

EVALUATION AND NETWORK ANALYSIS OF THE MEXICO CITY TECH SECTOR

FEBRUARY 2020

BY: **endeavor**
INSIGHT

PRESENTED BY: **BANORTE**

This research was made possible by funding and support from:



ABOUT ENDEAVOR INSIGHT:

Endeavor Insight is the research division of Endeavor, a non-profit organization that supports High-Impact entrepreneurs across the world.

Our work seeks to answer three fundamental questions:

- 1 How do entrepreneurs reach scale individually at their companies?
- 2 How do entrepreneurs reach scale collectively in local networks and ecosystems?
- 3 What can policymakers, philanthropic leaders, investors, support organizations, and other stakeholders do to empower more entrepreneurs to scale?

Over the last five years, Insight's work across five continents has been supported by a broad range of foundations and other organizations. The methodology utilized in this study is built on previous Endeavor Insight research supported by the Omidyar Network, the Kauffman Foundation, the World Bank, the Inter-American Development Bank, as well as partners within the Global Entrepreneurship Research Network.

AUTHORS:

Lili Török, Project Leader at Endeavor Insight

Rhett Morris, Director of Endeavor Insight

Rebeca Cepeda Ferrara, Insight & Analytics Manager, Endeavor Mexico

Enrico Robles Del Rio, Director of Intelligence, Endeavor Mexico

ADDITIONAL CONTRIBUTORS:

This project was developed with assistance from members of the Endeavor Mexico team: Seth Merkin, Sebastián Lozano, Miriam Pérez Cortés, Vincent Speranza, and Mark Rinder; and it was conducted as part of the Global Entrepreneurship Research Network's initiative to map entrepreneur communities.

TABLE OF CONTENTS

I. INTRODUCTION	4
II. EXECUTIVE SUMMARY	5
III. CONTEXT	7
IV. PRODUCTIVITY AMONG ENTREPRENEURIAL TECH COMPANIES	11
V. CHALLENGES	17
VI. DEMOGRAPHICS OF TECH FOUNDERS IN MEXICO CITY	22
VII. NETWORK MAP: PATTERNS OF INFLUENCE IN MEXICO CITY	26
VIII. RECOMMENDATIONS	38
IX. CONCLUSION	39
GLOSSARY	42
ANNEX I: METHODOLOGY	43
ANNEX II: MEASURES OF PRODUCTIVITY	46
ACKNOWLEDGEMENTS	49
ABOUT US	50

I. INTRODUCTION

Entrepreneurs play a critical role in cities and nations as they create new jobs, generate economic growth, and spread the development of new innovations. When local entrepreneurship communities are productive, their cities and regions are more likely to thrive, but when entrepreneurship communities struggle, cities and regions can become trapped in decline.¹

In recent years, many decision-makers have recognized the importance of entrepreneurship communities. Policymakers, leaders of philanthropic organizations, corporate executives, and others have begun to search for ways to increase the productivity of local founders. The actions of individuals like these have the potential to dramatically reshape the environment and support networks we operate.

In 2014, Endeavor Insight and Endeavor Mexico partnered to assess the state of the tech entrepreneurship community in Mexico City. The study's objective was to identify the greatest challenges and opportunities of scaling entrepreneurs in the city at the time, to map the network of tech entrepreneurs, and to identify ways that decision-makers like policymakers, philanthropic leaders, and investors can better support tech entrepreneurs.

Five years later, Endeavor witnessed an exponential growth of this community led by e-commerce & fintech companies. Endeavor saw a unique opportunity to revisit the topic and assess how the tech community has changed over the past years, to generate a snapshot of the current state of tech entrepreneurship in Mexico City and use previous findings to help decision-makers support the sector today.

With this objective, in 2019 Endeavor conducted a 12-month research project funded by Grupo Financiero Banorte. The findings summarized in this report are based on interviews with over 200 technology entrepreneurs in the Mexico City Metropolitan Area, as well as secondary data on over 632 tech companies and their founders.² Data was also gathered on more than 44 investment firms and local entrepreneurship support organizations. Participating entrepreneurs, executives, and support organizations contributed a total of more than 200 hours to this research.

In addition, the lessons drawn from these technology companies are consistent with Endeavor's experience supporting more than 2,016 entrepreneurs leading 1,258 fast-growing companies in a wide range of global industries, network mapping entrepreneur communities in a number of +50 cities around the world, and operating one of the most active venture capital funds outside of Silicon Valley.

The next sections of this report will share findings on the size and productivity of the entrepreneurship community, motivations of local entrepreneurs, network analysis of the sector, key challenges that impact opportunities for growth, and recommendations for future expansion.

II. EXECUTIVE SUMMARY

MEXICO CITY'S TECH ENTREPRENEURSHIP ECOSYSTEM HAS MADE REMARKABLE PROGRESS IN THE PAST FIVE YEARS.

Startup activity in Mexico City experienced massive growth from 2014 to 2019. The number of entrepreneurial tech companies almost quadrupled in Mexico City, rising from 164 to over 632. The majority of new companies were in e-commerce, fintech, IT services, and SaaS companies, but by the number of jobs created, Fintech far outperformed all other sub-sectors.

Employment growth was significant between 2014 and 2019, most of which was driven by a small group of companies that scaled. Entrepreneurial tech companies employed a total of over 29,000 people on a full-time, permanent basis in 2019, twice as many as they did in 2014. Companies that reached the size of 50 or more employees represented less than 15 percent of tech companies but contributed over 76 percent of jobs in

the sector. Large companies like Kavak, Grow Mobility, Ben & Frank, TrueHome, Urbvan and Luuna appeared, and others, like Clip, expanded to employ several hundred employees by 2019. Sub-industries that produced more of these companies, like fintech, produced more jobs than those that saw fewer companies scale, like e-commerce.

Total investment activity ballooned in 2019. Over the past ten years, more than 700 venture capital rounds³ worth over USD\$1.6 billion were raised by Mexico City tech startups, a 70x increase from 2010. 65 of which closed in 2019 and represent 55% of the total capital raised. However, the ecosystem has only 13 known cases of company acquisitions and no IPOs. Mexico also has not yet had lots of big international success stories in its tech entrepreneurship community—a Mercado Libre, Globant, Patagon, Nubank, or Rappi—that would elevate the community in the eyes of international audiences.

Top-performing founders share certain past career and educational experiences, as well as connections to past successful founders. Founders in the top 10 percent by company employee growth rate were significantly more likely to have studied or worked in finance, come from consulting,

or have work experience at a local company with 100 or more employees compared to other founders. They were more likely to start fintech and healthtech companies, and most significantly, they were more likely than other entrepreneurs to be connected to founders at significant scale (experienced founders who built companies with 100 or more employees or exited a company for over USD 10 million).

Support organizations led by successful founders are especially effective at assisting entrepreneurs. Six of the ten most influential organizations in the network are led by entrepreneurs with past CEO or founder experience at a company that reached 100 or more employees or exited for more than USD\$10 million. This support was reflected in the performance of companies involved: these companies were on average 2x more likely to be top performers as measured by employee growth rate.

DESPITE THE EXPLOSIVE GROWTH IN THE NUMBER OF COMPANIES AND AN INFLUX OF CAPITAL, THERE ARE A NUMBER OF NOTABLE RISKS FOR THE TECH ENTREPRENEURSHIP COMMUNITY:

The rate of scale-ups slowed from 2014 to 2019. Between 2014 and 2019, companies were not scaling at the same rate as they were starting up. While 20 percent of tech companies were at scale in 2014, by 2019, this dropped below 15 percent.

The fastest-growing companies identified talent acquisition and regulation as their biggest challenges.

Interviews with 39 founders of the fastest growing entrepreneurial tech companies revealed acquiring tech talent, acquiring managerial talent, and dealing with regulatory risk as their biggest challenges.

Support organizations are more influential in the ecosystem than entrepreneurs, as measured by number of connections. For a sector with 632 entrepreneurial companies, there are over 150 investors and other organizations supporting them. Based on previous research by Endeavor Insight, this pattern of influence can challenge the productivity of the entrepreneurship community moving forward.

While an increasingly favorable Mexican entrepreneurial ecosystem favors recent startups, it may also attract threats from Big Tech. Mexican startups are investing in educating customers and developing key infrastructure for emerging sectors, such as e-commerce and fintech. As the opportunity presented by the Mexican market gains recognition abroad, large international tech players like Amazon or Alibaba may capitalize on the progress made and attempt to establish dominant positions.

III. CONTEXT

IN THE PAST FIVE YEARS, A NUMBER OF NEW OPPORTUNITIES OPENED UP FOR TECH ENTREPRENEURS IN MEXICO CITY AS THE COMPETITIVE LANDSCAPE CHANGED AND FUNDING ACTIVITY SKYROCKETED.

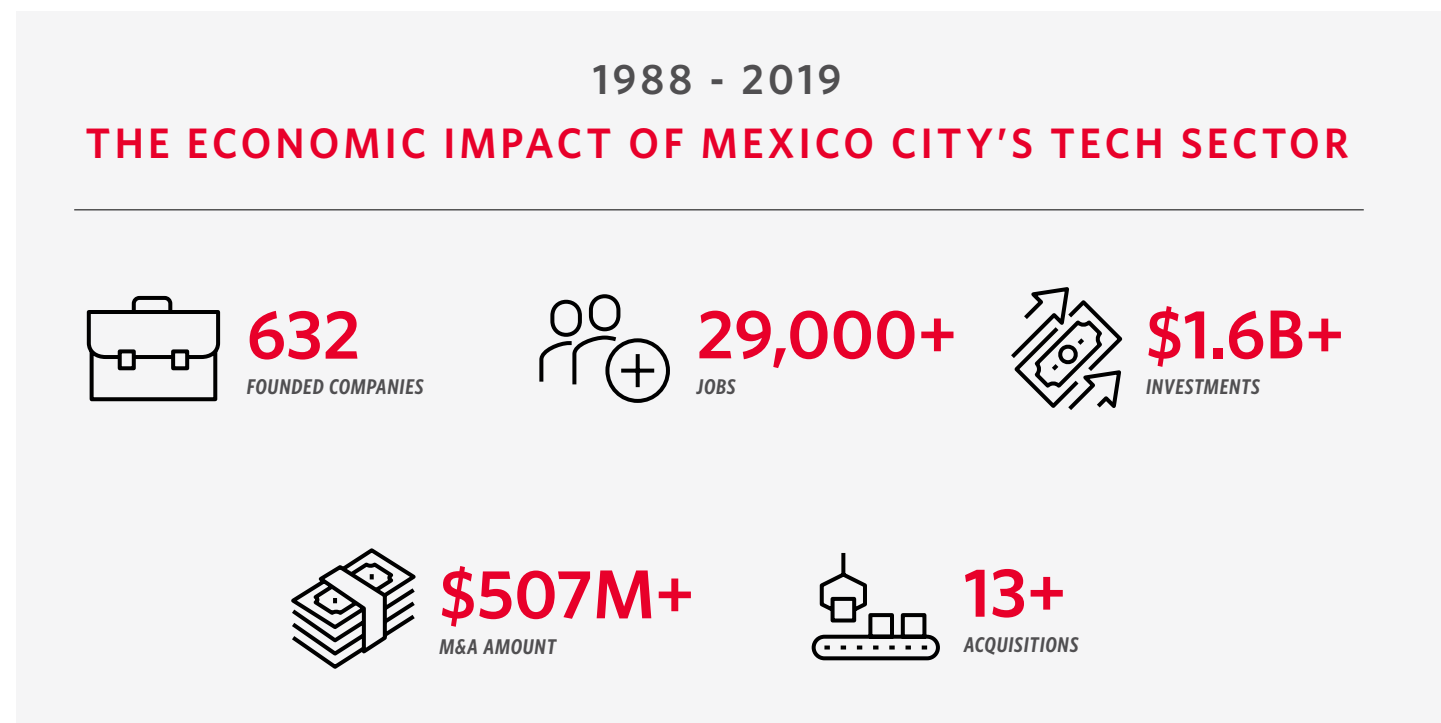
The first notable waves of Latin American entrepreneurship began in the mid-1990s in Argentina and Brazil. In both cases, the main catalyst of tech sector entrepreneurship was a small group of founders who had successfully scaled their companies and decided to reinvest their knowledge, credibility, and earnings in the next generation of entrepreneurs through mentorship and investment. Such prominent leaders included Wences Casares of Patagon and Marcos Galperin and Hernán Kazah of Mercado Libre, both in Argentina, and Laércio Cosentino and Ernesto Haberkorn of TOTVS in Brazil.⁴

In Mexico, entrepreneurs faced challenges distinct from those of their Argentine and Brazilian counterparts, including lackluster digital adoption, slow and high-cost connectivity infrastructure, a lack of effective digital payments and logistics solutions, low credit card penetration, and high incidence of fraud. In the 1990s, many Mexican e-commerce start-ups tried and failed to overcome these significant obstacles. The persistence of such problems maintained the sluggish rate of entrepreneurial activity in Mexico moving into the 2000s.

The expansion of investment activity in the late 2000s helped develop a more robust financing environment for Mexican startups. In 2006, Nacional Financiera (Nafin), a

public development bank, established its Fondo de Fondos de Capital Emprendedor (Entrepreneurial Capital Fund of Funds) to promote early stage investment in Mexican startups while limiting the government's share of returns, encouraging private investment. VC fund Ignia was established in 2007, focusing on B2C solutions for the emerging middle class; Angel Ventures, Mexico's first angel investors network, opened in 2008; and the Venture Institute, Mexico's first certified incubator and education platform, was founded in 2010. Activity from distinct stakeholders in the 2010s engendered drastic changes to Mexico's startup ecosystem, paving the way for accelerated future development.

Although Mexico is yet to see a unicorn the likes of Rappi or Mercado Libre, one company founded in 2012 sparked the creation of a Mexican e-commerce ecosystem, Linio, and had ripple effects throughout the tech sector as a whole. As explored in "Linio Mafia," an Endeavor Review published in 2019, e-commerce firm Linio made major investments in developing direct-to-consumer delivery logistics, a secure and integrated online payment system, an educated e-commerce customer base, and capable tech talent. Even though the entrance of Amazon in the Mexican market in 2015 changed the competitive landscape for tech entrepreneurs, Linio attracted numerous skilled business leaders



*N = 632 companies.
 Source: Endeavor Insight analysis.

to drive progress throughout the Mexican startup ecosystem, besides laying the groundwork for the growth of e-commerce in the country. Of 32 entrepreneurs surveyed who once worked at Linio, 31 of them had worked at a company with 50+ employees before joining the company. 17 of the respondents had moved from another country to join Linio. The 2019 review finds that founders and former employees of Linio went on to start at least 66 companies and participate in investment funds and other support organizations. Linio was acquired by Chilean retailer Falabella in August 2018 for USD\$138 million.

Linio's impact as a catalyst for the birth of an ecosystem was further compounded by public policy and increased accessibility to the digital world. A forthcoming report from Endeavor Mexico evaluating the current state of digital inclusion in Mexico highlights 2013's Telecommunications Reform as a milestone for the sector. The law deemed internet access a constitutional right, improved internet speed and quality, and decreased costs for users. In addition, Nafin's model was implemented at a much larger scale with the establishment of the Instituto Nacional del Emprendedor (INADEM), or the National Institute of the Entrepreneur, in 2013. INADEM supported 42 different investment funds with almost \$2,000 million pesos of injected capital, incentivizing increased participation of private investors in early stage funding in Mexico.⁵

Another major change was the development of the fintech sector, now one of the fastest growing industries of the Mexican economy. Endeavor Mexico, along with many other support organizations, bet on the rapid expansion of fintech in Mexico from the beginning by inducting its first entrepreneur from the sector in 2012.⁶ Finnovista was founded in 2013, offering acceleration and scale-up programs, events, research, and corporate partnerships to support Fintech and Insurtech startups in Latin America.

To add context to the impact that these companies have had on the sector, before the Fintech Law effective date in 2019, Endeavor Mexico published 'Fintech Thermometer: The Challenges of Regulation'.⁷ The report shows fintech's growing relevance in the Mexican economy, responsible for \$68,409 million pesos of economic activity, 3,600 direct jobs, and 4.7 million registered users. In addition, the number of startups in the sector grew 40% in 2018 and 18% in 2019, reaching 394 companies. Growth in the number of fintech companies was primarily driven by new digital payments & remittances ventures (79 startups, equivalent to 20% of the businesses in the market).

Similar to findings from Endeavor studies of other cities and industries, 'Fintech Thermometer' concludes that Mexico's Fintech ecosystem is led by a small group of entrepreneurs who have achieved significant scale. The entrepreneurs who hire the most employees also tend to raise more capital and generate more sales than less productive⁸ local peers. While 70% of the Fintech startups raised some debt or equity financing (totaling nearly 1 billion dollars among them)⁹, 80% of total investment and debt is concentrated among just 8 firms. Additionally, only seven companies account for 36% of total employment in the sector, employing over 100 people each. Success in digital payments is similarly concentrated among a few companies in this segment. Stand-out companies include Konfio, Credijusto, Klar, Albo, Bitso, Clip, and Conekta.

Mexico has made significant progress up to the present in terms of adoption of new technologies. The number of internet users in Mexico has grown from 62 million in 2015 to 74 million today, representing an increase from 57% to 66% of the country's population. The recent growth in internet use is, in part, due to the high penetration of smartphones in Mexico, which today has reached 62% of the population.

Despite higher rates of smartphone ownership, only 65% of smartphone users downloaded applications on their phones. Even so, e-commerce continues to grow in Mexico. During 2019's "Hot Sale," an important e-commerce shopping day, 13.4 million shoppers collectively spent \$11 billion pesos, a 77% increase in the money spent from the year before.¹⁰

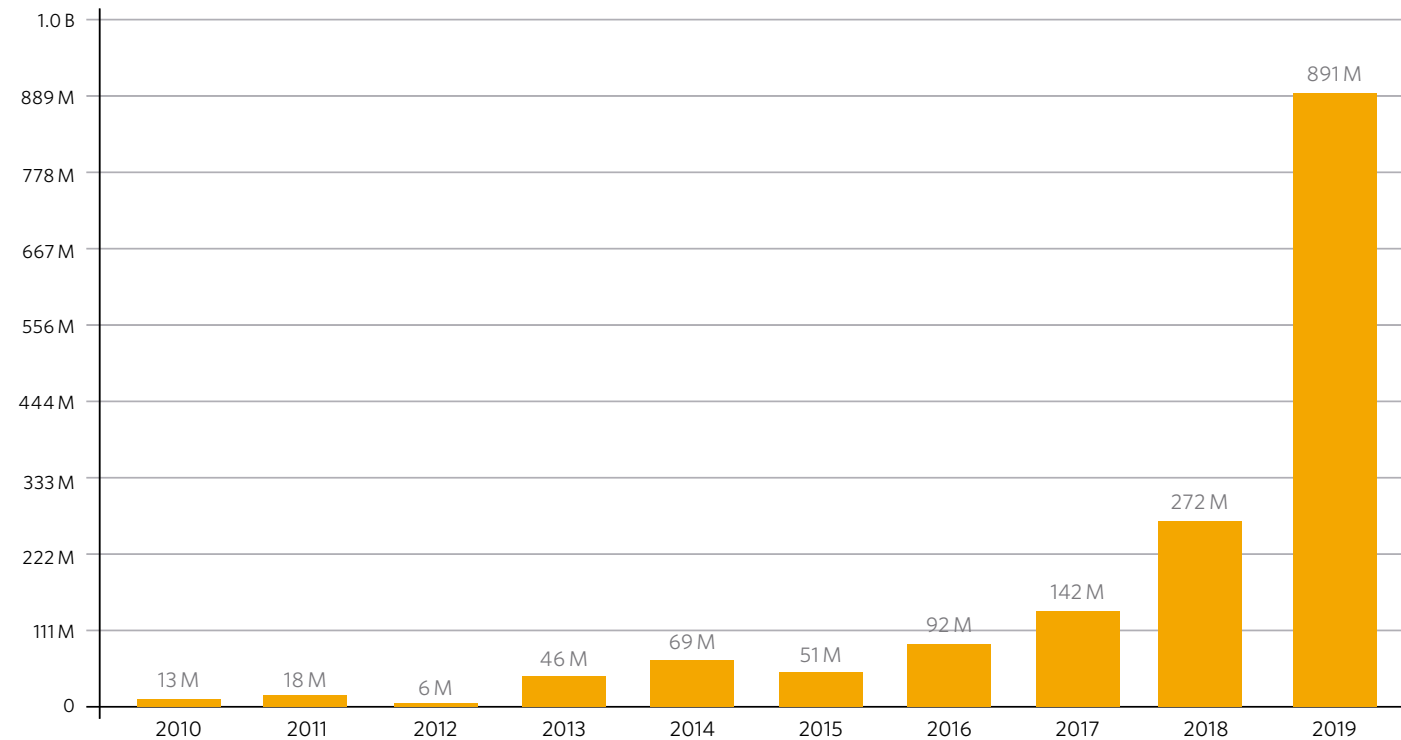
Following a series of notable exits and unicorns in Argentina, Brazil and Colombia, in 2018 Walmart announced a \$225 million deal to Acquire Cornershop in Mexico and Chile,¹¹ making this exit one of the biggest in the region. However, the acquisition was blocked by the Mexican antitrust authorities, dealing a blow to entrepreneurs and VCs who had eagerly awaited this infusion of liquidity in the local market.¹² Then, in mid-October 2019, Uber announced it would take a majority stake in Cornershop for a reported \$450 million, quadrupling Cornershop's valuation since the blockage of the Walmart deal.¹³ To date, the acquisition continues awaiting regulatory approval¹⁴ by the Federal Economic Competition Commission, which has yet to set a timeline for analysis of the deal.

Despite these setbacks for the ecosystem, investment activity skyrocketed in Mexico. In the past five years, over 700 venture capital rounds¹⁵ worth over USD\$1.6 billion were raised by Mexico City tech startups, 64 of which closed in 2019 and represent 55% of the total capital raised since 2010. In 2019, Softbank made news when it launched a USD\$5 billion fund for investment in Latin American startups and investment funds, injecting capital and credibility into the region's technology ecosystems through investments in firms including Clip, Kavak and Konfio in Mexico, Rappi in Colombia, and Credits, Buser & Olist in Brazil.¹⁶

Besides representing a large increase in overall financing for startups in Mexico, 2019 also saw a spike in the proportion of debt in the total. This change may signal optimism for startups' cash flow moving into the next year, as companies must achieve profitability to service significant debt obligations. Almost half a billion dollars was raised in debt this past year, concentrated among only 6 companies.

As we enter the new decade, the unprecedented liquidity in the Mexican technology ecosystem could result in major success for early stage startups seeking investment. However, later-stage companies may face downward pressure on their valuations and difficulty raising capital due to concerns over political risk, highly-concentrated competitive landscapes, and a possible macroeconomic downturn. Fintech and e-commerce will remain the sectors to watch for outlier startups and large-scale investment activity.

FUNDING RAISED OVER TIME (USD)



LEGEND:

■ = VENTURE CAPITAL (SEED & SERIES A, B, C & D)

*N = 753 funding rounds.

Source: Endeavor Insight analysis.

IV. PRODUCTIVITY AMONG ENTREPRENEURIAL TECH COMPANIES

ENTREPRENEURS COMMUNITIES BECOME PRODUCTIVE BY GENERATING A RELATIVELY SMALL NUMBER OF COMPANIES THAT REACH SCALE. THIS CAN BE SEEN IN MEXICO CITY SINCE ONLY 15 PERCENT OF ENTREPRENEURIAL TECH COMPANIES GENERATED OVER 76 PERCENT OF JOBS.

Local tech companies employed approximately twice as many people in 2019 in Mexico City as they did in 2014. Most of the job growth, however, can be attributed to a small minority of tech entrepreneurs who have built companies that employ 50 people or more. Of the estimated 632 entrepreneurial tech companies active in Mexico City today, less than 15 percent reached that scale,¹⁷ but they contributed to the overwhelming majority of the jobs — over 76 percent, as the chart below demonstrates.

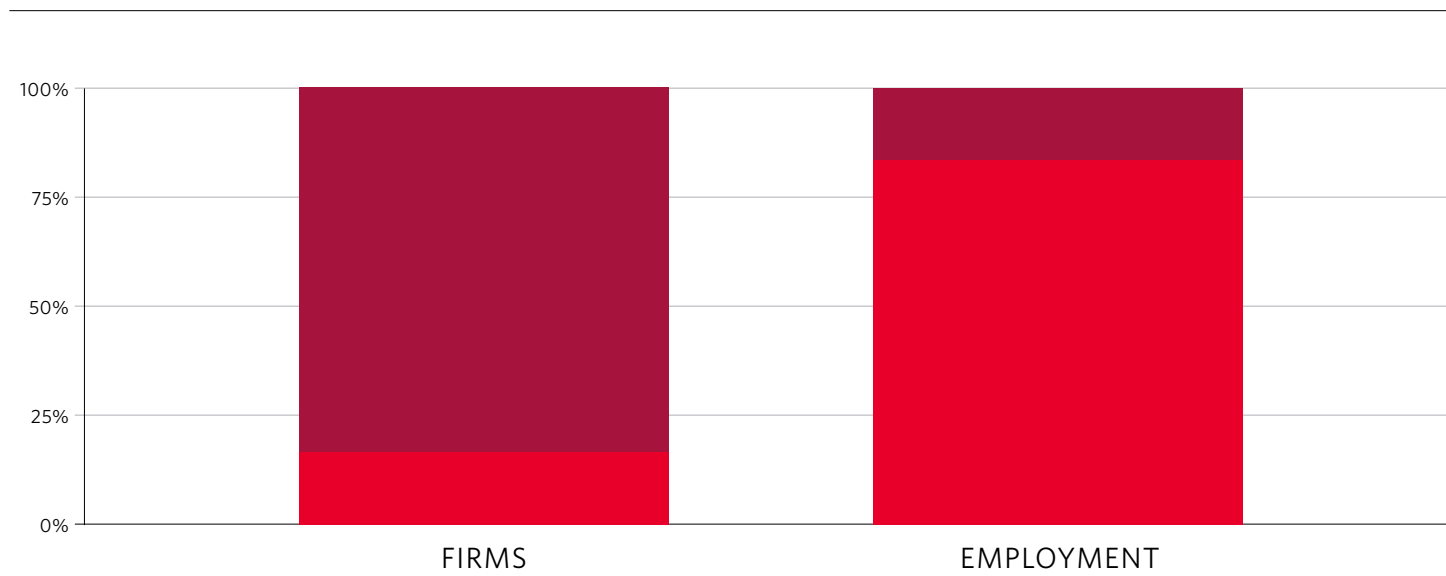
Other tech communities where Endeavor Insight has conducted research mirror this trend. In São Paulo, 21 percent of 585 companies reached the scale of 50 or more employees and contributed 91 percent of 48,000 jobs. In Bangalore, 11 percent of an estimated 3,000 companies reached scale and they created over 96 percent of more than 500,000 jobs.

BASED ON THE SHARE OF LOCAL TECH COMPANIES THAT REACH SCALE, THE TECH ENTREPRENEURSHIP COMMUNITY IS GROWING DYNAMICALLY.

15 percent of entrepreneurial tech companies in the city have at least 50 employees, and the median number of employees at these companies is 103. This suggests that companies that reach threshold of 50 employees can easily expand their workforce beyond that point.

Sub-industries that produced companies at scale at a higher rate, like fintech and enterprise software, outperformed the other sub industries, like e-commerce or adtech. 100 fintech companies together created an estimated 7,500 jobs, nearly twice as many as the 105 e-commerce companies in the sample, which created an estimated 4,200 jobs.

EMPLOYMENT CONTRIBUTION AMONG MEXICO CITY'S TECH COMPANIES



LEGEND:

■ = COMPANIES WITH 1 TO 49 EMPLOYEES ■ = COMPANIES WITH 50+ EMPLOYEES

*N = 632 companies and 29,000 jobs.
Source: Endeavor Insight analysis.

The tech community in Mexico City seems to have a number of demonstrated strengths when measured by the percentage of companies that have reached scale.

	FINTECH	SAAS	HEALTH TECH	SECURITY & LOGISTICS	AGTECH/ CLEAN TECH
TOTAL FIRMS	100	47	25	21	15
TOTAL JOBS	~7,500	~1,300	~630	~1,300	~630
MEDIAN JOBS / FIRM	9	11	12	16	15
% FIRMS W/ 50+ EMPLOYEES	22%	21%	20%	23%	26%

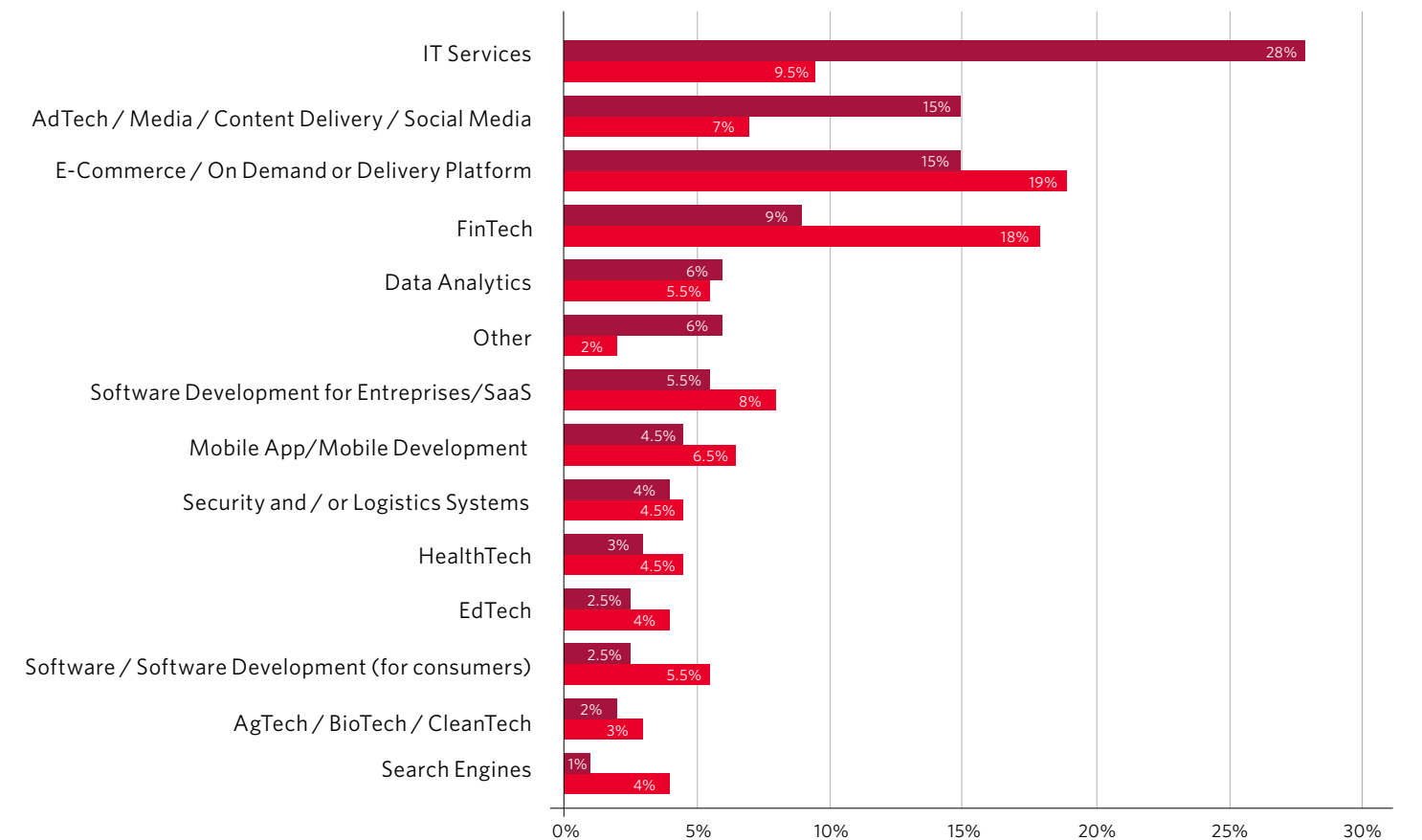
DYNAMISM IS SLOWING DOWN COMPARED TO 2014

Compared to other markets where Endeavor Insight has conducted studies, a relatively high share of local tech companies are reaching scale in Mexico City, but compared to five years ago, dynamism has seemed to slow down. In a previous study that Endeavor Insight conducted in 2014, the percentage of local tech companies with 50 or more employees was 20 percent, compared to less than 15 percent today. Companies are not scaling at the same rate.

It appears that there is a lot of enthusiasm around tech entrepreneurship in Mexico City, but over the past five years, tech companies have been starting up at a higher rate than they were able to scale. In some cases, this can be explained by the fact that at the time, Mexico City was specialized in a number of sub-industries that are now globally less influential. For example, IT services was a core competency for Mexico City in 2014. As much as 30 percent of local IT firms had 50 or more employees. When a new generation of founders followed

suit and started up in IT services, understandably, fewer of them were able to scale than their predecessors, because global demand for IT services as a whole has since slowed down. However, these considerations do not apply to fintech or data analytics, sub-sectors where the proportion of companies at scale has fallen significantly, leaving limited resources to be reinvested in the community.

BREAKDOWN OF INDUSTRIES WITHIN THE TECH SECTOR



LEGEND:

■ =PERCENTAGE 2014
■ =PERCENTAGE 2019

*N = 632 companies.

Source: Endeavor Insight analysis.

There is further evidence that the community has not been able to fully capture the growth of the most promising companies in 2014. Only three companies of the fastest-growing 10 percent of companies under 50 employees from 2014 have reached the scale of 50 employees or more: Clip, kubo.financiero, and SkyAlert. The remaining 11 firms have either closed or continued to operate as small and medium enterprises.

Thankfully, the changes in the competitive landscape and financing allowed a number of new companies to appear and scale in the city in the past five years, including companies like Ben & Frank, Kavak, and Luuna. Over 40 percent of the local tech firms at scale today were founded in the past five years.

KAVAK

ENTREPRENEUR & COMPANY PROFILE + FOUNDING STORY

Roger Laughlin and Loreanne and Carlos García cofounded Kavak in 2016 with one sole objective: "Make car ownership amazing." Kavak is a technology platform that allows buyers and sellers of used cars to efficiently complete their transactions 100% online. Kavak is proof of the new trend among entrepreneurs with less than five years in operation who find themselves in the right place at the right time, achieving exponential growth and reaping rewards from a more mature tech sector ecosystem. For many years, the e-commerce ecosystem saw many similar models struggle to differentiate themselves and scale their businesses in the face of challenges such as an immature market and a lack of digital talent. Roger and Carlos are part of what Endeavor called in a previous study 'The Linio Mafia' or 'Linio Network', to exemplify the multiplier effect of Linio in the tech

sector, a company hailed as the greatest incubator of digital talent in the sector. In this study, Endeavor identified 66+ companies founded by former employees of Linio with headquarters in Latin America, including Kavak.

Kavak has developed all of the technology to formalize the pre-owned car industry, such as a pricing algorithm capable of calculating the price of a car according to variables like real-time market supply and demand.

Three years after its founding, Kavak continues growing at an exponential pace. By the end of 2019, Kavak will have quadrupled (275% growth) its sales compared to the prior year and will have an inventory of more than 2,000 cars, an operating center with a capacity to

process thousands of cars a month and prepared for rapid scale, and more than 10 showrooms and inspection centers in Mexico City. To date, Kavak has closed one of the most significant Series B funding rounds in Mexico and Latin America, led by Green Oaks, Softbank and General Atlantic. Kavak is among companies in the sector that contributes most to collective productivity, currently employing more than 500 people.

As part of the network formed by Linio, Roger, Loreanne, and Carlos are recognized in the ecosystem as among the most influential entrepreneurs, reinvesting their knowledge, credibility, and economic gains in the next generation of entrepreneurs through mentorship, investment, and support for their employees' entrepreneurial aspirations.



KIO NETWORKS

ENTREPRENEUR & COMPANY PROFILE

Sergio Rosengaus and Antonio “Tony” Rallo founded Ncubo, a venture capital fund and incubator, with the objective of cultivating entrepreneurship that could bring technological innovation to the Mexican market. Beginning operations in 2000, Ncubo was ahead of the curve among its peer support organizations that would later enter the ecosystem. The group assisted 7 companies in total (3 of which remain in operation), including a business started by the Ncubo co-founders that would go on to achieve widespread recognition in the technology sector. Established in 2001, KIO Networks positioned itself to address the major technological challenges on the

horizon, building the infrastructure and one of the most advanced data centers to date to support the nascent sectors of cloud services and cybersecurity. KIO has now achieved the status of a unicorn, currently employing 2,259 people, serving 86,457 SME clients and 1,613 large corporate clients, and operating more than 40 data centers across 5 countries. KIO has successfully positioned itself as the largest operator of data centers and provider of mission-critical information technology in Latin America.

The entrepreneurial community benefits from success stories like that of Sergio and

Tony, but even more importantly, needs people to serve as mentors and investors who pass on their knowledge, credibility, and financial gains to former employees and other entrepreneurs to launch their own firms. Sergio and Tony decided to do just that, opening their second investment fund, ID345, in 2014. To date, the fund has invested in 25+ startups (Yalo, Eva Tech, Decidata, Rever among others), co-investing with international funds like Sequoia. Both Sergio and Tony are active mentors in the ecosystem and were frequently mentioned by the entrepreneurs interviewed for this study.

The next generation of tech firms that scale and drive economic growth in the tech community is going to come from the companies that are currently rapidly growing. Their challenges are also likely to signal important systemic barriers in the way of sustained growth for the entire community. Philanthropic leaders, policymakers, and others who wish to see entrepreneurship drive economic development need to listen to these entrepreneurs and address their challenges.

V. CHALLENGES

ACCESS TO TECH TALENT, ACCESS TO MANAGERIAL TALENT, AND REGULATION ARE THE TOP-RATED CHALLENGES AMONG GROWING ENTREPRENEURS.

Despite the political and economic shifts that have allowed the sector to double in size by its number of full-time permanent employees, there remains a number of notable challenges for founders working to scale their companies today. After interviewing 39 founders of the fastest-growing 10 percent of tech companies in Mexico City, three major themes emerged.

CHALLENGE 1: ACCESS TO TECH TALENT

Access to tech talent. The founders of the fastest-growing 10 percent of firms in the study were twice as likely to rate access to tech talent as a major impediment to their company's growth. Over 30 percent of these founders called access to technical talent either a severe or very severe obstacle, while less than 20 percent mentioned access to capital or access to customers.

The positions that were most frequently mentioned as difficult to hire were data scientists and backend developers. Mexico City has a rapidly growing body of tech talent thanks to 140 tuition-free universities and a push for more STEM graduates in the country. According to the Asociación Nacional de Universidades e Instituciones de Educación Superior (ANUIES) or the National Association of Universities and Higher Education

Institutions, there were over 163,000 engineering graduates in 2019 (up from 69,000 in 2011) who made up over 28 percent of all graduates that year.¹⁸ Growing companies still need to compete with large corporations, banks, and international tech companies with local headquarters in the city like IBM, Google, Facebook, Uber, and Microsoft.¹⁹ In addition, U.S. companies have been increasingly hiring Mexican software developers and data scientists to work remotely on a freelance basis, for their proximity to the U.S. and relatively low salaries compared to U.S. tech talent.

To facilitate hiring processes, several founders implemented internal referral systems where employees are encouraged to refer other candidates. However, they can only do so after spending several months with the company, and they only get rewarded for referrals if the new hire stays on for a certain number of months. Another entrepreneur built strong relationships with a

number of universities, specifically in Queretaro, a region famous for its high-quality tech education as an aerospace manufacturing hub, which hosted 85 of the country's 300 aerospace manufacturing companies. Bombardier, GE IQ, Safran, Airbus, Delta, Eurocopter, Aernnova, Meggitt, ITR, Cormer, Regent, and Liberty Spring, among others, manufacture in the region, which also hosts 7 academic institutions and 12 research centers for aerospace engineering.²⁰ Every year, 1,500 tech majors graduate from Queretaro.

CHALLENGE 2: ACCESS TO MANAGERIAL TALENT

Access to qualified managerial talent was rated as the second most pressing challenge by top-performing entrepreneurs. Nearly 30 percent of respondents called it a severe or very severe challenge, noting sales and marketing and product/project management positions as the hardest to fill.

Unlike in Buenos Aires or Sao Paulo during their entrepreneurial booms, Mexico did not have a first generation of great founders who would have cultivated a talent pool of managers capable of helping companies scale. Only seven of the more than 100 companies at scale were founded before 2000, and there were only three notable acquisitions among them: Adam Technologies, Metroscubicos, and Mediotiempo.com (founded in 2000 and acquired by Time.inc in 2008).²¹

With time, opportunities began to open for scaling entrepreneurs to bring in outside talent as the

entrepreneurship community began to grow in neighboring countries. Mexico City enjoys the reputation of an easily accessible cosmopolitan capital, and especially in the past five years, the city has undergone a number of changes that make it appealing to outsiders, including a number of bike-share programs and widespread online payment options. Mexico ranks 36th globally in ease-of-doing-business according to the World Bank.²² The relatively low cost of living and the ease of electronic payments may also have a role in attracting skilled foreign workers.²³ As a result, scaling companies were able to attract the managerial talent of other countries with better talent pools and bring them to Mexico to work in the tech sector.

Linio was a company that most prominently pursued this strategy. In 2016, Linio, an online retailer, raised USD\$55 million, one of the largest rounds in Mexico at that time, and it used the funds to attract the best available talent to work for the company and pursue aggressive growth. By 2018, sales began to plummet, and in August 2018, Falabella, a Chilean brick-and-mortar giant announced the company's acquisition for USD\$137 million. The company is still operating, and is considered one of the companies with a major role as a talent aggregator because of the substantial legacy in the entrepreneurship community.

Endeavor Insight identified over 30 founders that spun out of Linio, and these founders were nearly twice as likely to be in the top 10 percent of founders by their growth rate than the average founder. The founders of companies like Kavak, Envioclick, and Bayonet are Linio alumni. The reason for the high-performance rate is most

likely that over 90 percent of these founders had quality work experience *prior* to joining Linio. Apart from the fact that their experience at Linio taught them the skills to scale a company, it also made them come to Mexico, and meet highly qualified people on the job.

CHALLENGE 3: REGULATION

The rapidly changing regulatory landscape often came up in interviews as a major challenge for entrepreneurs to reckon with in the new administration. When the Federal Economic Competition Commission stopped Walmart's acquisition of Cornershop, many interviewed entrepreneurs noted that they were concerned about the potential implications for liquidity in Mexico City, even as Uber announced its acquisition of a majority stake in the company a few months later, however the acquisition continues awaiting regulatory approval. The López Obrador administration's decision to halt a US\$13 billion public-private partnership to expand Mexico City's airport is often pointed to as an additional marker of an environment of heightened regulatory risk.

In September 2019, SkyAlert's operations were threatened as Mexico City's government issued a new decree that the only entity allowed to send early earthquake warnings was a Mexican nonprofit known as the Center for Seismic Instrumentation and Registry (CIRES) on the grounds that having too many alert services is confusing for residents.²⁴ SkyAlert, one of the city's fastest-growing tech companies with 50 employees and an investment from Berkeley University, stopped using CIRES' services in 2016 when it shifted to using its own sensors

that were imported from Japan with their own investment. SkyAlert still operates and has won, so far, all the legal controversies. SkyAlert's app sold almost one million dollars in 2019.

Fintech in particular is a sector facing increased regulatory barriers in Mexico, forcing entrepreneurs to innovate around regulatory barriers. The rapid expansion of the country's Fintech startup landscape attracted the attention of the government banking authorities, leading to the creation of the "Law to Regulate the Financial Technology Institutions," or "Fintech Law," in 2018. Endeavor Mexico's publication 'Fintech Thermometer: The Challenges of Regulation' finds that of the 57% of Fintech companies affected by the law, 67% expect to incur costs from compliance. This law only regulates crowdfunding, wallet, and cryptocurrency firms.

The regulation limited the use of cryptocurrencies, significantly affecting adoption. Cryptocurrency exchange Bitso had to take significant measures to maintain business as usual, obtaining a license from the Gibraltar Financial Services Commission (GFSC) under its Distributed Ledger Technology Regulatory Framework. This means the custody, withdrawals, deposits, and trading of cryptocurrencies on Bitso will now be regulated by the GFSC, while transactions in pesos will remain subject to Mexican regulation.²⁵

While access to talent and navigating the changes in the regulatory landscape were the most cited concerns among founders as a whole, there were also important distinctions by sub-industry. In fintech, e-commerce, and SaaS, the three sub-industries with the highest representation of high growth companies, founders reported widely differing

challenges. Access to technical talent was the most pressing concern for SaaS company founders, while e-commerce founders were twice as likely as the two other groups to mention that securing capital was a major challenge for them. SaaS company founders, again, were significantly more likely than others to struggle with customer acquisition.

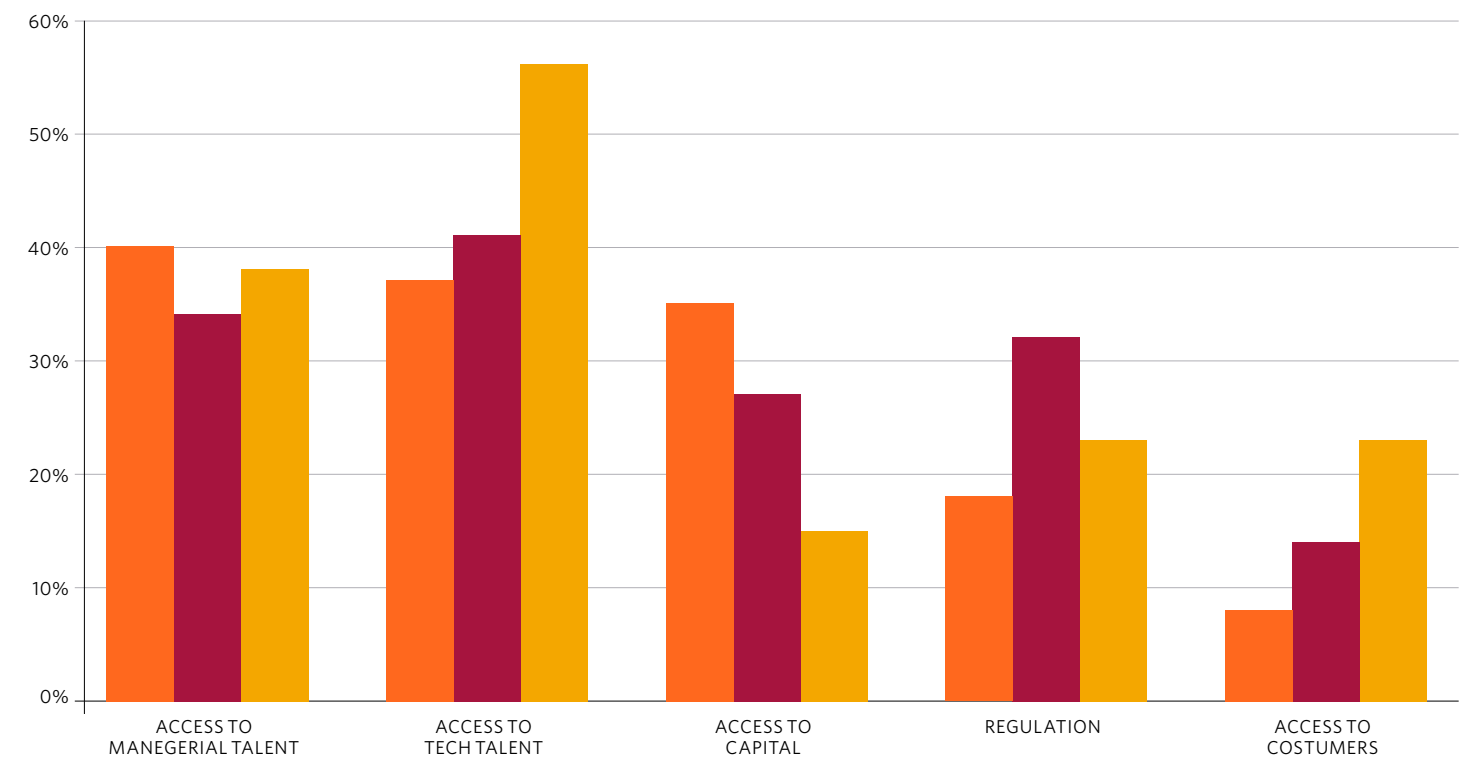
The next generation of companies at scale is going to arise from companies that are scaling rapidly today. Decision-makers in the public and private sectors should identify local tech entrepreneurs scaling rapidly today and address the challenges they reported, namely, access to tech talent, access

to managerial talent, and regulation. The story of Eva Tech illustrates the extent to which regulation can play a role in companies' decisions to relocate outside of Mexico. Founded by Julián Ríos at the age of 18, Eva Tech is a healthtech company dedicated to the development of biosensors for the timely detection of breast cancer. The company attended Y-Combinator in 2018 and went on to win the Thiel Fellowship and Mexico's Presidential Medal for Scientific and Technological Achievements. After grappling with the country's extensive regulatory framework for medical devices and investing millions of pesos, the team ultimately decided to stay in Mexico.

"Our position is that it continues to be a system with deep areas for improvement. The NOMs (Official Mexican Norms by its acronym in Spanish) were designed more than a decade ago and are no longer up-to-date with technological advances. We have a preventive system instead of a reactive one that does not function or advance as fast as startups and innovative companies require. Mexico, being a developing country, has the most complex regulatory system on the continent, which leads to a decrease in the input of health supplies and, above all, in innovation. It is a system that is partially responsible for the great deficiencies in the health sector that we have today."

JULIÁN RÍOS
Co-Founder and CEO at Eva Tech

"IS THE FOLLOWING A SEVERE OR VERY SEVERE OBSTACLE TO YOUR BUSINESS OPERATION IN MEXICO CITY?"



LEGEND:

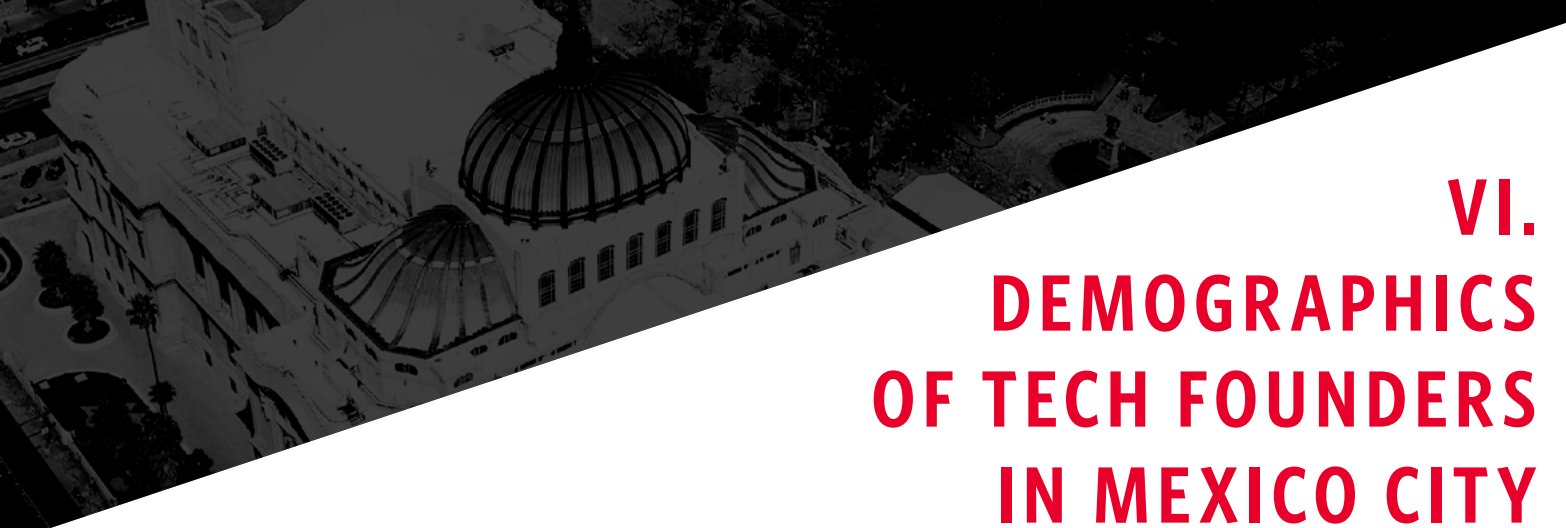
■ = E-COMMERCE, N=40

■ = FINTECH, N=44

■ = SAAS, N=13

*N = 97 companies.

Source: Endeavor Insight analysis.



VI. DEMOGRAPHICS OF TECH FOUNDERS IN MEXICO CITY

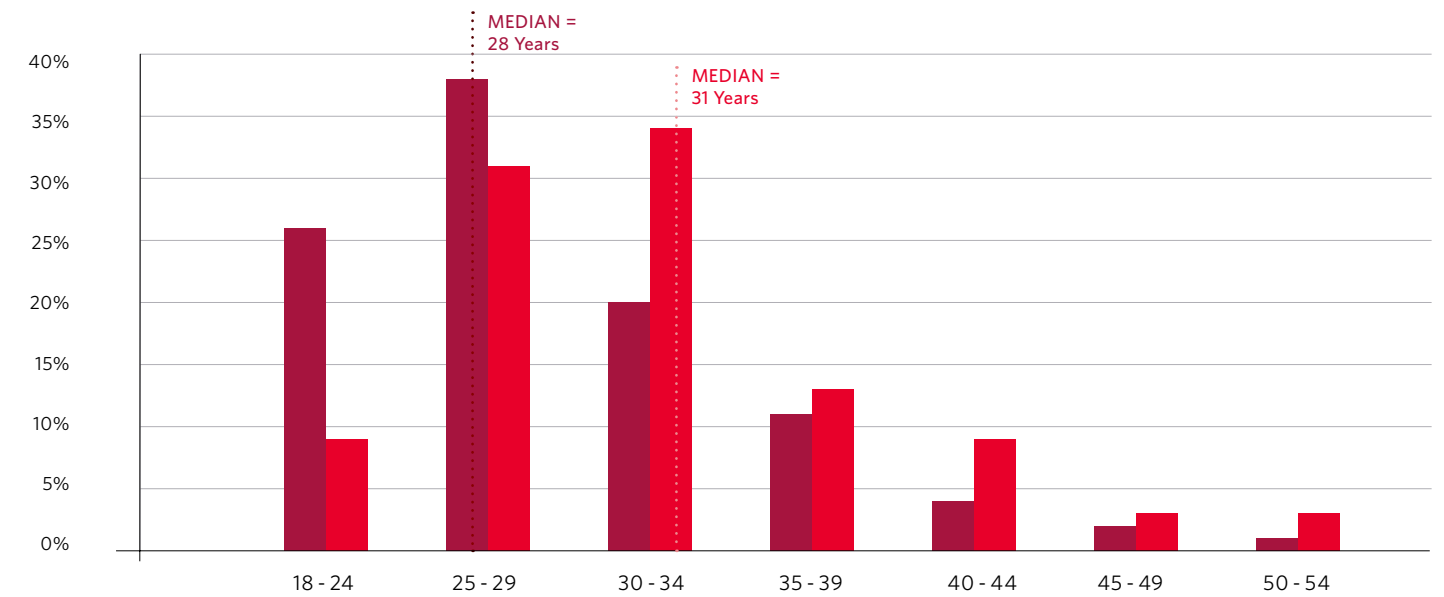
THE FOUNDERS OF FAST GROWING TECH COMPANIES IN MEXICO CITY HAVE DISTINCT CAREERS AND THEY ARE OFTEN CONNECTED TO EXPERIENCED SCALEUP FOUNDERS.

Decision-makers need to focus resources on fast-growing companies today to foster the next group of companies at scale that are able to move the economy forward. The fastest-growing ten percent of local tech companies and their founders have a number of distinct characteristics that can serve as valuable signals for policymakers seeking to support them, based on a review of the work and education histories of 883 tech founders in Mexico City. These founders tend to have more work experience than the average founder, are more likely to have worked at local tech companies, and are significantly more likely to have received support or investment from experienced company founders. The following insights emerged from the analysis of the careers and connections of fast-growing tech founders in Mexico City.

1. Mexico City's tech founders of high growth companies tend to be older than other founders when they start their first companies.

Most of Mexico City's tech founders were between the ages of 25 and 29 when they started their first tech company. This is relatively young compared to cities like New York, where the average tech founder starts their company at roughly 31 years of age.²⁶ However, the founders of the highest performing companies in Mexico City tend to be older. The higher average age of the most successful tech founders in Mexico City and New York is a reflection of the importance of prior work experience within a founding team.

MEXICO CITY'S TECH FOUNDERS' AGE AT FOUNDING



LEGEND:

- = COMPANIES IN THE 10% OF EMPLOYEE CAGR
- = REST OF COMPANIES

*N = 200 interviewed entrepreneurs.
Source: Endeavor Insight analysis.

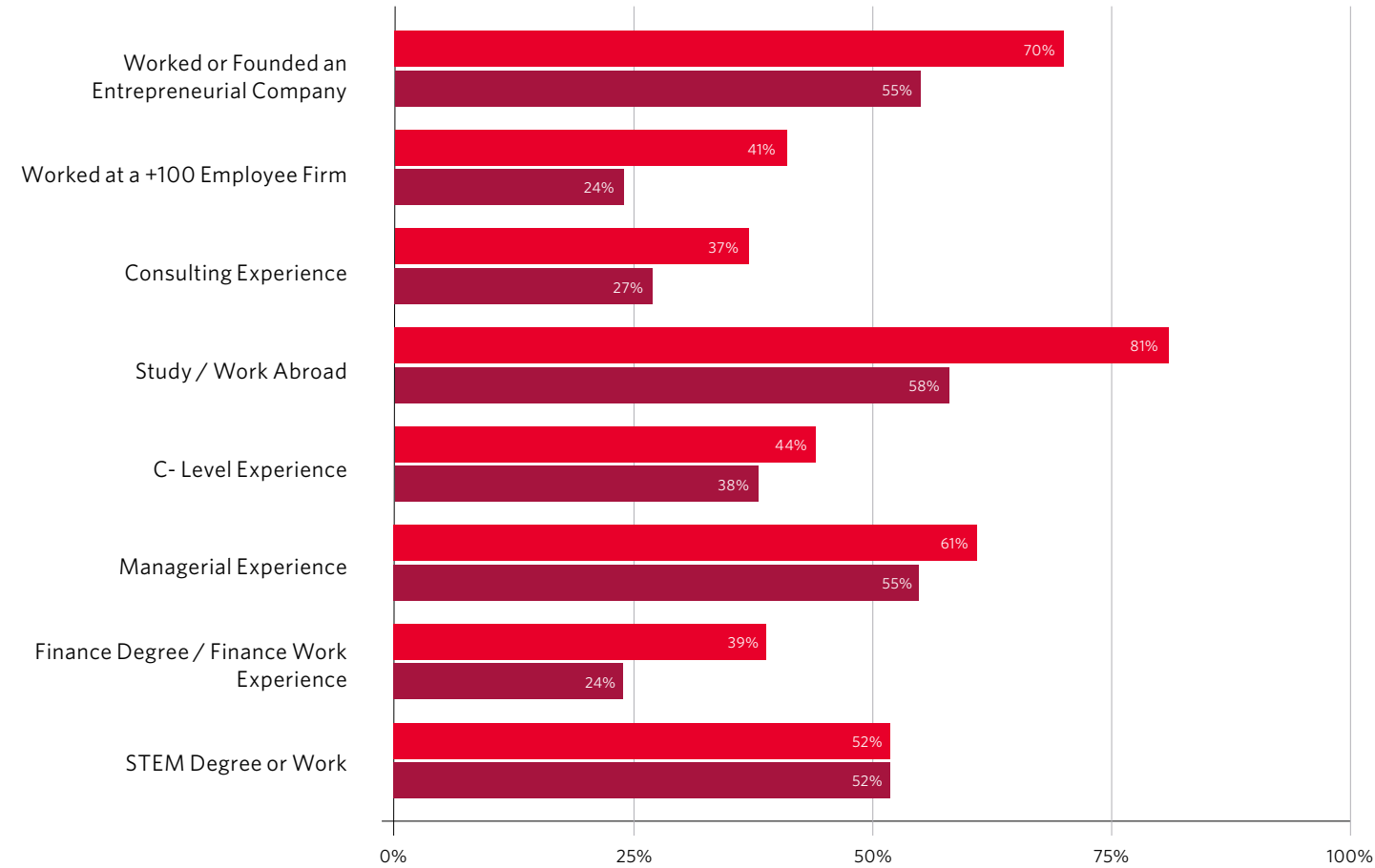
2. The founders of high growth companies are nearly twice as likely to have extensive work experience as other founders.

Previous studies by Endeavor Insight have demonstrated that founding groups with more collective work experience are overrepresented among high growth companies in tech sectors like Bangalore and Nairobi. The same is true for founders in Mexico City: co-founding groups with 20 or more years of work experience are almost twice as likely to be in the top 10 percent by growth rate as others. Conversely, co-founding teams with less than 5 years of work experience were underrepresented among high growth founders.

3. The founders of high growth companies are more likely to have worked at consulting firms and developed tech companies at significant scale.

Based on analyzing a dataset of the LinkedIn accounts of 883 founders in Mexico City, the founders of high growth companies are more likely to have worked at a consulting firm before starting a company and more likely to have worked at a tech company at significant scale (with 100 or more employees). 37 percent of high growth founders had previous experience at a consulting firm, compared to 27 percent of all others, and 70 percent of them worked at an entrepreneurial tech company, compared to 55 percent of all others.

MEXICO CITY'S TECH FOUNDERS' EXPERIENCE BEFORE FOUNDING THEIR COMPANY



LEGEND:

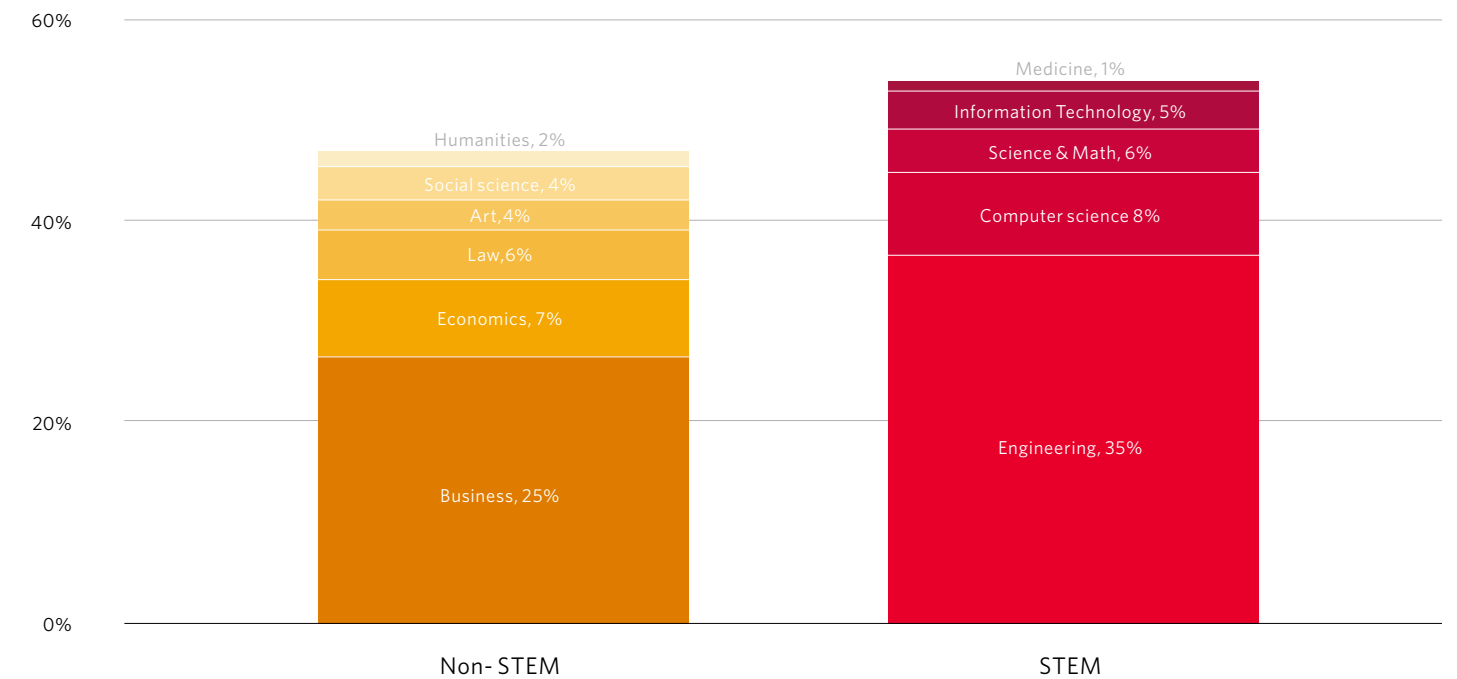
- = COMPANIES WITH 100+ EMPLOYEES
- = COMPANIES WITH 1 TO 99 EMPLOYEES

*N = 632 companies.
Source: Endeavor Insight analysis.

4. The majority of tech founders have undergraduate degrees in STEM fields. The most common undergraduate major among tech founders is engineering, followed by business (including marketing and finance), and finally computer science. Together, these three majors comprise almost 70 percent of the degrees of the founders, although a majority of the degrees obtained are in STEM fields, as shown in the graph below.* While this may seem intuitive for tech sectors, it is not always the case. Over 60 percent of tech founders in New York, for example, actually come from non-STEM majors.²⁷

5. The founders of high growth companies are more than twice as likely to have received mentorship or angel investment from experienced scaleup founders. The most powerful predictive feature for high growth founders was receiving mentorship or angel investment from experienced founders of companies at a significant scale (100 employees or more). Mentorship from one of these founders was 2.4 times more common among high growth companies; angel investment from these founders was 4 times as likely among high growth companies.

MEXICO CITY'S TECH FOUNDERS' UNDERGRADUATE MAJORS BY STEM AND NON-STEM FIELDS OF STUDY



*N = 632 companies.

Source: Endeavor Insight analysis.

Connections between tech founders often shape the way that companies scale and create wealth and jobs for their cities. The above analysis of founder work histories also demonstrates that connections to experienced founders can often translate into measurable improvements in company performance. The following sections provide a snapshot of the connections between tech founders in Mexico City, as well as investors and entrepreneurship support organizations like accelerators and incubators who have been working with them over the years.

VII. NETWORK MAP: PATTERNS OF INFLUENCE IN MEXICO CITY

INVESTMENT FIRMS AND SUPPORT ORGANIZATIONS ARE MORE INFLUENTIAL THAN ENTREPRENEURS IN MEXICO CITY, BUT MANY OF THEM ARE LED BY SUCCESSFUL ENTREPRENEURS.

As demonstrated in the previous section, connections between entrepreneurs have important implications for the ways in which local tech companies can help the economy grow in Mexico City. Networks are important vehicles to transmit resources and information in a community, and they can be powerfully leveraged to address the challenges of scaling tech companies.

Network analysis helps trace the flow of people, capital, and information between entrepreneurs, their co-founders, employees, mentors, investors, and other stakeholders. In order to get a snapshot of the network between tech entrepreneurs, as well as the investors and entrepreneurship support organizations that work with them today, the Endeavor team conducted interviews with 200 tech founders and 44 investors and other support organization leaders in Mexico City, analyzing their investment, mentorship, employment, cofounders, and accelerator connections using a methodology developed by members of the Global Entrepreneurship Research Network.

The methodology looks at four types of relationships among founders and companies that illustrate the ways in which local founders take knowledge and other resources acquired from founding one firm and use it to help launch or grow another.

These are:

1. Serial entrepreneurship;
2. Former employment;
3. Mentorship or entrepreneurship support; and
4. Investment.

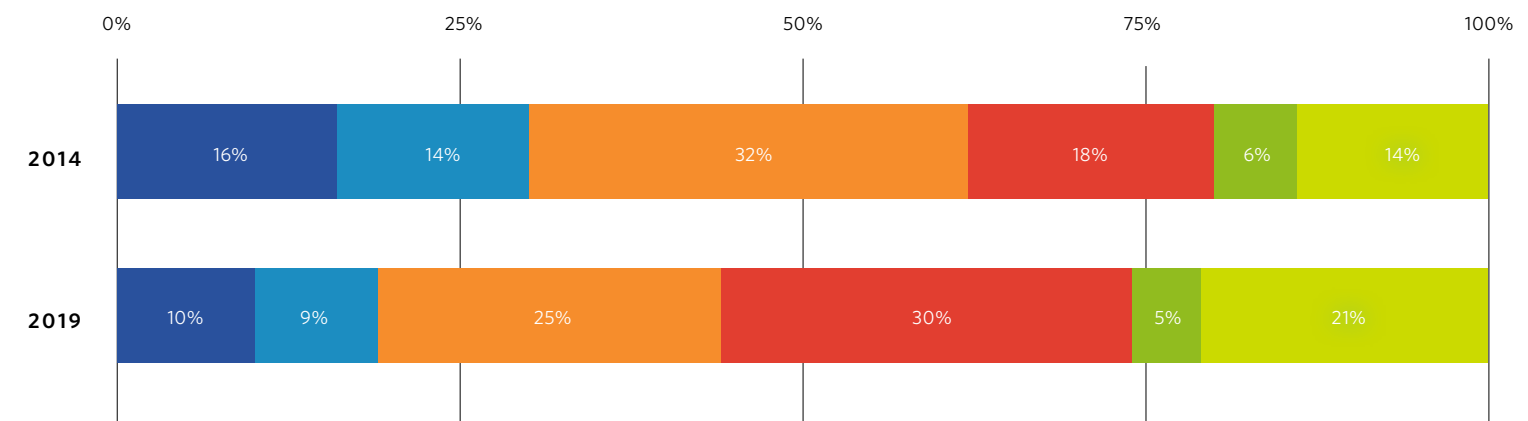
Endeavor Insight then used a centrality scoring algorithm to get a measure of the outbound connections of each company, investment firm, as well as accelerator and incubator (or entrepreneurship support organization).

The interviews revealed a network of 632 entities, connected through 974 connections. The network has more than tripled over time: in 2014, the same methodology would have revealed a network of 170 organizations, connected through 180 connections. **Three lessons emerged.**

LESSON 1:

Entrepreneurship support organizations and investment firms have an outsized influence in the tech ecosystem. In 2019, the Endeavor team identified over 150 investment firms and support organizations, for a sector of only 632 local tech companies. The influence of these organizations has grown over time. There is one entrepreneurship organization or investment firm for every three local tech companies in Mexico City, and they account for more than half of the connections in the network, up from 30 percent in 2014.

BREAKDOWN OF CONNECTION TYPES IN MEXICO 2014 VS 2019

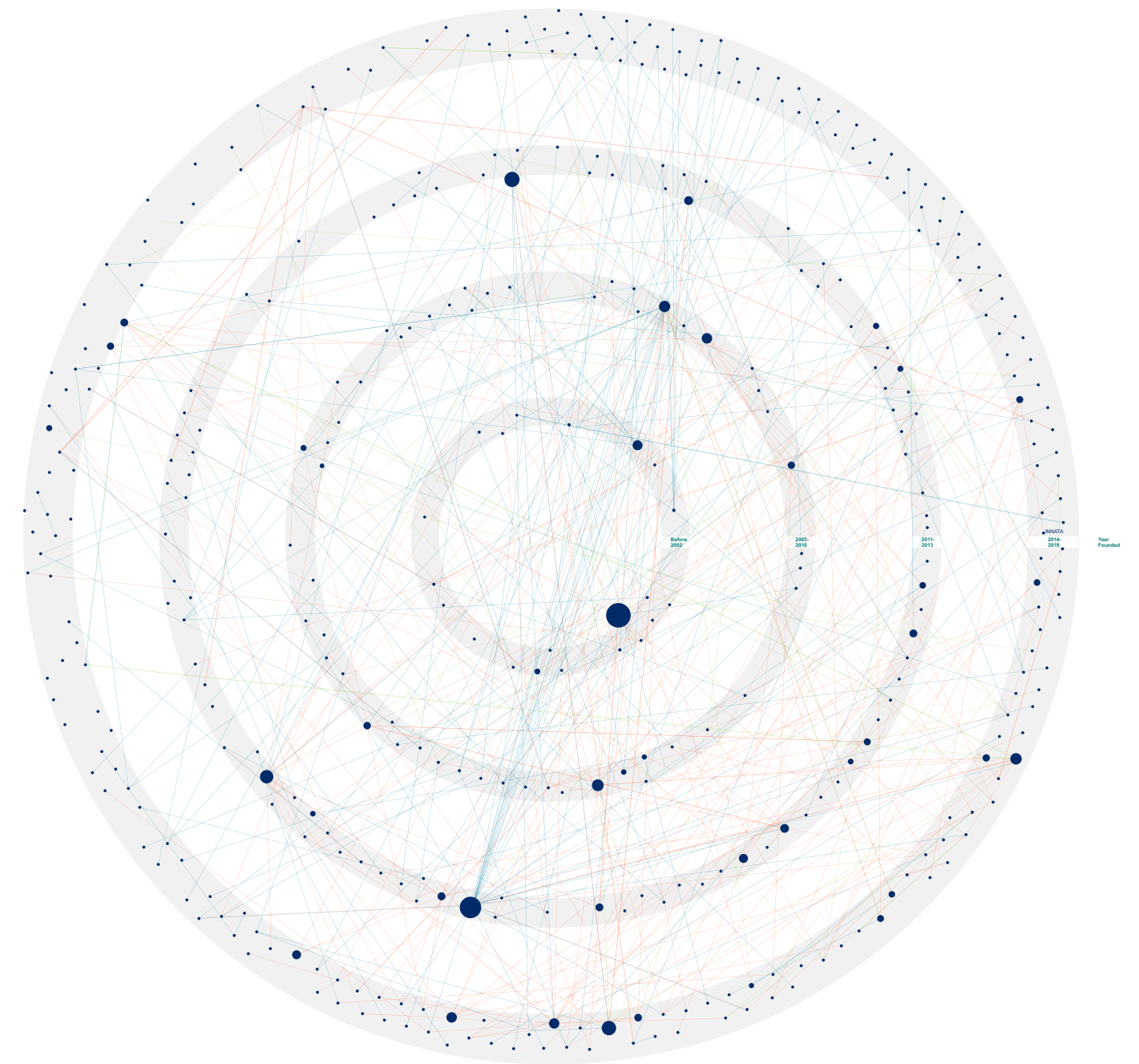
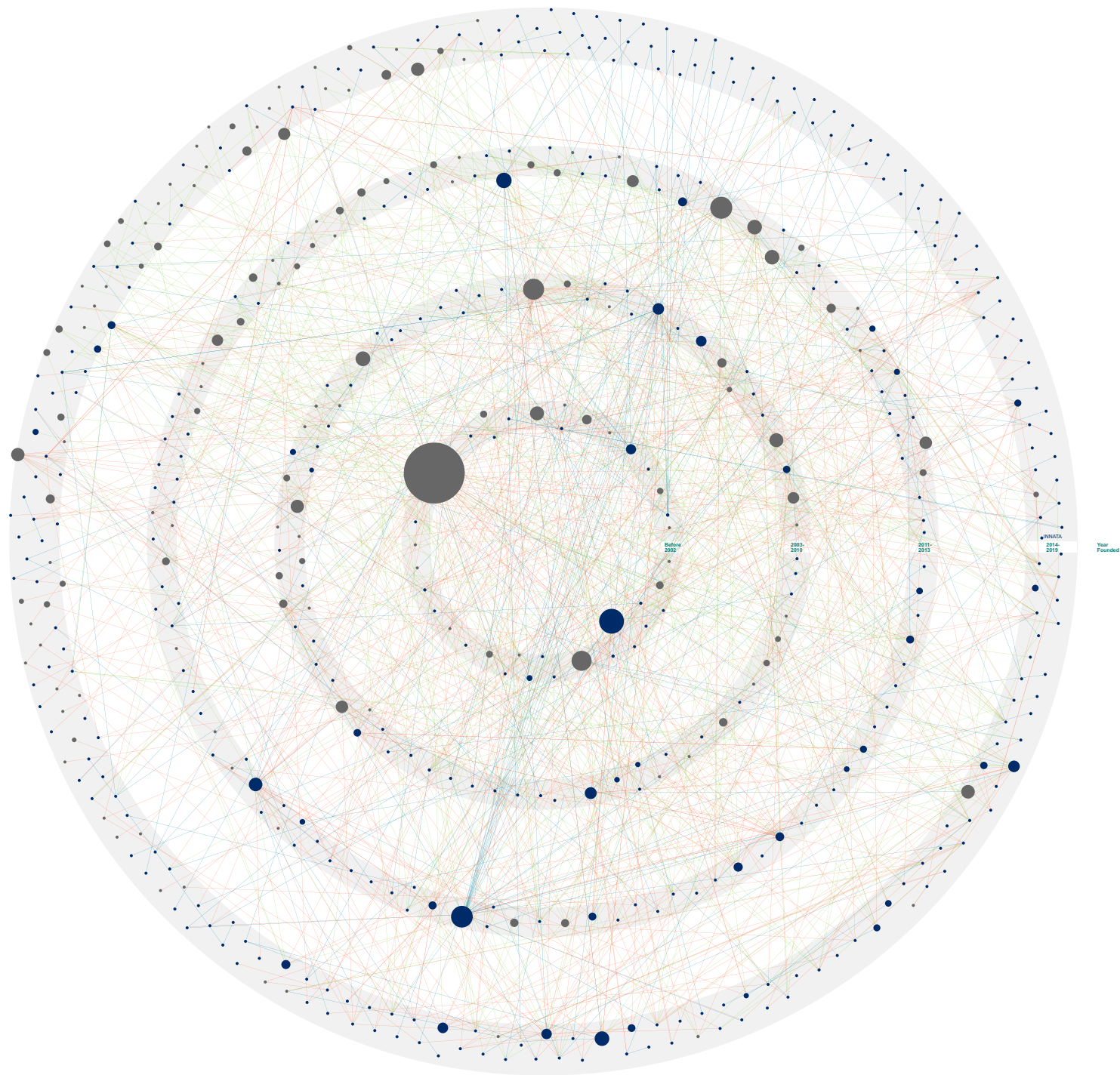


LEGEND:

- = SERIAL ENTREPRENEURSHIP
- = FORMER EMPLOYEE
- = MENTORSHIP
- = ACCELERATION
- = ANGEL INVESTMENT
- = INSTITUTIONAL INVESTMENT

*N = 200 interviewed entrepreneurs and 44 interviewed investors and support organization

Source: Endeavor Insight analysis.



Patterns of influence in entrepreneurship network. The network maps above illustrate the patterns of influence found in Mexico City with and without the influence of support organizations. These maps trace connections observed among founders of entrepreneurial companies (represented by blue circles), as well as investors and leaders of

support organizations (represented by gray circles). The connections are represented by arrows whose direction indicates which actor supports, provides investment to, or has once employed the other. The total influence of each actor is represented by the size of their circle in the network maps: the larger the circle, the greater the influence the actor has on the entrepreneurship community.

In Mexico City, the most influential actors lead organizations that are not entrepreneurial companies, but rather are accelerators, incubators, and capital funds for local, early stage startups. Comparing the two maps side by side highlights how support organizations, represented by the larger gray circles in the city's map, have an outsized influence in the tech ecosystem.

LESSON 2:

Angel investment and mentorship from experienced scaleup founders is relatively rare in Mexico City. As demonstrated in the previous section, when founders of companies at significant scale make investments in local tech companies, or mentor other founders, they make a significant contribution to the company's future and significantly increase their chances of becoming a high growth company. Unfortunately, these connections are relatively rare in Mexico City: only 12 of the 632 local tech companies received angel investment or mentorship from a local tech founder of a company at scale.

WE OBSERVED SIMILAR RESULTS IN MONTERREY'S MULTIPLIER EFFECT STUDY WHERE ANGEL INVESTMENT AMONG TECH ENTREPRENEURS IS RELATIVELY LOW. NEVERTHELESS, UNLIKE THE CASE OF MEXICO CITY, IN THE ENTREPRENEURIAL ECOSYSTEM OF MONTERREY NEARLY HALF OF THE ANGEL INVESTMENT IN THE SECTOR COMES FROM THE FOUNDERS OF HIGH-SCALE COMPANIES, INDICATING THAT THEY COLLECTIVELY PLAY AN ACTIVE ROLE AS INVESTORS.

LESSON 3:

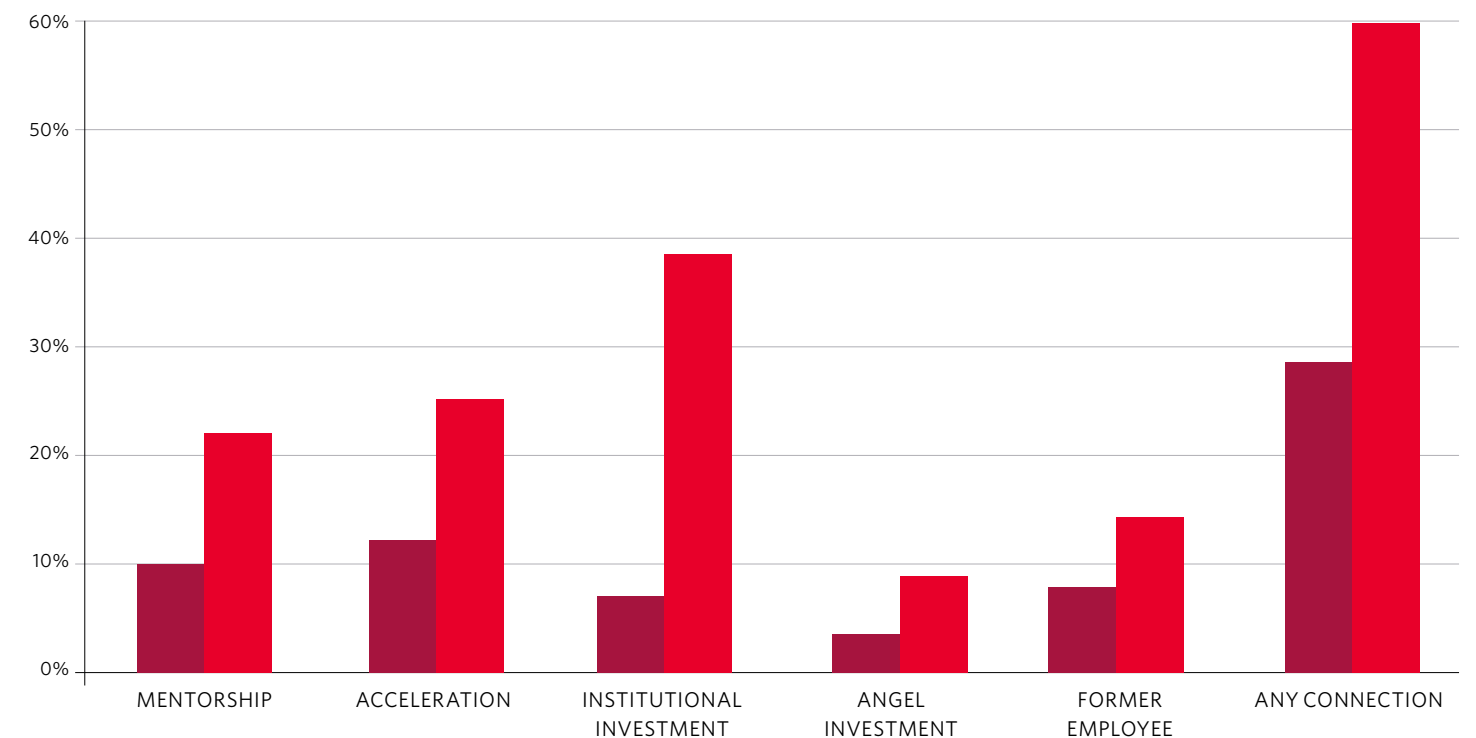
Experienced founders are active institutional investors and support organization leaders. The network analysis also provides good reason to be optimistic about the future of the Mexico City tech sector. Experienced founders are not active angel investors, but they are very active in the leadership of investment firms and support organizations in the city, and in particular in the leadership of the most influential investment firms and accelerators.

These connections are just as beneficial for Mexican tech companies as individual entrepreneur connections. In fact, receiving equity investment

from an institutional investor led by an experienced scaleup founder was six times more common for high growth firms than others. This connection type was also quite common: over 15 percent of all local firms benefited from it.

Overall, 20 percent of the investors and support organizations in Mexico City had an experienced scaleup entrepreneur in their C-level leadership or board, as did six out of the top 10 most influential organizations in the map: Endeavor Mexico, Inventmx, Linio, Sindelantal, Kio Networks, and Mountain Nazca.

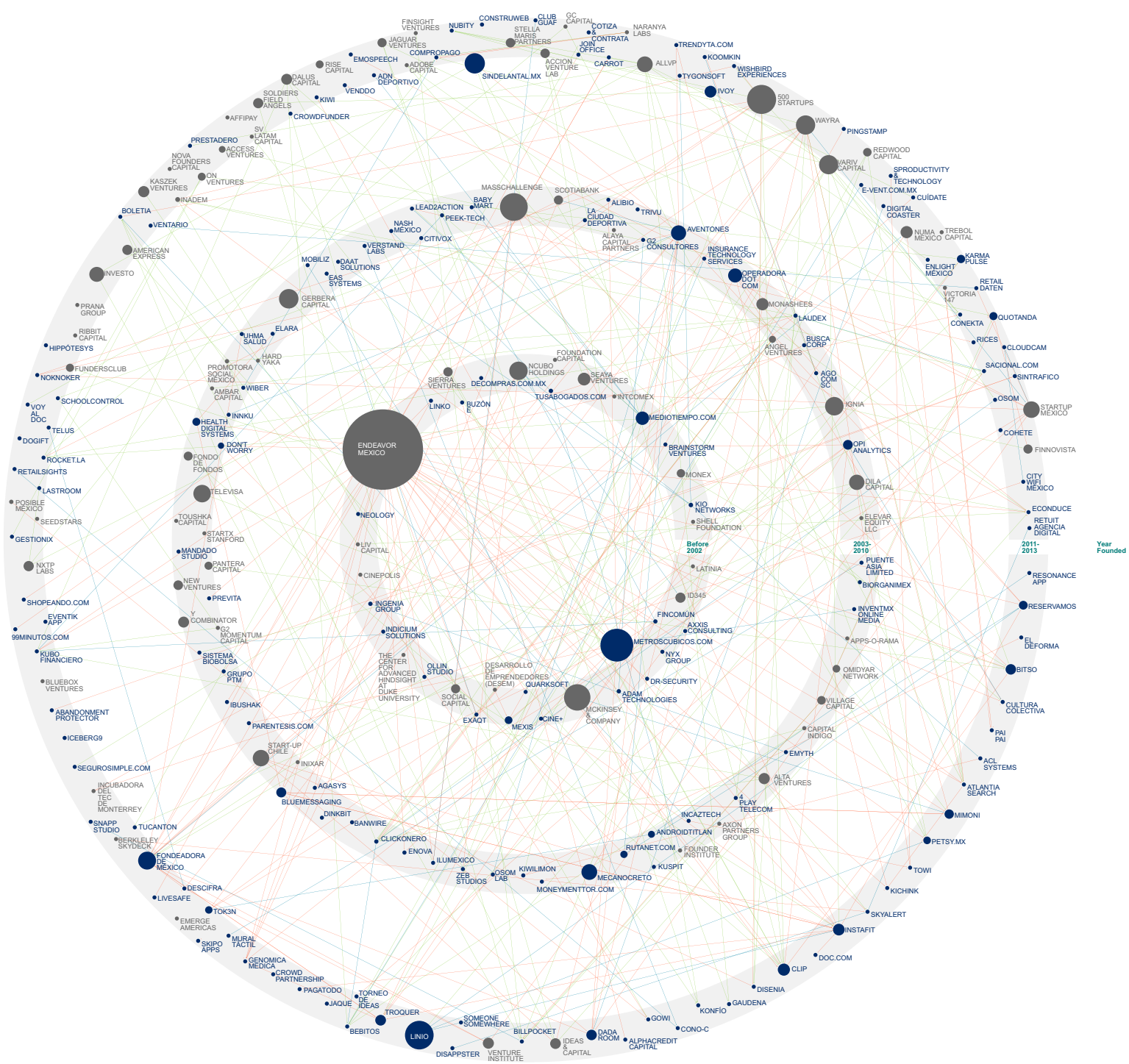
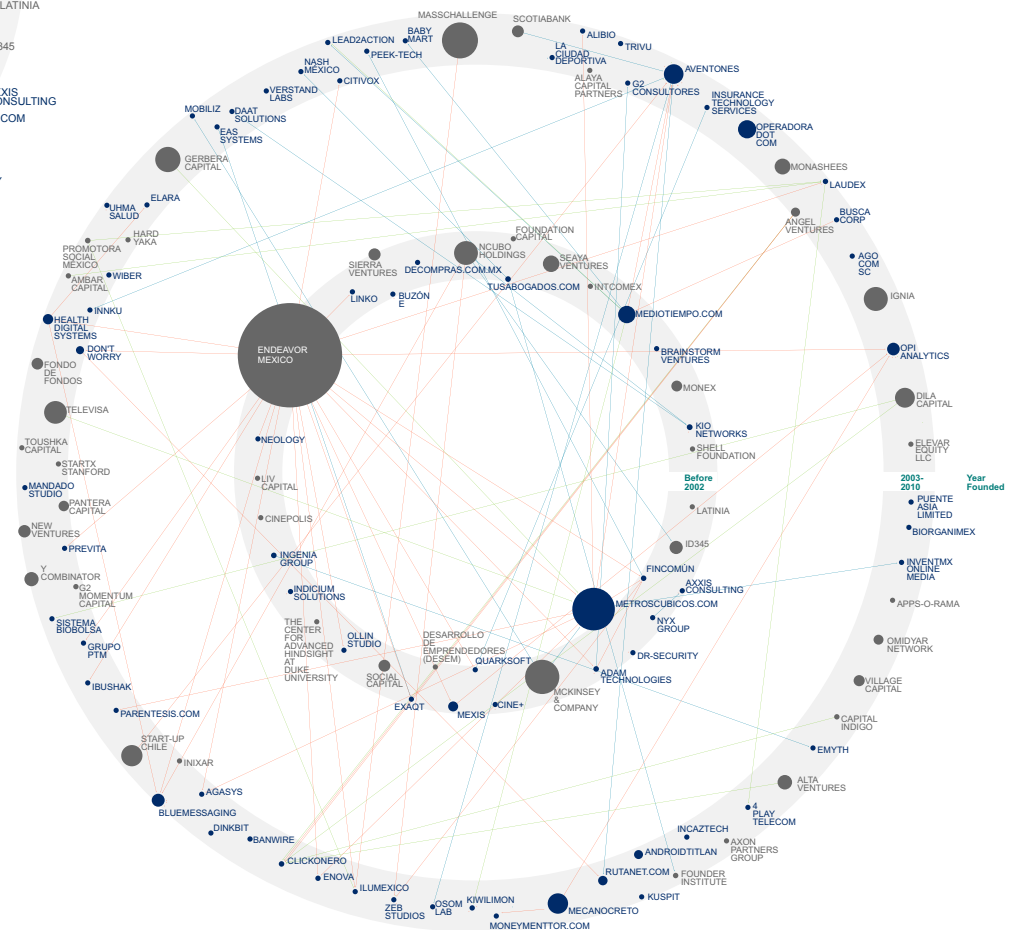
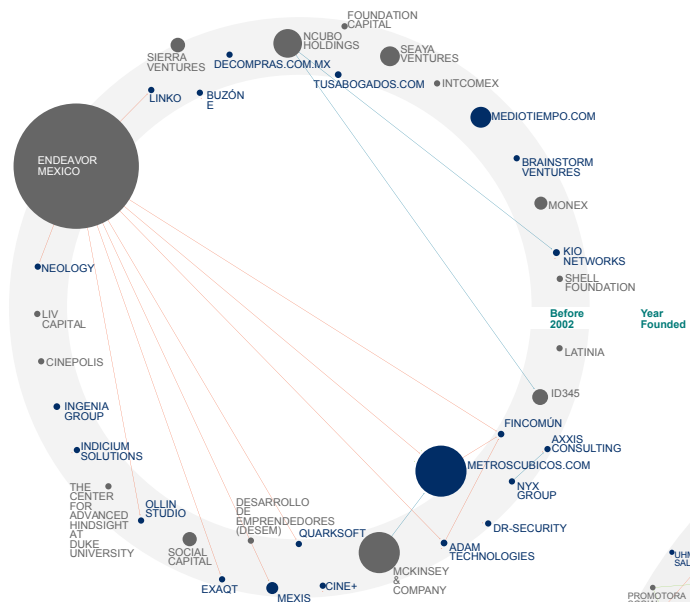
TYPE OF SCALEUP CONNECTIONS: TOP PERFORMER VS NON-TOP PERFORMER



LEGEND:

- = NON-TOP PERFORMER
- = TOP PERFORMER

*N = 200 interviewed entrepreneurs and 44 interviewed investors and support organization. Source: Endeavor Insight analysis.



CONNECTIONS:

- EXPERIENCE: Former employment or serial entrepreneurship
- SUPPORT: Mentorship or program participation
- INVESTMENT: Angel or venture capital

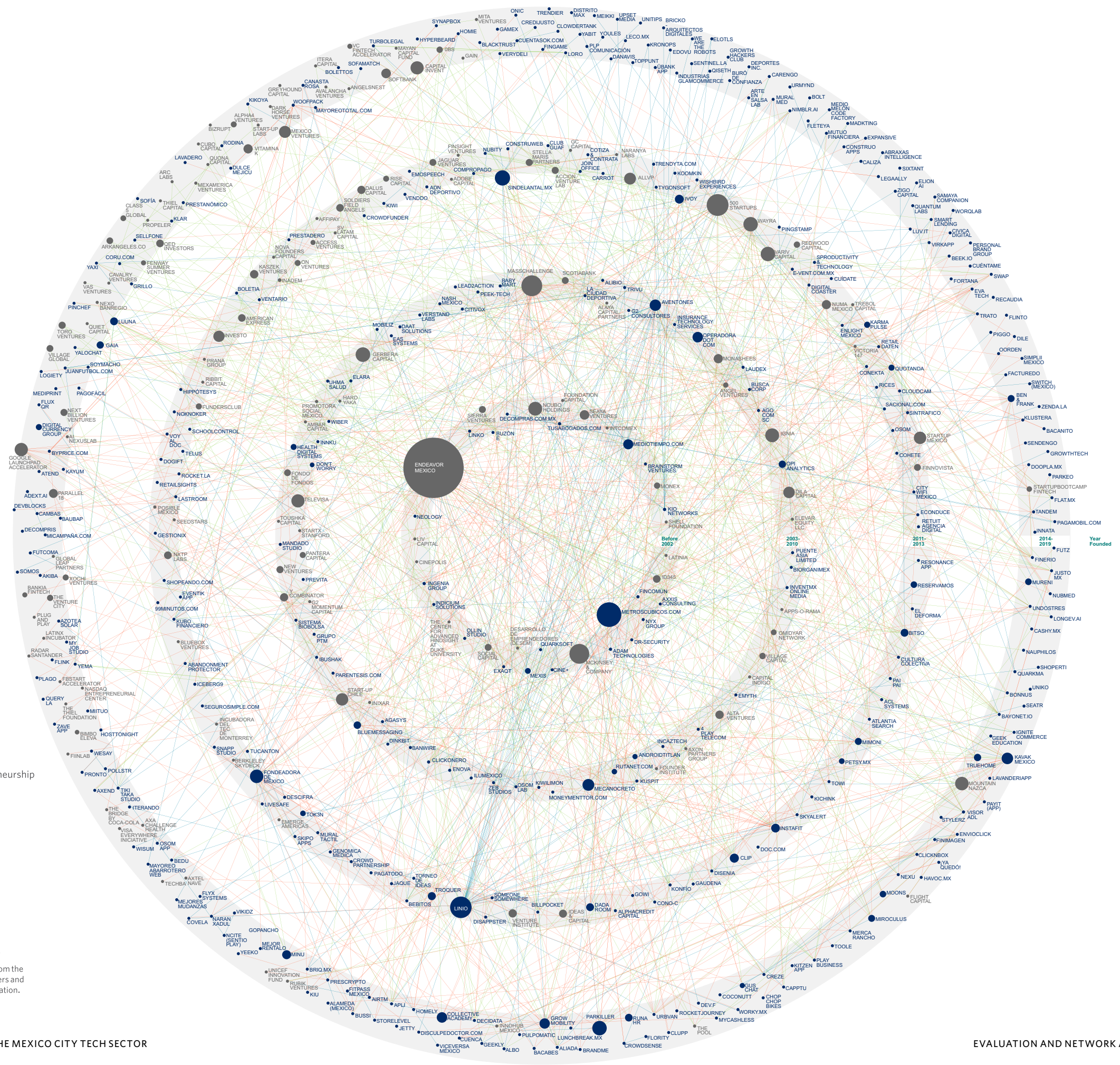
YEAR FOUNDED:

- BEFORE 2002
- 2003-2010
- 2011-2013
- 2014-2019

ACTORS:

- ENTREPRENEURIAL COMPANIES
- OTHER ORGANIZATIONS (e.g., accelerators, investment firms)

The size of the circle reflects the number of connections originating from the founders of each company or the leaders of each organization. Founders and leaders are represented by their most prominent company or organization.



CONNECTIONS:

- EXPERIENCE: Former employment or serial entrepreneurship
- SUPPORT: Mentorship or program participation
- INVESTMENT: Angel or venture capital

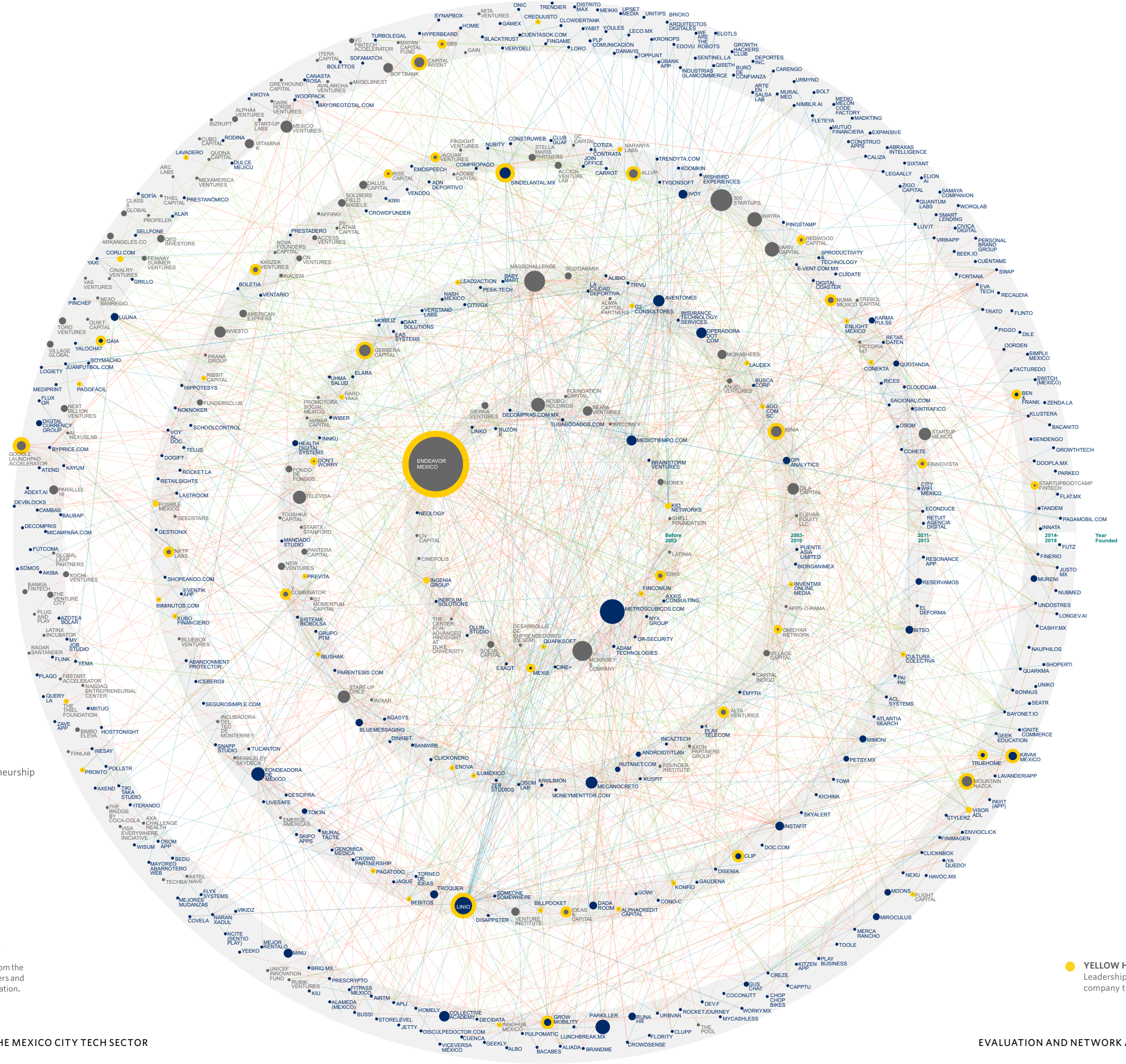
YEAR FOUNDED:

- BEFORE 2002
- 2003-2010
- 2011-2013
- 2014-2019

ACTORS:

- ENTREPRENEURIAL COMPANIES
- OTHER ORGANIZATIONS (e.g., accelerators, investment firms)

The size of the circle reflects the number of connections originating from the founders of each company or the leaders of each organization. Founders and leaders are represented by their most prominent company or organization.



CONNECTIONS:

- EXPERIENCE: Former employment or serial entrepreneurship
- SUPPORT: Mentorship or program participation
- INVESTMENT: Angel or venture capital

YEAR FOUNDED:

- BEFORE 2002
- 2003-2010
- 2011-2013
- 2014-2019

ACTORS:

- ENTREPRENEURIAL COMPANIES
- OTHER ORGANIZATIONS (e.g., accelerators, investment firms)

The size of the circle reflects the number of connections originating from the founders of each company or the leaders of each organization. Founders and leaders are represented by their most prominent company or organization.

YELLOW HEADLIGHTS:
Leadership includes someone with experience leading an entrepreneurial company that reached the scale of 100+ employees.

VIII. RECOMMENDATIONS

1. FOCUS SUPPORT ON FOUNDERS WITH A POTENTIAL TO REACH SCALE. 15 percent of local tech firms in Mexico City generated over 75 percent of the jobs. Decision-makers in the public sector and the private sector who want to support entrepreneurship as a driver of economic growth should focus resources on the companies with the highest potential to scale.

There are a number of traits that separate high growth entrepreneurs from others: they have more years of work experience, and they tend to have a different type of work experience than other founders, such as experience in consulting or at a local tech firm. They are also more likely to be connected to experienced founders of companies at significant scale (companies with a hundred or more employees and companies that were sold for over USD\$10 million).

2. ADDRESS THE CHALLENGES RELATED TO TALENT ACQUISITION AND RETENTION THAT ENTREPRENEURS REPORTED. Access to tech talent and access to managerial talent are the most pressing challenges for scaling tech founders in Mexico City today, so decision makers who want to support them should prioritize addressing these challenges. Linio's success in attracting outside talent suggests that visa programs and other policy measures to attract outside tech talent and managerial talent to Mexico City could achieve great traction, and they could potentially help foster more founders at scale.

3. ESTABLISH COMMUNICATION CHANNELS BETWEEN THE GOVERNMENT AND SCALEUP ENTREPRENEURS. The rapidly changing regulatory landscape has become a challenge for scaling companies in recent years, and while historically, large Mexican corporates have had their interests represented in legislation, scaling tech entrepreneurs do not have their voices heard in the same way.

Network analysis has revealed that institutional investors and entrepreneurship support organizations have been increasingly dominating the Mexico City tech ecosystem. This extensive influence could be leveraged to establish communication channels between regulators and the tech entrepreneur community in the city.

4. ENGAGE SUCCESSFUL FOUNDERS IN ECOSYSTEM SUPPORT ORGANIZATIONS. High-growth entrepreneurs tend to have connections to support organizations that include a founder of a successful start-up. For a market like Mexico City where successful founders demonstrate relatively little participation in angel investment and mentorship, involving them as staff or formal advisers at support organizations can be an effective way to engage them to propel ecosystem growth.

Endeavor Mexico has taken this approach in two different ways, first inviting Adolfo Babatz, co-founder and CEO of Clip, to join its board and then hiring Claudia de Heredia, cofounder of e-commerce firm Kichink, as director of Entrepreneur Selection and Growth. Similarly, Endeavor Philippines is led by Manny Ayala, founder of M&A advisory boutique IRG Ltd and tech incubator Hatchd.

IX. CONCLUSION

Mexico City has shown remarkable progress towards achieving a globally-recognized startup ecosystem in the past several years. The confluence of public policy interventions, the contributions of a small group of pioneering e-commerce founders, increased technology adoption, and validation by high-profile investments has brought funding and founding activity to an unprecedented level. However, major challenges for the ecosystem remain. Tech firms continue to struggle in securing key talent and cope with perceptions of heightened political and macroeconomic risk. Relatively few successful entrepreneurs are reinvesting their expertise and resources in Mexican startups, producing a dearth of essential support for their successors.

Our data demonstrates that the most successful founders in Mexico receive support from entrepreneurs who achieved significant scale in prior companies themselves, entrepreneurs who contribute to the "paying-it-forward" culture that drives economic growth. The city should continue to foster these relationships and elevate experienced entrepreneurs to positions of power. That way, Mexico City has a potential to become an entrepreneurship community that is organized bottom-up, rather than top-down, a community where experienced entrepreneurs decide how best to help the new generation.²⁸ The leaders of successful companies would set objectives for the community, fund and mentor new entrepreneurs, and actively design support programs to address the challenges of scaling entrepreneurs.

Mexico is yet to see a new generation of unicorn tech companies, but as ambitious entrepreneurs receive targeted support and develop innovative solutions to seize market opportunities, it may not be too far off.

"Venture capital already identified that the region is productive and scalable, equipped with spending power and the conditions for mobile network usage. What we are going to see is the launch and scalability of businesses, from whom historically we wouldn't have expected growth, and these businesses will become an essential part of Mexico's economy."

SERGIO ROSENGAUS

Co-Founder and CEO of KIO Networks and Board Chairman of Endeavor Mexico

"In my opinion, the ecosystem has achieved escape-velocity, right at the point where everything takes off and will continue to grow. I've never seen it better, never felt it better. Before, the status quo was on the investors' side; today, for the first time in our history, the status quo is clearly on the side of the entrepreneurs. Today, power is with people who have ideas, people that execute them, and people that create value."

HÉCTOR SEPÚLVEDA

Co-founder and Managing Partner at Mountain Nazca

"I believe that in the future we are sure to see entrepreneurs entering the stock market, but I can't tell you when. The worldwide phenomenon of going public has lagged behind. However, in Mexico there will be more and more money found in private financing rounds. I have no doubt that every year we are going to count on more exits, be it through foreign funds that come to indirectly finance local investors, or through direct investments from corporate venture capital funds. There will be more and more exits, but I am not sure about IPOs yet."

ERIC PÉREZ-GROVAS

Co-Founder and General Partner at Jaguar Ventures

"I don't have the slightest doubt that if not this year, next year we will witness one, two, or even three Mexican unicorns, be it Cornershop, Clip, Kavak, Grow Mobility, Konfío, or Credijusto, and probably there'll be one coming out of nowhere."

FEDERICO ANTONI

Co-founder and Managing Partner of ALLVP

"I really like the mobility vertical, as we are starting to see a phenomenon that we call the global emerging market play. In other words, companies and industries that become successful providing solutions to challenges that emerging markets face, such as Urbvan, can thrive in comparable emerging markets. I think we are going to see a resurgence of these types of models that are designed for helping developing economies, and they will have an important scale."

HERNÁN FERNÁNDEZ

Managing Partner at Angel Ventures Mexico

"In the next three years, I think we are going to see some companies reaching significant scale. We are going to see some unicorns, maybe even one or two IPOs, and we are probably going to start seeing meaningful exits."

ADOLFO BABATZ

Co-Founder and CEO of Clip and Board Member of Endeavor Mexico

"An entrepreneurial ecosystem led by accelerators, incubators, and investment firms is still a work in progress. We are in a decisive moment where we finally see a promising generation of potentially successful entrepreneurs in the sector but we have to be exigent that being successful is not enough. Once they become successful, we have to motivate those entrepreneurs to multiply their influence and assume leadership of the ecosystem, reinvesting their knowledge, credibility, and economic gains in the next generation of entrepreneurs."

VINCENT SPERANZA

Managing Director at Endeavor Mexico

▶ **ANGEL INVESTMENT:**

an investment in a company made by an individual, not on behalf of a business or investment firm.

▶ **ENTREPRENEURIAL FIRMS:**

for-profit businesses that are started by individuals who possess ownership and control of the firm. This excludes businesses that began as either government entities or subsidiaries of larger companies.

▶ **LOCAL COMPANIES:**

businesses that were founded or are currently headquartered in a city's metropolitan area.

▶ **MENTORSHIP:**

a connection through which a mentee will meet the mentor at least three times for a minimum of 30 minutes to discuss critical business issues.

▶ **METROPOLITAN AREA:**

the boundaries of a city's metropolitan area are defined using local input.

▶ **SERIAL ENTREPRENEURSHIP:**

the activity of founding of a company by someone who previously founded one or more companies.

▶ **SCALE-UPS:**

companies with an innovative and disruptive component that base their models on exponential growth.

▶ **SEED CAPITAL:**

the initial capital used when starting a business, often coming from the founders' personal assets, friends or family, for covering initial operating expenses and attracting venture capitalists.

▶ **SERIES A FUNDING:**

is the first round of financing given to a new business once seed capital has already been provided.

▶ **SERIES B FUNDING:**

is the second round of financing for a business through any type of investment, including private equity investors and venture capitalists.

▶ **SPIN-OFF:**

a company started by a former employee of another company.

▶ **STARTUPS:**

companies founded no more than three years earlier.

▶ **TARGET COMPANIES:**

entrepreneurial firms founded or currently headquartered in the city's metropolitan area and in the software industry.

▶ **TECHNOLOGY COMPANIES:**

for-profit businesses whose primary activity could be described as either software development (for enterprises or consumers) or internet/mobile-based retail or services.

▶ **TOP PERFORMER:**

a company in the top decile of all local, entrepreneurial companies founded in the same year based on its number of employees.

▶ **VENTURE CAPITAL:**

is financing that investors provide to startup companies and small businesses that are believed to have long-term growth potential.

DATA COLLECTION:

THE DATA COLLECTED FOR THIS PROJECT COMES PRIMARILY FROM SURVEYS AND INTERVIEWS WITH LOCAL ENTREPRENEURS AND STAKEHOLDERS.

For each city, we identified "VIP entrepreneurs" and other stakeholders who have an in-depth perspective on the sector (Heads of VCs, government officials, etc.) to interview. VIP entrepreneurs were identified based on:

- a) **SCALE** - i.e. the current largest companies in the sector
- b) **INFLUENCE** - i.e. companies who have made a large exit, received a large investment, or are otherwise noteworthy or influential.

In addition to the data from our preliminary interviews, **we also used other sources to build a primary company list.** These include databases like Pitchbook, D&B Hoovers, and Crunchbase, as well as the portfolio companies of investors and entrepreneurship support organizations operating in the city. We then reviewed companies in the list to identify which ones were targets, i.e. which companies fit our criteria: companies must be founded or headquartered in the mapped city, entrepreneurially founded, and in the selected industry to be included.

For the purposes of this study, tech companies were defined as those that are actively developing new computer technologies or are enabled by the Internet and belong to one of the following industries:

- ▶ AdTech / Media / Content Delivery / Social Media
- ▶ AgTech / BioTech / Cleantech
- ▶ E-Commerce / On Demand, or Delivery Platform
- ▶ EdTech (includes MOOCs)
- ▶ FinTech
- ▶ HealthTech
- ▶ Mobile App / Mobile Development
- ▶ Security and / or Logistics Systems
- ▶ Software / Software Development (for Consumers)
- ▶ Software Development For Enterprises / SaaS
- ▶ Search Engines
- ▶ Video Games (Gaming)
- ▶ Cloud Platforms and Applications
- ▶ Data Analytics
- ▶ Machine Learning
- ▶ Augmented Reality
- ▶ Virtual Reality
- ▶ IT services

NOT considered were those that:

- ▶ Manufacture hardware
- ▶ Give services through third party software
- ▶ Market third party technology

In total, we reviewed 1,000 companies to determine if they met the aforementioned criteria and identified 632 tech companies, interviewing 212 of these. These companies were founded between 1988 and 2019.

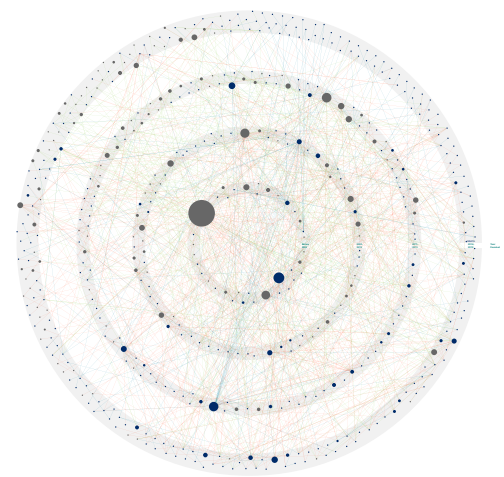
Once the list was complete, **we launched a mass outreach campaign** asking the entrepreneurs on the list to either fill out an online survey or set up an interview in-person or over the phone. **We interviewed over 200 Mexico City tech founders representing 212 tech companies.** The interviews contain the same questions in the survey, but were adapted to be more conversational.

The survey was designed to take no more than 15 minutes for entrepreneurs to fill out. The survey has remained relatively unchanged over the past few years, with only some updates made to reflect city-specific factors or the reticence of entrepreneurs providing certain kinds of data. The collected data is confidential and only accessible to Endeavor and its research partners.

In order to ensure that the company list is comprehensive, **we built a secondary list of companies mentioned in the interviews and surveys** that were not in the primary list. If an investor or support organization that was not in the primary list was mentioned in the survey, we also looked up its portfolio companies and added them to the secondary list. The secondary list also included new companies we found on LinkedIn while collecting data on entrepreneurs and companies. After identifying targets in this second list, we then launched another round of outreach. This process was repeated multiple times depending on the size of the city.

Once all outreach was completed, **we sent a verification email to all founders of target companies**, regardless of whether or not they had been interviewed. The verification email contains a summary of all their connections, including those mentioned by other founders (e.g. if another interviewee they did not mention listed them as a mentor). This allowed us to verify the connections on both sides. Then, we sent another verification email to all investors and support organizations to verify that we had an accurate and comprehensive list of tech companies in their portfolio.

The number of companies mapped and entrepreneurs interviewed varies depending on the size of the sector.



NETWORK MAPPING:

Previous research by Endeavor Insight has found that there are **four main connection types between entrepreneurs** that drive the growth of an industry. For maps that only include connections between entrepreneurial tech companies, these are:

1. Angel investment
2. Mentorship
3. Serial entrepreneurship
4. Former employee spinouts

For maps that also included support organizations and other stakeholders in the sector, these same four connection types were used with emphasis on the first two. Additionally, Angel investment included all forms of investment. Mentorship was expanded to include any type of entrepreneurship support from a stakeholder in the sector.

To learn about these connections between tech founders, the surveys and interviews discussed above focused on five core questions:

1. Who invested in your company? (This includes both angel and institutional investors)
2. Who was your mentor during the growth and development of your company?
3. Have you founded other tech companies in your city?

For each network map, **we assigned every founder to one company or organization**. Where an entrepreneur has founded multiple companies, his or her most prominent company based on an index of founding date, number of

employees, total investment, and exit sizes represents his or her influence on the map. If an entrepreneur has founded an investment firm or support organization, their tech company takes precedence if they founded one, followed by their investment firm, followed by their accelerator or support organization.

We calculated the size of an organization's circle based on directed closeness centrality for unconnected graphs. In other words, the size of an organization is a function of the number of first-, second-, third-, etc. degree connections the organization and its entrepreneurs have to others in the network.

There is no limit to the degrees of separation that factored into the "centrality" score. For example, if one mentor led a chain of mentorships between entrepreneurs, the original mentor's centrality score will increase even if the mentor only directly mentored one entrepreneur. In other words, all connections on the map were weighted equally. Financials and employee counts did not factor into the organization's bubble size.

We did not seek to map negative connections. For example, the terms on which former employees of other entrepreneurial companies leave was not measured, although it was rare to see a former employee connection and angel investment connection from the same source.

Each ring on the map represents a time period. Companies are located on a ring according to the year they were founded. The oldest companies are placed on the inner ring and the most recently founded companies are positioned on the outer rings. The number of rings on a map depends on the size and development of the sector.

Connections accrue to an organization based on the time period in which the connections occurred. When the year a connection occurred was unknown, we took one of two different approaches. When we do not have year information for a former employee, investment, or founder connection, we assume that the year of the connection between the source and the target companies is equal to the year the target company was founded. To estimate when a mentorship relationship started, we reviewed mentorship relationships. Among the mentorship relationships for which this information is available, we find that the mean elapsed time between company founding and mentorship is 0.5 years. We then set the mentorship year equal to the year the target company was founded and add 0.5 years to it, rounding to the nearest year.

Typically, companies are spread out over the map to facilitate processing the connections, and the proximity of companies on the map does not necessarily reflect the degree of connectivity between the two. However, the maps will occasionally feature clustering sub-networks in order to emphasize the role of specific companies in the sector.

NETWORK ANALYSIS:

Companies were only included in our analysis if it was possible to identify their founding year. Additionally, for companies whose employee count could not be found, we used the median number of employees for companies founded in the same year, and companies founded over ten years ago were combined into one cohort. Companies that are no longer operating were included in the map and analysis if it was possible to find enough data to target them. For companies that were acquired, we used the number of employees at the time of acquisition.

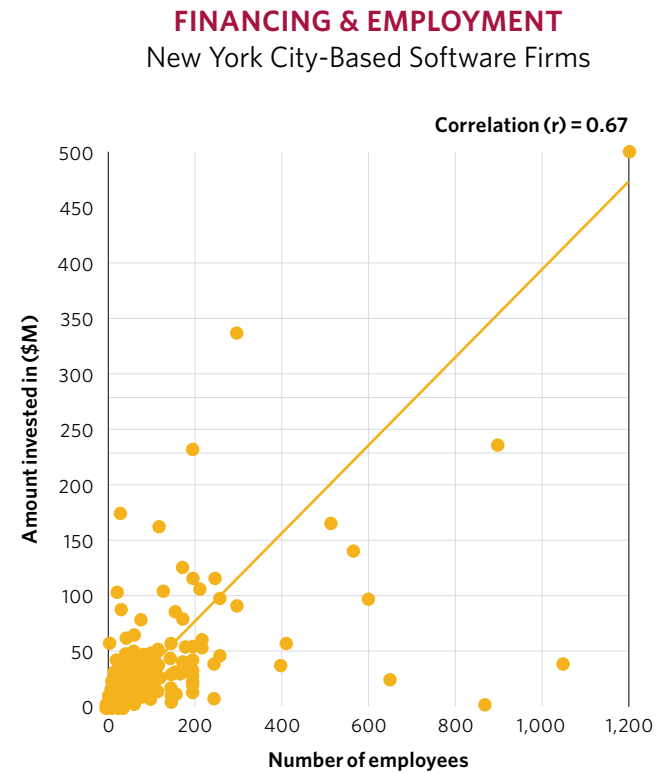
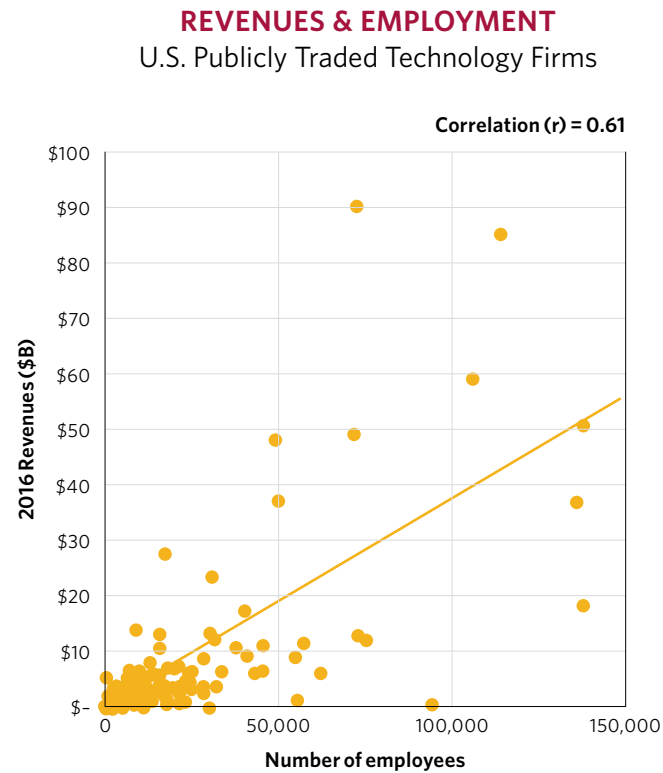
We conducted data analysis at least twice for each city; once after the preliminary round and initial data collection period, and then again after confirming information and inferences made from the first round of analysis. We also ran analysis of sub-networks based on the education background of entrepreneurs, the impact of VIPs, or any other potentially informative parameters.

We do not currently compare maps to randomly generated networks. However, maps, sub-networks and the strength of connections are compared to other benchmarks, including maps of the same industry in other cities and maps of sectors of a similar size. These benchmark comparisons prove helpful in understanding a sector's timeline and characteristics of development.

LIMITATIONS:

We recognize that omitted variables might play a role in sampling and therefore tried to offset resulting adverse effects through our double interview, verification, and analysis process. If gaps or misinterpretations of the data are revealed, the map and resulting analysis are corrected.

CORRELATIONS AMONG MEASURES OF FIRM PRODUCTIVITY



Source: NASDAQ & NYSE 2017; Endeavor Insight 2014.

The scatter plots above demonstrate the high level of correlation between indicators of a tech company's productivity. On the left, employment and revenue have a correlation of 0.61. On the right, employment and investment received are correlated at 0.67.

- Endeavor Insight defines an entrepreneurship community as the collection of stakeholders whose primary activities involve operating, supporting, or investing in entrepreneurial companies within a single metropolitan area or region, and a single industry or group of highly related industries.
- For the purposes of this research, "entrepreneurial companies" are defined as businesses that are started by individuals who possess ownership and control of the firm. This excludes businesses that began as either government entities or subsidiaries of larger companies. "Software companies" are defined as firms where the primary business activity is either software development, internet-based or mobile-based retail services, (e.g., e-commerce, delivery platforms, content platforms, online lenders), or electronic hardware design or manufacturing, fintech, or e-commerce. To avoid excess repetition, the terms "software company" and "tech company" are used synonymously in this document. Companies in this study are considered "local" if they were founded or are currently headquartered in a metropolitan area of Mexico City.
- Investment rounds include Venture Capital (Seed and Series A, B, C & D).
- Egusa, Conrad and Carter, David. "Brazil: A look into Latin America's largest startup ecosystem." *Techcrunch*, 19 January 2017. <https://techcrunch.com/2017/01/19/brazil-a-look-into-latin-americas-largest-startup-ecosystem/>
- Dib, Daniela. "El Futuro del Venture Capital sin el INADEM." *Fortune*, 8 December 2018. <https://www.fortuneespanol.com/destacado/futuro-venture-capital-sin-inadem/>
- The first fintech company supported by Endeavor Mexico was kubo. financiero in 2012, since then Endeavor has selected companies like: Brío, Clip, Laudex, mimoni, Kueski, Bitso, creze, arbolfinanciero, Alivio Capital, Conekta and Swap.
- "Fintech Thermometer: The Challenges of Regulation." *Endeavor Mexico*, June 2019. <https://contenido.endeavor.org.mx/fintech-thermometer>
- "ANNEX II: MEASURES OF PRODUCTIVITY" it shows the positive correlation between number of employees and other measures of productivity.
- Updated by the end of 2019 from the original report Fintech Thermometer, published June 2019.
- Celis, Fernanda. "Hot Sale crece 77% sus ventas en 2019." *Forbes*, 19 June 2019. <https://www.forbes.com.mx/hot-sale-crece-77-sus-ventas-en-2019/>
- "Walmart to Acquire Cornershop in Mexico and Chile, Further Investing in Last-Mile Delivery and Strengthening Omnichannel Strategy." *Walmart Inc.*, 13 September 2018. <https://corporate.walmart.com/newsroom/2018/09/13/walmart-to-acquire-cornershop-in-mexico-and-chile-further-investing-in-last-mile-delivery-and-strengthening-omnichannel-strategy>
- Wood, Sofia. "Latin America Roundup: Uber acquires Cornershop, Softbank, invest in Buster and Olist." *Techcrunch*, 30 October 2019. <https://techcrunch.com/2019/10/30/latin-america-roundup-ebanx-unicorn-uber-cornershop-softbank-buser-olist-carrefour-ewally/>
- Wood, Sofia. "Uber to pay \$450M for 51% of Cornershop." *Techcrunch*, 15 October 2019. <https://latamlist.com/2019/10/15/uber-to-pay-450m-for-51-of-cornershop/>
- Conger, Kate. "Uber Acquires Cornershop, a Grocery Delivery Start-Up." *The New York Times*, 11 October 2019. <https://www.nytimes.com/2019/10/11/technology/uber-cornershop-grocery-delivery.html>
- Investment rounds include Venture Capital (Seed and Series A, B, C & D).
- Marques, Felipe and Andrade, Vinicius. "SoftBank Upends Latin American Startups with Billion-Dollar Deal Binge." *Bloomberg*, 13 August 2019. <https://www.bloomberg.com/news/articles/2019-08-13/softbank-upends-latam-startups-with-billion-dollar-deal-binge>
- For the purpose of this report, Endeavor refers to a company that scale to have 50+ employees.
- "Anuarios Estadísticos de Educación Superior - ANUIES", 7 January 2020. <http://www.anui.es.mx/>
- Vázquez, Carlos A. "Why Are Tech Companies Like IBM, Facebook and Amazon Succeeding In Mexico?" *CodersLink* <https://coderslink.com/company/blog/why-are-tech-companies-like-ibm-facebook-and-amazon-succeeding-in-mexico/>
- "Queretaro's aerospace manufacturing industry: an industry flying high." *Tetawaki*, 6 August 2019. <https://insights.tetakawi.com/queretaros-aerospace-manufacturing-industry-an-industry-flying-high>
- "Time Inc. Acquires 51 Percent Of Mexican Soccer Site MedioTiempo." *CBS News*, 31 March 2008. <https://www.cbsnews.com/news/time-inc-acquires-51-percent-of-mexican-soccer-site-mediotiempo/>
- Lusting, Nathan. "Doing Business in Mexico: A Look at the Opportunities and Challenges." *Nathan Lustig*, 12 July 2017. <https://www.nathanlustig.com/business-mexico-look-opportunities-challenges/>
- "The world's best start-up hubs: Mexico City, Mexico." *Virgin*. <https://www.virgin.com/entrepreneur/worlds-best-start-hubs-mexico-city-mexico>

- 24 Whelan, Robbie. "Private Companies Shake Up Mexico City's Earthquake-Alert System." *The Wall Street Journal*, 23 September 2019. <https://www.wsj.com/articles/private-companies-shake-up-mexico-citys-earthquake-alert-system-11569231035>
- 25 "Bitso: The first regulated platform in LatAm," *Bitso*, published July 18, 2019, <https://blog-en.bitso.com/bitso-the-first-regulated-platform-in-latam-ae16416951d5>
- 26 *Endeavor Insight*. "The Power of Entrepreneur Networks: How New York City Became the Role Model for Other Urban Tech Hubs". Nov. 2014, <http://www.nyctechmap.com/nycTechReport.pdf>
- 27 STEM: Studies in the field of science, technology, engineering, and mathematics.
- 28 *Endeavor Insight*. "Fostering productive entrepreneurship communities." Oct. 2018. <https://endeavor.org/content/uploads/2015/06/Fostering-Productive-Entrepreneurship-Communities.pdf>

This study would not have been possible without the 200 Mexico City tech founders' generous contribution of interview and survey time. Special thanks to the entrepreneurs and key players of the ecosystem for elucidating the history of the entrepreneurship ecosystem:

ADOLFO BABATZ

Co-Founder and CEO at Clip and Board Member at Endeavor Mexico

ALBERTO PADILLA

Co-Founder and CEO at Briq.mx

ALEJANDRO VILLALÓN

Managing Partner at ON Ventures

ANA ORVAÑANOS

Co-Founder and CEO at Tandem

ANTONIO RALLO

Co-Founder and CEO at ID345.TECH and Co-Founder at KIO Networks

BERNARDO CORDERO

Co-Founder at Flat.mx and Founding Partner at STARTegy Venture Builder

CARLOS SALINAS

Co-founder and CEO at Luuna

COURTNEY MCCOLGAN

Founder and CEO at Runa

CRISTINA PALACIOS GODDARD

Co-Founder and Co-CEO at Jetty.mx

DARÍO OKRENT

Head of Digital Channels at Banco Azteca

DANIEL UNDURRAGA

Co-Founder and CTO at Cornershop

DEBORAH DANA

Co-founder and CEO at Canasta Rosa

EDUARDO PAULSEN

Co-founder and Co-CEO at Ben & Frank

ERIC PÉREZ-GROVAS

Co-Founder and General Partner at Jaguar Ventures

EVARISTO BABÉ

Co-founder and CEO at Pulpomatic

FEDERICO ANTONI

Co-founder and Managing Partner at ALLVP

FEDERICO CASAS

Co-founder and Partner at OBS

FERNANDO LELO DE LARREA

Co-founder and Managing Partner at ALLVP

HEBERTO TARACENA

Founder and Managing Partner at Capital Invent

HÉCTOR CÁRDENAS

Co-founder and CEO at Conekta

HÉCTOR SEPÚLVEDA

Co-founder and Managing Partner at Mountain Nazca

HERNÁN FERNÁNDEZ

Managing Partner at Angel Ventures Mexico

JORGE GONZÁLEZ GASQUE

Founder at G2 Consultores and Managing Partner at G2 Momentum Capital

JULIÁN RÍOS

Co-Founder and CEO at Eva Tech

LILIANA REYES

General Director at AMEXCAP

LOREANNE GARCÍA

Co-Founder and CPO at Kavak

MARÍA ARÍZA

CEO at BIVA

MIGUEL RAMÍREZ LOMBANA

Co-Founder and CEO at juanfutbol and Tiki Taka Studios

PABLO GONZÁLEZ

Co-Founder and CDO at Bitso

RICARDO WEDER

Founder and CEO at Jüsto

ROGER LAUGHLIN

Co-Founder and COO at Kavak

SEBASTIÁN BARRIOS

CTO at Cabify

SERGIO ROSENGAUS

Co-Founder and CEO at KIO Networks and Board Chairman at Endeavor Mexico

VICENTE FENOLL

Founder and CEO at kubo.financiero

VINCENT SPERANZA

Managing Director at Endeavor Mexico

ENDEAVOR, established in 1997, leads a global High-Impact Entrepreneurship movement and promotes economic growth and job creation by selecting, mentoring, and accelerating the world's best High-Impact Entrepreneurs. To date, Endeavor has evaluated more than 50,000 entrepreneurs and selected more than 1,698 individuals who lead more than 1059 high-growth companies. With the support of a global network of Endeavor mentors, these High-Impact Entrepreneurs have created more than 1,500,000 jobs, generated more than ten billion dollars in revenue during 2017, and inspired future generations to innovate and take risks. Headquartered in New York City, Endeavor operates in Endeavor operates in 35+ growth markets around the world. www.endeavor.org.mx

© All rights reserved, Endeavor Mexico 2020

GRUPO FINANCIERO BANORTE is a leading financial institution in Mexico, the second largest financial group in the country and the one with the broadest business diversification in the market. GFNorte provides services to more than 21 million customers through an extensive network that includes more than 1,160 branches, over 8,600 ATMs, more than 13,700 correspondents and over 164,000 point of sale terminals.

Our subsidiaries' main activity is the realization of financial operations such as providing banking, brokerage and warehousing services, leasing and factoring operations. We offer insurance and annuity services, as well as the management of retirement savings contributions. We also operate the international money transfer companies Motran and Uniteller, which mainly serve the remittance market.