Startup Genome

Global Startup Ecosystem Report 2017

By Startup Genome.
In close partnership with GEN crunchbase orb Intelligence

Contents

About Startup Genome

Every city has the right to participate in the global startup revolution and reap the benefits of job creation, innovation, and economic growth. As this Report documents, however, too many places are currently excluded from this revolution. We invite more people and organizations to join this growing global community that seeks to identify the code of how startup ecosystems function, evolve, and generate successful startups.

We provide a way for entrepreneurs everywhere to tell us about their journeys and their ecosystems. The survey data, supplemented with secondary research and data from global and local partners, helps create the world's most comprehensive primary research on startups.

For startup leaders, investors, and other ecosystem stakeholders, we provide data-driven insights to inform strategic decisions as to locations and guide actions to mitigate ecosystem weaknesses. We work with city leaders and members to capture and assess the efficacy of policies and practices, and help them learn from each other about what does and doesn't work.

Ecosystems develop along a lifecycle, and in each phase of the lifecycle ecosystems have different strengths and weaknesses. Scarce resources must be focused on the right actions at the right time for maximum impact in increasing ecosystem performance.

That requires clarity, objectivity, and local consensus, and that's why we are building the first precisely evidence-based policymaking engine to guide these efforts. We look forward to working with more places and learning more about your startup ecosystems.

About Our Partners

Global Entrepreneurship Network (GEN): Operates programs in 170 countries that foster cross border collaboration between entrepreneurs, investors, researchers, policymakers, and entrepreneurial support organizations to fuel healthier start and scale ecosystems.

Crunchbase: Everyday investors, journalists, founders, and the global business community turn to Crunchbase for information on startups and the people behind them.

Orb Intelligence: Database of firmographics that provides company information on 50 million companies worldwide and powerful data matching capabilities to marketing software vendors and B2B marketing agencies.

Dealroom: Helps corporations, investment firms and governments to track innovative companies and identify strategic opportunities, through data-driven software.

Our Global Network

Thank you!

Thank you to the startups, the global revolutionaries, the 10,000 founders across more than 100 cities and 50 countries who used their valuable time to take our survey.

Thank you to the 300 organizations that support startups in these cities. Thank you to our 40 city members who support this research financially, indicated on the map right next to this text.

A special Thank you to GEN, our publication partner, and Crunchbase and Orb Intelligence, our global data partners. And thank you to everyone who has supported us since the first Startup Genome report in 2011.

The Global Startup Ecosystem Report is yours, and and we could not produce it without your continued support.

This map shows our network of members.
Contact us at member@startupgenome.com to join us.

The Rise of Emerging Entrepreneurial Cities

The mission of the Global Entrepreneurship Network (GEN) is to help build one entrepreneurial ecosystem. People are mobile, ideas fly around the world, and capital moves rapidly across borders. Entrepreneurs no longer need to be constrained by geographic boundaries: startups in Africa working on global problems will seek connections with startups in Europe and the United States. Venture capitalists have followed this pattern, expanding their global investment portfolio over the past two decades.

Yet we have lacked ways to fully capture the globalization of startups and the progress of the global entrepreneurial ecosystem. And, while we have evidence-based insights about the DNA of specific innovation hubs such as London, New York, and Silicon Valley, we have not understood what works in helping smaller ecosystems accelerate their growth and increase their performance. Until now.

The Global Startup Ecosystem Report (GSER), produced by Startup Genome in collaboration with GEN, is a leap forward in our understanding of startup ecosystems and the global network of capital and connections that drive them. It also provides advanced analysis of the specific drivers of startup ecosystems, based on survey responses from thousands of technology startups from around the world.

Much work remains to be done, of course, and the Global Entrepreneurship Network will continue to work with Startup Genome and others to develop further insight. But, with the 2017 GSER, we know much more today than we did yesterday. Here, I will highlight four key findings that particularly resonate with our work at GEN and our partners around the world.

First, original ideas emerge from unexpected places in unanticipated ways. What became Silicon Valley did not come into being spontaneously, but was built over decades of strategic investment in a vision for an innovation-driven economy. Today, while there is no recipe for replicating Silicon Valley, this report offers plenty of ideas as to the ingredients to use, how much preparation is required and when to apply and mix each.

Second, there is a lifecycle to the development of startup ecosystems. It may be true that people and ideas and capital are fleet-footed, but competition for those resources is fierce. Doing the right thing at the right time in the lifecycle promises higher payoffs.

Third, we should all share a sense of urgency about developing vibrant startup ecosystems. City and regional leaders no longer need to be convinced of the value of new and young businesses to the growth of their economies. However, leaders of smaller economies need to invest aggressively in building and strengthening their entrepreneurship ecosystems. Amidst that sense of urgency, this cross-border research offers key knowledge on how today's leaders can build innovation ecosystems in an informed and strategic way.

Finally, entrepreneurial ecosystems are multi-dimensional. In the 2017 GSER, Startup Genome uses extensive data to analyze their performance plus eight factors driving startup success. At GEN, we continue to work with a variety of research partners, through the Global Entrepreneurship Research Network (GERN), to extend the reach of such analyses. Innovative data collection and research will enhance our ability to help startups.

Such research increases the global exposure of smaller ecosystems and the innovative new recipes that can now be invented anywhere. In doing so, it puts third-party objective analysis and credible input into hands of many more entrepreneurship champions in a mission to capture their cities' fair share and standing in this new economy.

Jonathan Ortmans
President
Global Entrepreneurship Network (GEN)

Introduction

A Word from a Founder

There is a revolution going on — the global startup revolution. We are changing the world together. All of us startup leaders and all of us working in different parts of the ecosystem. We are challenging the status quo, putting new ideas to work, and holding fast to the belief—the knowledge—that anyone, anywhere should be able to participate in this revolution. The work of startup leaders in spreading this culture of meritocracy and equality is never finished, and we are all helping each other, paying it forward, and expanding the boundaries of startup culture.

Two recent experiences really brought home for me how we, the startup community, have built a shared global culture.

Last summer, on my way to a conference in Sri Lanka, I decided to stop in China and visit Beijing and Shanghai for the first time. As the plane was making its final descent, I realized I only had one appointment set up in Shanghai, and none in Beijing. Not a good feeling. Luckily, that lone scheduled visit was with Richard Tan, CEO of Innospace. He received me like an honored guest, then connected me to other leaders telling them they had to meet me, that I was amazing and a good friend. He went out of his way to help me connect. Then each organization I visited did the same for me, and in the end I had visited 11 organizations in Shanghai and Beijing in less than 48 hours!

When I arrived in Sri Lanka, I spent my time visiting with two dozen startups about their products and experiences. Many of them displayed impressive levels of innovation. One in particular had developed PAYable, a Bluetooth chip and stripe credit card reader technology earlier in 2016 only a few months after Square released its chip reader. That small startup is helping lead a cashless payment revolution in Sri Lanka, right behind Square!

I know all of you have had similar experiences in every corner of the earth. Every time, we are reminded that our culture is special and truly global. The foundation of the revolution is the generosity and pay-it-forward mentality of startup culture. Introductions, favors, connections—people who are busy working on their own ideas and organizations frequently take the time to make these because they know it will come back around. This mentality of trust and open support helps startup ecosystems thrive. We at Startup Genome want to help spread this around the world.

So think of this as your report; we are a voice for the global revolution and I encourage you to read about all the exciting startup ecosystems we now cover, to pay them a visit and consider helping their startups or investing in them. We are all part of this growing global community.

JF Gauthier
Founder and CEO of Startup Genome

About This Research

Since 2011, we have been on a journey to increase the success rate of startups globally. Our first big research focused on quantifying the impact of internal success and failure factors— those under the control of a startup founder. We then turned to external success factors to quantify how they affect a startup's ability to succeed.

It is not about the secrets of Silicon Valley. One of those secrets is that Silicon Valley, often mistakenly touted as a shining example of unregulated free enterprise, was actually developed through tens of billions of dollars in government investments since the postwar era. While examining Silicon Valley certainly offers useful insights, much of the useful knowledge comes from ecosystems that successfully developed their ecosystems through proactive policy and concerted private programs.

Those lessons can be applied anywhere, but doing so requires rigorous data analysis, assessment of different factors, and sustained benchmarking over time.

Early-stage startups are highly dependent on their surrounding startup ecosystem, and so if we can create healthier startup ecosystems, we can generate more successful startups. We can do this by:

- Codifying how ecosystems function and evolve,
- Quantifying the factors that shape their performance, and
- Identifying the public policies and private practices that can accelerate growth.

Lifecycle and Ecosystem Assessment

This process involves two steps. First, it requires an assessment of an ecosystem against our Lifecycle Model, using metrics to identify its phase of development. This assessment provides a first set of insights into the challenges an ecosystem faces and what policies and practices its leaders ought to focus on.

Second, we quantify an ecosystem's overall performance, its score across eight success factors, and the breakdown of each factor score into sub-factors. The result is a precise understanding of each ecosystem, how it compares to other ecosystems at similar stages of development, and what are the most important gaps to address. This in-depth assessment is performed for our member cities, and informs the rankings found in this report.

The table later in this section contains a selection of about half of the metrics contained in Startup Genome's ecosystem assessment framework.

Rankings Guidance

The ranking is primarily driven by one question: in which ecosystems does an early-stage startup have the best chance of building a global success? Consequently it zeroes in on external factors that directly influence startup performance. The strength of the Global Ranking is the use of the performance model to validate every metric. Necessarily, the rankings capture only a fraction of

Startup Genome's ecosystem assessment framework. They can be useful in answering strategic questions related to location.

For startup leaders:

- Where should I form my tech startup in order to maximize my chances of building a global success?
- Where should I open a second office and move a company function, taking advantage of another ecosystem's strengths, and compensating for weaknesses in my original ecosystem?

For investors, support organizations, advisors, and others:

- How can I help address the ecosystem's weaknesses?
  - For example, seeing a funding gap, an angel investors might reach out to and co-invest with investors from other ecosystems, raising the likelihood that startups can raise a Series A round later.
- What are the factor gaps we need to work together to solve?

The Urgency of Ecosystem Investments

In the 2015 Startup Ecosystem Report we discussed the great transition the world is undergoing from the Industrial Era to the Information Era. Companies, sectors, jobs, and entire economies are being swept up in this transition. The Information Era is now fully blooming.

Technology is generating wealth and innovation at an exponential pace but only a handful of places in the world are capturing most of that value creation. Everywhere else, regions and people are falling further behind. Without immediate and aggressive actions to develop stronger startup ecosystems, this divergence will continue and more places will miss out on technological growth and dynamism.

While technology always creates winners and losers, today the gap between them is widening at a rapid pace. Startups are the key vehicle by which regions and their citizens can take advantage of technological change, and startups depend on strong ecosystems. They, however, can take years, even decades, to develop.

Those places that fail to boldly and immediately invest in startup ecosystems, and thus fail to produce startups, will experience economic stagnation.

Technology Sector Growing Twice as Fast as Global Economy

By any measure, the global technology sector has been growing rapidly, outdistancing most other economic sectors over a sustained period of time. Projections indicate that this growth will continue at its current rate and perhaps even increase.[1]

Global gross domestic product today is around $100 trillion. The technology sector (information and communications technology) is roughly 4.5 percent of that, compared to only 2 percent in 1992.[2] If the pace continues at current growth rates, then the tech sector will be 8 percent of global GDP within the next 15 to

1 CompTIA, "IT Industry Outlook 2016," January 2016, at https://www.comptia.org/resources/it-industry-outlook-2016-final; Robert Cohen, "The Impact of the New IP on the U.S. Economy: The rise of the "Megadigital" Economy," Economic Strategy Institute, working paper, January 2017. See also, Robert Cohen, "The New IP Economy: Software Innovation drives the Economy's Evolution to Software-Defined Infrastructure," Economic Strategy Institute, paper for OECD Initiative on Digital Data Innovation, May 2016.

2 M. Selvam and P. Kalyanasundaram, "Global IT/IT Enabled Services and ICT Industry: Growth & Determinants," Proceedings of the International Symposium on Emerging Trends in Social Science Research, April 2015, at http://globalbizresearch.org/Chennai_Symposium/conference/pdf/C549.pdf.

20 years. Global growth, meanwhile, is projected to be about 2.6 percent, which means that the tech sector is growing twice as fast as the global economy.[3] Long-term growth rates, however, give short shrift to the economic dominance of the technology sector:

- Technology is one of the few sectors worldwide where the return on equity for public companies has increased.
- Ten years ago, technology companies accounted for 17 percent of the foreign earnings of American multinationals. Today, this number is 46 percent.
- Technology companies now lead the rankings of largest public companies. On any given day, depending on the stock market's gyrations, technology companies may occupy the five top spots in the world in terms of market capitalization.

These numbers arguably understate the magnitude of the trends. When even old-line industrial corporations such as Boeing, Ford, General Electric, and John Deere are turning large parts of their businesses into software as a service (SaaS) offerings, it dramatically illustrates Marc Andreessen's "software is eating the world" idea. Many technological advances, moreover, are excluded from official economic statistics. Since the advent of smartphones, for example, sales of cameras have plummeted. Yet this is calculated as a decline in GDP because the inclusion (and improvement) of cameras in smartphones is not captured in economic data. Similar effects are true for a wide variety of technological change.

3 PwC, "The Long View: How Will the Global Economic Order Change by 2015?" February 2017, at http://www.pwc.com/gx/en/world-2050/assets/pwc-the-world-in-2050-full-report-feb-2017.pdf.

Trillions of dollars in economic value is being created by the technology sector, with much of that growth driven by startups. This is good news. Areas of the economy with greater use of information technology enjoy faster employment growth than those that have slower adoption.[4] Technology creates more jobs than it displaces overall, and advances such as artificial intelligence will improve living standards in many ways.

Yet as we discuss next, the technological payoff is not uniform. For this major engine of the world economy, with trillions of dollars in wealth—and much of it created by startups—only a handful of regions around the world are capturing these benefits.

Concentration of Technology's Benefits

Rapid technological change is today creating three economic challenges. We see divergence between geographic regions driven by technology. We see concentration of startups and their value. And we see growing inequality among different types of workers because of that concentration. At a high level, these gaps are not new. But the expansion of the tech sector—and its infiltration of other sectors—is exacerbating them. Only strong startup ecosystems can ensure wider participation and benefits, and all regions must urgently take up this task.

4 James Bessen, "How Computer Automation Affects Occupations: Technology, Jobs, and Skills," Boston University School of Law, Law and Economics Working Paper No. 15-49, October 2016, at https://www.bu.edu/law/working-papers/how-computer-automation-affects-occupations-technology-jobs-and-skills/.

1) Divergence Between Regions

For many decades, the economic fortunes of different places—across and within countries—converged pretty steadily. In recent years that steady convergence turned into accelerated divergence instead: metropolitan areas have increasingly outperformed non-metro areas. This shouldn't come as a surprise to anyone. However, new research suggests a divergence among seemingly successful American cities—places like San Francisco, New York City, and Boston have outpaced other cities.[5] This divergence helps explain sluggish global growth. The Great Recession nominally ended in mid-2009, but the subsequent expansion has been comparatively weak by historical standards.

More broadly, new business creation (across all types of firms, not just tech startups) has become increasingly concentrated. From 2010 to 2014, five American metro areas had the same level of business creation as the entire rest of the country.[6] This divergence is driven by tech companies.

If we compare, for example, the performance of the five largest public tech companies in four U.S. cities that are among our top 10 startup ecosystems, with that of the five largest public non-tech companies in other American cities, we see a marked difference (see Figure 1). The speed at which large tech companies create wealth (as measured by their market capitalization growth rate) has been nearly three times higher than for non-tech companies since 2012. The average market cap per employee—a rough

5 Richard Florida, "Welcome to the 'Great Divergence,'" CityLab, February 14, 2017.

6 Economic Innovation Group, "Dynamism in Retreat: Consequences for Regions, Markets, and Workers," February 2017.

measure of productivity—at those tech companies is 2.5 times higher, with $2.8 million for tech companies versus $1.3 million at companies in other sectors.

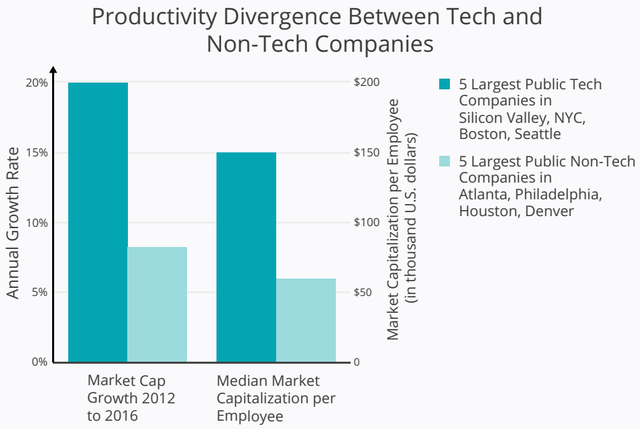


Figure 1

As a result, cities leading the global tech startup revolution, such as Silicon Valley, Seattle, New York City, and Boston have experienced much faster growth in this key resource than Philadelphia, Houston, Denver, and Atlanta. These four cities also have growing tech startup ecosystems, but ones that are not nearly as effective at creating unicorns and large tech winners.

2) Concentration of Startup Ecosystem Value

We see the effects of this concentration among startup ecosystems when we look at the global distribution of Ecosystem Value and Exit Values.

Figure 2 shows that that overall value of startup ecosystems is also highly concentrated. For Ecosystem Value (Exit Value plus Startup Valuations), 11 of the 55 ecosystems in our sample account for 78 percent of global Ecosystem Value. These 11 ecosystems are in seven countries.

Figure 3 shows that despite some ups and downs, the concentration of Exit Value has remained fairly steady among the top 10 ecosystems for at least 10 years. While their share fell slightly after 2011, likely reflecting the aftershocks of the global financial crisis, concentration has remained stable since.

Within the tech sector, companies reliant on network effects have outpaced their competitors—these "category kings" are growing faster and larger than all other public companies, thus capturing a bigger slice of market value.[7] Based on data compiled by

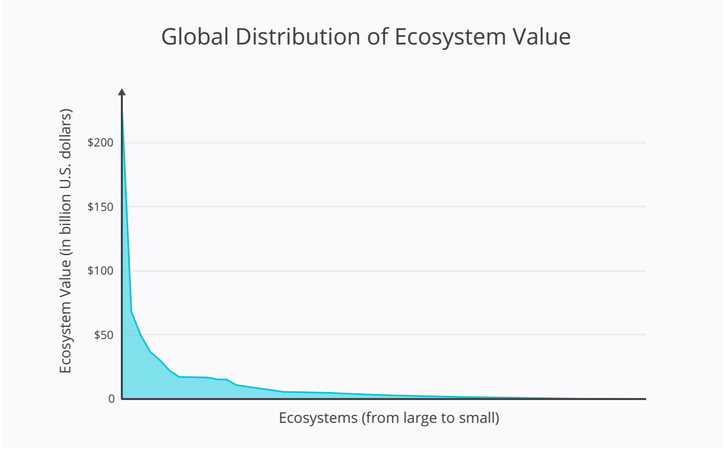


Figure 2

7 See https://www.battery.com/powered/network-effects-keys-ascending-consumer-internet-throne/.

Battery Ventures, these roughly three dozen companies account for around one-fifth of the entire global market value of software companies.[8] Among top ecosystems, there is a decided skew in where these "category kings" are located. Five ecosystems (Silicon Valley, New York City, Beijing, Seattle, and Shanghai) account for 49 percent of the market value of these dominant public companies.

The skew will be exacerbated in coming years as most of the leading technology companies in the IPO pipeline (such as Uber and Airbnb) are based in California—56 percent, to be exact.[9]

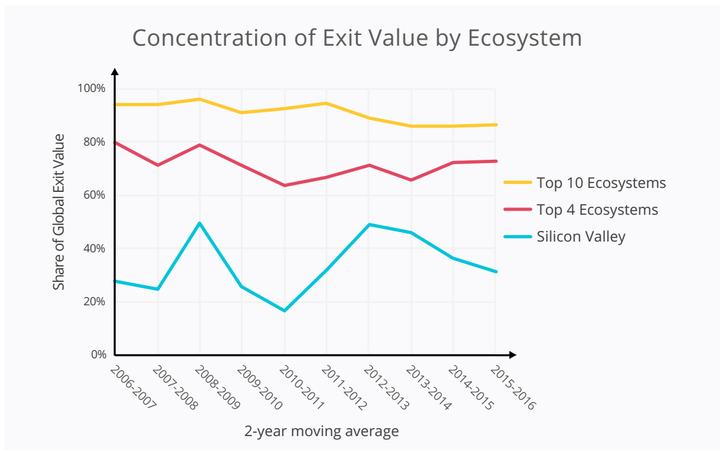


Figure 3

8 Deepak Ravichandran, Jeff Lu, and Roger Lee, "Network Effects - The Key to Ascending the Consumer Internet Throne," Venture + Growth, February 3, 2017, at https://www.battery.com/powered/network-effects-keys-ascending-consumer-internet-throne/.

9 CB Insights, 2017 Tech IPO Pipeline Report.

The upshot is that, while the technology sector is growing twice as fast as the world economy and transforming all types of different industries, the vast majority of that wealth creation is concentrated in only a handful of places. Without attending to creating a strong startup ecosystem, the slice of global technology and economic returns that is captured by other regions will fall.

3) Technological Inequality Among Workers

The global technology sector is on its way to doubling its share of world GDP within the next two decades, with trillions of dollars in economic value being added by the expansion of software innovation. Much of that increase is driven by tech startups. Yet if current concentration levels persist, 80 percent or more of the value created by the tech sector will accrue to only a few cities in only a handful of countries.

Concerns about what technological growth means for individual workers are high. It's commonly cited that 47 percent of occupations in the United States are susceptible to automation. Already, technology-fueled job creation in the United States has been mostly concentrated among high-wage workers, worsening labor market polarization.[10]

Emerging markets look to be worse off: at current projections, 60 to 80 percent of jobs in China, Thailand, Argentina, and South Africa, among others, are threatened by automation. Some countries, in fact, are experiencing "premature de-industrialization," wherein they shed manufacturing jobs before fully developing industrial economies. The twin forces of increasing automation and de-industrialization mean serious economic difficulty for many countries.[11]

This creates economic inequality, which can lead to political unrest. We've already seen examples of this in the United States and Great Britain with economic divergence creating political disquiet. Not coincidentally, these are the two countries where the most successful tech startup ecosystems are located, and where wealth creation based on technology has outpaced wealth creation in other parts of the economy.

Other countries, especially those struggling with different demographic challenges, will see similar unrest. To mitigate that, countries and regions need to focus on building stronger startup ecosystems. This work must begin immediately—strong startup ecosystems do not pop up overnight.

Focus on Startup Ecosystems

In his landmark book, Startup Communities, Brad Feld posited that it takes about 20 years for a vibrant entrepreneurial ecosystem to develop in a city or region.[12] This is a good estimate. In New York City, where a vibrant startup ecosystem has coalesced in the last few years, the seeds were planted at least two decades ago. Building on prior efforts, Israel and Singapore implemented innovative and aggressive policies in the 1990s to spur the growth of their startup ecosystems. In Israel, Tel Aviv has been a top-performing startup ecosystem for several years, and in our 2017 rankings, Jerusalem was a close runner-up, scoring strong in Talent and Market Reach. Singapore appeared in the top 10 ranking for the first time in 2015 (though it fell slightly to 12th in the current ranking).

Over the next 15 years, global economic value from technological change will double. But, because it takes roughly 20 years for a thriving startup ecosystems to develop, aggressive investments are needed urgently, or else more places will miss out on that wealth creation. The world needs more vibrant startup ecosystems to be part of the global circulation of innovation.

This can be done if we work together to build a more distributed global startup ecosystem. We know this is possible because a handful of places have successfully taken steps to foster thriving startup ecosystems. Applying the knowledge and lessons from those places, adapting them to different contexts and local strengths and weaknesses, and investing scarce resources in the right way can create more startup ecosystems in more places.

10 James Bessen, "How Computer Automation Affects Occupations: Technology, Jobs, and Skills," Boston University School of Law, Law and Economics Working Paper No. 15-49, October 2016, at https://www.bu.edu/law/working-papers/how-computer-automation-affects-occupations-technology-jobs-and-skills/.

11 Citi GPS, Technology at Work v2.0: The Future Is Not What It Used to Be, January 2016, at http://www.oxfordmartin.ox.ac.uk/downloads/reports/Citi_GPS_Technology_Work_2.pdf.

12 Brad Feld, Startup Communities: Building an Entrepreneurial Ecosystem in Your City (Wiley, 2012).

Measuring an Ecosystem's Lifecycle

Introduction

National strategy with regards to industry clusters is to grow their size and increase their performance so they produce more economic value and become increasingly globally competitive, sustainably creating jobs and wealth for its population.

City and regional leaders struggle to accelerate the growth of their ecosystems because the structure and dynamics of tech startup ecosystems differ radically from that of other industries, requiring a brand new model of economic development.

In most industries, while the early phase is characterized by the creation of many companies, it is predictably followed by a period of stability and finally, consolidation when a set of big, old companies dominates for long periods of time. This is true of most of industries: Tesla is the first real new entrant to automobiles in decades. Even in part of the tech sector, large companies such as IBM, HP, Intel, and Microsoft (youngest age, 42 years) are stable, predictable, and straightforward for regional leaders to grasp.

Tech startup ecosystems are completely different. Companies come and go, directions shift rapidly—the leading companies are younger and some of them will be displaced every five years by a new upstart. Imagine if the automobile sector were characterized by 1,000 new car companies each year, with only one becoming a large global leader every five years, only to be dethroned within a decade.

That dynamic, especially with rapidly-changing software technology, makes the evolution of tech startup ecosystems very complex. Like their ecological analogs, they evolve through different phases. Each phase has different features, resource characteristics, and needs. The quantification of the factors that capture and explain their evolution across each phase is challenging. Yet it is crucial to the ability of local leaders to focus on the right actions at the right time.

How can regional leaders keep up? By quantifying the phases of startup ecosystem evolution and the factors and triggers that shape that evolution. This is why we have developed a new Lifecycle Model of startup ecosystems, based on research and original data from our global survey of thousands of startups across 55 ecosystems.

Local resources are limited—leaders can use this Lifecycle Model to identify the right actions to take at the right times for maximum impact. This is the only way for smaller ecosystems to accelerate and capture a share of the new economy within the next 10 to 20 years, rather than be left behind.

The Ecosystem Lifecycle Model

Lifecycle Phases

Startup ecosystems go through the following four phases, each with distinct characteristics such as size, strengths and challenges, what triggers them to the next phase, and more importantly, what should be the objective of local leaders.

Activation

a. Low Output (number of startups), around 1,000 or fewer, limited local experience, and generalized resource gaps causing resource leakages.

b. Main Objective: grow and build a larger and more connected community by activating local entrepreneurs, talent and investors.

Globalization

a. Large exits (over $100 million) placed the ecosystem on the map as one of the best places in the state, province, or nation to build a startup, attracting resources and startups from nearby regions.

b. Growing towards 2,000 startups (and more in very large metropolitan areas) through National Resource Attraction, but important resource gaps still exist across several factors.

c. Main Objective: foster connections with global ecosystems so local startups can develop world-leading startups and unicorns.

Expansion

a. Several multi-million dollar exits and unicorns have elevated the ecosystem to the global stage and made the world its pool of resources.

b. Growing past 2,000 startups, with more abundant resources but still some gaps in Funding and Global Connectedness, ability to produce a rhythm of billion-dollar startups.

c. Main Objective: expand, fill remaining resource gaps and increase global connectedness by enabling and taking advantage of Global Resource Attraction.

Integration

a. Grown past 2,000 startups or many more, resources are balanced and competitive with other top ecosystems.

b. Main Objective: Integrate the ecosystems within the global, national and local flows of resources and knowledge inside and outside of the tech sector, optimizing laws and policies to sustain its competitiveness and growth, and spread its benefits (e.g. culture, source of competitiveness, wealth, innovation) to other sectors of the economy and parts of the nation.

The Startup Ecosystem Lifecycle model is captured in Figure 4.

Size

Ecosystem size is a multi-faceted concept that can be captured by Output (the number of startups) but also by ecosystem Startup Valuation. Output is the most useful measure of size because it precedes both the growth of other resources, such as talent and capital (see Resource discussion below), and a reliable increase in ecosystem performance (see 'Bigger is Better' at the end of the section 'Model Explanation').

At an early phase (e.g. Activation), Output varies according to other factors such as the size of the ecoystem's population. For this reason the concept of density, which is the number of thousand startups per million people, is also useful in framing the size of an ecosystem. The following chart (Figure 5) shows how an ecosystem evolves through the lifecycle. This growth in Output is driven by the Resource Attraction described later.

An analysis of density reveals the that highest density—at around two— is found only in Silicon Valley. It is interesting to think of it as an upper limit and combine it to the ranges of Output — 2,000 and more — found in well-resourced, more productive ecosystems. It leads to the hypothesis that a metropolitan city with a population lower than one million people will have difficulty growing an ecosystem into the Integration phase.

Relatedly, the large increase in Output with a lesser increase in Density from the Expansion to the Integration phase is due to the fact that startup ecosystems in larger cities have developed faster

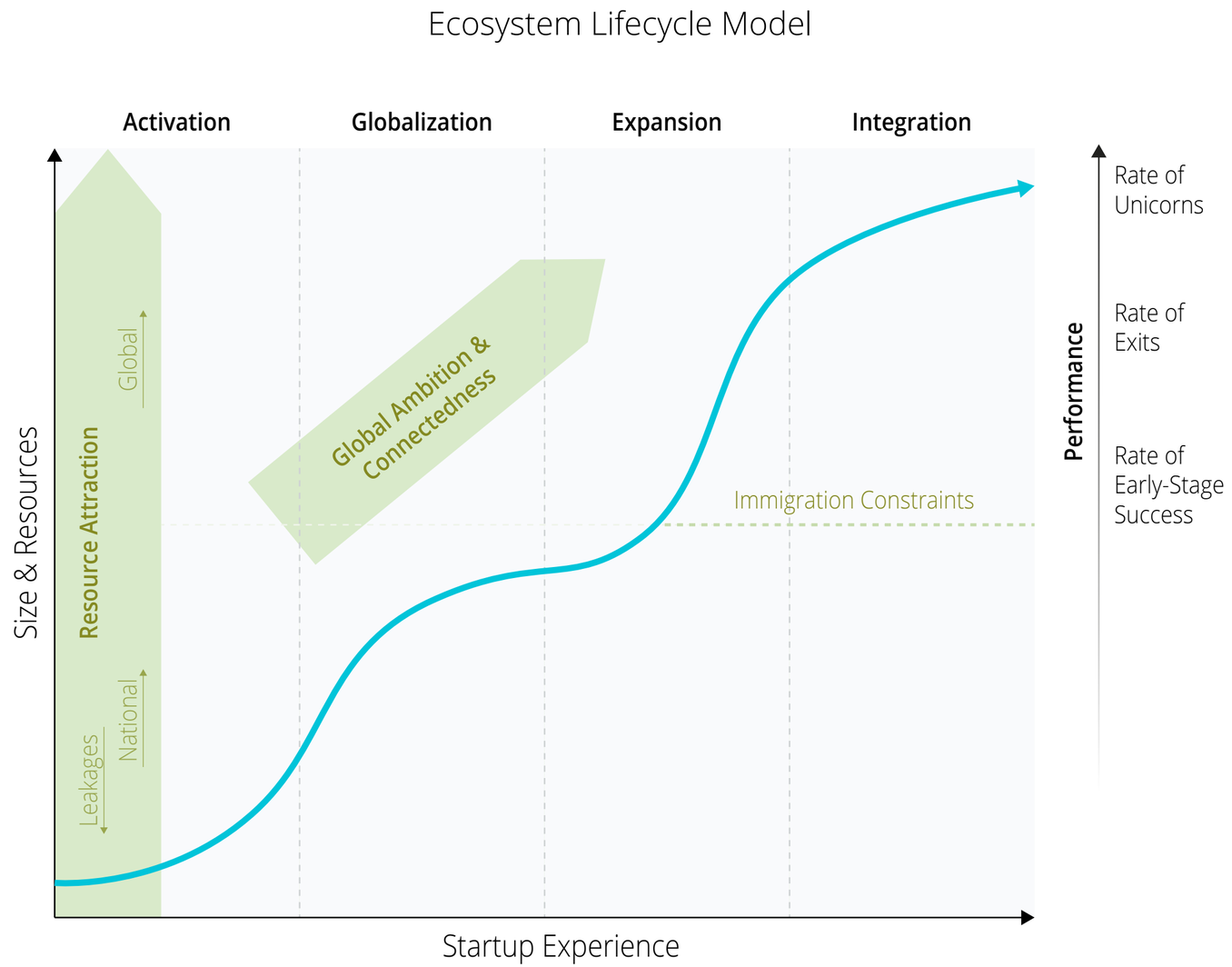


Figure 4

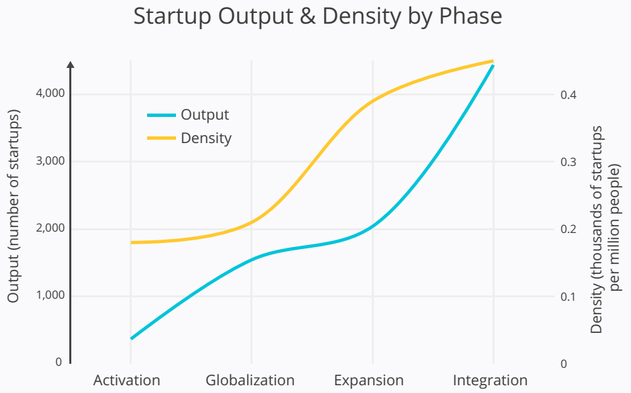


Figure 5

and reached the Integration phase earlier than smaller cities. This is related to the relationship between growth and access to resources, which a larger city provides in larger amount.

Startup Experience

Ecosystem size, and later its performance, is driven by Startup Experience. Over time an ecosystem and its labor force accumulate know-how through the successful development of startups. This experience is generally captured by exits (and unicorns) but also includes different aspects. At the very beginning this includes entrepreneurs sharing their experience and knowledge of forming and structuring a startup, the Customer Development and Lean Startup methodologies, etc. Later it is about sharing expertise on how to grow and scale a startup, both technically and from a business perspective. This expertise is built in the ecosystem through the accumulation of significant exits which, over time, drives up ecosystem performance.

Resources and Resource Attraction

Exits drive up ecosystem size in a more direct way: Resource Attraction. In tech ecosystems large companies are built more successfully in regions where ecosystem experience and resources abound. Large exits act as a beacon to the rest of a country or the world, putting an ecosystem on the map and telling entrepreneurs, talent, and investors that the complex conditions required to build a large startup are present. Entrepreneurs, startups, and investors are attracted to these ecosystems from locations perceived as having less resources—to the point some of them move. Therefore large exits are also the reason for resource leakages in ecosystems perceived as less conducive to startup success.

During the Activation phase, ecosystem resources grow at an organic rate, i.e. the rate local (city) resources grow and become activated to participate in its nascent tech sector, minus resource leakages. Because of leakages this can be a very slow process.

The following chart (Figure 6) shows how Resource Attraction varies across Lifecycle phases. Resource Attraction becomes positive during the Globalization Phase with National Resource Attraction. From the Expansion phase, with Global Resource Attraction, the world becomes the ecosystem's pool of resources. Another benefit of Resource Attraction is that it increases entrepreneurs'

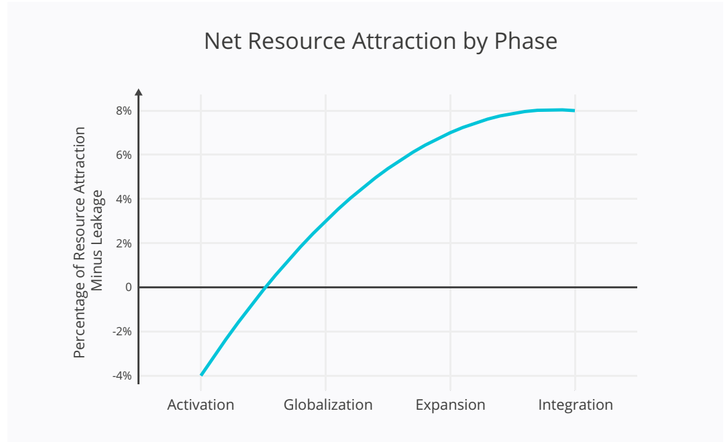


Figure 6

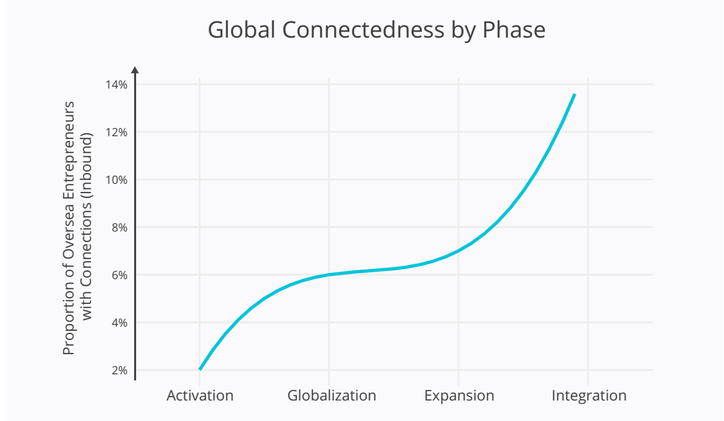


Figure 7

Global Connectedness, which, as demonstrated in our research (see the Global Connectedness Section), leads to an increase in a startup's ability to develop globally leading products and business models and to attract foreign customers.

The following chart (Figure 8) shows how Resource Attraction drives the growth in resources accessible to local early-stage startups across ecosystem phases.

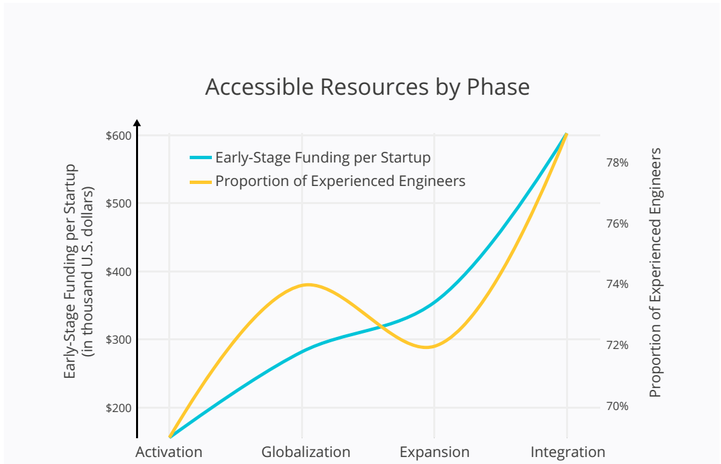


Figure 8

During the Globalization and Expansion phase, not only does early-stage funding increase rapidly, but also early-stage funding per startup increases. From the Globalization phase startups are formed at a faster pace locally, plus they move in from national then international locations. Global Resource Attraction has an even more acute impact on capital because it can flow in large amounts from all over the world without investors having to move.

This is not the case for Talent. Engineers (at least most of them) have to move to work for a startup at the Expansion phase. Accordingly, despite the Global and National Resource Attraction that ecosystems at the Expansion phase enjoy, the growth in startups through increased local entrepreneurial activity and Global and National Attraction of startups is so high that startup access to experienced engineers goes down. In other words, the number of engineers that early-stage startups have access to (now that they also compete with more scale-ups) grows slower than Output. This suggests that from the Expansion Phase, Global Attraction of engineers becomes extremely important, which requires proactive immigration policy and the removal of other immigration barriers (see Expansion phase for details).

Triggers

Triggers are the externally impressive exits and high startup valuations that spark a sharp increase in Resource Attraction, driving the growth of an ecosystem and its evolution to the next phase of the Lifecycle.

Ecosystem development is not natural or continuous: the global concentration of exit values and tech startups is one indication of just how hard it is to develop a strong startup ecosystem. Without large exits ecosystems can get stuck or trapped in one phase: this is the "ecosystem trap."[1] Momentum may stall, enthusiasm might wane, the rhythm of exits can slow down or fail to materialize.

The number and size of exits needed to trigger Resource Attraction varies with

- a) the relative attractiveness, geographic distance, and number of other ecosystems in the country (relative National Attraction), or continent and the rest of the world (relative Global Attraction);
- b) the rhythm of follow-on exits (one per year rather than one-offs);
- c) Immigration Barriers;
- d) the type of exit (IPO and unicorns often creating more Attraction); and
- e) the attractiveness of the sub-sector (an Artificial Intelligence exit may create more Attraction than an eCommerce one).

The analysis demonstrates that over the last ten years, exits greater than $100 million have triggered an ecosystem into Globalization and National Resource Attraction. But over the years

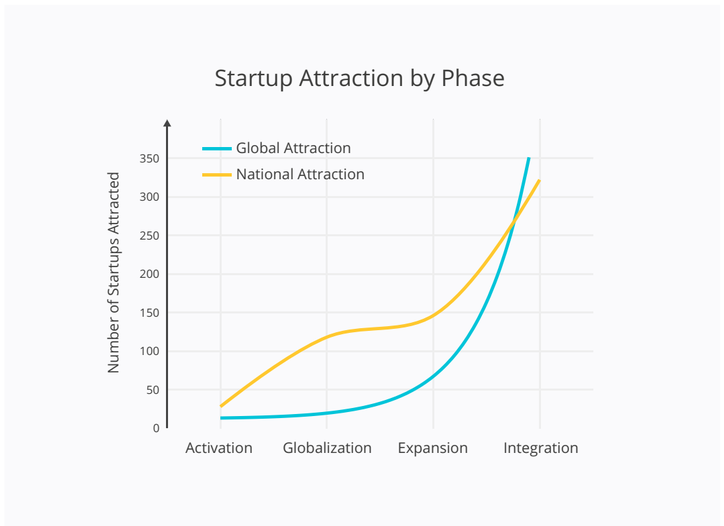


Figure 9

1 Dane Stangler, "The Ecosystem Trap," Growthology, April 18, 2016, at http://www.kauffman.org/blogs/growthology/2016/04/the-ecosystem-trap.

they have done so at a reducing rate as they have become less and less "relatively impressive". Exits of over $1 billion and the creation of unicorns have triggered Globalization phase ecosystems into Expansion and Global Resource Attraction, but also at a reduced rate.

The following heat maps show the timing and rhythm of triggers of different sizes and types in each of the top 20 ecosystems.

Because it is not rare to see one large exit happen once in a while in random locations, a single event rarely triggers much Resource Attraction. However, when two consecutive exits happen in the same ecosystem, it changes the regional or global perception of that ecosystem's ability to produce scale-ups. To help distinguish this effect, years have been grouped in pairs so two exits happening within the same year or within two consecutive years (2-0 or 1-1) show as light blue (a trigger), whereas one exit happening every other year (e.g. 1-0 or 1-0-1) will show as light gray (not a trigger).

By contrasting the relative timing of triggers across ecosystems, the heat map helps explain, for instance, why a few billion-dollar exits in Chicago in 2013-2014 did not produce as much Resource Attraction as it did for Boston five years earlier. Geographic distance explains why, despite the late timing (2013-2014) of

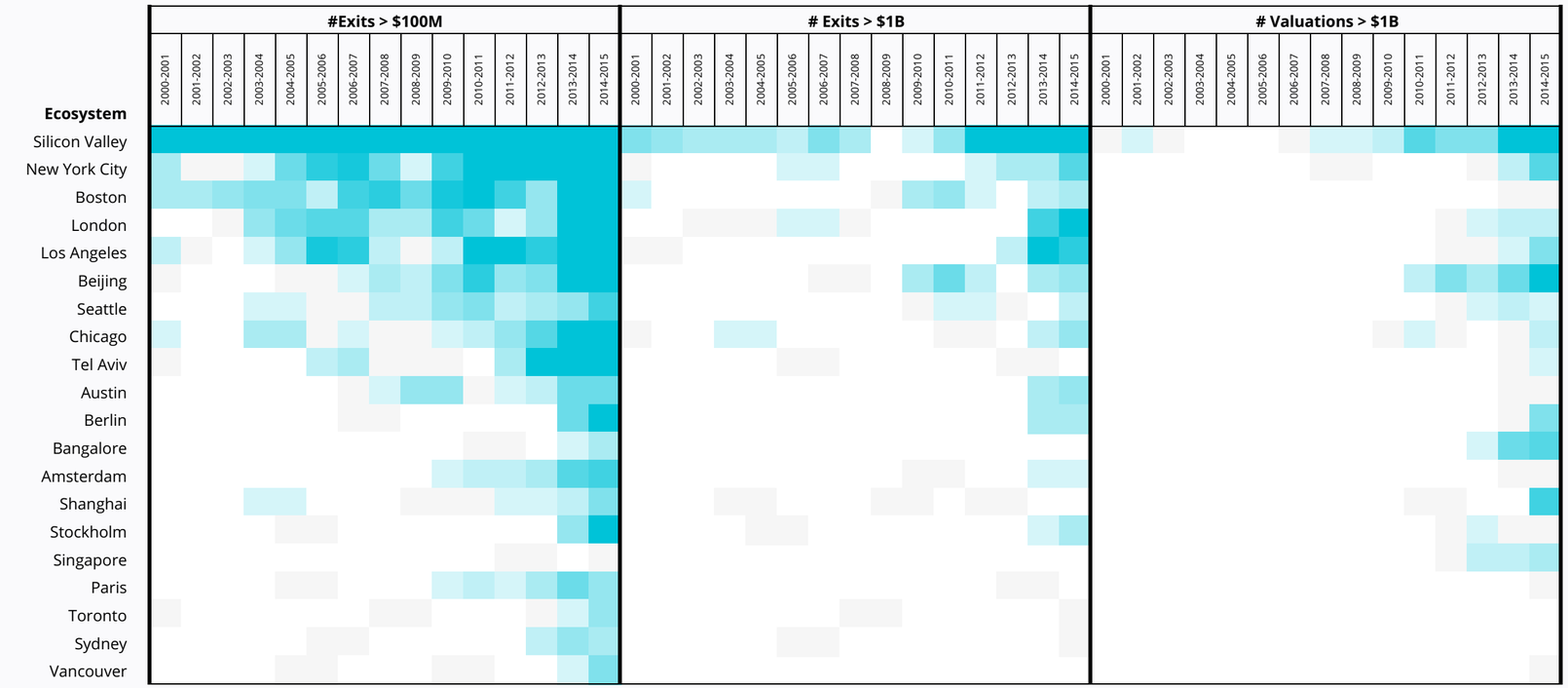


Figure 10

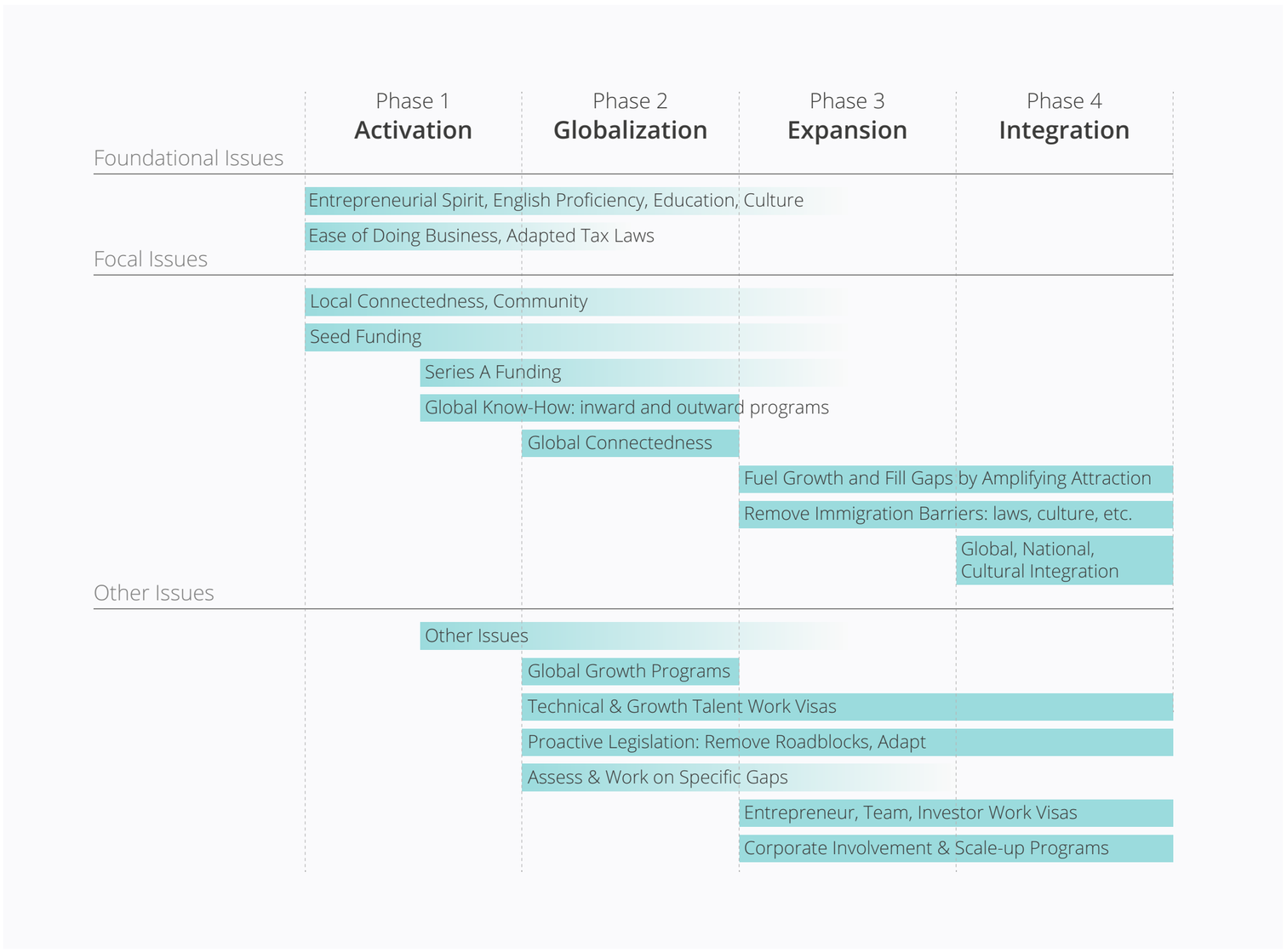


Figure 11

billion-dollar exits relative to other ecosystems and the lack of prior $100 million exits, Singapore has enjoyed some important Global Attraction within Southeast Asia for many years, and increasing Global Attraction since.

From Lifecycle to Policy

Because each Ecosystem Lifecycle phase faces different challenges, and because there is always more to do than can be done with scarce resources, local leaders must focus their actions and policies on the issues that will have the most impact. The accompanying table offers a first glance at the primary issues that local leaders should focus on in each phase.

In a forthcoming article to be published on our blog and emailed to research subscribers, Startup Genome will dig into each phase, providing quantitative analysis and focusing on the public policies and private actions that can be taken to move startup ecosystems through the Lifecycle—and prevent backsliding to earlier phases.

The Need for Global Connectedness

Networks and connections have long been assumed to be important in determining the strength of startup ecosystems. Attempts to quantify this have been good but limited by data availability.

Here, based on rigorous analysis, we definitively find that globally-connected startup ecosystems grow faster and perform better than less-connected places.

> *"My theory is that inequality comes from differential connectedness."*
>
> Ricardo Hausmann[1]

These ecosystems tap into a worldwide circulation of ideas, knowledge, talent, and capital. Through global networks that are rooted in relationships between entrepreneurs, startups in these ecosystems can access global customers at a very early stage and develop globally-leading products and business models. This is the foundation of unicorns and, as seen in the Lifecycle model, the trigger of ecosystem evolution and accelerated growth through attraction of international resources—and more global connections. Conversely, ecosystems that are not well-connected do not experience fast growth.

1 Quoted in, Philip E. Auerswald, The Code Economy: A Forty-Thousand Year History (Oxford, 2017).

Global Markets of Innovation

As Steve Blank emphasizes, startups must focus on global customers from the outset. In the Waterloo Startup Ecosystem report, we established that startups which focused on foreign customers grow 2.1 times faster than others. Startups in many large North American cities with numerous Fortune 1000 companies fail to achieve this faster growth. Domestic customer access is good but can limit foreign customer reach.

So who are these global customers? More importantly, where are they? Contrary to what might be assumed, multinational companies are very rarely global customers of innovation. They are global sellers of whatever products or services they market. Customers worthy of the focus of tech startups may be individual consumers or businesses with only 50 employees (or multinationals), but if startups from all over the world try to sell to them, they will become knowledgeable of the latest global innovations satisfying their needs and which needs are still unmet—and in this way, become Global Customers of innovations.

Silicon Valley, for example, emerges as the global startup hub in our Global Connectedness metrics. One out of every three

startups located outside the United States report having multiple connections to Silicon Valley. When we include U.S. startups, that figure rises to 47 percent. This means that even small companies located in Silicon Valley are global customers, because they become knowledgeable of what the latest and greatest technologies are by drawing on global startups competing locally. And, it means that more easily than anywhere else, Silicon Valley founders, investors, and advisors can also become knowledgeable of the latest global customer needs and the latest innovations pretty much anywhere in the world.

Silicon Valley, together with London and New York City, forms the top tier of startup ecosystems. One-quarter of startups around the world have multiple connections to London; for New York City, it's one in five (but 30% when including U.S. startups). No other startup ecosystem comes close to these three in terms of what we call "inbound" global connections.

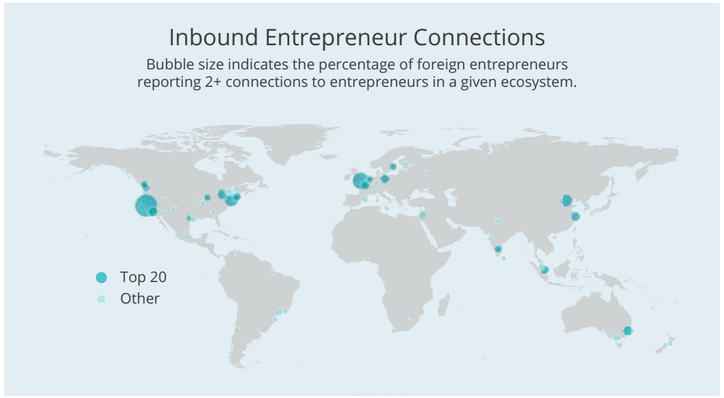


Figure 12 Inbound connections. Percentage of startups around the world (excluding the United States) saying they have 2+ connections to other ecosystems.

These three ecosystems cast the widest net of Global Connectedness: these are the places that startups everywhere want to connect to for access to advice, money, and ideas.

Connectedness creates two-way exchanges, and we can also look at the level of "outbound" connections that places have to leading startup ecosystems. To do this, we measure the ecosystems where startups report having the highest average number of significant connections to seven of our top ecosystems: Silicon Valley, New York City, London, Tel Aviv, Singapore, Berlin, and Shanghai.

Here, Tel Aviv stands out as not only a high-performing ecosystem but also one that is well-connected to others. Singapore, Silicon Valley, and London are also well-connected to their peers at the top, yet Berlin, New York City, and Shanghai are not as connected. Outside of those six, Stockholm, Toronto-Waterloo, Sydney, and Mexico City are the most connected to the top-performing ecosystems.

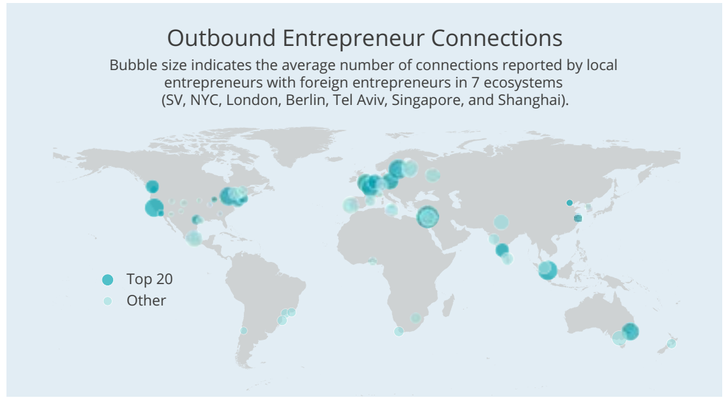


Figure 13 Average number of connections startups have to top ecosystems.

Global Market Reach

In the context of the customer development framework, reaching foreign customers allows startups to identify problems and solutions that are relevant to broad parts of the world.[2] Additionally, productivity and innovation increases as startups go global—in any given economy, companies with more exposure to foreign markets are the "frontier" firms that drive growth.[3] A focus on foreign customers should therefore mean faster growth for startups and ecosystems.

When we look at where startups report having the highest shares of customers elsewhere, we see a mix of top-performing ecosystems and smaller places. Tel Aviv ranks first, where one-third of startups sell to customers outside of the immediate region.

What we are seeing with many of these ecosystems is a function of the small size of their national economies or their geographic locations. Startups in New Zealand have a few options beyond Australia, so most of them must go global quickly. In Stockholm, Berlin, and Helsinki startups have an incentive to go global—beyond Europe—if they want to grow faster. The best examples of this are Tel Aviv and Jerusalem. Because of its small economy and thanks to their global community, Israeli startups have successfully executed go-global strategies for years.

This metric captures startups with customers outside their immediate region. For example, Berlin startups have access to a large

2 See Steve Blank's methodology at https://steveblank.com/category/customer-development/

3 Dan Andrews, Chiara Criscuolo, and Peter N. Gal, "Frontier Firms, Technology Diffusion and Public Policy: Micro Evidence from OECD Countries," OECD, Future of Productivity Series, 2015.

domestic market and the European Union, but these are not taken into account here. Instead, the high score of Stockholm, Berlin, and Helsinki reflects the global orientation of startups in these cities and their ability to expand globally, outside of the European Union, at a higher rate than other ecosystems.

While Silicon Valley and a few other top U.S. ecosystems fare well, many American ecosystems don't. In Chicago and Los Angeles, only eight and twelve percent of startups, respectively, report having customers outside of North America. Even in Los Angeles, only 14 percent of startups say they sell to customers in the rest of the world. However, because the U.S. is not only the largest national market to scale in but also the leading global market for innovation, U.S. startups can focus on addressing the U.S. market first and then go on to win over the world. Many Tel Aviv startups have done this successfully by targeting the U.S. from the onset and bypassing their local market entirely.

Interestingly, city size guarantees nothing. Large metropolises that are otherwise well-connected within the global economy aren't necessarily plugged into global startup networks. In fact, the size of a metropolitan area's economy may be a pitfall, misleading startups to focus on the large local market rather than go global. For this reason the ecosystems of Chicago and Los Angeles have seen their growth plateau and ranking go down, while Seoul, despite its global reach in other industries, is not achieving the same success with its startup ecosystem.

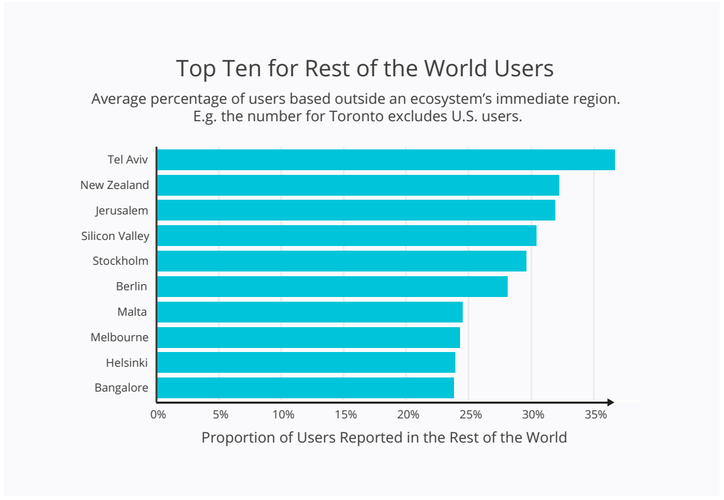


Figure 14 Average percentage of startups' customer base that is outside an ecosystem's immediate region. This excludes the immediate region or continent: the responses for Stockholm, Berlin, and Helsinki, for example, exclude customers in European markets.

Most Connected Ecosystems

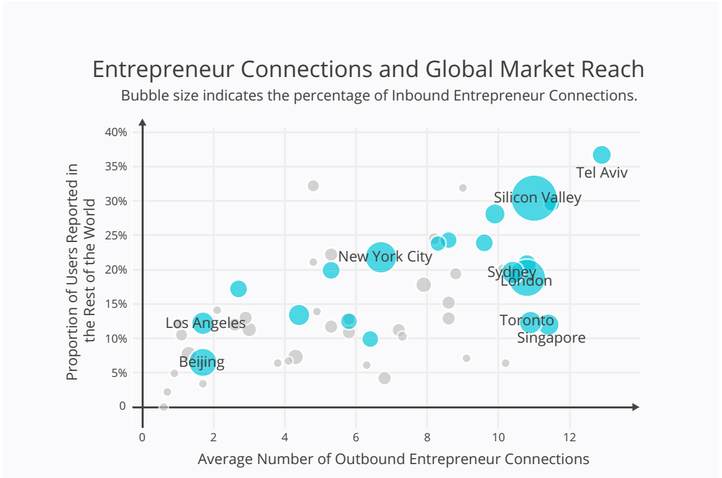


Figure 15

By Region

While there is a hierarchy of Global Connectedness within each region of the world, Silicon Valley, London, and New York form the Global Connectedness core. Analyzing these hubs can tell us which ecosystems have the strongest gravitational pull for startup ideas and resources and, thus, where startups are best positioned to go global in terms of market reach. Silicon Valley dominates the connections of nearly every single other startup ecosystem—some sort of connection with a startup founder or executive in Silicon Valley, it seems, is almost a prerequisite for startups elsewhere. In each region of the world, the most connected ecosystems are those with the most connections to Silicon Valley.

The exception, of course, is North America, where Silicon Valley is the dominant startup ecosystem—it has the most connections to New York City, followed by London and Tel Aviv. Likewise, London and New York City dominate the "secondary" connections. After Silicon Valley, the most connected ecosystems in each region have the strongest connectedness with London and New York. The lone exception is Singapore, which has Shanghai as its secondary connection city.

Concluding Remarks

Greater Global Connectedness leads to higher performance for startups and their ecosystems. Establishing more relationships between founders and executives in other parts of the world brings in more ideas and more innovation, resulting in faster

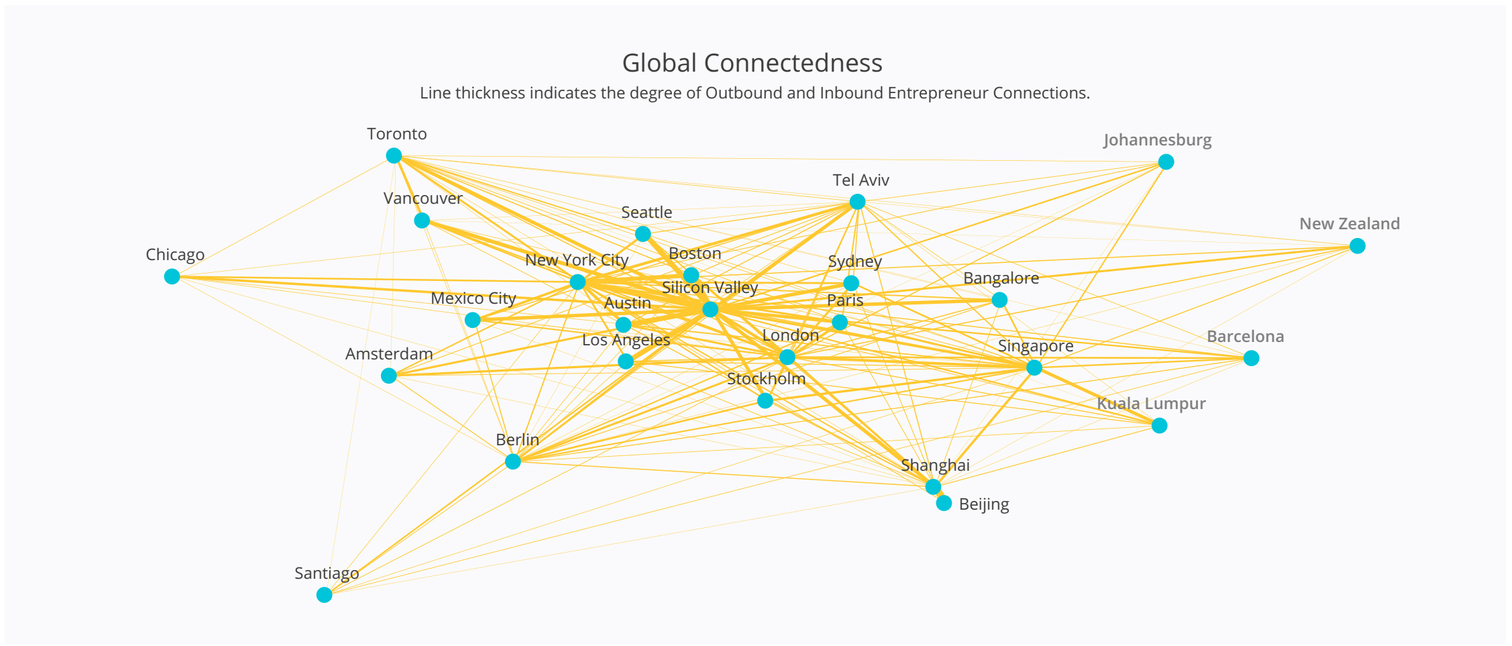


Figure 16

startup growth and more vibrant ecosystems. Startups thrive on relationships and the exchange of ideas—with customers, investors, corporations, and, especially, other startups. These ideas include "hard" knowledge such as technical ideas about product improvement, new scientific ideas, and how to sell into different markets. But global connectedness also brings the benefits of a global network to startups and their ecosystems, including giving introductions and being exposed to a pay-it-forward mentality. The exchange of this knowledge occurs through personal relationships, and more relationships leads to faster-growing startups. The broader those connections are, the better the growth outcomes will be for startups and their ecosystems.

Region	Ecosystem with Highest Global Connectedness:	Most Entrepreneurial Connections To:
Africa	Johannesburg	Silicon Valley
Asia Pacific	Singapore	Silicon Valley
Europe	Tel Aviv	Silicon Valley
Latin America	Mexico City	Silicon Valley
North America	Silicon Valley	New York City

Model Explanation

Startup Genome's Ecosystem Assessment Framework and 2017 ranking are based on the following key concepts and some new factors, as described below (see the Methodology section for more details).

Made of more than 100 metrics, the broader methodology better captures the factors that drive the success of startups. It also better measures the performance of smaller, yet high-performance ecosystems like Stockholm. This leads to important downward movements in the ranking among some large ecosystems. It also provides the ability to better compare Silicon Valley to other ecosystems and discern where it is getting challenged.

Key Rankings Concepts

Performance

The ranking is primarily driven by one question: In which ecosystems does an early-stage startup have the best chance of building a global success?

Early-Stage Startups

At that stage startups are almost completely dependent on the resources and skills present in their city, so the ranking and other metrics essentially measure their access to resources.

Ecosystem Boundaries

We defined ecosystems, with some exception, around the concept of a shared pool of resources generally located within a 60 mile (100 km) radius around a center point.

Ecosystem assignment

Because we are assessing an ecosystem based on its ability to provide the right resources for an early-stage startup to become a big success, we prefer to assign each startup to the ecosystem where it was started. This year we invested a great deal into researching the ecosystem where successful startups were actually started rather than use their location at exit.

Resource access

We use access rather than availability. For example, Silicon Valley has the largest pool of skilled and experienced software engineers.

That's high "availability," but it is difficult for early-stage startups to access (or attract) that experienced talent pool away from large local tech companies.

Current and lagging indicators

We use a mix of current indicators, such as funding and funding growth, and lagging indicators such as Exit Value, which reflects the ability of the ecosystem to develop successful startups formed five to 10 years prior.

Bigger is (generally) better

Michael Porter[1] asserted that the performance of every player in an industry cluster increases with the size of the cluster. It is also generally true of startup ecosystems. Larger ecosystems see their startups perform better on average: they have a higher rate of success from Series A to Series C, and their valuation grows faster (see Figures 17 and 18). Figure 19 suggests this is essentially due to the greater ability of larger ecosystems to create globally-leading startups—the focus of the ranking—some of which evolve into large exits and unicorns. Once the top and bottom 10% of startups are removed from the analysis, the valuation growth of startups in large and medium-sized ecosystems is similar.

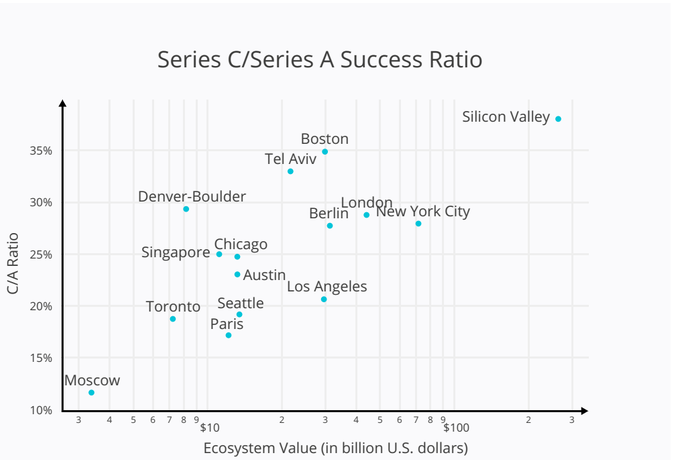


Figure 17

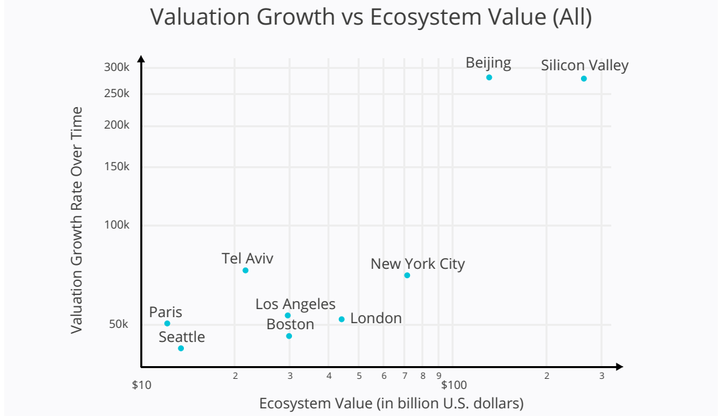


Figure 18

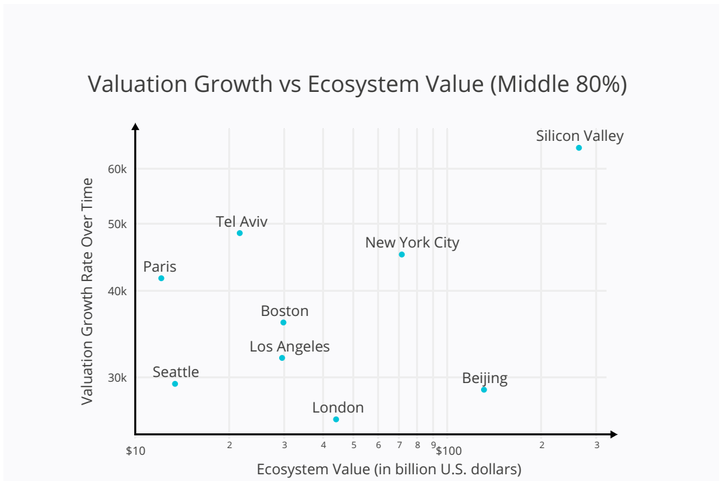


Figure 19

For a given ecosystem size, however, performance varies significantly based on other factors, and these other factors can sometimes influence ecosystem performance more than size. Stockholm is a great example; it produces more and bigger exits than some larger ecosystems.

In recognition of this, we developed new variables (see next section) capturing a more complete set of success factors, and reduced the weights for ecosystem size.

New Metrics

The following is a list of some of the new factors and metrics developed this year as part of our expanded Ecosystem Assessment Framework, some of which are not scored as part of the ranking.

- **Global Connectedness:** quantifies the valuable international relationships that exist between startup leaders, and how they were developed. It translates into a startup's ability to reach out outside its own ecosystem and highly correlates with the ability to attract foreign customers. For this reason it is categorized within market reach inside the ranking model.

1 Porter, M.E. (1990). The Competitive Advantage of Nations. New York: The Free Press..

- **Resource Attraction and Leakages:** a function of ecosystem performance and lifecycle evolution, these quantify the movement of startups and entrepreneurs between ecosystems, as well as the attraction of secondary offices of VC firms.
- **Founder Ambition:** quantifies the degree to which the product is considered to be new or first in the world, or a local version, and whether going global is an objective.
- **Founder Go-Global Strategy:** measures whether a startup is going global from the outset or first targets its local market, and whether its customer acquisition team is located, targeted, and skilled to succeed.
- **Corporate Involvement:** measure the perception that corporations are interested in working with startups.

Startup Genome's Ecosystem Assessment Framework (selection of ~45 metrics out of 100+)

Sub-Factor	Metric	Silicon Valley	New York City	London
Performance				
Ecosystem Value	Ecosystem Value			
Exit Value	Exit Value			
	Exit Value Growth Index			
	Exit Growth Rate			
Startup Valuations	Startup Valuations			
Output	Output			
	Output Growth Index			
Unicorns	# Unicorns			
Funding				
Access	Early-Stage Funding			
	Early-Stage Funding Growth Index			
	Median Seed Amount			
	Median Series A Amount			
Quality	Experienced VC Firm Index			
Market Reach				
Global Reach	Rest of the World Customers			
	Foreign Customer			
Global Connectedness				
Founder Relationships	International Outbound			
	International Inbound			
	Locally-Made Global Connections			
Resource Attraction				
Startup	Global Attraction			
	National Attraction			
	Leakage			
	Leakage Intent			
Entrepreneur	Global Attraction			
	National Attraction			
	Leakage			
Startup Experience				
Ecosystem	# Exits > $50M USD (last 10 years)			
Team	Advisors with Equity			
	Stock Options to All Employees			
	Founder Hypergrowth Experience			
Talent				
Access	Experienced Engineers			
	Time to Hire Engineer			
	Visa Success Rate			
	Days to Visa			
	Experienced Growth Employees			
Corporate Involvement				
Interest	Level Positive Involvement			
	Level Negative Involvement			
Founder				
Ambition	Globally Leading Product			
Go-Global Strategy	Targeting Global Market First			
	# Product Languages			
	Growth Leader Global Experience			
	Growth Team Global Focus			
	% Serial Founders			
	% Immigrant Founders			
	% Female Founders			
	% Biz & Tech Founders			

Sub-Factor	Metric	Silicon Valley	New York City	London
Performance				
Ecosystem Value	Ecosystem Value			

Figure 20

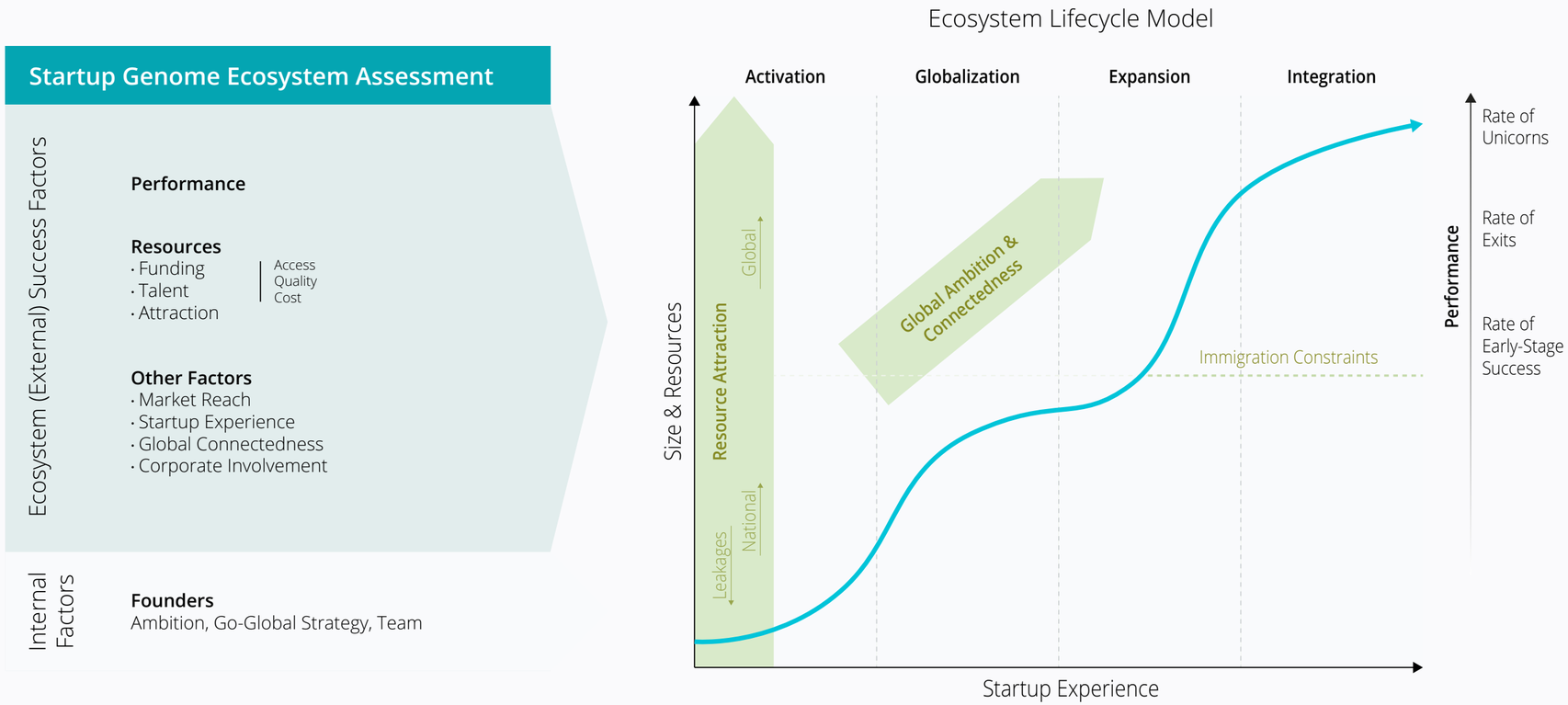
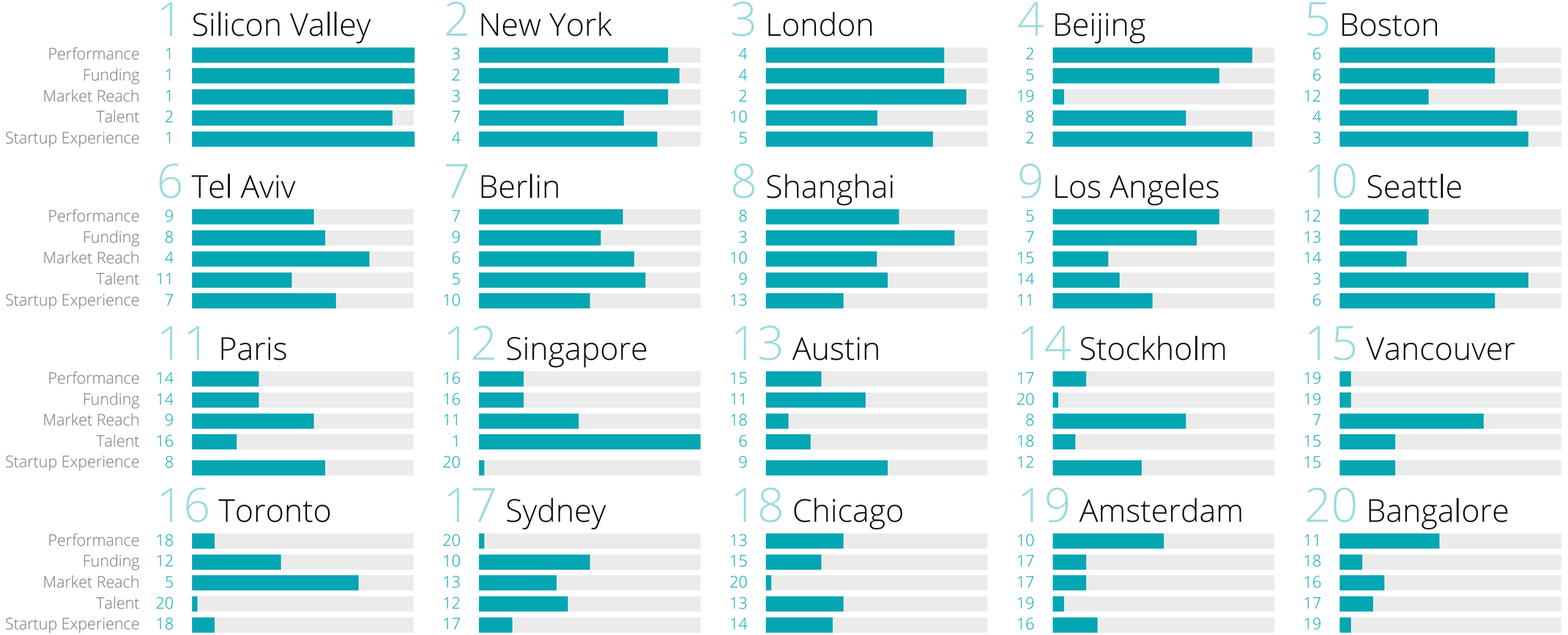


Figure 21

2017 Global Startup Ecosystem Ranking



Key Findings

	Ranking		Performance	Funding	Market Reach	Talent	Startup Experience	Growth Index
Silicon Valley	1	0	1	1	1	2	1	4.2
New York City	2	0	3	2	3	7	4	4.5
London	3	▲ 3	4	4	2	10	5	4.8
Beijing	4	NEW	2	5	19	8	2	4.4
Boston	5	▼ -1	6	6	12	4	3	4.0
Tel Aviv	6	▼ -1	9	8	4	11	7	4.5
Berlin	7	▲ 2	7	9	6	5	10	4.6
Shanghai	8	NEW	8	3	10	9	13	5.5
Los Angeles	9	▼ -6	5	7	15	14	11	4.2
Seattle	10	▼ -2	12	13	14	3	6	4.5
Paris	11	0	14	14	9	16	8	4.2
Singapore	12	▼ -2	16	16	11	1	20	4.6
Austin	13	0	15	11	18	6	9	4.3
Stockholm	14	NEW	17	20	8	18	12	5.3
Vancouver	15	▲ 3	19	19	7	15	15	4.3
Toronto	16	▲ 1	18	12	5	20	18	4.7
Sydney	17	▼ -1	20	10	13	12	17	6.3
Chicago	18	▼ -11	13	15	20	13	14	3.9
Amsterdam	19	0	10	17	17	19	16	4.8
Bangalore	20	▼ -5	11	18	16	17	19	4.7

Figure 22

We assessed 55 startup ecosystems across 28 countries and ranked the top 20. While every ecosystem enjoyed improvement in at least one dimension of their ecosystem, several places stand out for particularly strong growth.

Ecosystems all over the world are growing and producing successful startups. Our data include 28,000 startups (or 30 percent) outside of the top 20 ecosystems. Many of these ecosystems ranked highly on different metrics. Those that did will be listed as runner-ups below the sub-factor rankings.

Concentration by Region and Ecosystem

While still dominant, the United States has been seeing a concerning decline of both its share of Startup Valuations and Exit Value (a proxy for job creation and economic growth). While many governments in Europe and Asia have identified the growth of their innovation ecosystem as a priority and invested aggressively to directly support its growth, the United States has more heavily relied on its private sector. The result is a marked increase in shares of Exit Value and Startup Valuations for Asian and European ecosystems.

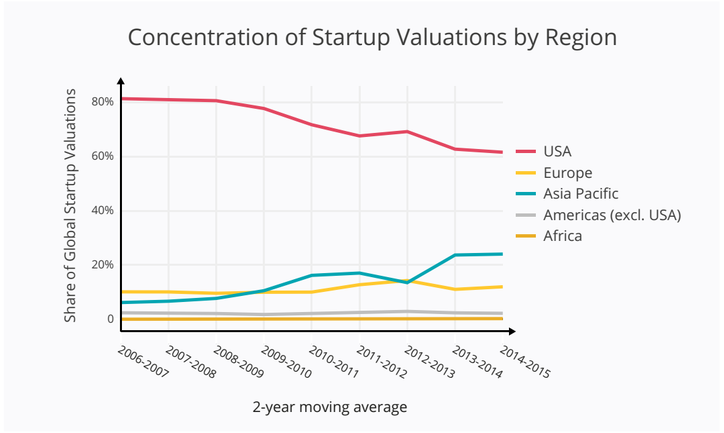


Figure 23

The Exit Value, because it is a lagging indicator, still reflects the strength of Silicon Valley and some other U.S. ecosystems during the second wave of the Internet which was focused on creating complex platform services and horizontal plays (e.g. Google, Facebook, and Amazon Web Services). Because of this strength, while U.S. Exit Values fell during the 2008-09 financial crisis and recession, they later recovered rapidly. Since 2013 however, with the beginning of the Third Wave[1] of the Internet, there has been a sharp decline in the U.S. share of global Exit Values. This looks to be caused by strong competition from government-supported ecosystems in other regions, as well as the changing character of software innovation. In the Third Wave of the Internet revolution, vertical plays and industry expertise—generally distributed all over the world—matter more than the deep technical web expertise in which Silicon Valley and a few other U.S. ecosystems enjoyed a quasi-monopoly.

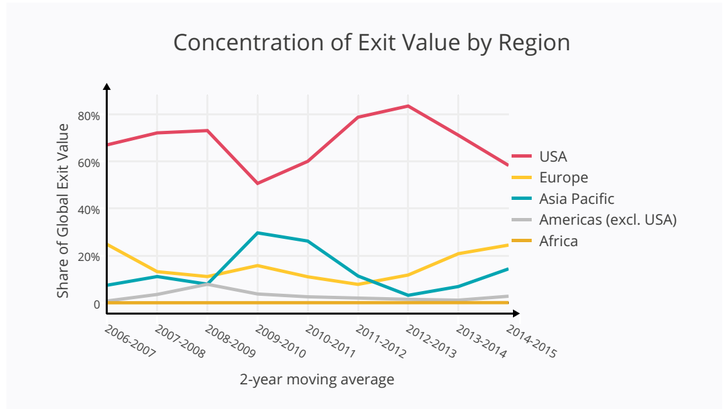


Figure 24

The dislocation between Startup Valuations and Exit Values for Asia, where changes in Startup Valuations are not directly reflected in changes in Exit Value, is due to two issues. First, Startup Valuations is a leading indicator, therefore its impact on Exit Value is delayed by about 5 years (the average age of startups is about 3 years while the average age at exit is about 7 or 8 years). This explains that American downward movement starts in 2009 for Startup Valuation, while the decline in Exit Value starts in 2014.

The second issue is informed by the Ecosystem Lifecycle section. In the first two phases of ecosystem development—Activation and Globalization—growth does not immediately translate into increased performance at creating exits. But, as more ecosystems in Europe and Asia-Pacific become larger and better resourced across different success factors, they evolve into the third and fourth phases, Expansion and Integration. At that point they are more successful at producing large exits.

This is what we've already seen since 2013: Berlin, Beijing, Shanghai, Singapore and, more recently, Stockholm, have joined London and Tel Aviv among the top ranks of non-American ecosystems. The result is an accelerated decline of U.S. ecosystem dominance.

1 Steve Case (2015). The Third Wave: An Entrepreneur's Vision of the Future. The Free Press.

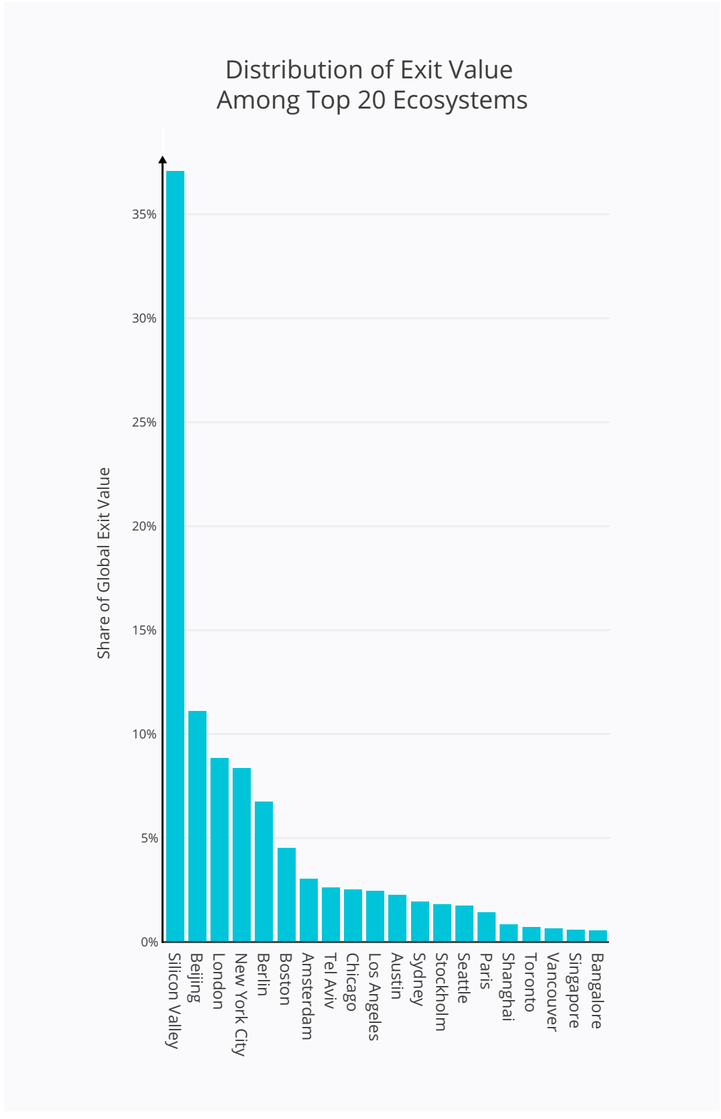


Figure 25

This may continue: when looking at the proportion of Exit Value (a lagging indicator) captured by the U.S. compared to its proportion of Startup Valuations and Output (respectively current and leading indicators), the trends suggest a continued reduction in the U.S. share of Exit Value (see Figure 26).

Yet the concentration of Exit Value among the top 20 ecosystems (Figure 25), remains alarming[2] (see especially 'The Urgency of Ecosystem Investments' article for the consequences of this concentration). Among our top 20 ecosystems, the top 10 capture 87 percent of the Exit Value.

2 While it looks lower than in our 2015 report, this is due to the addition of Beijing and Shanghai to our coverage and the fact that we re-assigned exits based on the original location of the startup rather than its location at exit or the one of its acquirer.

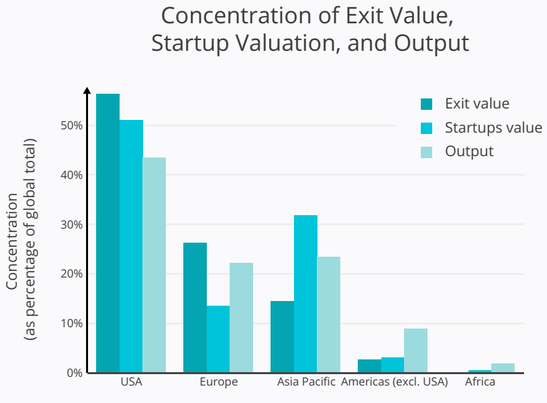


Figure 26

Ecosystem Ranking

Among the top 20 startup ecosystems, nine are located in North America, six in Europe, with the remaining five in Asia. This compares to ten and six respectively for North America and Europe in our 2015 ranking. Nonetheless, there was considerable movement within the top-ranked ecosystems.

First, it is important to note that the new coverage of Beijing and its #4 rank explains why the positions of Boston and Tel Aviv are one spot lower. And had Beijing and Shanghai both been ranked last year, Seattle and Singapore would have the same rank as last year, and Paris, Austin, and Amsterdam would be up two positions, Sydney would have moved up one position, Toronto two, etc.

The biggest upward movement was Stockholm, which entered the top 20 with an impressive 14th place, thanks to its high Market Reach and amazing ability to create unicorns despite its small size. London moved up to the number three overall rank, and Vancouver moved up three spots to the 15th spot. Two Chinese

Top Runners-Up for Top 20 Ecosystems (alphabetical order)
Atlanta
Delhi
Denver-Boulder
Jerusalem
Helsinki
Moscow
Mumbai
Salt Lake Provo

cities, Beijing and Shanghai, were assessed for the first time and took the 4th and 8th position respectively.

On the downside, two U.S. cities, Los Angeles and Chicago, moved lower several spots, with Chicago falling out of the top 10 completely. In both cases, this downward movement was driven by relatively low scores on Global Connectedness. Three ecosystems—Moscow, Sao Paulo, and Montreal—fell all the way out of the top 20. In Moscow's case, this fall was despite its overall number one ranking globally in Talent. Sao Paulo scored low on Market Reach and Startup Experience, while Montreal scored low on Talent. Sao Paulo's drop means that in our 2017 ranking, there are no Latin American cities in the top 20, a deplorable situation.

Silicon Valley continues to dominate overall, ranking first in Performance, Funding, Market Reach, and Startup Experience. It ranked third globally in Talent, behind Moscow and Singapore. In some areas, detailed below, Silicon Valley fell behind other ecosystems, likely reflecting its maturity in development. The surge in the rankings by Beijing and Shanghai reflected strong showings in a few areas. Beijing performed well in Startup Output and Startup Experience, while Shanghai scored highly on Funding.

Individual Score Highlights

Performance

Our analysis of Performance looked at Startup Output, Exits, Valuations, Early-Stage Success, Growth-Stage Success, and overall Ecosystem Value. The Performance factor, including its three sub-factors, is the main part of the ranking that favors larger ecosystems, but it does so to a lesser degree than in the past (see Methodology section for details).

Accordingly Vancouver, a successful ecosystem in a small city, ranked low across the three sub-factors. But surprisingly, Stockholm, an even smaller ecosystem and city, ranks #9 and demonstrates its ability to create and scale startups into global leaders.

Beijing shows its size with a #1 rank in Startup Valuation and second place in Exit Value, passing New York City on both metrics. London also passed New York City in Exit Value, a testament to how much it has grown in the last few years. Berlin has also climbed in the rankings to a 5th place in Exit Value, still riding its $14 billion in exits achieved at the end of 2014. As these exits move out of the ranking timeframe in the next report it will be interesting to see how this affects Berlin's position.

Exit Value is a metric where Chicago and Los Angeles rank high despite their drop in the overall ranking, respectively in 11th and 12th place. Sydney and Amsterdam also especially ranked high in Exit Value, respectively in 7th and 8th place. Finally Bangalore's 10th place in Startup Valuation and 15th place in Output are worth mentioning because these factors might indicate a future upward trajectory in the rankings.

Delhi, Sao Paulo, Denver-Boulder, Atlanta, and Seoul showed the size of their ecosystems competed closely with that of the top 20 ecosystems.

	Performance		
	Exit Value	Output	Startup Value
Silicon Valley	1	1	1
New York City	4	2	3
London	3	4	4
Beijing	2	3	1
Boston	6	6	7
Tel Aviv	10	8	9
Berlin	5	11	6
Shanghai	17	12	5
Los Angeles	12	5	8
Seattle	13	13	13
Paris	16	10	16
Singapore	20	14	17
Austin	14	17	14
Stockholm	9	19	11
Vancouver	18	20	18
Toronto	15	16	19
Sydney	7	18	20
Chicago	11	9	15
Amsterdam	8	7	12
Bangalore	19	15	10

Delhi	Runners-up
Sao Paulo	
Denver-Boulder	
Atlanta	
Seoul	

Figure 27

	Funding	
	Access	Quality
Silicon Valley	1	1
New York City	2	2
London	5	3
Beijing	4	7
Boston	7	4
Tel Aviv	8	8
Berlin	9	20
Shanghai	3	6
Los Angeles	6	12
Seattle	13	10
Paris	15	5
Singapore	16	11
Austin	10	19
Stockholm	20	9
Vancouver	19	17
Toronto	12	13
Sydney	11	16
Chicago	14	14
Amsterdam	18	14
Bangalore	17	18

	Runners-up
Seoul	
Salt Lake-Provo	
Atlanta	
Mumbai	
Melbourne	

Figure 28

Funding

Our analysis of the Funding factor looked at: Access through metrics of total and per startup early-stage investments as well as growth in early-stage investments; and, Funding Quality through the presence of experienced VC firms .

Figure 28 shows how our top 20 ecosystems compared against each other on the overall Funding factor. Here, Silicon Valley and New York City topped the list on Funding Access and Funding Quality. Other ecosystems scoring strongly on Funding Access were Singapore, London, and Los Angeles. Meanwhile, Boston, Paris, and Shanghai did well on Funding Quality.

Nearly all of the top 20 ecosystems have above-average Funding Quality, as measured by the presence of experienced venture capital firms. The lone exception is Berlin.

In the early phases of an ecosystem local investors will lead a high share of seed rounds. As ecosystems evolve through the lifecycle and attract outside investors, that share will go down, in turn increasing Funding Quality.

Outside of the top 20, ecosystems with relatively high Funding scores are Salt Lake-Provo, Atlanta, Seoul, Helsinki and Melbourne.

Market Reach

When we analyze an ecosystem's Market Reach, we want to know how well its startups can "go global" and how well the ecosystem

	Market Reach		
	Global Connectedness	Global Reach	Local Reach (GDP)
Silicon Valley	1	9	1
New York City	4	13	1
London	2	7	11
Beijing	12	20	8
Boston	16	14	1
Tel Aviv	6	3	19
Berlin	9	5	10
Shanghai	14	8	8
Los Angeles	17	17	1
Seattle	18	16	1
Paris	8	6	12
Singapore	3	11	20
Austin	19	18	1
Stockholm	10	2	18
Vancouver	13	1	14
Toronto	7	4	14
Sydney	5	15	16
Chicago	20	19	1
Amsterdam	15	10	17
Bangalore	11	12	13

	Runners-up
Helsinki	
Malta	
Jerusalem	
Estonia	
Lisbon	

Figure 29

helps in doing so. The sub-factors for this are Global Connectedness and Global and Local Reach, based on the startups' proportion of foreign customers and the National GDP. The Global Connectedness article contains a deeper discussion of these issues.

This factor had the greatest variety in terms of how many ecosystems scored well on the different sub-factors. Even though Silicon Valley, New York City, London and Tel Aviv clearly outperform all other places in the ability of their startups to "go global", several other places outside of our top 20 scored well on the components of Market Reach. And a few top 20 ecosystems performed poorly on Market Reach.

Canadian cities score particularly well on Market Reach, driven by the high share of foreign customers that startups in Toronto-Waterloo, Vancouver, and Ottawa are able to reach. Toronto-Waterloo and Vancouver respectively rank fifth and seventh overall in Market Reach, ahead of Stockholm, Boston, and Shanghai. This is largely because of Canadian startups' access to the U.S. market—when we remove that from Market Reach calculations (captured in our Rest of World Customers metric), Toronto-Waterloo and Vancouver both rank below the 10th position.

Similarly, startups in smaller ecosystems—such as New Zealand, Jerusalem, and Stockholm—demonstrate a greater ability to reach global customers than those in larger ecosystems. They also scored highly on Global Connectedness, measuring a startup leader's relationships with entrepreneurs in other countries.

Outside of the top 20, Helsinki, Malta, Jerusalem, Estonia and Lisbon also fared well on Market Reach.

Global Connectedness is highly correlated with the percentage of foreign customers, indicating how global connections are important to the understanding and penetration of global customers. Global Connectedness is also highly correlated with Global Resource Attraction. This means cities that see a large flow of startups and entrepreneurs move into the ecosystem benefit from this flow, capitalizing on it through global relationships which enhances the ability to "go global".

Talent

Now that platform services allow startups to rapidly focus on developing the product rather than investing heavily in coding the back end, high quality developers can be found anywhere in the world. Silicon Valley has lost the edge it had when, five to fifteen years ago, it enjoyed a quasi-monopoly on very experienced back-end engineers, which were the indispensable foundation of a startup's engineering team.

What matters, then, is Talent Access, as startups compete with large tech companies on quality hires. With this new context Silicon Valley is seeing its top position challenged.

For this factor, we analyzed Access, Cost, and Quality of Talent. The Access sub-factor includes the proportion of software engineers and growth employees with two or more years of experience at a prior startup, the time required to hire an engineer, and the ability to obtain a visa for hires from abroad (a form of Access that can mitigate a challenging local talent market). The Cost is engineer

	Talent		
	Access	Quality	Cost
Silicon Valley	1	1	20
New York City	7	1	18
London	9	12	7
Beijing	8	1	3
Boston	4	6	17
Tel Aviv	11	14	12
Berlin	5	17	8
Shanghai	10	1	2
Los Angeles	14	7	16
Seattle	2	8	19
Paris	17	1	6
Singapore	3	10	4
Austin	6	11	15
Stockholm	16	15	10
Vancouver	15	18	9
Toronto	20	19	11
Sydney	12	16	13
Chicago	13	9	14
Amsterdam	19	13	5
Bangalore	18	20	1

Moscow	Runners-up
Malta	
Phoenix	
Mumbai	
Helsinki	

Figure 30

salaries while Talent Quality is based on the country score at coding contests and online tests, the engineering community's experience with scaling applications (based on the number of exits over $50 million) and the ability to attract top engineers from other countries (estimated using the resource attraction score).

Within the top 20 ecosystems, Singapore ranked ahead of Silicon Valley. While Singapore trailed below the average top 20 at 10th place in Talent Quality, it more than made up for it by being the fourth and second best ecosystem for startups to access experienced software engineers and growth employees, respectively.

American cities in the top 20 scored well overall on Talent, except Los Angeles and Chicago where startups have a difficult time hiring experienced engineers and growth talent. Vancouver, Paris, Stockholm and Toronto-Waterloo ranked towards the bottom of the top 20 as well due to similar Access issues, despite their much lower engineering salaries. Beijing and Shanghai maintained a good balance made of solid Talent Access, low salaries and top Quality.

Outside the top 20, Moscow scored above Silicon Valley thanks to the highest quality score, ahead of Chinese and Estonian engineers.

Startup Experience

In startup ecosystems, experience matters—it is the pool of knowledge and networks that startups can draw on. Our Startup Experience Factor captures how well an ecosystem "recycles" experience into future startup performance. The analysis relies on two sub-factors: Team Experience and Ecosystem Experience. The former is based on founder hyper-growth or unicorn experience, advisors with equity, and startups providing options to all their employees. Option grants to employees reflect a founder's knowledge of aligning incentives, as well as whether employees value stock options, indicating a strong startup culture in the ecosystem). Ecosystem Experience is based on the number of exits above $50 million achieved within the last 10 years.

After Silicon Valley, Beijing and Boston show the most Startup Experience. It is interesting to note that Beijing is a very new ecosystem which gained tremendous experience rapidly through massive government investments and huge exits, while Boston is one of the oldest startup ecosystems.

As expected, fast-rising ecosystems (not including Beijing) score better on performance than they do on Startup Experience. Singapore, Sydney, and Bangalore score at the bottom of the top 20 on this Factor. (In Bangalore's case, it enjoyed fast growth in our 2015 report, though it now has an average growth rate).

Focusing on Team Experience, Vancouver (ranking first) and Austin join much larger Beijing, Silicon Valley (in second place), and Boston to complete the top 5, while Stockholm places eighth. This metrics showcase well the importance of tech in these three smaller cities of about one million people. This results in a concentration of experience available to startups, with tech entrepreneurship being a strong career option.

Turning to Ecosystem Experience, Chicago shows it is also an old ecosystem by placing sixth, just above Seattle, another ecosystem with a deep software industry foundation.

	Startup Experience	
	Ecosystem	Team
Silicon Valley	1	2
New York City	3	11
London	2	16
Beijing	5	3
Boston	4	5
Tel Aviv	7	15
Berlin	12	10
Shanghai	16	6
Los Angeles	8	17
Seattle	9	9
Paris	11	7
Singapore	20	12
Austin	13	4
Stockholm	15	8
Vancouver	18	1
Toronto	17	18
Sydney	14	14
Chicago	6	20
Amsterdam	10	19
Bangalore	18	13

Runners-up
Denver-Boulder
Salt Lake-Provo
Atlanta
Jerusalem
Houston

Figure 31

While at the overall Factor level Silicon Valley managed a first place, it found itself only ranking among the top 10 of the 55 ecosystems assessed with the proportion of its founding team with hypergrowth experience, and proportion of founders with at least two years experience in a prior startup. Despite having more such experience than any other ecosystem, being home to 14,000 startups results in dilution of this experience.

Denver-Boulder, Atlanta, Helsinki, Jerusalem and Houston scored well on Startup Experience, including the use of advisors by Helsinki startups and the level of hyper-growth experience in Houston.

Resource Attraction

This new set of metrics is very powerful. It measures an ecosystem's gravitational pull by the attraction of entrepreneurs who moved specifically to form a startup, the attraction of existing startups, the opening of secondary VC offices, and the intent of a startup leader to move the startup. Knowing where the person or startup moved from allows us to compute negative attraction, in addition to breaking down attraction into national and international, a much more powerful metric.

These provide a clear view of the phase of lifecycle development of an ecosystem because they evolve faster by growing inorganically through the attraction of resources, growing the fastest when the world becomes their pool of resources. And with international attraction comes global connectedness which leads to a greater ability to "go global".

Not surprisingly, Silicon Valley is the king of attraction, with 21 percent of its entrepreneurs and 15 percent of its startups saying they moved from another country. Multiplying by the output we estimate that in Silicon Valley at least 2,900 startups count an entrepreneur who moved from another country, and more than 2,000 startups moved from another country. This is in addition to more than 1,200 that moved from within the United States. No ecosystem has even one third of this level of attraction.

The attraction of startups is an especially meaningful indicator, correlating much better with Global Connectedness and Market Reach metrics than any other attraction metric. Focusing on the attraction of startups, New York City is second just short of one third the attraction, followed by London and Berlin, an ecosystem that entered the Expansion phase of lifecycle ecosystem only in 2014. It has enjoyed rapid growth with Attraction of Resources as the fuel.

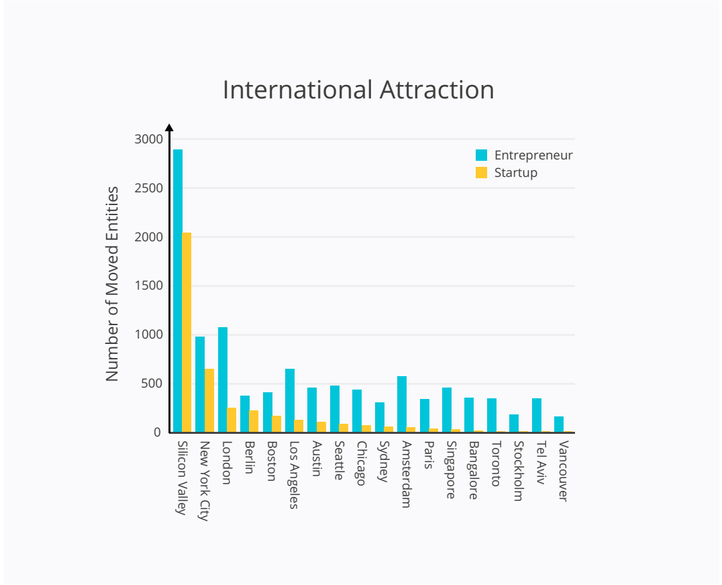


Figure 32

Singapore has a surprisingly low level of startup attraction, but a competitive level of entrepreneur attraction. In Santiago, Attraction has been driven by government programs rather than "natural" gravitational force. Chicago's lower lever of Attraction than other large U.S. ecosystems helps explain its low Global Connectedness and lack of Market Reach, factors that are mostly responsible for its drop in the rankings.

Individual Ecosystem Highlights

In addition to those discussed already, many other surprises or happy findings emerged from our analysis.

- Salt Lake-Provo and Seoul both scored well on overall Funding. This was driven by good access to early-stage funding for startups in Salt Lake-Provo, and good Funding Quality in Seoul.
- Malta and Phoenix both enjoy solid scores in Talent Access.
- Lisbon, Jerusalem, Helsinki, and Estonia fare strongly on Global Connectedness, driven by strong connections to the top-performing ecosystems and high shares of startups reaching foreign customers.
- Atlanta, Helsinki, and Houston do well on Startup Experience, including the use of advisors by Helsinki startups and the level of hyper-growth experience in Houston.

Other Notable Highlights

Here, we highlight some additional Key Findings that emerged from our analysis.

European ecosystems are best at reaching a global customer base

For startups in Europe, 20.7 percent of their customers come from outside of the continent, whereas the average for all other regions is 12.8 percent.

Employee stock options are more widely used in the United States

Among American ecosystems, 42 percent of startups offer stock option plans to all their employees, compared to an average of 22 percent in the rest of the world. (This is likely related to differences in tax law.)

Advisors are most heavily used by startups in Asia-Pacific ecosystems

Startups in the Asia-Pacific region have 48 percent more advisors with equity than the rest of the world.

Global Connectedness

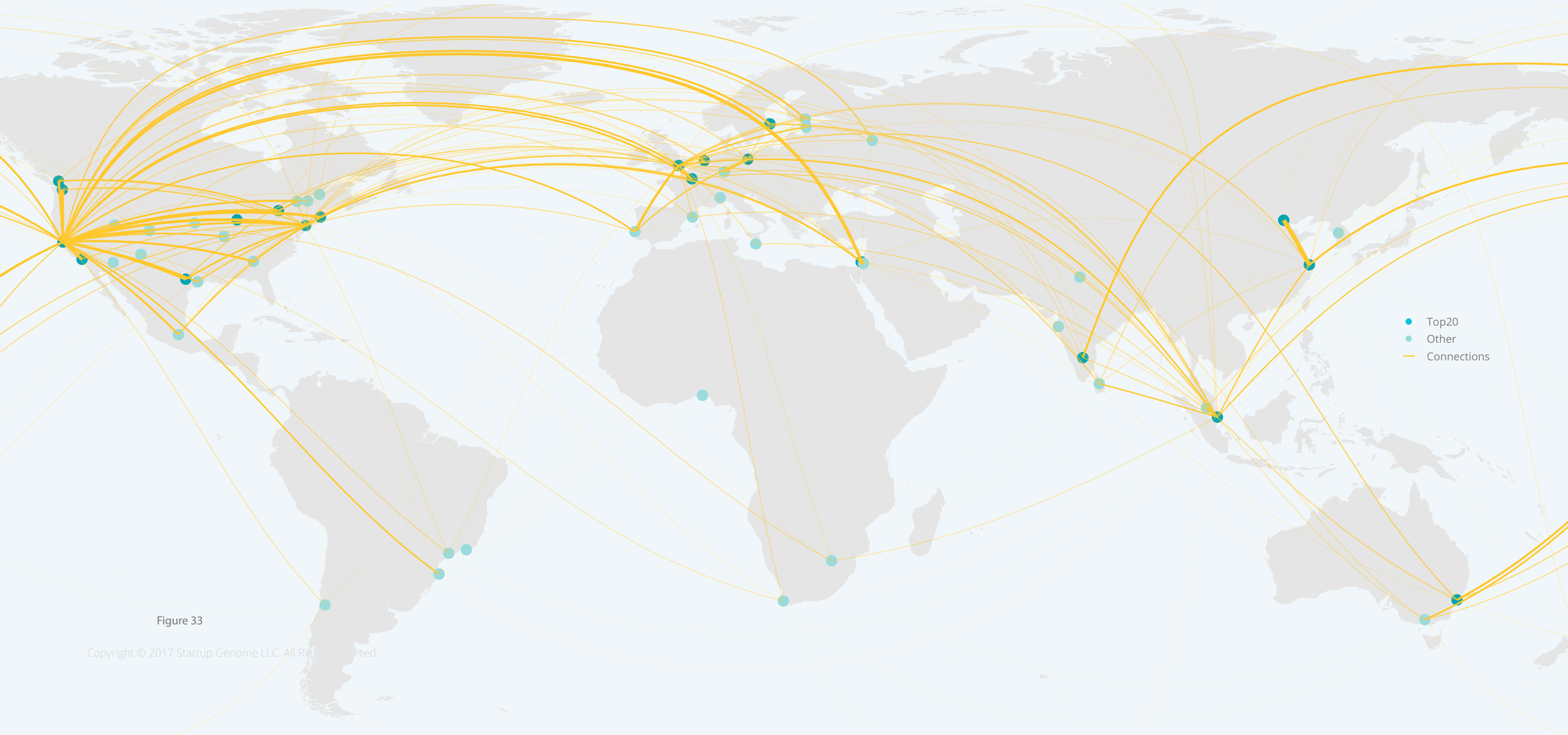


Figure 33

Deep Dives into Top 20 Global Startup Ecosystems

#1 Silicon Valley USA

While we've seen enormous growth in several regions around the world, Silicon Valley still stands as the dominant global ecosystem. Defined geographically as the Bay Area, it boasts 12,700-15,600 active startups and two million tech workers, all looking for the next big thing.

Despite a high cost of living that threatens to drive out talent, the region's exceptional culture, professional networks, and industry leadership help attract and retain talented and ambitious people. Silicon Valley is notable for its attraction of international talent, confirmed by the highest value in Global Resource Attraction at 21% and almost half of all founders in the region being immigrants. London and Berlin are the only other ecosystems to have shares above 40 percent, and in the closest American ecosystem, Boston, 30 percent of founders are immigrants.

Large-scale exits and breakneck growth are daily business in the Bay Area. Despite a drop by more than 10 percent, more than a third of the global value creation in exits is still captured right here in Silicon Valley.

Along these lines, over one-quarter of the world's unicorns are located here as well and it's difficult to even keep track of them. Take Airbnb as just one example. The online marketplace for accommodations launched in 2008 and recently raised its third billion at a $30 billion valuation, making it as valuable as the established Marriott International hotel imperium.

Silicon Valley may see structural challenges around affordability of housing and access to talent but there's no questioning its reign: The ecosystem ranks first in four of the five overall variables in this year's Index. Still, Silicon Valley will continue to face pressure from the growth of startup ecosystems elsewhere. Overall venture funding fell in 2016, as did valuations for later stage companies. Even the top-ranked global ecosystem, populated by unicorns and deca-unicorns, is not immune to setbacks in performance and an increase in global competition.

In times of aggressive startup ecosystem investment across the globe and the internet moving into its third wave, it becomes clear that Silicon Valley will have to tackle its challenges in a real way.

Voices and Findings

"Silicon Valley's thriving startup ecosystem is one of America's greatest assets, and its record of success has helped to fuel a broader movement towards entrepreneurship across the rest of the country."

Evan Engstrom
Executive Director at Engine

28% of the global investments into Early-Stage startups are captured by Silicon Valley companies. Its top contenders are NYC and Beijing, which capture about 11% each. Silicon Valley also has the highest Global Resource Attraction score, at 21%.

"Silicon Valley's private economic infrastructure—talent, capital, culture—is without peer. Yet, our public institutions have not been up to the great challenges that confront us—around housing access and affordability, mobility, and education. We need sound policy in these areas. But to get there we might need to re-think our institutions of governance, shifting to regional structures that can lead regional solutions."

Brian Brennan SVP SVLG
Co-Author of SVCIP.com
(SV Competitiveness and Innovation Project)

Silicon Valley startups employ the highest Percentage of Engineers with prior Startup Experience of two or more years.

Silicon Valley also claims a little less than one third of the Exit Value of the global startup ecosystem, down by 15% compared to the 2015 report. Beijing and London rank #2 and #3 with 10% and 8%, respectively.

"The explosive growth in tech over the last decade was originated by engineers in Silicon Valley to establish enabling tools and platforms that will benefit businesses around the world. These platforms now provide the infrastructure for a new wave of tech companies to emerge from any city in the world."

Daniel Saks
President and Co-CEO at AppDirect

In Silicon Valley, 6% of founding teams are composed of founders who were all part of hypergrowth companies, six times bigger than anywhere else in North America, South America, or Europe.

"One of the biggest challenges for Silicon Valley will continue to be the rising cost of housing in the area. If the region cannot offer a reasonable and comfortable living situation for its population, young talent may choose to reside in more affordable part of the world, thus robbing Silicon Valley of one of its greatest assets—young talent."

Robert Siegel
Partner at XSeed Capital and Lecturer in Management at the Stanford University Graduate School of Business

Silicon Valley has the highest Percentage of Founders that are Immigrants at 46 percent.

Metrics

Ecosystem Demographics

Metropolitan GDP
$619 bn
Global Avg: $267 bn

Metropolitan Population
7.6 m

Ecosystem Performance

Ecosystem Value
$264 bn
Global Median: $4.1 bn

Startup Output
13 - 16 k
Global Avg: 1,762

Growth Index
4.2

Funding

Early-stage Funding per Startup
$762 k
Global Avg: $252 k

Early-stage Funding Growth Index **4.4**
Global Avg: **5**

Experienced VC Firm Index **10.9**
Global Avg: **7**

Market Reach

Foreign Customers
30%
Global Avg: **23%**

11.0 Global Connections
Global Avg: **6.1**

Talent

Experienced Software Engineers
87%
Global Avg: **72%**

Experienced Growth Employees
76%
Global Avg: **60%**

Visa Success Rate
58%
Global Avg: **41%**

Startup Experience Index **7.4**

$112 k Software Engineer Salary
Global Avg: **49 k**

Global Avg: **5**

Founders Demographics

Women Founders
16%
Global Avg: **16%**

Immigrant Founders
46%
Global Avg: **19%**

Resource Attraction

Entrepreneurs **2,896**
Global Avg: **300**

Startups **2,049**
Global Avg: **83**

#2 New York USA

For decades, New York City's technology sector was overshadowed by the high-flying and high-paying financial sector. With a thick web of 6,300-7,800 active tech startups, things look quite different today. New York remains the global capital of capital, but is now also at the forefront of information technology and consumer technology trends.

The ecosystem of the Big Apple has come a long way, from a decade ago, when it was often criticized as not being a "real" tech hub. This did not happen overnight. As documented by Endeavor Insight,[1] two landmark events in the history of New York City tech were the founding of DoubleClick in 1996 and its subsequent acquisition by Google in 2007. This set off a big push for talent and an explosion of startup activity, leading to a steady march of acquisitions and IPOs. In fact, for four years in a row, New York City has seen at least one $1 billion exit per year.[2]

Meanwhile, dozens of major tech companies have opened offices in New York as well, and employ more than 15,000 people. For many of the startup success stories covered in this report, New York has been the the number one destination for entering the U.S. market, too. This Global Resource Attraction floods financial wealth and tech-savvy talent into the ecosystem, which then accelerates the next wave of growth. Earlier in 2017, the city announced that all subway stations now have Wi-Fi and cell service, enabling constant connection.

New York City's pipeline of growth companies and exits continues to be strong, with successful ventures such as Warby Parker, Blue Apron, Buzzfeed, and others with a valuation north of $1 billion. In summer 2016, another success story made headlines with the acquisition of Jet.com by retail giant Walmart at $3.3 billion, the largest e-commerce deal ever recorded.

As a result, New York City remains the world's second highest ranked startup ecosystem, with impressive results across all of the five factors. It's biggest blemish in the Index would be its high Cost for Engineers, which is compensated with a competitive Quality and Time to Hire. As with Silicon Valley, venture funding went down in 2016, but the current momentum means New York City's tech startup ecosystem will continue to flourish.

1 http://www.nyctechmap.com/nycTechReport.pdf

2 http://www.builtinnyc.com/2015/12/10/numbers-behind-new-york-techs-steady-growth

Voices and Findings

New York City has the 2nd highest absolute Number of Early-Stage Investments in the world, trailing only Silicon Valley, and the 5th highest Number of Early-Stage Investment per startup.

"New York City has the largest concentration of financial resources along with high quality talent in a city of over eight million people. While the percentage of experienced founders vs. the population is low, the sheer numbers outweigh all other ecosystems. It's not percentages or arbitrary valuations without viable exit paths that are essential to an ecosystem. It's about real revenue, real exits, and real value."

Joshua Siegel
General Partner at Rubicon Ventures

The availability of engineers in New York is improving. New York City has the fastest Average Time to Hire an Engineer of all U.S. ecosystems, at 24 days, 3 weeks faster than in Silicon Valley.

"Finding great engineers is a pain point for every tech ecosystem, and the competition from Wall Street exacerbates that pain point in NYC. That's why the city is working to increase the supply by creating CornellTech, which will add to the homegrown engineering population. But the best solution is the promotion of NYC as a great city for engineers as NYC remains one of the most attractive places in the world to live for well educated millennials."

Lou Kerner
Partner at Flight VC

New York City is the 3rd most valuable startup ecosystem in the world and also produced the 3rd highest Number of Unicorns, trailing only Silicon Valley and Beijing.

"At the end of the day, it all comes down to customers. If you have customers, you can raise capital — or you may not need any — and New York has the single largest concentration of customers anywhere in the world."

Avi Savar
Managing Partner and CEO at Dreamit

New York City is the 2nd largest ecosystem in the world by number of startups with about 6,300-7,800 startups. It also has one of the highest net Global Resource Attraction rates at 10%.

"New York is a phenomenal place to build a business. It's an entrepreneurial hive mind of people from diverse backgrounds and industries, a melting pot of talent and ideas and opportunities. To quote the prolific American author John Updike, 'The true New Yorker secretly believes that people living anywhere else have to be, in some sense, kidding.'"

Matthew Brimer
Co-Founder at General Assembly

Metrics

Ecosystem Demographics

Metropolitan GDP
$1,559 bn
Global Avg: $267 bn

Metropolitan Population
24 m

Ecosystem Performance

Ecosystem Value
$71 bn
Global Median: $4.1 bn

Startup Output
6.3 - 7.8 k
Global Avg: 1,762

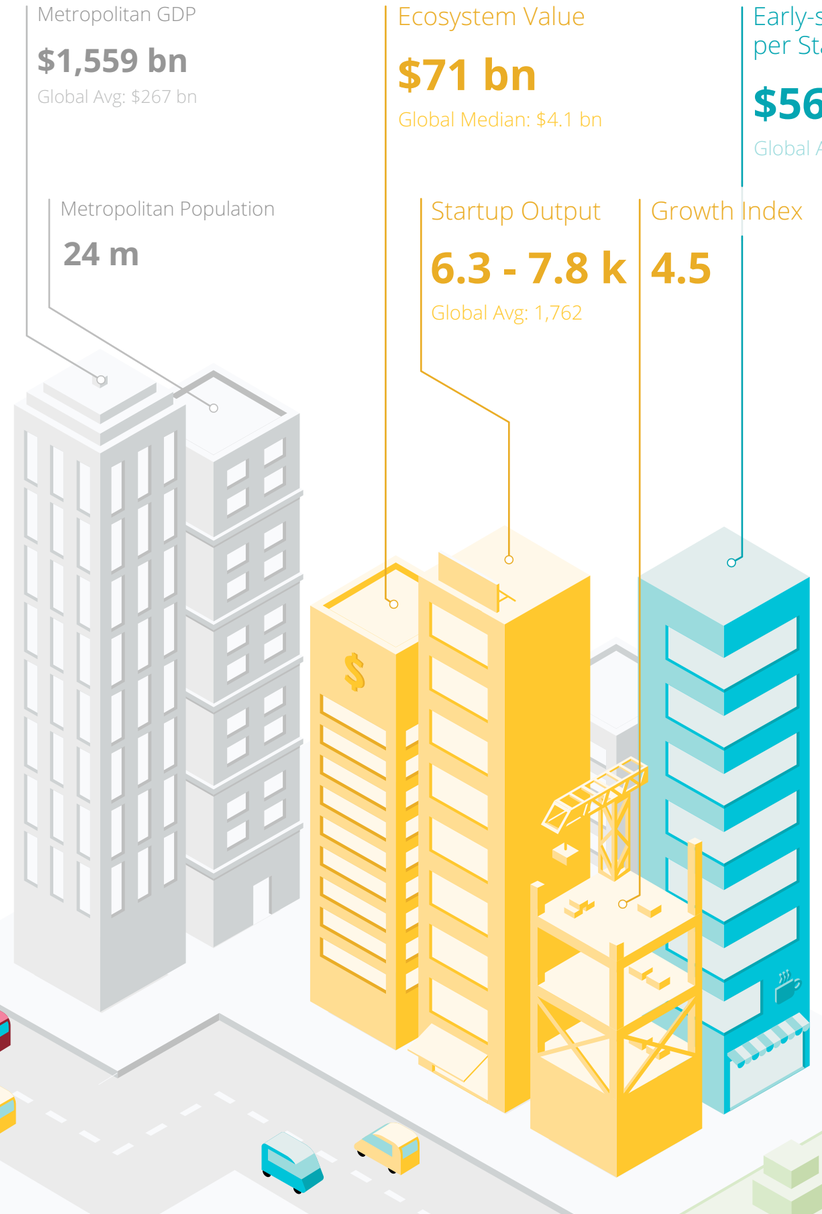
Growth Index
4.5

Funding

Early-stage Funding per Startup
$568 k
Global Avg: $252 k

Early-stage Funding Growth Index **4.6**
Global Avg: **5**

Experienced VC Firm Index **10.3**
Global Avg: **7**



Market Reach

Foreign Customers **22%**
Global Avg: **23%**

Global Connections **6.7**
Global Avg: **6.1**

Talent

Experienced Software Engineers **78%**
Global Avg: **72%**

Experienced Growth Employees **64%**
Global Avg: **60%**

Visa Success Rate **57%**
Global Avg: **41%**

Software Engineer Salary **$97 k**
Global Avg: **49 k**

Startup Experience Index **6.9**

Founders Demographics

Women Founders **19%**
Global Avg: **16%**

Immigrant Founders **25%**
Global Avg: **19%**

Resource Attraction

Entrepreneurs **984**
Global Avg: **300**

Startups **654**
Global Avg: **83**

#3 London United Kingdom

London is undoubtedly Europe's capital when it comes to tech ecosystems. The city boasts of around 4,300-5,900 active start-ups, the fourth highest Startup Output in the world, with most of them located in the East London cluster between Old Street and Shoreditch areas.

The city's muscular financial arm provides ample support for investors and startups alike. In terms of total venture capital investments, and most other Funding metrics, London is leading in the European comparison. This directly translates into growth. Tech Nation 2016 found that London's digital tech industries are growing 32% faster[1] than the wider economy, reaching over $200 billion. At the same time, the high concentration of influential organizations provide ample exit opportunities. On a ten-year timeline, only two ecosystems have exited more tech startups at above $50 million than London: New York and Silicon Valley. Due to proximity to the some of the world's biggest banks, sophisticated VC funds, and tech companies like Apple, Google, and Facebook, London startups have access to potential investors and acquirers alike.

Several startups even made their way to become unicorns, serving the global market such as FinTech startup Powa or media company Shazam. In 2016, we witnessed history when ARM Holdings, one of the world's most influential technology companies powering 95% of the world's smartphones, was acquired by Softbank for $32 billion—marking the U.K.'s largest ever tech deal and a landmark in the growth of the ecosystem.

London displays strong performance and improves by three places from the 2015 ranking, mainly due to strong improvements in Funding (#4 versus #10 in 2015) and Startup Experience (#10 versus #13 in 2015). Performance, Market Reach, and Talent factors all remained high, leading to impressive overall results. Despite uncertainty about Brexit and its potential ramifications, many startups and corporates have pledged their support, suggesting that London has the ability to hold firm through unsettled times.[2]

Tech City UK *aims to make the U.K. the best place to start and grow a digital business. It does this through free business lifecycle programs, policy thought leadership, and digital skills support.*

1 http://www.telegraph.co.uk/finance/businessclub/technology/12150691/UKs-digital-industries-growing-32pc-faster-than-wider-economy.html

2 http://www.cityam.com/254914/tech-startups-and-investors-really-feel-brexit

Voices and Findings

"Entrepreneurs start tech companies here in Britain because there is great access to investors; a strong ecosystem to tap into; and deep tech talent and expertise. There are challenges ahead but we are confident that London will remain Europe's startup capital with innovative new businesses that will future-proof our economy being launched daily."

Gerard Grech
CEO at Tech City UK

As the leading startup ecosystem in Europe, London is outperforming its top contenders Berlin and Tel Aviv in all factors except for Talent, where Berlin is currently five ranks ahead.

"London has emerged as a leading international tech hub due to the city's diversity of talent, creativity and innovation. London has always attracted the brightest and most ambitious people from across all fields; finance, retail, and the creative industries, as well as the sciences, health and now tech. This report shows that overseas talent helps London to punch above its weight, providing a distinct advantage."

Russ Shaw
Founder at Tech London Advocates

London is the 4th largest ecosystem in the world by number of startups. The ecosystem comprises of about twice as many startups as the next biggest European ecosystem, Tel Aviv. London is also the 4th largest ecosystem in the world by Ecosystem Value and by far the largest in Europe.

"London has established itself as a leading hub for technology investment globally, attracting significantly more money than any other major European city."

Patrick Imbach
Co-Head of KPMG Tech Growth

Despite confidence that the startup ecosystem will not suffer from Brexit, London ranks behind European peers such as Berlin and Amsterdam with regards to its net Global Resource Attraction rate.

"As a Dublin startup relocating to London, SwiftComply found the depth of talent and density of funding a breath of fresh air. We have noticed some nervousness in the market post-Brexit, from both a recruitment and fundraising perspective. That being said, the London ecosystem appears to be thriving with several accelerators, co-working spaces, and meet-ups providing valuable support to entrepreneurs."

Michael O'Dwyer
CEO at SwiftComply

Metrics

Ecosystem Demographics

Metropolitan GDP
$542 bn
Global Avg: $267 bn

Metropolitan Population
14 m

Ecosystem Performance

Ecosystem Value
$44 bn
Global Median: $4.1 bn

Startup Output
4.3 - 5.9 k
Global Avg: 1,762

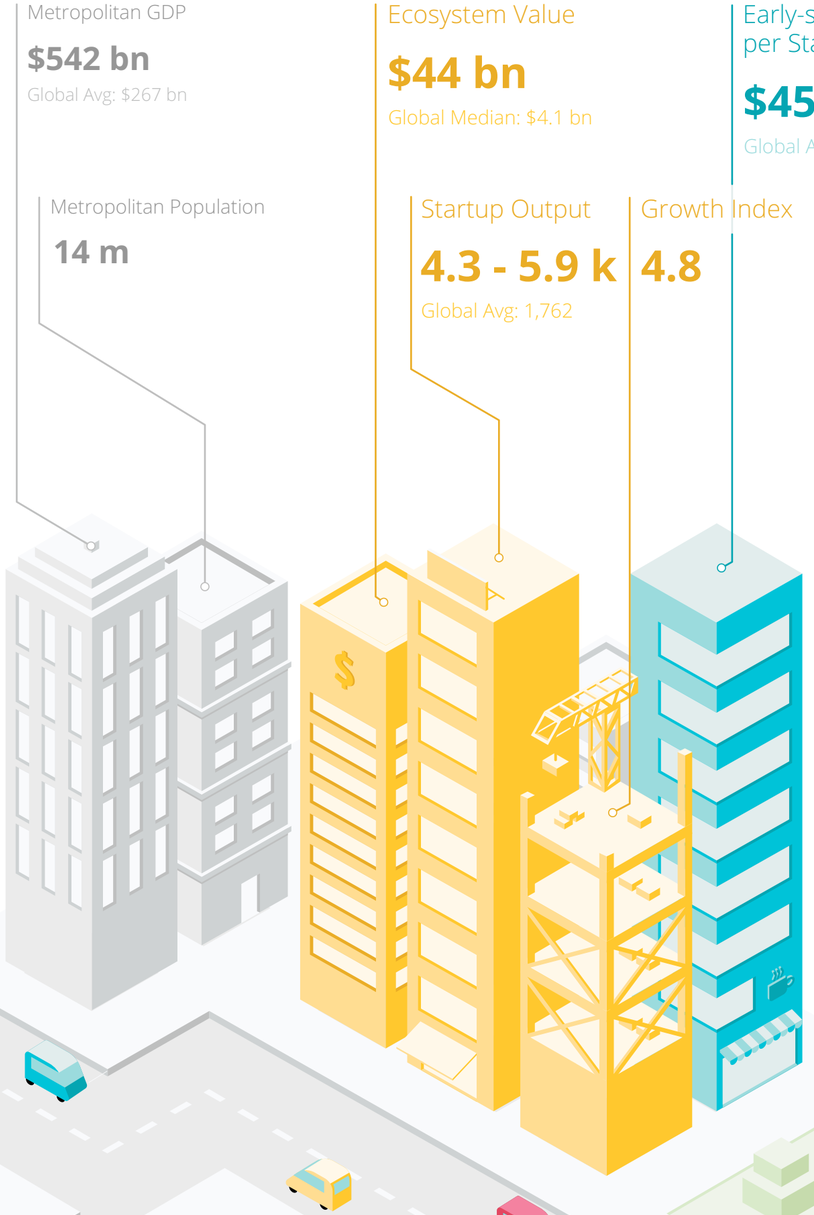
Growth Index
4.8

Funding

Early-stage Funding per Startup
$451 k
Global Avg: $252 k

Early-stage Funding Growth Index **4.6**
Global Avg: **5**

Experienced VC Firm Index **10.1**
Global Avg: **7**



Market Reach

Foreign Customers
33%
Global Avg: **23%**

10.8 Global Connections
Global Avg: **6.1**

Talent

Experienced Software Engineers
79%
Global Avg: **72%**

Experienced Growth Employees
59%
Global Avg: **60%**

Visa Success Rate
44%
Global Avg: **41%**

Startup Experience Index **6.7**

Founders Demographics

Women Founders
15%
Global Avg: **16%**

Immigrant Founders
42%
Global Avg: **19%**

$52 k Software Engineer Salary
Global Avg: **49 k**

Global Avg: **5**

Resource Attraction

Entrepreneurs **1,079**
Global Avg: **300**

Startups **257**
Global Avg: **83**

#4 Beijing China

Beijing counts an enormous population of around 25 million people in the metropolitan area and is home to 4,800-7,200 startups, the third largest Startup Output in the world. The startup scene of China's capital city has been an unknown to many in the Western world, at least until now.

The city boasts of 70 colleges and universities, most notably Tsinghua and Peking University, and more than 280 scientific research institutes. There is an abundance of aspiring founders and talent with a reputation for being ahead of the curve when it comes to tech trends. The number of coworking spaces pushes 300, where Beijingers turn ideas into profits.

Funding is readily available as well, with not only foreign investors injecting money into the ecosystem—in 2015 the Chinese government invested a staggering $231 billion into its startups. Pairing strong talent and funding with a domestic market of around 1.3 billion consumers, these are the ingredients that really move the needle. Beijing claims more than 40 startups valued at above $1 billion, the second highest concentration of unicorns in the world.

In 2016, the ecosystem made further headlines when Apple invested $1 billion into Didi Chuxing, China's version of Uber. Now Apple is building a $45 million research facility—a significant affirmation of the capital city's tech future.

Beijing debuts in the global top 20 coming in at #4 overall, with Startup Performance only narrowly behind the one found in Silicon Valley. Funding, Talent, and Startup Experience are the other Factors with a performance that can easily keep up with the top ecosystems in the U.S. and Europe. Apart from international investment activity, Beijing is somewhat of an insular ecosystem, ranking #19 out of #20 in Market Reach due to a low Percentage of Foreign Customers and a lack of Relationships with Founders in other Startup Ecosystems. Given the ecosystem's size and scale, Asia's tech mega center is bound to continue its trajectory as an ecosystem superstar.

Ecosystem Partners: Startup Grind, Cyzone

Voices and Findings

"Talking about thriving startups, people tend to always look at Silicon Valley first. But the truth is, there is a hidden gem in the heart of China's capital—called Zhongguancun—where possibilities are nearly limitless for creative minds. Here, the high dynamics and breathtaking speed of Beijing's entrepreneurial landscape are bringing forth Silicon Valley's only true competitor."

Jelte Ansgar Wingender
Beijing Chapter Director at Startup Grind

Beijing is home to 4,800-7,200 startups, making it the 3rd largest ecosystem in the world by number of startups and by far the largest in Asia. Beijing produced 24 Unicorns until now — the second highest Unicorn Output in the global landscape.

"Beijing is a great place to launch a company. It has a unique demographics, rich history, and money looking to be put to work. It can be the perfect place to find your niche market or a testbed before launching to the rest of the country."

John Artman
Editor-in-Chief at TechNode

Beijing ranked 2nd for highest Number of Early-Stage Funding per Startup in the world, trailing only Shanghai. Beijing captures 11% of the global Early-Stage Investment and 10% of global exits.

"Working closely with the startup ecosystem in Beijing for the past decade made me experience first-hand how rapidly innovation and entrepreneurship has taken over the city. The government has been promoting mass entrepreneurship by putting innovation at core of the five year plan."

Bibu Biman
Co-Founder at Tamon Tech

Beijing founders are the 5th youngest in the world with an average age of 32. They also have the highest number of Advisors with Equity, with an average of 4 per startup. The next closest is Shanghai with 2.79.

"Despite its dynamism, Beijing remains a mostly hostile environment for foreign founders. Access to capital is limited, building partnerships is challenging, and most importantly, hiring is a struggle. These problems are due to the belief that foreigners can't really understand the Chinese market and succeed in it. And this belief is, to a large extent, justified."

Thomas Graziani
Co-Founder of WalktheChat

Metrics

Ecosystem Demographics

Metropolitan GDP
$506 bn
Global Avg: $267 bn

Metropolitan Population
25 m

Ecosystem Performance

Ecosystem Value
$131 bn
Global Median: $4.1 bn

Startup Output*
4.8 - 7.2 k
Global Avg: 1,762

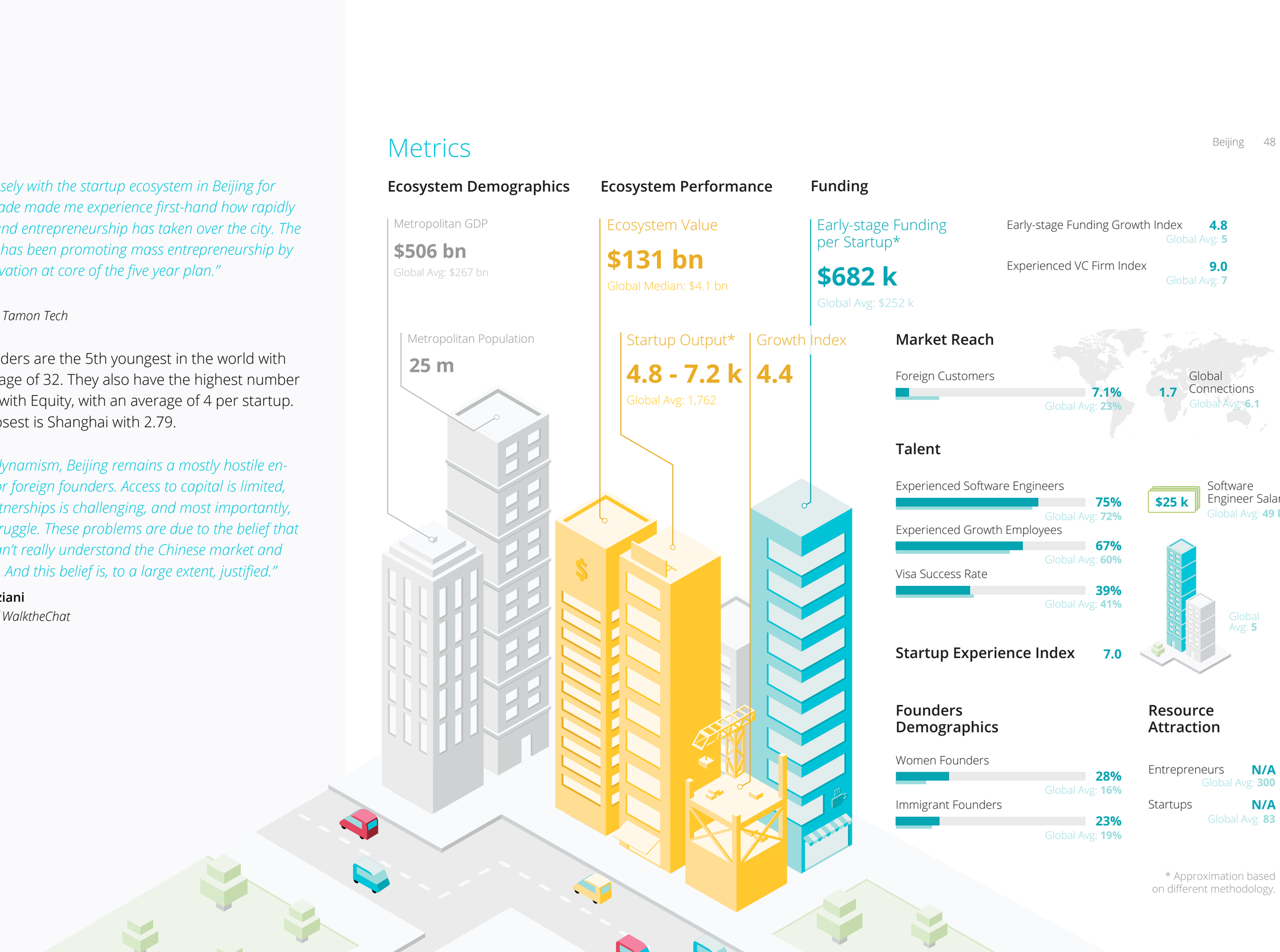
Growth Index
4.4

Funding

Early-stage Funding per Startup*
$682 k
Global Avg: $252 k

Early-stage Funding Growth Index **4.8**
Global Avg: **5**

Experienced VC Firm Index **9.0**
Global Avg: **7**



Market Reach

Foreign Customers
7.1%
Global Avg: **23%**

1.7 Global Connections
Global Avg: **6.1**

Talent

Experienced Software Engineers **75%**
Global Avg: **72%**

Experienced Growth Employees **67%**
Global Avg: **60%**

Visa Success Rate **39%**
Global Avg: **41%**

$25 k Software Engineer Salary
Global Avg: **49 k**

Startup Experience Index **7.0**

Global Avg: **5**

Founders Demographics

Women Founders **28%**
Global Avg: **16%**

Immigrant Founders **23%**
Global Avg: **19%**

Resource Attraction

Entrepreneurs **N/A**
Global Avg: **300**

Startups **N/A**
Global Avg: **83**

* Approximation based on different methodology.

#5 Boston USA

Boston is home to an estimated 2,900-3,900 tech startups and continues to hold its own as a globally leading startup ecosystem. As the third highest performing startup ecosystem in the U.S., Boston draws on the ideas and people of over 50 colleges and universities, most notably Harvard University and MIT. Talking about mature startup ecosystems capable of producing competitive tech startups and disruptive innovation, Boston should come to mind.

Boston boasts of dozens of sophisticated support organizations like the celebrated accelerator MassChallenge, which has nurtured over 850 startups in multiple sectors to date. The internationally celebrated program has set up shop in four more countries. Brand new this year is MIT's accelerator, The Engine, which recently raised an initial $150 million fund to support tech firms building solutions for big societal problems.

In recognition of the high density of talent in science, engineering, and technology in the Boston region, General Electric announced that it was moving its headquarters from Connecticut to Boston in 2016.

While the startup ecosystem is mostly famous for science driven, B2B-focused innovation, recent marquee companies include both business and customer-facing startups. Two prime examples are TripAdvisor and HubSpot, both companies with a global footprint and a market cap at an impressive $6.3 billion and $2.3 billion, respectively. Other success stories that call Boston home include EMC, PTC, Akamai, Nuance, Netezza, Endeca and Wayfair.

Boston went down by one in this year's global ecosystem Index due to Beijing coming in at #4. The ecosystem now ranks #5 and confirms a very balanced scorecard across all factors. However, Boston scores low on Global Connections, as entrepreneurs aren't focused on building relationships with other ecosystems. Among U.S. ecosystems, Boston also has the lowest Percentage of International Founders coming in. Boston lies at 12% while the U.S. average amounts to 17%. These factors suggest that Boston could further improve its inflow of human and financial capital compared to U.S. counterparts.

This, perhaps, is something GE can help improve. In its new home, GE will find that it may be the biggest fish in the pond, but it won't necessarily be the most innovative. Boston tech startups rule, and they will continue to do so going forward.

Voices and Findings

"Boston is a city of revolutionary innovation, and we pride ourselves on having a deep-rooted history of driving social change. One of our greatest assets as a city is our people, which is why we celebrate the diversity of our workforce and strive to advance opportunities for all to succeed in Boston's innovation economy."

Martin J. Walsh
Mayor at City of Boston

Boston is the 7th most valuable startup ecosystem with the 6th highest Startup Output in the world. It is tied for the 7th highest Number of Unicorns at 6, compared to New York City at 16 and Silicon Valley at 57, respectively.

"Boston continues to build one of the most compelling innovation ecosystems in the world. Its strengths come from the community's commitment to entrepreneurship and the diversity of stakeholders. Boston has policy makers, academics, corporations, investors, and technologists working collaboratively to help startups launch and create impact."

Kiki Mills Johnston
Managing Director, Boston at MassChallenge

Boston is now ranked 7th globally in Total Amount of Early-Stage Funding as well as 7th in Early-Stage Funding per Startup.

"As a world leading startup ecosystem, Boston continues to build upon a strong foundation of talent. This grows out of the greater Boston areas dense university landscapes, but also upon the city's support of making immigrants welcomed. With Boston's dense and diverse talent pool comes different views of solving 21st century problems."

Simon Towers
Co-Founder at PitchFull

Boston is tied for the 10th highest Percentage of Immigrant Founders at 30% and 2nd highest in the United States.

"Boston has a unique ability to attract a diverse pool of highly gifted talent from all over the world through its welcoming academic institutions. We see a direct correlation between its dense concentration of skilled immigrants, and the creation of a strong ecosystem able to tackle the harder tech problems better than any other city."

Eveline Butchatskiy
Director at Techstars

Boston indicates the 6th highest Percentage of startups that offer all of their employees stock options, at 48% in comparison to Silicon Valley at 50% and the global average at only 26%.

Metrics

Ecosystem Demographics

Metropolitan GDP
$382 bn
Global Avg: $267 bn

Metropolitan Population
4.7 m

Ecosystem Performance

Ecosystem Value
$30 bn
Global Median: $4.1 bn

Startup Output
2.9 - 3.9 k
Global Avg: 1,762

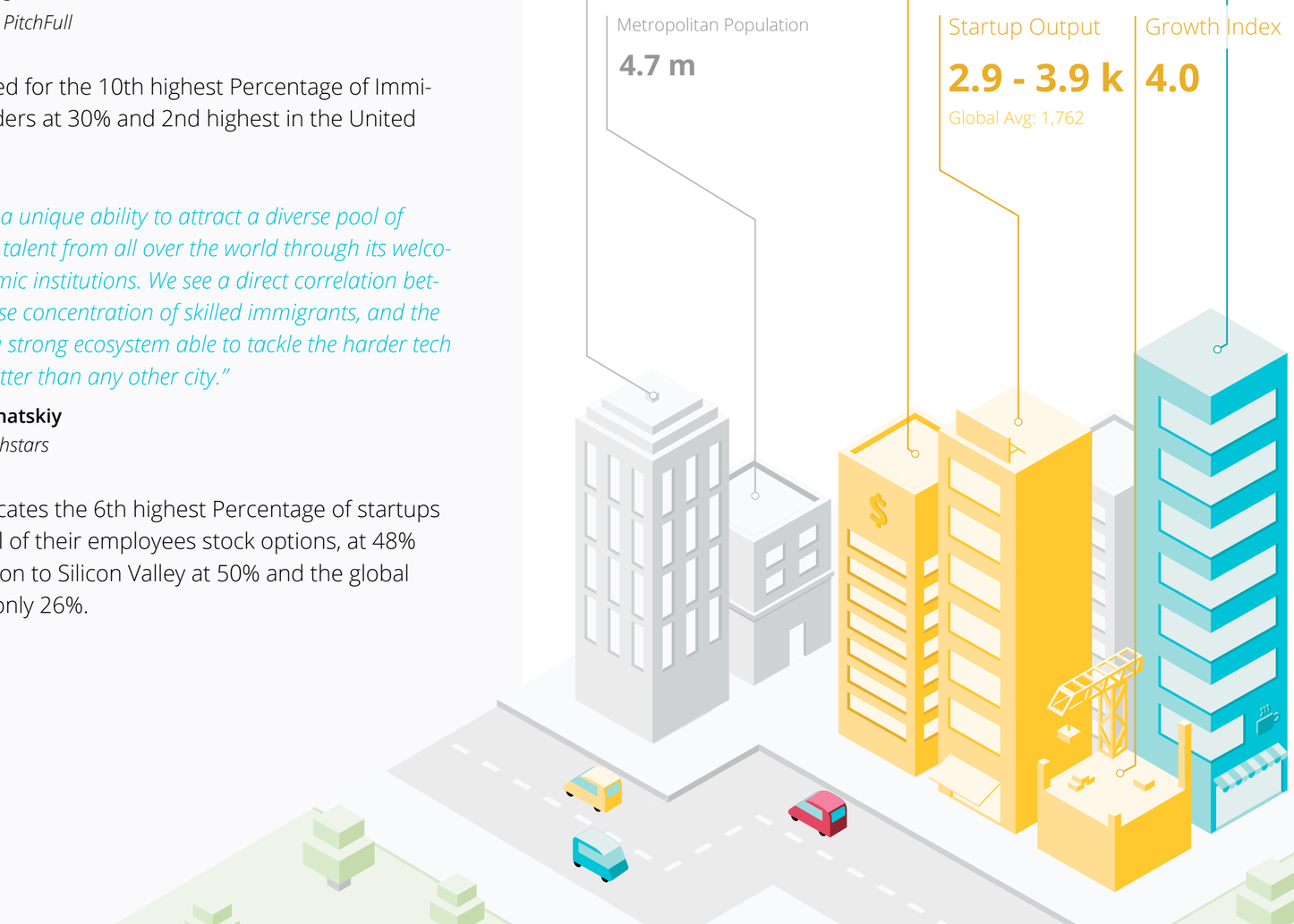
Growth Index
4.0

Funding

Early-stage Funding per Startup
$495 k
Global Avg: $252 k

Early-stage Funding Growth Index **4.5**
Global Avg: **5**

Experienced VC Firm Index **9.8**
Global Avg: **7**



Market Reach

Foreign Customers **20%**
Global Avg: **23%**

5.3 Global Connections
Global Avg: **6.1**

Talent

Experienced Software Engineers **80%**
Global Avg: **72%**

Experienced Growth Employees **72%**
Global Avg: **60%**

Visa Success Rate **40%**
Global Avg: **41%**

Startup Experience Index **7.0**

$95 k Software Engineer Salary
Global Avg: **49 k**

Global Avg: **5**

Founders Demographics

Women Founders **16%**
Global Avg: **16%**

Immigrant Founders **30%**
Global Avg: **19%**

Resource Attraction

Entrepreneurs **416**
Global Avg: **300**

Startups **174**
Global Avg: **83**

#6 Tel Aviv Israel

The capital of Israel is Jerusalem, but the capital of the Start-Up Nation is undoubtedly Tel Aviv. With some 2,200-2,700 tech start-ups churning out products for global markets, Tel Aviv has one of the highest Startup Densities in the world. Although there were fewer deals in 2016, venture capital funding hit an all-time high. Over the past 40 years, 250 Israeli companies have gone public on the Nasdaq, most of them based in Tel Aviv. Today, only China and the United States have more firms on the Nasdaq.

Tiny Tel Aviv has all the characteristics of a global tech ecosystem giant: education, entrepreneurial spirit, technology, a global mindset, government support, and a staggering 300 multinational R&D centers operating in Israel.[1] But setting Tel Aviv apart from other ecosystems is a factor that accounts for its strength across multiple industries, especially in cybersecurity—its military. Expertise gleaned from the country's elite military intelligence forces, combined with support from the government has helped raise $581 million in funding for cybersecurity in 2016.[2]

1 http://innovationisrael-en.mag.calltext.co.il/article/41/433

2 Start-Up Nation Central: FINDER INSIGHTS SERIES. ISRAEL'S CYBERSECURITY INDUSTRY IN 2016.

Beyond frontier technologies like cyber tech, recent B2C success stories like the video streaming startup Houseparty bolster the ecosystem's reputation as the breeding ground for some of the world's most successful companies. The live video chat app was released in early 2016 and has run to the top of the mobile app charts, raising $52 million along the way.

In this year's ranking Tel Aviv held strong as one of the top startup ecosystems in the world, falling only one spot behind from #5 to #6 to make way for Beijing. Despite the rise of startup ecosystems in larger economies all around the world, Tel Aviv is still in the top 10 in the Performance Index. Tel Aviv has strong Funding numbers and is great in reaching markets, connecting with other ecosystems, and reeling in plenty of foreign customers. However there are signs Tel Aviv's ecosystem success may be plateauing. High engineering costs and long times to hire are the cause of Tel Aviv's weakest Index factor.

Start-Up Nation Central *connects companies and countries to the people and technologies in Israel that can solve their most pressing challenges.*

Tel Aviv Global *is city-owned company that works to position Tel Aviv as a global business center of innovation and entrepreneurship, a destination for urban tourism, and a leading city brand worldwide.*

Voices and Findings

"Tel Aviv has the highest rate of early-stage startups and the highest rate of accelerators per capita in the world. Tel Avivians are great in creating technology and accelerating its maturation. We in city hall create key conditions for the ecosystem's growth, from our open-data policy and city-funded co-working spaces, to free public wi-fi and strong relationships with global partners."

Eytan Schwartz
CEO at Tel Aviv Global and Tourism

Tel Aviv is tied with Los Angeles for the highest percentage of startups who reported that the product they are developing is the first of its kind or in a completely new category, at 51%. The global average is 35%.

"Due to the fairly small size of our market, Israeli startups aim globally from day 1. With a strong heritage of entrepreneurship, Israeli startups attract funding from all over the world, and the activity of multinational corporations like Google, Facebook, Amazon, Apple and Microsoft and many others help connect us with global trends."

Omri Bauer
Senior Technology Advisor to the CEO at Start-Up Nation Central

Tel Aviv startups have the highest percentage of Foreign Customers outside their continent at 37%, indicating a strong ability to go global. 69% of startups in Tel Aviv immediately target the U.S. or U.K. markets, the 2nd highest rate in the world behind only Estonia.

"Israel is an extremely small market, of an aggregate number of 8 million people, with very unique characteristics. In addition, the neighbor markets around Israel are not enthusiastic to adopting Israeli technologies, given the geopolitical situation. However, what could be considered as a clear disadvantage has actually turned into one of the main advantages and differentiators of Israeli startups, as they target global market overseas from day one."

Inbal Arieli
co-CEO at Synthesis and Senior Advisor to Start-Up Nation Central

Only 1% of Tel Aviv's startups originated from outside the country—other top ecosystems indicate figures five to 15 times higher. Tel Aviv also has one of the lowest Percentages of Women Founders in the world at 8%, only half of the global average and 7% less than Jerusalem.

"Although it is the easiest time in history to start a startup, it is the hardest time to be successful. There are many factors that contribute to a startup's success: CEO support, finding the right mentors, sales strategy, and access to the right network of customers and partners."

Zack Weisfeld
Founder at Microsoft Accelerator and General Manager at Microsoft Global Accelerators

Metrics

Ecosystem Demographics

Metropolitan GDP
$153 bn
Global Avg: $267 bn

Metropolitan Population
3.7 m

Ecosystem Performance

Ecosystem Value
$22 bn
Global Median: $4.1 bn

Startup Output
2.2 - 2.7 k
Global Avg: 1,762

Growth Index
4.5

Funding

Early-stage Funding per Startup
$509 k
Global Avg: $252 k

Early-stage Funding Growth Index **4.7**
Global Avg: **5**

Experienced VC Firm Index **9.0**
Global Avg: **7**

Market Reach

Foreign Customers
45%
Global Avg: **23%**

12.9 Global Connections
Global Avg: **6.1**

Talent

Experienced Software Engineers
74%
Global Avg: **72%**

Experienced Growth Employees
80%
Global Avg: **60%**

Visa Success Rate
27%
Global Avg: **41%**

$63 k Software Engineer Salary
Global Avg: **49 k**

Startup Experience Index **6.1**

Global Avg: **5**

Founders Demographics

Women Founders
8%
Global Avg: **16%**

Immigrant Founders
16%
Global Avg: **19%**

Resource Attraction

Entrepreneurs **351**
Global Avg: **300**

Startups **15**
Global Avg: **83**

#7 Berlin Germany

Berlin continues to move up the ecosystem rankings, from #9 in 2015 to #7 this year. Between its affordable downtown flats, hip culture and lax visa laws, Berlin continues to beckon international founders and talent. The industry is humming, currently counting an estimated 1,800-2,400 active tech startups. Some categories that experience significant growth rates in Berlin are FinTech, digital health, artificial intelligence, mobility, food technology, and cyber-security.

Today, virtually every corporation with a large footprint in Germany is operating an innovation hub in the city. Rocket Internet continues to be a driving force of Berlin's ecosystem growth, raising $1 billion in funds in 2016—despite recent controversy around top shareholder Kinnevik selling half of its stake and pulling representatives from the Supervisory board.

A growing number of startups have already reaped the rewards of Berlin's healthy, if not yet deep, entrepreneurial roots. Some of them netted big money from investors, mostly in the race for take-out and food delivery market shares. In a series of investments and acquisitions driving European consolidation, HelloFresh brought in $88 million in Series G, while takeout service DeliveryHero (valued at $3 billion) acquired Rocket Internet-bred competitor Foodpanda.

In early 2017, Billpay, nicknamed the "European Paypal," sold for $75 million, while the latest FinTech posterchild N26 was awarded a full German banking license. The startup aiming to revolutionize the traditional banking industry is about to become the next big thing coming out of Berlin.

Berlin ranks #7 globally in the Performance factor. However, two IPOs in 2014 from Zalando and Rocket Internet, worth close to $14 billion, have had an outsized effect. Next year those marquee companies will fall outside the two year moving average, so Berlin will need to confirm its upward trend with fresh victories. Out of all European ecosystems, attracting the largest percentage of startups from outside the country should help, with 11% versus the rest of Europe averaging 2 percent. This attraction also extends to an influx of Talent, Berlin's strongest ranking Factor, where it is buoyed by its friendly environment for immigrants and experienced growth teams.

Berlin ranks behind London as the second-best performing European startup ecosystem in this year's ranking. The city has not yet reached its full potential, but despite its challenges, it can safely be said that the capital of cool is racing toward a bright and ambitious future.

Voices and Findings

"I am not a huge fan of thinking about startup ecosystems as a national achievement. One of Berlin's core strengths is its diversity and internationality, and that's what we should be proud of and continue to work on: A hub in the heart of a connected Europe and not an isolated fortress."

Uwe Horstmann
Founding Partner at Project A Ventures

Berlin has the 2nd highest Percentage of Immigrant Founders at 43%, trailing only Silicon Valley. Berlin startups have the 3rd highest Visa Acceptance Rates for Foreign Candidates at 77% and have one of the fastest acceptance times, too.

"Berlin has one of the most inclusive and diverse startup ecosystems in the world. You don't need a German passport or an Ivy League diploma to succeed here; the Berlin startup scene is open for business and welcomes founders and talents from everywhere."

Udo Schloemer
Founder and CEO at Factory Berlin

Berlin startups report the 6th highest Percentage of Foreign Customers outside of their continent at 28%, indicating a strong drive and/or ability to Go Global, compared to 19% for London.

"As a founder Berlin is the place to be–global VC funds, extraordinary talents from around the world, high quality of life and the European market at your disposal. This is the environment it takes to disrupt industries and make the impossible happen."

Valentin Stalf
Founder and CEO at N26

Berlin has the second highest net Global Resource Attraction rate in the world at 18%, with only Silicon Valley startups reporting a 3% higher value. A key ingredient to move through the Startup Ecosystem Lifecycle.

"Berlin is the place to build a startup in Germany. That said, U.S. ecosystems are still way ahead of us. The really large financing rounds can't be closed with Berlin-based investors yet. Essentially, it's a matter of time for us to build up the resources, experience, and guts to compete at the global level."

Alexander Kudlich
Member of the Management Board at Rocket Internet SE

21% of startups report at least one negative experience with corporates. The global average lies at 9%, suggesting that the ecosystem could improve relationship-building between startups and incumbent firms.

Metrics

Ecosystem Demographics

Metropolitan GDP
$158 bn
Global Avg: $267 bn

Metropolitan Population
6.0 m

Ecosystem Performance

Ecosystem Value
$31 bn
Global Median: $4.1 bn

Startup Output
1-8 - 2.4 k
Global Avg: 1,762

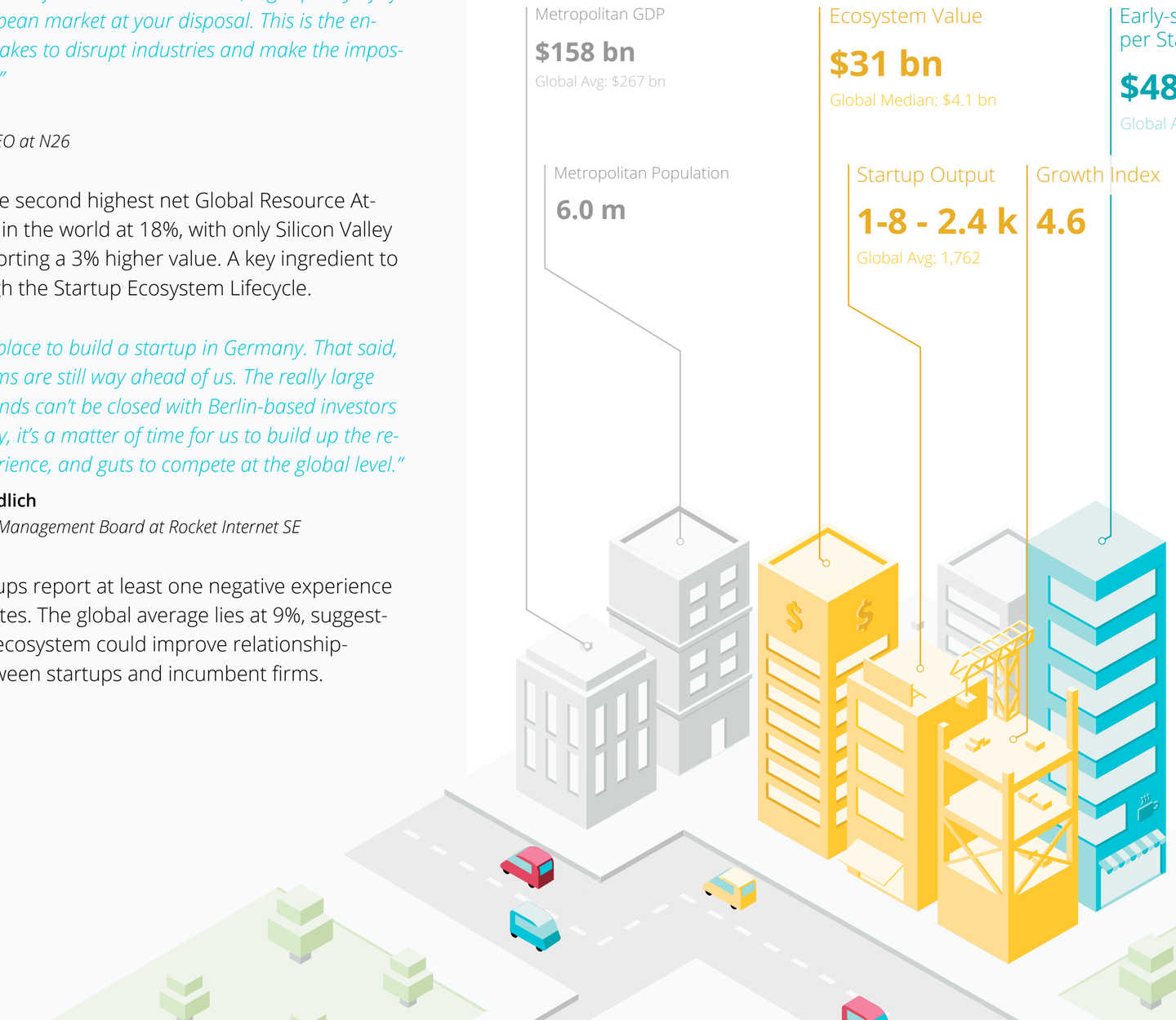
Growth Index
4.6

Funding

Early-stage Funding per Startup
$483 k
Global Avg: $252 k

Early-stage Funding Growth Index **4.5**
Global Avg: **5**

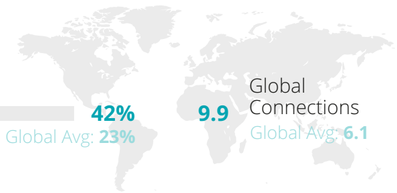
Experienced VC Firm Index **6.5**
Global Avg: **7**



Market Reach

Foreign Customers
42%
Global Avg: **23%**

9.9 Global Connections
Global Avg: **6.1**



Talent

Experienced Software Engineers **72%**
Global Avg: **72%**

Experienced Growth Employees **69%**
Global Avg: **60%**

Visa Success Rate **77%**
Global Avg: **41%**

$55 k Software Engineer Salary
Global Avg: **49 k**

Global Avg: **5**

Startup Experience Index **5.8**

Founders Demographics

Women Founders **13%**
Global Avg: **16%**

Immigrant Founders **43%**
Global Avg: **19%**

Resource Attraction

Entrepreneurs **378**
Global Avg: **300**

Startups **231**
Global Avg: **83**

#8 Shanghai China

Life in Shanghai is fast-paced, colorful, and even glamorous for some. At 24.1 million people, it is one of the most populated cities in the world. Rich cultural relics comprise the Old Town neighborhood, while shoppers delight in long stretches of shops peddling designer brands and vintage goods. It's no surprise that the city is also a startup ecosystem mega-star.

Between Shanghai's government push to boost the currently at least 1,800-2,700 active tech startups and the recent, rapid growth in its coworking scene, the city makes for an enticing place to build the next unicorn. In 2016, China's Mass Entrepreneurship and Innovation Policy unveiled a new round of reforms designed to push the world's second-largest economy to a higher level.[1] In Shanghai, first and foremost, this means funding. A startup is eligible to apply for a low interest rate loan of up to $30,000 without collateral or guarantee as long as a founder holds Shanghai citizenship.

Shanghai offers ample incentives for would-be innovators to take calculated risks. The city is affordable by most major city's standards, and some districts provide rent allowance or free rent if startups choose to register there. Local venture capitalists are supported as well. Venture capitalists can apply for reimbursement of up to $900,000 if their investment in a local early-stage startups fails.

Shanghai's co-working spaces—a combination of government-sponsored, locally-owned, and foreign-owned ones such as WeWork—doubled to 500 in 2016. Beyond coworking spaces, Shanghai startups that target the on-demand economy have done well. One particular innovator—Mobike—a startup which provides bikes in an Uber-like interface raised $215 million in Series D funding. The app enables users to locate, unlock, and rent bikes for 20 cents per hour. It has proven popular enough that they now have an active fleet of 100,000 bikes across five Chinese cities.

The newly measured Shanghai ecosystem, has bounded into the rankings at #8, thanks to some of the most prolific Funding results globally, solid global Market Reach, and very high collective valuation of the ecosystem's startups—though its exit numbers lag behind. Overall, Shanghai shows no major weaknesses, with solid numbers in all of the Index factors and subfactors. It is safe to say Shanghai will continue to play an important role in the global startup ecosystem landscape for years to come.

Co-authored by Mia Sun
Co-Director of Shanghai Chapter at Startup Grind

Ecosystem Partners: Startup Grind, CaoHeJing, Innospace

1 http://www.chinadaily.com.cn/regional/2016-10/28/content_27207825.htm

Voices and Findings

"Shanghai's startup environment is exceptional in the sense that you have huge government support, a very large pool of talent, and the best customer base to start off your service and experiment with innovative solutions."

Davis Wang
CEO at Mobike

Shanghai startups have on average 32% of their customer base outside of China, the highest ratio among all Asian ecosystems in scope and significantly higher than Beijing, at 7%.

Shanghai startups have on average 2.79 Advisors with Equity, 2nd in the world only to Beijing (4) and well above Silicon Valley at 1.78 Advisors.

"It's a really exciting time to be in the co-working business in China. The market is not as developed as in the West, so major players have a chance to shape the market and establish the standard. The key is to capture the essence of the shared economy and focus on the community aspect of the business to ensure success. We believe coworking is not just a great platform for startups and freelancers, it's the future of work, and SMEs and MNCs will make the shift as well."

Paul Hu
Managing Director at naked Hub

49% of Shanghai's founders answering the survey reported having two or more years of prior experience in a startup as an employee, one of the highest rates globally.

"China's consumer market has huge potential, which extends beyond general needs into the lifestyle markets such as social, new media, content IP, and online video."

Richard Wang
Partner at DFJ Dragon Fund

Shanghai has the 4th highest Number of Unicorns and is the 5th most valuable Ecosystem in the world.

Metrics

Ecosystem Demographics

Metropolitan GDP
$384 bn
Global Avg: $267 bn

Metropolitan Population
34 m

Ecosystem Performance

Ecosystem Value
$42 bn
Global Median: $4.1 bn

Startup Output*
1.8 - 2.7 k
Global Avg: 1,762

Growth Index
5.5

Funding

Early-stage Funding per Startup*
$255 k
Global Avg: $252 k

Early-stage Funding Growth Index **6.7**
Global Avg: **5**

Experienced VC Firm Index **9.2**
Global Avg: **7**

Market Reach

Foreign Customers
32%
Global Avg: **23%**

4.4 Global Connections
Global Avg: **6.1**

Talent

Experienced Software Engineers **73%**
Global Avg: **72%**

Experienced Growth Employees **69%**
Global Avg: **60%**

Visa Success Rate **32%**
Global Avg: **41%**

Startup Experience Index **5.7**

$22 k Software Engineer Salary
Global Avg: **49 k**

Global Avg: **5**

Founders Demographics

Women Founders **26%**
Global Avg: **16%**

Immigrant Founders **36%**
Global Avg: **19%**

Resource Attraction

Entrepreneurs **N/A**
Global Avg: **300**

Startups **178**
Global Avg: **83**

* Approximation based on different methodology.

#9 Los Angeles USA

Los Angeles - Orange County

For nearly a century, Los Angeles has been synonymous with creativity, especially in film, media, and art. Today, the metro's creative bent has found a new outlet in tech startups. As more and more aspiring founders find out, the second most populous city in the U.S. offers many attractive assets to its 3,700-4,600 startups, aside from its enviable weather. L.A. was again named the Top Digital City in America,[1] and it even convinced the famed Elon Musk to work on Tesla, SpaceX and Hyperloop One out of Southern California.

Los Angeles graduates high-quality software engineers (giving it a #7 place in Talent Quality), and its residents are eager adopters of technology. They readily use apps that let them report graffiti, get around town, and pay their water bills. The city government is helpful, too: it exempts new businesses from paying taxes for the first two years. Early in 2017, one particular startup made global headlines with the biggest tech IPO since Facebook: Snap. Since then, the share price of the company behind Snapchat rose by 40% in comparison to its offering price, confirming a staggering valuation in excess of $30 billion. The Snap IPO follows the $1 billion acquisition of Dollar Shave Club by Unilever and the $2 billion acquisition of Oculus VR by Facebook. Clearly, Los Angeles is working on its portfolio of impressive tech exits which are fueling the next wave of startup success stories. Los Angeles ranks as the 9th best startup ecosystem overall which, while respectable, represents a drop of six ranks from 2015. It ranks highly in Performance and Funding at #5 and #7, but is dragged down by the three other factors: Market Reach, Talent, and Startup Experience. Los Angeles is not a very globally connected ecosystem, with entrepreneurs reporting many relationships with founders in Silicon Valley and N.Y.C., but not overseas. This makes it harder for startups to go global, as confirmed by a low average percentage of Foreign Customers. Finally, despite the Startup Experience long accumulated by the ecosystem, its early-stage startups count less Hypergrowth Experience and find it relatively difficult to attract experienced engineers, growth talent, and advisors.

Bixel Exchange *runs Startup Launch and Tech Ed Partnerships to combine forces that ignite creativity, empower entrepreneurs, and cultivate talent for a more prosperous Los Angeles.*

Cross Campus' *membership ranges from aspiring entrepreneur to seasoned executive. Cutting edge events, membership resources, and craft beers on tap ensure a highly engaged coworking community.*

AnnenbergTech *is an initiative of the Annenberg Foundation that supports the growth of philanthropy among the burgeoning Los Angeles tech community.*

1 http://www.govtech.com/dc/digital-cities/Digital-Cities-Survey-2016-Winners-Announced.html

Voices and Findings

"In the 20th century, LA's economy was driven by entertainment, engineering and trade. This base of creativity, innovation, and influx of new people and new ideas are fueling our rise as a nascent global capital of entrepreneurism and technology in the 21st. Our greatest challenges are going to be growing our talent pipeline to keep pace with the growth of the tech sector, and ensuring that our startups are connected to seasoned tech veterans."

Sean Arian
Founder of Bixel Exchange and VP of Innovation at LA Area Chamber of Commerce

Los Angeles is ranked #5 in the world in Early-Stage Funding, behind only Silicon Valley, New York City, Beijing and and Shanghai. It also has the 5th highest Startup Output in the world and the 5th highest number of Unicorns.

"We're excited that Los Angeles remains a top destination for disruptive, rapid-growth startups. There's no better example than SNAP. Its recent IPO minted hundreds of investors-in-waiting who are now in a position to provide the funding and resources to seed the next round of world-changing, LA-based startups."

Dan Dato
Co-Founder and COO at Cross Campus

Los Angeles is tied with Tel Aviv for the highest number of startups who reported that the product they are developing is the first of its kind or in a completely new category, at 51%, the global average being 34%.

Despite its size and track record, Los Angeles attracts only few foreign startups, with 3% compared to 6% for Austin. Its startups also report only 12% of foreign customers, one of the lowest numbers of all top 20 ecosystems, and well below the global average of 23%.

"Los Angeles has a startup ecosystem that is creating first of its kind technology to solve the problems of the world, not the 1%, and that is what excites me about having my company based here."

Sky Kelley
Founder and CEO at AVISARE

Los Angeles is home to top-quality Engineering Talent, but its overall Talent score is dragged down by high Costs and difficulties in Access, which shows average Hiring Speed and Experience.

Metrics

Ecosystem Demographics

Metropolitan GDP
$867 bn
Global Avg: $267 bn

Metropolitan Population
14 m

Ecosystem Performance

Ecosystem Value
$30 bn
Global Median: $4.1 bn

Startup Output
3.7 - 4.6 k
Global Avg: 1,762

Growth Index
4.2

Funding

Early-stage Funding per Startup
$450 k
Global Avg: $252 k

Early-stage Funding Growth Index **4.6**
Global Avg: **5**

Experienced VC Firm Index **8.1**
Global Avg: **7**

Market Reach

Foreign Customers
12%
Global Avg: **23%**

1.7 Global Connections
Global Avg: **6.1**

Talent

Experienced Software Engineers **74%**
Global Avg: **72%**

Experienced Growth Employees **60%**
Global Avg: **60%**

Visa Success Rate **31%**
Global Avg: **41%**

Startup Experience Index **5.8**

$84 k Software Engineer Salary
Global Avg: **49 k**

Global Avg: **5**

Founders Demographics

Women Founders **16%**
Global Avg: **16%**

Immigrant Founders **16%**
Global Avg: **19%**

Resource Attraction

Entrepreneurs **655**
Global Avg: **300**

Startups **133**
Global Avg: **83**

#10 Seattle USA

While Seattle may be most famous for its tech giants Amazon and Microsoft, the city encompasses 2,000-2,600 active tech startups who are busy disrupting industries and raising billions of dollars. The Pacific Northwest is largely centered around software products, but also encompasses significant clusters in gadgets, biotech, and of course cloud technology. In 2015, Seattle startups raised as much as $1.95 billion in venture capital.

Seattle's strong Access to Tech Talent has drawn dozens of Silicon Valley tech giants including Google, Facebook, Oracle, Salesforce, Adobe, HP, and Twitter. Average salaries are high—second only to the Bay Area, thanks in part to Amazon and Microsoft's ability to offer upwards of $200,000 to promising software engineers. Many of the city's 90,000 developers come from the University of Washington,[1] which ranked 6th in the country for its computer science programs according to U.S. News & World Report.

1 http://www.bizjournals.com/seattle/blog/techflash/2015/12/seattle-area-has-more-software-engineers-than-san.html

With prime Talent and Funding at hand, Seattle's smaller homegrown startups are now commanding the attention of industry giants. Machine learning and artificial intelligence startup Turi sold to Apple for around $200 million, while e-commerce company Zulily sold to QVC for a breathtaking $2.4 billion. Other leading companies like Expedia, F5 Networks, RealNetworks, and aQuantive are helping drive growth and startup experience for the city.

Seattle was ranked #8 in 2015 and is now #10, falling two spots due to the introduction of Beijing and Shanghai to the study. Seattle is ranked #1 in the Talent Index, up from #4 in 2015, which should be highlighted as a major success. The ecosystem scored high marks on Access and Quality, two Talent sub factors, which are strong enough to compensate for the high cost. Most metrics on the Performance, Funding, and Startup Experience Index hover around the top 10, showcasing Seattle as a very balanced, high quality startup ecosystem.

Voices and Findings

"Seattle's success is due to: 1) Founding international headquarters for major tech companies decades ago. 2) Their employees leaving to start new tech companies. 3) UW attracting high level tech professors and graduates. 4) Washington having over 25,000 unfilled tech jobs as every major U.S. tech company has an office in Seattle. 5) An exodus of Silicon Valley talent continuing to move to Seattle. 6) A very collaborative community supporting each other in growing our ecosystem."

Brett Greene
CEO at New Tech Northwest

"We actively maintain our strong ties to Silicon Valley with our mentors and investors but are fortunate to be working in the shadow of other leading tech companies. Seattle is the perfect market for us to be growing our company as we continue to see the influx of tech companies building their presence here."

Avni Patel Thompson
Founder and CEO at Poppy

Seattle's founders are some of the most technically experienced in the world; their rank tied for 9th with 90% of them having a technical background. 81% of engineers working in Seattle's startups have at least two years of startup experience, the 6th highest percentage in the world.

"With high tech companies like Microsoft, Amazon, and many others, along with a robust life sciences community in the Seattle area, I often see startups led by highly experienced technologists as well as PhD's out of our academic institutions. It makes for a rich, inventive environment."

Susan Preston
Managing Member at Seattle Angel Fund

Seattle has the highest Percentage of Startups that give Stock Option Plans to all of their employees at 58%, compared to the average value of 42% across all U.S. ecosystems. This is a key indicator of Startup Experience within the founding team.

"It's incredible, but not surprising, that Seattle has the highest percentage of startups that give stock option plans to all of their employees. It speaks to the community oriented culture of Seattle as a city where people highly value working with others toward a shared goal."

Yohei Nakajima
Director of Pipeline at Techstars

Seattle has the lowest Early-Stage Investment Growth rate among the top 20 at only 6% but the 4th highest Exit Growth rate at 150%.

Metrics

Ecosystem Demographics

Metropolitan GDP
$301 bn
Global Avg: $267 bn

Metropolitan Population
3.7 m

Ecosystem Performance

Ecosystem Value
$13 bn
Global Median: $4.1 bn

Startup Output
2 - 2.6 k
Global Avg: 1,762

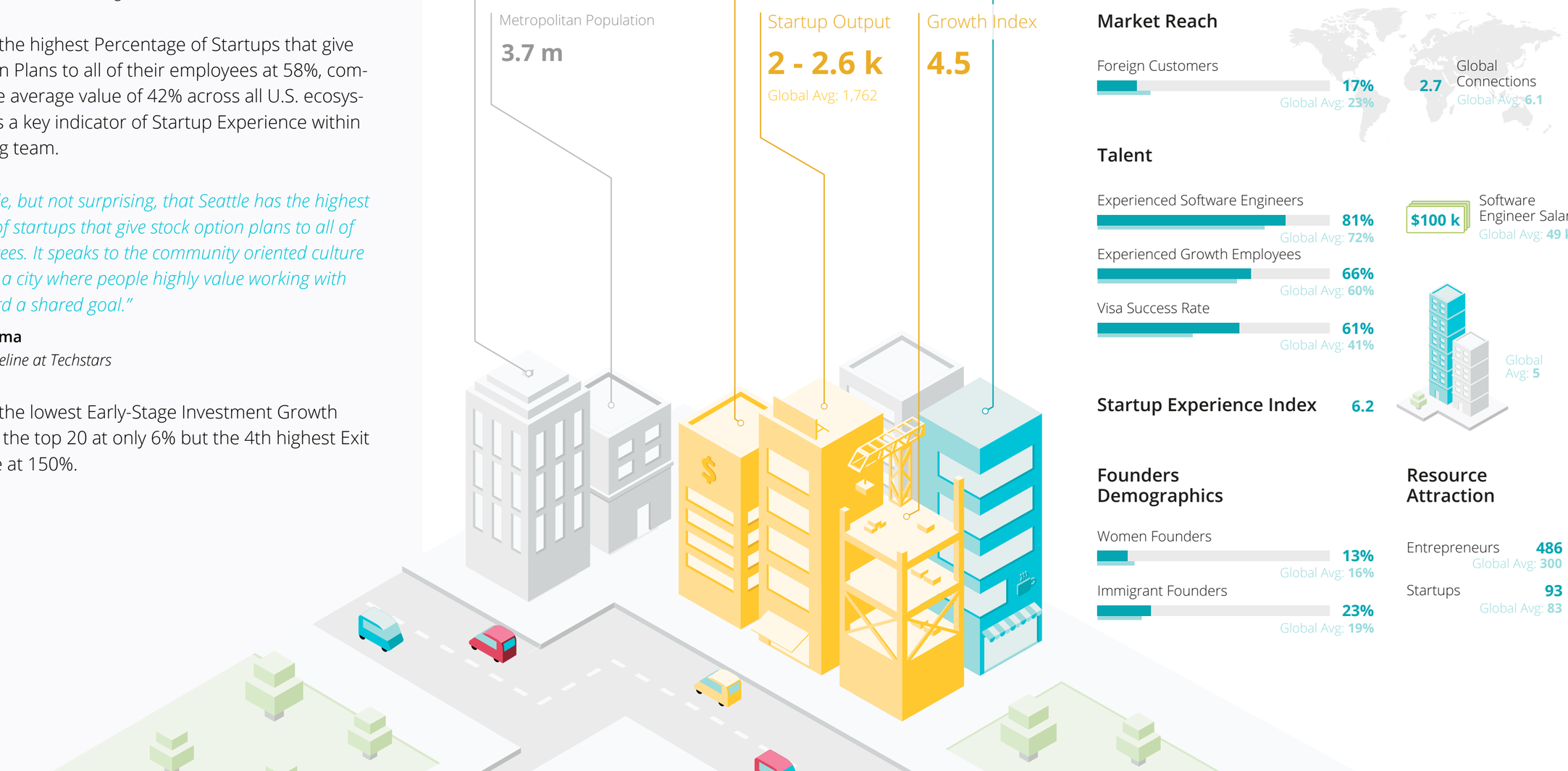
Growth Index
4.5

Funding

Early-stage Funding per Startup
$332 k
Global Avg: $252 k

Early-stage Funding Growth Index **4.4**
Global Avg: **5**

Experienced VC Firm Index **8.4**
Global Avg: **7**



Market Reach

Foreign Customers **17%**
Global Avg: **23%**

2.7 Global Connections
Global Avg: **6.1**

Talent

Experienced Software Engineers **81%**
Global Avg: **72%**

Experienced Growth Employees **66%**
Global Avg: **60%**

Visa Success Rate **61%**
Global Avg: **41%**

$100 k Software Engineer Salary
Global Avg: **49 k**

Global Avg: **5**

Startup Experience Index **6.2**

Founders Demographics

Women Founders **13%**
Global Avg: **16%**

Immigrant Founders **23%**
Global Avg: **19%**

Resource Attraction

Entrepreneurs **486**
Global Avg: **300**

Startups **93**
Global Avg: **83**

#11 Paris France

Paris holds on to its rank as a major contender in the global startup scene. New government initiatives such as a decisive move forward to increase the influx of entrepreneurs, engineers and investors,[1] a tuition-free coding school, and many others factors confirm an overall positive trend. Based on latest estimations, Paris is comprised of 2,000-2,600 active tech startups.

Ride-sharing service BlaBlaCar has established Paris as a center for the "sharing economy,"[2] and the city's increase in favorable tax benefits, subsidies, and loans to the tech community all aim to propel Paris as one of the leading startup ecosystems in Europe. Paris has seen its share of trending finance rounds with companies such as Deezer, the music streaming app with over 6 million subscribers, that has raised over $217 million in venture capital as of 2017.

The world's largest incubator is slated to open in Paris, started by billionaire Xavier Niel. Station F will open in 2017 and be equipped with an auditorium, computer labs, workshops, 3,000 desks for rent, and numerous hangout areas. The incubator—constructed in a former rail yard—is expected to create 4,000 jobs. Facebook and prominent venture capital firms have already confirmed that they will base staff at the facility, a move that will garner support and help to fill seats with more technology entrepreneurs, investors, and inventors.

Many come to Paris to be thrilled by the lights, but equally as dazzling are events like the new VivaTech, which brings more than 45,000 members of the global community to Paris each year. The ecosystem is clearly becoming better at utilizing its resources through collaboration, which arguably builds up overall startup experience.

However, Paris' Early-Stage Funding growth has been below average, and its Talent Index and its subfactors are relatively lackluster. In addition, the ecosystem hasn't had many big exits in the last few years. In the long run, this may cause low attraction rates or, in the worst case, leakages to the advantage of other top ecosystems.

1 https://techcrunch.com/2017/01/17/france-creates-a-special-visa-for-entrepreneurs-engineers-and-investors/

2 http://www.bbc.com/news/business-38597504

Voices and Findings

"Startup ecosystems in Europe have been growing impressively in the last few years, helping Europe catch up globally as a great place for Tech. Europe's peculiarity is that it is multi-centric, based on several highly interconnected world-class startup hotspots, showing a wide but differentiated range of assets. Paris is among them, with its DeepTech startups and talents (AI, IoT, HealthTech), a great density of VC funding, and a proven capacity to build innovative business models."

David Monteau
Director at La French Tech

Paris ranks 10th in Market Reach, due to a high Foreign Customer ratio of 36% and a high level of Global Connectedness. It indicates a strong Global Connectedness Index of 10.8, slightly behind only Tel Aviv and Silicon Valley at 12.9 and 11.0, respectively.

"Paris has become one of the world's most dynamic startup scene, and is surely seen as a gateway into the European market for most non-EU companies. Unsurprisingly, in 2016 France was the 2nd European country for startup funding rounds. Our main focus should now be to help seeded startups scale internationally."

Tristan Lebeau
Startup Program Manager at NUMA

Paris is building up startup experience, with especially local Venture Capitalist experience ranking 5th in the global comparison, resulting in a good performance with regards to Paris's Funding Quality.

"There are two reasons why Paris has Founders with higher degrees. First, entrepreneurship and science are often confused: most people without a science degree think they're not qualified to found a startup. Also, it's hard to make a good living as an entrepreneur, at least until series B. Well-connected people from wealthier families can afford it."

Nicolas Colin
Co-Founder and Partner at TheFamily

Paris' engineering teams have a comparably high rate of formal engineering education. 15% of Founders have pursued only an Undergrad Degree, while 81% of Founders have pursued a Masters or PhD degree, the third highest percentage in the world.

"At Kima Ventures, we're funding more and more female entrepreneurs and it doesn't only come from our strong will to do so but also from a maturing ecosystem naturally breaking the gender barriers in entrepreneurship"

Jean de La Rochebrochard
Partner at Kima Ventures

The Paris ecosystem displays one of the lower Percentages of Women Founders in the global comparison at 10%, despite efforts to move the needle closer to the global average of 16%.

Metrics

Ecosystem Demographics

Metropolitan GDP
$688 bn
Global Avg: $267 bn

Metropolitan Population
12 m

Ecosystem Performance

Ecosystem Value
$12 bn
Global Median: $4.1 bn

Startup Output
2 - 2.6 k
Global Avg: 1,762

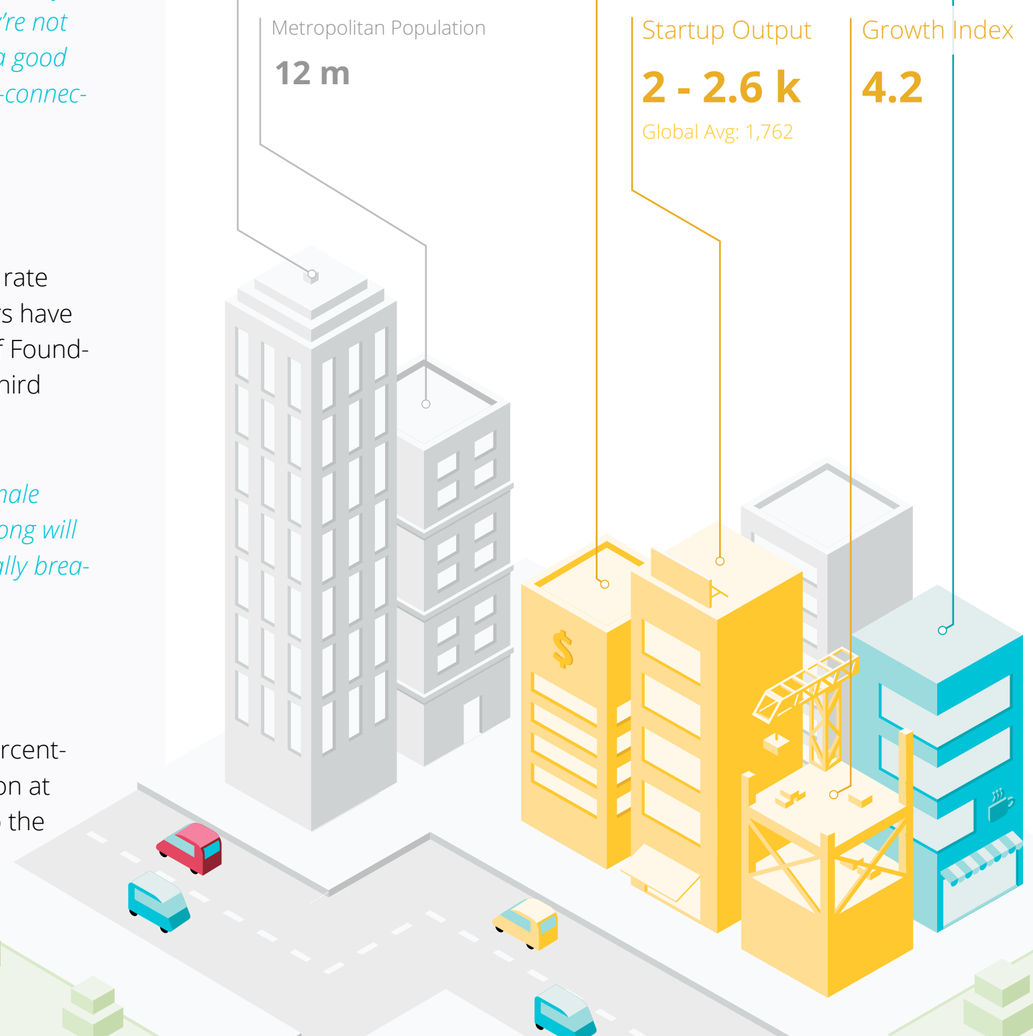
Growth Index
4.2

Funding

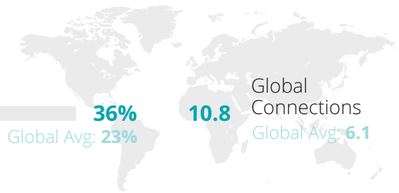
Early-stage Funding per Startup
$270 k
Global Avg: $252 k

Early-stage Funding Growth Index **4.5**
Global Avg: **5**

Experienced VC Firm Index **9.3**
Global Avg: **7**



Market Reach



Foreign Customers **36%**
Global Avg: **23%**

10.8 Global Connections
Global Avg: **6.1**

Talent

Experienced Software Engineers **69%**
Global Avg: **72%**

Experienced Growth Employees **62%**
Global Avg: **60%**

Visa Success Rate **37%**
Global Avg: **41%**

$46 k Software Engineer Salary
Global Avg: **49 k**

Global Avg: **5**

Startup Experience Index **6.1**

Founders Demographics

Women Founders **10%**
Global Avg: **16%**

Immigrant Founders **11%**
Global Avg: **19%**

Resource Attraction

Entrepreneurs **346**
Global Avg: **300**

Startups **46**
Global Avg: **83**

#12 Singapore

Tropical climates, ample parks, and city gardens are as much a part of Singapore as its electric skyline at night. Economically, Singapore is one of Asia's most vibrant hubs and among the world's leaders in global commerce, finance, and transportation. By all means, the city-state is poised for a continued startup revolution.

Along with a geographical location that renders it an easy access point to up-and-coming tech markets in Southeast Asia, Singapore's 1,600-2,400 tech startups enjoy significant government subsidies. The government launched 13.2 billion R&D Initiative,[1] and merged two tech-oriented agencies into the unified GovTech, which oversees key regulatory frameworks and the delivery of digital services. To further accelerate the development of a mature venture capital landscape, the government also launched schemes that match early-stage VC funds on a one-to-one basis.[2]

At a more hands-on level, Singapore's government also launched SGInnovate, a well-resourced agency aimed at bringing key people and resources together to foster deep innovation and move the needle for startups that are trying to scale globally.

In the last few years Singapore's Grab, Uber's largest rival, raised $750 million in fresh capital from existing investor SoftBank. Work-messaging platform, Pie, was acquired by Google, who also announced plans for building an engineering team based in Singapore. Events like this suggest that the country's strategies are working to establish local tech startups as globally-relevant companies.

Singapore held steady as a top ecosystem in 2017, falling only two places from #10 to #12 due to the new Chinese entrants. Singapore's Performance numbers are solid and will probably continue to rise as their Startup Output and valuation rankings significantly exceed their exit ranking—which is a lagging indicator. There is some concern in the Funding Index where Singapore's Early-Stage Funding growth is falling behind its peers, however, with some of the strongest Tech Talent in the world every problem should be seen as a challenge.

SPRING: *As the national enterprise development agency under the Ministry of Trade and Industry, SPRING Singapore helps Singapore enterprises grow and builds trust in Singapore products and services.*

1 https://www.mci.gov.sg/cos2016

2 https://www.spring.gov.sg/Nurturing-Startups/Pages/ACE-startups-grant.aspx&sa=D&ust=1489142850303000&usg=AFQjCNGWFC8MUJ6r54oMxmwkVZHuBglkrg

Voices and Findings

"Singapore is evolving at a pace like no other ecosystem. Within three years, we're a sustainable ecosystem of accelerators and corporate co-innovation, resulting in a six-fold increase of startups raising series A; in a year, VC money doubled to $1.7 billion. As we continue to grow Singapore startups, it reduces early-stage exits (by acquisitions) and increases the number of sizable startups in the ecosystem."

Alex Lin
Head of Infocomm Investments

Singapore ranks #1 globally in the Talent factor even before Silicon Valley due to strong performance in Access and Cost sub-factors. The experience levels of Singaporean Talent is comparably strong, given that 80% of the Engineering and 74% of the Growth teams have gained at least two years of prior startup experience already.

"I am confident the ASEAN tech ecosystem now is one of the most exciting in terms of risk reward. Investors who invest now are getting in near ground zero. My cofounder and I are putting our money where our mouth is and investing heavily in both ASEAN startups and VCs. And Singapore is where we find all our deals as most startups value the talent pool, capital pool, clear corporate governance and intellectual property regime here."

Lim Der Shing
Tech Investor and Co-Founder at JobsCentral Group

Singapore has the 6th highest Percentage of Immigrant Founders in the world at 35%. It also has the 3rd highest level of Global Connectedness of all top 20 ecosystems outperforming even Silicon Valley.

"Singapore is an open society and welcomes entrepreneurs around the world to create the next big thing here."

James Tan
Managing Partner at Quest Ventures

Founders based in Singapore are the youngest in the world, with a median of 28 years. Only 27% of Singapore teams have 2-3 founders, the lowest rate in the world, and 20% lower than the next closest ecosystem. Our past research showed that startups with 2-3 founders significantly outperform other founder number combinations.

"The Singapore startup ecosystem is a fast growing, albeit young one. While progress is encouraging it is not without challenges. For one, exit options remain limited, thus restricting capital/talent liquidity circulating back into the ecosystem. I remain confident that this will be solved in time."

Tiang Lim Foo
Operating Partner at SeedPlus

Metrics

Ecosystem Demographics

Metropolitan GDP
$264 bn
Global Avg: $267 bn

Metropolitan Population
5.5 m

Ecosystem Performance

Ecosystem Value
$11 bn
Global Median: $4.1 bn

Startup Output
1.6 - 2.4 k
Global Avg: 1,762

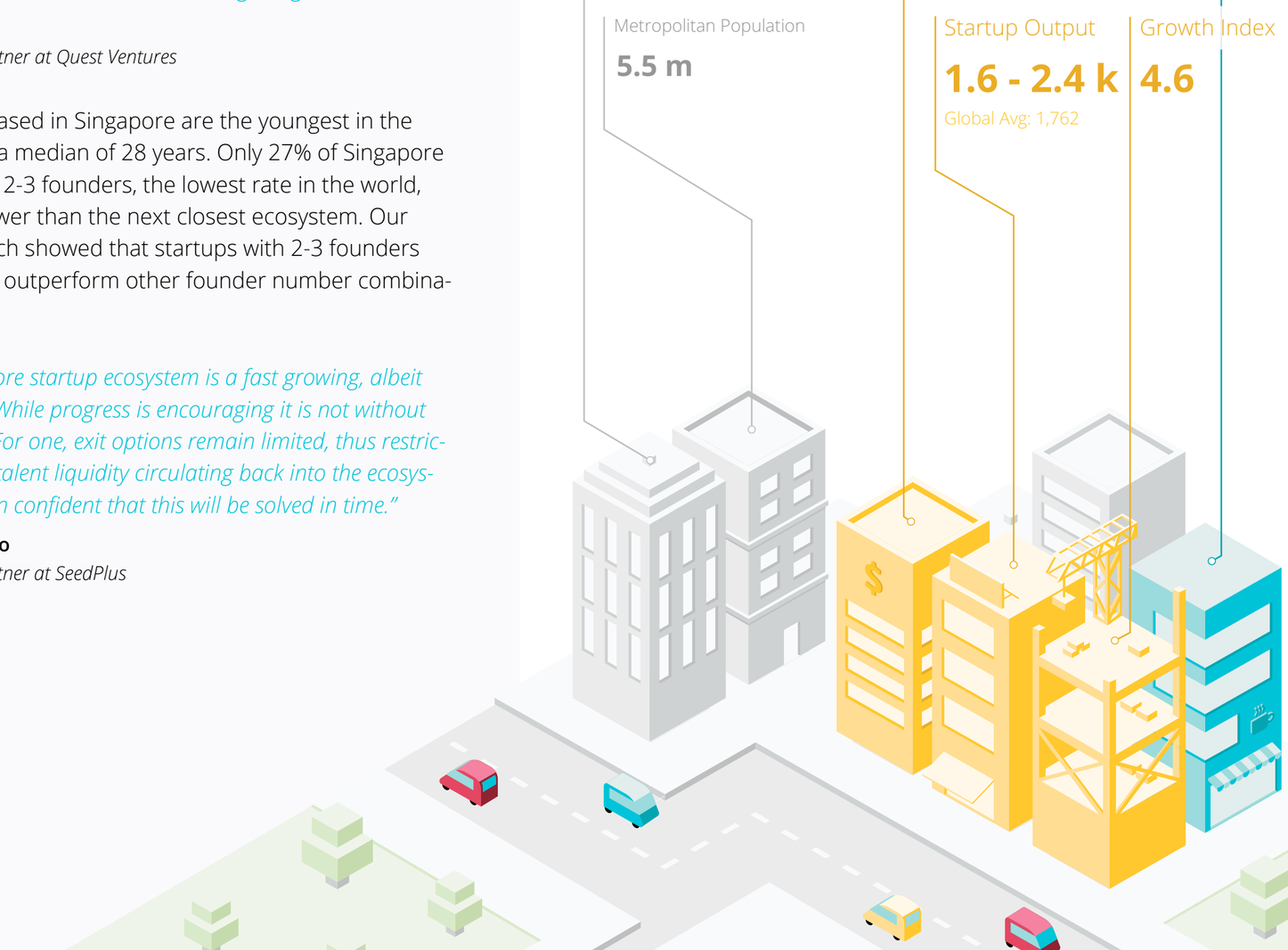
Growth Index
4.6

Funding

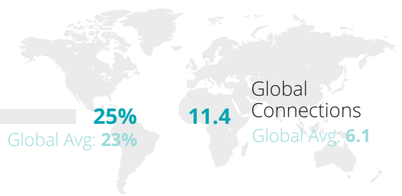
Early-stage Funding per Startup
$276 k
Global Avg: $252 k

Early-stage Funding Growth Index **4.6**
Global Avg: **5**

Experienced VC Firm Index **8.2**
Global Avg: **7**



Market Reach



Foreign Customers
25%
Global Avg: **23%**

11.4 Global Connections
Global Avg: **6.1**

Talent

Experienced Software Engineers
80%
Global Avg: **72%**

Experienced Growth Employees
74%
Global Avg: **60%**

Visa Success Rate
25%
Global Avg: **41%**

$35 k Software Engineer Salary
Global Avg: **49 k**

Startup Experience Index **4.8**

Global Avg: **5**

Founders Demographics

Women Founders
12%
Global Avg: **16%**

Immigrant Founders
35%
Global Avg: **19%**

Resource Attraction

Entrepreneurs **463**
Global Avg: **300**

Startups **40**
Global Avg: **83**

#13 Austin USA

With music extravaganzas that draw tens of thousands to the city, Austin has earned its reputation as the "live music capital of the world." A relatively low cost of living and high quality of life makes the state capital of Texas one of the fastest growing cities in the United States. But crowds don't come only for the music; startup festivals such as SXSW Interactive are drawing crowds well into the 30,000s as well. Capital Factory, in particular, is at the core of the ecosystem by accelerating startups while bringing together all local innovators under one roof.

The city now boasts between 1,700-2,200 ambitious tech startups, which pride themselves in a sense of community that you won't find anywhere else. Established players will tell you the same, for example Techstars or Texas Venture Labs, where 40 percent of the companies they work with get funded within a year. Austin's startup community also benefits from proximity to the talent and expertise of the numerous Fortune 500 companies with operations there, including Amazon, Apple, Cisco, eBay, and Google.

During the last few years, the Kauffman Growth Index[1] has repeatedly ranked Austin among the fastest growing ecosystems in the U.S.. Nearly $600 million of venture capital was invested into 75 Austin-based startups in 2016, while for the past six years, the ecosystem has collectively raised almost $700 million on average each year.

The most famous tech company to come out of Austin is still Dell, but many current and future tech success stories are working hard to change that. In 2015, HomeAway, a vacation rental marketplace, was acquired by Expedia for $3.9 billion, while UnboundID, an identity management software company, went for $600 million. Each year, the region celebrates the fastest growing startups with the "Fast 50" list.

Compared to last year, Austin moved up by one in the overall Index and now ranks #13. The startup ecosystem has a role-model aspect to many others, and the "pay it forward" culture is contagious, as confirmed by the third highest Global Resource Attraction rate measured. Austin's strongest factor is its Talent, ranked #8. The city's weakest factor is its Market Reach, highlighted by its distinct lack of relationships with international founders and customers.

Overall, the Austin ecosystem is faced with challenges other startup ecosystems would be happy about.

Capital Factory *is the center of gravity for entrepreneurs in Austin. Last year more than 90,000 entrepreneurs, programmers, and designers gathered day and night for meetups, classes, and coworking.*

1 http://www.kauffman.org/kauffman-Index

Voices and Findings

"Austin's overall ecosystem is strong and getting stronger. Thanks to several strong software and tech-companies as well as UT we have a great developer pool, as is evidenced by some of the world's greatest brands (Apple, Google, Facebook) opening offices here. Likewise, we have a very strong support system for startups and entrepreneurs and a strong Angel and Seed ecosystem to support it. Finally, the community in general is like no other I've been a part of. It's extremely collaborative where we all really and sincerely want to help this community win."

Amos Schwartzfarb
Managing Director at Techstars Austin

Austin indicates the 3rd highest net Global Resource Attraction rate in the world at 17%. The city also indicates the 2nd highest density of startups in the world, trailing only Silicon Valley.

"It's got the music, the university scene, the hippies, and the rule-breakers. It's very easy to hire people who want to push the limits. It's an incredibly innovative city."

William Hurley
Co-Founder at Honest Dollar

50% of Austin startup founders have gained at least two years of prior experience in a startup, ranking them among top ecosystems like New York City, Boston and even Silicon Valley.

"If you're in the home-remodeling or home-building business, a growing, thriving city is obviously really, really appealing. As a community, Austin is just very supportive of new and interesting things."

Jason Ballard
Founder at TreeHouse

Austin startups have the 2nd highest Percentage of Employees on their Growth Team that previously gained at least wo years of startup experience, trailing only Tel Aviv at 78%.

"Austin has one of the best seed funding ecosystems in the United States, with resources such as the Central Texas Angel Network, Techstars, Capital Factory, and SKU"

Dr. Deepak Sekar
Founder and CEO at Casabots

Austin startups have a comparably hard Time to Hire Engineers, with a median time of 60 days compared to the global median of 41 days.

Metrics

Ecosystem Demographics

Metropolitan GDP
$115 bn
Global Avg: $267 bn

Metropolitan Population
2 m

Ecosystem Performance

Ecosystem Value
$13 bn
Global Median: $4.1 bn

Startup Output
1.7 - 2.2 k
Global Avg: 1,762

Growth Index
4.3

Funding

Early-stage Funding per Startup
$410 k
Global Avg: $252 k

Early-stage Funding Growth Index **4.6**
Global Avg: **5**

Experienced VC Firm Index **7.2**
Global Avg: **7**

Market Reach

Foreign Customers
12%
Global Avg: **23%**

5.3 Global Connections
Global Avg: **6.1**

Talent

Experienced Software Engineers
81%
Global Avg: **72%**

Experienced Growth Employees
78%
Global Avg: **60%**

Visa Success Rate
44%
Global Avg: **41%**

Startup Experience Index **5.9**

$82 k Software Engineer Salary
Global Avg: **49 k**

Global Avg: **5**

Founders Demographics

Women Founders
12%
Global Avg: **16%**

Immigrant Founders
9%
Global Avg: **19%**

Resource Attraction

Entrepreneurs **462**
Global Avg: **300**

Startups **112**
Global Avg: **83**

#14 Stockholm Sweden

Outsiders often associate Stockholm with cold weather, but rest assured the city's startup scene is on fire. The capital of Sweden debuts in the global top 20, coming in at rank 14 overall, with sub-factors such as Global Connectedness, Funding Quality, and Exit Values even qualifying the Nordic leader for the global top 10.

The strong Performance of Stockholm's 600-900 active tech startups is rooted in world-class education, hitting a sweet spot between top-tier engineering programs at KTH Royal Institute of Technology and strong growth talent graduating from the Stockholm School of Economics. Both institutions encourage entrepreneurship through established incubation programs, in addition to the Stockholm School of Entrepreneurship which provides everything else founders need to know.

Regardless of whether you're already busy running a company or not, startup enthusiasts come together and generate energy at the STHLM Tech Meetup, the largest monthly tech event in Europe. SUP46 and Epicenter are only two main hubs where the rubber hits the road and ideas are turned into startup success stories made in Sweden.

Going Global from the get go is often considered common sense as the domestic market comprises of less than 10 million, and Stockholm founders want to win big. It seems that thanks to this focused ambition many of them actually do, as confirmed by wild success stories like mobile gaming app maker King. The company behind Candy Crush went public in 2014 and was acquired for $5.9 billion in 2016.

Stockholm ranks second in Europe when it comes to producing unicorns,[1] outpaced only by London. The city is home to Spotify, the most highly valued unicorn in Europe at $8.6 billion, as well as the successful FinTech startup, Klarna, valued at $2.2 billion. We can expect this track record to maintain Stockholm as highly fertile ground for tech startups.

Stockholm Chamber of Commerce *is the leading business organization for companies in Stockholm, focused on developing policy and influencing decision-makers on major issues affecting businesses and the capital region's global competitiveness.*

1 https://www.theguardian.com/technology/2016/jun/20/britain-leads-europe-technology-unicorns

Voices and Findings

"There has been an overwhelming influx of capital the last few years in the Nordics in general but in Stockholm specifically. Not only in money, but also in the number of deals. We have also seen some big M&A deals and together this has increased the number of early investments (pre/seed/A-round) dramatically. This has created a big new wave of early-stage startups and a huge opportunity for B- and C-rounds coming up."

Jonas Almeling
Head of Innovation & Ecosystem at Business Sweden

Stockholm startups have the 4th highest percentage of Foreign Customers outside their country at 46%, indicating a strong ability to Go Global. Stockholm also has the 4th highest Visa Success Rate in the world at 69%.

"Stockholm startups share the born global mentality, realising that Sweden—with its early adopter consumer/business mentality—is a great test market, but t in order to build a global success, one needs to grow fast internationally. Global ties are therefore a key component of our ecosystem."

Marta Sjögren
Principal at Northzone Ventures

The ecosystem has an irregular Performance composition, with very high exits and overall valuation rankings, but low overall Startup Output — indicating top quality on a per startup basis, but also potential regression to outsized success from a few outliers.

"Stockholm startup people are very loyal, both founders and talent. Seasoned entrepreneurs are still part of the community after 15 years. They provide money, give important advice, and start new companies themselves. This culture of giving back helps create the second and third generation of success stories."

Jane Walerud
Partner at Walerud Ventures

Stockholm founders tend to seek advice from experts who have mastered some of their challenges already. With an average of 1.8 Advisory with Equity per startup, Stockholm outperforms Berlin, Tel Aviv and London.

"Swedish education is world-class. The interesting thing with engineering and talent in Sweden is that from the beginning people (and talent) are independent and extremely responsible. They share the goal to develop something and thinking on their own—outside of the box."

Pär Hedberg
Founder and CEO at Stockholm Innovation & Growth

Stockholm startups have a very good relationship with local corporates, they have four times less negative interactions and 20% more positive interactions than the European average.

Metrics

Ecosystem Demographics

Metropolitan GDP
$143 bn
Global Avg: $267 bn

Metropolitan Population
2.2 m

Ecosystem Performance

Ecosystem Value
$15 bn
Global Median: $4.1 bn

Startup Output
600 - 900
Global Avg: 1,762

Growth Index
5.3

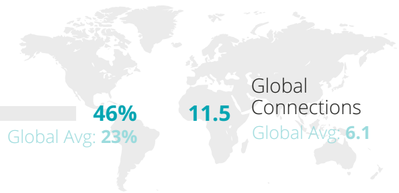
Funding

Early-stage Funding per Startup
$325 k
Global Avg: $252 k

Early-stage Funding Growth Index **5.0**
Global Avg: **5**

Experienced VC Firm Index **8.4**
Global Avg: **7**

Market Reach



Foreign Customers
46%
Global Avg: **23%**

11.5 Global Connections
Global Avg: **6.1**

Talent

Experienced Software Engineers
64%
Global Avg: **72%**

Experienced Growth Employees
52%
Global Avg: **60%**

Visa Success Rate
69%
Global Avg: **41%**

Startup Experience Index **5.7**

Founders Demographics

Women Founders
12%
Global Avg: **16%**

Immigrant Founders
15%
Global Avg: **19%**

$55 k Software Engineer Salary
Global Avg: **49 k**

Global Avg: **5**

Resource Attraction

Entrepreneurs **186**
Global Avg: **300**

Startups **15**
Global Avg: **83**

#15 Vancouver Canada

Vancouver is consistently named as one of the top worldwide cities for livability and quality of life, while simultaneously climbing the ranks as a global startup hub. With more startups per capita than any other city in Canada, Vancouver is leveraging its unique combination of assets: Hollywood North, a strong industrial foundation, enterprise data and cloud underpinnings, and a remarkably diverse talent pool, with over half of its residents having a first tongue other than English. The city's growing reputation is underpinned by the highest concentration of visual effects and animation studios, two of the top six video game franchises, and its ranking as one of the world's top 20 Global Financial Centers.

The Vancouver startup ecosystem is currently comprised of 800-1,100 startups and shining success stories. In the early days Slack's founder estimated the market for the software to be $100 million, which they exceeded in just three years—and have now become the fastest growing business software of all time. Broadband.tv is now the third largest video streaming site in the world after Facebook and Google, while dating app Plenty of Fish sold to Match.com for $575 million. Bitstew exited in 2016 for $157 million – accounting for the largest exit in Canada last year, while TIO Logic exited for $233 million within the first few months of 2017.

A large portion of this growing success comes from ambitious incubator and accelerator collaborations between Wavefront, BC Innovation Council, Launch Academy, BC Tech Association and others–organizations that are all committed to growing the next generation of tech successes and marshalling a 100,000+ strong army of entrepreneurs over the next decade.

Vancouver is ranked #15 overall this year, moving up the ranks by three. The city may have the fewest number of startups in top 20, but their valuations are highly competitive. Its Funding metrics point to the Vancouver ecosystem holding steady, not rising or sinking greatly. Market Reach is Vancouver's strongest factor, due to strong Global Connectedness and the world's highest ranking in reaching foreign customers.

The Vancouver Economic Commission *is the economic development agency for Vancouver. The VEC works to position Vancouver as a globally recognized city for innovative, creative, and sustainable business.*

BC Tech Association's *mission is to make British Columbia the best place to grow a tech company. BC Tech is committed to building a strong tech ecosystem and community, helping companies grow and advocating to keep the sector thriving.*

Voices and Findings

"We are proud that Vancouver has once again been recognized as a top global startup ecosystem. We owe our success to the diverse and entrepreneurial talent drawn to our city; our location as a gateway to Asia and the West Coast; and an ecosystem that encourages interconnectivity and collaboration. As our city continues to attract talent and capital, we feel incredibly optimistic for our future."

Ian McKay
CEO at Vancouver Economic Commission

55% of Vancouver startups give all of their employees stock options, the highest in Canada and well above the rest of Canada, which averages 30%.

"Vancouver's tech scene is teeming with startups that are drafting off the chutzpah of companies like Global Relay, Hootsuite, BuildDirect, Avigilon, Slack, and BroadbandTV—all of whom are building the next generation of tech successes in Canada."

Bill Tam
President and CEO at BC Tech Association

Vancouver startups have the highest rate of startups in Canada that immediately target the large innovation markets of the U.S. or U.K. 64% of startups in Vancouver do this compared to the Canadian average of 48%. Vancouver is ranked #5 in the world on this metric.

Vancouver startups report the 2nd highest percentage of Foreign Customers outside of their country at 57%.

"The closer ties and synergies Vancouver has with the West Coast of North America as opposed to other Canadian Provinces such as Ontario or Quebec, typically results in Vancouver startups looking to market and partner directly across the border where it is more lucrative to scale and grow faster after gaining traction."

Ray Walia
Co-Founder and CEO at Launch Academy and Victory Square

The Vancouver startup ecosystems skews much more towards B2B versus B2C, although the mix is close to the global average. It has 20% more B2B startups than the global average and 50% fewer B2C startups, on a relative basis.

"When we started out, everyone told me you can't build a major tech company in Vancouver. There aren't enough investors or engineers or top-level managers. Each day, I'm driven to prove them wrong. We've been able to scale to nearly 1,000 employees, more than 15-million users and have established ourselves as the leading social media management platform globally."

Ryan Holmes
CEO at Hootsuite

Metrics

Ecosystem Demographics

Metropolitan GDP
$110 bn
Global Avg: $267 bn

Metropolitan Population
2.5 m

Ecosystem Performance

Ecosystem Value
$9 bn
Global Median: $4.1 bn

Startup Output
800 - 1.1k
Global Avg: 1,762

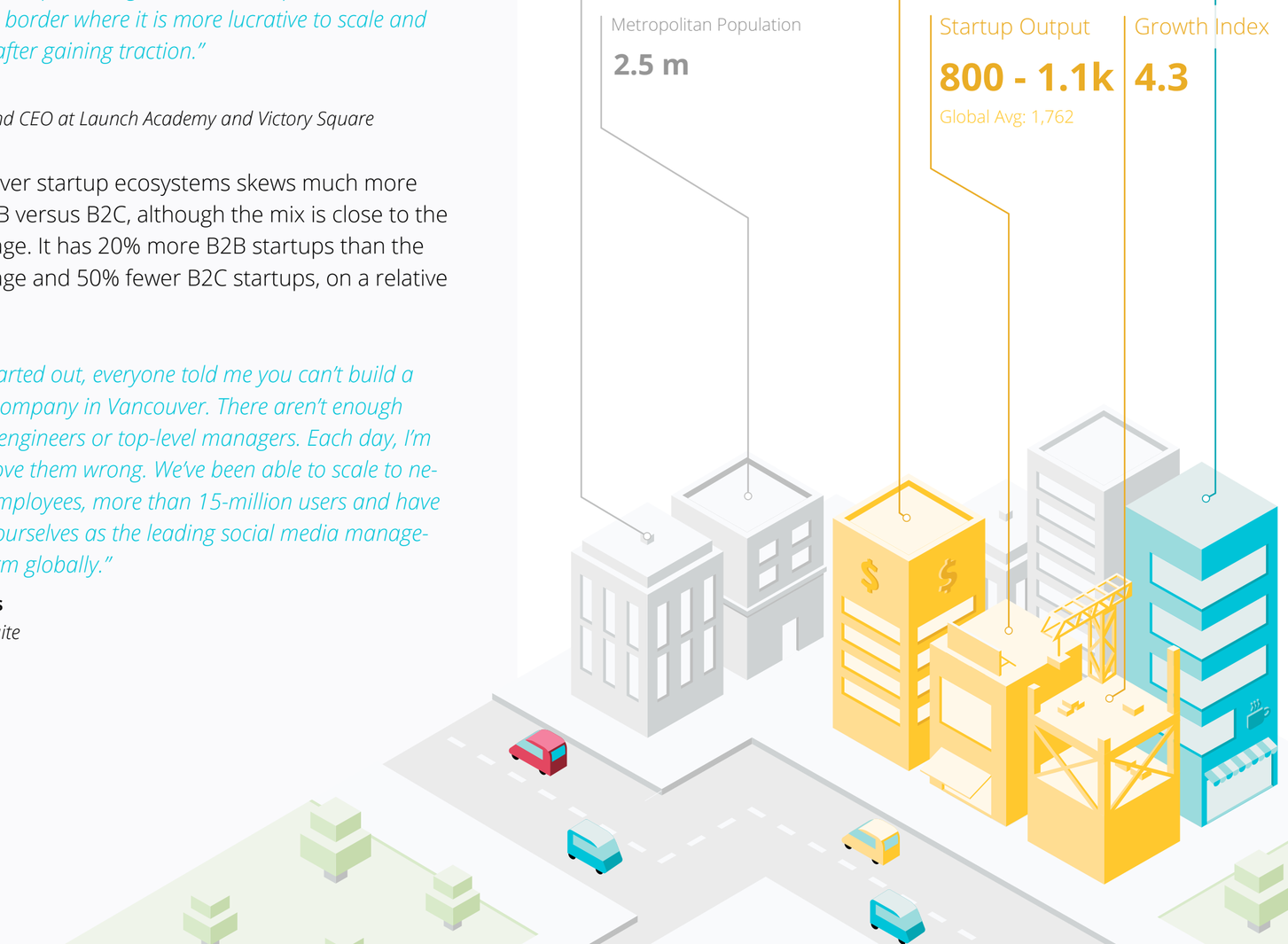
Growth Index
4.3

Funding

Early-stage Funding per Startup
$334 k
Global Avg: $252 k

Early-stage Funding Growth Index **4.9**
Global Avg: **5**

Experienced VC Firm Index **7.6**
Global Avg: **7**



Market Reach

Foreign Customers **57%**
Global Avg: **23%**

7.9 Global Connections
Global Avg: **6.1**

Talent

Experienced Software Engineers **70%**
Global Avg: **72%**

Experienced Growth Employees **59%**
Global Avg: **60%**

Visa Success Rate **66%**
Global Avg: **41%**

$55 k Software Engineer Salary
Global Avg: **49 k**

Startup Experience Index **5.6**

Global Avg: **5**

Founders Demographics

Women Founders **12%**
Global Avg: **16%**

Immigrant Founders **30%**
Global Avg: **19%**

Resource Attraction

Entrepreneurs **165**
Global Avg: **300**

Startups **14**
Global Avg: **83**

#16 Toronto-Waterloo
Canada

The Toronto-Waterloo Corridor stretches from Toronto, Canada's largest city and financial center to the Waterloo Region, which boasts the second highest density of startups in the world and the headquarters of some of Canada's largest tech companies.

These two startup ecosystems have been considered separately in past rankings. However, over the past year, there have been strong signals that the region is increasingly behaving as one ecosystem. Overall, an estimated 2,100-2,700 startups thrive thanks in part to world-class engineering talent, strong entrepreneurial culture, an affordable rental market, and a global base of customers.

The Toronto-Waterloo Corridor benefits from multicultural talent drawn from sixteen academic institutions, most notably the University of Toronto and University of Waterloo, alongside generous tax credits, government grants and favorable currency exchange.

As a result the Corridor has been attracting both larger series A rounds, such as League ($25M), as well as growth rounds from companies such as Thalmic Labs ($120M), Wealthsimple ($50M) and Vidyard ($35M). There have also been significant exits, including COM DEV ($345M - Honeywell), BlueCat ($400M - Madison Dearborn) and Bitstrips ($100M – Snapchat).

The proximity to Bay Street, Canada's Wall Street, has contributed to a growing amount of FinTech firms alongside other significant clusters and world-class research in artificial intelligence and quantum computing. Such favorable conditions have also drawn major U.S. companies like Google, Amazon, IBM and Airbnb, Oracle, and Netsuite to establish offices.

The integrated Toronto-Waterloo innovation corridor ranks #16 overall. Its Performance Index components all keep them right around the edge of the top 20 bubble. Further integration and increased connections between startups, universities, and innovation hubs will help the Toronto-Waterloo Corridor develop even further as one globally leading startup ecosystem.

MaRS: *With 1.5 million square feet of space in downtown Toronto, MaRS is the world's largest urban innovation hub. It supports scaling ventures that are tackling key challenges and helps open global markets to drive adoption of new solutions.*

Communitech, *founded by entrepreneurs in 1997, now supports an ecosystem of more than 1,000 tech companies—from startups to rapidly growing mid-size companies and large global players.*

Voices and Findings

"An increase in high-growth companies has driven the continued expansion of the Waterloo Region startup ecosystem over the past year, attracting record levels of capital, along with new talent and companies to the region. Increased collaboration along the Toronto-Waterloo corridor means that these companies are able to access the resources they need to keep growing, and will provide even greater opportunities for the next generation of startups being built."

Iain Klugman
CEO at Communitech

Toronto-Waterloo has the highest Startup Output in Canada. One of the Corridor's biggest strengths is its Global Connectedness with other top startup ecosystems and the Percentage of Foreign Customers — resulting in #5 overall in Market Reach.

"Toronto's tech sector has matured radically, especially in fintech, which has skyrocketed in the region, largely because we're home to Canada's financial center and have a strong talent pool. I predict increased growth across all sectors as we continue to activate the Toronto-Waterloo Corridor by supporting the ventures that span it and leveraging its corporate & capital networks."

Salim Teja
EVP at MaRS Ventures

The Corridor produces some of the highest quality talent in the world, with University of Waterloo's graduates being especially prized by the largest Silicon Valley tech companies. However, the combination of early-stage startups reporting a low level of access to experienced technical and growth talent with a low level of international talent attraction and scaling experience pushed the Corridor to the 20th rank on Talent.

"The Toronto-Waterloo innovation corridor is driving Ontario's position as a thriving startup hotbed. Startup Genome's report reinforces how important it is for our province to continue to foster a culture of innovation by investing in an educated, talented workforce."

Hon. Reza Moridi
Ontario's Minister of Research, Innovation and Science

The Percentage of Startups with at least one Female Founder lies at 18% in the Corridor, only slightly above the global average of 16%. This indicates an important opportunity for growth.

"Just imagine the economic growth and richness that gender equity would bring to our business ecosystems. Women have enormous potential to lead the growth of new technologies across Canada and around the world. We need to encourage and inspire more diversity in leadership positions."

Annette Verschuren
Chair and CEO at NRstor Inc.

Metrics

Ecosystem Demographics

Metropolitan GDP
$323 bn
Global Avg: $267 bn

Metropolitan Population
6.1 m

Ecosystem Performance

Ecosystem Value
$7.2 bn
Global Median: $4.1 bn

Startup Output
2.1 - 2.7 k
Global Avg: 1,762

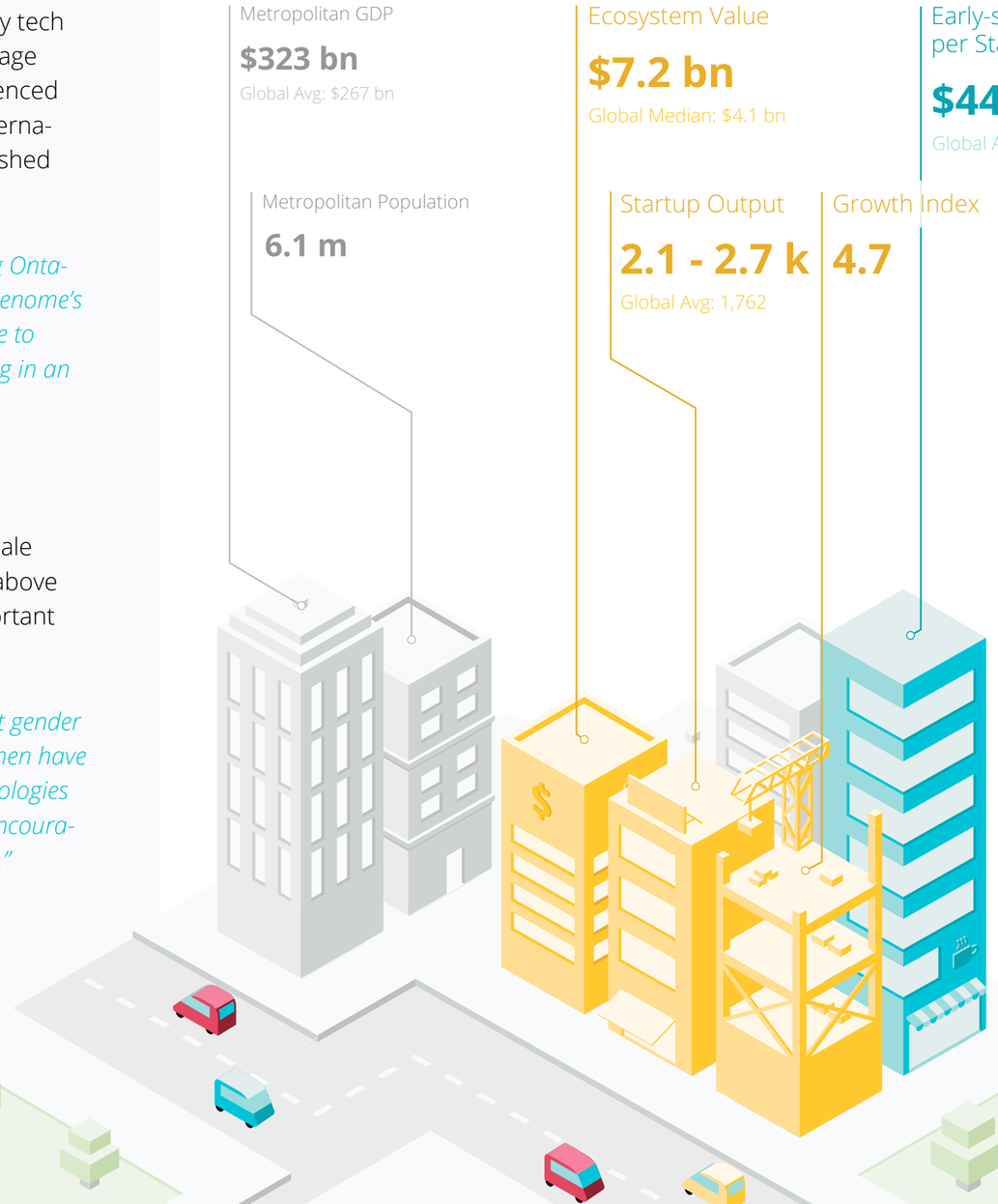
Growth Index
4.7

Funding

Early-stage Funding per Startup
$443 k
Global Avg: $252 k

Early-stage Funding Growth Index **4.5**
Global Avg: **5**

Experienced VC Firm Index **8.1**
Global Avg: **7**



Market Reach

Foreign Customers
42%
Global Avg: **23%**

10 Global Connections
Global Avg: **6.1**

Talent

Experienced Software Engineers
68%
Global Avg: **72%**

Experienced Growth Employees
54%
Global Avg: **60%**

Visa Success Rate
30%
Global Avg: **41%**

Startup Experience Index **4.9**

$56 k Software Engineer Salary
Global Avg: **49 k**

Global Avg: **5**

Founders Demographics

Women Founders
19%
Global Avg: **16%**

Immigrant Founders
23%
Global Avg: **19%**

Resource Attraction

Entrepreneurs **350**
Global Avg: **300**

Startups **17**
Global Avg: **83**

#17 Sydney Australia

Sydney boasts of an estimated 1,300-2,100 active tech startups, which recently benefited from determined government incentives, gangbuster exits, and as a consequence, a new wave of growth. Meanwhile, the not-for-profit group TechSydney has been established to turn Sydney into a world-class hub through improved local and global connectedness. Collaboration between startups and tech giants like Airbnb and Amazon will be fostered, while a fireside chat with investor legend Brad Feld has inspired tech startups.

Things in Australia's largest metropolis are heating up. Between $75 million in federal tax incentives established to boost angel funding, government allocated multi-million dollar funding for incubators and accelerators, and new VC arrangements to boost growth, the capital city is on the path of establishing a globally competitive framework.

The proof is in the exits—like record-breaking Atlassian, the collaboration software maker that was not only the most successful IPO last year, but also set a record $4.4 billion valuation for an Australian technology firm. FinTech startup, Afterpay, the "buy now, pay later" online payment method, went IPO and is potentially now worth more than $100 million. And in a case of one online delivery market acquiring another, Just Eat purchased Menulog for staggering $687 million.

Sydney's funding rounds are impressive as well. In the last year the online graphic design platform, Canva, experienced rapid growth with a valuation of $345 million, more than double the company's $165 million valuation a year ago, while the cloud-based platform Tyro plans to use its $100 million in new funds to accelerate its growth initiatives and new product development.

Sydney held steady in this year's Index, falling one spot in the overall rankings, from 16th to 17th. Sydney has a top 10 Exit Factor ranking, but performs below its overall ranking in Startup Output and valuation, indicating it may be benefiting from a few outliers. Sydney is one of the most globally connected startup ecosystems, but its Market Reach is held down by its relative lack of foreign customers.

TechSydney *is an entrepreneur-led, member-funded industry group that connects, supports and promotes the tech industry in Sydney.*

StartupAUS *is Australia's national startup advocacy organization, with a mission to transform Australia through technology entrepreneurship.*

The University of Technology Sydney *has a distinct model of learning, strong research performance, and a leading reputation for engagement with industry and the professions.*

The Committee for Sydney *is an independent think tank and champion for Sydney working for the enhancement of its economic, social, cultural and environmental conditions.*

Voices and Findings

"Sydney's tech ecosystem is comfortably among the best, but in terms of being the most desirable place to start and grow a tech company, we are world-leaders."

Dean McEvoy
Co-Founder and CEO at TechSydney

The Sydney ecosystem ranks in the global top 5 in Global Connectedness, indicating a deep understanding of global business models and international markets.

"With the Asia-Pacific on our doorstep, access to world-class local talent, government support and the lifestyle options it affords us, Sydney has been a great place to co-found a high-impact startup from scratch."

Adam Schuck
Co-Founder at Lexy

44% of Sydney-based startups report that they are offering a product that is the first of its kind. In relation to the global average of 34%, this outlines the bold ambition to create a business of global significance.

"In helping to grow Sydney's startup ecosystem, we remain passionately committed to creating a physical tech hub where people can live, work and play–an epicentre where everyone and everything is connected."

Mike Cannon-Brookes
Co-Founder and Co-CEO at Atlassian

Sydney has one of the highest rates of Early-Stage Funding Growth, particularly impressive for its already large size.

"Australia's ecosystem has developed rapidly in the last few years. A funding boom, a fast-growing pool of talented entrepreneurs, and strong government support have helped make this one of the best places in the world to build a tech startup."

Alex McCauley
CEO at StartupAUS

Sydney ranks outside the top 20 and only slightly above the global average in terms of its Early-Stage Funding per startup, indicating an opportunity for growth.

Metrics

Ecosystem Demographics

Metropolitan GDP
$320 bn
Global Avg: $267 bn

Metropolitan Population
5 m

Ecosystem Performance

Ecosystem Value
$6.6 bn
Global Median: $4.1 bn

Startup Output
1.3 - 2.1 k
Global Avg: 1,762

Growth Index
6.3

Funding

Early-stage Funding per Startup
$254 k
Global Avg: $252 k

Early-stage Funding Growth Index **6.7**
Global Avg: **5**

Experienced VC Firm Index **7.7**
Global Avg: **7**

Market Reach

Foreign Customers
20%
Global Avg: **23%**

10.4 Global Connections
Global Avg: **6.1**

Talent

Experienced Software Engineers
79%
Global Avg: **72%**

Experienced Growth Employees
53%
Global Avg: **60%**

Visa Success Rate
60%
Global Avg: **41%**

Startup Experience Index **5.4**

$64 k Software Engineer Salary
Global Avg: **49 k**

Global Avg: **5**

Founders Demographics

Women Founders
22%
Global Avg: **16%**

Immigrant Founders
31%
Global Avg: **19%**

Resource Attraction

Entrepreneurs **314**
Global Avg: **300**

Startups **67**
Global Avg: **83**

#18 Chicago USA

As the metropolis of the Midwest and the third largest city in the United States, Chicago's neighborhoods are home to cultural delights, but also a strong tech ecosystem. The city continues to wrestle with top hubs to retain talent after they graduate from local top universities, yet those who stick around become part of a solid tech community.

Chicago boasts 2,300-2,900 startups, and is especially well known for its Unicorn club. Chicago doesn't just have Unicorns, it has some of the fastest growing Unicorns in the country. The windy city landed three of the top seven startups for the fastest time (three years or less) to see a $2 billion valuation.[1] In a recent analysis by PitchBook,[2] Chicago companies offer the highest venture capital returns of any startup hub in the United States. Avant, Uptake, Mu Sigma, and SMS Assist are some of the top contenders, rendering Chicago's booming tech scene as exciting as its world-class museums and music venues.

Chicago's aptitude for cranking out Unicorns is partially due to the top-ranked accelerator New Venture Challenge, which is where companies like Braintree and GrubHub (with a market cap of $3 billion as of March 2017) got their start. Impressive exits during the last two years include Cleversafe ($1.3 billion) and Coyote Logistics ($1.8 billion), although the city is striving to create mega companies that go public and reach 10 times that size and beyond. One approach is to draw top level venture partners to join Chicago startup boards to leverage their networking and talent scouting skills in order to catapult global scaling.

However, when looking at leading success factors, Chicago shows some real challenges. It ranked at the bottom of the top 20 in Global Connectedness and second to last in Global Reach. The ecosystem lacks Global Connections to help its founders "Go Global" and therefore they find it difficult to reach global customers, at least at an early-stage. Team Experience also ranks #20, with the lack of Founder with Hypergrowth Experience and low number of Advisors with Equity being particularly low. These factors, in combination with Chicago's Performance rank falling from #8 in 2015 to #13 this year, contributed to Chicago placing #18 overall.

1871 *is located in a single 130,000 square-foot space including technical schools, universities, mentors, investors, technology suppliers, consulting firms, and corporate partners and 500+ technology startups.*

1 http://pitchbook.com/news/articles/the-11-fastest-us-startups-to-a-2b-valuation

2 http://chicagoinno.streetwise.co/2016/06/09/chicago-has-higher-vc-returns-though-fewer-deals/

Voices and Findings

"Chicago has a vibrant tech ecosystem that continues to attract loyal and diverse talent. We are extremely proud of Chicago's status as a leader in fostering a welcoming and supportive atmosphere for women in entrepreneurship, and with 1871 as the backbone for innovation in the city, we are excited to be recognized for this."

Howard Tullman
CEO at 1871

Chicago has the highest percentage of Female Founders in the world, with 34% of founders in the ecosystem being women, compared to an average 18% in U.S. ecosystems and 16% in Silicon Valley, respectively.

"Vibrant, well-connected communities are essential to new entrepreneurs. The growing number of female founders in Chicago has created a strong network of role models, inspiring and supporting the next generation of female entrepreneurs."

Starr Marcello
Director at the Polsky Center at UChicago

With a median of 30 days, Chicago indicates a relatively fast Time to Hire Engineers. A key benefit to the ecosystem and its tech startups, compared to the global median of 41 days.

"I believe the largest driver of startup growth in Chicago is the individual efforts of entrepreneurs and homegrown support systems that provide education, networking, and growth opportunities to founders and the startup community."

Nicole Vasquez
Founder and President at The Shift Chicago

Chicago's entrepreneurs have the weakest Global Connectedness Factor of all top 20 ecosystems. Also, despite its track record, it attracts very few foreign startups, with 2.9% compared to 5.7% for Austin. As a result only 8% of Startup Customers come from outside of the country indicating a strong challenge in reaching the global market. The average value for U.S. ecosystem lies at 15%.

"At WorldChicago we host many entrepreneurs and entrepreneurship support organizations from around the world each year. While Chicago is not thought of as a startup hub, once our international delegates arrive, they are incredibly inspired and amazed by the energy and support for entrepreneurship here. We have seen long-term partnerships develop and expect to see that trend continue at a fast pace."

Peggy Parfenoff
President at WorldChicago

Metrics

Ecosystem Demographics

Metropolitan GDP
$612 bn
Global Avg: $267 bn

Metropolitan Population
9.6 m

Ecosystem Performance

Ecosystem Value
$13 bn
Global Median: $4.1 bn

Startup Output
2.3 - 2.9 k
Global Avg: 1,762

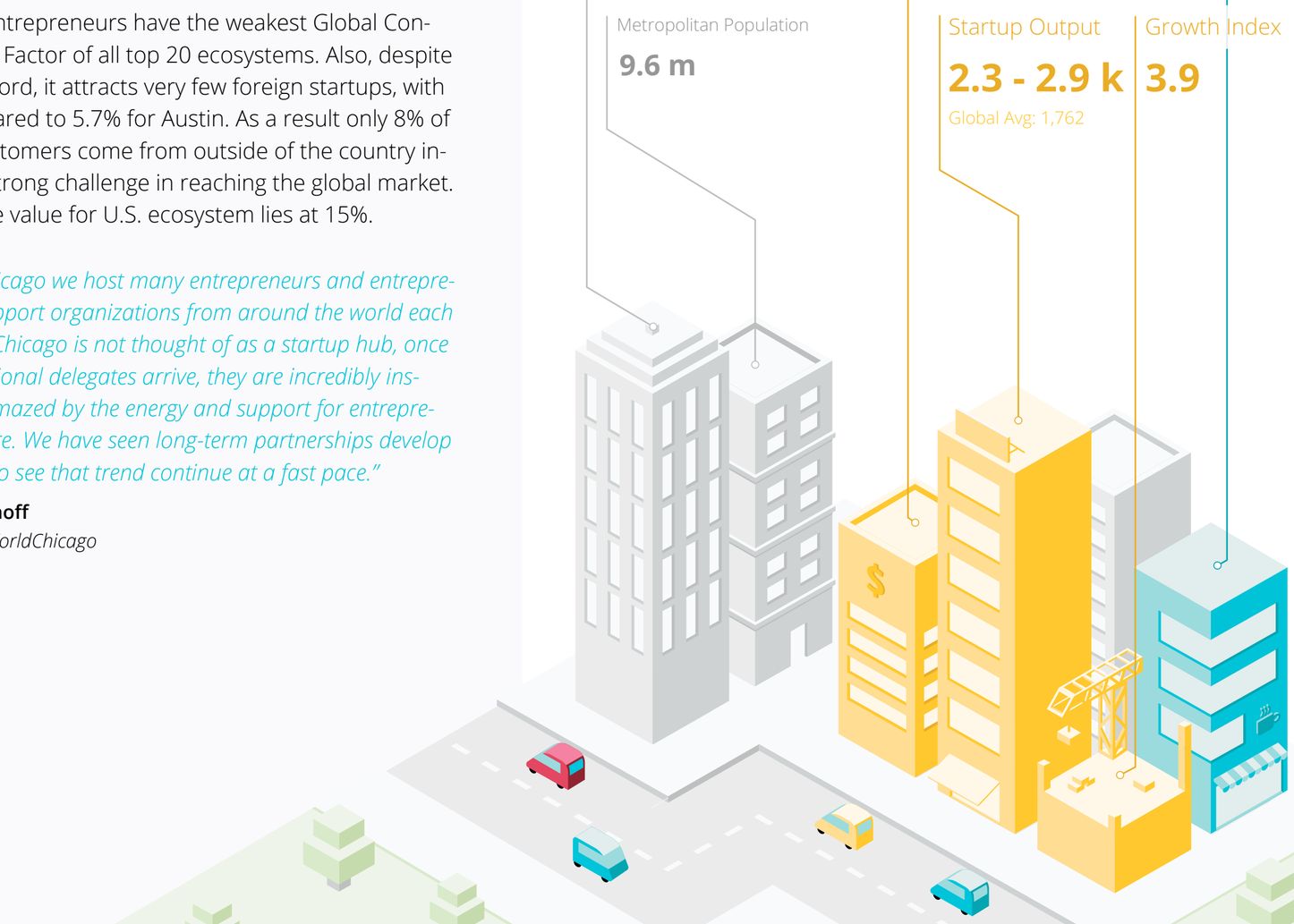
Growth Index
3.9

Funding

Early-stage Funding per Startup
$271 k
Global Avg: $252 k

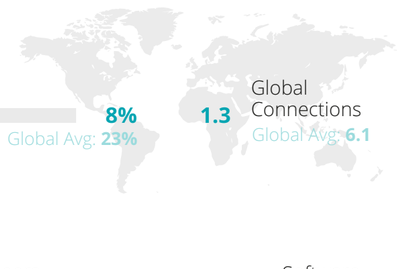
Early-stage Funding Growth Index **4.5**
Global Avg: **5**

Experienced VC Firm Index **8.1**
Global Avg: **7**



Market Reach

Foreign Customers
8%
Global Avg: **23%**



1.3
Global Connections
Global Avg: **6.1**

Talent

Experienced Software Engineers
79%
Global Avg: **72%**

Experienced Growth Employees
46%
Global Avg: **60%**

Visa Success Rate
23%
Global Avg: **41%**

$76 k
Software Engineer Salary
Global Avg: **49 k**

Startup Experience Index **5.7**

Global Avg: **5**

Founders Demographics

Women Founders
34%
Global Avg: **16%**

Immigrant Founders
14%
Global Avg: **19%**

Resource Attraction

Entrepreneurs **443**
Global Avg: **300**

Startups **76**
Global Avg: **83**

#19 Amsterdam-StartupDelta

The Netherlands

With a population of nearly 17 million, the Netherlands are known as a beautiful country with an excellent education system that scores among the highest worldwide in math and science. The startup ecosystem of Amsterdam-StartupDelta, encompassing surrounding communities according to our 60-square-mile radius, is built on the high numerical aptitude and currently boasts of around 2,300-3,500 tech startups.

Nearly 90 percent of the Dutch population speaks English, making it an attractive location for tech talent, international founders, and investors alike. Its capital city Amsterdam has prompted major global companies such as Uber, Netflix, and Tesla to establish European headquarters there, with more expected to follow.

To further entice foreign entrepreneurs, Dutch parliament continues to boost the startup ecosystem through a growing number of initiatives and policies, including favorable tax code and the introduction of the startup visa.[1] This is confirmed by Amsterdam-StartupDelta making it into the top 10 in terms of its net Global Resource Attraction of 10%.

1 https://www.government.nl/topics/enterprise-and-innovation/contents/support-for-small-and-medium-sized-enterprises-smes

Dutch startups have a knack for exceeding their own expectations. Takeaway.com, a leader in the on demand food delivery business, went public in September 2016, and is now valued north of $1.1 billion. It raised nearly twice what it predicted it would raise when it announced its intention to go public. The local posterchild Adyen, an online and mobile payment company, helps web companies such as Facebook, Uber and Airbnb. It increased its transaction volume to more than $90 billion, and expanded to over 2,700 live stores in U.S. and Europe.

Amsterdam-StartupDelta holds on to its 19th rank in this year's overall Index, an impressive feat considering three new entrants in the global top 20. The Dutch ecosystem indicates outstanding Performance metrics given its small size, for example a top ten ranking in Exit Value. However, local startups could generally use improved access to Talent and Funding. The ecosystem can be bullish about its future, considering that its key issues are possible to solve.

StartupDelta *aims to merge all layers of the Dutch startup ecosystem into one single connected hub to improve access to talent, capital, networks, knowledge, and markets for startups.*

Voices and Findings

"The Netherlands is one big connected tech ecosystem buzzing with creativity; where design and innovation are combined with excellent infrastructure and engineering skills. The Netherlands is an ideal testbed and launchpad into Europe. Here entrepreneurs, government, and business are focused to drive the most innovative economy of Europe."

His Royal Highness Prince Constantijn van Oranje
Special Envoy StartupDelta

The Amsterdam-StartupDelta ecosystem is the 5th most valuable ecosystem in Europe. At the global level, it ranks 7th in the world in both Startup Output and Exit Value, indicating impressive performance.

"We conducted a survey amongst our alumni from our Amsterdam-based accelerator program, and the number 1 reason why they found Amsterdam appealing is that it is a very small city with a lot of stakeholders located close by and easy to reach. The quality of living and the international community was therefore by far the most important factor"

Marc Wesselink
Managing Partner at Startupbootcamp

59% of startups confirmed positive Involvement with Corporates, higher than founders in London, Tel Aviv and Berlin reported on.

"Working in a fast growing tech company is extremely demanding for all involved. It's not surprising employees and especially founders take personal preferences into consideration, besides just looking at numbers."

Chris Hall
Founder and CEO at Bynder

The main reason startup founders report moving to Amsterdam is for personal reasons rather than any particular business reason. Amsterdam is considered a European hotspot in the global startup scene, as displayed in the high net Global Resource Attraction rate of 10%.

"Since we're closing the ranks of this Global Top 20, Amsterdam has to step up and say: 'We can, We will' to climb the Top 5 in 2020 -now let's get even more entrepreneurs more engineers, more creatives -and more risk money to our great little startup city, repeating the mantra: 'We can. We will.' -and then we shall."

Oscar Kneppers
Founder at Rockstart

42% of startups reported that they are offering a product that is the first of its kind globally. In relation to the world average of 34%, this underlines the ambition of Amsterdam founders to start and scale a startup with global footprint.

Metrics

Ecosystem Demographics

Metropolitan GDP
$321 bn
Global Avg: $267 bn

Metropolitan Population
7 m

Ecosystem Performance

Ecosystem Value
$14 bn
Global Median: $4.1 bn

Startup Output
2.3 - 3.5 k
Global Avg: 1,762

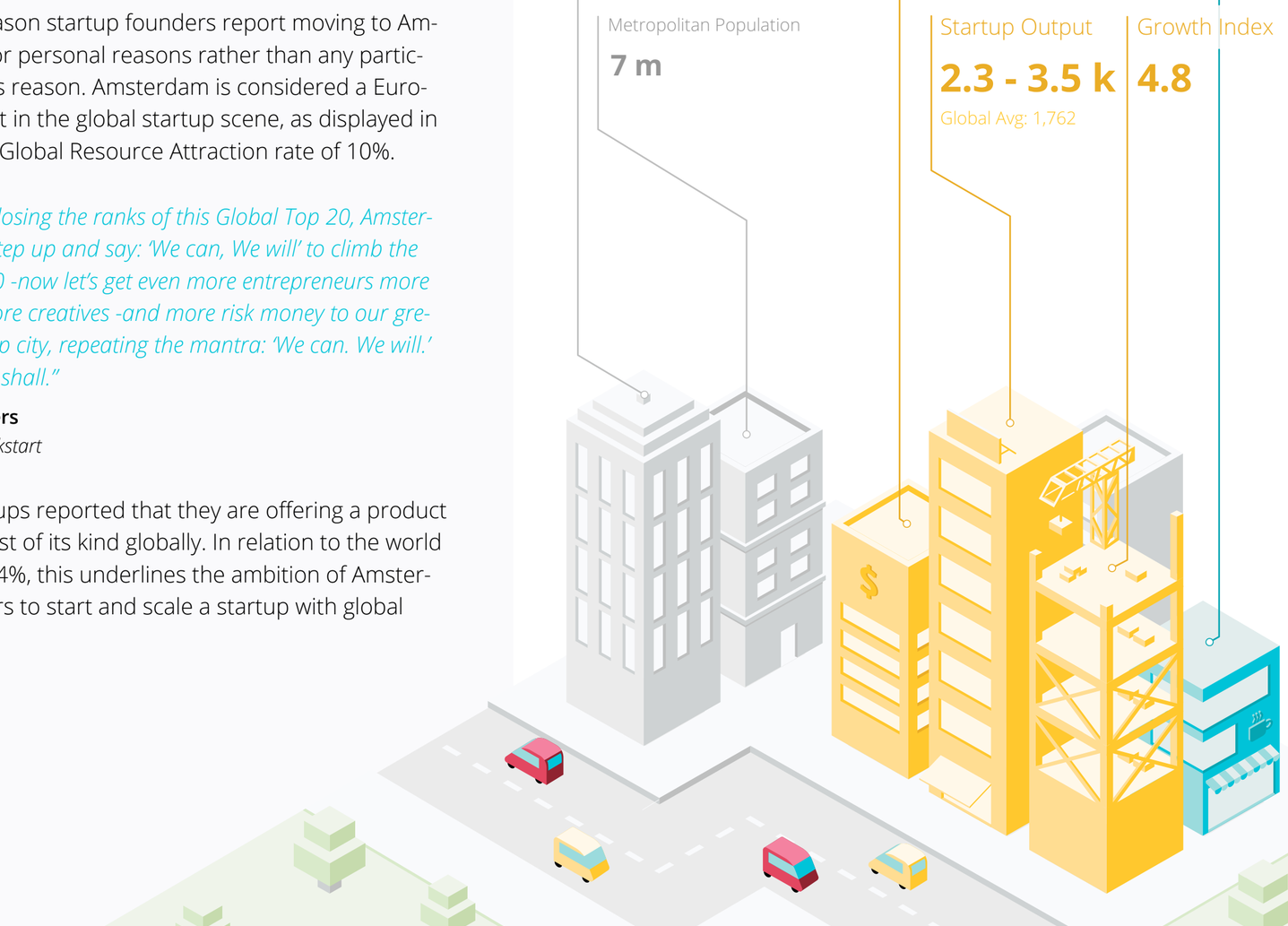
Growth Index
4.8

Funding

Early-stage Funding per Startup
$144 k
Global Avg: $252 k

Early-stage Funding Growth Index **4.8**
Global Avg: **5**

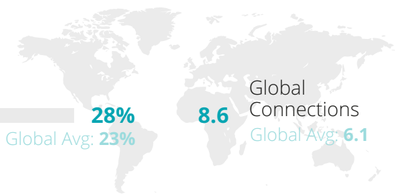
Experienced VC Firm Index **8.1**
Global Avg: **7**



Market Reach

Foreign Customers **28%**
Global Avg: **23%**

8.6 Global Connections
Global Avg: **6.1**



Talent

Experienced Software Engineers **62%**
Global Avg: **72%**

Experienced Growth Employees **53%**
Global Avg: **60%**

Visa Success Rate **47%**
Global Avg: **41%**

$45 k Software Engineer Salary
Global Avg: **49 k**

Global Avg: **5**

Startup Experience Index **5.5**

Founders Demographics

Women Founders **14%**
Global Avg: **16%**

Immigrant Founders **13%**
Global Avg: **19%**

Resource Attraction

Entrepreneurs **580**
Global Avg: **300**

Startups **58**
Global Avg: **83**

#20 Bangalore India

India's technology epicenter Bangalore confirms its position as the country's leading startup hub, yet it drops in the global Index from rank 15 to 20. The statistics are still impressive for the most part, with regards to the latest estimation of 1,800-2,300 active tech startups.

The city is a magnet for Indian talent, with millions migrating to the city for work, many of them highly-skilled tech workers. In fact, Bangalore has, on average, the youngest tech workers among all startup ecosystems. This influx of youthful talent has helped drive the startup surge.

Bangalore is abound with success stories. Flipkart, the startup posterchild offering an online shopping experience similar to Amazon, was valued at $5.37 billion as of March 2017. In the largest investment in an Indian healthcare AI startup, SigTuple, which uses computer vision and artificial intelligence for malaria diagnosis, announced series A funding of $5.8 million, along with hopes to go global with the technology. And online supermarket Big Basket raised $150 million—an impressive feat considering that more and more high-profile investors are exercising caution.[1]

1 https://www.bloombergquint.com/business/2016/08/23/investments-into-startups-fall-as-venture-capital-investors-take-a-caution-first-approach

Because of these global startups, Bangalore is again attracting the attention of foreign multinationals. Today, however, they come in hopes of tapping the pipeline of startups and their innovations. Amazon and Uber have established offices in Bangalore. Microsoft Accelerator, Qualcomm, and Cisco are all involved in setting up startup accelerators. Large Indian companies have also connected with the Bangalore startup scene, including Yes Bank, Tata Group, and Mahindra. Closer ties between startups and big companies has brought a further influx of talent and investment, helping to spur further growth in Bangalore's ecosystem.

Bangalore is the last one in the top 20 overall. It is ranked ##11 in Performance, where it is ranked #7 overall based on valuations, but has a very low Exit sub-factor. This indicates either that Bangalore has a very bright future as these startups mature, or there is trouble at the top of the market with acquisitions. Bangalore's early-stage Funding growth is on par with its current overall ranking. In the Market Reach Index, Bangalore has created strong ties with other startup ecosystems, but the startups have struggled to nab many foreign customers. In the Talent Index, Bangalore has challenges with Access and Quality—engineers haven't been hired very quickly, experience is average and visa success is low—but the bang for the buck is still hard to beat, as Bangalore's engineers are the most cost-efficient among the global top 20.

Voices and Findings

"The accelerated evolution of Bangalore's startup ecosystem in the last decade is predominantly due to its strong technology population. This, combined with the phenomenon of seasoned entrepreneurs exiting and entering the ecosystem as investors and mentors to the startups, sets the stage to building world-class deep technology startups from this city. It is a historic juncture for Indian tech startups as they are poised to take on larger problems and enter the global stage."

Ravi Narayan
Global Director at Microsoft Accelerator

Almost 45% of Bangalore's startup founders have gained at least 2 years of prior work experience in a startup, placing the ecosystem in the upper third globally, close to Silicon Valley at 49% and Tel Aviv at 55%. 94% of Bangalore founders have a technical background, the highest rate in the world.

"With deep tech becoming a strong area of focus and the startup ecosystem in the country maturing, world class globally competitive startups from Bengaluru will disrupt markets and the way we live."

Anuradha Subramanian
Partnerships and Alliances at Nasscom 10,000 Startups

"Though we're a U.S.-based startup our development team sits in Bangalore as it's relatively less expensive. It is definitely the capital of India in terms of concentration of tech talent and startups. This also means there's lot of churn among employees who move around a lot to seek better opportunities. The quality and professionalism of resources is also questionable in many cases."

Abhimanyu Godara
Founder and CEO at Bottr.me

Bangalore has the cheapest annual salary of for an engineer in the top 20, about $8,600 a year. This is nearly 13 times cheaper than in Silicon Valley and 4 times cheaper than the average value for Asia-Pacific. The primary reason startups move to Bangalore is because it is easier to find good technical employees, however, there are difficulties around Access and Quality.

"Exits are tough in the Indian ecosystem only when they are incorrectly evaluated. A lot of times I have seen Indian companies making projections similar to their Silicon Valley peers without actually having the penchant to create global brands like the Silicon Valley companies do."

Kanwaljit Singh
Founder and CEO at Gaussian Networks

Metrics

Ecosystem Demographics

Metropolitan GDP
$45 bn
Global Avg: $267 bn

Metropolitan Population
8.7 m

Ecosystem Performance

Ecosystem Value
$19 bn
Global Median: $4.1 bn

Startup Output
1.8 - 2.3 k
Global Avg: 1,762

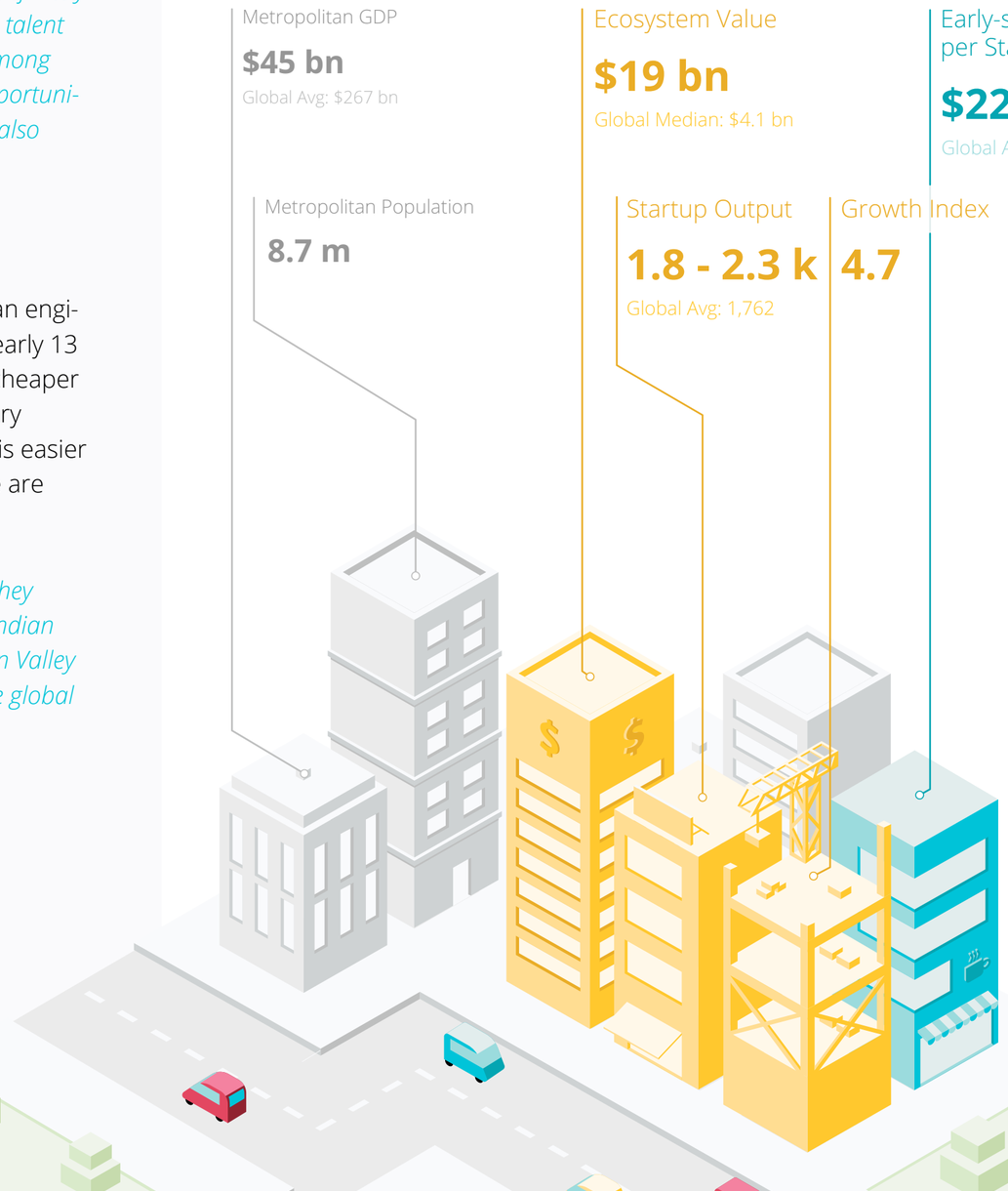
Growth Index
4.7

Funding

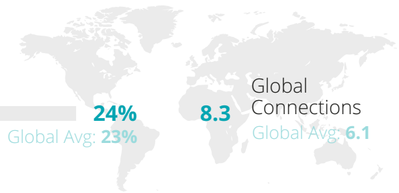
Early-stage Funding per Startup
$229 k
Global Avg: $252 k

Early-stage Funding Growth Index **4.7**
Global Avg: **5**

Experienced VC Firm Index **7.3**
Global Avg: **7**



Market Reach



Foreign Customers
24%
Global Avg: **23%**

8.3 Global Connections
Global Avg: **6.1**

Talent

Experienced Software Engineers **68%**
Global Avg: **72%**

Experienced Growth Employees **60%**
Global Avg: **60%**

Visa Success Rate **21%**
Global Avg: **41%**

Startup Experience Index **4.9**

$8.6 k Software Engineer Salary
Global Avg: **49 k**

Global Avg: **5**

Founders Demographics

Women Founders **10%**
Global Avg: **16%**

Immigrant Founders **16%**
Global Avg: **19%**

Resource Attraction

Entrepreneurs **359**
Global Avg: **300**

Startups **22**
Global Avg: **83**

Regional Clusters

Americas

Atlanta

Houston

Mexico City

Montreal

Ottawa

Quebec City

Santiago

Sao Paulo

St. Louis

Atlanta USA

With an abundance of resources including skilled talent, top-ranked institutions, and an engaged corporate community, Atlanta is distinguishing itself as a top destination for starting and scaling tech companies. Over 163,000 people are employed in high-tech occupations, and the area's higher education institutions graduate over 4,000 engineers annually, creating a rich talent pool for growing companies.

Atlanta's 1,000-1,400 currently active tech startups benefit from the low cost of doing business and access to customers afforded by the presence of 25 FORTUNE 1000 company headquarters. The Bridge, Engage, and the Techstars/Cox Enterprises partnership are evidence that the corporate community is serious about supporting entrepreneurs. Atlanta's tech scene has grown tremendously in the past few years as tech hubs, co-working spaces, accelerators and incubators have bubbled up.

Atlanta's top tech sector is FinTech, with Kabbage leading the pack with a post-money valuation of $1 billion. Digital media is another Atlanta industry to watch, especially as MailChimp, the premier email marketing platform, saw a 42% jump in revenue growth from 2015 to 2016.

The last three years have been good for Atlanta, with newsworthy exits from the likes of SecureWorks, a cybersecurity software with an IPO valuation of $1.87 billion, and CloudSherpas, an enterprise cloud services provider that was acquired for $400 million. AirWatch, which provides enterprise mobility management, was bought by VMware for $1.55 billion a year after it commanded one of the largest Series A funding rounds in history at $200 million.

Atlanta's brightest minds look forward to events such as Venture Atlanta—the 15-year-old investor showcase that has helped entrepreneurs raise over $1.6 billion, leading to $13 billion in exits to date. Other high-visibility events include Atlanta Startup Week, a five-day celebration around entrepreneurship, and the lively Atlanta Startup Battle, which pits startups against each other for $100,000 in funding.

The Metro Atlanta Chamber (MAC) *serves as a catalyst for a prosperous Atlanta region by focusing on starting, growing and recruiting companies to metro Atlanta while strengthening connections that drive Atlanta's innovation and entrepreneurial culture.*

Voices and Findings

"The momentum Atlanta has towards becoming a globally competitive destination for entrepreneurs is undeniable. Successes like Internet Security Systems and AirWatch have contributed to a fertile environment for companies like MailChimp, Kabbage and Pindrop Security. With unprecedented support from the corporate community, a rich talent pool, and unique cost structure, it's absolutely the right time to be building a company in Atlanta."

Jennifer Sherer, Ph.D.
Vice President, Innovation & Entrepreneurship at Metro Atlanta Chamber

Atlanta indicates comparably strong performance with regards to Startup Output, Funding, and Startup Experience, qualifying the ecosystem as a runner-up to the top 20.

"Atlanta's tech startup ecosystem continues to grow fast. Every month multiple startups raise another institutional round of capital. Every year for the last four years a new physical building dedicated to startups has opened up. Look for the next wave of strong exits due to so many high quality startups."

David Cummings
CEO at Atlanta Tech Village

45% of startups reported that they are offering a product that is the first of its kind globally. In relation to the world average of 34%, this underlines the approach of Atlanta startups to go global.

"Atlanta has been a tremendous place for BIP Capital to invest over the last decade, particularly in B2B startups. The combination of sophisticated technical talent, access to large enterprises, the ample pool of operating talent, and the low cost of living is a recipe for repeatable success."

Mark Buffington
Managing Director at BIP Capital

57% of Atlanta-based startups report to have had at least one positive experience with corporates, the second highest rate in the United States only after Denver/ Boulder.

"Only in Atlanta could I have built two separate companies with billion dollar valuations thanks to the ecosystem rich in talent, high in value, and with all the ingredients for success. Manhattan Associates (NASDAQ: MANH) from 30 to 800 employees and public in three years and AirWatch from 100 to 2,000 employees in three years. This ability to grow is why Atlanta is where I choose to invest my time and capital."

Alan Dabbiere
Founder of Manhattan Associates and AirWatch (now part of VMware)

Metrics

Ecosystem Demographics

Metropolitan GDP
$325 bn
Global Avg: $267 bn

Metropolitan Population
5.6 m

Ecosystem Performance

Ecosystem Value
$8.5 bn
Global Median: $4.1 bn

Startup Output
1 - 1.4 k
Global Avg: 1,762

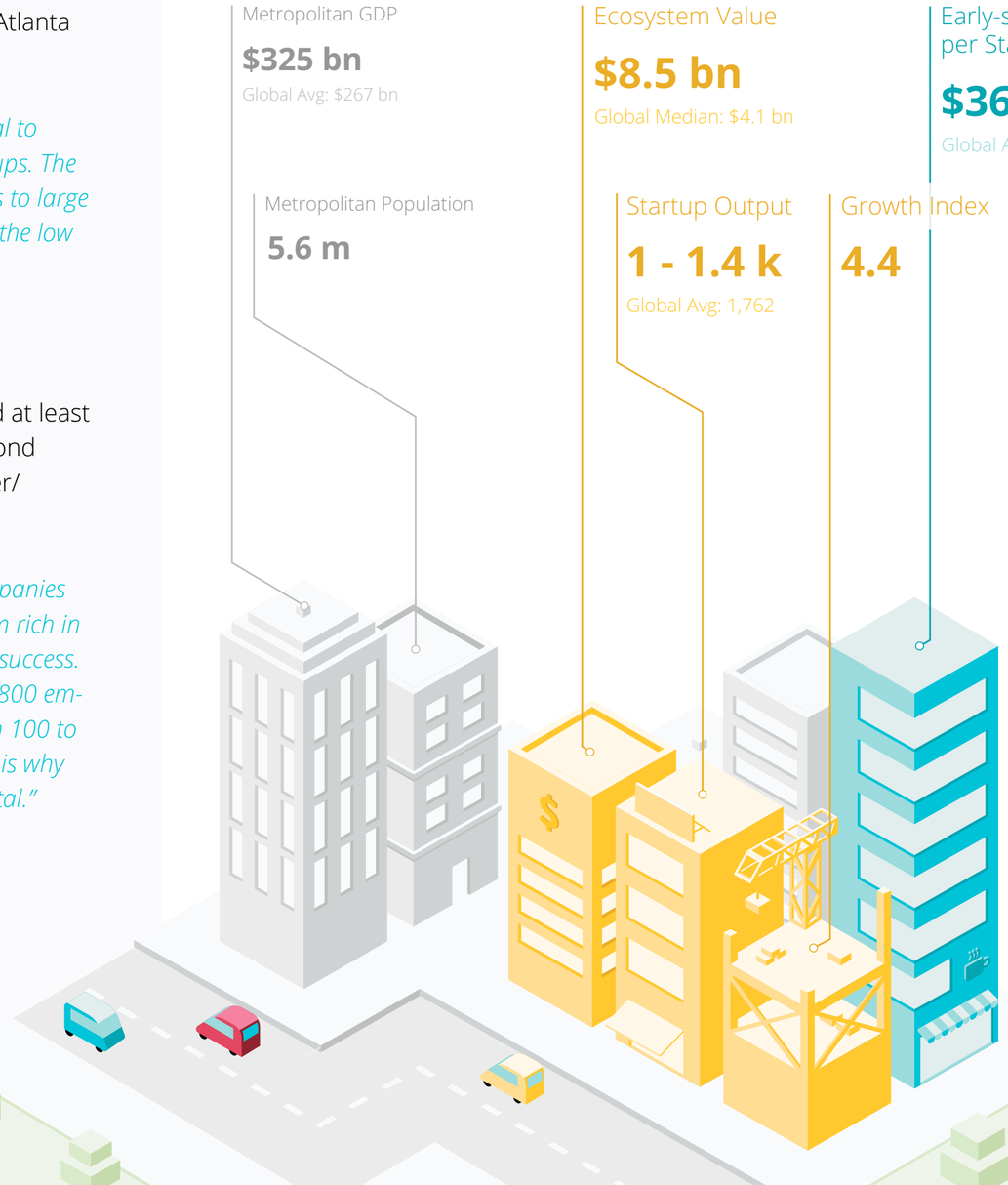
Growth Index
4.4

Funding

Early-stage Funding per Startup
$367 k
Global Avg: $252 k

Early-stage Funding Growth Index **4.4**
Global Avg: **5**

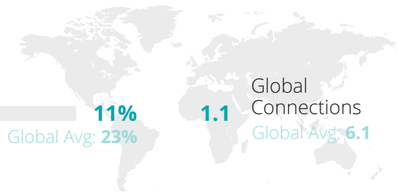
Experienced VC Firm Index **7.9**
Global Avg: **7**



Market Reach

Foreign Customers
11%
Global Avg: **23%**

1.1 Global Connections
Global Avg: **6.1**



Talent

Experienced Software Engineers
74%
Global Avg: **72%**

Experienced Growth Employees
65%
Global Avg: **60%**

Visa Success Rate
29%
Global Avg: **41%**

Startup Experience Index **5.8**

$73 k Software Engineer Salary
Global Avg: **49 k**

Global Avg: **5**

Founders Demographics

Women Founders
17%
Global Avg: **16%**

Immigrant Founders
16%
Global Avg: **19%**

Resource Attraction

Entrepreneurs **164**
Global Avg: **300**

Startups **0**
Global Avg: **83**

Houston USA

Houston's reputation for innovation in aviation re-upped itself with the announcement of a soon-to-be-opened SpacePort. Citing long-term hopes as the pioneers of a new standard of travel (with sights on offering a commercial flight from Houston to Tokyo in three hours), this project offers Houston an opportunity to strengthen its reputation as a leader and to create high-tech, next-generation type jobs.

The last few years have witnessed focused efforts from the startup community, corporations, governmental agendas like the Mayor's Task Force on Innovation, universities, and philanthropists—all pushing to enable Houston's entrepreneurs to thrive amidst the challenges of commercialization. These efforts have paid off, considering that the Houston ecosystem comprises of around 900-1,400 tech startups already today.

Houston's ecosystem players understand the value of cooperation and consensus at a local level. In an ambitious new effort, the Greater Houston Partnership's Innovation roundtable has brought together 26 individuals from 20 different organizations including startups, corporations, government, academia and investors. The members aim to assess the needs of Houston's innovation economy and to create more collisions.

Within its first year, a new incubator, Station Houston, boosted the city's young technology companies with an incredible 170 new members. University of Houston and Rice University, Houston's top ranked schools for entrepreneurship, both run established accelerators that require no equity and even provide a living stipend to its participants. Houston also nurtures its women in tech, hosting The Grace Hopper Celebration of Women in Computing, the world's largest gathering of women technologists.

Overall Houston is an emerging startup ecosystem with decent output numbers that haven't translated into globally competitive valuations or exits just yet. As startup experience matures performance matures as well, and with Houston making it almost into the top in experience, for all signs point to Houston as a strong contender for even more high growth ventures to come.

The Greater Houston Partnership *promotes economic development, foreign trade, and investment. It develops the local innovation economy by convening with key stakeholders to solve the region's most pressing issues.*

Voices and Findings

"Houston is a city that has been known for innovation across its principle industry sectors. We are excited about the collaborative efforts underway to further develop the region's innovation economy and to set the strategy to accelerate the growth of Houston's high-impact startup ecosystem. Moving forward, the Houston region will continue to further diversify its economy and raise its profile as an attractive destination for entrepreneurs, startups and associated risk capital."

Bob Harvey
President and CEO at Greater Houston Partnership

The Houston startup ecosystem consists of around 900-1,400 tech startups, making it one of the biggest 30 ecosystems in the world.

"Leadership is core and critical, period. The Houston startup community will evolve to be world-class by choice...not by chance. We see the opportunity centered on activation, as well as development. We believe that unlocking what can be our most unfair advantage hinges on activating and leveraging our corporate community. Quite simply, the scale of Houston-based corporates is massive...perhaps the most robust in the world."

John Reale
Managing Director at Station Houston

Houston made it into the runners-up for strong Startup Experience, almost entering the top 20 in this realm. Around 40% of founders gained prior experience at a hypergrowth startup for at least two years before venturing out on their own.

"The startups and investors in Houston know that a lack of seed capital in our ecosystem is a problem. The good news is that several community organizations have been working together for months to come up with a variety of ways to address this issue. So over the next year or two, I think we'll see a lot more seed-stage investment activity."

Jeff Reichman
Principal at January Advisor

Houston startups work with an average of 1.5 Advisors with Equity, one of the higher values in the world and an indicator that founders value advice from experienced people.

"Houston has some great strengths as an innovation economy. There is tremendous focus on leveraging those strengths while proactively and deliberately addressing the gaps. This is important for Houston and the momentum is encouraging."

Gina Luna
CEO at Luna Strategies, LLC

Metrics

Ecosystem Demographics

Metropolitan GDP
$525 bn
Global Avg: $267 bn

Metropolitan Population
6.5 m

Ecosystem Performance

Ecosystem Value
$635 m
Global Median: $4.1 bn

Startup Output
900 - 1.4k
Global Avg: 1,762

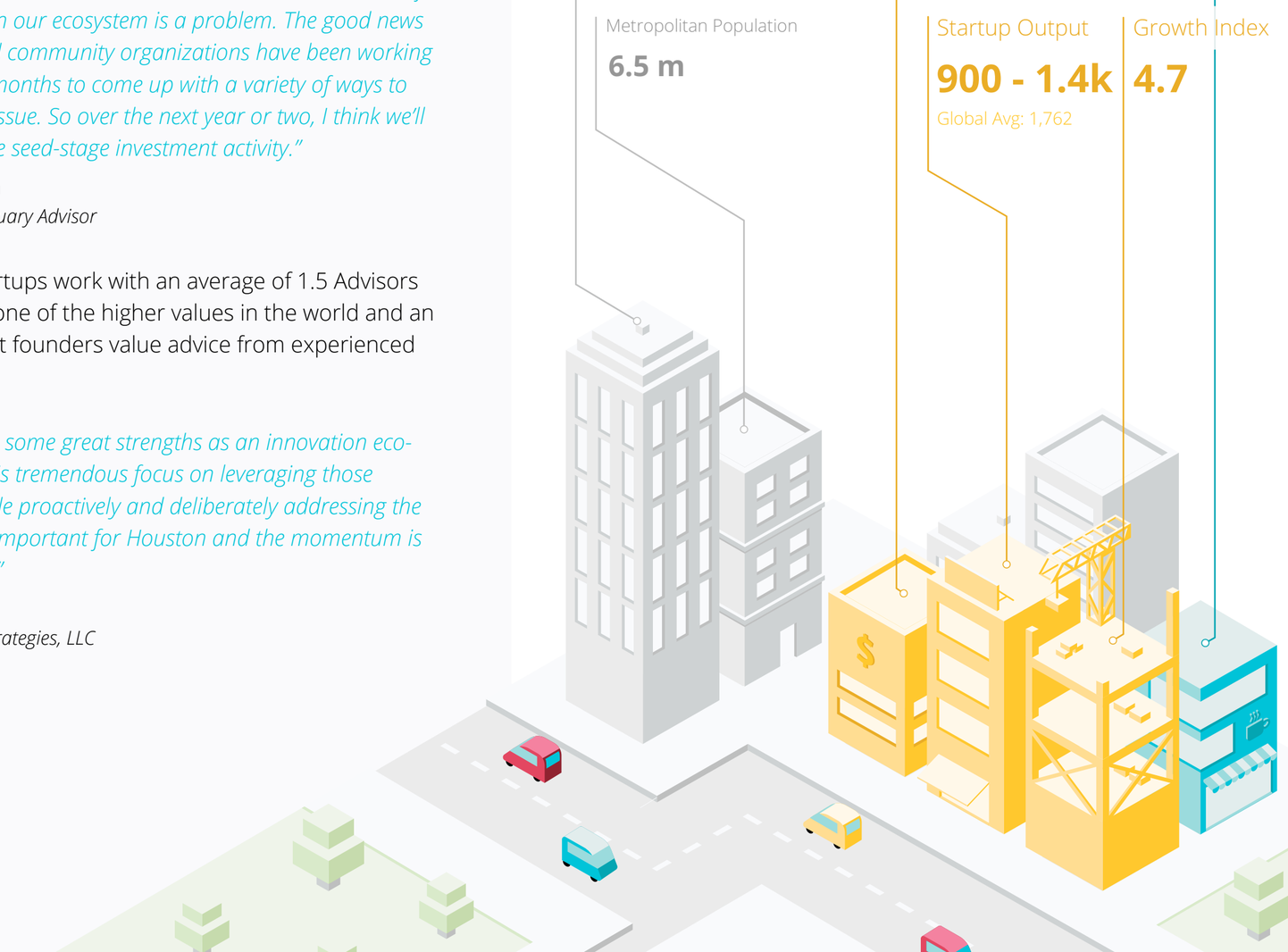
Growth Index
4.7

Funding

Early-stage Funding per Startup
$110 k
Global Avg: $252 k

Early-stage Funding Growth Index **5.5**
Global Avg: **5**

Experienced VC Firm Index **7.5**
Global Avg: **7**



Market Reach

Foreign Customers
13%
Global Avg: **23%**

2.9 Global Connections
Global Avg: **6.1**

Talent

Experienced Software Engineers
72%
Global Avg: **72%**

Experienced Growth Employees
60%
Global Avg: **60%**

Visa Success Rate
49%
Global Avg: **41%**

Startup Experience Index **5.1**

$76 k Software Engineer Salary
Global Avg: **49 k**

Global Avg: **5**

Founders Demographics

Women Founders
21%
Global Avg: **16%**

Immigrant Founders
26%
Global Avg: **19%**

Resource Attraction

Entrepreneurs **151**
Global Avg: **300**

Startups **18**
Global Avg: **83**

Mexico City Mexico

Mexico City's legacy industries like tourism and financial services are now making room for a roster of dynamic new tech companies that have already gone to market. During the last couple of years the city has developed an ambitious startup ecosystem comprised of around 350-650 active tech startups. A web of strong startup communities such as Techstars Startup Weekend, Hackers and Founders, and Startup Grind have helped the local ecosystem grow organically.

With public authorities promoting entrepreneurship as well, Mexico City now offers the right cocktail of regulatory support, such as new initiative enabling founders to open a business in just one day. The National Institute of Entrepreneurship alone distributed more than $650 million to entrepreneurs across the country—leading to an estimated 6,000 new companies and 73,000 new jobs.[1]

The metropolis has another key asset—its proximity to the U.S. provides it with ample market potential and prominent sources of capital that other countries simply don't have. In just a few years we've seen the entrance of international headquarters for giants such as Amazon, Google, Twitter, Facebook and other tech companies, as well as the entrance of WeWork in Latin America with an aggressive growth plan in Mexico City. NUMA, Village Capital, MassChallenge and Startupbootcamp are only a few international accelerator programs that recently set up shop as well.

In 2015, the ecosystem recently reveled in the exit of Aventones, a ride sharing platform led by Christina Palacios that was bought by French Blablacar. There is also strong movement in the local FinTech scene as payment app Conekta raised $6.6 million in 2016, while Alta Ventures and American Express invested $8 million in CLIP in 2015. Putting all of these pieces together, more success stories are expected to come out of Mexico City in the near future.

INADEM *works for national policy that supports entrepreneurs to boost their innovation, competitiveness, and projection, thereby increasing their contribution to economic development and social welfare.*

1 http://www.ibtimes.com/mexico-city-next-silicon-valley-how-mexicans-became-obsessed-unicorns-2317659

Voices and Findings

"Mexico Capital City has become a place that gathers human talent, ideas, creators, investors, scientists and the challenges that offer the opportunity to inspire any entrepreneur and yet…it is just the gateway of the whole Mexican entrepreneurial ecosystem."

Itzel Villa
General Manager of Entrepreneurs and Financing Programs at INADEM

In the global comparison, Mexico City's bright spots are its Global Connectedness and its cost-efficient and easy Access to Software Engineering Talent.

"When we launch a new FinTech program, we look for a mix of things: strong financial industry presence, an active entrepreneurial ecosystem, angel investors who understand the importance of investing in early-stage tech and… an educated regulator. Mexico City uniquely combines all these factors. We have a broad range of both local, regional and international industry players, a highly active and fast growing startup community, a nascent FinTech ecosystem with angel investors and VCs. And late last year the government announced the launch of a FinTech policy."

Nektarios Liolios
Co-Founder and CEO at Startupbootcamp FinTech & InsurTech

Mexico City startups work with an average of 1.7 Advisors with Equity, one of the 10 highest values in the world and an indicator that founders value advice from experienced people.

"Mexico's investment ecosystem has grown tremendously in the past decade. In 2008 there were only 3 active funds investing in startups, by 2012 the number had grown to 14 funds and today we have over 60 Seed and Venture Capital funds that are active. This is mainly because of the government's efforts in creating funds of funds to increase the number of investors in the country."

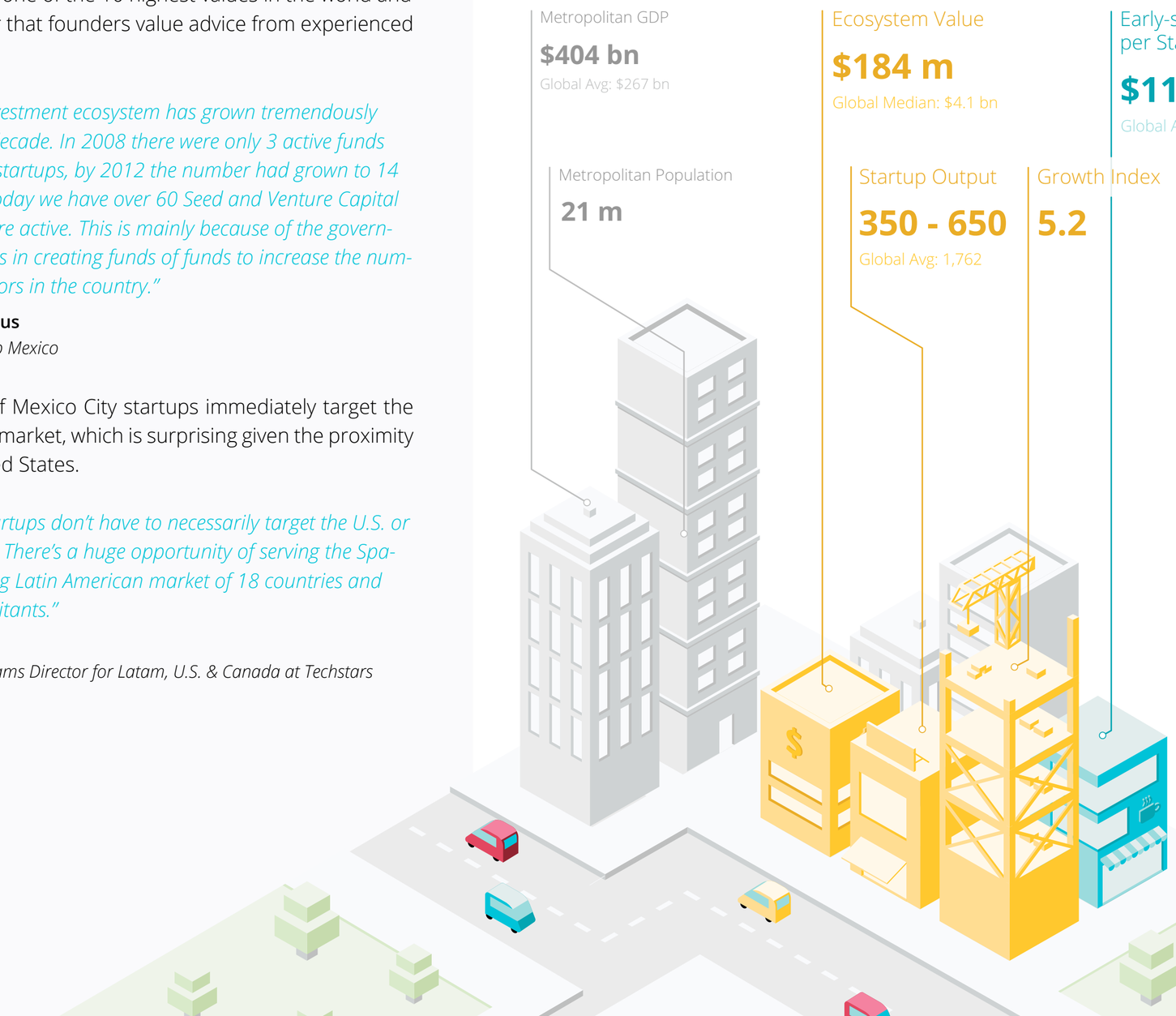
Marcus Dantus
CEO at Startup Mexico

Only 11% of Mexico City startups immediately target the U.S. or U.K. market, which is surprising given the proximity to the United States.

"Mexican startups don't have to necessarily target the U.S. or U.K. market. There's a huge opportunity of serving the Spanish speaking Latin American market of 18 countries and 380M inhabitants."

Aldo Aguirre
Startup Programs Director for Latam, U.S. & Canada at Techstars

Metrics



Ecosystem Demographics

Metropolitan GDP
$404 bn
Global Avg: $267 bn

Metropolitan Population
21 m

Ecosystem Performance

Ecosystem Value
$184 m
Global Median: $4.1 bn

Startup Output
350 - 650
Global Avg: 1,762

Growth Index
5.2

Funding

Early-stage Funding per Startup
$118 k
Global Avg: $252 k

Early-stage Funding Growth Index **4.5**
Global Avg: **5**

Experienced VC Firm Index **4.9**
Global Avg: **7**

Market Reach

Foreign Customers
13%
Global Avg: **23%**

10.2 Global Connections
Global Avg: **6.1**

Talent

Experienced Software Engineers
68%
Global Avg: **72%**

Experienced Growth Employees
62%
Global Avg: **60%**

Visa Success Rate
62%
Global Avg: **41%**

Startup Experience Index **4.5**

$25.5 k Software Engineer Salary
Global Avg: **49 k**

Global Avg: **5**

Founders Demographics

Women Founders
16%
Global Avg: **16%**

Immigrant Founders
22%
Global Avg: **19%**

Resource Attraction

Entrepreneurs **38**
Global Avg: **300**

Startups **9**
Global Avg: **83**

Montreal Canada

Montréal reconfirms its strength as an ecosystem in this year's ranking but sits outside of the top 20. The city doesn't have the size and hype of some of its peers, and many founders have found this to be an advantage—utilizing the slower place to develop deep customer understanding, taking the time to nail product market fit, and streamlining operations before prematuring scaling, as startups in other locales are often pressured to do.

At the moment, the Montréal startup ecosystem consists of an estimated 800-1,400 startups with several clusters seeing significant traction. Companies around the world race to develop self-driving cars and toys that babysit, yet Montréal, in particular, has developed a concentration of expertise in the area of artificial intelligence, largely thanks to the efforts of Université de Montréal professor Yoshua Bengio. The federal government joined in, stoking Montréal's AI movement with an additional $213 million grant alongside Microsoft and Google's generous contributions.[1]

Perhaps this aptitude for excellence stems from the healthy level of competition between its resident techies. The city hosts TV-worthy events like Mega Demo Days, which pits 12 tech startups against each other as they pitch their products for a shot at up to $1 million in seed funding. Indeed, the global startup community is excited to see more from Montréal after office rental app Breather raised $40 million in December 2016 and airfare finder app Hopper got a $82 million deal the same year—just a few of the wins for the energetic tech community.

Montréal is home to high quality VC firms and as an attractive city with a young population, their global connectedness is pretty good. On the downside, local startups still have a hard time accessing top talent. The Startup Performance looks promising overall due to the recent exit performance, which suggests that the ecosystem will be able to move through the ecosystem lifecycle going forward if required steps are taken at the right time.

Real Ventures *is the leading source of seed stage capital in Canada. Established in 2007, they have invested in over 150 companies across three funds.*

Centech powered by ETS *supports companies to grow on an international scale through mentorship, coaching, financial support, facilities, and access to high-level equipment and software.*

Other Ecosystem Member: Ville de Montréal

1 http://www.theglobeandmail.com/report-on-business/microsoft-investment-in-element-ai-bolsters-Montréals-status-as-ai-hub/article33294325/

Voices and Findings

"The Montréal ecosystem is still growing. The main actors work together to optimize our actions. The city is taking more and more space on advanced fields such as AI, IoT and healthcare. As the second student city in North America, you can easily find talent for a good price because of the low cost of living. Also, there are a lot of programs to support startup companies."

Richard Chénier
General Director at Centech

33% of Montréal-based founders are immigrants, the second 2nd highest rate in North America after Silicon Valley.

"Montréal has always been a very diverse and welcoming city, however, it's startup ecosystem is even more so. A lot of our VC firms and startups are founded or run by immigrants, in fact, 33 percent of our Founders are newcomers to Montréal."

Emma Williams
Director at Maison Notman House

The main reason startups move to Montréal is for better partnership opportunities.

"When I first started to get involved in the startup ecosystem over seven years ago, I was drawn by the energy and sense of community that was beginning to take form. Our diversity, our creativity, ingenuity, and desire to collaborate truly set us apart from most of the ecosystems around the world. We help entrepreneurs without asking too much in return, because we believe in our city, and the desire we share to reinvigorate our city by working together."

Noah Redler
Founder of Arche Innovation

While there is a strong sense of community and connectedness, local employees are relatively inexperienced. On average, only 49% of their growth teams have at least 2 years of startup experience. Engineers are more experienced, with 59% reporting at least two years of prior work experience at a startup.

"Montréal is such a generous and cohesive community. There are so many rich and diverse cultures represented, each of which have incredible entrepreneurs willing to support and give advice with no expectation of something in return. Startup culture in Montréal is like a team sport—innovators in this city band together to elevate the whole community."

Philippe Telio
Founder of StartupFest

Metrics

Ecosystem Demographics

Metropolitan GDP
$156 bn
Global Avg: $267 bn

Metropolitan Population
4.1 m

Ecosystem Performance

Ecosystem Value
$4.1 bn
Global Median: $4.1 bn

Startup Output
800 - 1.4k
Global Avg: 1,762

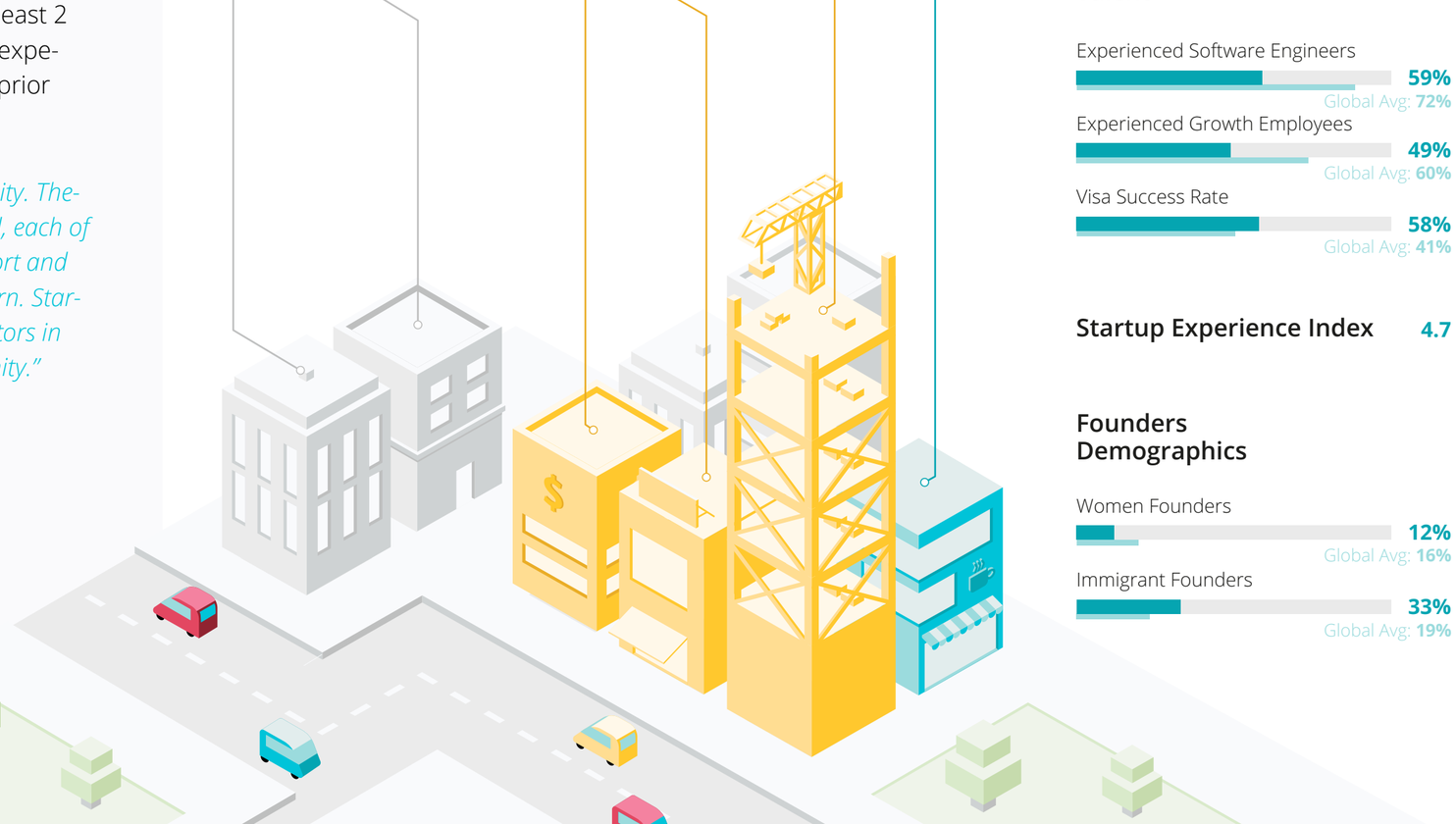
Growth Index
5.8

Funding

Early-stage Funding per Startup
$123 k
Global Avg: $252 k

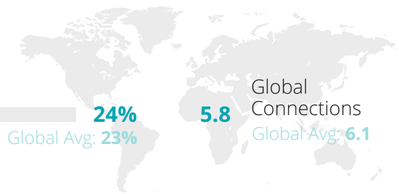
Early-stage Funding Growth Index **4.4**
Global Avg: **5**

Experienced VC Firm Index **8.0**
Global Avg: **7**



Market Reach

Foreign Customers
24%
Global Avg: **23%**



5.8 Global Connections
Global Avg: **6.1**

Talent

Experienced Software Engineers
59%
Global Avg: **72%**

Experienced Growth Employees
49%
Global Avg: **60%**

Visa Success Rate
58%
Global Avg: **41%**

Startup Experience Index **4.7**

$50 k Software Engineer Salary
Global Avg: **49 k**

Global Avg: **5**

Founders Demographics

Women Founders
12%
Global Avg: **16%**

Immigrant Founders
33%
Global Avg: **19%**

Resource Attraction

Entrepreneurs **170**
Global Avg: **300**

Startups **11**
Global Avg: **83**

Ottawa Canada

Winters in Ottawa may be long and cold, but few other cities take it in stride and use the frozen canal to skate to work. The capital city's one million residents are also uniquely bilingual—while most speak English, a significant number speak French as their primary language.

Ottawa's software sector is back on the map with 450-850 ambitious tech startups. An important feature of Ottawa's emerging startup ecosystem is its high concentration in tech, which accounts for 90% of its total VC investments. SaaS companies in the region are thriving, supported by specialized accelerator programs like LSpark but also events such as SaaS North—a two day conference for enthusiastic SaaS founders, investors, and executives to come together in order to learn, hobnob, and grow.

The ecosystem owes a lot of its success to success stories like Shopify. The company made headlines with its IPO in 2015 as it started trading at 60% above its offering price of $17, resulting in a stock market debut of almost $2 billion and one of the most successful North American IPOs of the year. Other startup success stories include PageCloud, which sold more than $1.5 million in advance orders before officially hitting the market, and You.I TV, the multimedia and design software that raised $12 million and $15 million in the last two rounds, sending sales skyrocketing.

Current success stories are one thing, but there is also much to look forward to as more venture capital funds moving into the city for the first time. The recent announcement by BlackBerry promises to make Canada's capital into a true city of the future with self-driving cars—a goal they aspire to make possible via a $100 million investment and 650 new jobs in Ottawa.

While Ottawa's startup ecosystem may not yet score high in its Performance Index metrics its bright spots are in its Global Connectedness and ample Access to Talent.

Invest Ottawa *is a non-profit that facilitates all life cycles of a technology company—from startup to international expansion.*

Voices and Findings

"Ottawa has been a driver of the innovation economy for decades, accounting for nearly 20% of the city's GDP. Our startup ecosystem has expertise in deep technologies, focusing on solving big problems primarily in the B2B space. Looking forward, Ottawa is poised to be a global leader in SaaS, IoT, AI, AV, NGN, 5G, cyber security, biotechnology, and many other key disruptive technologies. Canada's capital is blessed with a high quality of life, an abundance of green space and the highest level of education in the country."

Jon Milne
Managing Director at Innovation at Invest Ottawa

Ottawa startups have a Foreign Customer rate of 41%, well above the global average of 23%. 36% of Ottawa-based startups indicate that they are working on a globally unique product, suggesting an ambition to Go Global above the global average.

"The vibrancy of Ottawa's startup ecosystem is underpinned by the very high percentage of local engineering talent with direct and valuable startup experience."

Luc Lalande
Executive Director, Entrepreneurship Hub at University of Ottawa

73% of engineers working for an Ottawa-based startup have gained at least two years of prior startup experience, 1% above the global average. They are also the most formally educated in Canada, with 79% of their developers having an engineering degree.

"Ottawa's startup ecosystem owes its strength, in part, to the decades-long history of tech and thought leadership coming out of the established giants and world class universities. As this ecosystem grows from and continues to develop one of the best cities in the world to work and live, the future is bright for Ottawa's ability to attract and retain the best talent. However, the most important reason Ottawa's startup community keeps growing and succeeding is because we are grounded by an authentic desire to help and support one another."

Allan Wille
President and CEO at Klipfolio

Ottawa is tied for the 3rd highest percentage of startups being B2B-focused at 55%.

"As a newcomer to this ecosystem, it has exceeded my expectations. I have co-founded startups in Paris and San Francisco but have never experienced the level of support by both the institutions and individuals as I have experienced in Ottawa. It has a remarkable quality of life, incredible people, nearly limitless tech talent, amazing outdoors."

Solon Angel
Founder and CGO at MindBridge.ai

Metrics

Ecosystem Demographics

Metropolitan GDP
$58 bn
Global Avg: $267 bn

Metropolitan Population
1.3 m

Ecosystem Performance

Ecosystem Value
$1.3 bn
Global Median: $4.1 bn

Startup Output
450 - 850
Global Avg: 1,762

Growth Index
4.4

Funding

Early-stage Funding per Startup
$141 k
Global Avg: $252 k

Early-stage Funding Growth Index **4.6**
Global Avg: **5**

Experienced VC Firm Index **6.0**
Global Avg: **7**

Market Reach

Foreign Customers
42%
Global Avg: **23%**

7.2 Global Connections
Global Avg: **6.1**

Talent

Experienced Software Engineers
73%
Global Avg: **72%**

Experienced Growth Employees
64%
Global Avg: **60%**

Visa Success Rate
35%
Global Avg: **41%**

Startup Experience Index **4.8**

$56 k Software Engineer Salary
Global Avg: **49 k**

Global Avg: **5**

Founders Demographics

Women Founders
13%
Global Avg: **16%**

Immigrant Founders
20%
Global Avg: **19%**

Resource Attraction

Entrepreneurs **83**
Global Avg: **300**

Startups **30**
Global Avg: **83**

Quebec City Canada

Walking the cobblestone streets of Québec City is like stepping back in time to old Europe.

World class museums, bistros, and festivals beckon travelers and locals alike, and the city's Old Town neighborhood is a Unesco World Heritage site.

Although Montréal may get more attention as far as Canadian startups go, Québec City and its estimated 150-300 tech startups is widely known as one of the most aspiring startup cities. A quarterly increase in workshops, hackathons, cocktail hours, and conferences strengthen the community bonds any night of the week, while the Canadian Mentorship Challenge, the Startup Communities franchise, and the Startup Canada Awards are among the biggest tech events in the country.

The economic development agency Québec International is committed to supporting tech entrepreneurship while accelerator Le Camp works with them hands-on throughout their lifecycle. The city is home to many competitions and events such as Catapulte aimed at the gaming industry, as well as Startup Weekend, Hacking Health, and many more.

Québec City is a small and emerging ecosystem, but essentially not new to tech. Over the years it has produced a couple of large success stories like Taleo which was acquired by Oracle in 2005 for $1.9 billion. Recent success stories include Caven, which raised a $39 million Series D Round 18 months before, and Coveo, which raised a total $70 million to develop highly advanced enterprise search technology. As the ecosystem continues to grow, new stars like Poka emerge. The platform that allows companies to use video to share knowledge and collaborate in real time already raised $5 million in venture funding to date.

Overall, in this year's ranking Québec City naturally struggles to keep up with the big shots. However, its below average cost of engineers and the startups' ability to reach foreign customers are bright spots of the ecosystem.

Le CAMP *is a incubator-accelerator that offers businesses a diversity of services dedicated to supporting growth and mentorship from pre-startup to internationalization.*

Voices and Findings

"In Québec City, the vibrancy of our entrepreneurial community is a source of collective pride. Here we spare no effort to find ways of turning these ideas and projects into commercial successes. Thanks to our tightly knit ecosystem, Québec City is in a position to rival the major cities in the world."

Sébastien Tanguay
Director of Technology Entrepreneurship at Le Camp Québec

45% of startups state that their product is the first of its kind in the world or in a new category. The highest rate in Canada.

"Québec City is a very French city isolated a bit commercially from the rest of North America so entrepreneurs might compare their product only with other local businesses or only within the French Speaking World. My guess is that lots of these products have a comparable product in the U.S."

Khalil Zahar
Founder and CEO at Hykso

"Quebec is known for its innovation and creativity, hence the strong "being first" mentality. The startup ecosystem is also quite new, hence the low percentage of people working in such environments, but I believe it is growing extremely quickly and this should go up very promptly."

Jean-Michel Lebeau
CEO and President at Cortex

At 42%, almost half of Québec City engineers have already worked at a startup for at least two years.

"Québec City is proud to support its entrepreneurial ecosystem on three areas: by stimulating entrepreneurship initiatives, by facilitating the journey of entrepreneurs, and by financing entrepreneurial projects."

Jacques Vidal
Director of Entrepreneurship and Regional Development at Ville de Québec

Québec City indicates a comparably long Time to Hire an Engineer with a median of 90 days, compared to a global median of 41 days.

Metrics

Ecosystem Demographics

Metropolitan GDP
$33 bn
Global Avg: $267 bn

Metropolitan Population
800 k

Ecosystem Performance

Ecosystem Value
$764 m
Global Median: $4.1 bn

Startup Output
150 - 300
Global Avg: 1,762

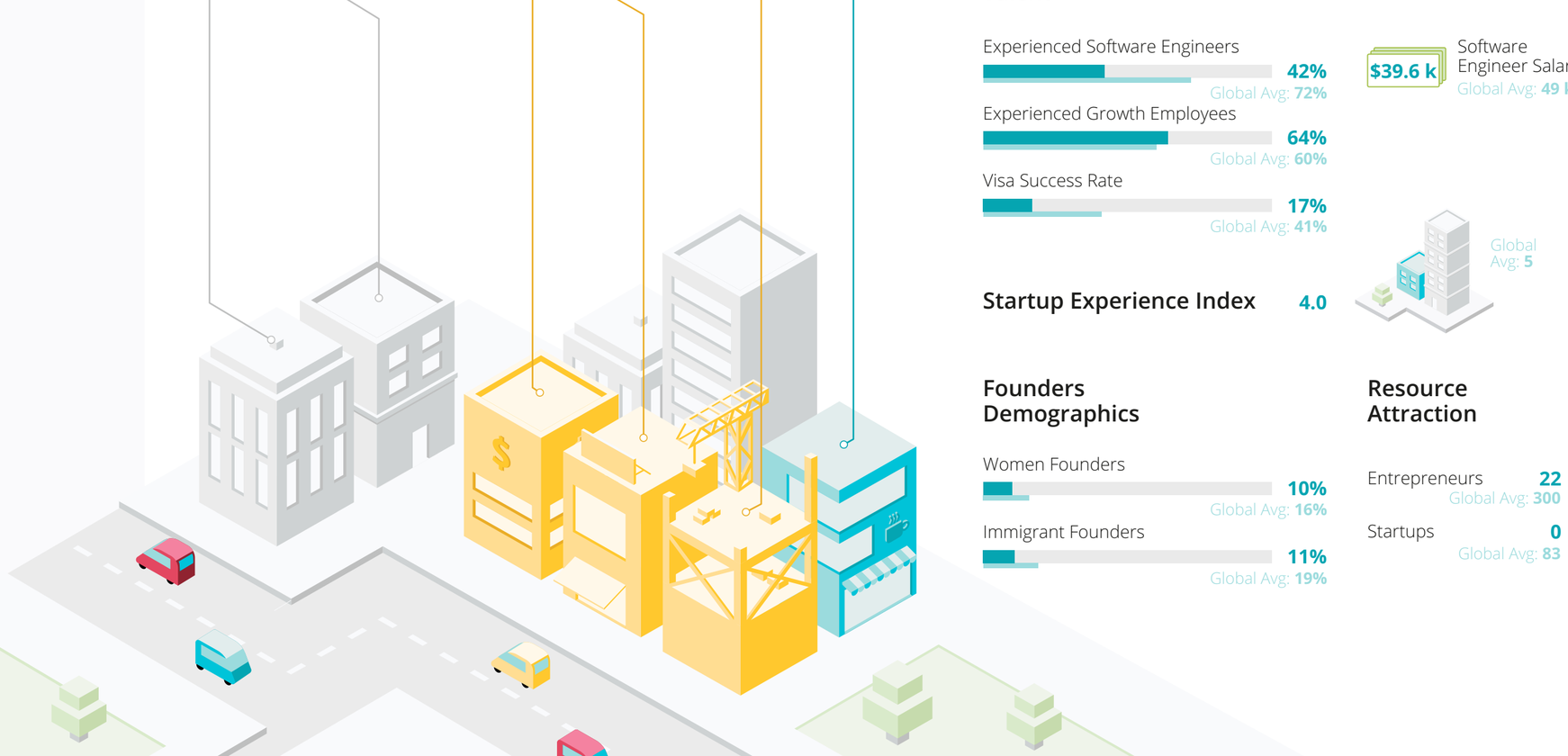
Growth Index
4.3

Funding

Early-stage Funding per Startup
$15 k
Global Avg: $252 k

Early-stage Funding Growth Index **4.4**
Global Avg: **5**

Experienced VC Firm Index **6.3**
Global Avg: **7**



Market Reach

Foreign Customers
36%
Global Avg: **23%**

5.3 Global Connections
Global Avg: **6.1**

Talent

Experienced Software Engineers
42%
Global Avg: **72%**

Experienced Growth Employees
64%
Global Avg: **60%**

Visa Success Rate
17%
Global Avg: **41%**

$39.6 k Software Engineer Salary
Global Avg: **49 k**

Startup Experience Index **4.0**

Global Avg: **5**

Founders Demographics

Women Founders
10%
Global Avg: **16%**

Immigrant Founders
11%
Global Avg: **19%**

Resource Attraction

Entrepreneurs **22**
Global Avg: **300**

Startups **0**
Global Avg: **83**

Santiago Chile

Chile is often regarded as the economic role model for Latin America, and Santiago is at the forefront as one of the leaders in technology entrepreneurship. The urban capital of Santiago accounts for one-third of the country's population and approximately 90% of the country's startup activity. As of today, Santiago is home to around 500-700 active tech startups.

The government's open-arms approach to foreign entrepreneurs as well as different government-backed entrepreneurship programs have led to a robust and growing local startup scene. Chile's government-backed entrepreneurship programs have supported close to 200,000 of its own entrepreneurs,[1] along with foreign entrepreneurs from around the world. Many of these techies will work with famed Startup Chile, which brings in 250-300 companies a year, and offers foreign entrepreneurs funding without equity loss in addition to a year's visa to develop and refine their ideas in Santiago. This is a welcomed change in times of increasingly inward oriented policy.

A series of long standing international events ensures the steady influx of international experts and talent to mingle with the ecosystem. Big international conferences like Seedstars World, MeetLatAm, and Digital Bank Latam ensure that Santiago gets the diversity, global connectedness, diversity, and knowledge exchange required for any startup to thrive.

The acquisition of ClanDescuento by Groupon marked the country's first major exit to kickstart the city's entrepreneurial journey. Subsequent success stories include Corfu, the online food market that ships to four continents, and Circuito Antártico, the tourism company that offers cruises to the Antarctic. All signs indicate that Santiago's global-first strategy is working. If so, the Chilean society will become a more connected and more entrepreneurial one over time.

Corfo *is a public agency working with the Ministry of Economy to promote Chile's growth by focusing on local innovation and entrepreneurship, while also inviting worldwide talent to develop startups in Chile.*

1 https://techcrunch.com/2016/10/16/a-look-into-chiles-innovative-startup-government/

Voices and Findings

"Santiago's ecosystem has grown at high speed for the last 10 years, becoming one of the strongest and most diverse ones in Latin America and the world. With more than 1,000 startups supported by the government per year, it is also one of the most dynamic in seed stage. The main challenges are clear: The R&D is still low (but growing) and there is still an issue with the establishment of a market to buy and sell equity from startups. Now they are living on a tipping point where the 'door to Latin America' is achieving maturity."

Tadashi Takaoka Caqueo
Head of Entrepreneurship at Corfo

Santiago is outside the global top 20, but shines with regards to its net Global Resource Attraction, thanks to innovative startup policies, its low engineering salary, and high level of access to engineers with prior experience in a startup.

"In LATAM, investors are used to funding local and traditional projects, instead of global tech businesses with high risk. The challenge is building trust, speaking the same language, and changing their mindset. It's a work in progress and we are on the right path. We'll see the real change in the next 2-3 years."

Rocio Fonseca
Executive Director at Startup Chile

86% of developers have received formal education in software engineering and graduated from a university—the highest ratio found in North and South America.

"Many companies are born in the local ecosystem every year, but few survive, and even fewer grow. Few entrepreneurs see the value in bringing on experienced people to fill key roles and making them part of the company. Even fewer see the necessity to aim for explosive growth or make themselves into global companies, which results in the indicators that we see in this report."

Maria de los Angeles Romo
Managing Director at Endeavor Chile

8% of Santiago-based startups offer a stock option plan to all employees, whereas the global average lies at 26%.

"Most investors are thinking of Brazil when they are thinking of South America due to its size. However, Chile is very well positioned to be the innovation hub of South America as it is an ideal testing ground for pilots and has an incredible ease of doing business."

Jamie Riggs
Executive Director of emprendeFCH

Metrics

Ecosystem Demographics

Metropolitan GDP
171 bn
Global Avg: $267 bn

Metropolitan Population
6.7 m

Ecosystem Performance

Ecosystem Value
N/A
Global Median: $4.1 bn

Startup Output
500 - 700
Global Avg: 1,762

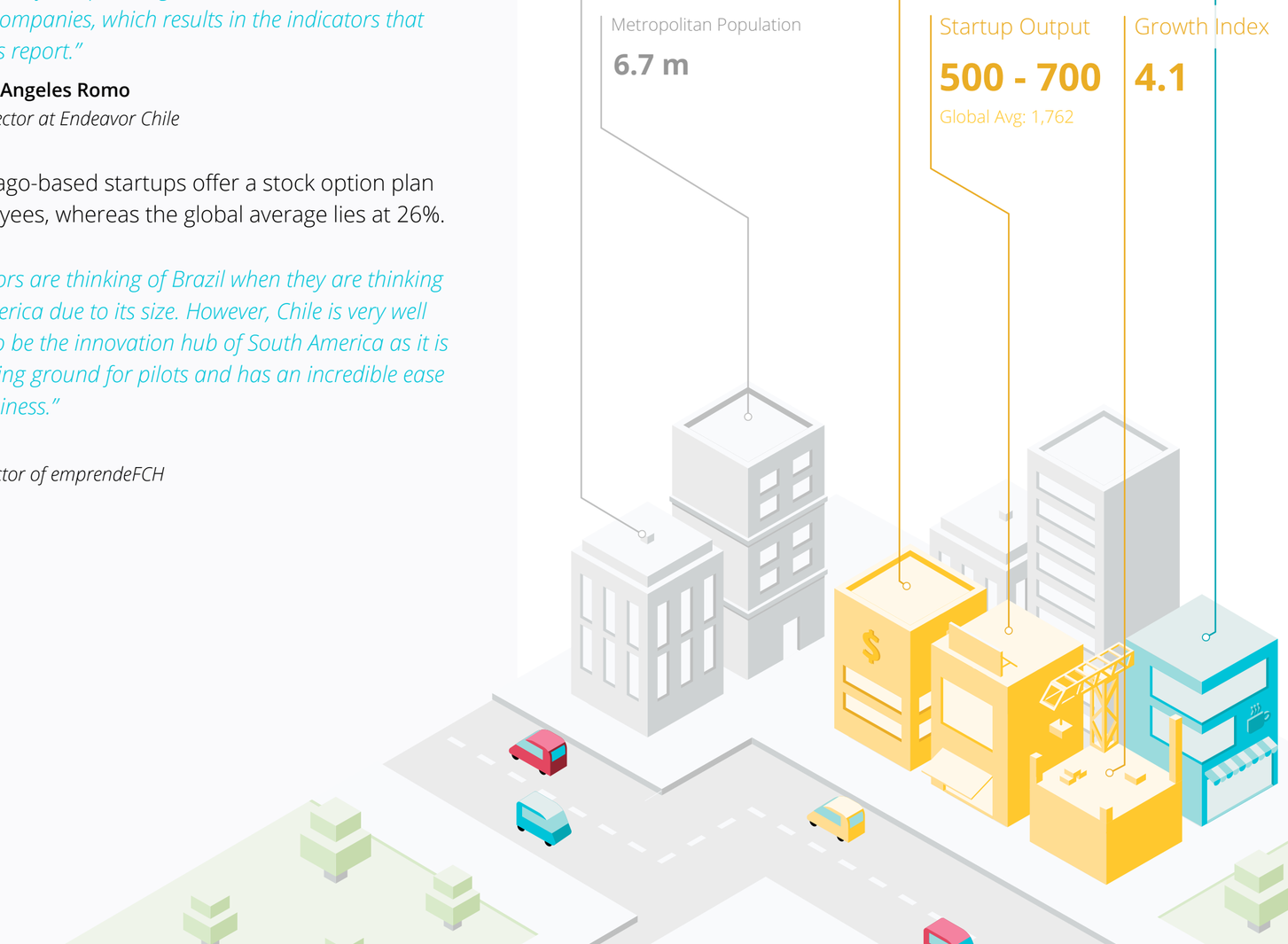
Growth Index
4.1

Funding

Early-stage Funding per Startup
N/A
Global Avg: $252 k

Early-stage Funding Growth Index **4.2**
Global Avg: **5**

Experienced VC Firm Index **5.3**
Global Avg: **7**



Market Reach

Foreign Customers
12%
Global Avg: **23%**

2.6 Global Connections
Global Avg: **6.1**

Talent

Experienced Software Engineers
76%
Global Avg: **72%**

Experienced Growth Employees
62%
Global Avg: **60%**

Visa Success Rate
35%
Global Avg: **41%**

$25.3 k Software Engineer Salary
Global Avg: **49 k**

Startup Experience Index **4.2**
Global Avg: **5**

Founders Demographics

Women Founders
12%
Global Avg: **16%**

Immigrant Founders
21%
Global Avg: **19%**

Resource Attraction

Entrepreneurs **122**
Global Avg: **300**

Startups **47**
Global Avg: **83**

São Paulo
Brazil

Boasting of 1,600-2,900 active tech startups, São Paulo is home to the largest and most mature startup ecosystem in South America. The Brazilian tech epicenter is also one of the 15 largest ecosystems in the world. At the same time São Paulo is among the cities that fell the farthest in this year's global ranking, from 12th in 2015 to now outside the top 20. Economic challenges and political turmoil have undoubtedly weakened the ecosystem, but also strong newcomers from China and Sweden made it impossible to not lose ground in the global comparison.

The willingness and energy to reverse this trend is undoubtedly there. The city of São Paulo recently announced a program with which it aspires to reduce the time required to incorporate most types of ventures to less than 7 days. Federal and local government have also led the establishment of Innovatech, a provider of online mentorship, and other service providers.

Government leadership remains sparse while private players continue to drive growth. Organizations like Endeavor Brazil and Dínamo, a movement to promote policy changes to foster innovation and startups, are just two important examples. Startup Farm, one of Brazil's most important accelerators, has already invested $100 million into well over 200 startups. YouTube Gaming, Instagram and other large technology companies have committed to making São Paulo their Latin American headquarter while Google announced its first batch of resident startups last year.

As a result, the ecosystem continues to produce startup success stories like no other Latin American ecosystem. Real estate startup VivaReal has already raised approximately $75 million, making it one of the largest Brazilian startups. Rising stars coming out of the ecosystem include DogHero and Exact Sales, which have raised $3.1 million and $1.2 million, respectively.

In this year's ranking, São Paulo's strongest factor is Performance-driven by its high number of startups that are performing reasonably well. The Funding environment appears to be a major hindrance, and while the Engineering Talent is low cost, São Paulo doesn't rank well on the Access sub-factor. The ecosystem's potential is undeniable, but the assessment also outlines that the city can do better at materializing the hype.

Endeavor Brazil: *With the support of an unrivaled network of seasoned business leaders, Endeavor works to catalyze long-term economic growth by selecting, mentoring, and accelerating high-impact entrepreneurs worldwide.*

Voices and Findings

"The São Paulo ecosystem benefits from its economic power and stands out for bringing together the main initiatives to stimulate the startup ecosystem. Furthermore, São Paulo is the country's financial hub and holder of the biggest consumer market, making it extremely appealing for high-impact entrepreneurs."

Juliano Seabra
Managing, Director at Endeavor Brazil

24% of São Paulo startups reported that they are offering a product that is the first of its kind globally. In relation to the overall average of 34%, this outlines the modesty of Sao Paulo startups to start and scale a startup with global footprint.

"The large size of Brazilian internal market and the small number of English speakers are at the same time a curse and a blessing. They create barriers to foreign competition, as long as slow down the globalization of local solutions"

Felipe Matos
Founder and Head of Ecosystem at Startup Farm

7% of customers for startups in São Paulo come from outside of the country, indicating a strong challenge to reach the global market. Only 9% of São Paulo startups immediately target the U.S. or U.K. market, well below the global average of 36%.

"São Paulo has a fast developing startup ecosystem and a growing local market which has matured over the past few years. Nevertheless, entrepreneurs still need stronger stimulus to build startups aimed at international markets and the right mindset to take their businesses global from day one."

André Victor Barrence
Head of Campus São Paulo at Google

The main reason for entrepreneurs or startups to move to São Paulo are better sales and marketing opportunities.

"Brazil is a huge country so our startups' entrepreneurs tend to have a very local mindset, not focusing on international opportunities. Besides, the entrepreneurship culture here is still very recent, so the employees don't have a very strong owner mindset as in other countries."

Guilherme Junqueira
Co-Founder of ABStartups and CEO of Gama Academy

Metrics

Ecosystem Demographics

Metropolitan GDP
$431 bn
Global Avg: $267 bn

Metropolitan Population
21 m

Ecosystem Performance

Ecosystem Value
$3.45 b
Global Median: $4.1 bn

Startup Output
1.6 - 2.9 k
Global Avg: 1,762

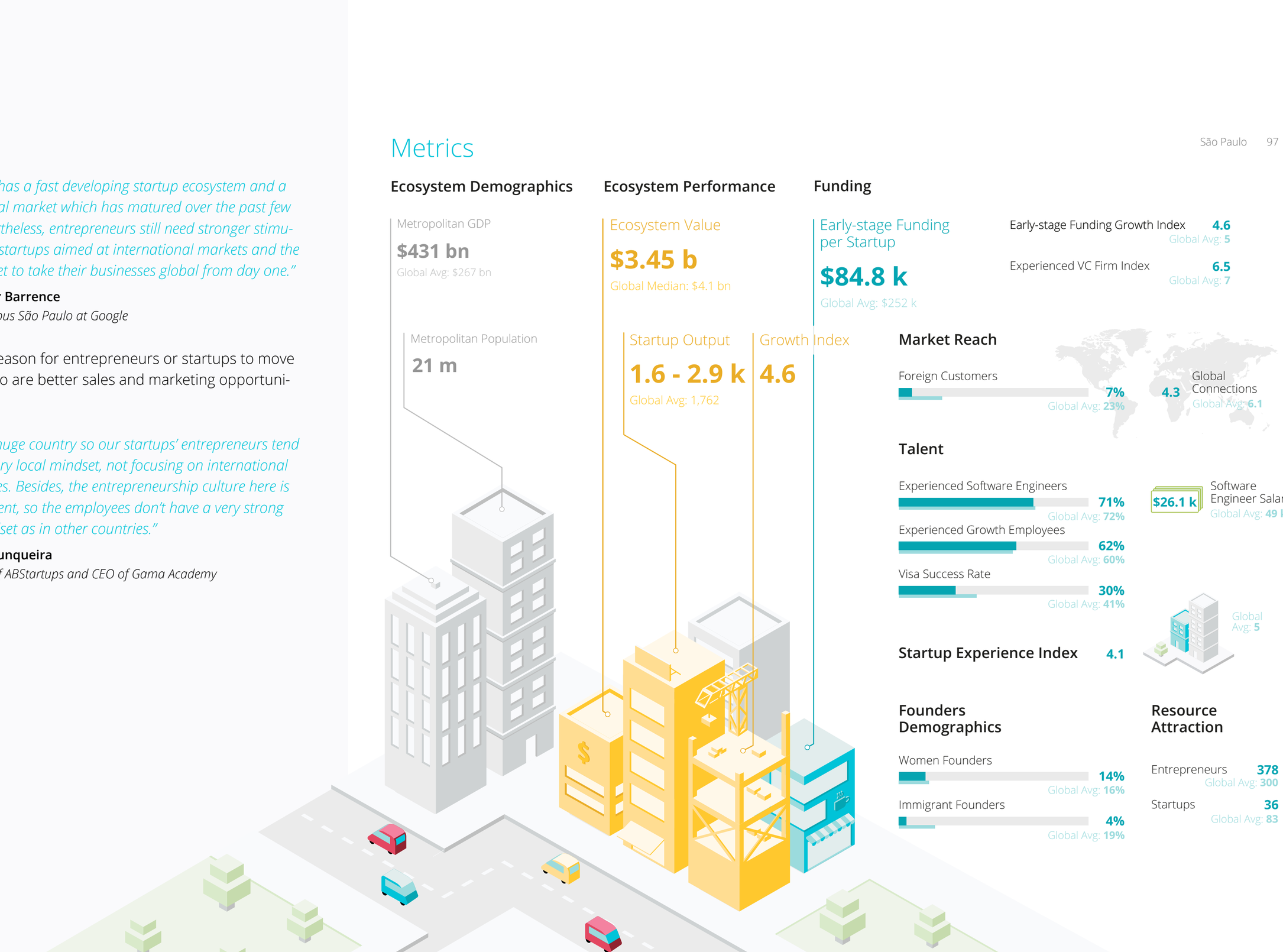
Growth Index
4.6

Funding

Early-stage Funding per Startup
$84.8 k
Global Avg: $252 k

Early-stage Funding Growth Index **4.6**
Global Avg: **5**

Experienced VC Firm Index **6.5**
Global Avg: **7**



Market Reach

Foreign Customers
7%
Global Avg: **23%**

4.3 Global Connections
Global Avg: **6.1**

Talent

Experienced Software Engineers
71%
Global Avg: **72%**

Experienced Growth Employees
62%
Global Avg: **60%**

Visa Success Rate
30%
Global Avg: **41%**

$26.1 k Software Engineer Salary
Global Avg: **49 k**

Startup Experience Index **4.1**

Global Avg: **5**

Founders Demographics

Women Founders
14%
Global Avg: **16%**

Immigrant Founders
4%
Global Avg: **19%**

Resource Attraction

Entrepreneurs **378**
Global Avg: **300**

Startups **36**
Global Avg: **83**

St. Louis USA

St. Louis' Midwestern work ethic, a penchant for forward thinking, and an influx of funding is all working together to make St. Louis an emerging contender within the tech world. St. Louis is one of the faster growing startup scenes in the U.S. Its tech scene now houses 200-350 active startups, occupying several rehabbed buildings to form St. Louis' hip tech cluster. This activity has inspired a new crop of founders, with new business venture creation rising steadily every year since 2009. The highly ranked Washington University of St. Louis has played a critical role in the turnaround of this old industrial city, supplying an influx of engineering talent and cutting edge science.

St. Louis is poised to make itself the magnet for talented entrepreneurs from under-represented backgrounds. Recent support came from the Kauffman Foundation to address racial and gender equity in the entrepreneurial startup community. The city is also home to women-only Prosper Capital, a nonprofit that provides entrepreneurial training and mentorship to women.

The city is dotted with unique ventures like the new and notable St. Louis Fashion Incubator, which offers six emerging designers a two-year residency. Adding to the boomtown culture of experimentation is TechShop, a new addition to the scene that supplies machinery for tinkering alongside corporate team-building events and classes in electronics, silkscreen printing, and laser cutting.

St. Louis' balanced Index shows a mix of strengths and opportunities for growth. On one hand the ecosystem has an outperforming exit sub factor, but on the other hand, a relatively low number of active startups and valuations. Their Early-Stage Funding growth outperforms their overall performance, which could support the prediction of comparably strong ecosystem development through attraction of new startups to the region. However, their Global Connectedness scores are comparably low, meaning their growth likely has to come from increased entrepreneurial interest in the mid-west.

Arch Grants *is a nonprofit that manages a Global Startup Competition which awards $50,000 equity-free grants to entrepreneurs who are excited to build their brands in St. Louis.*

Voices and Findings

"The St. Louis startup ecosystem is at a pivotal moment regionally and statewide. Venture-backed and bootstrapped companies are poised for growth. Emerging and established business leaders must find more ways to collaborate for that growth to happen."

Ginger Imster
Executive Director at Arch Grants (now VP Innovation and Entrepreneurship at the St. Louis Economic Development Partnership)

St. Louis startups have 1.82 Advisors with Equity per Startup, 4th highest in the world, and above Silicon Valley at 1.78.

"The strength of St. Louis' ecosystem is that we work together—across innovation centers and programs, with corporate, government and university partners—to ensure we provide a fertile place for innovation and entrepreneurship, with a shared goal to make St. Louis the best place to start and grow a business. We provide attention, access, and affection. No city in the world does it like St. Louis does."

Patricia Hagen
President and Executive Director at Technology Entrepreneur Center/T-Rex

"St. Louis is characterized by tremendous growth in venture funding over the past five years. St. Louis has rapidly grown from nearly nothing to one of the leading entrepreneurial ecosystems in the Midwest."

Clifford Holekamp
Co-Founder and General Partner at Cultivation Capital

St. Louis has the 7th highest Percentage of Engineers who are graduates of local universities, at 93%. This is well above the U.S. average of 60%.

"The potential of St. Louis's ecosystem is driven by the local, world-class universities that attract students from all over the world. Fostering entrepreneurship has become a priority for the universities. I think this will have a positive impact on the number of successful startup companies in St. Louis over the upcoming decade."

Abby Cohen
Co-Founder and Co-CEO at Sparo Labs

16% of St. Louis startups report having moved from another U.S. city, twice the average for U.S. ecosystems.

Metrics

Ecosystem Demographics

Metropolitan GDP
$150 bn
Global Avg: $267 bn

Metropolitan Population
2.9 m

Ecosystem Performance

Ecosystem Value
$761 m
Global Median: $4.1 bn

Startup Output
200 - 350
Global Avg: 1,762

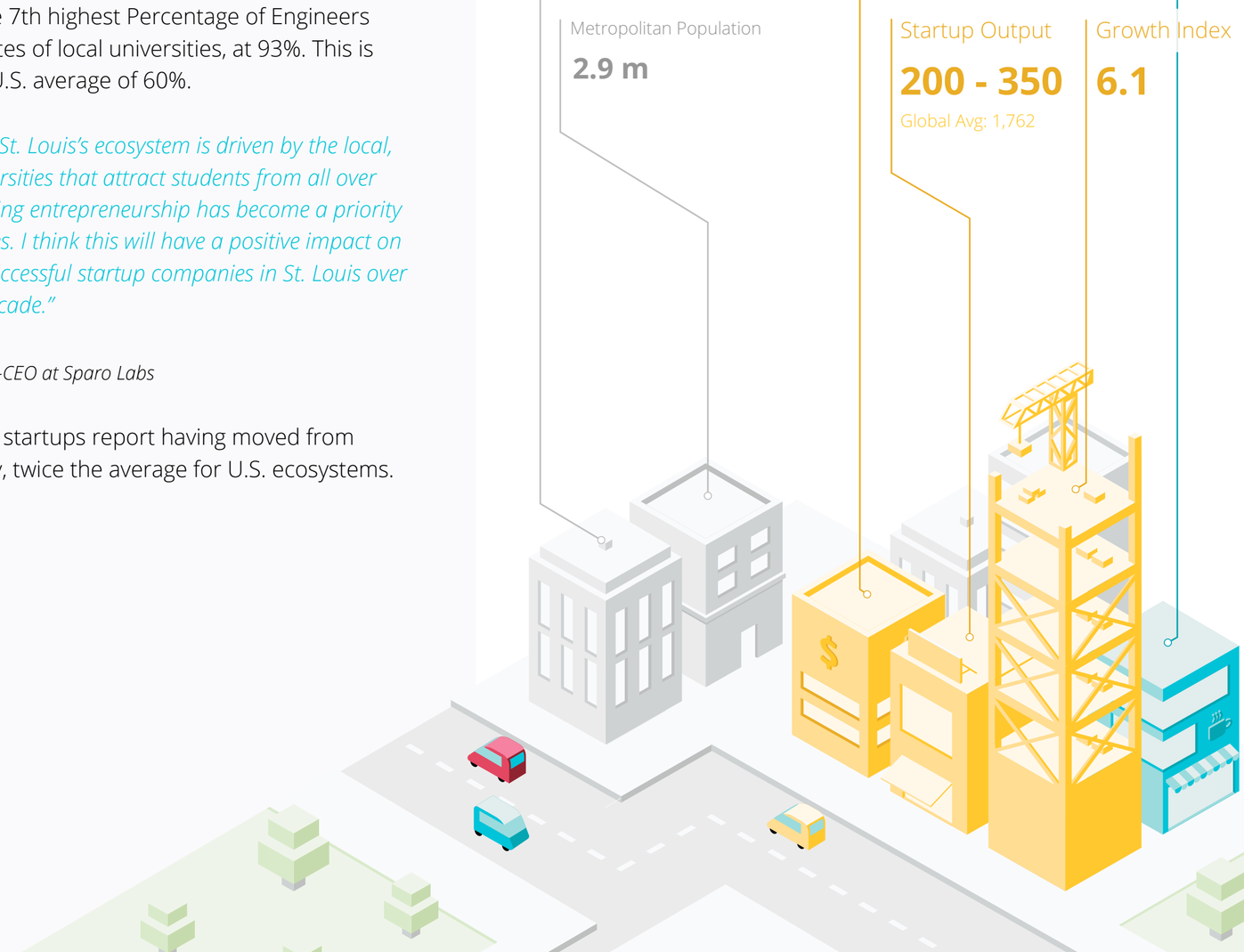
Growth Index
6.1

Funding

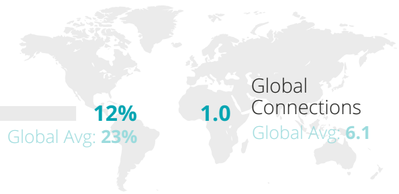
Early-stage Funding per Startup
$159 k
Global Avg: $252 k

Early-stage Funding Growth Index **4.5**
Global Avg: **5**

Experienced VC Firm Index **5.4**
Global Avg: **7**



Market Reach



Foreign Customers **12%**
Global Avg: **23%**

Global Connections **1.0**
Global Avg: **6.1**

Talent

Experienced Software Engineers **65%**
Global Avg: **72%**

Experienced Growth Employees **51%**
Global Avg: **60%**

Visa Success Rate **66%**
Global Avg: **41%**

Software Engineer Salary **$75 k**
Global Avg: **49 k**

Global Avg: **5**

Startup Experience Index **4.5**

Founders Demographics

Women Founders **19%**
Global Avg: **16%**

Immigrant Founders **10%**
Global Avg: **19%**

Resource Attraction

Entrepreneurs **43**
Global Avg: **300**

Startups **14**
Global Avg: **83**

Regional Clusters

Europe

Barcelona

Estonia

Frankfurt

Helsinki

Jerusalem

Lisbon

Malta

Moscow

Barcelona Spain

Rich in heritage and history, Barcelona is one of the world's leading tourist, economic, trade fair, and cultural centers. The city is economically the strongest region of Spain, so it's no surprise that funding in the region is plentiful. In 2015, 56% of all euros invested in Spain went to Catalonia-based startups. The vast majority of this venture capital came from international investors, at 85%, but there is also a vibrant and continuously developing business angel community. Barcelona alone is currently home to an estimated 900-1,100 tech startups.

Between exits and incubators, Barcelona is also bustling with exciting events to add to its long list of attributes. Pier 01, a brand new startup community hub opened in 2016, and is the home of the Barcelona Tech City, a nonprofit with the goal of showcasing the city as a main hub in the global tech scene. Currently this singular building houses almost 100 organizations: startups, incubators, accelerators, venture builders, government agencies, and big corporate innovation labs. The space also hosts industry conferences, meetups, and workshops, all efforts aimed at making it the mainstay of the city's digital sector.

Owing to its pool of local and international talent, the last few years have been good for this Mediterranean city. In 2016 Barcelona's saw its largest exit in its history with Privalia, an online-fashion outlet, acquired by French Vente-Privee for around $560 million. The latest exit is Social Point, the gaming giant that recently sold to the American Take-Two for $250 million. In the last 12 months Barcelona's tech ecosystem has mobilized over $1 billion. With news like these, Barcelona can now officially add "startup hotbed" to its long list of charms.

Barcelona is one of the ecosystems narrowly on the outside of the top 20. As mentioned above it has had some big exits recently, but other performance factors indicate that this level may be hard to sustain. Barcelona's Funding metrics are on par with its overall ranking. It ranked strong strong for connectedness with other startup ecosystems, but its Market Reach is one of the things that will have to be tackled going forward.

Catalonia Trade & Investment *is the Catalan Government agency for foreign investment and business competitiveness. It promotes startup innovation in over 110 markets with 39 offices around the world.*

Voices and Findings

"Barcelona is one of Europe's most dynamic startup ecosystems, concentrating a balanced combination of industrial tradition and emerging ICT activities. A competitive business environment together with a creative mindset give birth to plenty of ambitious startups. International investors and talent are also attracted by these features. Catalonia is just the perfect place to start and grow a global business."

Núria Betriu
DGI and CEO of Catalonia Trade & Investment, Government of Catalonia

Barcelona had the third fastest exit growth rate of all ecosystems, behind only Montreal and St. Louis. This statistic favors smaller ecosystem, but it is a strong positive signal nonetheless.

"Barcelona has been an entrepreneurial city along the history and, with the digital revolution, has become one of the most active ecosystems in Europe with serial entrepreneurs, important exits, business angels professional investors and international talent."

Jesús Monleon
Founder and Partner at Seedrocket 4Founders Capital

Barcelona has the 2nd highest percentage of their software development team having a software engineering degree at 87%. Silicon Valley is at 81%.

"Barcelona is not only at the forefront of the Smart City movement, the Catalan capital also attracts a huge amount of engineering and tech talent."

Ignasi Vilajosana
CEO at Worldsensing

"Barcelona has a vibrant entrepreneurial ecosystem. Money goes where talent and good businesses are, and this is today the case of Barcelona."

Daniel Sanchez
General Partner at Nauta Capital

Barcelona founders have the 5th highest percentage of founders over 30, at 89%.

Only 9.9% of customers for startups in Barcelona come from outside of the continent—one of the lowest rates in the world—which correlates with a lesser ability to reach global markets.

Metrics

Ecosystem Demographics

Metropolitan GDP
$171 bn
Global Avg: $267 bn

Metropolitan Population
5.4 m

Ecosystem Performance

Ecosystem Value
$6.4 bn
Global Median: $4.1 bn

Startup Output
900 - 1.1k
Global Avg: 1,762

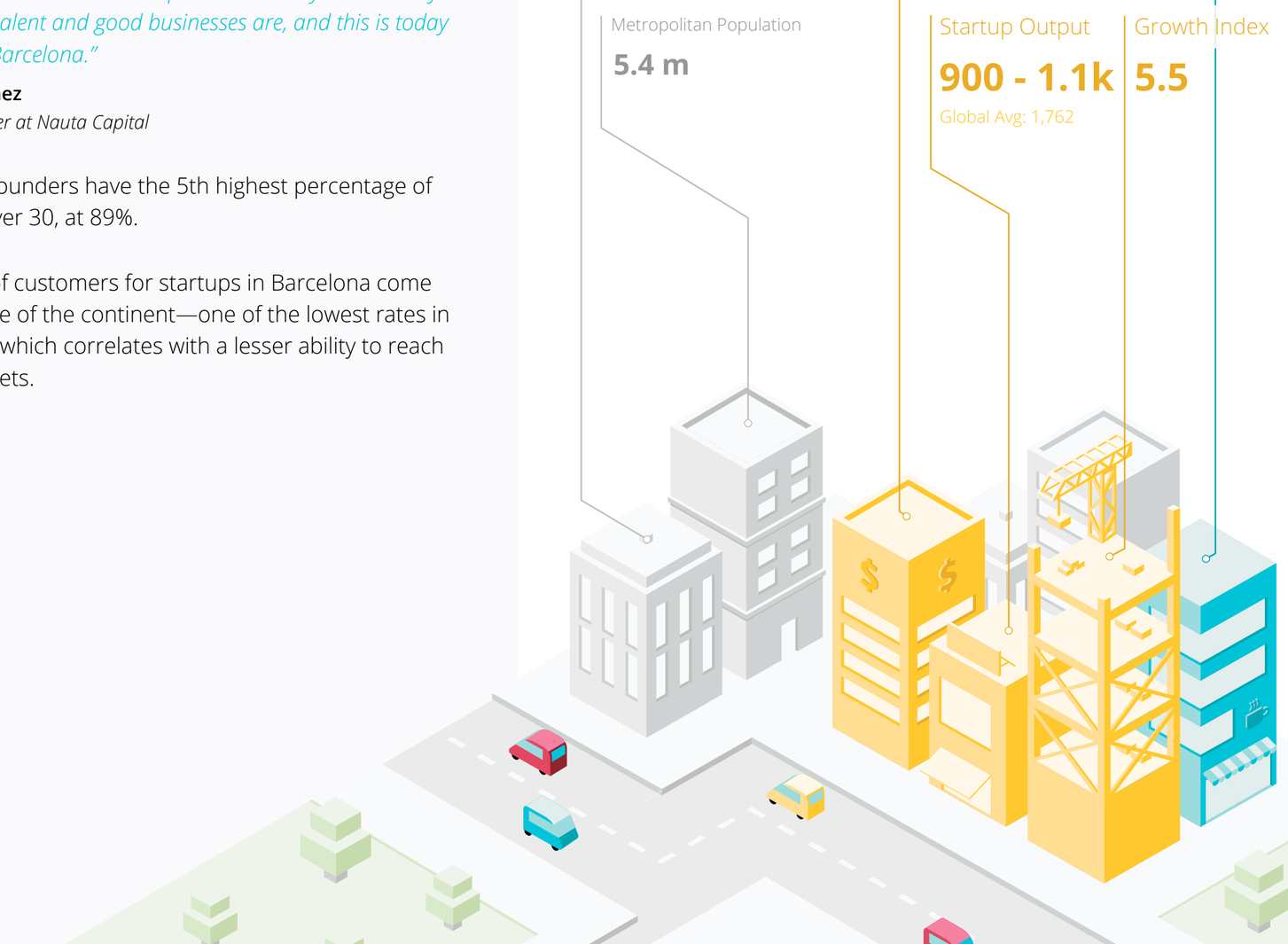
Growth Index
5.5

Funding

Early-stage Funding per Startup
$223 k
Global Avg: $252 k

Early-stage Funding Growth Index **4.7**
Global Avg: **5**

Experienced VC Firm Index **6.2**
Global Avg: **7**



Market Reach

Foreign Customers
24%
Global Avg: **23%**

6.4 Global Connections
Global Avg: **6.1**

Talent

Experienced Software Engineers
62%
Global Avg: **72%**

Experienced Growth Employees
57%
Global Avg: **60%**

Visa Success Rate
41%
Global Avg: **41%**

$37 k Software Engineer Salary
Global Avg: **49 k**

Startup Experience Index **4.9**

Global Avg: **5**

Founders Demographics

Women Founders
14%
Global Avg: **16%**

Immigrant Founders
10%
Global Avg: **19%**

Resource Attraction

Entrepreneurs **160**
Global Avg: **300**

Startups **10**
Global Avg: **83**

Estonia

Estonia might just be one of the smallest, leanest, and most exciting ecosystems one could hope to encounter. Their enthusiasm and forward-thinking earned them the nickname "Estonian Mafia". They run things, and they run them well — especially their 300-900 tech startups, thanks to a remarkably tech-savvy government, a global-first mindset, and the ability to incorporate a company online in less time than it takes to drink a cup of coffee.

Its unique e-residency program allows international founders to set up online businesses under Estonia's laws—welcoming in digital nomads who want a slice of Europe's wide market, without ever needing to set foot in the country. For non-EU nationals who do want to live in the country, Estonia recently rolled out their Startup Visa program—one of about ten in the world created to attract the best international talent available. Further supporting its startups, last year Estonia launched the EstFund,[1] with an allotted $64.5 million ready to disburse.

Raising the biggest seed round of any Estonian startup thus far is Starship Technologies, purveyors of robots that deliver goods to your door. The deal secured for $17.2 million and coincided with a partnership with Mercedes-Benz to develop and test the "Robovan," the world's first autonomous delivery vans. We also saw Grabcad bought up by the world's largest 3D printing company, Stratasys, and farm management software provider VitalFields acquired by The Climate Corporation, a subsidiary of Monsanto.

Estonia's mix of smart infrastructure, boundary-busting visa programs, startup solidarity (and even their mafia-related humor) assures the world that they'll bring us more game-changing technology like they did with Skype and are now currently doing with Transferwise, who offers an inexpensive way to transfer money abroad.

Estonia does not rank close to the top of the Index in terms of Startup Experience and Performance, but Early-Stage Funding inflows, strong Global Connectedness and low cost, high quality engineering Talent indicate the ecosystem is on the rise.

Startup Estonia *is a governmental initiative that unites the best of startups, incubators, accelerators, and the private and public sector in order to make Estonia the birthplace of many more startup success stories.*

1 https://www.innovationtrends.eu/news/investment-plan-europe-new-%E2%82%AC60m-fund-estonian-smes

Voices and Findings

"Signs that the Estonian startup ecosystem is growing in both quality and quantity are becoming clearer by the year, with more Estonian startups raising ever larger funds, expanding internationally and creating jobs at a fast pace--all of which emphasises the significant economic impact that the startup ecosystem has on this small country."

Mari Vavulski
Head of Startup Estonia

Estonian products are on average offered in 2.3 languages, the second highest value in the world, second only to Shanghai at 3. Estonian startups immediately Go Global at a higher rate than any other ecosystem outside of the U.S. or U.K. 70% of Estonian startups enter the U.S. or U.K. market from the get go.

"If you come from such a tiny nation of 1.3 million, it is only natural that you can't build a company for the miniature internal market but have to go global from the start. If just a million people speak your mother tongue, Estonian, then of course you will translate your products into as many other languages as you can. Skype was available in 27 languages in its first year."

Sten Tamkivi
Co-Founder & CEO at Teleport

Estonian startups have the world's highest success rate of obtaining Visa for foreign candidates at 84.5%, more than double the success rate than the global average (41%).

"Access to talent is crucial when aiming to build a strong technology scene. Luckily the policymakers in Estonia have understood that and are encouraging to bring more knowledge to the market. The short-term work registration is approved in 7-10 days, which means that a foreign talent whom you are interviewing today could potentially sit in your Estonian office in two weeks."

Karoli Hindriks
Founder at Jobbatical.com

The Estonian ecosystem ranks in the lower tier for Startup Experience of their Growth Teams, with only 40% of Growth Employees having previously gained at least 2 years of work experience in a startup.

"There is a saying by Ernest Hemingway that in every harbor there is an Estonian and it must be true. The startup founders of the region are supportive and the connections have a massive impact when it comes to global expansion."

Martin Gorosko
Startup Incubator Manager at Tallinn Science Park Tehnopol

Metrics

Ecosystem Demographics

Country GDP
$23 bn
Global Avg: $267 bn

Country Population
1.3 m

Ecosystem Performance

Ecosystem Value
$1.5 bn
Global Median: $4.1 bn

Startup Output
300 - 900
Global Avg: 1,762

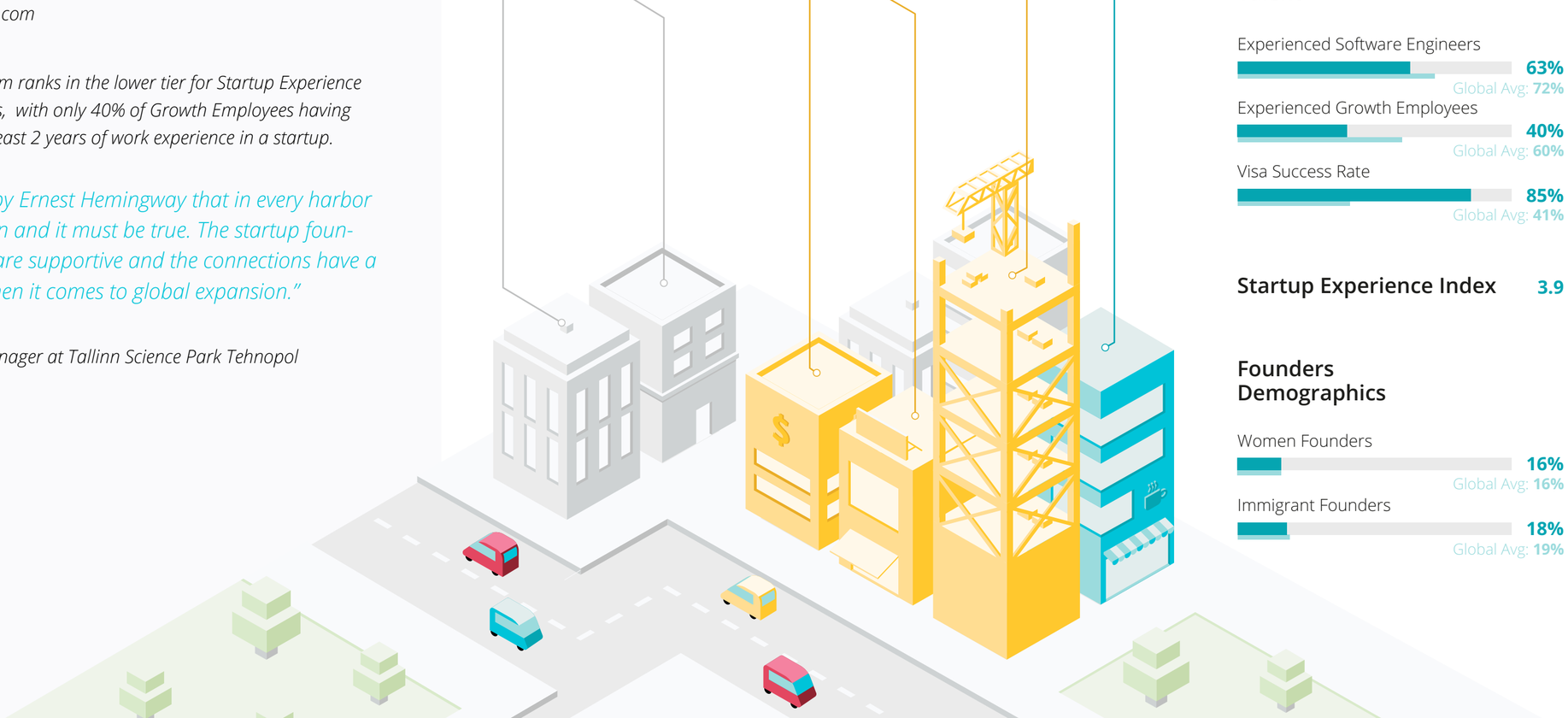
Growth Index
5.6

Funding

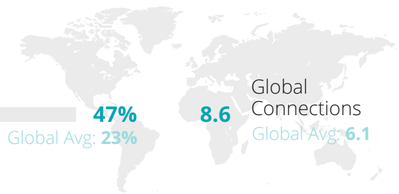
Early-stage Funding per Startup
$272 k
Global Avg: $252 k

Early-stage Funding Growth Index **4.5**
Global Avg: **5**

Experienced VC Firm Index **3.1**
Global Avg: **7**



Market Reach



Foreign Customers
47%
Global Avg: **23%**

8.6 Global Connections
Global Avg: **6.1**

Talent

Experienced Software Engineers
63%
Global Avg: **72%**

Experienced Growth Employees
40%
Global Avg: **60%**

Visa Success Rate
85%
Global Avg: **41%**

Startup Experience Index **3.9**

$19 k Software Engineer Salary
Global Avg: **49 k**

Global Avg: **5**

Founders Demographics

Women Founders
16%
Global Avg: **16%**

Immigrant Founders
18%
Global Avg: **19%**

Resource Attraction

Entrepreneurs **60**
Global Avg: **300**

Startups **12**
Global Avg: **83**

Frankfurt Germany

For years Frankfurt has held the title as the major financial center of the European continent, laying claim to mighty financial institutions such as Deutsche Bank and the European Central Bank. It's only fitting then that the city would look to FinTech to boost its economy from the world of banking as usual into the digital world of startups and tech companies. Among its estimated 200-300 currently active tech startups, Frankfurt is home to more than 80 FinTech companies.[1]

Frankfurt's reputation for FinTech is expanding to include other high tech industries. Clark, a company that uses algorithms to optimize insurance, closed $13.8 million in Series A funding in 2016, while Ginmon, a public investment company managed by state-of-the art software technology, closed a financing round in the 7-digit Euro range. Another promising startup from a completely different category is smartphone-based app Cobi, which integrates six bike accessories into one, and has succeeded in raising about $11.6 million.

Seeing the high-growth potential, the German government is hard at work on legislation that will make conditions more friendly for investors, namely through tax incentives.[2] Universities are chiming in with their own support programs, and incubators run by establishments like Deutsche Börse or Commerzbank aim to bring about better access to the stock market and more investors for startups.

Frankfurt is an emerging startup ecosystem with promising assets and performance, especially with regards to Talent, Startup Experience, and Corporate Involvement. Fueled with an educated workforce that is increasingly turning to the startup scene as a career choice, Frankfurt's ecosystem could become much more than just a reputable FinTech hub. Launched in late 2016, Frankfurt has finally also found its key organization in Tech Quartier, a centrally located startup hub dedicated to bringing all of this potential together.

TechQuartier *is the central startup hub in Frankfurt, providing a unique network to its startups, several floors of modern workspace, and new programs and platforms to accelerate innovation, growth and co-creation.*

1 http://deutsche-boerse.com/dbg-en/media-relations/deutsche-boerse-spotlights/spotlight/Deutsche-Boerse-FinTech-hub---the-start-up-location-in-financial-centre-Frankfurt/2606394

2 https://www.thelocal.de/20170102/could-frankfurt-become-the-new-berlin-for-startups

Voices and Findings

"The Frankfurt region has been underestimated so far but the huge potential is just about to unfold. The triangle of corporates, academia, and politics are now working closely together to support startups. Nurturing this potential in a systematic way will lead to a vibrant and dynamic startup ecosystem right at the heart of Europe."

Dr. Thomas Funke and Dr. Sebastian Schäfer
Co-Directors at TechQuartier

The Frankfurt ecosystem benefits from business and tech talent drawn from top class universities. As one result, Frankfurt has the highest percentage of their software development team with a software engineering degree at 88% (Silicon Valley at 81%).

"The Frankfurt region offers an excellent environment for startups and innovation. It provides not just the right kind of talent and knowledge, but also perfect transport and digital infrastructure. With TechQuartier we now also have a melting pot for startups that was officially selected as one of the central German hubs for FinTech (de.hub)"

Tarek Al-Wazir
Hessian Minister of Economics, Energy, Transport and Regional Development

"Frankfurt has been developing tremendously since we founded 360T in 2000. Not only is it more cosmopolitan than ever, it also developed a culture and landscape for entrepreneurial activities. While the spotlight was on Berlin and London, Frankfurt's entire ecosystem started to surface and emerge within the last couple of years, and more to come."

Carlo Kölzer
Founding Partner and CEO at 360T

Yet only 11% of Frankfurt startups offer a stock option plan to all of their employees, far below the global average of 26%.

"The Frankfurt region offers an ideal talent pool with its highly educated workforce and over 100,000 students from all fields of academia. Startups can tap into this pool of international talent. But they need to start offering more high-powered incentives to new hires in order to succeed in this large but competitive labor market."

Prof. Andreas Hackethal
Entrepreneur and Professor of Finance at Goethe University Frankfurt

62% of Frankfurt-based startups have had at least one positive interaction with corporates, which is 14% higher than in Berlin.

"Many places speak of the need for corporates to support startups. But that's mostly lip service. Only few German cities have a stronger corporate density than Frankfurt, and their current engagement in the ecosystem is somewhat unique. Corporates are taking a very hands-on approach and that's fantastic to see."

Christopher Schmitz
Partner at EY

Metrics

Ecosystem Demographics

Metropolitan GDP
$230 bn
Global Avg: $267 bn

Metropolitan Population
5.8 m

Ecosystem Performance

Ecosystem Value
$1.8 bn
Global Median: $4.1 bn

Startup Output
200 - 300
Global Avg: 1,762

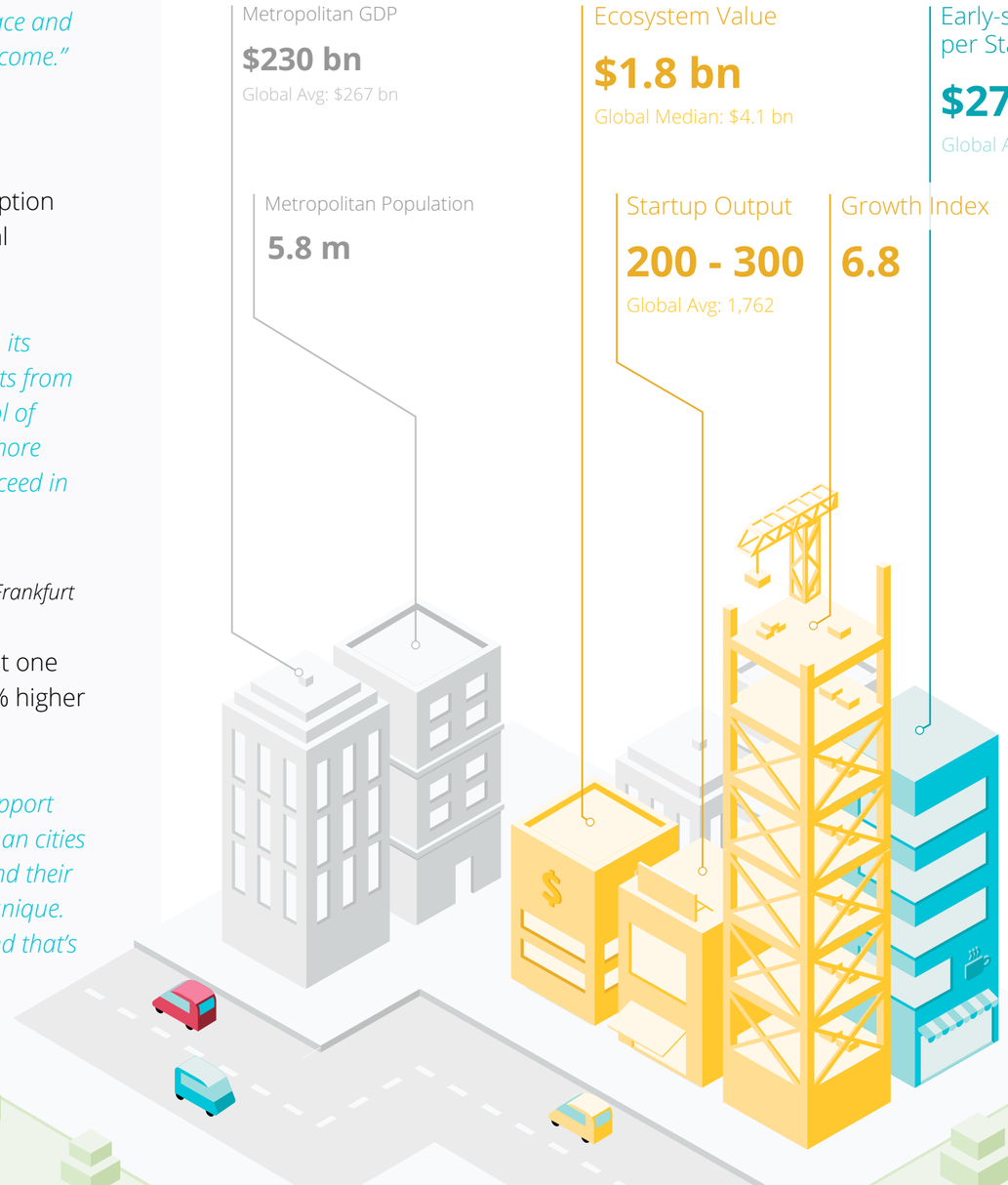
Growth Index
6.8

Funding

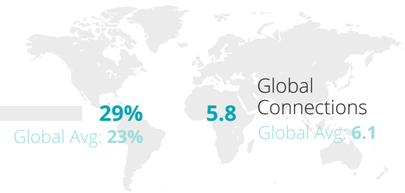
Early-stage Funding per Startup
$276 k
Global Avg: $252 k

Early-stage Funding Growth Index **8.2**
Global Avg: **5**

Experienced VC Firm Index **7.4**
Global Avg: **7**



Market Reach



Foreign Customers
29%
Global Avg: **23%**

5.8 Global Connections
Global Avg: **6.1**

Talent

Experienced Software Engineers
67%
Global Avg: **72%**

Experienced Growth Employees
60%
Global Avg: **60%**

Visa Success Rate
56%
Global Avg: **41%**

$56 k Software Engineer Salary
Global Avg: **49 k**

Startup Experience Index **4.1**

Global Avg: **5**

Founders Demographics

Women Founders
10%
Global Avg: **16%**

Immigrant Founders
9%
Global Avg: **19%**

Resource Attraction

Entrepreneurs **54**
Global Avg: **300**

Startups **0**
Global Avg: **83**

Helsinki Finland

Helsinki may be a small city of 1.1 million, but it is the largest one in Finland and most definitely the epicenter of the country's startup scene. The northern European city is known for punching above its weight class when it comes to tech: Linux and Nokia are only two of many technology companies with a global footprint that started out in Finland.

Helsinki currently boasts around 500-700 tech startups and is a prime example of how smaller ecosystems are often driven by a strong sense of community and authentic leadership. Take Slush, organizer of one of the hottest startup conferences in the world, which is also running a program each year to teach key skills to students around how to design their own future.

Necessitated by its small size, Helsinki has a penchant for going global and for international deals. In June 2016, Tencent acquired Supercell, the Finnish maker of Clash of Clans, for staggering $8.6 billion in a decisive move to become the global leader in smartphone and tablet games. Few months later, the Finnish startup Thundersoft was acquired by Rightware for $68 million.

Thanks to Helsinki's strong ecosystem of support organizations and accelerators including Startup Sauna, Nestholma and NewCo Helsinki, the chances for more local success stories seem high. M-Files ($34 million), AlphaSense ($25.5 million) and Swap.com ($20.2 million) are only three Finnish startups that have received significant funding rounds in 2016. Interestingly, all of these companies are headquartered in the U.S. today.

Helsinki is a very cohesive ecosystem and a runner-up to this year's top 20 ranking. For obvious reasons, Helsinki ranks particularly well in the Talent and Market Reach Index. Because of its small community, Helsinki has the ability, as well as the momentum, to develop a position of influence and to produce the connective tissue that is needed to build and grow a robust startup community.

Helsinki Business Hub *enables foreign companies to establish their businesses and innovation driven companies to grow in the Helsinki region by providing the right information and contacts and by designing growth opportunities for our customers.*

Voices and Findings

"Nobody in their right mind would come to Helsinki in November. Except you, you badass. Welcome", says the banner at SLUSH, Europe's leading startup event, held and born in Helsinki. Helsinki startup ecosystem has all the ingredients of success: Europe's highest level of venture investment in relation to GDP, an extensive talent pool, a good ecosystem of private and public support players – and the attitude."

Marja-Liisa Niinikoski
CEO at Helsinki Business Hub

Helsinki startups have the second highest Rate of Visa approvals at around 80%. With almost 20 days less processing time than the global average, Visas are also relatively fast to obtain. However, any unnecessary delay can cause significant problems for the business.

"The painfully bureaucratic and long approval process is a huge problem for many startups. However, I very rarely hear anyone not getting their visa accepted. As long as the startups and their employees follow the guidance, the visas are likely to get through."

Marianne Vikkula
CEO at Slush

Helsinki startups immediately Go Global targeting large innovation markets at a higher rate than nearly any other ecosystem. 66% of Helsinki startups begin by targeting the U.S. or U.K. market — trailing only Estonia and Tel Aviv. Helsinki startups also report a high Foreign Customer rate at 43% (global average 23%).

In Helsinki the 2nd highest Percentage of Startups found positive Corporate Interest and Involvement with them, at 68%. At the global level, an average of 51% of Startups experience positive Involvement with Corporates.

"Helsinki has developed a very strong ecosystem of startups, investors, and public funding supported by great startup events, such as Slush. The latest game changer for the ecosystem has been the way corporations have started to build true partnerships with startups. This has enabled many of the startups to accelerate their growth and become better prepared to enter the global markets."

Topi Järvinen
Managing partner and Co-founder at Nestholma Venture Accelerator

On average, Helsinki startups have 2 Advisors with Equity per Startup, the 3rd highest value in the world, and above Silicon Valley at 1.78. 46% of Helsinki startups offer an Employee Stock Option Plan to all employees, the 6th highest rate in the world.

"When it comes to entrepreneurship, there is a culture of giving back in Finland where successful entrepreneurs with exits and/or a wealth of experience give back to the community and transfer their knowledge to the next generation of entrepreneurs and startups."

Mikael Lauharanta
COO and Co-Founder at Smarp

Metrics

Ecosystem Demographics

Metropolitan GDP
$77 bn
Global Avg: $267 bn

Metropolitan Population
1.4 m

Ecosystem Performance

Ecosystem Value
$1.5 bn
Global Median: $4.1 bn

Startup Output
500 - 700
Global Avg: 1,762

Growth Index
4.1

Funding

Early-stage Funding per Startup
$358 k
Global Avg: $252 k

Early-stage Funding Growth Index **4.5**
Global Avg: **5**

Experienced VC Firm Index **7.9**
Global Avg: **7**

Market Reach

Foreign Customers **43%**
Global Avg: **23%**

Global Connections **9.6**
Global Avg: **6.1**

Talent

Experienced Software Engineers **72%**
Global Avg: **72%**

Experienced Growth Employees **64%**
Global Avg: **60%**

Visa Success Rate **80%**
Global Avg: **41%**

Software Engineer Salary **$41 k**
Global Avg: **49 k**

Startup Experience Index **5.0**

Global Avg: **5**

Founders Demographics

Women Founders **8%**
Global Avg: **16%**

Immigrant Founders **16%**
Global Avg: **19%**

Resource Attraction

Entrepreneurs **122**
Global Avg: **300**

Startups **22**
Global Avg: **83**

Jerusalem Israel

In what is known across the world as the "Start-Up Nation," most attention has been directed at Tel Aviv, and not without good reason. But last year, the Boston-based accelerator MassChallenge expanded to Jerusalem, the larger capital city. This solidified what has been developing for several years: Jerusalem is a rising star on the global startup scene, with approximately 500-700 active tech startups at the core of its community.

With a population of almost one million—one-third of which is Muslim—Jerusalem's startup ecosystem thrives on diversity and the actions of a helpful city government. The city boasts a number of recent startup successes in cutting-edge realms like computer vision (image processing, virtual reality), machine learning, and artificial intelligence. Glide, makers of back and forth video chat that recently integrated with Apple Watch, aims to revolutionize video communication as we know it, while OrCam pioneered a compact device that allows the visually impaired to understand text and identify objects.

Tel Aviv has made news with several recent big budget acquisitions. Mobileye, a company that creates software for driverless cars, raised $890 million in its initial public offering in the United States, making it the largest Israeli IPO in the United States. In March 2017, Intel made a bold move by purchasing the Jerusalem-bred company for $15 billion in a decisive attempt to claim leadership in the self-driving car market.

Jerusalem is a top contender that narrowly fell outside of this year's top 20 ecosystem Index overall. The city's weakest factor is performance, where interestingly its exit value is very strong but the total value of the pre-exit startups is weak—indicating strong outlier performance with weaker fundamentals. With all the momentum gathering, we expect more record-breaking numbers and technological innovation from Jerusalem in the near future.

Jnext *supports technology innovation development and works to transform Jerusalem into a magnet for hi-tech ventures and early-stage companies.*

Voices and Findings

"Jerusalem has been a religious and cultural capital for thousands of years, however in the last five years the city has also emerged as a leading technology hub. Jerusalem hosts world leading institutions in the sciences and design disciplines, and together with government support and a grassroots movement the city has become an entrepreneurship enclave."

Helen Wexler
Director of Jnext at the Jerusalem Development Authority

Jerusalem startups immediately Go Global, targeting large innovation markets at a higher rate than nearly any other ecosystem outside of the U.S. or U.K. 65% of Jerusalem startups begin by targeting the U.S. or U.K. market—typical behaviour for startups made in Israel.

"Jerusalem has three unique characteristics: Community, Creativity, and Diversity. Its population consists out of Arabs and Jews, Secular and Ultra-orthodox, and a large amount of immigrants."

Jonathan Medved
CEO at OurCrowd

Jerusalem startups have the 7th highest rate of Immigrant Founders in the world at 34%, interestingly, more than double the percentage of Tel Aviv (16%).

"The high-tech scene in Jerusalem has been growing dramatically in the past few years—from under 200 startups in 2012 to more than 600 now. The foundation of Jerusalem's tech ecosystem rests on great collaboration between entrepreneurs, investors, academic institutions, and multinational corporations."

Uri Adoni
Partner at Jerusalem Venture Partners

"As an immigrant myself, I can personally attest to the vibrancy and diversity of Jerusalem's founder population. Because so many of our founders come from the overseas markets their startups target, it's no wonder that Jerusalem startups go global early on in their lifecycles."

Ben Wiener
Managing Partner at Jumpspeed Ventures

Jerusalem startups display a relatively low Percentage of Founders with a technical background, at 74%, compared with Tel Aviv and Silicon Valley at 93% and 87%, respectively.

"Despite the lag in the number of founders with technical skills, the Jerusalem entrepreneurial ecosystem has recently started to pick with startups, led by students and alumni of the Hebrew University, focusing on hard sciences. HUstart—the Hebrew University entrepreneurship center that was founded by the Asper Foundation leads this trend."

Niron Hashai
Vice Dean Innovation and Development, School of Business Administration at The Hebrew University of Jerusalem

Metrics

Ecosystem Demographics

Metropolitan GDP
$26 bn
Global Avg: $267 bn

Metropolitan Population
1.2 m

Ecosystem Performance

Ecosystem Value
$6 bn
Global Median: $4.1 bn

Startup Output
500 - 700
Global Avg: 1,762

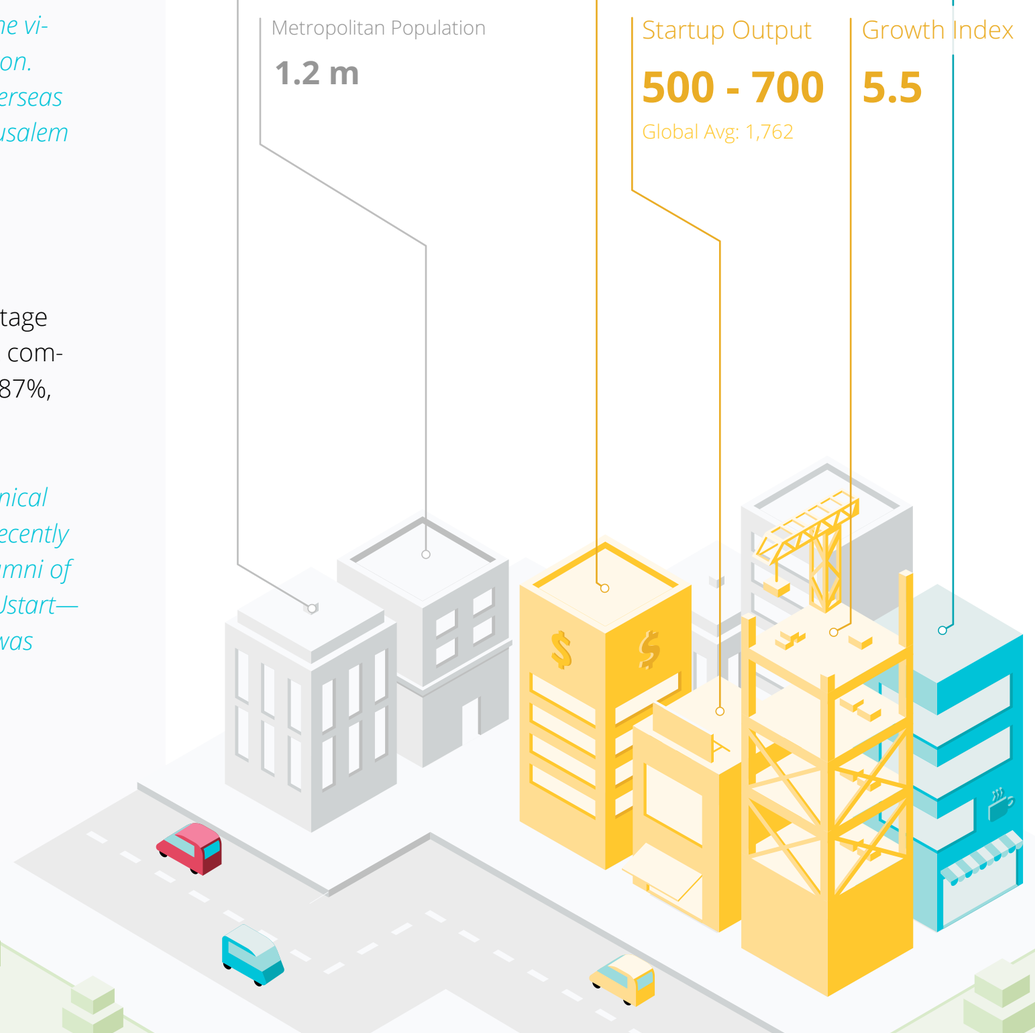
Growth Index
5.5

Funding

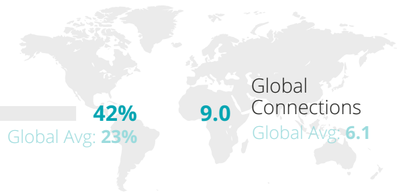
Early-stage Funding per Startup
$254 k
Global Avg: $252 k

Early-stage Funding Growth Index **4.4**
Global Avg: **5**

Experienced VC Firm Index **7.4**
Global Avg: **7**



Market Reach



Foreign Customers
42%
Global Avg: **23%**

9.0 Global Connections
Global Avg: **6.1**

Talent

Experienced Software Engineers
75%
Global Avg: **72%**

Experienced Growth Employees
59%
Global Avg: **60%**

Visa Success Rate
31%
Global Avg: **41%**

$57 k Software Engineer Salary
Global Avg: **49 k**

Startup Experience Index **5.3**

Global Avg: **5**

Founders Demographics

Women Founders
15%
Global Avg: **16%**

Immigrant Founders
34%
Global Avg: **19%**

Resource Attraction

Entrepreneurs **122**
Global Avg: **300**

Startups **17**
Global Avg: **83**

Lisbon Portugal

During the depths of the Euro crisis, Portugal was seen by many as having a dim economic future. Today that's no longer the case. The growing startup culture in Lisbon is helping renew the entire country's trajectory. Lisbon has ample access to talent, affordable housing, and adequate public transportation, and the coastal location adds to its attractiveness as a spot for founders to establish their firms.

Lisbon currently counts more than 15 incubators, 20 acceleration programs, and a knockout community of Business Angels and Venture Capital investors. In short, it is not very surprising that Lisbon is already home to an estimated 200-300 tech startups.

Lisbon's tech talent is nurtured by its top incubators and accelerators. Startup Lisboa is comprised of three spaces in the city and a residence for international entrepreneurs. It is also in charge of the city's new flagship project, the Beato Creative Hub, which will integrate several national and international incubators, accelerators, artistic residencies, and creative industries in a space of almost 40,000 square meters. Techies are also supported by the internationally recognized Beta-i accelerator and Second Home, one of London's coolest incubators and creative spaces that just opened a new space in Lisbon last year.

Recent startup success stories include CrowdProcess—a scientific R&D tool used by banks to predict bad loans. The company has been considered the best FinTech startup in Europe after winning the Money 20/20 pitch competition in 2016. Lisbon's efforts are also turning heads worldwide as the city won the coveted spot as host of the 2016 to 2018 Web Summit, Europe's most important technology conference and marketplace. Between the energy, new thinking, new technology, financial incentives for startups, and of course, all the sunshine, Lisbon's emerging ecosystem appears ready for the global growth it's after.

Lisbon is a lower ranked startup ecosystem, mostly due to its infancy. It doesn't have many exits or people who have experienced exits before, but its valuation rank does outpace its other performance indicators, its early-stage investment is growing at a fast pace, and the ecosystem is integrating well with the rest of Europe — so there are strong indicators of future strength.

The Lisbon City Council *develops and supports a diverse range of projects and initiatives in the fields of entrepreneurship, innovation, and creativity including Made of Lisboa, the official community of Lisbon-based innovators.*

Voices and Findings

"Lisbon wants to be one of the most competitive, creative, and innovative cities in Europe. Our vision is to become a Global Hub for Innovation and Entrepreneurship with open heart to receive everyone that wants to develop their dreams, ideas or projects. Our startup ecosystem is very young but appears ready for the global growth and gives us the confidence that we are working in the right direction. This is why it is so important for us to be present for the first time in the Startup Genome Report. "

Duarte Cordeiro
Vice-Mayor of Lisbon

Lisbon startups have more than one third Foreign Customers, 10% more than startups in Barcelona, and 9% more than the global average. Together with a strong performance in Global Connectedness, Lisbon comes close to the top 20 in terms of access to international markets.

"One thing we tend to notice is that most of our early startups here at Beta-i have 2-3 founders, a metric that outperforms other founder number combinations. In fact, 76% of Lisbon teams have that many founders, which is among the highest percentages in the world. We believe that 'cohesion' and balance is behind most of the good results we have."

Pedro Rocha Vieira
Co-Founder and President at Beta-i

Lisbon has the lowest percentage of Founders with just an Undergraduate Degree at 12%, and at 82% the highest Percentage with a Masters or PhD. 76% of Lisbon teams have 2-3 founders, 3rd highest in the world. Early Startup Genome reports found startups with 2-3 founders significantly outperformed other number combinations.

"Lisbon is now experiencing a social and economic turning, indelibly marked by a generation of Portuguese and foreign entrepreneurs that are starting and developing here their innovative businesses. Essentially, it's a very qualified entrepreneurship, resulting from the bet in the past few years on the quality of higher education. At a time when we see dangerous signs of closure in the world, Portugal is fully committed to create an friendly environment for all of those that want to create, innovate and invest in Portugal. It's also with pride that we emphasize the impact of the continuous growth of Women founders in our ecosystem."

Miguel Fontes
Executive Director at Startup Lisboa

Lisbon has the highest rate of Women Founders in Europe, pointing towards inclusive growth, which could become a competitive advantage over time.

Metrics

Ecosystem Demographics

Metropolitan GDP
$96 bn
Global Avg: $267 bn

Metropolitan Population
2.8 m

Ecosystem Performance

Ecosystem Value
$1.3 bn
Global Median: $4.1 bn

Startup Output
200 - 300
Global Avg: 1,762

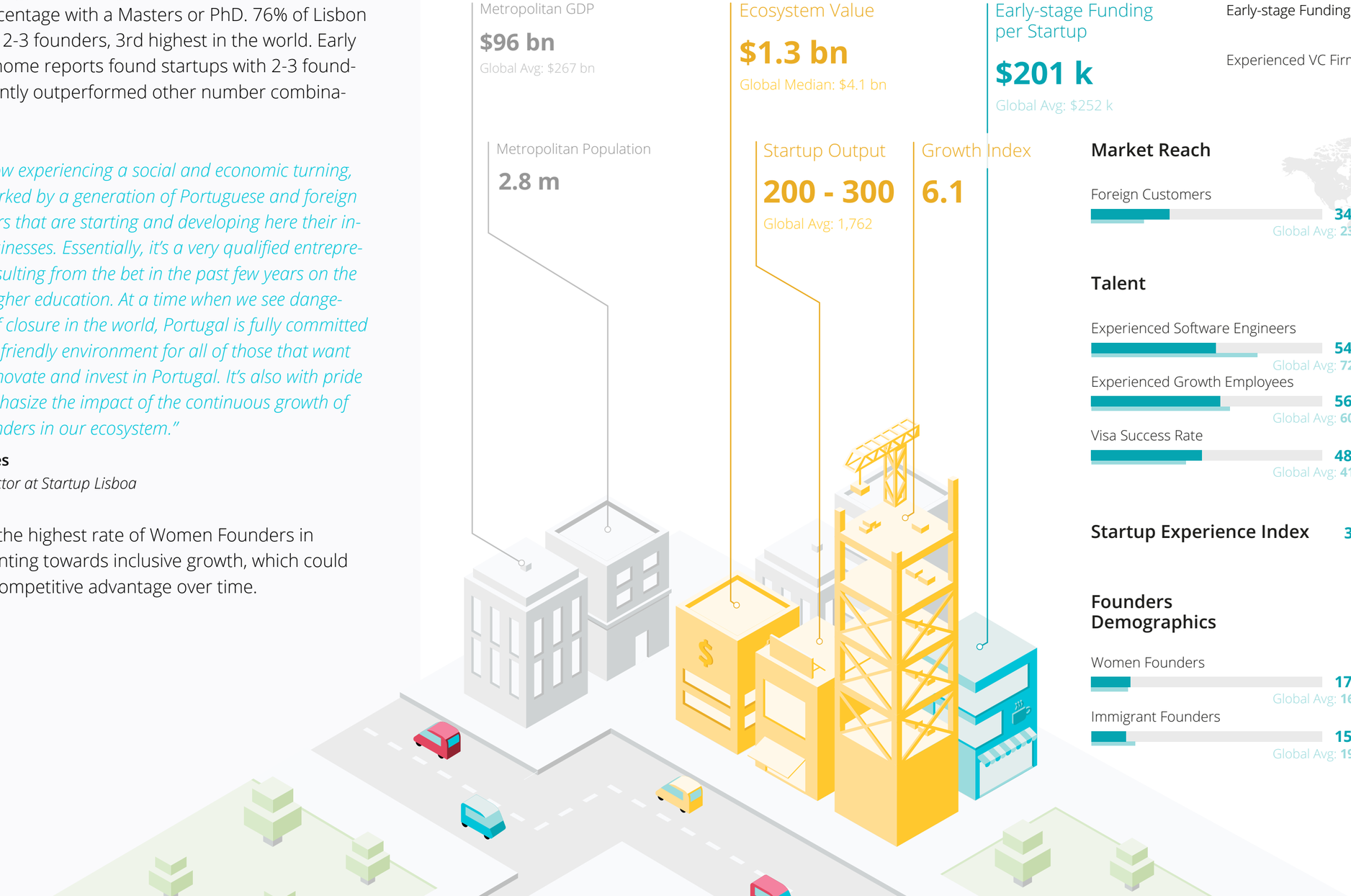
Growth Index
6.1

Funding

Early-stage Funding per Startup
$201 k
Global Avg: $252 k

Early-stage Funding Growth Index **5.3**
Global Avg: **5**

Experienced VC Firm Index **4.8**
Global Avg: **7**



Market Reach

Foreign Customers **34%**
Global Avg: **23%**

10.1 Global Connections
Global Avg: **6.1**

Talent

Experienced Software Engineers **54%**
Global Avg: **72%**

Experienced Growth Employees **56%**
Global Avg: **60%**

Visa Success Rate **48%**
Global Avg: **41%**

Startup Experience Index **3.5**

$29 k Software Engineer Salary
Global Avg: **49 k**

Global Avg: **5**

Founders Demographics

Women Founders **17%**
Global Avg: **16%**

Immigrant Founders **15%**
Global Avg: **19%**

Resource Attraction

Entrepreneurs **38**
Global Avg: **300**

Startups **11**
Global Avg: **83**

Malta

Malta is one of the world's smallest and most densely populated countries. Its tech ecosystem especially booms in the gaming and gambling sector, and each month churns out tech-centric events and new ventures on the English-speaking Mediterranean island. The local ecosystem currently boasts of around 50-100 tech startups.

This year brought the inaugural launch of ZEST Malta, organized by the MCA, a dream assembly of 375 of Malta's most passionate startup community members, investors, policy advisors, and support stakeholders under one roof to discuss disruption and tech innovation.

Also new and noteworthy is the lobby group and forum, Silicon Valletta—designed to connect the country's emerging startup scene with the government and investment sectors, as well as bring together the CEOs of Maltese-based digital businesses.

Malta's up-and-coming startups can find the boost they need from a new network of supportive programs. The last few years have seen the launch of the Seed Investment Scheme by MIMCOL, which offers tax credits to startup investors, while the Takeoff Business Incubator has already hosted more than 30 startups and awarded more than $215 thousand in seed funding. Meanwhile, the MITA Innovation Hub, a zero-equity acceleration program, doled out seed funding totaling $282 thousand to 15 Malta startups. Other support comes from Malta Enterprise, such as its Kordin Business Incubation Centre (KBIC), and the seed funding grant (Business START), while private incubators, such as Microsoft's Innovation Center, also play a strong role in the ecosystem. These programs each aim to provide the necessary breeding ground for Malta's next generation of high-growth, high-impact startups.

Malta's internationally celebrated startups include Hotjar, HippoData, and DiscountIF, as well as the up-and-coming Freshy, an eco- and wallet-friendly service that allows cafeterias and restaurants to sell excess food instead of throwing it away. Considering all the concerted efforts that are currently invested into the ecosystem, more success stories are expected to come out of Malta in the near future.

The Malta Communications Authority *is responsible for maximizing the benefit derived from developments in ICTs by stimulating innovation, increased awareness, and opportunities in business and society.*

Voices and Findings

"Malta's resilient infrastructure and forward-looking regulatory framework are essential business enablers. However, it is people that conjure and execute smart ideas that drive innovation. We strive to enable and facilitate this drive. In this regard, the growing community of tech startups and talent in Malta is critical to the country's future."

Dr. Edward Woods
Chairman at Malta Communications Authority

30% of startups count at least one founder with experience in a hypergrowth startup or unicorn, a high proportion that is 7% above the global average.

"A startup in Malta is forced to think about which large market makes the most sense, as Malta's market is insignificant in size. This ensures startups look at market attractiveness and not market convenience."

Simon Azzopardi
President at Silicon Valletta

62% of Malta startups immediately target the large innovation markets of the U.S. and U.K., 6th highest rate in the world.

"We have a small but vibrant startup ecosystem which has been built in the last five years or so. The government assists through tax incentives, everyone speaks English, an advanced internet infrastructure and we're also part of the EU. Climate is excellent and with Malta being small you can achieve a productive work-life balance."

David Vella
CEO at Altaro Software

Malta startups have the 6th highest Percentage of Employees on their Growth Team that have previously gained at least 2 years of Startup Experience, at 73%. The primary reason startups move to Malta is due to better regulation and policies — the only startup ecosystem where that was the primary reason.

"Malta's biggest strength is its ability to adopt a nimble and proactive policy-making approach. In the past, this has helped Malta carve its own niches, with particular success in financial services and iGaming. Malta seeks to repeat this approach with startups by being the natural place to launch a disruptive tech idea."

Hon. Minister Manuel Mallia

Malta has the 4th highest Percentage of Immigrant Founders at 39%, trailing only SV, Berlin and London.

Metrics

Ecosystem Demographics

Country GDP
$11 bn
Global Avg: $267 bn

Country Population
423 k

Ecosystem Performance

Ecosystem Value
$773 m
Global Median: $4.1 bn

Startup Output
50 - 100
Global Avg: 1,762

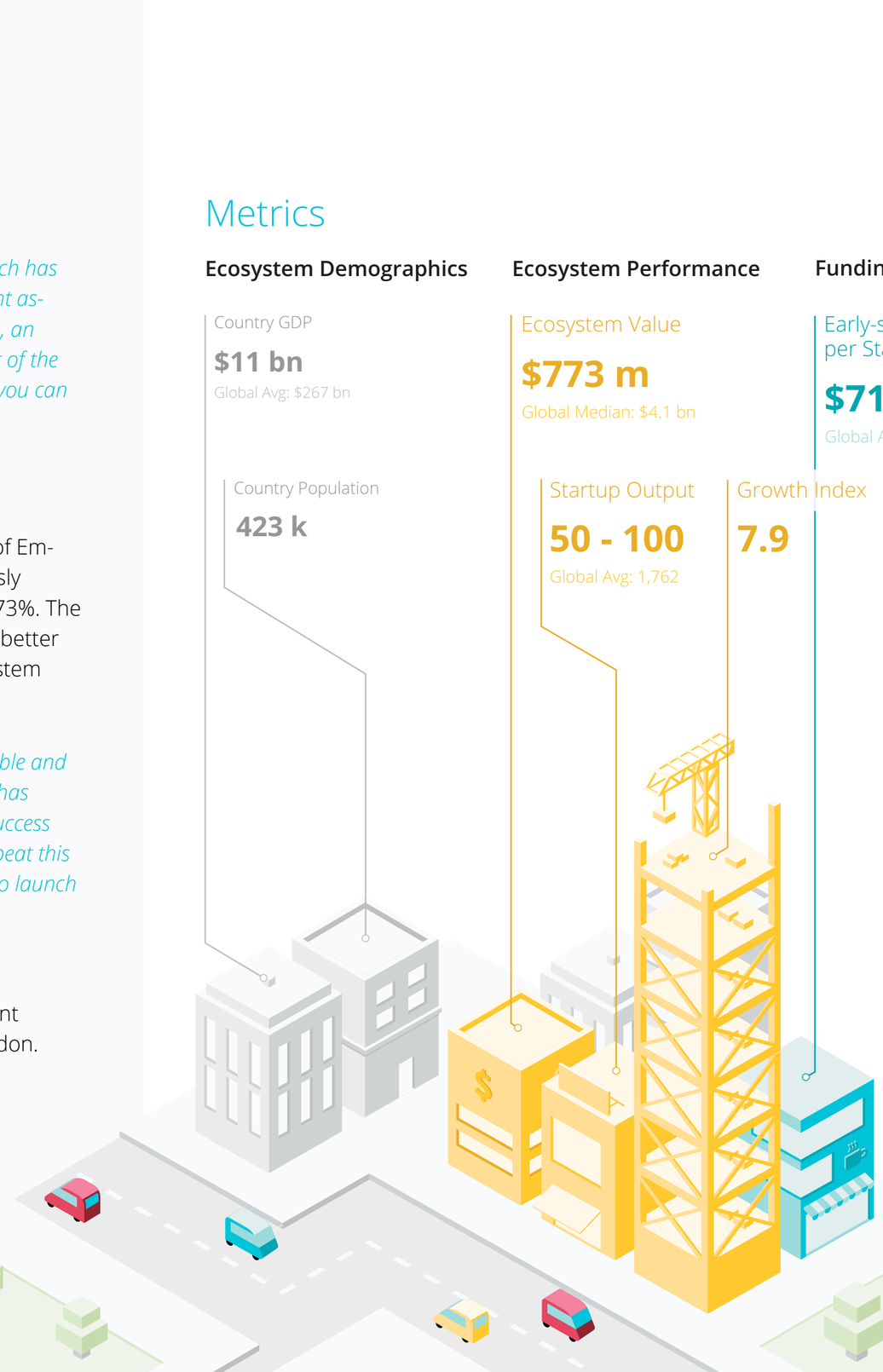
Growth Index
7.9

Funding

Early-stage Funding per Startup
$71.3 k
Global Avg: $252 k

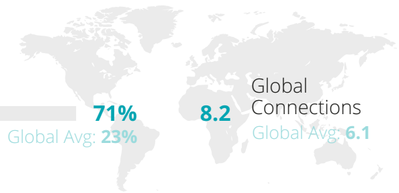
Early-stage Funding Growth Index **8.2**
Global Avg: **5**

Experienced VC Firm Index **1.2**
Global Avg: **7**



Market Reach

Foreign Customers
71%
Global Avg: **23%**



8.2 Global Connections
Global Avg: **6.1**

Talent

Experienced Software Engineers
85%
Global Avg: **72%**

Experienced Growth Employees
73%
Global Avg: **60%**

Visa Success Rate
58%
Global Avg: **41%**

$35.8 k Software Engineer Salary
Global Avg: **49 k**

Global Avg: **5**

Startup Experience Index **4.5**

Founders Demographics

Women Founders
13%
Global Avg: **16%**

Immigrant Founders
39%
Global Avg: **19%**

Resource Attraction

Entrepreneurs **6**
Global Avg: **300**

Startups **2**
Global Avg: **83**

Moscow Russia

Moscow currently boasts approximately 1,500-3,400 startups. During the last couple of years, the Russian capital's tech ecosystem has developed a strong support system for startups and investors alike. Its tech landscape is peppered with public and private acceleration programs and success stories like Avito, the online ads company that sold a majority stake to Naspers for $1.2 billion, and Prisma, an app that has banked 85 million downloads in less than six months draw international attention.

Moscow has developed a strong startup educational support system, both for startups and for investors. The Internet Initiative Development Fund is a $100 million fund focused on internet and mobile app projects. They support 100 companies per year—a high number relative to other cities' venture capital funds. The IIDF also developed a course on "Internet entrepreneurship," now implemented in 127 universities across Russia, and the crowdfunding platform StartTrack teaches business angels how to choose and invest.

Other players are driving the sustainable development of the entire ecosystem. The annual Russia Startup Village is the premier startup conference that attracts over 20,000 technology entrepreneurs for networking, education, and inspiration. Skolkovo technopark, Moscow's most prominent incubator, raised $158 billion in funding between government support, foundations, and investors. Here, startups and tech firms mingle with students at Skoltech, the incubator's IT university, where local and international students can earn a master's degree in biomedical science, IT, energy, space science—and even a PhD.

Moscow, ranked #13 last year, fell out of the top 20 into the runner-up list. Over the last few years, as several European and Asian ecosystems have achieved an important increase in Performance, Moscow has been affected by political issues that led to a leakage of talent, capital, and investors, leading to a one of the worst rates of Early-Stage Funding growth among the 56 ecosystems measured. Now, despite its top Talent Quality, high Output of startups, and large economy, its ecosystem has been unable to produce many globally successful startups.

Voices and Findings

"Moscow startups have high-quality IT-professionals, yet business and marketing expertise is an area for improvement. That's why IIDF created a course "Internet Entrepreneurship" that helps future startup founders to improve their marketing, business-modeling and pitching skills. This year more than 7,000 participants graduated from this course."

Margarita Zobnina
Head of Ecosystem Projects Department at IIDF

92% of seed rounds came from local investors, indicating a lack of capital attracted from outside of Moscow and making it more difficult for startups to access funding.

"There are a lot of talented engineers who live in Moscow and other big Russian cities. The top three Russian tech universities are Moscow-based (MSU, MSTU, MEPhI). That's why you can easily find a lot of early-stage high-tech startups in Moscow. However, there is a lack of entrepreneurs. So, Moscow is a great opportunity for 'hustlers' who want to find 'hackers' and 'hipsters'."

Mikhail Ernan
Director at HSE Incubator

Moscow engineers are some of the most experienced in the world, with 83% of engineers having at least two years of startup experience; this is just a tick behind the leader, Silicon Valley, at 87%.

Startups in Moscow have the lowest acceptance rate of visas for foreign candidates of any ecosystem in the world at 13%. It is hardly surprising that 98% of engineers are local graduates.

"The Government of Moscow is well aware of the issue, thus starting in May 2017 Moscow Agency of Innovations will introduce a special talent immigration program. We can guarantee that visa acceptance rate in the sector will grow exponentially by the end of the year."

Alexey Parabuchev
Head of Moscow Agency of Innovations

Only 4% of Moscow startups offer a stock option plan to all of their employees, far below the global average of 26%

"In Russia, startups usually focus on sourcing the talent locally or from neighbor CIS countries. The main reasons are language (not too many people outside of CIS know or are willing to learn Russian) and cost. At the same time, it has become easier for foreign entrepreneurs to join teams as more teams now speak English as the second language at work."

Daniil Kozlov
Partner at Global Venture Alliance (GVA)

Metrics

Ecosystem Demographics

Metropolitan GDP
$553 bn
Global Avg: $267 bn

Metropolitan Population
19 m

Ecosystem Performance

Ecosystem Value
$3.4 bn
Global Median: $4.1 bn

Startup Output
1.5 - 3.4
Global Avg: 1,762

Growth Index
3.9

Funding

Early-stage Funding per Startup
$61 k
Global Avg: $252 k

Early-stage Funding Growth Index **4.2**
Global Avg: **5**

Experienced VC Firm Index **6.1**
Global Avg: **7**

Market Reach

Foreign Customers **19%**
Global Avg: **23%**

8.8 Global Connections
Global Avg: **6.1**

Talent

Experienced Software Engineers **83%**
Global Avg: **72%**

Experienced Growth Employees **75%**
Global Avg: **60%**

Visa Success Rate **13%**
Global Avg: **41%**

Startup Experience Index **4.6**

Founders Demographics

Women Founders **11%**
Global Avg: **16%**

Immigrant Founders **15%**
Global Avg: **19%**

$37 k Software Engineer Salary
Global Avg: **49 k**

Global Avg: **5**

Resource Attraction

Entrepreneurs **502**
Global Avg: **300**

Startups **25**
Global Avg: **83**

Regional Clusters

Asia-Pacific

Kuala Lumpur

Melbourne

New Zealand

Seoul

Sri Lanka

Kuala Lumpur Malaysia

Kuala Lumpur's ecosystem has been building momentum and attracting worldwide attention since it hosted the 2013 Global Entrepreneurship Summit. No longer a best kept secret, the region is teeming with around 350-650 tech startups, with a high degree of women-founded ones. Startups located here benefit from a good level of English, a prime location in Southeast Asia, as well as lower labor costs compared to nearby Singapore. The presence of three different nationalities makes Malaysia a great hub for product testing.

The government has been actively involved in stimulating the Malaysian ecosystem. One such effort called the Cradle Investment Program has invested over $60 million in Kuala Lumpur since its inception in 2003. They have funded an accelerator program called the Coach and Grow program, which has supported over 700 startups to date. Thanks to strong leadership from government agencies and the strength of the existing tech community, the ecosystem's connectedness, experience, and funding rounds are accelerating rapidly. As a next step, the government is expected to launch a 10-year tax exemption plan to further attract foreign tech companies to Kuala Lumpur.

Recent funding rounds prove that Kuala Lumpur's tech scene can hold its own next to its Southeast Asian neighbors. KFit, which helps people find gyms and get unlimited access to them for a fixed fee, closed a $12 million Series A funding round. Meanwhile, iflix, the online TV streaming service was launched in May 2015 and has already signed up over one million members. Funded by European media giant Sky for $45 million, iflix already announced plans to raise a new round to fund its ambitious plan for global expansion.

Kuala Lumpur is not ranked among the global top 20 startup ecosystems due to its relative lack of Global Connectedness and Startup Experience, but low cost, easy to hire engineering talent could foreshadow a rise in the ranks. The determination found in Malaysian public authorities point towards a continuously maturing ecosystem with more success stories to come.

MaGIC *enables and supports the entrepreneurship ecosystem in Malaysia as the new economic growth driver through creativity and innovation. It is the catalyst for sustainable entrepreneurship development in Malaysia.*

Voices and Findings

"It is exciting to be ranked as a vibrant startup ecosystem along with our peers in Bangalore and Singapore. The Startup Genome report highlights the growth we have achieved and reaffirms our belief that an ecosystem's key to success is seamless collaboration between its players. The report also points to a trend we are seeing more and more—Malaysians looking to expand their business overseas. Our latest initiative, the Global Accelerator Program, aims to help entrepreneurs do exactly that, encouraging them to take their concepts out to the region, or even further afield."

Ashran Dato' Ghazi
CEO at MaGIC

Kuala Lumpur has the highest percentage of founders with an undergraduate degree at 65%. Kuala Lumpur also has one of the highest percentages of women founders in the world at 23%.

"With Malaysia being in the heart of ASEAN, this gives you access to a market of over 600 million people, there's enough problems to be solved and traction to be gained in this market itself hence there's nothing wrong with startups thinking local. With similarities in ASEAN markets, thinking local is big too."

Bikesh Lakhmichand
Founder and CEO at 1337Ventures

Only 10% of customers for startups in Kuala Lumpur come from outside of the country, more than 13% less than the global average, indicating a strong local market but also challenges in reaching the global one.

"I have been involved in the startup scene for the last three years. In the beginning almost no event that I went to was attended by any women founders. From then onward I would see more and more women come out with brilliant ideas and become founders of great startups such as Happy Bunch and Local Usher, only to name a few. It started strong with the MaGIC CEO being a woman. She inspired more women founders to join the startup community too."

Maznuddin Zainuddin
Innovation Lead, Product Marketing Innovation Exchange TM at Telekom Malaysia

9% of Kuala Lumpur startups immediately target the U.S. or U.K. market. 13% intend to eventually go after global markets.

Metrics

Ecosystem Demographics

Metropolitan GDP
$172 bn
Global Avg: $267 bn

Metropolitan Population
7.2 m

Ecosystem Performance

Ecosystem Value
$1.14 b
Global Median: $4.1 bn

Startup Output
350 - 650
Global Avg: 1,762

Growth Index
6.9

Funding

Early-stage Funding per Startup
$153 k
Global Avg: $252 k

Early-stage Funding Growth Index **6.0**
Global Avg: **5**

Experienced VC Firm Index **6.0**
Global Avg: **7**

Market Reach

Foreign Customers
10%
Global Avg: **23%**

6.8 Global Connections
Global Avg: **6.1**

Talent

Experienced Software Engineers
72%
Global Avg: **72%**

Experienced Growth Employees
53%
Global Avg: **60%**

Visa Success Rate
43%
Global Avg: **41%**

$10.6 k Software Engineer Salary
Global Avg: **49 k**

Startup Experience Index **4.4**

Global Avg: **5**

Founders Demographics

Women Founders
23%
Global Avg: **16%**

Immigrant Founders
13%
Global Avg: **19%**

Resource Attraction

Entrepreneurs **98**
Global Avg: **300**

Startups **0**
Global Avg: **83**

Melbourne Australia

Melbourne is an entrepreneurial city where people are exceptionally open to new ideas and innovation. The city earned the moniker "culture capital" due to its lively street art, music, and theater. Hard work is de rigueur, and startup founders benefit from a favorable business infrastructure as well as a high standard of education that supplies them with exceptional talent to work with.

Melbourne is renowned as the world's most livable city and has a great standard of living but relatively high costs—a circumstance that makes it challenging for many of the currently 900-1,300 local startups. This and many other reasons prompted Prime Minister Malcolm Turnbull to roll out a $1.1 billion innovation package that offers tax breaks for startup investors, changes crowdfunding legislation, and introduces initiatives geared to turn Melbourne into a startup powerhouse.

The startup ecosystem can be proud of its success stories; Kogan, Envato, and Red Bubble especially shine in the digital marketplace. Canva grew from 1.8 million to 7 million users, and doubled its valuation to reach $345 million in 2016. Social media marketing platform Tribe raised $5.35 million in venture capital during a Series A round—in less than one year after its launch.

As so many ecosystems can attest, connectedness is key, first on a local, and then global level. The coworking space, York Butter factory, offers landing pads for burgeoning startups and Inspire9 runs the Angelcube program, an intensive startup accelerator program each June. Weekly meetups like Fintech Melbourne, Melbourne Silicon Beach, Innovation Bay, and Startup Victoria offer the necessary touch point for anyone interested in founding or working in startups.

Melbourne is itching to crack the top 20 overall, but isn't quite there and faces stiff competition. The ecosystem almost scored a top 20 ranking in terms of its Startup Output, but its Valuation and Exit numbers lag further. However, it has one of the strongest rates of Early-Stage Funding, strong Global Connectedness scores, and high quality engineering—all indicators that it could make a push into the top 20 soon.

LaunchVic *works with entrepreneurs, industry, business, the community and educational institutions to strengthen Victoria's entrepreneurial and startup ecosystem.*

Voices and Findings

"The Melbourne startup ecosystem is thriving -- its strong grass roots community is producing successful scale-ups, and it is the choice location for APAC headquarters for global unicorns. Known for its cultural vibe, high education standards, and its collaborative and multicultural community, the world's most liveable city is also proving to be a strong startup ecosystem."

Kate Cornick
CEO at LaunchVic

Melbourne founders are more technically oriented compared to their neighboring ecosystem in Sydney. Founding teams in Melbourne are 25% more technically skewed and 15% less business skewed.

"There's tremendous energy in Melbourne's startup ecosystem. Zendesk, Stripe, Slack and Square recently opened their Australian headquarters in Melbourne, while local startups like CliniCloud, Myagi and Unlockd are attracting substantial customers and investment from overseas. We also have many international students with great engineering and IT skills who stay after graduation to launch startups focused on Asian markets."

Dr. Colin McLeod
Professor at the University of Melbourne

Melbourne startups are highly connected globally with an average of 8.6 connections to the top global ecosystems.

"Melbourne is a grassroots startup ecosystem which is fast increasing resources to enable it to compete against its bigger neighbours. Government initiatives, like LaunchVic, support platform programs to help startups scale. Plus local success stories like Redbubble's successful $288 million IPO showcase the talent and potential of local entrepreneurs."

Sarah Moran
CEO at Girl Geek Academy

Melbourne startups have one of the lowest utilization rates of Startup Advisors in the world, with only .73 Advisors with Equity per Startup.

"Startup advisors with equity are not yet a common part of the Australian landscape the way they are in the U.S. This may be due to the fact that our employee share schemes until very recently had adverse tax consequences, making the granting of shares more difficult than it should have been. We expect to see this shift over time now with advisor roles becoming more common."

Georgia Beattie
CEO at Startup Victoria

40% of startups reported that they are offering a product that is the first of its kind globally. In relation to the world average of 34%, this underlines Melbourne's ambition to disrupt entire industries.

Metrics

Ecosystem Demographics

Metropolitan GDP
$253 bn
Global Avg: $267 bn

Metropolitan Population
4.7 m

Ecosystem Performance

Ecosystem Value
$1.6 bn
Global Median: $4.1 bn

Startup Output
900 - 1.3k
Global Avg: 1,762

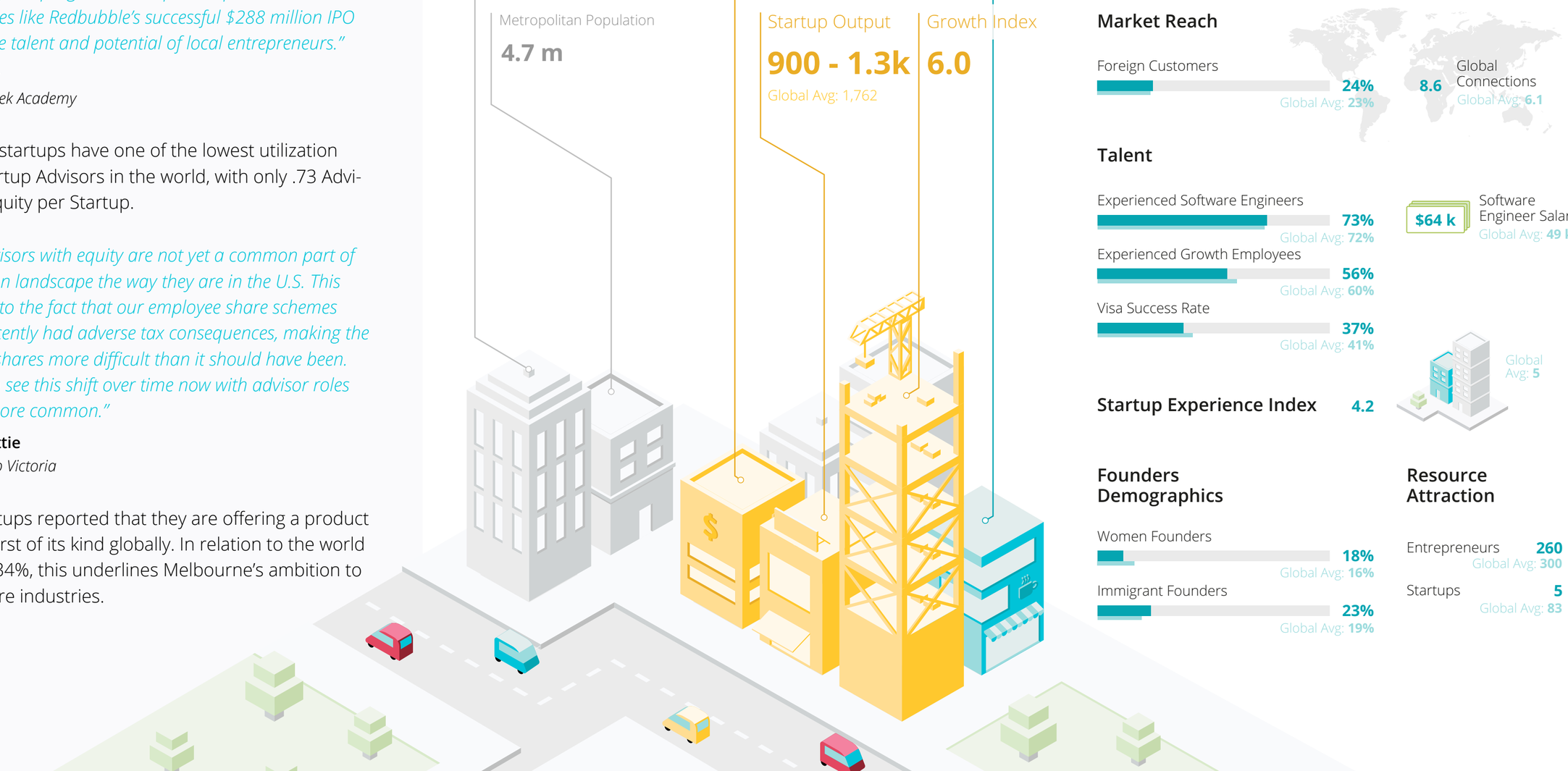
Growth Index
6.0

Funding

Early-stage Funding per Startup
$157 k
Global Avg: $252 k

Early-stage Funding Growth Index **7.1**
Global Avg: **5**

Experienced VC Firm Index **6.2**
Global Avg: **7**



Market Reach

Foreign Customers **24%**
Global Avg: **23%**

Global Connections **8.6**
Global Avg: **6.1**

Talent

Experienced Software Engineers **73%**
Global Avg: **72%**

Experienced Growth Employees **56%**
Global Avg: **60%**

Visa Success Rate **37%**
Global Avg: **41%**

Software Engineer Salary **$64 k**
Global Avg: **49 k**

Startup Experience Index **4.2**
Global Avg: **5**

Founders Demographics

Women Founders **18%**
Global Avg: **16%**

Immigrant Founders **23%**
Global Avg: **19%**

Resource Attraction

Entrepreneurs **260**
Global Avg: **300**

Startups **5**
Global Avg: **83**

New Zealand

New Zealand's spirit of collaboration and inventiveness is paving the way for a healthy and well-funded tech sector. Over a few decades the country that holds just 4.5 million people has radically transformed to become one of the most globalized economies around.

At the moment the local startup ecosystem is estimated to be home to 400-600 ambitious tech startups. The country's talent is attracting attention from worldwide tech giants such as Google, who is now using New Zealand as a testing bed for the future forward technology Google Loon, which gives wireless internet access to the world.

Recent legislation promises to liberalize the capital markets. New Zealand policy makers and industry players are dedicated to formalizing the angel asset class and improve early-stage funding, and it appears to be working. Research shows that every dollar invested in tech sector productivity brings a $3 ROI—an impressive stat made possible in part by the New Zealand Venture Investment Fund and the $300 million that has been earmarked to boost the country's vibrant early-stage investment market. All investments are made through the NZVIF either through privately managed venture capital funds, or alongside experienced angel investors into domestic companies with high-growth potential.

All this work is paying off. Last year New Zealand hit over $60 million in high level investments for the first time. We also saw an influx of companies who successfully raised capital from overseas investors including venture capital firms, angel groups, and equity crowdfunding.

New Zealand's angel-backed startups have proven their ability to scale globally by raising more than $500 million in growth funds. Their innovative digital megastars include the accounting app Xero and RocketLabs, who found a way to launch satellites at a fraction of the cost of past solutions.

In the overall Index, New Zealand's strongest factor is Talent, followed by Funding which are both above average in the global comparison. Performance metrics are below average and pose an opportunity for improvement. The big picture suggests brighter days are ahead, as solid Funding and Talent variables are key ingredients for improved performance over time.

Angel Association New Zealand *aims to increase the quantity, quality, and success of early-stage investments in New Zealand to create a greater pool of capital and capability for innovative start-up companies.*

Voices and Findings

"Kiwis have always been resourceful, with an entrepreneurial spirit and pragmatic approach enabling New Zealand to "punch above its weight". In the last 10+ years the startup ecosystem has built on this legacy and developed an enviable level of engagement between all stakeholders, so that we can successfully collaborate and compete in the global innovation market. New Zealand is attracting and developing more capability, capital and connections to achieve its full potential ... and it is a great place to live!"

Marcel van den Assum
Chairman at NZ Angel Association

New Zealand startups report a high Percentage of Foreign Customers outside their continent at 32%, confirming the fairly small domestic market and, more importantly, the ability to Go Global.

"Small countries with small domestic markets are quite different startup environments from larger markets. Say you're in Boston and want to get to four million customers. You drive for an hour. If you want to get to five million customers, you drive for an hour and 20 minutes. From NZ to get to a market size of 5 million we need to be exports. That requires the capital, networks, and being away from family to operate internationally."

Rod Drury
Founder and CEO at Xero

New Zealand ranks 5th in terms of startups that found positive Corporate Interest and Involvement with them, at 65%. The global average is at 51% of startups having a positive Involvement with Corporates.

"Our domestic market is too small to build significant businesses without this focus. That said, the biggest challenge we face is the limited pool of experienced execs that we can tap when it comes time to scaling these businesses. We have to look offshore to solve this problem as well and New Zealand's wider reputation as a pure, multicultural and welcoming nation, in an uncertain and volatile world, is playing in our favor."

Phil McCaw
Founder and Managing Partner at Movac

New Zealand startups are ranked 5th to last in terms of the startup experience of their growth teams, with only 48% previously having at least 2 years of startup experience.

"Kiwis, both in the public and private sectors, go offshore frequently to learn the better practices being developed and adopted elsewhere. They are quite adept at adjusting their ecosystem accordingly."

Bill Payne
U.S.-based Angel Investor

Metrics

Ecosystem Demographics

Country GDP
$179 bn
Global Avg: $267 bn

Country Population
4.5 m

Ecosystem Performance

Ecosystem Value
$807 m
Global Median: $4.1 bn

Startup Output
400 - 600
Global Avg: 1,762

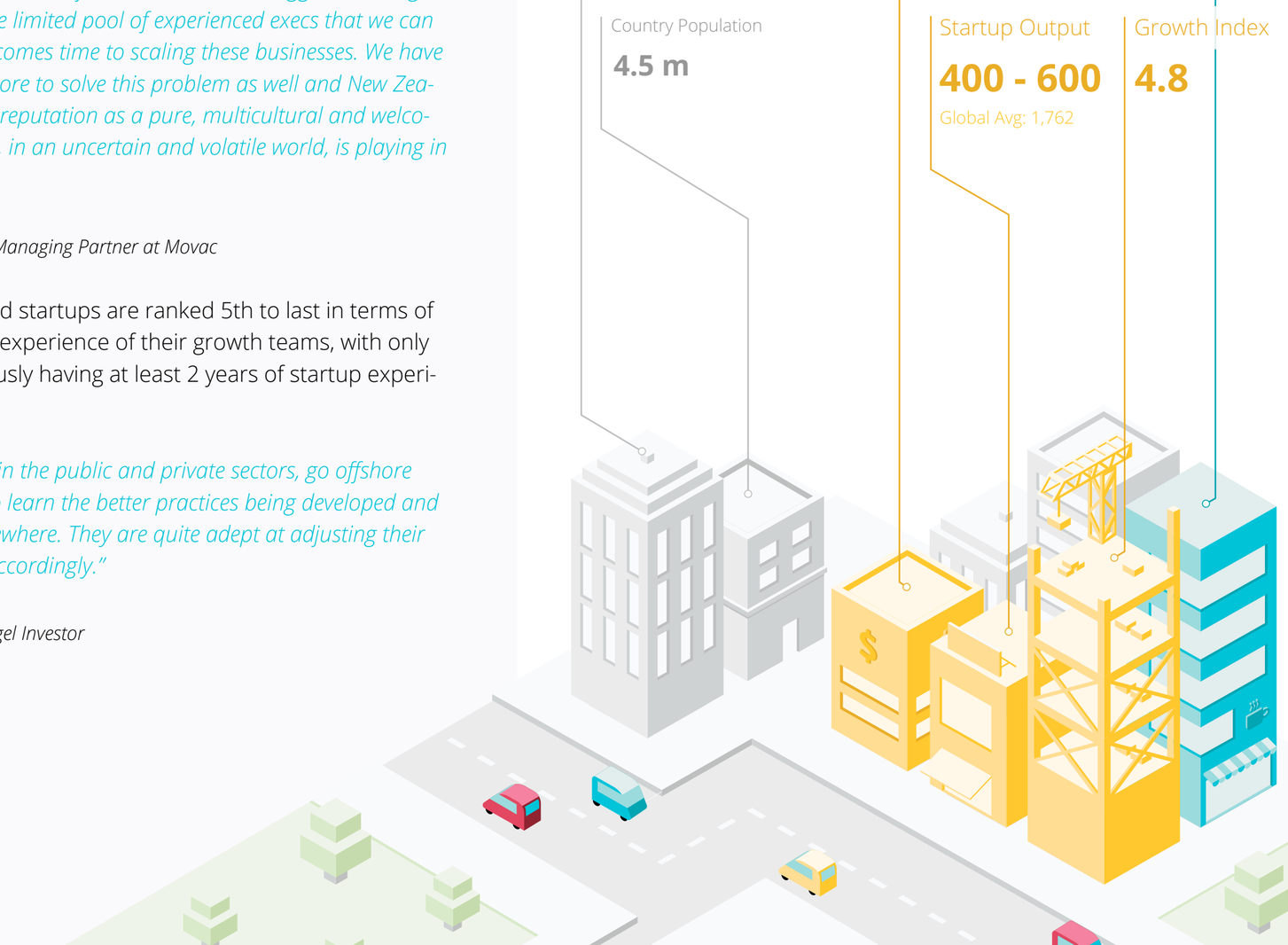
Growth Index
4.8

Funding

Early-stage Funding per Startup
$301 k
Global Avg: $252 k

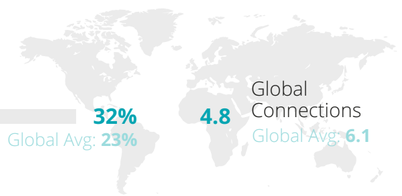
Early-stage Funding Growth Index **5.2**
Global Avg: **5**

Experienced VC Firm Index **6.6**
Global Avg: **7**



Market Reach

Foreign Customers
32%
Global Avg: **23%**



4.8 Global Connections
Global Avg: **6.1**

Talent

Experienced Software Engineers
65%
Global Avg: **72%**

Experienced Growth Employees
48%
Global Avg: **60%**

Visa Success Rate
68%
0.632 mm* Global Avg: **41%**

$52 k Software Engineer Salary
Global Avg: **49 k**

Global Avg: **5**

Startup Experience Index **4.8**

Founders Demographics

Women Founders
21%
Global Avg: **16%**

Immigrant Founders
25%
Global Avg: **19%**

Resource Attraction

Entrepreneurs **110**
Global Avg: **300**

Startups **11**
Global Avg: **83**

Seoul South Korea

Seoul can brag about many things—the world's fastest internet speeds, a savvy consumer and financial services market, and underground Wi-Fi for subway users as recently implemented in NYC. It is also home to 1,500-3,400 startups.

Its Gangnam District is not just known for Psy and plastic surgery. It is the most active startup area in Seoul with 81% of VC residing in the region and over a hundred thousand in attendance of 3,000+ startup-related events in 2015. Asia's first Google Campus set up shop in this hotspot, while other international companies such as Supercell, Apple, and WeWork have all chosen Seoul as well.

Seoul understands the value of digital sophistication. The government recently announced a $1.5 billion initiative[1] to increase internet speeds so that you can download a feature-length movie in approximately one second. The fastest growing sector by funding is virtual reality, with FinTech and cybersecurity startups not far behind.

Seoul's recent and formidable wins include Viva Republic, a money transfer app that is shifting the country's relatively antiquated payments system and Spoqa, a marketing app for cafes, restaurants, and other stores which received its most recent funding of $3.9 million in 2016. Last year saw the best funding yet for Korea's modern generation of startups—and between favorable governmental regulations, ample funders, and an eager market, there are no signs of the Seoul ecosystem slowing down.

Seoul is an ecosystem that's fast on the rise, looking to crack the top 20 soon. Seoul lacks strength in the Exit category, but it has a very high Startup Output and a strong Funding environment that is progressing better than most of its peers. Its biggest weakness in the Index is its Market Reach, which is hampered by a lack of Global Connectedness to other startup ecosystems and a relatively low Percentage of Foreign Customers.

Bigbang Angels Inc. *is an accelerator focused on a platform business model to support the growth of over 50 early-stage startups by connecting them with 200 of Korea's best investors and advisors.*

ROA Invention LAB *is specialized in Lean Startup education and Startup acceleration, focusing on the O2O/On-demand, Media & Content platform sector.*

AcademyX *offers a Startups training framework package from idea development to investment. They provide a learning services platform that combines content and solutions in an online / offline convergence environment.*

1 http://www.cnn.com/2014/01/22/tech/mobile/south-korea-5g/

Voices and Findings

"Seoul offers a very good environment for hiring good engineers. Therefore, Seoul's potential for becoming a global tech startup hub is big."

Ji Hoon Jeong
Professor at Kyung Hee Cyber University

Startups can hire an engineer in Seoul faster than anywhere else in the world, with a median Time to Hire of 15 days, compared to a global median of 41 days.

"Seoul is competitive in that startups and entrepreneurs can easily find young, talented people from top-level engineers to designers and marketing specialists. Koreans have the highest level of education amongst OECD countries and a changing trend is that more qualified people are now willing to work for high-potential startups in place of traditional big name corporations."

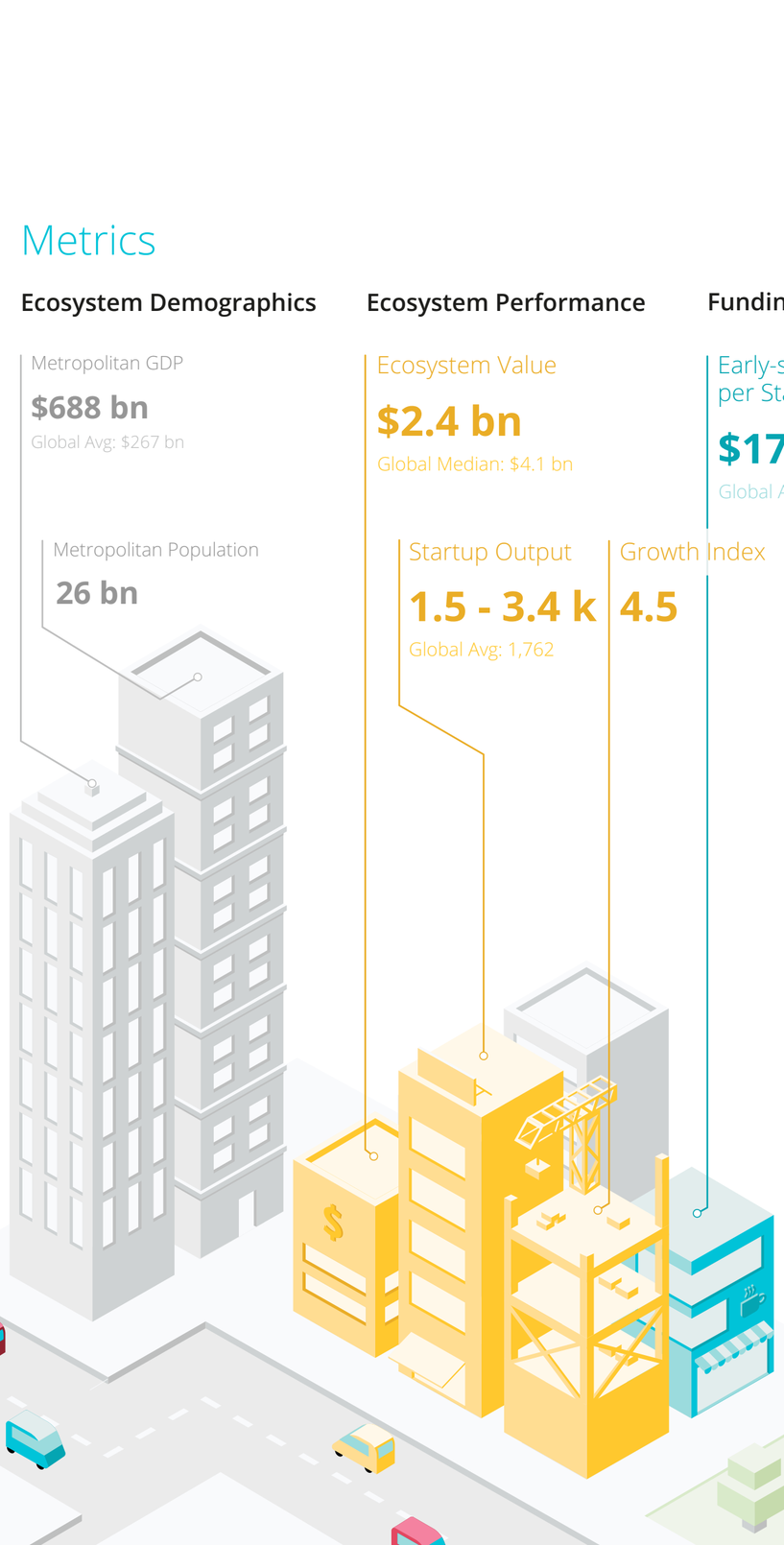
Jeffrey Lim
Head of Campus Seoul, Google

Seoul startups are tied for the 3rd with Silicon Valley for the highest Percentage of Employees on their Growth Team that previously gained at least two years of startup experience—at 76%, they trail only Tel Aviv and Austin.

"Seoul is the best place for mobile B2C startups to grow thanks to its population numbering more than ten million, all equipped with advanced smartphones with access to high-speed internet. The most popular sectors for these start-tups are O2O (online to offline), e-commerce, and fintech. Gangnam, located at the southern part of Seoul, emerged as a strong startup hub in recent years not only due to its business centric districts and cozy co-working spaces, but also access to many venture capital firms and the large pool of sw engineers in the area."

Jungwook Lim
Managing Director at Startup Alliance by Never

Seoul has the highest percentage of B2C startups at 50 percent. Only 8% of customers for startups in Seoul come from outside of the continent—one of the lower rates of this year's assessment—indicating a strong challenge in reaching the global market.



Metrics

Ecosystem Demographics

Metropolitan GDP
$688 bn
Global Avg: $267 bn

Metropolitan Population
26 bn

Ecosystem Performance

Ecosystem Value
$2.4 bn
Global Median: $4.1 bn

Startup Output
1.5 - 3.4 k
Global Avg: 1,762

Growth Index
4.5

Funding

Early-stage Funding per Startup
$174 k
Global Avg: $252 k

Early-stage Funding Growth Index **5.2**
Global Avg: **5**

Experienced VC Firm Index **8.4**
Global Avg: **7**

Market Reach

Foreign Customers **14%**
Global Avg: **23%**

Global Connections **2.1**
Global Avg: **6.1**

Talent

Experienced Software Engineers **68%**
Global Avg: **72%**

Experienced Growth Employees **76%**
Global Avg: **60%**

Visa Success Rate **25%**
Global Avg: **41%**

Software Engineer Salary **$38 k**
Global Avg: **49 k**

Startup Experience Index **4.1**

Global Avg: **5**

Founders Demographics

Women Founders **16%**
Global Avg: **16%**

Immigrant Founders **12%**
Global Avg: **19%**

Resource Attraction

Entrepreneurs **731**
Global Avg: **300**

Startups **0**
Global Avg: **83**

Sri Lanka

The Government of Sri Lanka is working hard to offer universal access to broadband infrastructure and mobile connectivity to its citizens,[1] but you'll already find the local tech scene teeming with the right vibe, prolific ideas, and programmers typing away on their keyboards. It's no wonder then that its economy has seen robust annual growth, with a GDP per capita that's ahead of the other South Asian countries, and making it a promising target for curious investors.

The island nation population of just above 20 million has had its share of turmoil as the civil war ended less than 10 years ago. Yet the strife hasn't failed to produce a close-knit tech community that shares ideas, advice, and connections to potential investors—alongside a flock of returnees equipped with global experience and an essential desire to make an impact in the local scene.

This fiery energy has rendered Sri Lanka a relatively new, but formidable player in tech. While the country may still lack coworking spaces, events like Disrupt Asia 2016, Sri Lanka's first ever startup conference and showcase, featured over 40 speakers, among them many international experts.

Research indicates a growing startup ecosystem comprising of 150-300 active tech startups. This number is bound to grow after 2016 witnessed one of the biggest exists in the country with eChanneling, a service to call doctors via web which was acquired for an amount estimated at around $4.5 million. In order for more success stories like this to happen, Sri Lanka needs to work hard to master the typical challenges of an ecosystem in the Integration phase. This was confirmed by a study surveying 250 ecosystem stakeholders, concluding that entrepreneurial culture and affordable workspace are needed the most.[2]

Not surprisingly, Sri Lanka does not rank among the top ecosystems in this year's Index. Due to its infancy, it doesn't have many output oriented metrics to showcase its progress, but its Early-Stage Funding is growing at one of the fastest rates in the world. And its decent Global Connectedness scores, combined with low cost engineering talent is a bright spot to build around.

The Information and Communication Technology Agency *is a wholly owned institution by the Government of Sri Lanka striving to make Sri Lanka a digitally-inclusive country.*

1 http://www.colombopage.com/archive_17A/Feb23_1487839041CH.php

2 http://www.sundaytimes.lk/160904/business-times/sri-lanka-tech-start-up-ecosystem-need-of-the-hour-207252.html

Voices and Findings

"The startup ecosystem in Sri Lanka has seen a significant growth since 2015, igniting the wave for digital innovation. The Government and the industry have jointly taken the initiative of driving the development of the ecosystem. It is self evolving and matures on a daily basis fostering the culture that is required for the Digital Economy."

Muhunthan Canagey
Managing Director and CEO at ICT Agency of Sri Lanka

Sri Lankan startups have the 2nd fastest Time to Hire an Engineer, with a median of 20 days. The Asia-Pacific median is 35 days, while the global median is at 41.

"Sri Lanka isn't known for tech startups but some of our companies power the London Stock Exchange and the middleware platform for Ebay. So we've certainly had some international successes and the future looks even brighter. But, our domestic market is small, so we need more founders to think 'global' from day one."

Mangala Karunaratne
Founder and CEO at Calcey Technologies

Only 13% of Sri Lankan startups immediately target the U.S. or U.K. market, significantly below the global average of 36%. For reference, other nearby ecosystems such as Bangalore have a rate of nearly double at 25%, indicating that Sri Lanka startups are focusing on local problems.

"Sri Lanka is, what Hong Kong is to China, to the South Asian Region. Innovation happens at the periphery of the client. Sri Lanka is strategically placed in close physical proximity and social intimacy to the fastest growing Asian economic powerhouses of the future such as India, Indonesia, and Bangladesh. Sri Lankan startups have realized this potential and have set their sights to win in these markets."

Ruwindhu Peiris
Managing Director at Stax Inc.

Sri Lanka faces typical challenges of the first phase of the Startup Ecosystem Lifecycle, such as a net negative Global Resource Attraction with some startups relocating to higher performing ecosystems.

"The startup ecosystem in Sri Lanka is at its infancy, and I believe there is a strong upside to startups in the island. This said, as a country we need to think bigger and open up labour markets so we can attract the best and the brightest to come work in the island."

Lahiru Pathmalal
CEO of Takas.lk

26% of Sri Lankan startups report that they are working on a product/service that is globally unique. 34% report a purely local differentiation of their product/service.

Metrics

Ecosystem Demographics

Country GDP
$82 bn
Global Avg: $267 bn

Country Population
5.6 m

Ecosystem Performance

Ecosystem Value
$32 m
Global Median: $4.1 bn

Startup Output
150 - 300
Global Avg: 1,762

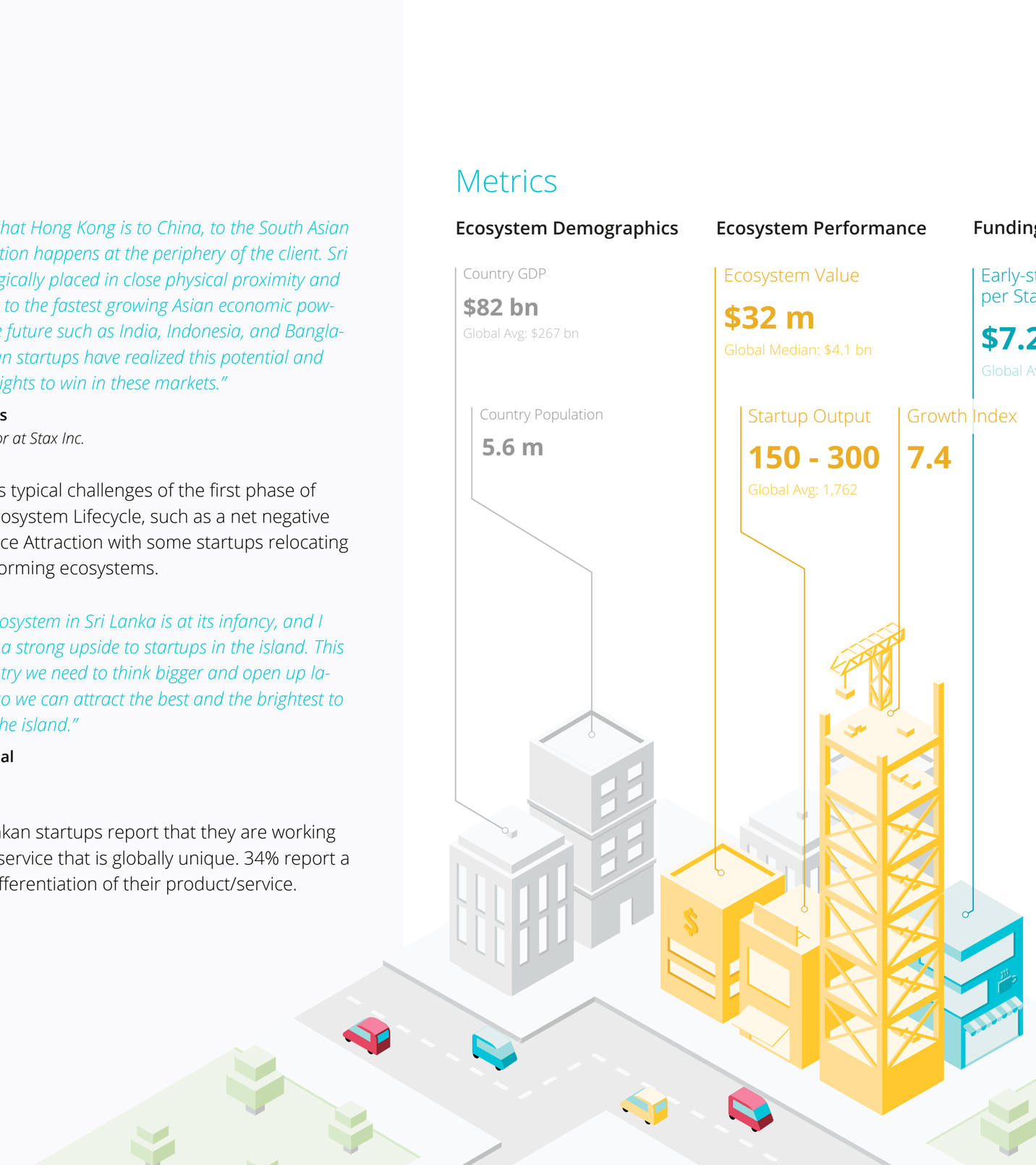
Growth Index
7.4

Funding

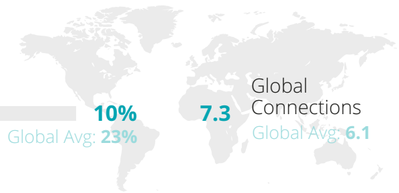
Early-stage Funding per Startup
$7.21 k
Global Avg: $252 k

Early-stage Funding Growth Index **6.2**
Global Avg: **5**

Experienced VC Firm Index **5.1**
Global Avg: **7**



Market Reach



Foreign Customers
10%
Global Avg: **23%**

Global Connections **7.3**
Global Avg: **6.1**

Talent

Experienced Software Engineers
63%
Global Avg: **72%**

Experienced Growth Employees
50%
Global Avg: **60%**

Visa Success Rate
41%
Global Avg: **41%**

Software Engineer Salary **$11 k**
Global Avg: **49 k**

Global Avg: **5**

Startup Experience Index **4.0**

Founders Demographics

Women Founders
10%
Global Avg: **16%**

Immigrant Founders
16%
Global Avg: **19%**

Resource Attraction

Entrepreneurs **47**
Global Avg: **300**

Startups **0**
Global Avg: **83**

Regional Clusters

Africa

Cape Town

Johannesburg

Lagos

Cape Town South Africa

Beautiful beaches and dramatic landscapes have long made Cape Town a popular place for tourists to visit and for locals to proudly call home. Yet recent years have given Cape Town a new status as Africa's prime locale for startups. Much of Cape Town's talent comes to the "Silicon Cape" for its solid academic institutions and stays for its moderate living expenses and friendly people.

The Western Cape's startup history can be traced back to 1999 when U.S.based VeriSign acquired Mark Shuttleworth's Thawte in a stock purchase of $575 million. Cape Town is now home to the most IT-based companies on the African continent, including an estimated 700-1,200 currently active tech startups. As one key driver of growth, the local ecosystem is home to the most mature funding landscape on the continent, resulting in comparably high amounts of funding being invested into fledgling startups.

Seed funding in Cape Town predominately comes from angel investors operating through accelerators. To create investment diversity and catalyze growth, South Africa's government has stepped in to establish new tax incentives for venture capitalists.[1]

This will in turn help Cape Town's startups and other small and medium sized businesses have better access to equity finance.

Going forward, Cape Town's ecosystem leaders cite a need for more growth capital and collaborations amongst the necessary stakeholders in South Africa to build a stronger startup ecosystem. There is also a call for more industry specific accelerators and incubators in South Africa—necessary for nurturing a healthy pipeline of investment-ready ventures.

Cape Town is an emerging city that is not yet plugged into the global ecosystem and its fluid exchange of resources. However, above average Startup Experience, low cost of Engineering Talent and relatively solid Funding factor in the regional comparison are bright spots to build upon during the next years to come.

Allan Gray Orbis Foundation *works with high impact entrepreneurs who display the potential to be agents of change and dramatically contribute to positive economic, social, and political change.*

1 http://www.tax-news.com/news/Praise_For_New_South_African_Venture_Capital_Tax_Incentives___65432.html

Voices and Findings

"At the Allan Gray Orbis Foundation we are committed to the development of a conducive environment for the cultivation of high impact entrepreneurship and South Africa's inclusion in this year's ranking is a welcome development to create global awareness about the opportunities in the local entrepreneurship ecosystem."

Fredell Jacobs
Head of Impact Assurance at Allan Gray Orbis Foundation

Cape Town is the largest startup ecosystem on the African continent, with between 700 - 1,200 active tech startups.

"The Western Cape has emerged as a center for venture capital activity in South Africa. The majority of the country's startups are based here and 75% of venture capital deals were concluded in this province. These trends speak to the business confidence in the Western Cape. We know that to attract investment and to support entrepreneurs to thrive, we have to create an enabling environment. To achieve this, we have prioritized the reduction of red tape."

Alan Winde
Western Cape Minister of Economic Opportunities

One third of Cape Town startup founders have gained at least two years of prior experience in a fast-growing startup, making them 5% more experienced than the global average.

"Small angel rounds are available, but very few break into the super Angel or even series A market. The startup perspective is that there are no investors. From an investor perspective this is often due to the quality of the startups."

Nevo Hadas
Partner at &Innovation Consulting

Cape Town startups require 53 days to hire a software engineer. While it takes 9 days longer in Johannesburg, the global average lies at 46.

"Constraints are significant and competition for talent is heated, but interest in and recognition of the quality of companies/products along with significant international cost benefits make Cape Town extremely attractive."

Brett Commaille
Lead Partner at AngelHub Ventures

Cape Town startups have one of the lowest utilization rates of startup advisors in the world, with only .85 advisors with equity per startup.

"Ideas are easy, implementation is hard, we help expose startups to thinking that expands their business models, getting to the 'why' quicker."

Lianne Du Toit
Ecosystem Manager at Graduate School of Business (GSB) Solution Space

Metrics

Ecosystem Demographics

Metropolitan GDP
$59 bn
Global Avg: $267 bn

Metropolitan Population
3.7 m

Ecosystem Performance

Ecosystem Value
$172 m
Global Median: $4.1 bn

Startup Output
700 - 1.2k
Global Avg: 1,762

Growth Index
4.5

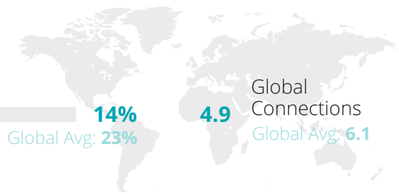
Funding

Early-stage Funding per Startup
$20.2 k
Global Avg: $252 k

Early-stage Funding Growth Index **4.8**
Global Avg: **5**

Experienced VC Firm Index **5.3**
Global Avg: **7**

Market Reach



Foreign Customers
14%
Global Avg: **23%**

4.9 Global Connections
Global Avg: **6.1**

Talent

Experienced Software Engineers
76%
Global Avg: **72%**

Experienced Growth Employees
50%
Global Avg: **60%**

Visa Success Rate
36%
Global Avg: **41%**

Startup Experience Index **4.0**

$20.1 k Software Engineer Salary
Global Avg: **49 k**

Global Avg: **5**

Founders Demographics

Women Founders
17%
Global Avg: **16%**

Immigrant Founders
18%
Global Avg: **19%**

Resource Attraction

Entrepreneurs **228**
Global Avg: **300**

Startups **18**
Global Avg: **83**

Johannesburg

South Africa

Johannesburg is South Africa's largest city, and it is also a rapidly changing city, poised optimistically towards the future. Famous for its large-scale gold and diamond trade, Johannesburg has also become one of the main technology innovation hubs—comprising the country's largest R&D, aerospace, high-tech manufacturing, biotech, ICT, and media clusters.

As of today Johannesburg is already home to an estimated 200-500 currently active tech startups. Johannesburg's rapidly growing tech scene had over 180 startup events last year, while the city's combined financial resources infused funding of nearly $252 million for its most promising companies. The high concentration of talented people in the area helps new startups move quickly.

Recent years have welcomed an influx of tech-friendly activity for the economic hub. Global technology giant IBM recently announced that it will invest more than $60 million into a new tech hub and startup accelerator. In an effort to cement Johannesburg as a leading digital cluster in Africa, the University of the Witwatersrand reclaimed five unused buildings near its campus and turned them into the Tshimologong Digital Innovation Precinct. Alongside the common incubator goals of growing skills, creating jobs, and providing monetary investment, Tshimologong also aims to promote the regeneration of Johannesburg's inner-city area.

In the global comparison, Johannesburg is facing challenges around its relative lack of Startup Experience, Funding, and Global Connectedness. The average valuations of local startups are currently outperforming considering those handicapping factors. Johannesburg's challenges are actively tackled through local leadership, as validated by the fact that Johannesburg has been the first African city ever to host the prestigious 2017 Global Entrepreneurship Congress. Here, thousands of people from all over the world have gathered to discuss the current state and future of entrepreneurial innovation while being exposed to South African startups. The exchange with international leaders is key, for example to enhance knowledge about international markets and the key ingredients for building globally scalable technologies.

SiMODiSA *is a collaborative research, stakeholder engagement, and policy design effort by key stakeholders from both the public and private sector in South Africa.*

Other Ecosystem Partner: The Business Place

Voices and Findings

"Johannesburg, also known as 'Egoli', the city of gold, is one of Africa's premium business destinations and pillar of commerce. With the current emerging entrepreneurial ecosystem, it is geared to be a world class start up city that will nurture and support the next generation of African unicorns. Startups will be refined and polished, just like the natural resources that come out of its ground."

Matsi Modise
Managing Director at SiMODiSA Association

Johannesburg indicates the 3rd highest percentage of startups that experienced positive corporate interest and involvement, at 67%. The global average is at 51%.

"As the financial and corporate epicenter of the continent, Johannesburg is seen by many as the New York of Africa. With all major corporate headquarters here and great connectivity to the entire continent, it is the ideal place to build corporate partnerships and expand across the continent."

Marcello Schermer
Managing Director at Seedstars World

27% of startups reported that they are offering a product that is the first of its kind globally. The global average being 34%, this underlines the approach to focus on the local market. Only 10% immediately target the U.S. or U.K. market, far below the global average of 36% as well.

"Most of the startups in Johannesburg focus on innovations to address local challenges, with significant support from the city of Johannesburg, WITS University, and The Innovation Hub."

McLean Sibanda
CEO at The Innovation Hub

Johannesburg startups have one of the toughest times hiring engineers, with a median time of 60 days compared to the global median of 41 days.

"South Africa is bottom of the tables in terms of entrepreneurship and we have one of the highest unemployment rates in the world—all of these issues need to be addressed. My dream is for the private and public sectors to work together to support entrepreneurs with effective funding and business support to create the jobs that we need and to solve our local problems and challenges."

Claire Bussetti
Financial Services Professional

Johannesburg startups have 0.9 Advisors with Equity, indicating a lack of support systems for founders who are facing challenges they need help with. The global average lies at 1.2

Metrics

Ecosystem Demographics

Metropolitan GDP
$83 bn
Global Avg: $267 bn

Metropolitan Population
4.4 m

Ecosystem Performance

Ecosystem Value
$1.36 b
Global Median: $4.1 bn

Startup Output
200 - 500
Global Avg: 1,762

Growth Index
6.3

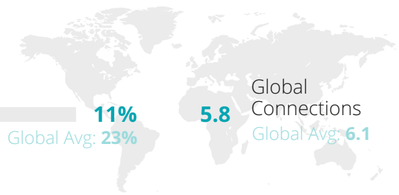
Funding

Early-stage Funding per Startup
$10.4 k
Global Avg: $252 k

Early-stage Funding Growth Index **8.2**
Global Avg: **5**

Experienced VC Firm Index **6**
Global Avg: **7**

Market Reach



Foreign Customers
11%
Global Avg: **23%**

5.8 Global Connections
Global Avg: **6.1**

Talent

Experienced Software Engineers
75%
Global Avg: **72%**

Experienced Growth Employees
55%
Global Avg: **60%**

Visa Success Rate
20%
Global Avg: **41%**

$20 k Software Engineer Salary
Global Avg: **49 k**

Startup Experience Index **3.6**

Global Avg: **5**

Founders Demographics

Women Founders
25%
Global Avg: **16%**

Immigrant Founders
17%
Global Avg: **19%**

Resource Attraction

Entrepreneurs **94**
Global Avg: **300**

Startups **0**
Global Avg: **83**

Lagos Nigeria

Lagos, the most populated and fastest growing city on the African continent, is a rising star in the global startup ecosystem. The city has transformed tremendously in the last four years, as reflected in skyrocketing smartphone use and connectivity. While Nigeria is busy adding six million new internet users every year, the feverish entrepreneurial energy of Lagos and its estimated 400-700 active startups stayed consistent by providing them with useful new technologies.

Few things can signify the arrival of a city as a contender on the global startup scene a visit from Mark Zuckerberg, who came to Aso Villa Demo Day to share his journey to developers and the 30 startups in attendance. As a more general trend, the ecosystem benefits from globally connected expats bringing back knowledge and financial capital after working in the U.S or U.K.

At the same time as the business models of local startups become more robust and innovative over time, we also see more of them also make headlines by receiving big checks from top Silicon Valley VCs including Greycroft, Khosla Impact, Green Visor, Social Capital Partnership, and many others. Among the recent ecosystem victories is Y-Combinator incubated Flutterwave, a FinTech startup which is revolutionizing payment methods in places where there was previously no universally used and accepted payment system in place and transaction would often take days.

In the global comparison, Lagos is one of the weaker performing startup ecosystems to date. It is comparably isolated and inexperienced, but it has low cost engineering talent, who speak great English — assets that could enable them to increase their global integration. We anticipate more headlines from Lagos as they work to establish themselves as a hub for startup investment and innovation over the next few years.

Voices and Findings

"The Lagos startup ecosystem has shown tremendous growth in the last 12 months with our startups like Flutterwave and Paystack amongst many others getting into prestigious accelerators like Y Combinator and raising funds from top tier international investors."

Yele Bademosi
General Manager at Starta Africa

At $2 billion, the Lagos startup ecosystem is the most valuable startup ecosystem on the African continent, but only second in number of startups after Cape Town.

"These are exciting times for the fast-growing Lagos startup ecosystem. We are seeing great and innovative startups come through the system and local and international investors proving seed capital to scale the ventures. To be sure, there are still a lot of challenges facing the ecosystem but that's to be expected since the ecosystem is in its infancy."

Collins Onuegbu
Director at Lagos Angel Network

The Lagos ecosystem has the 9th highest rate of Founders with an Undergraduate Degree at 59% while 93% of them have a technical background, the 3rd highest rate in the world.

"A population of 20 million, long-ignored by global companies, means that Lagos tech startups have a large, ready customer base without having to expand geographically. But, this also reflects a shortfall in the thinking of many local founders, who lack context of how their business may fit into a global competitive landscape and scale. Increased dialogue with international investors, Nigerian-returnees who have worked at tech companies globally, and the adoption of Lagos as a key market of focus by some of the world's best incubators, has already helped shape otherwise conservative thinking around business models and innovation."

Alexandra Novitske
Principal Investment Officer - Africa at Singularity Investments

Lagos startups have one of the lowest rates of Foreign Customers at 6%, suggesting challenges to Go Global (overall average at 23%). Only 11% of startups plan to Go Global.

"Entrepreneurs in the Lagos ecosystem and in Africa at large, have an opportunity to tremendously impact the high rate of unemployment plaguing the continent through innovation in the new economy. I encourage us all to keep pushing boundaries regardless of the challenges we face and take on the opportunities by playing to our natural resilient strength as Africans."

Emeka Akano
Co-Founder and CEO at Jara Mobile

Metrics

Ecosystem Demographics

Metropolitan GDP
$75 bn
Global Avg: $267 bn

Metropolitan Population
21 m

Ecosystem Performance

Ecosystem Value
$2 b
Global Median: $4.1 bn

Startup Output
400 - 700
Global Avg: 1,762

Growth Index
6.6

Funding

Early-stage Funding per Startup
$77.8 k
Global Avg: $252 k

Early-stage Funding Growth Index **4.2**
Global Avg: **5**

Experienced VC Firm Index **5.1**
Global Avg: **7**

Market Reach

Foreign Customers
6%
Global Avg: **23%**

3.8 Global Connections
Global Avg: **6.1**

Talent

Experienced Software Engineers
77%
Global Avg: **72%**

Experienced Growth Employees
63%
Global Avg: **60%**

Visa Success Rate
39%
Global Avg: **41%**

Startup Experience Index **4.1**

Founders Demographics

Women Founders
14%
Global Avg: **16%**

Immigrant Founders
4%
Global Avg: **19%**

$14.1 k Software Engineer Salary
Global Avg: **49 k**

Global Avg: **5**

Resource Attraction

Entrepreneurs **56**
Global Avg: **300**

Startups **15**
Global Avg: **83**

Acknowledgment and Partners

We would like to express our deep gratitude towards all who helped to make this project possible. A global project like the Startup Ecosystem Report can only be realized with enormous efforts from both the project team and external supporters. Several partners have invested significant resources into the project. Numerous advisors, founders, investors, and industry experts have given us access to their knowledge, networks, and time because they support our vision and wanted to move their ecosystem and the whole startup sector forward. Thank you.

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Survey Participants and Interviewees

Thanks to the more than 10,000 survey participants and the ~275 interviewees—startup founders, investors, leaders of accelerators, incubators and startup hubs, and policy-makers—all over the world who trusted us by sharing their confidential information and expert knowledge with us. By providing us with solid quantitative data and insights, they created the basis and the heart of our research.

Thank you for your support!

Partners and Collaborators

Global Partners

- CrunchBase: Everyday investors, journalists, founders, and the global business community turn to CrunchBase for information on startups and the people behind them.
- Dealroom.co provides data-driven intelligence on high-growth companies.
- Global Entrepreneurship Network is a year-round platform of programs and initiatives created by the communities that celebrate Global Entrepreneurship Week each November.
- Orb Intelligence: Business Information for B2B Marketing and Sales. Orb provides company information and smart algorithms as a service to marketing software vendors and B2B agencies.
- Angel Resource Institute provides education, training, mentoring, and information on best practices in the field of angel investing to improve connections between angel investors and entrepreneurs.

Regional Report Partners

We expect to publish regional reports over the coming months in partnership or collaboration with the following organizations.

SPAIN

Catalonia Trade & Investment/ACCIÓ is the Catalan Government agency for foreign investment and business competitiveness. It promotes startup innovation in over 110 markets with 39 offices around the world.

ONTARIO

The Government of Ontario, Ministry of Research, Innovation and Science supports world-class research, commercialization and innovation taking place across Ontario through a range of programs and services.

MaRS: with 1.5 million square feet of space in downtown Toronto, MaRS is the world's largest urban innovation hub. It supports scaling ventures that are tackling key challenges and helps open global markets to drive adoption of new solutions.

Communitech, founded by entrepreneurs in 1997, now supports an ecosystem of more than 1,000 tech companies—from startups to rapidly growing mid-size companies and large global players.

Ecosystem Partners

Ecosystems by alphabetical order

Amsterdam

- B. Amsterdam
- Bright Move
- Rockstart
- Startupbootcamp
- StartupJuncture

Multi-Locations

- BCG Digital Ventures
- Global Entrepreneurship Network
- Samsung NEXT
- Seedstars World
- Startup Digest
- Startup Socials
- Startupbootcamp
- Techstars
- UtrechtInc
- YES!Delft

Atlanta

- ATDC
- Atlanta Tech Village
- FlatironCity
- TechSquare Labs

Austin

- Austin Technology Incubator
- Built In
- Central Texas Angel Network
- St. Edward's University
- Techstars
- The University of Texas at Austin
- WeWork

Bangalore, Delhi, and Mumbai

- 91springboard
- Global Incubation Services
- India Business Group
- Innov8
- INVEST INDIA
- KarmaCircles
- Kyron Global
- LetsVenture
- Microsoft Ventures
- Mumbai Angels
- NASSCOM
- CO-LIV
- TLabs

Barcelona

- 101 Startups
- Antai Venture Builder
- Connector
- SeedRocket

Beijing

- 91Maker
- creativeyoungcommu
- Cyzone
- Innoway BJ
- Makesglobal
- Noodle&Meetup
- Startup Grind
- Suhehui
- technode

Berlin

- Berlin Valley
- DB mindbox
- Factory Berlin
- FinLeap
- Hub:raum
- KPMG
- Microsoft Accelerator
- Project A
- Rocket Internet
- Techstars

Boston

- Carlton PR & Marketing
- CIC
- Health Innovators
- MassChallenge
- PitchFull
- Techstars
- The Capital Network

Cape Town

- AngelHub Ventures
- Kieno Kammies Strategic Business Solutions
- Silicon Cape
- Techstars
- The LaunchLab
- Warren Harding

Chicago

- Catapult Chicago
- MATTER
- The Shift Chicago
- University of Chicago

Colorado

- BEN Colorado
- Built In Colorado

Estonia

- Buildit
- Civitta
- Contriber
- Startup Wise Guys
- Tehnopol

Frankfurt

- Commerzbank
- Deutsche Bank
- Deutsche Börse Group
- Frankfurt Economic Development
- HTAI
- ING-DiBa
- KPMG
- Merck
- PwC

Helsinki

- ArcticStartup
- Conor Venture Partners
- Espoo Innovation Garden
- FiBAN
- FVCA
- Nestholma
- NewCo Helsinki
- NFBAN
- Slush
- Startup Sauna
- Startup100

Houston

- Circular Board
- Fannin Innovation Studio
- HATCH pitch
- Houston Angel Network
- Houston Technology Center

- Mercury Fund
- RED Labs
- Rice University - McNair Center for Entrepreneurship and Innovation
- Rice University - OwlSpark
- Rice University - Rice Alliance for Technology and Entrepreneurship
- Station Houston
- Unconventional Capital

Jerusalem

- Jerusalem Venture Partners (JVP)
- Jumpspeed Ventures
- Made in JLM
- MassChallenge
- Siftech

Johannesburg

- Edge Growth
- Endeavor
- Everlytic
- Raizcorp
- Seed Academy
- Technology Innovation Agency

Kuala Lumpur

- 1337 VENTURES
- Agensi Inovasi Malaysia
- Cradle Fund
- MAD Incubator
- Malaysia Digital Economy Corporation
- Malaysian Technology Development Corporation
- MAVCAP
- Maybank
- myNEF
- SME Corp.
- TeAM
- Technology Park Malaysia
- Telekom Malaysia
- TERAJU

Lagos

- Jara Mobile
- OIIE
- Seedstars World
- Singularity Investments
- TechCabal
- Techpoint

Lisbon

- Beta-i
- BGI
- Fábrica de Startups
- Labs Lisboa
- LISPOLIS
- Startup Lisboa
- Tec Labs

London

- Balderton Capital
- KPMG
- MassChallenge
- Techstars
- The Accelerator Network
- Wayra UK

Los Angeles

- Mucker Capital
- WeWork

Malta

- The Malta Communications Authority

Melbourne

- Hub Australia
- Inspire9
- Melbourne Accelerator Program
- Startup Victoria
- Teamsquare

Mexico City

- Hackers/Founders
- Techstars

Montreal

- Arche Innovation
- Credo
- District 3
- FounderFuel
- Notman House
- Real Ventures
- Startupfest

Moscow

- GVA
- HSE
- IIDF
- Maxfield Capital

New York City

- Digital.NYC
- District Cowork
- ff Venture Capital
- Gust
- Rubicon Venture Capital

New Zealand

- Lightning Lab
- New Zealand Venture Investment Fund
- Powerhouse
- Snowball Effect
- The Ice House

Ottawa

- Algonquin College
- Capital Angels
- Kanata North BIA
- L-SPARK
- La Cité
- Lead To Win
- Startup Garage

Paris

- 50 Partners
- NUMA
- TheFamily

Quebec City

- BDC
- PwC
- ROBIC
- VETIQ
- Ville de Quebec

Santiago

- Austral Incuba
- Chrysalis
- Fundacion Chile
- Imagine Lab
- Incuba UC
- INNOVO
- Magical Startups
- Santiago Innova
- Start-Up Chile
- UDD Ventures
- University of La Frontera

São Paulo

- ABStartups
- colab.re
- CUBO
- Dínamo
- Google
- São Paulo Negócios
- Start-Up Brasil
- Startup Farm
- Techstars
- X4Start

Seattle

- Techstars

Seoul

- Academy X
- Big Bang Angels
- BLT patent & law firm
- FuturePlay
- Google Korea
- ROA Invention LAB
- SparkLabs
- The Innovation Hub
- VENTURE SQUARE

Shanghai

- ChinaAccelerator
- Ether Capital
- Innoclub
- Innospace+
- NakedHub
- People Square
- Startup Grind
- technode
- Xnode

Silicon Valley

- Computer History Museum
- GSVlabs
- Manos Accelerator
- PARISOMA
- RocketSpace

Singapore

- 500 Startups
- AIRmaker
- Collision 8
- Entrepreneur First
- Expara
- Golden Gate Ventures
- JFDI
- muru-D
- SeedPlus
- SGInnovate
- Singapore Management University
- Spacemob
- SPH Plug & Play
- Startupbootcamp
- TAG.PASS
- The Finlab

Sri Lanka

- Lankan Angel Network
- SLASSCOM
- Startup Sri Lanka

St. Louis

- BioGenerator
- Capital Innovators
- CIC
- Cultivation Capital
- Donald Danforth Plant Science Center
- ITEN
- Missouri Technology Corporation
- Prosper Women Entrepreneurs

- T-REX
- Yield Lab

Stockholm

- Epicenter
- Impact Hub
- Industrifonden
- Keiretsu Forum
- NFT VENTURES
- SSES
- Startup Grind
- STING
- Stockholm Business Region
- SUP46
- Sweden Demo Day
- Venture Cup

Tel Aviv

- Geektime
- SOSA

Toronto

- Centre for Social Innovation
- City of Toronto
- DMZ
- NEXT Canada

- OneEleven
- Toronto Global

Turin

- 2i3T
- I3P
- USA
- Rise of the Rest

Vancouver

- BC Tech Association
- HIGHLINE
- Launch Academy
- RADIUS SFU
- Sauder S3i

Startup Package Partners

To reward participants of our online survey, multiple great companies agreed to offer huge discounts on their product:

AWS China is a secure cloud services platform, offering compute power, database storage, content delivery and other functionality to help businesses scale and grow.

Compass is the leading solution for automated management reports and benchmarks for small and medium-sized online businesses.

Foundersuite is a collection of software tools and templates that help startup CEOs execute more efficiently and effectively.

Hotjar is a new powerful way to reveal true website user behavior and experiences in one central tool – giving you the big picture of how you can improve your site's UX and conversion rates. All your data is securely stored in the cloud and accessible at lightning speed.

Olark is a lightweight chat tool that you can integrate on your site or application within a few minutes. It's great for engaging and learning from your customers right when they use your product.

Zendesk is a customer support application. Being responsive and in touch with your customers makes a big difference no matter in what stage your company is.

Promotional Partners

- Sticky Docs
- Nasdaq Entrepreneurial Center
- Launch Pad
- Hermes Group

Methodology

The ranking methodology focuses on the following aspects:

- Stakeholder Objectives: informing our stakeholders' strategic decisions
- Objectivity and Transparency: producing a data-driven, objective ranking based on a transparent weighting formula and factors.
- Data Sources: using multiple data sources to assess a large sample of startups.
- Robustness and Stability: testing multiple formulas to make sure the ranking is robust to different data selection methods.

The ranking captures only a fraction of Startup Genome's ecosystem assessment framework. The broader framework provides an in-depth, quantitative analysis of the ecosystem, including the identification of its lifecycle phase, strengths and weaknesses, and benchmarks.

1. Stakeholder Objectives

We took four different perspectives when defining the objectives of this report.

- Startups: Where should I form my tech startup in order to maximize my chances of building a global success? Where should I open a second office?
- Startups, Investors, and Supporters: What ecosystem weaknesses do I have to compensate for?
- Investors: where are there Funding gaps I can take advantage of?
- Ecosystem Leaders: how can we accelerate the growth of our startup ecosystem?

2. Data Sources

We have focused our efforts on collecting measurable and verifiable information from startups and investors, local ecosystem partners, and third-party sources.

Here's a description of our main datasets:

- Startup Genome proprietary data
  - Interview of Experts: ~ 275 interviews across 25 countries with founders, investors, and industry experts in 2015 and 2016;
  - 2016 Startup Ecosystem Survey with more than 10,000 participants with the majority concentrated in 56 ecosystems;
- CrunchBase: global dataset on funding, exits, and locations of startups and investors;
- Orb Intelligence: global dataset on funding, exits, and locations of startups and investors;
- Dealroom: global dataset on funding, office location funding flow;
- Local partners (accelerators, incubators, startup hubs, investors):
  - list of startups;
  - list of local funding events

3. Definitions Used

(see the 'Model Explanation' section for the main definitions)

- Tech Startup. Steve Blank defines a startup as a "temporary organization in search for a repeatable and scalable business model". We then define tech startups around the usage of the term in Silicon Valley: startups whose products are mostly software-based. This includes web, mobile and other software, including eCommerce companies that offer their platform to others, and small web-connected devices (e.g. IoT). We collected data from hardware, biotech, nanotech, and cleantech but excluded them from our analysis. This is the only way to analyze a more homogenous set of startups (rather than comparing apples to oranges).
- Location: where possible we assigned a startup to the ecosystem where it was created by manually researching all of the large acquisitions and the largest exits.
- Indexes: an index is obtained by capping the z-score of each ecosystem's value for for any factor, sub-factor or metric at five standard deviations away from the mean, then adding five. This results in an index of zero to ten with an average of five, and each point up or down representing a movement of one standard deviation away from the mean. For instance an ecosystem Output growth rate of 12% compared to a mean of 10% and standard deviation of 2% for all the ecosystems would result in an Output Growth Index of 6 for that ecosystem.

4. Selected Data Timeframes:

- Ecosystem Value, Exit Value, and Startup Valuation: sum of exits and funding rounds of 2014, 2015 and 1H2016
- Latest quality year: in 2015 we assessed that it takes one year for half of the seed rounds to find their way into our major data sources. Therefore for earlier-stage metrics the year 2015 is the latest one for which reliable benchmarks can be computed.
- Early-Stage Funding: Sum of all Seed and Series A investments in 2014 and 2015, corrected for obviously missing rounds.

5. Ranking Methodology

The ranking is a weighted average of the following factor scores:

- Performance: 30%
- Funding: 25%
- Market Reach: 20%
- Startup Experience: 15%
- Talent: 10%

We calculated an ecosystem index value for each factor, based on the sub-factor and metrics detailed below. The ecosystems scores were multiplied by the above weights to establish the overall rank of each ecosystem. The weights of the factors were determined in 2015 and adjusted in 2016 through correlation analyses and modeling work based on linear regression analyses, using factor indexes as independent variables with the performance index as dependent variable. Startup Experience gained weight as it now includes a more reliable metric of experience and has a stronger, clearer relationship with Performance. The weight for Talent was reduced because its resulting regression coefficient was lower.

We then varied the weights and scoring sensitivity for each sub-factor and metric to measure the fit of the model as measured by the regression's r-squared (0.90) and the variables' t-values. Finally, adding the actual Performance Index to the ranking formula serves to include the influence of unobserved factors on the performance of an ecosystem.

6. Changes from 2015

In general we diversified the ranking away from size and towards more current and leading indicators of success.

- Reduced the overall weight attributed to metrics capturing ecosystem size ("bigger is better" metrics)
- Increased the overall weight of current and leading indicators (e.g. startup valuation and growth indexes), reducing the weight of lagging indicators (e.g. Exit Value)
- Adopted log functions where this showed a better fit with performance measures, reducing the score of larger ecosystems
- Added Global Connectedness to better capture the relationships between entrepreneurs that have a marked impact on the ability of startups to "Go-Global" (see the Global Connectedness section)

7. Ranking Details

Performance

Captures the actual leading, current, and lagging indicators of ecosystem performance.

- 50% Startup Valuation (or Startup Value) (Log of): sum of all startups valuations and estimated valuations during the time-frame without double-counting
- 25% Exit Value = 90% Exit Value + 10% Exit Value Growth Index: sum of all exit valuations plus exits with unknown valuations estimated at the 25% percentile of global exits with known valuations
- 25% Output = 90% Output + 10% Output Growth Index
  - Number of startups
  - A new statistical method, MSE (Multiple System Estimation), led to much more reliable estimations

Funding

Quantifies funding metrics important to the success of early-stage startups.

- 90% Access
  - 90% Early-Stage Funding = 90% sum (log) + 10% amount per startup
  - 10% Early-Stage Funding growth rate (2012/13 vs 2014/15)
- 10% Quality (Experienced VC Firm Index)
  - 50% number of VC firms with 5-year experience (log)
  - 50% ratio of experienced to non-experienced VC firms

Market Reach

Measures early-stage startup access to customers allowing them to scale and "Go-Global" from the onset.

- 50% Reach: mix of local GDP and Global Reach to balance the effect that very small economies have, by definition, a high proportion of customers from neighboring countries but it is not strictly indicative of their ability to go-global
  - 40% Local Reach: National GDP
  - 60% Global Reach: percentage of Foreign Customers
- 50% Global Connectedness
  - 50% Global Market: Meaningful relationships with local entrepreneurs reported by international entrepreneurs (Inbound Entrepreneur Connections), indicating to what degree startups from all over the world are active in this ecosystem, making local customers knowledgeable of global innovations (Global Customers)
  - 40% Global Connections: Average number of meaningful relationships reported by local entrepreneurs (Outbound Entrepreneur Connections) with international entrepreneurs in the following top ecosystems (excluding any such ecosystem located within their country): Silicon Valley, New York City, London, Berlin, Tel Aviv, Singapore and Shanghai.
  - 10% Global Connections Made Locally: Meaningful international relationships with entrepreneurs reported by local entrepreneurs as having been made locally, indicating to what degree an entrepreneur can build a global network without travelling

Talent

Assesses the talent early-stage startups have access to.

- 80% Access
  - 37.5% Experienced Software Engineers: percentage with 2+ years prior experience in a startup
  - 12.5% Time to Hire Software Engineers (lower is better)
  - 25% Experienced Growth Team: percentage with 2+ years prior experience in a startup
  - 12.5% Days required for an answer to a work visa application (lower is better)
  - 12.5% Work Visa Success Rate
- 10% Quality
  - 80 points National Score at Coding tests: HackerRank and TopCoder, capturing the average raw talent of developers in each country—this is what an ecosystem starts with
  - 50 points Startup Experience: number of exits over $50 million during the last 10 years, measuring actual scaling experience accumulated by the ecosystem and present (on average) in the technical team
  - 15 points Global Resource Attraction: indicates the ability to attract high-quality talent from other countries
- 10% Cost: software engineer salary (lower is better): from Glassdoor, Salary. com, and PayScale

Startup Experience

Captures the degree of startup experience in an ecosystem and the degree to which its founders espouse practices that are known to positively impact a startup's success based on Startup Genome research.

- 60% Ecosystem Experience: cumulative number of startups over 10 years that started in the ecosystem and exited
  - 66.7% log of number of exits over $1 billion
  - 33.3% log of number of exits over $50 million
- 40% Team Experience
  - 33.3% percentage of startups with at least one founder with prior experience in a hypergrowth startup or unicorn
  - 33.3% average number of advisors with equity, indicating the advisor is worth giving stock to and is actually involved
  - 33.3% ESOP to All: percentage of startups that offer stock options to all their employees, indicating the founder knows it has a positive impact on performance and that employees value it enough for the founder to offer them, indicating a local startup culture (see 'Startup Genome Report – Why Startups Succeed' in our website research section)

Growth Index

- 33.3% Output Index: annual growth in the three-year average formation of startups (2010-2012 vs 2013-2015, longer time-frame is used due to the two- to three-year delay in the capture of startup formation in popular databases)
- 33.3% annual growth in the average of early-stage funding (2012-2013 vs 2014-2015, 2015 being the last selected year because of the one- two-year delay in the capture of seed funding events in popular databases)
- 33.3% annual growth in the two-year moving average of Exit Value (2013-2014 vs 2014-2015, selected to be consistent with other measures)

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In alphabetical order.

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