



***FAR FROM
SILICON VALLEY:
The Entrepreneurial
Gap in Emerging
Markets***





Dear Reader,

We are a team whose paths coincided back in 2012 at the University of Pennsylvania where we began the Wharton/Lauder dual-degree master's program. As part of this program we were tasked with forming groups with a common interest on an internationally relevant hot topic. It was a shared curiosity for what generates thriving innovative and entrepreneurial ecosystems that brought us together. It's been a wonderful journey ever since.

Early on in our discussions it became clear that we could focus on only a few cities and would need to carefully choose interesting regions to inform our understanding. We spent days researching the big players across the globe; some cities stood out for having long histories of supporting entrepreneurs and investing in innovation. Other cities were hard to ignore as they were gaining unprecedented momentum in entrepreneurship and innovation.

Beijing, Bangalore, Santiago and Nairobi formed the combination we were looking for. We believe that these four cities illustrate not only how different regions around the world are approaching entrepreneurship but also what different stages of the entrepreneurial ecosystem can look like. We traveled to each, met with incredible people, and became all the more passionate about the topic and excited for what the future holds.

As you read this report, please note that unlike cooking or chemistry, entrepreneurial and innovative ecosystems can't be created with a recipe or formula; nonetheless, we identified six factors that make an important difference. These six factors are intended as a guiding framework for thinking about the creation of an ecosystem that drives innovation.

We hope you find the information as valuable and enjoyable as we did.

Happy reading,
The Team

Content

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Brad Feld
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Global Snapshot

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& CAPIT

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Li-Fu Lee

Beijing 14

Evolve

HIGH IMPACT
ENTREPRENEURSHIP

Approximately 50-60%
high impact entrepreneur
education and/or work experi-
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d in China. Given the intense
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who have 3-10 years of work
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Internet entrepreneurs or re-

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Bangalore 18

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COMMUNIT
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GOVERNME
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The Future

The Future 30

The Team

Melissa C. Blohm

Prior to pursuing her MBA/MA Melissa spent 6 years working as a Human Capital Consultant. There, she focused on global implementation of technology and process solutions. Melissa has a passion for international business challenges and has lived and worked in Venezuela, the United States, Australia and Peru. Melissa is in the process of establishing her own business that will take technology hardware products to Africa. Her interest in being a part of this project came from her strong belief that innovative and entrepreneurial thinking in emerging markets is the key to solving the world's biggest challenges. Melissa is fluent in Spanish.

David Cummins

David has always had an interest in venture capital and entrepreneurship. Prior to Wharton, he was a member of the Draper Fisher Jurvetson (DFJ) Growth Fund in Silicon Valley. There, he invested in expansion-stage technology companies in the US and China, most notably Tesla (Nasdaq: TSLA), AdMob (acquired by Google for \$750 million), and Okbuy (the "Zappos of China"). He left DFJ to return to his entrepreneurial roots. He co-founded Enterupt and raised \$400,000 from early Skype investor, Tim Draper. Enterupt built products in the online reputation and travel marketplace spaces used by thousands of people. David is fluent in Mandarin Chinese.

Professor Regina Abrami Advisor

- Ph.D. in Political Science, University of California, Berkeley
- Senior Lecturer in Political Science, Senior Fellow in the Management Department, Wharton School
- Director of the Global Program at the Lauder Institute of Management and International Studies
- Previous faculty of Harvard Business School

Ye Ella Lu Design Assistant

Ella has interdisciplinary design experience in graphic, product, exhibition and architectural design. She has always had a passion for using design to implement social changes. She has work experience in the business development department of the Solomon R. Guggenheim Museum in New York, architecture offices in Shanghai, Hong Kong, and the Netherlands.

Vinay Narayan

Vinay is passionate about consumer technology. He spent the summer of 2013 helping scale a global program at eBay in Silicon Valley. Prior to business school he worked in operational roles across diverse industries. He has worked in India for a pre-IPO education start-up, for the mobile marketing team at Nokia and for the business development team at J&J, where he focused on growing the ocular medical device category. Vinay is fluent in Hindi.

Dalton J. Wright

Prior to Wharton, Dalton was on the founding team of Mexico's leading venture capital fund, Alta Ventures Mexico, which raised \$70M to accelerate entrepreneurship in Latin America. He first gained experience in venture capital in Utah, helping build Kickstart Seed Fund into the most active seed investor in the region. Dalton loves entrepreneurship and co-founded a media technology company during college which raised angel investment and was sold to new partners. After graduating from Wharton/Lauder he will be returning to Utah as a partner in Kickstart Seed Fund III. Dalton is fluent in Spanish.

Yinyin Wu

During the summer of 2013, Yinyin worked in the account management group of PIMCO in New York City. Prior to Wharton, Yinyin spent 5 years working at Credit Suisse, in New York and San Francisco, where she advised corporates on liability management transactions and technology companies on financing and M&A opportunities. Yinyin developed an interest in technological innovation during her time living in Silicon Valley and working with technology companies at varying stages of maturity. Yinyin is fluent in Mandarin Chinese.

Professor Mauro Guillén Advisor

- Ph.D. Sociology, Yale University
- Ph.D. Political Economy, University of Oviedo
- Director of the Joseph H. Lauder Institute of Management Studies at Penn
- Dr. Felix Zandman Endowed Professorship in International Management at the Wharton School
- Secondary appointment as Professor of Sociology in the Department of Sociology of the University of Pennsylvania

Xitong (Kacie) Nie Research Assistant

Kacie is a sophomore at Penn, majoring in Systems Engineering and Finance. On campus, she is the president of Global China Connection and the social chair of International Council on Systems Engineering at Penn. Last summer, she interned at the investment banking division of a securities firm in China where she worked on M&A deals in healthcare and hospitality. She looks forward to embarking on a career in finance.

Executive Summary

Overview

High-impact entrepreneurship and ecosystems for innovation are important to the ongoing and future economic development of developed and emerging market economies alike, but what is innovation? For the purpose of this report, we define innovation as a product, service, or process invention that creates significant economic value when applied to a market opportunity.

The natural question that follows is: how does a country go about creating an ecosystem for innovation? Experts, academics, investors, entrepreneurs and industry participants each have unique viewpoints as to the critical elements required to stimulate and sustain high impact entrepreneurship and thriving innovation ecosystems. We will summarize and highlight some of these viewpoints from global thought leaders in more detail in this report.

Performance Criteria Factors

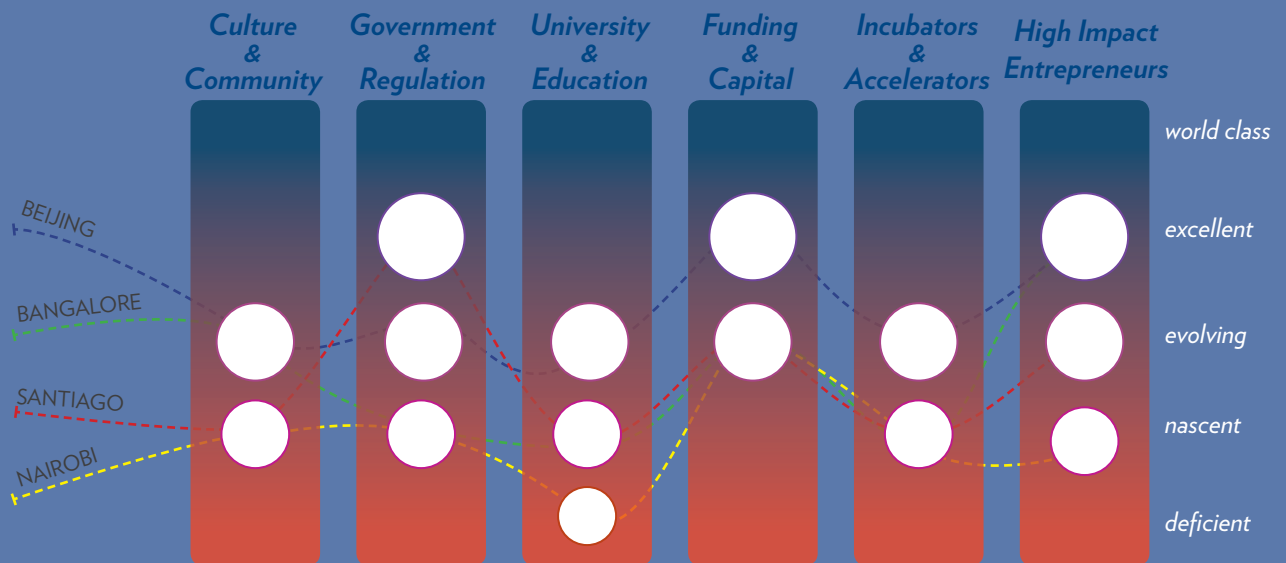
Based on our own research, we identified six factor groups that we believe are critical actors that drive the creation of successful high-impact entrepreneurship and innovation ecosystems. The six factors that we considered are listed below. Later in this report, we will define each respective group in more detail.



1. High Impact Entrepreneurs
2. Community & Culture
3. Government & Regulation
4. Universities & Education
5. Incubators & Accelerators
6. Funding & Capital Sources

Ecosystem Scorecard

In this report, we focus our analysis on four ecosystems that are geographically diverse and are currently at different stages of development. These ecosystems include, Beijing, Bangalore, Santiago and Nairobi. We traveled to each of these geographies in an effort to gather data, collect information and conduct primary interviews with entrepreneurs, government officials, investors, corporate players and multiple other industry participants. Below is a summary of how each of these respective ecosystems is performing relative to our six-element checklist. In this report, we provide additional data, insight, performance analysis and our specific suggested areas of improvement for each respective ecosystem.



Going Forward

During the course of our research it became all the more evident that innovative ecosystems are critical to the creation of thriving and sustainable economic growth. At the same time, the world of innovation and entrepreneurship is quickly changing. Silicon Valley is a good example of success, but it is no longer the only model or success story. In trying to create this ecosystem, each country, city and community must adjust for its own characteristics and idiosyncrasies. Government support, such as through visa programs, access to permits, IP protection, and contract enforcement are a must, but without the involvement and commitment from all six factor groups success is unlikely.

Ultimately, the best ecosystems offer the entrepreneur access to large markets, capital, mentors, customers, educated employees, resources, and IP protection. Based on the geographies that we studied, each comes up short in some respects and room remains for improvement. Those who can build ideas and businesses quickly while overcoming the challenges that exist will be the ones who succeed.

Key Terms and How We Define Them

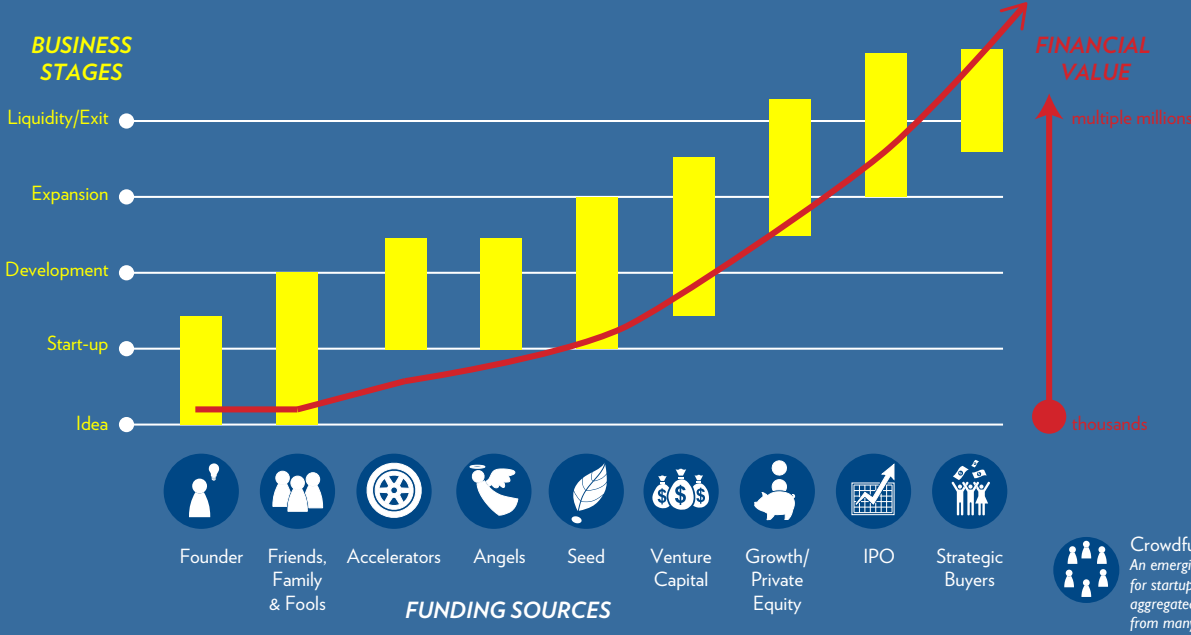
We have provided the following definitions and frameworks to establish a common language by which we may evaluate, compare and discuss entrepreneurial ecosystems around the world. While no two ecosystems are identical and these definitions vary somewhat from region to region, the following represents a useful starting point to understand the structure of a “typical” entrepreneurial ecosystem.

INCUBATORS & ACCELERATORS

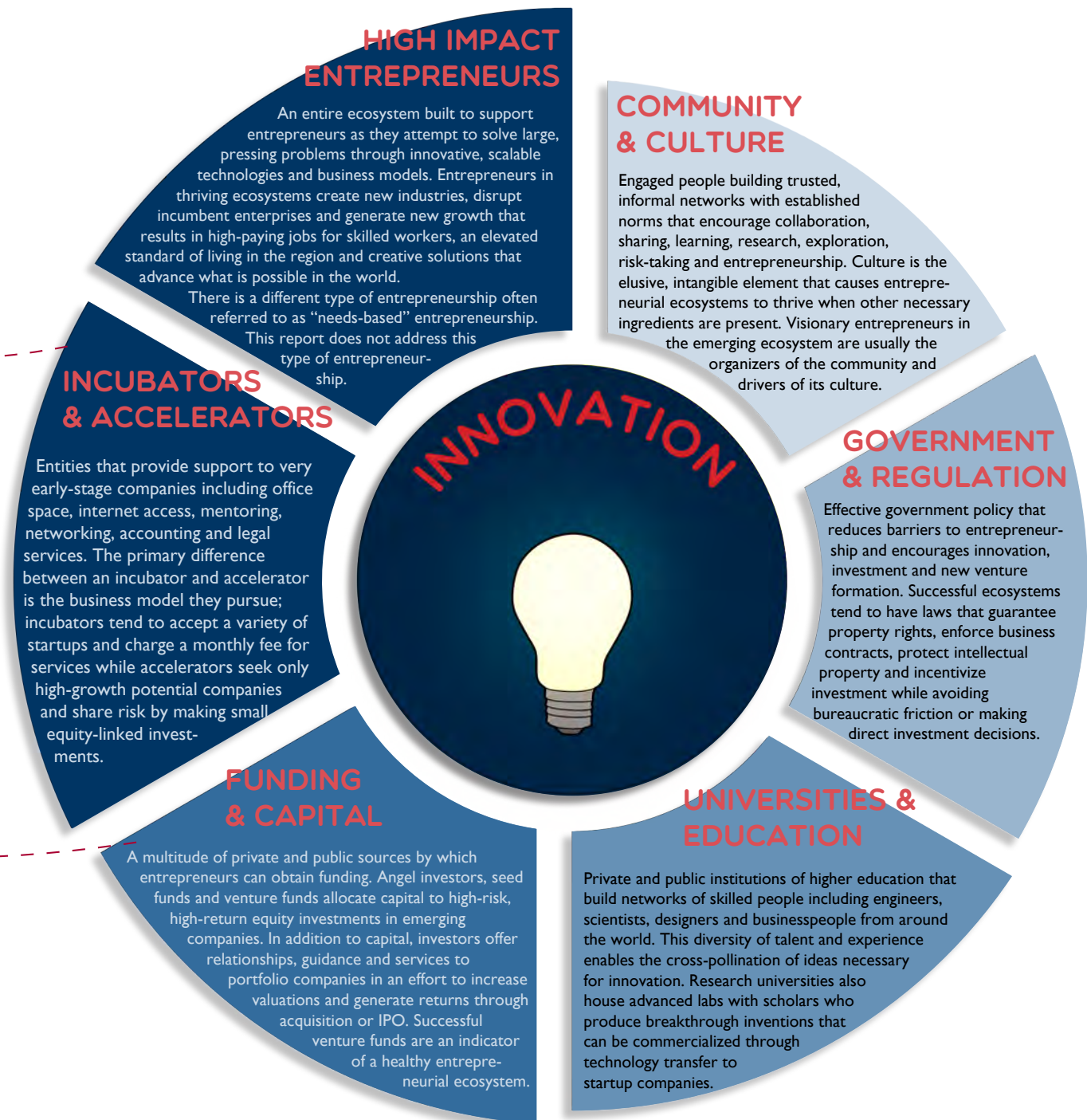
<p><i>Time:</i> longer <i>Money:</i> fee-based <i>Cohort:</i> rolling basis <i>Focus:</i> various types & industries <i>Example:</i> StartX</p>  <p>Incubators</p>	<p>Both offer:</p> <p><i>Office Space</i> <i>Mentorship</i> <i>Early Stage Support Services</i></p>	<p>Accelerators </p> <p><i>Time:</i> shorter, condensed <i>Money:</i> equity-based <i>Cohort:</i> batches or groups <i>Focus:</i> high growth, often tech <i>Example:</i> Y-Combinator</p>
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FUNDING & CAPITAL

Given the wide variation that exists between (and even within) ecosystems regarding these terminologies, we have avoided specific figures such as investment amounts and company valuations. A venture investment in one market may look more like a seed round in another. For the purposes of this study we have attempted to normalize the concepts based on the stage of a company from inception through a liquidity event.



We believe there are six factors that drive the creation of successful innovative and entrepreneurial environments.



What do we mean by innovation?

The study of innovation has produced dozens of definitions. Sub categories can include disruptive, breakthrough and incremental innovation as well as product, process and business model innovation. For the purpose of this study we have defined innovation as a product, service or process invention that creates significant economic value when applied to a market opportunity.

What Some Experts Say...

- **Leaders are the entrepreneurs** who lead the community, and **Feeders are the support system** that are comprised of the government, universities, investors, mentors, service providers and large companies. The entrepreneurial community needs grass-roots activities started by entrepreneurs that bring together the players.
- The main cultural attributes that are essential to Silicon Valley are - **Give before you get**, (“pay it forward” culture.) Everyone is a mentor, so **share your knowledge and give back**. Embrace weirdness.
- **Entrepreneurs need to be committed** to their region for the long term (20+ years), the community and its leaders must **be inclusive**, play a non-zero sum game, be mentorship-driven and be comfortable experimenting and failing fast.
- Top-down government driven clusters are not the most effective. There is a **disconnect between entrepreneurs and governments**, such that entrepreneurs are self-aware and bottoms up while governments are unaware and macro-focused.
- Schools like MIT and Stanford are “outward facing” research **universities** that act **as community catalysts**, a magnet for entrepreneurial talent for the region, teachers, and a pipeline for talent back into the region. Their **research offers a continual stream of new technologies** to be commercialized.
- **Accelerators** (such as Tech Stars) **should be mentor driven**. Entrepreneurs learn best from other entrepreneurs.

For sources, see bibliography items 56-58.

- Governments often focus on reforming “legal, bureaucratic and expensive technology clusters, however **launching ecosystems**”
- Public leaders should “**stop emulating Silicon Valley**” and “local conditions.” The ambition to become another Silicon Valley “failure” while they should be focused on their own unique strengths.
- Public efforts must “**engage the private sector**” from the start. The ecosystem becomes viable. “Only the private sector has the resources for self-sustaining, profit-driven markets.”
- Instead of spreading out resources broadly, governments should support **preneurs** (not necessarily tech) who address large potential markets.
- **Don’t “flood** high-potential entrepreneurs **with easy money**” and be resourceful. There is “scant support that expensive incubator programs provide for entrepreneurship.”
- “Get a big win on the board” and “**over-celebrate the success**” of the ecosystem by igniting the imagination of the public and inspiring others.
- Although difficult, governments must “**tackle cultural change**” in entrepreneurship.” Shifts can be made in as little as a decade and can be sustained.

For sources, see bibliography items 41.

Brad Feld
Entrepreneur, investor,
author & co-founder of Tech
Stars

Daniel Isenberg
Prof. of entrepreneurship at
Harvard, Columbia, and Bab-
son, advisor, investor, author
& entrepreneur

Paul Graham
Entrepreneur, technolo-
gist, investor, & founder
of Y-Combinator

- **The people, not the buildings, make Silicon Valley.** A first-rate university in a city where nerds and investors want to live is the organic way to attract the right kind of people to build an innovation ecosystem.
- **Entrepreneurs** are hackers. Hackers are makers, not just engineers and scientists. People who break rules are the source of American’s wealth and power. **Determination, flexibility, imagination**, and strong friendship are the key attributes of entrepreneurs.
- **A society in which people can do and say what they want** will also tend to be one in which the most efficient solutions win, rather than those sponsored by the most influential people.
- Within the US, there are no technology hubs without first-rate universities. So if you want to make a Silicon Valley, **the university has to be a magnet**, drawing the best people from thousands of miles away.
- Start-up **investors** tend to have a lot of experience themselves in the technology business. This helps them pick the right startups, and means they **can supply advice and connections as well as money**.
- **Y-Combinator is a start-up boot-camp** that serves as a quality filter and provides entrepreneurs with seed funding, one-on-one mentorship from experienced entrepreneurs, investor introductions, and a high-quality supportive alumni community.

For sources, see bibliography items 33-36.

and regulatory frameworks” or on building **ecosystems requires a more holistic approach.**

instead “shape the ecosystem around the needs of entrepreneurs and sets governments up for “frustration and confusion” and opportunities.

“start” and have a clear exit strategy as well as motivation and perspective to develop

and **focus on “growth-oriented entrepreneurs.”**

“Be tough” when they need to be tough and programs contribute commensurately to

success.” This has a “stimulating effect on the ecosystem of imitators.”

“Go head-on” to “alter social norms about entrepreneurship” and media efforts can help shape attitudes.

• “Silicon Valley’s informal social relationships **supports experimentation** and creates a more flexible regional network-based industrial system that promotes collective learning, encourages risk taking, **embraces failure**, and enables information to spread quickly.”

• “**Entrepreneurs** are measured by what they are currently doing. The stigma of failure is depersonalized, so entrepreneurs **are free to challenge the status quo**, break with tradition, and innovate in areas where most say it cannot be done.”

• “The **US Government channeled resources to universities** (e.g. MIT, Stanford) to develop technologies for the Second WW and Cold War. These resources were the seeds of developing an innovation ecosystem.”

• “Stanford **forged a close working relationship** between the engineering school and local technical firms. The formation of the Stanford Industrial Park in 1951 provided a mechanism for **transferring technology from university** laboratories to the nearby commercial firms.”

• “**Venture capital** replaced military contracts **as the main source of capital.** Many VCs were previously successful entrepreneurs who brought operating experience, technical expertise, contacts, & capital to Silicon Valley.”

For sources, see bibliography items 54-55.

Annalee Saxenian
Prof. and Dean of the
UC Berkeley School
of Information

Checklist for Creating Entrepreneurial Environments

Factors	Qualities
<input type="checkbox"/> Culture & Community	An innovation ecosystem that is based on communities and cultures that encourage risk-taking, embrace failure, promote collective learning, engage in information sharing, and openly provide mentorship.
<input type="checkbox"/> Government & Regulation	Governments that help cultivate innovation ecosystems by making it easy to start/close a business, enabling domestic and foreign talent to flow freely, being an early customer of young start-ups, and providing legal infrastructure that promotes IP protection and a fair playing field.
<input type="checkbox"/> Universities & Education	Universities that attract the best talent globally and develop working relationships with local technology companies that help to commercialize university R&D. No technology hubs exist without first-rate universities.
<input type="checkbox"/> Funding & Capital	Investors who are former technology entrepreneurs and operators and can provide young startups with contacts, advice, technical understanding, and capital. A large number and variety of investors across the funding continuum is necessary.
<input type="checkbox"/> Incubators & Accelerators	Incubators and accelerators that serve as quality filters, provide young companies with a small amount of capital and, more importantly, that provide seasoned mentorship.
<input type="checkbox"/> High Impact Entrepreneurs	People with pioneering spirits who are willing and able to challenge the status quo, possess imagination, experiment with seemingly crazy ideas, and are unafraid of failure are critical for innovation ecosystems.

Snapshot of High Impact

UNITED STATES

313.9 million population

20 incubators & accelerators

254 million internet users

\$50,000 per capita income

>1,000 active angel investors

\$11.2 billion venture investment

4465 startups

1.5% GDP growth

SAN FRANCISCO

EUROPE

739 million population

17 incubators & accelerators

504 million internet users

\$33,000 per capita income

>60 active angel investors

\$1.8 billion venture investment

591 startups

0.3% GDP growth

LONDON

BRAZIL

201 million population

4 incubators & accelerators,

7 coworking spaces

89 million internet users

\$11,000 per capita income

>100 active angel investors

>300 startups

2.4% GDP growth

SAO PAULO

CHILE

17.5 million population

4 incubators & accelerators

11 million internet users

\$15,000 per capita income

>30 active angel investors

\$10-15 million venture investment

4.6% GDP growth

336 startups

SANTIAGO

SOUTH AFRICA

49 million population

5 incubators & accelerators

14 million internet users

\$7,500 per capita income

20 active angel investors

\$30-35 million venture investment

3% GDP growth

60 startups

CAPE TOWN

Entrepreneurship Globally

CHINA

1.4 billion population

568 million internet users

\$6,000 per capita income

7.1% GDP growth

200 active angel investors

\$1.5 billion venture investment

>1000 startups

5 incubators & accelerators

9 coworking spaces

BEIJING

ISRAEL

7.9 million population

5.8 million internet users

\$31,000 per capita income

3.6% GDP growth

15 incubators & accelerators, **9** coworking spaces

15 active angel investors

\$1 billion venture investment

386 startups

TEL AVIV

INDIA

1.2 billion population

152 million internet users

\$1,500 per capita income

3.2% GDP growth

32 active angel investors

> \$300 million venture investment

>500 startups

20 private incubators & accelerators

BANGALORE

KENYA

43.2 million population

14 million internet users

\$1,000 per capita income

5.7% GDP growth

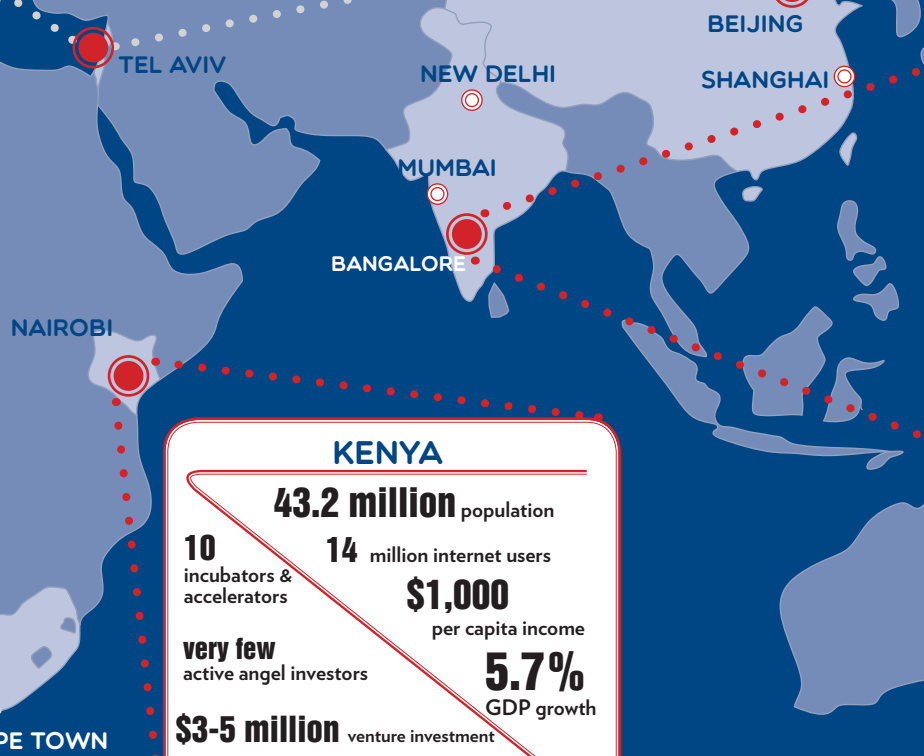
very few active angel investors

\$3-5 million venture investment

50 startups

10 incubators & accelerators

NAIROBI



●●●●● Cities this report focuses on
●●●●● Other notable innovative and entrepreneurial cities
 For sources of data see bibliography items 37, 38, 39, 40

Beijing's Innovation Ecosystem Forges Ahead

Beijing is the most developed innovation ecosystem out of the four that we analyzed, boasting sufficient available investment capital, a sizeable addressable market, a large pool of talent, and a supportive government. In order for Beijing's innovation ecosystem to continue its development, the ecosystem still needs increased mentorship by experienced entrepreneurs, improved community transparency and information sharing, more angel investors, closer relationships between universities, R&D, and local startups, less taboo around failure, and continued education reform.

"We haven't funded a single company coming out of an accelerator due to the low quality."

-Mickey Du, Innovation Works



Venture Fund: Innovation Works (IW) was founded in 2009 by Dr. Kai-Fu Lee. Dr. Lee was previously the head of

Google China. IW started as an incubator but evolved into a venture capital fund. Today, IW has more than \$500M in assets under management and has invested in more than 60 startups. IW provides its entrepreneurs with funding and value-added services.



Seed Fund: ZhenFund was founded in 2006 by Xu Xiaoping. Mr. Xu was a co-founder of New Oriental (NYSE: EDU), China's largest education company. Mr. Xu has made over 80 angel investments before teaming up with Sequoia on ZhenFund 2.0. ZhenFund has made 60 seed investments to date and plans to invest in 80-100 companies from 2012-2014. ZhenFund's average investment size is \$300k.



Angel: Lei Jun is one of China's most prolific technology entrepreneurs and influential angel investors. He most recently founded Xiaomi, a low-cost smartphone provider valued at more than \$10B. Lei Jun has made countless angel investments in companies such as YY (Nasdaq: YY), UCWeb and Vancl.

HIGH IMPACT ENTREPRENEURS

Approximately 50-60% of the first generation of high impact entrepreneurs in China received education and/or work experience in Silicon Valley. More recently, entrepreneurs tend to be born, raised, and educated in China. Given the intense competitive nature of the Internet industry, investors seek to invest in entrepreneurs who have 3-10 years of work experience and domain expertise, a stark contrast to the US where many Internet entrepreneurs are university students or recent graduates.

INCUBATORS & ACCELERATORS

Beijing's incubators and accelerators are fragmented and tend to produce lower quality companies than their US counterparts. This is largely driven by the fact that many incubators and accelerators lack the relevant collaborative communities and experienced mentorship of Silicon Valley accelerators such as Y-Combinator. As a result, many incubators and accelerators tend to attract companies primarily looking for capital, as opposed to mentorship and strategic guidance.

FUNDING & CAPITAL

China is the 2nd largest venture market in the world at ~20% of the size of the US. \$3.7B was invested in 202 deals in 2012 and \$6.3B was invested in 362 deals in 2011. The first 10 years of the VC industry was dominated by Silicon Valley venture funds. Over the past 5-7 years an increasing number of domestic Chinese venture funds have been raised. China only has about ~300 hundred angel investors, compared to 30,000 in the US. Most investment activity occurs in the mobile, ecommerce, gaming, content, cloud, and education industries.

Pony Ma founded Tencent, China's largest communications company

Microsoft Research opens in Beijing

Robin Li founded Baidu, the "Google of China"

Lenovo is founded

Zhongguancun, "China's Silicon Valley" is established in Beijing

1984

1988

1998

2000

2003 2010

Baidu 百度 Baidu dominates Chinese search

Yanhong "Robin" Li was born in China and educated at the University at Buffalo. He previously worked at Infoseek in Silicon Valley. Robin co-founded Baidu (the "Google of China") in 2000. Today Baidu has a market capitalization of \$56B. Robin is one of the richest people in China with a net worth of \$6.9B.

COMMUNITY & CULTURE

Historically China has had to wrestle with widespread fear of failure, a general mistrust of others, lack of experienced mentors, little market transparency, limited open collaboration and a lack of data-driven decision-making processes. The "if you win, I lose" mentality is still widespread. The above-mentioned soft elements of an innovation ecosystem are the critical factors of Silicon Valley's success. Beijing's ecosystem would be well-served to continue improvements in all of these areas.

Tencent 腾讯



淘宝网 Taobao is an ecommerce juggernaut Taobao.com

Yun "Jack" Ma was born in China. Jack founded Alibaba Group in 1999, which includes Taobao (the "eBay of China") and Alipay (the "PayPal of China"). Taobao controls 80% of the ecommerce market in China. Taobao is estimated to be worth \$100B and is expected to IPO in 2014. Jack Ma has a net worth of \$3.4B.

Tencent is China's largest online media and entertainment company

Huateng "Pony" Ma was born and educated in China. In 1998, Pony co-founded Tencent, China's largest gaming, social networking, and communications site. Tencent has a market capitalization of \$100B, making it more valuable than McDonalds. Pony is the 4th richest person in China with a net worth of \$6.8B.

GOVERNMENT & REGULATION

The Chinese government has made efforts to stimulate high-impact entrepreneurs for 20 years. These efforts started by building high-tech parks in Beijing 15 years ago. More recently, local governments have started becoming Limited Partners in venture funds and cooperating with VCs to invest directly in startups. Policies aimed at continuing education reform, enhancing IP protection, and lowering the costs of starting businesses will greatly benefit the evolution of Beijing's ecosystem.

"In Silicon Valley, failure is accepted as part of the learning process for an entrepreneur. In China, failure is viewed more as a stigma, but this is slowly changing for the better."

-David Lin, Microsoft Accelerator

"There is too little knowledge dissemination to date in China. We hope this changes, but it will take time."

-Chinese VC

"The key to working with the government is to develop the relationship and trust...and not to lose their money."

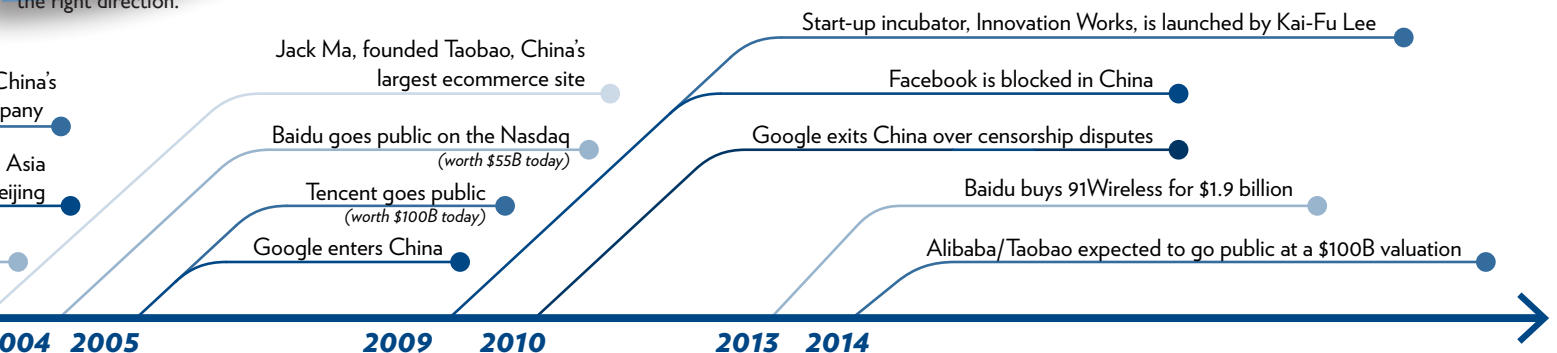
-Chinese VC

UNIVERSITIES & EDUCATION

According to estimates, China produces 70% more engineering graduates than the U.S., but less than 20% of China's engineering graduates are globally employable. China's top engineering school, Tsinghua University, does produce world-class talent and is located close to Zhongguancun, China's Silicon Valley, in Beijing. The government must strike a delicate balance between continued education reform and being equitable to all. Easier university technology commercialization and closer relationships with local startups would be a step in the right direction.

"Conventional Chinese education has a disproportionate focus on 'what's the right answer' and not enough attention is paid to 'how do you get to the right answer.'"

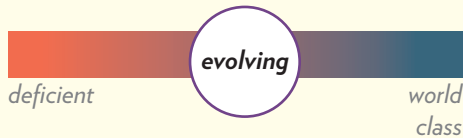
-Rui Ma, 500 Startups



Beijing's Entrepreneurial Ecosystem Today

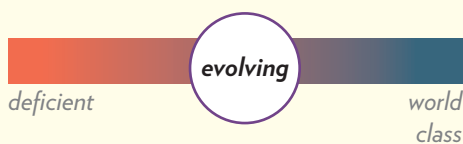
Factors for Creating Entrepreneurial Environments

Culture & Community



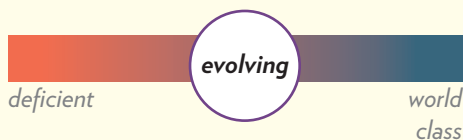
Beijing's startup ecosystem still lacks a widespread community that embraces open information sharing, no-strings-attached mentorship, cross-company collaboration, and collective learning. A "if you win, I lose" mentality persists. While the taboo of failure is slowly fading, a culture of embracing failure as a necessary path to innovation has yet to be fully adopted.

Government & Regulation



While the government's initial attempts to stimulate high-impact entrepreneurship by developing high-tech parks was met with limited success, the government has played a key role in attracting foreign capital, opening China's Internet market up to competition, providing investment capital to domestic VCs and startup companies and offering incentives to young companies.

Universities & Education



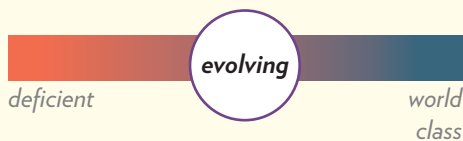
The world's most innovative and productive startup ecosystems are located near first-rate universities. China's premiere technical university, Tsinghua University, ranks #50 globally. In contrast, Harvard, MIT, Stanford, Caltech, and Berkeley each rank in the top 10 globally and are located near innovation hubs. Chinese universities lag far behind their US counterparts when it comes to attracting the best foreign students and faculty, equipping students with practical industry-ready skills, and facilitating the interaction between university R&D activities and the surrounding commercial enterprises.

Funding & Capital



Beijing's venture capital infrastructure is well developed. The fluid and relatively easy access to investment capital has been a key component in helping entrepreneurs to fuel their growing companies. While 90% of investor exits to date have been via IPOs, the M&A ecosystem in China has started to provide investors with additional exit avenues, which, in turn, is creating a virtuous investment cycle.

Incubators & Accelerators



The primary purpose of incubators and accelerators in Silicon Valley is to provide their entrepreneurs and companies with access to seasoned entrepreneurs who are willing to mentor, collaborate, and share their experiences with young entrepreneurs. While this mentor-driven community is a key element of the fabric of Silicon Valley, it has yet to take hold in a major way in Beijing.

High Impact Entrepreneurs



Chinese entrepreneurs are arguably somewhere between excellent and world class. Not only have they shown an ability to scale large successful businesses (e.g. Taobao, Baidu), but they have also shown an ability to compete against foreign competitors in China (e.g. Google, eBay). Chinese entrepreneurs are rapidly moving beyond simply copying foreign business models to developing their own models and scaling companies beyond China.

Each factor has been rated on the following sliding scale: ① deficient, ② nascent, ③ evolving, ④ excellent, ⑤ world class

Recommendations for the Future

Beijing is the most well-developed startup ecosystem that we analyzed. It includes a large domestic market, a vast domestic talent pool, wide access to investment capital and a deep understanding of Chinese consumers. However, challenges remain. We have identified a number of specific areas of improvement that will benefit the continued evolution of Beijing's startup ecosystem.

Culture & Community: Beijing should strive to cultivate a startup community based on mentorship, collaboration and collective learning. The secret to a thriving startup ecosystem is the people, not the physical infrastructure. Successful Chinese entrepreneurs are best-positioned to drive this initiative in a no-strings-attached manner by openly sharing their experiences, mentoring young entrepreneurs, advising immature startups, and investing some of their wealth back into the ecosystem. Over time, this will result in a pay-it-forward culture where information spreads rapidly, resources are used efficiently, collective knowledge is leveraged and innovation occurs.

Government & Regulation: While the government's initial attempts to stimulate high-impact entrepreneurship by developing high-tech parks was met with limited success, the government has played a key role in attracting foreign capital, opening China's Internet market up to competition and providing investment capital to domestic VCs and startup companies. We think the government has room for improvement on IP protection and making it easier for entrepreneurs to start and close young businesses.

Universities & Education: Beijing universities should actively recruit the best technical professors and students globally and incentivize them to teach and receive their educations in China. Better professors are likely to attract higher caliber students, which will produce better R&D. Additionally, universities should actively seek to work more closely with the startup community and identify opportunities to commercialize university-developed R&D. These efforts will likely increase the number of high impact ventures that are developed and launched at Chinese universities, which will then attract more talented faculty and students, creating a virtuous cycle.

Incubators & Accelerators: Beijing incubators and accelerators should reposition their primary value-add as providing strategic mentorship and guidance as opposed to merely supplying investment capital. Developing a more open community based on shared learning and mentorship will better enable incubators and accelerators to attract mentors with relevant experience who share these values. Most companies in Beijing fail due to operational and strategic mistakes rather than a lack of capital. Mentorship, rather than capital, is one of the largest voids in Beijing's startup ecosystem today.

High Impact Entrepreneurs: The wealth generated by large-scale exits should be spread among as many employees as possible. While stock options are still a new phenomenon in Beijing, entrepreneurs should ensure that company stock options are granted to every employee. That way, when large-scale exits occur, as many people as possible get rich. By doing this, more of the wealth created by successes is likely to be reinvested back into the ecosystem in the form of new products built, technology developed, companies started and jobs created.



Bangalore's Innovation Ecosystem Begins to Evolve

Bangalore is the second largest startup ecosystem that we analyzed. Bangalore has a large pool of technical talent, a growing network of VCs and angel investors, a supportive state government and a generation of entrepreneurs who are increasingly willing to take risks earlier in their careers. However, challenges remain, including the taboo of failure in Indian society, a limited exit environment, willing but inefficient government support of startups and an investing community that often views their relationships with startups merely as financial transactions as opposed to partnerships.

"58% of incubator and accelerator-backed startups die in the first 18 months of operation"-Mukund Rajan, Microsoft Accelerator

"We want to seed companies that will have a global footprint"-Rajesh Sawhney, GSF Accelerator



Incubator: Startup Village is a public-private partnership with India's Department of Science and Technology in the southern Indian state of Kerala. It was created to incubate 1000 startups over 10 years. Most companies incubated are from college campuses.



Accelerator: GSF Accelerator was established in 2011 by former Reliance Entertainment CEO, Rajesh Sawhney. It follows a Y-Combinator-like cohort system and provides companies with seed capital (\$27,000 for 8% equity), mentorship, product development, and help raising additional capital. GSF acknowledges that its approach must be adapted to India's markets in order to remain relevant.

Angel: Rajan Anandan is a prolific angel investor in Internet, mobile and SaaS start-ups. He is the current VP of Google India, and his investments include Capillary Technologies, SocialBlood, and StepOut. He invests \$10,000-\$50,000 per company and is well respected for his domain expertise.



Seed Fund: Blume Ventures was co-founded by Wharton alum Karthik Reddy. Blume manages \$20M and invests \$100,000-300,000 in pre-Series A companies across the Internet, mobile and digital media spaces.

HIGH IMPACT ENTREPRENEURSHIP

Indian entrepreneurs are comprised of first-time entrepreneurs with 3-10 years of full-time work experience (60%), serial entrepreneurs (15%), developers (10%), internationally educated Indian returnees (10%), and student entrepreneurs (5%). Indian startup entrepreneurs tend to be more technical but lack the "hacker" mentality of their US counterparts. Over the past 10 years, Indian entrepreneurs have started 10-20% of new ventures in Silicon Valley. Unsurprisingly, returnees are the most attractive entrepreneur segment to early-stage investors.

INCUBATORS & ACCELERATORS

The new wave of incubators and accelerators was started two years ago and is markedly different from older incubators that have existed in elite colleges for many years. They provide startups with active mentoring and technical guidance as startups prepare to raise capital. The incubators and accelerators are market-oriented and privately funded. Most incubators and accelerators have global ambitions for their cohorts, despite India's sizeable domestic market. Leading accelerators include GSF Accelerator (Delhi), Microsoft Accelerator (Bangalore) and Start-up Village (Kochi).

FUNDING & CAPITAL

More than \$1B was invested in Indian startup companies in 2012. Accelerators and incubators invest \$20,000-50,000, seed funds and angel groups invest \$100,000-1M, and early-stage VC funds invest \$1-10M. India's limited exits and small multiples paid by acquirers has driven the explosion of incubators and accelerators, many of which are providing capital at more equitable terms. India's difficult exit environment is the biggest negative factor impacting the ecosystem. This has caused some experienced entrepreneurs to diversify by starting accelerators, as opposed to starting new ventures.



Vishnu Varshney is selected to run the Gujarat Venture

First Indian Institute of Technology (IIT) launched in Kharagpur

Five more IITs launched in Madras, Kanpur, Delhi and Bombay

The World Bank and ICICI Bank fund more than 50 SMEs

First national incubator in Indian

1950

1960s

1980s

1990

1999



Sanjeev Bikchandani



Mr. Bikchandani was educated at the Indian Institute of Management in Ahmedabad. He co-founded InfoEdge, a provider of salary survey reports. Subsequently, he started Naukri.com, India's first and now largest domestic online job portal. Naukri went public in 2006 on the Bombay Stock Exchange, raising \$34M at \$160M valuation, making it one of India's first Internet IPOs.



Sabeer Bhatia

Mr. Bhatia was educated in India and at Stanford. He briefly worked for Apple early in his career. Mr. Bhatia co-founded Hotmail in 1996. He achieved celebrity status in India when he sold Hotmail to Microsoft in 1998 for \$400M in stock. He has a personal net worth of over \$100M.



Phanindra Sama

In 2006, Phanindra Sama co-founded redBus, an Indian travel booking site. In 2013, redBus was acquired by South Africa-based Internet group Naspers and Chinese Internet giant Tencent, for an estimated \$125M. This acquisition is hailed as an important exit milestone for Indian VCs.



Deep Kalra

Deep Kalra is an alumnus of the Indian Institute of Management, Ahmedabad. Prior to becoming an entrepreneur he worked as a VP at GE in India. Mr. Kalra founded MakeMyTrip.com, India's largest online travel site, in 2000. The company launched in India in 2005 and went public in the US (NASDAQ: MMYT) in 2010. MakeMyTrip has a market value of \$600M today.

COMMUNITY & CULTURE

The vast majority of India's middle class continues to remain risk averse and failure is still taboo in Indian society. However, risk appetites are slowly increasing among young professionals with 3-10 years of professional experience. Successful returnees and Indian entrepreneurs are showing signs of a willingness to share their experiences and mentor the next generation of Indian entrepreneurs.

GOVERNMENT & REGULATION

The earliest government effort to provide venture capital to the small enterprise sector occurred in the '80s. In 2013 the government launched an initiative called "10,000 Startups" to provide startups with \$25,000 worth of products and services. Government restrictions on foreign investment in and ownership of local companies has hurt the ecosystem. Most government officials don't understand the Internet, which is one reason why regulations remain hazy around things like ecommerce.

UNIVERSITIES & EDUCATION

India's Department of Science and Technology has traditionally provided funding to over 100 accredited universities to incubate technology startups. India's most elite technical and management universities have active incubator programs. However, while technically savvy, many of the startups at university incubators lack the mentoring and financial support necessary to commercialize. The role of Indian universities in helping bright, enterprising students start and scale new businesses remains limited.

"It is unfair to compare the start-up ecosystems in Bangalore and Silicon Valley- their realities are different."

-Indian VC

"The risk/reward profile for smart people to do startups isn't there given the limited exit environment. The alternative to a startup is a \$100k/year steady job."

-Mukund Rajan, Microsoft Accelerator

"It is important to understand 'what' the policy is today and 'how do I effectively operate within the context of the system, because changing policy is hard."

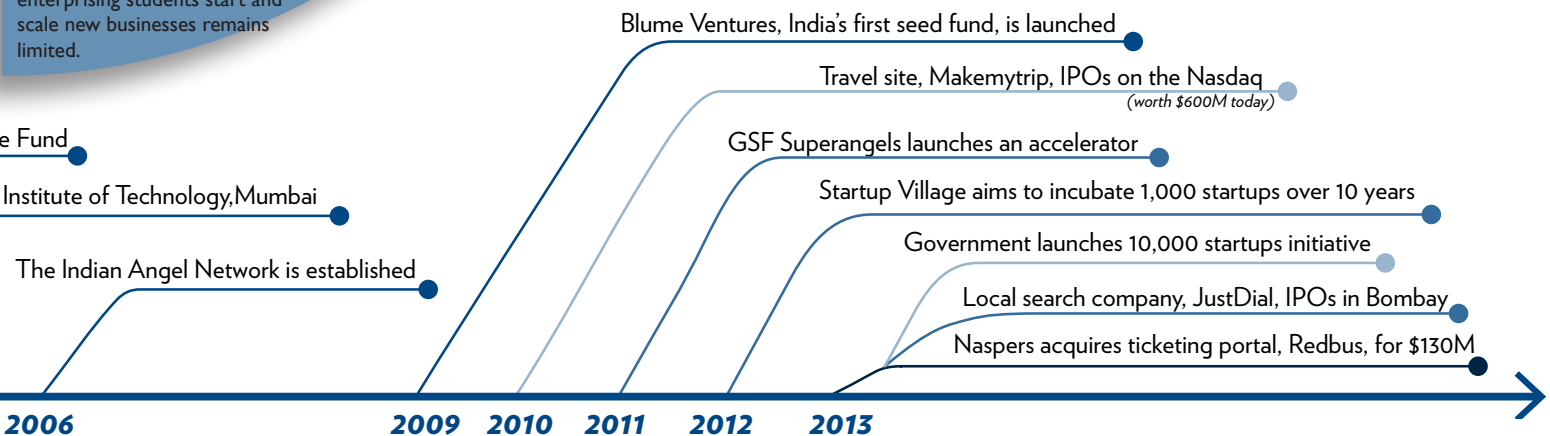
-Indian VC

"The Indian Government hurts more than it helps the startup ecosystem, but they have largely stayed out of the way."

-Indian VC

"The Indian start-up ecosystem is still missing quality mentoring and capital in the \$100,000-\$300,000 investment range"

-Indian Seed Investor



Bangalore's Entrepreneurial Ecosystem Today

Factors for Creating Entrepreneurial Environments

Culture & Community



The vast majority of India's young technical and managerial talent belongs to a risk-averse middle class that favors career stability over potential professional risk at startups. The startup community still has room for improvement in cultivating mentorship, increasing ecosystem collaboration and enhancing partner-centric relationships with investors.

Government & Regulation



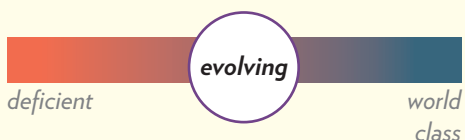
The Indian government has initiated large-scale efforts to provide capital to entrepreneurs. These efforts are often inefficient, partly driven by the government's inability to identify the best entrepreneurs and accelerators to support. The government has struggled to encourage technology entrepreneurship outside IT services. Regulations have made it difficult for angel investors to operate, hindered the ability of foreign capital to flow into India, and discouraged the investment and M&A activities of foreign companies in India.

Universities & Education



The earliest incubators in India at elite engineering and management colleges yielded few commercial successes. The interface between university R&D and commercial enterprises lags far behind that of the US. Low quality faculty, outdated curricula and weak market interest in student-initiated ventures plague the future of entrepreneurship emerging from India's higher education institutes.

Funding & Capital



Many of India's venture capitalists lack the startup experience and mentorship capabilities that are critical to startups. The limited exit environment in India has compelled some Indian investors to place overly onerous terms on entrepreneurs and attempt to flip their stakes to other investors in an effort to make their fund economics viable. While slowly changing, there are far too many inexperienced former investment bankers and corporate executives acting as investors.

Incubators & Accelerators



Privately funded incubators and accelerators in India are relatively new to the ecosystem and have greatly increased access to early stage mentoring and capital for promising startups. The best accelerators are run by professionals with successful operating track records. Accelerators are tailoring the Silicon Valley model to fit the Indian market to efficiently identify, nurture and scale young companies.

High Impact Entrepreneurs



Indian entrepreneurs possess world-class technical talent and managerial capabilities. They are generally highly educated, motivated and have global ambitions for their startups. Indian entrepreneurs could benefit from placing more emphasis on achieving domestic success initially before seeking to expand their businesses globally.

Each factor has been rated on the following sliding scale: ① deficient, ② nascent, ③ evolving, ④ excellent, ⑤ world class

Looking to the Future

Bangalore has a rapidly evolving innovation ecosystem that is market-driven, possesses a large network of educated technology-savvy entrepreneurs and boasts a growing network of investors. Bangalore still faces structural challenges that hinder the consistent creation of large successful companies that we see in Silicon Valley and even Beijing. There are a number of steps that can be taken to improve the state of Bangalore's innovation ecosystem:

Culture & Community: Bangalore needs to strive to create an environment conducive to risk-taking and an attitude more tolerant of failure. India needs more successful Indian entrepreneurs who can be role models for new startups and provide mentoring and capital. Successful Indian entrepreneurs should lead the way for promoting entrepreneurship in the country. Greater knowledge sharing and shared learning among startups and investors will yield more successful outcomes.

Government & Regulation: The Indian Government needs to partner more effectively with leading incubators and accelerators to identify quality startups that can be financed. It needs to create and enforce stringent laws around IP protection, provide tax incentives to early stage companies and their investors, relax restrictions on foreign investment and acquisitions and increase broadband connectivity throughout the country.

Universities & Education: Indian engineering and management colleges need to invest in hiring and retaining world class faculty who conduct research that has greater relevance to industry in the areas of computer science, electrical engineering and management fields. Universities need to enhance collaborations between university R&D and incubation activities and Bangalore's broader technology ecosystem. Additionally, the elite institutes in India stand to gain from tapping into the vast pool of global and domestic alumni who can act as role models and mentors to improve the quality of startups incubated in universities.

Incubators & Accelerators: Applicant quality has been a major struggle for India's incubators and accelerators to date. Incentivizing experienced entrepreneurs to participate in the initial filtering and subsequent mentoring processes will help to attract higher quality entrepreneurs and improve the quality of companies. Incubators and accelerators should also assist their companies in negotiating investment terms that are in the best long-term interest of the companies.

High Impact Entrepreneurs: Indian entrepreneurs need to focus on building innovative products and services tailored to the Indian market. There is a need for active involvement of successful entrepreneurs to advise and finance startups as they scale. This will create an environment where large exits are possible through IPOs. Improved regulations around foreign investments and acquisitions will likely increase the number of exits through M&A.



Santiago's Ecosystem Rumbles to Life

In early 2010 a massive 8.8-magnitude earthquake rocked the coast of Chile and affected over 1M people while destroying some 350,000 homes and claiming hundreds of lives. The country was in the middle of a transition of power for the first time in 20 years and many must have wondered what the future would hold for Chile. Out of crisis and adversity can spring new opportunities and willingness to collaborate, and for some, a particularly audacious vision emerged: that Chile would bounce back stronger than ever with Santiago as the leading innovation hub in Latin America.



Angels

Angels: The first angel group Octantis was organized in 2003 and bet \$1.2M on local startups but failed to generate returns. In general, angel networks struggle without strong seed and venture investors in the ecosystem to provide investment leadership and follow-on funding, which was the case in Santiago at the time. Since then, Chile Global Angels formed in 2009 and its 27 angels have made 12 investments to date and generated one exit. Other small angel clubs have formed in association with different universities.



Accelerators

Seed Accelerators: While Startup Chile offers \$40K grants to participants, other groups such as Fundación Chile, Wayra (Telefonica) and some universities have launched seed accelerators that take equity in participating startups and establish market terms for early-stage companies. Another accelerator, Social Lab, helps launch social impact companies, which have now raised \$2M in capital. Each of these accelerators appears to be motivated primarily by strategic objectives and secondarily by returns, which underscores the early nature of the ecosystem and uncertainty regarding its ability to sustain itself from value creation and liquidity events alone.



Seed

Seed Funds: There are very few, if any, traditional seed funds in Chile and "seed capital" is often used to refer to small grants or investments offered through incubators or accelerators. This presents the capital gap that exists between \$100K and \$1M in initial funding, with most venture funds preferring to invest larger amounts in more developed companies. Most recently Nazca Ventures raised \$6M (larger if matched by CORFO) to provide smaller early stage investments that may resemble traditional seed deals.

HIGH IMPACT ENTREPRENEURS

Santiago is beginning to see the fruits of its ecosystem development efforts with initial exits in sectors such as data services (AxonAxis by Equifax in 2010), local online advertising (Zappedy by Groupon in 2011), mobile social gaming (Atakama Labs by DeNA in 2011) and clean energy (Solar Chile by First Solar in 2013), although the ecosystem is still awaiting a marquee "homerun." Recent venture funding of web-based startups such as Safer-Taxi (\$4.2M) and ComparaOnline (\$16M) point to increased early-stage investment activity while the exit market for Latam technology companies continues to mature.

INCUBATORS & ACCELERATORS

In addition to Startup Chile, others have recently launched seed accelerator programs including Fundación Chile, Wayra (Telefonica) and Social Lab, a social impact program. Nearly 30 CORFO-backed incubators dot the landscape and co-working spaces for startups are becoming more common. While this activity signals a burst of interest in entrepreneurship, time will tell if these programs are effective at producing investable startups with big market potential and how they will evolve as the ecosystem matures and becomes returns-driven rather than subsidy-driven.

FUNDING & CAPITAL

LAVCA has named Chile the #1 environment for VC in Latin American for a consecutive 8 years due to the country's "IP protection, judicial transparency and perceived corruption." CORFO has matched private capital by a ratio of 3:1 to raise an estimated \$450M for early stage investments, but much of this capital has gone to later stage growth investments while a capital gap still exists at the early stage. New accelerators, seed funds and angel groups are attempting to fill this void, however the shortage of high-growth homegrown startups and limited exit activity has constrained investment.



CORFO established to promote economic growth

CONICYT founded to develop Chilean science and technology

Fundación Chile founded with ITT (US telecom)

Endeavor lau

1939

1967

1976

1998

ST>RT-UPCHILE

Startup Chile (SUP) is a government-sponsored accelerator that offers a visa and \$40K in non-dilutive funding to international entrepreneurs (and now local entrepreneurs) to spend 6 months in Santiago working on a startup and supporting the local entrepreneurial ecosystem by teaching classes, mentoring locals and participating in conferences, hack-a-thons and meet-ups. The purpose of Startup Chile is to create a local culture of entrepreneurship with a network of international entrepreneurs. Several SUP participants have raised additional private capital and at least two have already been acquired.

COMMUNITY & CULTURE

When Startup Chile launched in 2010, the average Chilean's extended social network was limited compared to that of other Latin Americans, owing perhaps to Santiago's removed geographical location and a conservative business culture based on close relationships and family ties. While Santiago's economy was strong, its entrepreneurial culture was weak, with society and parents pushing talented young graduates toward large stable corporations while discouraging risk-taking, disruptive thinking and entrepreneurship. Startup Chile and others are working to change that.

GOVERNMENT & REGULATION

Chilean society, still divided from the Pinochet era, has a mixed view of the laissez-faire economic policies of the period's "Chicago Boys." Following the transition to democracy, the center-left political party, which ruled for 20 years, maintained a free-trade strategy as Chile became a regional economic leader. In 2010, the conservative party took power and made interventions to encourage a new culture of entrepreneurship, with most ecosystem development efforts backed by state agencies CORFO and CONACYT.

UNIVERSITIES & EDUCATION

Santiago has no flagship research institution and its system of higher education is fragmented across small, mostly private universities. Access to education is a hotly debated political issue with recent demonstrations against the school system and calls for public, affordable college for all. R&D spending is an anemic 0.4% of GDP and the government has moved to increase spending, incentivize public and private R&D through tax credits and sponsor universities-based incubators and accelerators. In 2009 Chile joined the PCT and turned focus to patent filing and technology commercialization.



Fundación Chile was founded in 1974 as a \$200M public private partnership with ITT (US telecom) and now BHP Billiton (global mining) to support innovation technology adoption in Chilean industries. The organization is credited with helping launch Chile's salmon and solar industries and operates a venture fund and seed accelerator program with exited investments in data services, clean energy and agritech. These efforts support the ecosystem by providing market terms and reduced transaction costs for early-stage financings.



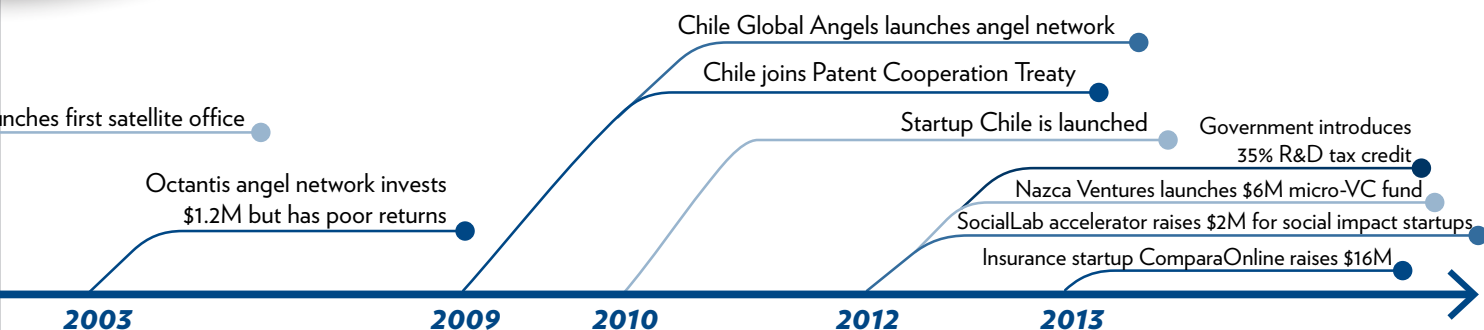
Corfo is Chile's Economic Development Agency that has existed since 1939 to promote industry and growth. During the 1990s the agency increased its focus on innovation, R&D, tech transfer and investment and is now the public backbone of the entrepreneurial ecosystem. CORFO supports accelerators (most notably Startup Chile) and dozens of incubators by subsidizing operations and providing grants for startups. In 2006, CORFO began matching funds up to 3X for early-stage venture firms and in 2012 a 35% tax credit was announced to incentive private R&D spending.

"What took us from a low income to a middle income country will not take us from a middle to high income country"

- Andrés Pesce
VP of Business Development and Investment, Fundación Chile

"The great thing about these days is that you can challenge the incumbents with the same rules and in their own field"

- Nicolas Shea
Founder of Start-up Chile and Cumplo



Santiago's Ecosystem Rumbles to Life

Factors for Creating Entrepreneurial Environments

Culture & Community



Santiago is still in the early stages of building a vibrant startup community. Historical cultural barriers have included the perception of entrepreneurship as less prestigious and of lower economic value for those with top talent, while some young people, politically opposed to big business, tend to include new venture activity in their negative opinion. Startup Chile's effort to catalyze a culture of entrepreneurship has raised awareness and support for startups and has added Santiago to the global startup map, but the outcome is yet to be determined.

Government & Regulation



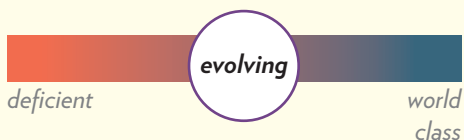
The Chilean government, through agencies CORFO and CONICYT, has been the ubiquitous presence in the ecosystem with innovation and entrepreneurship a top priority. Its groundbreaking Startup Chile program has been copied by many other aspiring ecosystems, including in Brazil, and the government's supportive policies have attracted international research centers and entrepreneurs, incentivized new fund formation, reduced barriers to starting a business and reformed bankruptcy laws.

Universities & Education



Santiago claims two universities in the top 10 in Latin America (University of Chile and Pontifical Catholic University) however neither is consistently ranked among the top 400 global research institutions. Progress has been made to incentivize research and development, PCT patent filing and technology transfer, but venture funding of university-based technologies has been limited. Politically, the highly privatized university system and lack of access to higher education for many is a hotly debated issue in current discourse.

Funding & Capital



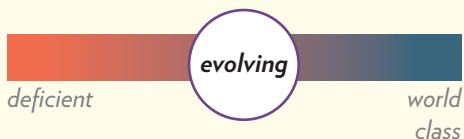
Santiago has the most developed venture capital market in Latin America with new funds forming in recent years to fill gaps in the capital spectrum, particularly at the early stage. In 2013 CORFO announced \$90M in matching capital for 6 new early stage funds, 3 with foreign capital. Local angel, seed and venture investors are currently funding startups in Santiago and abroad, while regional Latin American funds have led some of Chile's largest venture rounds in recent months.

Incubators & Accelerators



Through dozens of incubators, a variety of accelerator programs and growing co-working spaces, Santiago is creating opportunities for networking, mentorship and collaboration. International programs like Wayra and 500 Startups have accepted Chilean founders while local accelerators at Fundación Chile, Social Lab and Startup Chile have pursued very different missions including financial returns, social impact and cultural change. The sustainability of these programs in the long term is unknown.

High Impact Entrepreneurs



There is not yet a robust track record of high impact entrepreneurship in Santiago, although a handful of local startups have been acquired in recent years as well as a couple of ventures launched by international founders at Startup Chile. Without a previous generation of successful, high-growth entrepreneurs, the ecosystem lacks the robust mentor networks and experienced angel investors to guide young founders, although connections with international entrepreneurs help bridge the gap.

Each factor has been rated on the following sliding scale: ① deficient, ② nascent, ③ evolving, ④ excellent, ⑤ world class

Recommendations for the Future

Santiago is an emerging entrepreneurial ecosystem in one of the richest, most competitive nations in Latin America and is transitioning to an innovation economy. The ecosystem has benefited from substantial government support in recent years and is beginning to show its potential with more startup activity, early-stage investment, research spending and international awareness than ever before. Moving forward, Santiago will be challenged to develop its own core productive assets and areas of investigation that will drive the city's innovation engine. The country needs to increase investment in research and development. Other challenges include its relative geographic isolation, small domestic market, deep political fractures and competition for regional superiority from other Latin American ecosystems in Brazil, Colombia and Mexico.

Culture & Community: Santiago should continue its effort to import foreign entrepreneurs but needs to do a better job of attracting those who will put down roots and help build the community for years to come. The country should strengthen ties with diaspora Chileans and entice entrepreneurial and highly educated returnees to come back and help build the ecosystem with their experience and international networks. Entrepreneurship must be celebrated on both sides of the political aisle and efforts should be made to involve disruptive, counter-culture members of society in the ecosystem. Startups must be seen as a way to effect societal change and to solve big problems and not just as a means of making money. Chileans must become more collaborative and risk-tolerant.

Government & Regulation: The government has played a central role in developing Santiago's ecosystem but needs to have its own exit plan in place to allow the private sector to thrive. Chile is preparing to return power to the center-left political party and the country's leaders, regardless of political affiliation, need to protect the successful innovation programs from disruptive political cycles. Entrepreneurship must transcend political lines and a long-term commitment must be made to innovation, R&D and a supportive business environment. While it may be tempting to spread scarce resources equitably across programs, Santiago should concentrate its resources on high-impact programs and players. Programs to spur entrepreneurship need to be focused on core innovation and not just "window-dressing" to put Santiago on the map.

Universities and Education: Santiago must resolve its current crisis in higher education by rebalancing quality and access across all segments of society. A component of this solution should include the transformative potential of massive open online courses to help close the gap between private and public schools. Santiago must become a magnet for top regional and international students by improving research capabilities (particularly in core innovation areas such as clean tech, astronomy and mining), by providing financial aid to gifted students and by differentiating itself from other Latin American hubs by focusing on advantages in physical security and quality of life. Finally, Santiago must support a flagship research institution that can produce breakthrough IP and compete for top scientists and engineers from around the world.

High Impact Entrepreneurs: Entrepreneurs in Santiago have yet to achieve a "homerun" exit and critics of the ecosystem point to the abundance of mobile application start-ups and the relative paucity of basic science and IP-driven companies. Santiago should continue to encourage entrepreneurs to develop capital efficient products (such as mobile applications) but needs to also develop its core innovation capacity to generate truly disruptive companies. Santiago should work to attract more seasoned entrepreneurs beyond the relatively inexperienced participants in Startup Chile and should expand exchange programs with other leading international tech hubs to help locals gain experience and build networks abroad. A first generation of successful, internationally-connected entrepreneurs could provide mentorship to young entrepreneurs and inspire risk-averse talent to consider a start-up as a viable if not superior alternative to traditional employment.



Nairobi's Fledgling Innovation Ecosystem

Amongst the cities that we traveled to, Nairobi had the youngest and least developed innovation ecosystem. Initial signs of organized high impact entrepreneurship and investment can be traced back to only a mere five years ago. Today, there appears to be notable interest from foreign investors not only in Nairobi but also in many cities across East Africa. But the innovation and entrepreneurial ecosystem faces its share of challenges such as a small domestic market that is narrowly focused on mobile technology. Local opinion on the status and quality of all six factors varied widely but one thing that people seem to agree with is that time is still needed in order to allow for growth of the ecosystem. The hope is that government support for innovation will increase, cultural biases against entrepreneurs will wither away, technology penetration will continue to grow, and that all these elements will attract investors and lead to the right deals.

HIGH IMPACT ENTREPRENEURS

Safaricom's introduction of mobile payment system M-Pesa in 2007 was critical for the creation of an innovation ecosystem in Nairobi. This mobile payments platform would be the foundation for many Kenyan startups going forward (e.g. Sematime, Kopo Kopo). 31% of Kenyan GDP is now transacted through mobile payments (Forbes) and 74% of adults in Kenya are M-Pesa customers. This ecosystem is supported by many international investors and entrepreneurs. However, entrepreneurship remains challenging for local Kenyans, as many opt for the financial security of a corporate job versus taking equity in a startup.

INCUBATORS & ACCELERATORS

Nairobi has begun to develop a cohort of incubators and accelerators. They are a mix of co-working spaces, mentorship programs, entrepreneurial communities, and true accelerators. This network is loosely structured and overlapping, are usually funded by investors abroad, and typically have an industry focus (mobile technology, energy). Some, like Invested Development, are socially oriented, investing in companies that have potential to lift many Kenyans out of poverty and improve their standard of living. Others, like Savannah Fund, are more oriented towards the bottom line. Some, such as 88 mph, are true accelerators making real equity bets.

FUNDING & CAPITAL

Early stage investors in Nairobi comment that there is no shortage of capital. Yet, they continue to struggle to find the right entrepreneurial talent and companies to invest in. There are 25+ early stage firms (and this number is growing!) who invest at the early stage, funding a range of sizes from less than \$20,000 to \$2 million. However, the community has still indicated that a funding gap exists at the idea to product level (sub-\$20,000), as some entrepreneurs lack the personal capital (or "friends and family round") to self-fund, and also at the \$50,000 - \$200,000 level. A common area of focus for investors is mobile technology.

A number of Incubators and Accelerators have recently popped up in Nairobi, some of these include:



m:lab



88mph



iHub



Acumen Fund



Growth Africa



Invested Development



nailab



Innovation 4 Africa



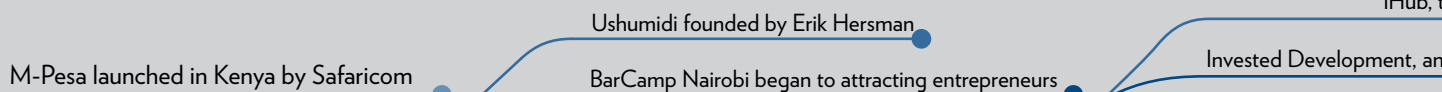
iLab Africa

"The necessary business acumen is not there. There are plenty of brilliant young coders who can build a beautiful product but do not have the training nor experience to bring it to market. There is a gap between idea and growth phases of young companies."

-Nancy Wang, Innovation 4 Africa

"Our focus is not IT, its social enterprise." -Founder and CEO of prominent Kenyan start-up accelerator and investment firm

"East Africa is attracting a significant amount of investment. The region is one of Africa's fastest growing economic hubs." -Kenneth Macharia, Acumen Fund





The Konza Techno City - A Brilliant Plan or a Planned Disaster?

Kenya's government recently launched a \$15bn initiative, the Konza Techno City project, an IT city to be built 37 miles outside of Nairobi. Konza is part of Kenya Vision 2030 and will have a science park, convention center, shopping malls, hotels, international schools, and more.

COMMUNITY & CULTURE

The entrepreneurial community in Nairobi is small and bears a large international influence. The investor community is largely comprised of "outsiders": they are visibly male, young, and white. Many of them came to Africa to make a difference and are deeply engaged with the social impact mission. There is a cultural dichotomy for the Kenyan entrepreneur. Kenyans are very entrepreneurial by nature of their environment. However, pursuing entrepreneurship as a career is still difficult for new Kenyan graduates who attended university based on the support of the broader communities and opt to take a corporate job with stable cash flows.

The government expects Konza to create as much as 20,000 new IT jobs, as well as spur trade and investment in Kenya. Konza's focus will be on business process outsourcing, software development, data centers, call centers, and more.

This plan has been met with mixed reviews, but largely skepticism and concerns that this is more a political play than a truly economic one. While political parties on all sides are supportive, citizens seem more hesitant.

"It's a massive scam" (Konza Techno City)
- prominent player in the Nairobi entrepreneurial environment

"I think they are quite destructive." (in regards to grants given by government) "It hurts the ecosystem."
-Nancy Wang, Innovation 4 Africa

"[Businesses] are very tedious to set up, it takes many days."
-Investment Analyst at Nairobi investment firm

GOVERNMENT & REGULATION

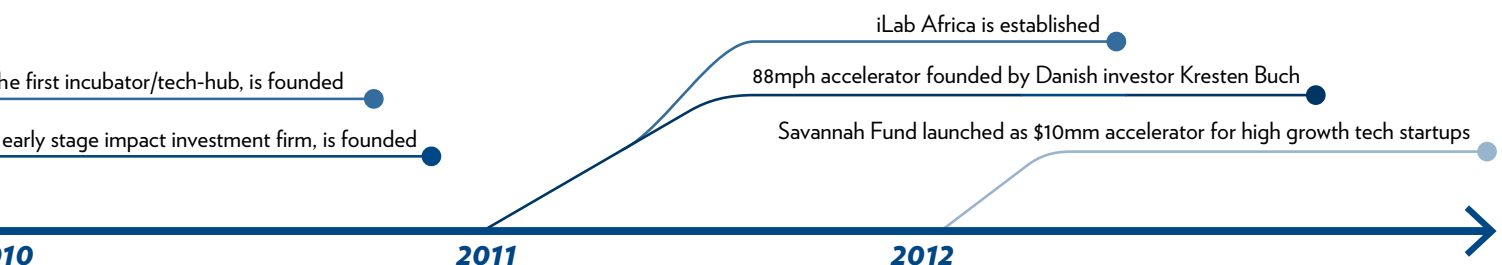
Reviews on government involvement in innovation are mixed. Some investors are concerned with corruption and bureaucracy - citing visa issues and ease of obtaining permits in particular. According to the World Bank's Doing Business 2014 index, Kenya's ranking has fallen and in 2014 ranks 129 out of 189 countries overall. However, the government has the right intentions. In 2008, it implemented Kenya Vision 2030, a long-term development plan whose goal is to transform the country into a newly industrializing, middle income country.

UNIVERSITIES & EDUCATION

Universities have begun to get involved in entrepreneurship. However, real challenge in the education space is the lack of interaction between MBA and technology programs. Because these programs do not usually overlap, there is a gap between the two fields - both of which are required to start, build, and develop successful businesses. In addition, due to the lack of successful predecessors, there are few mentors available to support and educate entrepreneurs.



iLab Africa is a research center under the Faculty of Innovation Technology at Strathmore University in Kenya. iLab Africa was created in order to drive research, innovations and entrepreneurship. Its primary focus is on using mobile technology to deliver solutions. While iLab does not provide funding, it provides workspace, advisory services, and connections with Venture Capital firms.



Nairobi's Fledgling Innovation Ecosystem

Factors for Creating Entrepreneurial Environments

Culture & Community



Nairobi's startup ecosystem is still in a fledgling state with early efforts to build a community of local and foreign entrepreneurs, innovators and investors. A small, close-knit community of predominately foreign talent is forming and tends to be oriented toward social impact in its startup and investment focus. Native Kenyans are also participating in the emerging community, however work is needed to create a culture of collaboration and shared risk-taking in what has historically been an ethnically divided society.

Government & Regulation



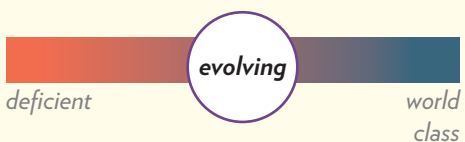
The government has recently made efforts to stimulate the long-term economic development of the country through Kenya Vision 2030 and other initiatives aimed at youth entrepreneurship but results remain to be seen. Kenya's ease of doing business ranking by the World Bank continues to decline in recent years while bureaucracy creates unnecessary friction for new companies. Foreigners complain of the long wait times, fees and paperwork required to obtain a visa or to open a business.

Universities & Education



Kenyan universities are starting to build platforms to support entrepreneurship, research and development and technology transfer. At Strathmore University, professors had limited time to spend on research so it created iLab, a research and innovation center, and iBiz, a business incubation center for student-led startups. Kenyatta University launched the Chandaria Business Innovation & Incubation Center in 2011 to support both KU students and other Kenyans in their entrepreneurial endeavors.

Funding & Capital



Given the tepid investment environment in the rest of the world, there is a significant amount of foreign money chasing East Africa. Over the past few years, various early stage investment firms have set up shop in Nairobi – some with higher social purposes and others purely profit-driven. These firms fund the spectrum of investment stages, although some funding gaps remain. However, there have been no prominent exits via IPO or M&A, due to the still evolving stages of Kenya's entrepreneurship journey.

Incubators & Accelerators



The early innovation ecosystem in Nairobi was spurred by the founding of the iHub umbrella in 2009 to offer co-working space, networking and mentorship for local and foreign innovators. iHub founder Erik Hersman also launched m:lab, a mobile-focused incubator and a research arm which publishes reports on the state of innovation in Africa. Others have since launched seed accelerators and there is now a platform for budding entrepreneurs to seek mentorship and capital in a supportive environment.

High Impact Entrepreneurs



Given the nascent status of high-impact entrepreneurship in sub-Saharan Africa, an experienced first-generation of homegrown entrepreneurs and mentors is still in the making. Kenyan students feel a strong obligation to provide ongoing financial support to their home communities upon graduation, with most young talent pursuing corporate or government employment. While technical talent does exist in Nairobi, it is often not balanced with business acumen and knowledge of startup methods.

Each factor has been rated on the following sliding scale: ① deficient, ② nascent, ③ evolving, ④ excellent, ⑤ world class

Recommendations for the Future

Nairobi is the least developed startup ecosystem in our analysis, having really only started a few years ago and consisting now of a small community. Prominent exits have not yet occurred and will likely require at least a few more years before a first generation of successful entrepreneurs can emerge. Kenyans are by nature and circumstance very entrepreneurial people, however the vision is often limited to achieving a certain quality of life as opposed to effecting big disruptive change. The creation of a successful entrepreneurial ecosystem faces some significant challenges, including: a limited domestic market that is further restricted by internet and smartphone penetration rates, cultural factors pushing new grads to be job seekers instead of job creators, limited overlap in technical and business training, and bureaucratic government policies that fail to promote long-term incentives for entrepreneurship. Last but not least, time is certainly needed for this community to climb to a higher state of maturation.

We have identified a number of specific areas of improvement that will benefit the continued evolution of Nairobi's startup ecosystem.

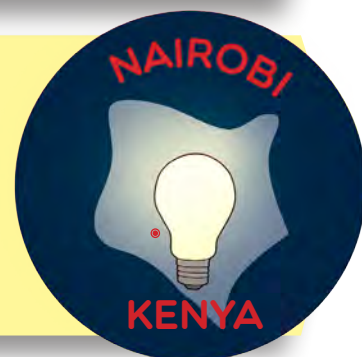
Culture & Community: The idea of being a job creator instead of a job seeker very much falls in line with the Kenya Vision 2030 goals. If gifted students within technology and business can find each other and be free of the financial and cultural constraints that otherwise demand them to take corporate jobs, strong and innovative startups with high success potential will begin to emerge. This mentality must be further promoted and bred within the national identity to truly effect change at the grassroots level where graduating students make career decisions. Kenya Vision 2030 is a promising starting point.

Government & Regulation: Kenya's rank in the World Bank's Doing Business 2014 report has fallen from the previous year, overall and in particular categories. Kenya can reduce bureaucracy by improving access to permits, registration, and credit, reducing lead times to obtain the aforementioned, creating easy access to visas for entrepreneurs and investors, providing tax and other economic incentives to startups, providing business and technology training for entrepreneurs, and providing better enforcement of contracts (IP and otherwise). These changes will motivate entrepreneurs to see Nairobi as a friendly environment for the creation of jobs through entrepreneurship.

Universities & Education: Universities can take on a more active role in designing joint technology and business programs that are ultimately meant to breed a class of well-educated entrepreneurs with computing prowess and business savvy. Additionally, the continued creation of platforms that emphasize entrepreneurship as a career and give the foundation for launch is critical. Many successful entrepreneurs develop their ideas and meet their business collaborators in educational settings and Kenya must capitalize on its own academic programs.

Incubators and Accelerators: Although a number of incubators and accelerators exist on and around Ngong Road in Nairobi, the presence of more locals is critical in Nairobi's incubators and accelerators, an area currently dominated by young, international talent that may not have the local know-how and experience to mentor budding Kenya entrepreneurs. The chicken-or-egg problem again presents itself: great mentors with success building innovative startups in East Africa are still lacking, yet they are greatly needed to help establish this first-generation entrepreneurial class.

High Impact Entrepreneurs: The sophistication level of entrepreneurs needs to be raised through better technology and business training in universities, as well as mentorship from experienced players in the East African innovation scene. This "chicken-or-egg" problem will likely require a multiple year period to resolve itself. Entrepreneurs must be comfortable with the risk-seeking nature of the business. This requires a fundamental cultural change throughout the broader community that promotes risk tolerance as a basis of innovation.



The Future of Global Entrepreneurship

During our research, we have traveled to countries that cover the spectrum of economic development. What we've found in each geography is that innovation ecosystems are critical to creating thriving and sustainable economic growth for countries. Each of the countries we visited has been transformed in ways both big and small by entrepreneurship and the disruptive technologies created. While the recipe for success will vary by country, we have attempted to layout the elements that we believe to be critical for developing thriving high-impact entrepreneurship and a thriving innovation ecosystem.

- **Government & Regulation:** A government's support is one of the most critical factors towards creating a thriving entrepreneurial ecosystem. Government must create a healthy and predictable environment that reduces friction for entrepreneurs, investors, and academics. This entails building the necessary infrastructure for the ecosystem: easy visa programs, access to permits, IP protection, contract enforcement, and more. However, governments should not be making the investment decisions and capital allocation should be left up to the private sector. Governments should be cautious that when it tries to overstep its public sector role; its spending can become wasteful. Small government actions can have big effects on making a system easier to navigate, but it can't necessarily change the culture of the ecosystem on its own.

- **Culture & Community:** Regardless of geography, innovation ecosystems should work to cultivate communities based on mentorship, collaboration and collective learning. This will help to create a virtuous cycle and pay-it-forward culture where information spreads rapidly, resources are used efficiently, collective knowledge is leveraged and innovation occurs.

- **Universities & Education:** Universities should seek to work more closely with local startup communities and identify opportunities to commercialize university-developed R&D. Universities should make every effort possible to attract world-class faculty, which should in turn result in higher quality students and better university-developed R&D.

- **High-impact Entrepreneurship:** Entrepreneurs need to have the right blend of training – technical know-how as well as business acumen – to create successful startups. These entrepreneurs must have a strong risk-tolerance, embrace failure, and see entrepreneurship as a prestigious career option.

- **Funding & Capital:** Investors across the continuum of funding stages are necessary. In particular, those who have had experience building and running their own startups often make the best investors. They provide appropriate mentorship and serve as a quality filter to identify the best and most viable startups.

- **Incubators & Accelerators:** Incubators and accelerators are meant to provide mentorship and knowledge transfer from seasoned entrepreneurs as well as create collaboration among the different players within the system. Incubators or accelerators that don't serve as good quality filters can hinder startup companies that have great potential.

The world of innovation and entrepreneurship is changing. Each country, city and community can adjust for its own characteristics and idiosyncrasies to thrive. Ultimately, the best ecosystems offer the entrepreneur access to large markets, capital, mentors, customers, educated employees, resources, and IP protection. Based on the geographies that we studied, each comes up short in some respects and room remains for improvement. Those who can build ideas and businesses quickly while overcoming the challenges that exist in each of these ecosystems will be the ones who succeed.

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