’t seem to be as widely distributed as we might have thought, or perhaps people with such skills are attracted to certain kinds of environments.

When Matt finally found a software development job, he was able to avoid the nine US cities. But his job also fell into a cluster, though smaller than Silicon Valley or Seattle or Northern Virginia. His job was in a small city in the middle of the country. It was close to a university and next to a highway that leads to the lakes up north. It was also the only place in his state where development jobs might be found.

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