Deep Dive: Shenzhen—An International Hub of Hardware Innovation

This is the first report in our series on startups in China. In this series, we will focus on the ecosystems in Shenzhen, Beijing and Shanghai to provide insights into how these cities are incubating businesses with global potential. Our first report discusses Shenzhen—the world's hardware mecca.

1) Starting out as a small fishing village 35 years ago, Shenzhen has grown to become a world-class manufacturing hub, which is responsible for the production of most electronics goods worldwide.

2) "*Shanzhai*," which refers to the culture of producing copycat consumer goods, is still deeply welded in Shenzhen's business environment. Ironically, this became the catalyst for the development of creative and flexible supply chains.

3) In terms of startup funding, processes for due diligence and valuation are opaque relative to international markets. Fundraising has become harder this year, as both government and the private sector have turned more cautious.

Deborah Weinswig
Managing Director,
Fung Global Retail & Technology
deborahweinswig@fung1937.com
US: 917.655.6790
HK: 852.6119.1779
CN: 86.186.1420.3016

Copyright © 2017 The Fung Group. All rights reserved.

Table of Contents

Executive Summary 3
Introduction 4
Shenzhen by the Numbers 7
The Startup Ecosystem in Shenzhen 8
Case Study: Whoolala 12
Government Subsidy Programs for Startups 14
Funding from Venture Capital Firms and Enterprises 15
Conclusion 16
Field Trip to Shenzhen: A Closer Look at Huaqiangbei 16

Deborah Weinswig, Managing Director, Fung Global Retail & Technology
deborahweinswig@fung1937.com US: 917.655.6790 HK: 852.6119.1779 CN: 86.186.1420.3016
Copyright © 2017 The Fung Group. All rights reserved.

Executive Summary

This is the first report in our series on the startup ecosystems in China, a continuation of our coverage on other global ecosystems and startup hubs: India, Berlin, London, Paris and Amsterdam. In this series, we focus on Shenzhen, Beijing and Shanghai to provide insights into how these cities have bred successful technology businesses such as Tencent, BYD, Xiaomi, Huawei and Lenovo.

Shenzhen is evolving from a "shanzhai" manufacturer to a hub of hardware innovation.

This report will explain the value proposition that Shenzhen offers to technology startups. How far it has come from its origins as a fishing village 35 years ago to what it is today. Ironically, being the capital of *shanzhai*—a word that describes producing counterfeit consumer goods—has actually become the city's strength, by encouraging creativity and the development of flexible supply chains.

We look at three different aspects—demographics, quality of life and economy—to analyze the pros and cons of starting a business in Shenzhen:

- **Demographics:** Shenzhen is one of the youngest cities with the largest number of migrants in China.
- **Quality of Life:** Shenzhen is one of the least air-polluted cities among the Chinese megalopolises, but expensive housing prices are an issue for budding entrepreneurs.
- **Economy:** Shenzhen has a world-class manufacturing ecosystem that helps convert ideas into products quickly and efficiently.

The fact that major industry-leading tech companies, such as DJI, Tencent and Huawei, are headquartered in Shenzhen is an asset for the startup ecosystem. Their success sets an example and brings more investment and business opportunities into the city, while they also supply a pool of engineering talent for the ecosystem.

Source: iStockphoto

Deborah Weinswig, Managing Director, Fung Global Retail & Technology
deborahweinswig@fung1937.com US: 917.655.6790 HK: 852.6119.1779 CN: 86.186.1420.3016
Copyright © 2017 The Fung Group. All rights reserved.

Introduction

From its origins as a fishing village to a hub of original equipment manufacturers (OEM), to a world-class hardware maker, to an incubator of software, Shenzhen is working to rebrand itself as an innovation hub in China.

World-Class in Hardware Manufacturing and Tech Innovation

Shenzhen was designated as a special economic zone in the 1990s and initially the city's manufacturing industries focused on labor-intensive production of products such as textiles and toys before progressing to the higher-value manufacturing of consumer electronics goods.

The shanzhai culture has helped establish the foundation of world-class hardware manufacturing.

As Shenzhen solidified as the city in China for hardware production, it acquired the reputation of *shanzhai*—a word that describes counterfeit consumer goods. *Shanzhai* became a standard for products because it offered the easiest way to capitalize on factories' idle utilization. Since the early 1990s, the manufacturing sector has expanded rapidly, and a whole value chain in manufacturing electronic goods started to emerge along the way.

Due to blooming demand for electronic products and the growing purchasing power of Chinese customers, Shenzhen gradually integrated manufacturing, technology and innovation into its ecosystem, which consists of a network of supply chains, experienced engineers and advanced logistics and infrastructure.

In a study, McKinsey & Company argues that the time it takes to make a product prototype in Shenzhen is 2–3 days, while an integrated manufacturer might need 10–12 days. This is due to the collaborative nature of Shenzhen's producers and the close proximity of materials, parts and services suppliers, all located within the city. This is also reflected in the costs associated with product development—making a prototype in Shenzhen is estimated to cost $30,000–$50,000 versus $100,000–$200,000 for in-house development, according to McKinsey's study.

From a Maker to an Innovator

Shenzhen continued to invest in R&D in order to drive technological innovations.

Shenzhen is now one of the top cities in terms of the number of patent applications in China, according to the international Patent Cooperation Treaty. Companies in Shenzhen were awarded more patents than all companies in Beijing and Shanghai combined in 2016, according to data from the State Intellectual Property Office for the People's Republic of China (PRC).

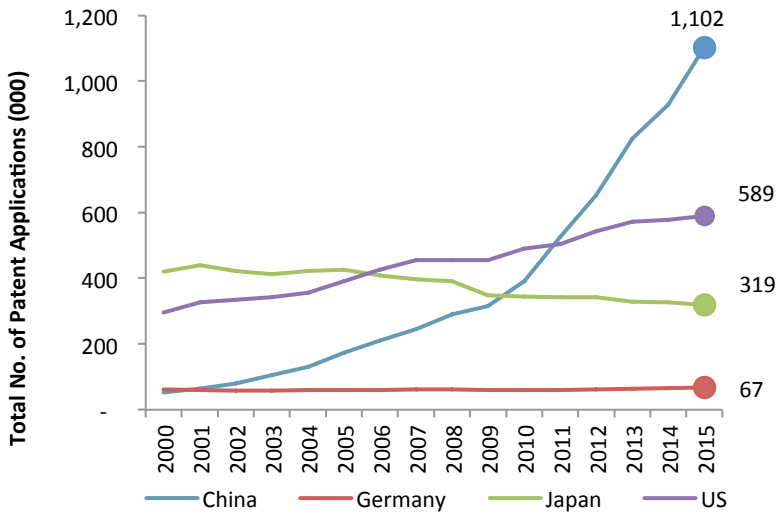
Shenzhen has also become a major hub for foreign high-tech companies in China, while also attracting notable domestic ones. According to a report by PWC, Shenzhen ranked first in terms of technology readiness, which involves: internet penetration, broadband speed, digital economy, software development and multimedia design, in line with its capability for innovation.

Shenzhen has invested more than 4% of its GDP annually in research and development (R&D) since 2013, putting it on a par with South Korea and Israel, which hold the world's top-two positions in terms of investment in R&D, according to the OECD. In 2017, the Shenzhen government targeted

Deborah Weinswig, Managing Director, Fung Global Retail & Technology
deborahweinswig@fung1937.com US: 917.655.6790 HK: 852.6119.1779 CN: 86.186.1420.3016
Copyright © 2017 The Fung Group. All rights reserved.

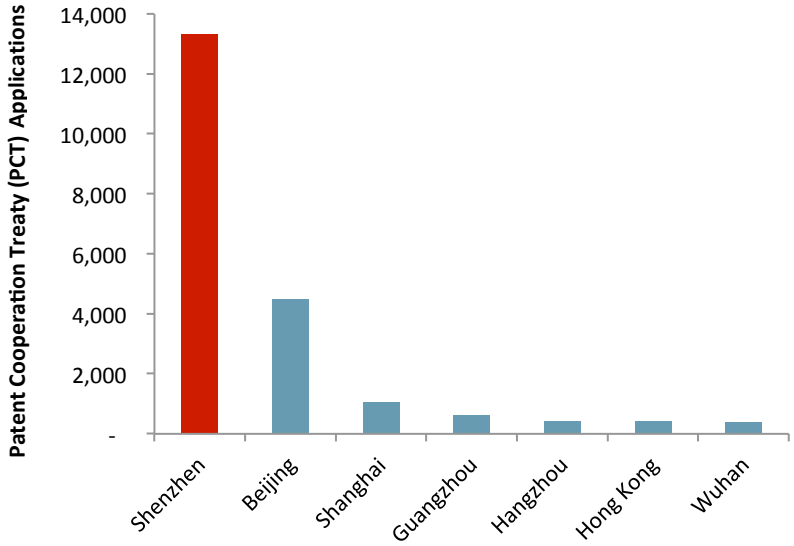
to spend ¥80 billion in subsidizing technological innovations. In addition to that, the level of spending is expected to be maintained at more than 4% of GDP for the next three years.

Figure 1. Total Number of Patent Applications by Different Countries in 2015



Source: World Intellectual Property Organization

Figure 2. Total Number of Patent Cooperation Treaty (PCT) Applications by Chinese Cities in 2015



Source: The State Intellectual Property Office of the PRC

The Road to Becoming an International Hub of Hardware Innovation

During the sixth municipal congress of the Communist Party of China in 2015, Municipal Committee Secretary of Shenzhen Ma Xingrui laid out the city's blueprint for the next five years, and highlighted the key focus for

Deborah Weinswig, Managing Director, Fung Global Retail & Technology
deborahweinswig@fung1937.com US: 917.655.6790 HK: 852.6119.1779 CN: 86.186.1420.3016
Copyright © 2017 The Fung Group. All rights reserved.

By connecting nearby cities with diversified service offerings, Shenzhen gradually became a hub of hardware innovation.

Shenzhen before 2020: remaining competitive in high-tech industries, upgrading modern infrastructure for modern service industries, scaling up education and medical services to sustain and further enhance its attractiveness to capital and talent.

Based on this comprehensive new urban planning blueprint, Shenzhen is slated to become a high-tech innovation base, an international logistics hub, a financial and cultural center and a provider of advanced services. Local government sets the development focus for each district. Here are the highlights of the key zones in Shenzhen:

- **Qianhai:** A Hong Kong-Shenzhen service center, focusing on high tech, education, art and logistics services.
- **Futian:** A political, financial and trading center.
- **Luohu**: A financial and trading services center.
- **Longgang and Pingshan:** A modern heavy industrial base.
- **Longhua:** A transportation and logistics hub.
- **Guangming:** A local high-tech and eco-agricultural base.
- **Aerotropolis:** An international logistics and supply-chain base.
- **Yantian:** A leisure tourism and logistics hub.

Figure 3. 2010–2020 City Plan of Shenzhen

Source: Urban Planning/Land & Resources Commission of Shenzhen Municipality

Deborah Weinswig, Managing Director, Fung Global Retail & Technology
deborahweinswig@fung1937.com US: 917.655.6790 HK: 852.6119.1779 CN: 86.186.1420.3016
Copyright © 2017 The Fung Group. All rights reserved.

Shenzhen by the Numbers

Shenzhen leads China's key cities in terms of three different aspects: demographics, quality of life and economy.

To better understand the differences between Shenzhen and Shanghai, Beijing and Hong Kong, we compiled a data table to study the advantages and disadvantages of starting a new company in Shenzhen compared to other cities.

Figure 4. Economic Data Comparison

		2015/2016			
		Shenzhen	**Shanghai**	**Beijing**	**Hong Kong**
Demographics	Population	11,378,900	24,150,000	21,710,000	7,298,600
	Average Age	33	37	36	44
	Age 15–44 (%)	73%	50%	53%	45%
	New Registered Migrants	160,000	60,000	70,000	N/A
Quality of Life	Housing Price (RMB/sqm)	4,848	3,097	3,212	15,547
	Housing Price as a % of Income (%)	42%	20%	20%	40%
	Office Rental Price (RMB/sqm/month)	258	268	383	1,785
	Pollution (PM 2.5) (ug/m3)	30	51	81	26
Economy	GDP (RMB, Billion)	1,750	2,512	2,301	2,398
	GDP per Capita (RMB)	158,000	103,796	106,497	328,941
	Average Income (RMB)	11,671	15,739	16,285	38,518
	Primary Industry (%)	0.0%	0.4%	0.5%	0.1%
	Secondary Industry (%)	39.5%	29.1%	19.2%	7.2%
	Tertiary Industry (%)	60.5%	70.5%	80.3%	92.8%

Source: Local City Statistical Bureaus/KPMG/Ernst & Young/NBS/CEIC/NDRC/IMF

Demographics

Although Shenzhen is not the largest city in China, the average age of its population, as of 2016, is only 33, which makes it one of the youngest cities. On top of that, 73% of the population is between the ages of 15 and 44, which is the age group most prone to entrepreneurship.

With 160,000 new registered migrants in 2016, Shenzhen is also one of the most diverse cities in the country. Diversity contributes to the quality of the talent pool available in the city.

Quality of Life

Due to the rise in incomes, standard of living and real estate prices, many factories moved to nearby smaller cities in Guangdong Province. As a result, Shenzhen has become one of the cleanest of China's industrial cities. Shenzhen's PM 2.5 index is 30, which is one of the lowest readings for a Chinese city. However, housing prices have become increasingly expensive, and housing-related expenses now account for 42% of the average resident's income, similar to the level in Hong Kong. The relatively less-polluted environment is now a positive driver for attracting talent, however, the rising cost of living has hurt the incentive to remain long in the city.

Deborah Weinswig, Managing Director, Fung Global Retail & Technology
deborahweinswig@fung1937.com US: 917.655.6790 HK: 852.6119.1779 CN: 86.186.1420.3016
Copyright © 2017 The Fung Group. All rights reserved.

Economy

Compared to Shanghai, Beijing and Hong Kong, which all focus on service industries such as finance, logistics and tourism. Shenzhen has a world-class manufacturing ecosystem that helps contribute over 39.5% of it GDP. Shenzhen houses a complete manufacturing value chain and has incubated thousands of hardware startups over the past decade. Because *shanzhai* is deeply rooted in Shenzhen, rather than protecting their intellectual property through timely legal action, most entrepreneurs focus on product improvement and innovation.

The Startup Ecosystem in Shenzhen

We evaluate Shenzhen's startup ecosystem by looking at its foundation blocks: its accelerator and incubator programs, the funding climate, the track record of startups and the availably of technology talent.

The network of incubators and accelerators is underdeveloped in Shenzhen.

Accelerators and Incubators

The incubator and accelerator network in Shenzhen is underdeveloped relative to other ecosystems.

Haxlr8r—A Hardware Accelerator

Pronounced "Hax-celerator," a combination of the words "hack" and "accelerator", Haxlr8r is a hardware-only accelerator program, and probably the most established program in the city. As a mostly foreign-owned accelerator launched in 2011, the program put a tremendous effort into promoting Shenzhen as a hardware hub to the rest of the world. Co-Founder Cyril Ebersweiler, an investment partner with SOSventures, an Austin, Texas headquartered venture capital firm, is a vocal advocate of Shenzhen, and so is Ben Joffe, a general partner of Haxlr8r.

According to Joffe, the accelerator program at Hax is an effective training ground for foreign entrepreneurs to learn to take advantage of Shenzhen's manufacturing and supply-chain capabilities to build their products. Many of these foreign entrepreneurs come to China for the first time without speaking the language, so the accelerator program is particularly valuable in connecting them with the right factory and supply-chain partners.

Hax has also become a launchpad for Chinese hardware startup teams that are developing products for the global market. Darma, the smart seat cushion that monitors posture, heart rate and breathing, is one example of a product developed by a Chinese team that launched with the help of Haxlr8r.

Weiyouhui Incubation Park—An Incubator in Longgang Shenzhen

Weiyouhui Incubation Park is located in Longgang and, with more than 12,000 square meters of office space, it can incubate more than 100 companies at the same time. The incubator offers startups mentoring from coaches who are veterans in Internet, media, recruitment, entrepreneurship and management. In addition to mentoring, Weiyouhui helps startups acquire angel investment or Series A funding.

One example of a project incubated at the Weiyouhui Incubation Park is Su Yun Bang Bang, a logistics company that focuses on last-mile delivery for schools. Its valuation is now more than ¥20 million.

Deborah Weinswig, Managing Director, Fung Global Retail & Technology
deborahweinswig@fung1937.com US: 917.655.6790 HK: 852.6119.1779 CN: 86.186.1420.3016
Copyright © 2017 The Fung Group. All rights reserved.

3W—An Incubator with a Coffee Shop

3W was first crowdfunded as a coffee shop in 2010. The company not only provides office space for startups, but also offers services including angel investment, corporate public relations, conference organization and, last but not least, its coffee shop.

Joymason is a personalized services provider incubated at 3W. It is an instant-messaging product that uses artificial intelligence (AI). It raised Series A funding in June 2015.

Entrepreneurial Magic Cube—An All-in-One Incubator

Entrepreneurial Magic Cube is the world's first all-in-one "Office space + Cloud roadshow + Partnership" service base. Launched by Zhang Bing, CEO of 3800 Group in China, the company selects startups based on their fast growth potential, and provides value-added services such as corporate strategic management consulting, technology development, brand design and management, and investment and financing guidance.

Makerspaces are relatively well-developed in the city.

Makerspaces and Maker Events

Shenzhen is a hub for makers, and makerspaces are well developed compared to incubators in the city. Shenzhen Maker Faire and Chaihuo Maker Space are both well-established platforms that bring the maker community to Shenzhen.

Chaihuo Maker Space—A Playground for Hardware Innovators

Chaihuo Maker Space is China's equivalent to TechShop in Silicon Valley. For an affordable monthly membership fee of US$20, entrepreneurs, engineers and hardware enthusiasts can use the workspace and equipment (such as 3D printers and machine tools) to build prototypes and test their ideas. What is even more valuable is the community and network that Chaihuo offers: there are frequent networking events where seasoned entrepreneurs from China and other countries share their experience and advice.

Shenzhen Maker Faire—An Annual Event for Makers

Part of the international maker movement, the first Shenzhen Maker Faire, was held in April 2014. "Maker Faires" consist of conferences, expos and carnivals held all over the world to engage the hardware developer community. It was a big show-and-tell, and could be considered a milestone in rebranding the "Made in China" stigma. The whole ecosystem—from large corporates to small players to venture funds, from Chinese to foreigners, from professionals to hobbyists—gathered as part of this vibrant industry meetup. The upcoming Shenzhen Maker Faire held on October 15–16, 2017 will certainly be an event to watch.

Deborah Weinswig, Managing Director, Fung Global Retail & Technology
deborahweinswig@fung1937.com US: 917.655.6790 HK: 852.6119.1779 CN: 86.186.1420.3016
Copyright © 2017 The Fung Group. All rights reserved.

Some 13 companies in Shenzhen can be classified as "Chinese unicorns."

Successful Stories and Notable Startups

According to the report "2016 Chinese 'Unicorn' Development," there are 131 (87% year-over-year growth) Chinese companies that fit the definition of Chinese Unicorn:

- Registered in China
- Founded within the past 10 years (established in 2006 and later)
- Obtained private investments and has not yet listed
- Valued at more than $1 billion

Combined, these 131 unicorn companies are valued at over $487 billion, and of this, 13 are based in Shenzhen with a valuation of around $39 billion in total.

Figure 5. 2016 Chinese Unicorn Ranking

Ranking in Shenzhen	Ranking in China	Company	Valuation ($ Bil.)	Industry	Founded	Description
1	7	DJI	10	Smart Hardware	2006	One of the largest manufacturers of unmanned drones for commercial and recreational purposes.
2	10	Cainiao	7.69	Logistics	2013	A global parcel-tracking platform of Alibaba Group. It supports postal tracking, international express tracking and cross-border carriers.
3	14	WeBank	5.5	Internet Finance	2015	China's first private and online-only bank, it is a joint venture led by Tencent.
4	20	Tencent Cloud	3.3	Cloud Services	2010	A cloud-computing service provided by Tencent.
5	25	Dadi Film	3.1	Culture and Entertainment	2007	A theater chain with over 500 theaters in China.
6	26	Royole	3	Smart Hardware	2012	A manufacturer of flexible display, VR, wearables and smart devices.
7	54	Tubatu	1.6	E-Commerce	2008	A B2C e-commerce platform in the home décor market.
8	76	Fenqile	1.18	Internet Finance	2014	A B2C e-commerce company that offers installment for a wide range of products.
9	83	Fangdd	1	Real Estate	2011	An O2O platform for real estate operated by agents.
10	83	Lamabang	1	Social Media	2012	A B2C e-commerce company tailor-made for mothers.
11	83	UBTECH	1	Smart Hardware	2012	A humanoid robot maker.
12	83	icarbonx	1	Health Care	2015	A health data platform powered by AI.

Source: China Torch/Great Wall Enterprises' Strategy Research Center

Deborah Weinswig, Managing Director, Fung Global Retail & Technology
deborahweinswig@fung1937.com US: 917.655.6790 HK: 852.6119.1779 CN: 86.186.1420.3016
Copyright © 2017 The Fung Group. All rights reserved.

Software Startups Account for the Majority of Unicorns

With the help of Shenzhen's hardware ecosystem, DJI has become one of the largest manufacturers of unmanned drones in the world, however, it is one of only three hardware-driven unicorns. In contrast, the other nine unicorns in Shenzhen are clearly software-focused, operating in industries such as e-commerce online finance.

Notable Startups

We selected some rising stars that relate to the supply chain and briefly look at their business model.

The following list of startups shows the different approaches they have taken in leveraging Shenzhen's ecosystem. Some have succeeded and left Shenzhen to target global markets, while others have chosen to remain rooted in the manufacturing hub. Some have developed a consumer product to showcase their technology in order to earn the credibility to expand into the enterprise space.

ZhenHub—An E-Commerce Logistics Management Platform

Founded in 2016, ZhenHub is a cloud-based inventory and order-management system for e-commerce retailers to automate logistics. Retailers can manage all their inventory and orders from a single online dashboard. The platform can automatically fulfill orders and automate the fulfillment process, while providing a complete real-time overview of inventory, sales orders and shipments globally. ZhenHub assists with international package and freight quotations, warehouse and fulfillment, platform integration, reporting and analytics.

Meta Factory—A Hardware Prototype Factory

Meta Factory was founded in 2016, based in Shenzhen and New York. The company offers four services: CAD drafting, prototyping, manufacturing and components sourcing. It can help to design and build complex electronic prototypes, manufacture high-quality and high-volume electronic hardware products and source rare and unique electronic components.

Tech4Trade—A Global Sourcing Company

Tech4trade is a web-based application designed to give buyers, manufacturers, inspection companies, freight forwarders and other related companies a secure online market place to meet, cooperate and share information on international trade projects. Tech4trade's solution can support different stages of product development, such as design, sourcing, supplier audits, order management, quality assurance and shipments management.

Klook Travel—A Travel Activities Booking Platform

Founded in 2016, Klook Travel offers a one-stop solution to discover activities, attractions and things to do in different cities. To offer activities at lower prices than traditional travel firms or tour operators, Klook works directly with attraction managers and owners.

Deborah Weinswig, Managing Director, Fung Global Retail & Technology
deborahweinswig@fung1937.com US: 917.655.6790 HK: 852.6119.1779 CN: 86.186.1420.3016
Copyright © 2017 The Fung Group. All rights reserved.

CASE STUDY

Case Study: Whoolala

Fung Global Retail and Technology met with Lukas Hlavac, Co-Founder and COO of Whoolala, and discussed Shenzhen's startup ecosystem as well as Whoolala's business model and vision.

Whoolala is an online marketplace for fashion products that connects Chinese consumers with Asian designers.

Business Model

Launched in 2014, Whoolala is a Shenzhen-based digital-first brand management platform for emerging Asian designers, and one of the few startups in Shenzhen founded by foreign entrepreneurs.

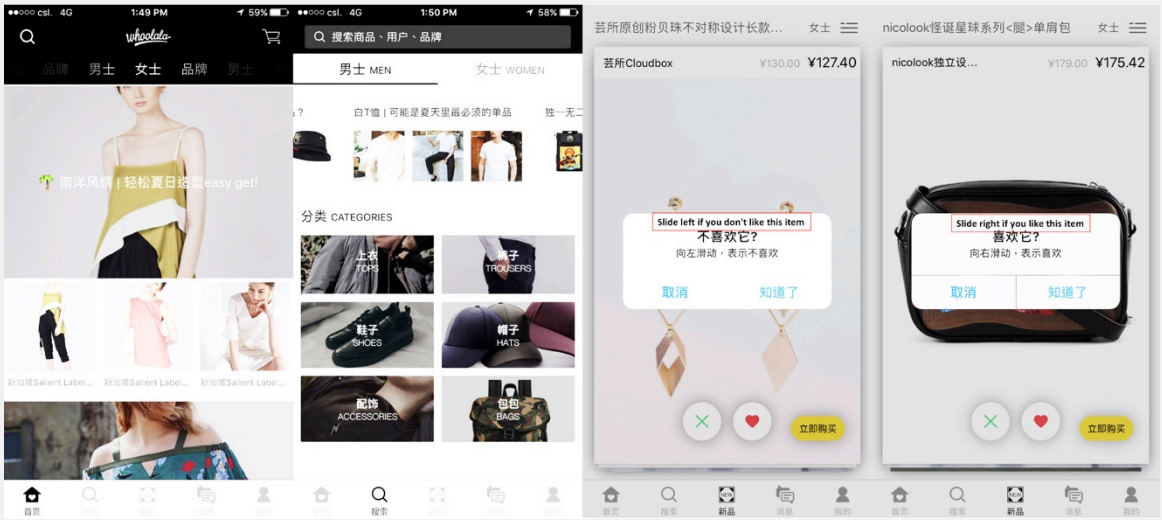
Whoolala helps Asian designers enter the Chinese market by assisting with their brand positioning, digital strategy and omnichannel distribution through physical retail concepts and its self-operated online marketplace. For example, the company recently partnered with Lane Crawford to launch a pop-up store in Chengdu, and plans to expand its physical retail initiatives going forward.

How it Works

Designers submit their portfolios on the Whoolala app and the products can be featured on the customer's interface after a screening process. Whoolala offers several features:

- **A daily blog:** A marketing platform to reach Chinese customers.
- **A ranking of brands:** Whoolala ranks the brands based on sell-out performance.
- **Fashion community and regular meet-up events:** Whoolala helps to organize events or sharing sessions for designers to stay on top of fashion trends.

Figure 6. Whoolala User Interface



Source: Whoolala

Deborah Weinswig, Managing Director, Fung Global Retail & Technology
deborahweinswig@fung1937.com US: 917.655.6790 HK: 852.6119.1779 CN: 86.186.1420.3016
Copyright © 2017 The Fung Group. All rights reserved.

The Whoolala App also tracks and analyzes users' preferences based on "likes" and "dislikes," and personalizes content respectively. According to the data provided by the company, each app user will screen through 80 items per day.

Whoolala has about 150 brands or designers, and displays more than 10,000 products. Its target customers are the middle class in China's second-tier cities.

Hlavac on Shenzhen as a City to Launch a Business

Some of Shenzhen's advantages Hlavac mentioned include its openness to foreigners, better quality of life, sufficient tech talent and proximity to Hong Kong.

Comparing Startup Cultures

During our discussion, Hlavac noted some of the advantages that he felt made Shenzhen the best city in China for the Whoolala team: it offers a better quality of life, has ample tech talent and is near Hong Kong, which offers world-class banking and legal services, and is a hub for connecting to the rest of Asia.

He commented that even though Beijing might have a better educational foundation and a larger entrepreneurial ecosystem, Shenzhen is relatively open to foreigners as well as migrants from other Chinese cities, which serves to its advantage.

Software Development Is Ramping Up

Although Shenzhen is famous for its manufacturing prowess, software startups are gaining traction, according to Hlavac. Since the *shanzhai* nature is still rooted in Shenzhen, software development is relatively immune to the "open source" culture. Moreover, with talent coming in from tech companies such as Baidu, Shenzhen startups are well positioned to attract and retain engineers looking to be part of an entrepreneurial story.

Funding Activity in 2017

Getting funding for startups seems to be harder this year, as venture capitalists (VC) and the local government have turned more cautious about supporting new projects. Hlavac noted that he is seeing startups raising funds continuously, as rounds can last for 6–12 months, which is a short funding cycle environment. He also pointed out that most Chinese VC funds still look to back mostly Chinese entrepreneurs, as they believe one needs to be from China to understand the local market. He estimates that this year, overall funding will decline compared to last year.

Deborah Weinswig, Managing Director, Fung Global Retail & Technology
deborahweinswig@fung1937.com US: 917.655.6790 HK: 852.6119.1779 CN: 86.186.1420.3016
Copyright © 2017 The Fung Group. All rights reserved.

The Shenzhen government supports innovation through subsidy and funding programs.

Government Subsidy Programs for Startups

The Shenzhen Human Resources and Social Security Bureau, which is a city-level division of the Ministry of Human Resource and Social Security of the PRC, has organized a number of funding programs to support the growth in the technology industry in the past year. Here are some highlights of notable programs that help to facilitate the startup ecosystem.

1. Start-Up Enterprise Subsidy

- **Amount:** ¥5,000 per founder and a maximum allowance of ¥50,000.
- **Eligibility:** For startups that have operated for no less than six months. A startup can only apply once.

2. Rental Subsidy

- **Amount:** First year no less than 80% of annual rent; second year no less than 50% of annual rent; and third year no less than 20% of annual rent; or a maximum allowance of ¥6,000 each year for three years.
- **Eligibility:** Certificated startups based in the Entrepreneurship Incubator Zone, technology-related startups and overseas students can apply.

3. Social Security Subsidy

- **Amount:** Full subsidy of social security for a maximum of three years.
- **Eligibility:** Any startup can apply.

4. Employment Subsidy

- **Amount:** ¥2,000 per headcount for a team of three members or less; ¥3,000 per headcount for a team of four or more members. The maximum allowance is ¥30,000.
- **Eligibility:** Any startup can apply.

5. Micro-Financing

- **Amount:** A loan amount of ¥200,000 per founder, with a maximum total loan amount of ¥2,000,000
- **Eligibility:** Any startup can apply.

6. Peacock Campaign

- **Amount:** ¥800,000–¥1,500,000 for overseas talent. A maximum of ¥80 million for a team that acquires overseas talent.
- **Eligibility:** High achieving talent, e.g., Nobel prize winners; top management in government-recognized technology and innovation companies.

These subsidy programs cover different aspect of funding needs. The Shenzhen Science and Technology Innovation Commission, which is

Deborah Weinswig, Managing Director, Fung Global Retail & Technology
deborahweinswig@fung1937.com US: 917.655.6790 HK: 852.6119.1779 CN: 86.186.1420.3016
Copyright © 2017 The Fung Group. All rights reserved.

another government division that focuses on supporting high-tech startups, also offers similar funding programs in the Nanshan district.

Funding from Venture Capital Firms and Enterprises

An adequate number of venture capital firms provide a healthy environment for startup funding.

According to data from the Shenzhen Chamber of Investment, the total amount of investment from the top 100 Shenzhen VC funds in 2016 was ¥58 billion, up 40% year over year, which was invested in 987 transactions, up 16.4% year over year. Last year, health care, culture and entrainment, solutions for enterprises and smart hardware recorded the fastest growth in terms of funding raised: smart hardware, for example, attracted more than ¥3.98 billion, up 95.2% year over year.

Shenzhen Capital Group is one the most famous investment groups in the city, having made it to the top of the list since 1999. Shenzhen Capital Group managed around ¥208 billion as at the end of March 2017. Its internal rate of return (IRR), which is ranked number one in China, is over 40%, with more than 730 invested projects. One of the biggest returns in terms of absolute value is coming from its investment in Shenzhen MTC, which is now valued at over ¥14 billion. By selling its shares of Shenzhen MTC on the public market, Shenzhen Capital Group received over ¥1 billion in return.

China Internet giants Baidu, Alibaba and Tencent have launched their respective funds in recent years:

- **Baidu Ventures** aims to support cutting-edge technology, including AI and virtual reality/augmented reality (VR/AR). The fund size is around $200 million. It oversees projects in both the US and China.
- **Baidu Capital** focuses on later-stage venture investment. The fund size is around ¥20 billion. It oversees projects in both the US and China.
- **Alibaba Entrepreneurs Fund** aims to support young entrepreneurs. The fund size is around $130 million. It oversees projects in Hong Kong and Taiwan.
- **Tencent Industry Win-Win Fund** focuses on different stages of venture investment, including seed, early-stage and later-stage venture investments. The fund size is ¥5 billion. It oversees projects mainly in China.

These funds from Baidu, Alibaba and Tencent are founded to serve the strategic development of different enterprises—for example, Baidu on AI-related tech, and Tencent on media and social network projects. Yet, they provide an alternative exit opportunity for startups and VCs, which is positive for the entire startup ecosystem.

According to a report from Reuters in February 2017, China's securities regulator is considering deregulating the initial public offerings (IPO) of technology companies, allowing them to jump the queue for the long-waiting line of IPO applicants. This move, in our view, is a positive sign for VC funding, as it could shorten the time to exit. Given the current investment activity in the ecosystem, we believe there is enough venture capital to support startups in Shenzhen.

Deborah Weinswig, Managing Director, Fung Global Retail & Technology
deborahweinswig@fung1937.com US: 917.655.6790 HK: 852.6119.1779 CN: 86.186.1420.3016
Copyright © 2017 The Fung Group. All rights reserved.

Conclusion

In our opinion, Shenzhen currently is more of a manufacturing service provider for innovative products rather than a startup incubator hub. The legacy of *shanzhai* capital remains and the lack of homegrown innovation is still a roadblock to the future growth of Shenzhen. Yet, having world-class quality control, a mature supply chain and a highly adaptable business climate, Shenzhen is rapidly reinventing itself to capture the next big wave.

Field Trip to Shenzhen: A Closer Look at Huaqiangbei

The Fung Global Retail & Technology team went on a field trip to take a closer look at Huaqiangbei—a world-famous manufacturing hub.

In order to better understand how Shenzhen's hardware supply chain works, the Fung Global Retail & Technology team went on field trip last week to Huaqiangbei, a major electronics manufacturing hub and electronics marketplace; Nanshan, a hybrid technology/commercial free-trade zone; and Futian, a central business district.

The Origins of *Shanzhai*

Source: Fung Global Retail & Technology

Huaqiangbei is only 15 minutes away from the central business district (CBD), and is an area famous for selling electronics parts as well as for hardware manufacturing. On first glance, commercial buildings and malls are everywhere, just like in any other country. However, in fact, several thousand shops and stalls are spread across many buildings and multiple floors.

Deborah Weinswig, Managing Director, Fung Global Retail & Technology
deborahweinswig@fung1937.com US: 917.655.6790 HK: 852.6119.1779 CN: 86.186.1420.3016
Copyright © 2017 The Fung Group. All rights reserved.

Source: Fung Global Retail & Technology

More than several thousand shops occupy spaces across the many buildings in Huaqiangbei.

In one of the many malls we visited, there were more than 500 stores located inside. There were at least five more similar malls along the same street in Huaqianbei. Most of the shop owners were selling smartphone-related electronic components, such as smartphone cases and screen protectors. Many of them are selling similar products, with little or even no variation. As the picture below indicates, not only are these shops doing wholesale business—the bulk of the screen protectors and phone cases we saw looked ready for shipping—but they also acted as a retail store and accepted mobile payments (i.e., Alipay and WeChat pay).

Source: Fung Global Retail & Technology

Deborah Weinswig, Managing Director, Fung Global Retail & Technology
deborahweinswig@fung1937.com US: 917.655.6790 HK: 852.6119.1779 CN: 86.186.1420.3016
Copyright © 2017 The Fung Group. All rights reserved.

Source: Fung Global Retail & Technology

Source: Fung Global Retail & Technology

The *Shanzhai* Culture Is Still in the Veins of Shenzhen

Within five minutes' walking distant, there was a mall showcasing completely different consumer products. Popular electronics goods such as hoverboards and unmanned drones can be purchased relatively inexpensively in the mall. We noticed that some products were fakes or counterfeits, for example, a small booth from JKH Electronics showcased an Ab Belt which looked very much like the training gear from The Sixpad. This should not come as a surprise, given the *shanzhai* culture of Shenzhen. Ironically, one can find authorized stores alongside counterfeit stores in the same building, as shown in the photo below. Global brands such as Dell, Asustek and Samsung were selling their electronics products on the ground floor of the mall.

Deborah Weinswig, Managing Director, Fung Global Retail & Technology
deborahweinswig@fung1937.com US: 917.655.6790 HK: 852.6119.1779 CN: 86.186.1420.3016
Copyright © 2017 The Fung Group. All rights reserved.

Source: Fung Global Retail & Technology

Source: Fung Global Retail & Technology

Source: Fung Global Retail & Technology

Deborah Weinswig, Managing Director, Fung Global Retail & Technology
deborahweinswig@fung1937.com US: 917.655.6790 HK: 852.6119.1779 CN: 86.186.1420.3016
Copyright © 2017 The Fung Group. All rights reserved.

Deborah Weinswig, CPA
Managing Director
Fung Global Retail & Technology
New York: 917.655.6790
Hong Kong: 852.6119.1779
China: 86.186.1420.3016
deborahweinswig@fung1937.com

Kiril Popov
Senior Analyst

Simic Chan
Senior Research Associate

Hong Kong:
8th Floor, LiFung Tower
888 Cheung Sha Wan Road, Kowloon
Hong Kong
Tel: 852 2300 4406

London:
242-246 Marylebone Road
London, NW1 6JQ
United Kingdom
Tel: 44 (0)20 7616 8988

New York:
1359 Broadway, 18th Floor
New York, NY 10018
Tel: 646 839 7017

FungGlobalRetailTech.com

Copyright © 2017 The Fung Group. All rights reserved.