

The 10 TRAITS of GLOBALLY FLUENT METRO AREAS

GLOBAL CITIES INITIATIVE
A JOINT PROJECT OF BROOKINGS AND JPMORGAN CHASE

SAN JOSE

GDP (country rank), 2012 ¹	Share National GDP, 2012 ²	GDP/Capita, 2012 ³	Population, 2012 (country rank) ⁴	Share National Pop., 2012 ⁵	GaWC Global City Ranking, 2010 ⁶	# Global 2000 HQs, 2012 ⁷	GDP/c Growth 1993-2012 ⁸
\$306,554,124,630 (9)	1.95%	\$68,974.29	4,444,474 (11)	1.41%	27	17	1.72%

1) Benchmarks — what is the city’s recent ranking performance in terms of global firms, connectivity, diversity, range of cultural assets, immigrants, visitors?

The San Jose metropolitan area has global significance because it houses arguably the most important innovation cluster in the United States – Silicon Valley – which serves as a magnet for high-tech firms, advanced services, talented workers, and global capital. Thirty-seven percent of its population is foreign-born, many of whom are well-educated immigrants from China and India who play a vital role in filling high-tech positions and starting new firms.⁹ Many of the 14 Fortune 500 firms headquartered in San Jose were founded by immigrants, including Google, Yahoo!, and eBay.

San Jose ranks 10th on *fDi’s* Cities of the Future North American rankings, which measure the future economic prospects of global cities. In that same publication, San Jose ranks fourth for economic potential, sixth for human resources, and 10th for quality of life.¹⁰ On measures of global firm connectivity, San Jose was measured a “Gamma+” – or eighth-tier – global city by researchers at the Globalization and World Cities Research Network based on connectivity to multinational advanced services firms.¹¹ In addition to global firms, the metro area’s research and development institutions play a major role in maintaining its position as a global innovation hub. Most prominently, these include Stanford University, government research labs for NASA, the Department of Energy (SLAC National Accelerator Laboratory), and the military.

2) Narrative – the city’s journey into and through globalization. What kind of economic and development trajectory

has it taken? What has changed over time?

As recently as the 1940s the San Jose metro area was an insular agricultural region. Since then, its economic development trajectory has been characterized by advanced technologies, innovation, and continuous adaptation that have kept the region globally relevant during a period of disruptive technological change. Analee Saxenian's case study traces Silicon Valley's origins to a combination of university research (Stanford University), military spending, and entrepreneurial risk-taking. Countless institutions played a role in establishing Silicon Valley in the mid-20th century, including Bell Telephone Laboratories, Shockley Semiconductor, Fairchild Semiconductor, Xerox PARC, and the Stanford Research Institute (now SRI International).¹² Silicon Valley's economic history traces the life cycle of technology in the 20th and early 21st century – starting with personal computers and semiconductors, evolving to software and the World Wide Web, and now further with biotechnology and social media.

While the industries and technologies have changed, the San Jose region's global relevance has not. This is in no small part due to the fact that Silicon Valley continues to be the first choice for entrepreneurs to found high-tech startups due to the large presence of skilled workers, venture capital, and advanced research and development. Of adults 25 years and older, 45 percent have a bachelor's degree or higher.¹³ In 2011, Silicon Valley (including San Francisco) attracted nearly \$12 billion in venture capital funding, by far the highest total in the country.¹⁴ San Jose also leads the nation in per capita patent generation. In a virtuous feedback loop at the heart of agglomeration economics, the presence of the most innovative firms and entrepreneurs attracts even more skilled workers and venture capital, which in turn attract even more firms.¹⁵ However, San Jose is not without its challenges. The highest median household incomes in the nation keep land values, housing prices, and office rents high.¹⁶ Deficiencies in K-12 public education have also hindered the generation of homegrown high-skill workers, thus the region's continued reliance on skilled immigrants.

3) Elements of international and global orientation - In what ways is the city globally connected and relevant? What sort of trade patterns does it exhibit?

With 37 percent of its population born outside the United States, San Jose has the second-highest percentage of foreign-born residents of any metro area in the country. Many of these are entrepreneurs and skilled workers. In this sense, Silicon Valley has become a magnet for global talent, especially from Asia. As more highly educated immigrants came to the region, San Jose became one of the hubs of Indian and Chinese diasporic networks.¹⁷ These connections with countries like India are not static, as evidenced by the return of over 10,000 high-tech workers to India from Silicon Valley when the tech bubble crash closed many firms in the early 2000s.¹⁸

Beyond immigrant networks, San Jose engages with the world through its strong comparative advantage in advanced technology, anchored by innovative companies like Apple, HP, Intel, and Google and academic powerhouses like Stanford University. Computer and electronics manufacturing, in particular, dominates San Jose's trade profile, accounting for over \$12 billion in exports, 54 percent of the region's total. Overall, exports account for 18 percent of San Jose's gross metropolitan product, the fourth-highest share among the top 100 metro areas.¹⁹ San Jose ranked second behind Tokyo in a list of the most important nodes in the technology hardware and equipment subsector, indicating its primary position in global production networks.²⁰ Following computers and electronics, San Jose's largest export categories are royalties (12 percent of total exports), business services (7 percent), and transportation equipment (7 percent). San Jose's largest trade partners are Canada, Mexico, China, and Japan.²¹ Close proximity to ports in Oakland bolster the city's ability to send advanced goods abroad.

Beyond accessing its ports, San Jose has benefited from proximity to the San Francisco-Oakland metro area. Increasingly, San Francisco and San Jose have become an integrated market, sharing workers, research institutions, and innovations. Valley-based companies such as Facebook, Electronic Arts, eBay, Yahoo, and Apple now operate large private bus systems to shuttle workers from San Francisco to Silicon Valley, allowing workers to enjoy San Francisco's myriad cultural and urban amenities while still working in the San Jose

metro. And even after renovations at the San Jose International Airport, the region still relies on the much more internationally connected San Francisco International Airport, the primary destination for the San Francisco metropolitan area's 8.6 million international aviation passengers in 2011. In comparison, the San Jose metro area moved less than 400,000 international passengers during 2011.²²

4) To what extent is the city's international dimension inherited or intentional?

San Jose's international connectivity stems from its position as one of the most innovative regions in the world, due mainly to the technology cluster centered in Silicon Valley. As Joseph Cortright explains, the creation and maintenance of Silicon Valley has been the subject of much debate:

Because there is no single or settled definition of industry clusters and many competing theories about what drives clustering, different investigators can examine the same set of facts and reach different conclusions about the key drivers. Consider Silicon Valley, undoubtedly the most studied industry cluster anywhere. Its success is variously attributed to defense spending and government procurement...to the higher education institutions...to a unique business culture and set of relationships...to the vision of an extraordinary academic leader...and to a long and deep history of radio and television industry entrepreneurship.... An element of truth lies in each of these explanations, but there is no obvious way to sort out or arbitrate among them²³ [citations removed].

Indeed, the economist Enrico Moretti has posited that Providence, Rhode Island could have just as easily housed Silicon Valley if the legendary high-tech pioneer William Shockley had taught at Brown University instead of Stanford.²⁴ While the cluster's origins may be up for debate, at this point Silicon Valley continues to enjoy a positive feedback loop generated by the simple fact that young computer programmers and tech entrepreneurs identify it as the primary destination to advance their skills and ideas.

In addition to drawing in the world's skilled workers and venture capital, the global nature of San Jose's firms means that business executives travel internationally constantly. International travel allows these firms to spot and then act on opportunities in new markets and sectors, a first-mover advantage that boosts outward exports and inward foreign direct investment and creates new wealth across the region.

While the vast majority of this process occurs organically, there has clearly been intentional stewardship by regional actors to maintain San Jose's enviable global position by attracting foreign workers, incubating new businesses, and maintaining the metro's high quality of life. San Jose's high concentration of foreign-born workers has created an internationally welcoming culture that values diversity. Entrepreneurs with nascent business ideas flock to the region for its entrepreneurial spirit and world-class business incubators. In a recent ranking of 10 incubators that are changing the world, Forbes listed three from Silicon Valley.²⁵ One of these, the Environmental Business Clusters, is a clean-tech incubator founded by non-firm actors: the City of San Jose and the San Jose State University Research Foundation.²⁶

¹ Brookings analysis of Moody's Analytics and Oxford Economics data.

² Ibid.

³ Ibid.

⁴ Ibid.

⁵ Ibid.

⁶ "The World According to GaWC; Classification of Cities 2010," September, 14, 2011.

⁷ The data were produced by G. Csomós and constitute Data Set 26 of the Globalization and World Cities (GaWC) Research Network (<http://www.lboro.ac.uk/gawc/>) publication of inter-city data.

⁸ Brookings analysis of Moody's Analytics and Oxford Economics data.

⁹ Manuel Pastor and John Mollenkopf, "Struggling Over Strangers or Receiving With Resilience? The Metropolitics of Immigrant Integration," *Urban and Regional Policy and Its Effects: Volume 4*. (Washington: Brookings Institution Press, 2010).

¹⁰ Jacqueline Walls, "American Cities of the Future 2011/12," April/May 2011, available at

www.greenvillesc.gov/PublicInfo_Events/NewsArticles/AmericanCitiesoftheFuture.pdf.

¹¹ “The World According to GaWC; Classification of Cities 2010,” Globalisation and World Cities Network, September 14, 2011.

¹² Annalee Saxenian, *Regional Advantage: Culture and Competition in Silicon Valley and Route 128* (Cambridge: Harvard University Press, 1994).

¹³ “State of Metropolitan America,” Brookings Metropolitan Policy Program (Washington: Brookings Institution, 2010).

¹⁴ Richard Florida, “America’s Leading High Tech Venture Capital Centers,” *The Atlantic Cities*, August 24, 2012.

¹⁵ Enrico Moretti, *The New Geography of Jobs* (New York: Houghton Mifflin Harcourt Publishing, 2012).

¹⁶ “Silicon Valley in Transition,” NOVA Workforce Board, July 2011, available at bwresearch.com/C6EB7D78-B01F-4D0C-B31C-069EEA1AADF4/FinalDownload/DownloadId-397F0ACAA63A25FA04D488BE52342DFA/C6EB7D78-B01F-4D0C-B31C-069EEA1AADF4/reports/BW_NovaTechReport_072011.pdf.

¹⁷ Robert Guest, *Borderless Economics* (New York: Macmillan Palgrave, 2011).

¹⁸ Saskia Sassen, *Cities in a Global Economy, 4th Edition* (London: Sage Publications, 2012).

¹⁹ Emilia Istrate and Nicholas Marchio, “Export Nation 2012: How U.S. Metropolitan Areas Are Driving National Growth” (Washington: Brookings Institution, 2012).

²⁰ Stefan Krätke, “How Manufacturing Industries Connect Cities Across the World: Extending Research on ‘Multiple Globalizations,’” forthcoming in *Global Networks*, 2012.

²¹ Emilia Istrate and Nicholas Marchio, “Export Nation 2012.”

²² “Appendix B: International Air Travel Between the United States, by US Metropolitan Area, 2003 and 2011” (Washington: Brookings Institution, 2012), available at

www.brookings.edu/~media/research/files/reports/2012/10/25%20global%20aviation/25%20global%20aviation%20appendix%20b

²³ “Making Sense of Clusters: Regional Competiveness and Economic Development,” Brookings Metropolitan Policy Program (Washington: Brookings Institution, 2006).

²⁴ Enrico Moretti, *The New Geography of Jobs*.

²⁵ “Ten Technology Incubators That Are Changing the World,” *Forbes Magazine*, available at

www.forbes.com/2010/04/16/technology-incubators-changing-the-world-entrepreneurs-technology-incubator_slide_3.html.

²⁶ “Overview: Environmental Business Cluster,” available at www.environmentalcluster.org/about/index.htm.

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