

Austin's Entrepreneurial Genesis in a Nutshell

From a university town to a high-tech entrepreneurial city

Elsie Echeverri-Carroll, IC² Institute, The University of Texas at Austin

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Figures refer to the infographic posted at: <http://ic2.utexas.edu/aeg>

The *Kauffman Index* rated the Austin MSA as the number-one U.S. city for entrepreneurial activity in 2015 and 2016 among the 40 largest metropolitan areas in the United States. Figure 1 shows Austin entrepreneurial trend measured by registrations with the Texas Secretary of State. The trend matched the Kauffman foundation's rankings as it shows Austin's entrepreneurial activity exploding in these two years. How did Austin become a top entrepreneurial city? Generous funding from the Kauffman Foundation has allowed a team at the IC² Institute at the University of Texas at Austin, under the leadership of Dr. Elsie Echeverri-Carroll,¹ to unveil the genesis of Austin's entrepreneurial ecosystem. Using qualitative (more than 50 interviews with local influencers) and quantitative methods (e.g., analysis of large databases²), the teams find that Austin's entrepreneurial evolution has gone through five stages depicted concisely below.

1. Capacity Building at the University of Texas at Austin (1960-1980)

Until the 1980s, Austin's economy was largely based on income generated by the state government and by its large research university, the University of Texas at Austin (UT). UT's computer science department was created as an independent department in 1966, only three years after the first independent computer science program in the United States was established at Purdue University.³ The competitiveness of UT's computer science department has been fundamental to attracting an important cluster of large high-tech companies to Austin in the hardware (computer and semiconductor manufacturing) and software industries. As shown in the infographic, UT's computer science department ranked among the top eight in the nation in R&D expenditure in 1973, 1993, and 2014. The department has provided talent and worked closely with the local industrial community in curriculum design and collaborative R&D.⁴

UT's collaboration with local businesses and government has a long tradition. UT teamed up with the Greater Austin Chamber of Commerce, the state and city governments, and the private sector to successfully bid for the location in Austin of the first two large

computer and semiconductor R&D consortia: MCC (Microelectronics and Computer Technology Corporation) in 1983 and Sematech (Semiconductor Manufacturing Technology) in 1988. According to Admiral Inman (chairman, president, and first CEO of MCC), UT's "commitment to excellence" was one of the two major factors (besides quality of life) that convinced MCC to locate in Austin.⁵ Moreover, UT provided direct incentives for MCC and Sematech to choose Austin including offering professional opportunities (in the form of fellowships and teaching positions) to MCC employees and allocating \$12.3M to acquire the site for Sematech. MCC chose Austin over 57 other cities in 27 states, and Sematech chose Austin over 137 competing cities. Winning this vigorous national competition put Austin on the high-tech city map and set the stage for corporate spinoffs that would accelerate the local entrepreneurial ecosystem.

UT's early contributions to the local entrepreneurial ecosystem were also represented by startups that spun out directly from the university and became important multinational companies such as TRACOR in 1955 and National Instruments in 1974. As the bottom of the infographic shows, two institutions, the IC² Institute founded in 1977 and the Austin Technology Incubator (ATI) founded in 1989 (within the institute), were pioneer contributions of UT to Austin's entrepreneurial ecosystem. They were the vision of Dr. George Kozmetsky, dean of UT's school of business (1966-1982)⁶ and important knowledge broker in Austin's entrepreneurial ecosystem. It is estimated that between 2003 and 2012, ATI graduate companies yielded \$880M in terms of local economic impact.⁷

UT's capacity building, particularly the presence of a strong computer science department and its close collaborative networks with local institutions, was integral to the attraction of multinational corporations to the Austin region, which set the basis for the development of Austin's entrepreneurial ecosystem.

2. Continuous Attraction of Large High-Tech Companies (1960-today)

Few large plants moved to Austin in the 1960s and 1970s including IBM (1967), Texas Instruments (1969), Motorola (1974), and Advanced Micro Devices (1979). The tendency to attract branch plants of large high-tech firms, many from Silicon Valley, accelerated exponentially in the 1990s after the arrival of MCC and Sematech. The reasons these corporations chose Austin were carefully documented in research conducted at the IC² Institute in the 1990s by its founder George Kozmetsky jointly with some of the institute fellows.⁸ This research shows that a key ingredient of Austin's continuous attraction of large high-tech firms has been careful collaboration among government, business, and the University of Texas.

3. Corporate Spinoffs and Entrepreneurial Spawning (1990-today)

The semiconductor, computer, and software clusters of large corporations became a training ground for future technology-oriented entrepreneurs, who in some cases became frustrated with the decision process to approve new innovations at these corporations and decided to start their own business. Many early local entrepreneurs, such as the three IBM engineers who founded the software company Tivoli, had previous experience working in large corporations.

Most empirical evidence for other high-tech regions⁹ shows that large technology firms can act as corporate incubators and have significant impact by spawning founders and top executives of successful local startups. Similarly, these locally founded startups can have important entrepreneurial cascade effects by becoming a downstream source of more founders. We document this trend by studying the family tree of founders from Tivoli, a local independent startup from 1989 to 1996. Tivoli was founded in 1989 by former IBM employees Robert Fabbio, Steve Marcie, Todd Smith, and Peter Valdez. The company completed an initial public offering in 1995, one year before IBM acquired it for \$743 million. Tivoli's family tree, startups created or managed by ex-Tivoli employees, is a great example of local corporate-spawning cascade effects.

Tivoli operated as an independent startup for just seven years, but the company legacy remains a significant part of the city's entrepreneurial landscape. The company produced a group of entrepreneurs who have been able to launch or operate at least 29 startups in Austin between 1990 and 2013. Using data from LinkedIn, the infographic shows the effect of Tivoli employees on Austin's entrepreneurial ecosystem extended through 2013. What is more intriguing is how successful many of these companies have been, as evidenced by the fact that only three of the 29 companies were not acquired or recipients of outside funding. Indeed, most of these spinout companies were acquired by large corporations—including Lucent Technologies, Sun Microsystems, and SolarWinds— or were able to raise funding from venture capital firms or angel investors. The Tivoli startup was also an important source of top managers for 27 startups. Most of the literature focuses on the spawning of company founders from large corporations; Tivoli is evidence that startups are also an important downstream source of startup founders and managers.

4. Entrepreneurial Community (2010-now)

Egan and Garber from the Center for Entrepreneurship and Innovation at Rice University note that Austin, Dallas, and Houston all had a similar number of startup companies receiving their first round of investments in 2006.¹⁰ However, by 2009 Austin started building momentum, and in the past three years has seen between 30 and 40 new companies financed each year, while both Houston and Dallas have flatlined. They

maintain that an entrepreneurship ecosystem needs to reach approximately 40-50 startups per year securing venture capital, with the right ecosystem components participating appropriately, before it can achieve a self-sustaining virtuous cycle and notes that in Texas, only one urban area, Austin, is (just) at this level.

Austin now has a community of entrepreneurs, making it possible for founders with little previous experience working with large corporations or fast-growing startups but strong linkages with the entrepreneurial community to create successful startups such as BuildASign (founded in 2005) and Mutual Mobile (founded in 2010). What is a tangible example that Austin has a community of entrepreneurs? During the interviews Capital Factory was repeatedly mentioned as a tangible example of a community of entrepreneurs. This accelerator/incubator/co-working space, founded in 2009, has an impressive accumulation of entrepreneurial talent. About 129 Capital Factory partners and mentors founded 157 startups between 1970 and 2016, of which 121 were founded in Austin. More important, almost all of the startups founded in Austin have been successful, as indicated by the fact that 62 are still active companies and 36 were acquired.

5. Large Corporations, Significant Expansions, and Economic Incentives (2010-now)

Many large corporations continue to expand in the city and have taken advantage of economic incentives from the city and the state. These expansions consist of increases in both the physical size of large high-tech firms' campuses and in their workforce. As shown in part five of the infographic, in 2015, Oracle acquired 27 acres of land for its new 560,000 square-foot campus south of Lady Bird Lake, which will focus on cloud computing, and received a \$1M incentive from the Texas Enterprise Fund (TEF). Additionally, Oracle purchased the adjacent Azul Lakeshore Apartments with the intent of eventually converting this into housing for Oracle employees, since the company has expressed plans to increase its Austin workforce by 50 percent.¹¹ Similarly, in 2016 Apple moved thousands of its employees into its new 1.1 million square-foot campus in north Austin and into a smaller 216,000 square-foot campus in southwest Austin—the technology giant has built its second-largest campus in Austin. In line to receive a total of \$36 million in tax incentives from the city (\$8.6M), county (\$6M), and state (\$21M from TEF) for its Austin expansion, Apple has pledged to create 3,600 new jobs while retaining at least 3,100 existing jobs.¹² If Apple reaches those hiring figures, it will become the second-largest technology employer in Austin behind Dell.

Notes

- ¹ In collaboration with Professor Michael Oden at UT's Community and Regional Planning Program and a team at the University of North Carolina at Chapel Hill, under the leadership of Professor Maryann Feldman.
- ² For example, the National Establishment Time Series (NETS) and business registrations from the Texas Secretary of State.
- ³ University of North Carolina, Chapel Hill. (1999, May 14). A personal history of computer science at UNC-Chapel Hill: Gestation and birth 1962-64. Retrieved from <https://www.cs.unc.edu/History/Gestation.html>
- ⁴ Porter, Bruce. (2016, August 8). UT Austin's Computer Science Department Chair. Personal Interview.
- ⁵ Downing, D. E. (1983, August). Thinking for the future: The promise of MCC. *Austin Magazine* 25(8), 105-110.
- ⁶ George, K. (2010, February 23). George Kozmetsky 50 Acres Scholarship. Retrieved from <http://www.today.mcombs.utexas.edu/2010/02/george-kozmetzky-40acres-scholarship>
- ⁷ Bureau of Business Research, University of Texas at Austin. (2014, January). The economic impact of Austin Technology Incubator alumni companies on Travis County, 2003- 2012.
- ⁸ Smilor, R.W., Kozmetsky, G., and Gibson, D.V. (1987). The Austin San Antonio Corridor—the dynamics of a development technopolis. Working paper. Austin, TX. The IC² Institute.
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- ⁹ Spawning of new startups from large corporations has been fundamental in the development of the entrepreneurial ecosystem in Silicon Valley (Gompers, Lerner, and Scharfstein 2005, Lerner 2009) and the Research Triangle (Avnimelech and Feldman 2010a, 2010b).
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- ¹⁰ Egan, E. J., and Garber, R. (2016, March 7). The state of venture capital in Texas. *Issue Brief* 03.07.16. Houston, TX: Rice University's Baker Institute for Public Policy.
- ¹¹ In 2015, the Greater Austin Chamber of Commerce estimated that Oracle employed about 1,100 people in Austin.
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- ¹² Hawkins, L., and Novak, S. (2015, September 6). Apple rises in Austin. *Austin American-Statesman*. R
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