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HOW UTAH BECAME THE NEXT SILICON VALLEY

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The Novell corporate headquarters, in Provo, Utah.

PHOTOGRAPH BY GEORGE FREY/BLOOMBERG VIA GETTY

A couple of years ago, Mark Muro, a fellow at the Brookings Institution, noticed, along with some of his colleagues, that when politicians and businesspeople debated how the U.S. could be more economically competitive, the conversations tended to focus on promoting certain innovative industries. But, more often than not, the discussions said as much about who held the microphone as they did about what mattered for growth; that is, people kept talking about the industries in which they were involved, instead of figuring out what the most innovative industries had in common and how their successes could be replicated. “The manufacturing people

promote manufacturing,” Muro told me. “There is a separate energy discussion. And meanwhile we have a vivid, sophisticated, but somewhat disconnected ‘high-tech’ or digital discussion ongoing.” So Muro and his colleagues at Brookings’ Metropolitan Policy Program identified a few simple traits that are associated with innovation, and grouped together the industries that share those traits to come up with what Muro describes as a “super-sector.” Then they set out to learn where this super-sector of advanced industries exists in the United States, and what lessons could be gleaned from those places.

On Tuesday, Brookings is publishing its findings (<http://www.brookings.edu/research/reports2/2015/02/03-advanced-industries>) in an eighty-eight-page report. Some of the industries that comprise their super-sector have an old-fashioned ring (“Clay Products,” “Ship and Boat Building,” and “Metal Ore Mining” are grouped together with “Software Publishers” and “Communications Equipment”), but they share two important features. They invest a great deal in research and development—more than four hundred and fifty dollars per worker—and they employ high proportions of people from the fields of science, technology, engineering, and math, collectively known as the S.T.E.M. fields. As a whole, the super-sector is responsible for seventeen per cent of U.S. G.D.P. and accounts for nearly two-thirds of our exports. It also employs eighty per cent of our engineers and makes up ninety per cent of our private R. & D. spending. But the super-sector is also at risk, Muro and his colleagues argue, because the U.S. runs a trade deficit in most advanced industries. The Brookings report, like many Brookings reports, is as much a call to action as it is a research document—urging governments and business groups to invest more, and more effectively, in innovative industries.

Muro and his colleagues also mapped (<http://www.brookings.edu/research/reports2/2015/02/03-advanced-industries#interactive>) their super-sector, and the

results are surprising and instructive. Some of the metropolitan areas with the highest concentration of employees in the sector were expected: the area around San Jose, California, is number one, for example, followed by the Seattle area. But they also found that Utah had three cities in the top fifteen: the metropolitan areas of Salt Lake City, Provo, and Ogden. This fascinated Muro, especially when he realized that much of the employment in the sector was coming from well-known companies that have opened offices in Utah, like the software firm Adobe, or from startups that have come to be worth billions of dollars. (In 2013, the C.E.O. of one such startup, the software company Qualtrics*, wrote (<http://blogs.wsj.com/accelerators/2013/09/14/ryan-smith-welcome-to-utahs-silicon-slopes/>) that his firm, which had recently been valued by investors at more than a billion dollars, was headquartered within a thousand yards of two other startups worth more than a billion dollars.) “You think this is going to be fairly corn-pone stuff, and then you realize, ‘Holy cow, these are significant companies,’” Muro said.

The report shows other unanticipated cities with high concentrations of advanced industries—Wichita, Kansas, for example—but these places tend to rely heavily on single industries, and they tend to stand alone rather than being clustered. In Utah, by contrast, the firms aren’t concentrated in one particular sector—the state’s super-sector employment comes largely from software businesses, but also from medical-device manufacturers and makers of aerospace products, among others—and the three cities on the list are all within driving and public-transit distance of one another. “We don’t pay attention to Utah much, and Utah clearly sticks to its own affairs,” Muro said. “There’s a sense that they’re not like some metros, selling themselves externally, and yet, they do seem to be executing.”

How are they doing it? Some observers, including Muro, have pointed to a certain cultural knack for salesmanship and

entrepreneurship among Mormons, who make up two-thirds of the state's population. But, religion aside, Utah turns out to also have features in common with other places involved in the super-sector: local universities that graduate a lot of S.T.E.M. students (most notably, Brigham Young University); policies and infrastructure that attract businesses (for instance, tax breaks and a light-rail system that connects the state's biggest cities); and strong relationships among local companies (Utah's state and local governments, along with an economic-development organization, facilitate partnerships, and, because many of Utah's businesses are home-grown, and the state's population is small, densely located, and tightly knit, its businesspeople tend to get to know each other well).

In fact, the Wasatch Front region of Utah—the small section that contains Provo, Salt Lake City, and Ogden, and is home to eighty per cent of the state's population—looks a lot like Silicon Valley in certain ways. Much as Intel and other semiconductor manufacturers helped create Silicon Valley, the software company Novell—one of the flagships for the Utah super-sector—was founded in Provo, in the nineteen-seventies, and helped attract, and spawn, other local tech businesses. Also, the Wasatch Front, like Silicon Valley, is densely populated and connected by a freeway and a mass-transit system. And, especially since the mid-aughts, venture capitalists have invested surprising amounts in Utah companies; in the first half of last year, the state was the sixth most popular (<http://blogs.wsj.com/venturecapital/2014/09/24/qualtrics-boosts-utah-tech-industry-with-150-million-financing/>) destination for venture-capital funding.

To understand how those features help stimulate local economies—and how that growth perpetuates itself—consider the small town of Draper, Utah, part of which is included in the metropolitan area of Salt Lake City, to its north, and part of which is the metropolitan area of Provo, to its south. The

population of Draper rose rapidly in the nineties and aughts, during a statewide population boom. The scale might seem modest to someone from San Jose or Seattle—Draper’s population is just over forty-five thousand—until you consider that, twenty years ago, fewer than ten thousand people lived there, in what was then a quiet agricultural village. Troy Walker, the mayor, grew up in a nearby town and moved to Draper in the early aughts. “It was interesting, watching these fields turn into homes,” he recalls. “There was a big dairy operation where, right now, there’s a whole bunch of commercial buildings and a high-end apartment complex.” Walker believes Draper’s population will reach a hundred thousand before too long.

Walker told me that when he got involved in local politics several years ago, as a member of the city council, he encountered a philosophical rift. Longtime residents of Draper wanted it to remain mostly residential, while he and some other newcomers felt that the local government wouldn’t be able to provide proper services and infrastructure to the influx of residents unless they became more aggressive in courting businesses and the tax revenue they provide. Over time, the newcomers have prevailed, in part because they have come to outnumber the old-timers. Walker and his allies advocated for the regional light-rail system to be extended to Draper and won.

Lured by factors such as tax breaks, affordable real estate, an educated populace (many of whom had foreign-language skills gained during missionary trips), and the strong public-transit system, big companies, ranging from eBay (http://www.mercurynews.com/ci_23167606/ebay-expands-presence-utah-plans-hire-1-600) and E.M.C. (<http://www.sltrib.com/sltrib/money/53717348-79/500-center-company-emc.html.csp>) to Edwards Lifesciences (<http://finance.yahoo.com/news/Edwards-Lifesciences-Opens-iw-800904892.html>), which makes heart valves, started opening offices in town, employing many hundreds of people each.

Startups, too, have sprouted up, some of them founded by B.Y.U. graduates. The unemployment rate in Draper is around three per cent, compared to six per cent nationwide. Now, the state legislature has voted to relocate a state prison that has been based there for decades. Walker envisions turning that real estate into a multi-use development with housing and businesses—anchored, he hopes, by a big corporation.

The open question is whether the success of a place like Draper can be replicated. For years, researchers and policymakers have tried to figure out how to copy Silicon Valley's success elsewhere, with mixed success; you can't, of course, turn back time to the nineteen-seventies and insert an Intel or a Novell—or, for that matter, a Stanford or B.Y.U.—into every state. Still, the Brookings researchers argue that Utah's cities, and other places like them, offer a number of crucial lessons, if governments and businesses elsewhere are willing to heed them: expand government- and corporate-funded R. & D.; nurture startups by getting them capital and other help; improve the pipeline of S.T.E.M. workers through schools, universities, and corporate-funded training programs; and collaborate to create local "ecosystems" that encourage super-sector companies to cluster together. As the report puts it, "The speed and complexity of innovation and its global champions are ratcheting up the urgency of the enterprise"—that is, the ongoing national enterprise of encouraging innovation—"and demanding new strategies for engaging in it. Both the private and public sectors must radically rethink their technology development strategies accordingly if they are to remain relevant."

**Correction: An earlier version of this post misspelled the name of the company Qualtrics.*

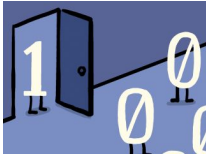




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