



BCYC Winter Learning Journey City Report Beijing

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1. Introduction and brief historical background of city visited

Beijing is the capital of People's Republic of China. It is the world's third most populous city, and the most populous capital city, with 21.71 million residents (including 21.45 million urban dwellers). It is also one of the oldest cities and has been the political centre of China for most of the past 8 centuries.¹

Today, Beijing functions as China's centre for political, cultural, international exchange and scientific innovation.² In 2018, Beijing was ranked 9th on AT Kearney's Global Cities Index in terms of current performance, based on 27 metrics spanning five dimensions of business activity, human capital, information exchange, cultural experience and political engagement.³

2. Key changes and developments since 1978 reforms

Beijing has experienced tumultuous changes since China's 1978 economic reforms. According to Table 1 in Annex A, Beijing's permanent population has increased by almost 2.5 times over this period. However, it is also noteworthy that the number of migrant population has increased by 36.4 times in the same period. This has given rise to issues of overcrowding, public safety and access to education, which will be discussed in greater detail at section [5] below.

According to Table 2 in Annex A, Beijing's GDP has also increased by 257.48 times over the same period. Particularly noteworthy is Beijing's transition from a secondary industry driven economy to a tertiary industry driven one.

In addition, the average wage of full-time employees has also risen 200.6 times over this period as seen from Table 3 in Annex A. However, soaring property prices, amongst other factors, continues to exacerbate issues such as unequal distribution of wealth and retention of young talents. (see Section [5])

3. Summary of Economic and Sociocultural qualities of the city

a. Economy

Table 2 in Annex A shows that Beijing's economy primarily comprise the tertiary sector (services), which generated 82.2% of its output in the first 3 quarters of 2018, followed by the secondary sector (manufacturing, construction) at 17.4% and primary sector (agriculture, mining) at 0.4%. The tertiary sector is further diversified into financial services (17.7%), wholesale

¹ Wikipedia <https://en.wikipedia.org/wiki/Beijing>

² Chinese-cities-of-opportunities-2018, pg 6.

³ 2018 Global Cities Report AT Kearney.

and retail (8.31%), information technology (12.1%), real estate (12.7%), and scientific research (12.13%).⁴

In 2006, the city government identified 6 high-end economic output zones around Beijing (Refer to Annex B) as the primary engines for local economic growth.⁵ In the first quarter of 2017, these 6 zones accounted for 50.2% of Beijing's GDP.⁶

b. Education

Beijing is commonly seen as the education centre of China. Beijing has a literacy rate of 98%, higher than the national average of 96%. Beijing is also home to 89 regular higher education institutions (by comparison, Shanghai has 68)⁷, 6 of the 36 "Class A Double First Class Universities"⁸, and 8 of the 39 "Project 985" Universities, including Peking University ("PKU") and Tsinghua University, widely recognized as the top 2 universities in China. In addition, Beijing also has the highest student-to-teacher ratio in senior secondary education and the highest amount of budgetary funds allocated for education per student.⁹

4. Key takeaways from Corporate visits

a. Haidilao¹⁰

Key takeaway and learning points

1. Power of technology and innovation: The purpose of having smart restaurant is to reduce labour costs and solve food safety problems. Through the use of technology such as food delivery robots, the demand for manpower can be reduced, and the staff can provide more attentive and thoughtful services to customers. In the kitchen, as repetitive steps such as cutting and washing food are replaced by machines, the contact that people have with food is reduced, therefore minimising the chance of food contamination. It also increase the traceability and transparency of the whole food preparation process. This is especially important amidst the increase in food safety issues and consumers are more concerned about the origin and hygiene standard of the food they consume. In the long run, through the Intelligent Kitchen Management

⁴ http://www.bjstats.gov.cn/tjsj/yjdsj/GDP/2018/201810/t20181022_409059.html

⁵ <https://web.archive.org/web/20130914061955/http://www.bjhigh-endarea.gov.cn/gnq/>

⁶ http://www.bjhd.gov.cn/ztl/kjcx/mtbd/kjcp/201810/t20181027_3883225.htm

⁷ Education-in-China-a-snapshot

⁸ A Chinese government plan conceived in 2015 to comprehensively develop a group of elite Chinese universities and individual university departments into world class universities and disciplines by the end of 2050. See Notice from China's Ministry of Education and other national governmental departments announcing list of double first class universities and disciplines at http://www.moe.gov.cn/srcsite/A22/moe_843/201709/t20170921_314942.html.

⁹ Education-in-China-a-snapshot

¹⁰ Refer to Annex C

System, Haidilao will be able to control their production operations and hence, achieve significant savings in their production, logistics and inventory costs.

2. Innovation as the future of society: Some might question the need for so much money to be poured into the R&D of technology used in restaurants as ultimately it is a place for people to consume food. However, what we can learn from this is that regardless of the industry, it is important to keep up with the digital transformation so as not to be left on the side-line. As one of the most famous hotpot restaurant chain, Haidilao is trying to be the leading company of the F&B industry to revolutionise the future dining experience. This gives them a competitive edge to win the trust and loyalty of customers .

b. Momo Inc¹¹

Key takeaway and learning points

As its founder, Momo Inc's CEO, Mr Tang Yan had seen it grow from a humble app to one of China's social network giants. His sharing therefore shed valuable insights which young entrepreneurs and seasoned managers alike can draw on.

1. Do what you are good at, but be realistic: Chinese tech companies, be it giants like BAT (Baidu, Tencent, Alibaba) or new stars such as Momo, ultimately seeks to serve the market rather than engage in R&D. Hence while they will look out for new technologies, they will not develop complex technologies themselves.
2. Prioritize growth over rewards: While Momo filed for a NASDAQ IPO within 3.5 years of its inception, other startups should take caution from doing the same. Indeed, listing brings about various advantages, such as raising the profile of the company and allowing share-based compensation scheme to be implemented. However, the company will also come under tighter regulatory scrutiny, and it may not be desirable for its management to be bogged down by compliance when their attention and energy could be better spent on the company.
3. Understand your market: To do business in China, one must understand the local market, which is intertwined with the local culture. For example, the success of Momo's live streaming service (网络直播) is unlikely to be replicated elsewhere, because it panders to psychological needs of users unique to the local market.

¹¹ Refer to Annex D

c. PKU Yuanpei College¹²

Key takeaway and learning points

1. There is always room for improvement: While it has been hailed as one of China's top 2 institutions, PKU did not shy away from borrowing from the experiences of other world-class universities to offer its liberal arts curriculum. Indeed, Yuanpei College is named after one of PKU's most revered presidents, Mr Cai Yuanpei, who famously championed the motto of "freedom of thoughts, and an all-embracing attitude"(思想自由, 兼容并包).

d. Asian Infrastructure Investment Bank ("AIIB")¹³

Key takeaway and learning points

We spoke to 2 Singaporeans occupying key positions in AIIB. They shared with us candidly on Singapore's value proposition to the world and steps young Singaporeans should take to stay relevant.

1. Maintain thy strengths: Singaporeans are recognized and valued not only for their exposure to both the East and the West, but also their integrity, work ethics and competence. As a preliminary, Singaporeans must maintain these strengths and develop them further.
2. Step out: At the same time, Singaporean youths should bear in mind that China and India produces millions of graduates a year. It is therefore vital for youths to be cognisant of the potential competition they may face from the global market. One way to address this is for Singaporeans to step out of Singapore and experience studying, interning or working overseas.
3. Know thy neighbours: It is also pertinent for Singaporean youths to be acquainted with our regional neighbours. Southeast Asia presents a billion population market, and Singapore is well poised both in terms of geographical location and its relevant experience and expertise to tap on this market. However, this can only be achieved if youths step out of their comfort zones and acquire a deeper understanding of our neighbours.

¹² Refer to Annex E

¹³ Refer to Annex F

5. Key Issues and Problems confronting the city

At the same time, due to pseudo urbanisation, the expansion of Beijing has brought along various problems. Socio-economic issues such as soaring property prices, poor air quality, the loss of historic neighbourhoods, and a significant influx of migrant workers from less-developed rural areas of the country may threaten the sustainability of Beijing's development unless effective countermeasures are taken.

a. Pollution vs GDP growth

One of the biggest problems faced by Beijing is the air pollution. The city suffers from one of the worst air pollution worldwide. Air pollution is measured by the Air Quality Index (AQI) (Refer to Annex G Figure 1), which scales pollution levels from 0 to 500 . Levels in Beijing have reached up to 755, which is the highest level of air pollution since recording began in 2008, deemed to be even "Beyond Index".¹⁴

Beijing's air pollution problem is caused by various factors, ranging from the booming economy and population, surge in motorized vehicles, manufacturing output, and natural reasons which include the city's surrounding topography and seasonal weather. China as a whole, has also experienced major economic growth with a drastic rise in Gross Domestic Product (GDP). This increase in wealth is directly correlated with an increase in pollution.

Emissions from motorized vehicles contribute to nearly 70% of the city's air pollution¹⁵. With the increase in wealth, Chinese individuals are more capable of owning motor vehicles. Besides the increased in motorised vehicles, population growth in Beijing also contributes largely to the pollution. Beijing's population has doubled over the past century, and swelled from 11 million to 16 million in the past 7 years.

Coal burning factories are also major cause to the smog present in Beijing. These factories are mainly located on the outskirts of Beijing and the nearby cities of Harbin and Hebei. Beijing is a

¹⁴ <https://www.scmp.com/news/china/policies-politics/article/2058582/smog-levels-beijing-charts>

¹⁵ Wu, Y., et. al. On-Road Vehicle Emission Control in Beijing: Past, Present, and Future. *Environmental Science & Technology*, 45,1:147-153

victim of its own topography because it is surrounded by mountains, ensuring that pollution remains trapped within the city limits. Air quality worsens in spring and summer when temperature and humidity levels rise, and winds contribute to the smog by carrying pollutants from industrialized southern regions.

The issue of air pollution with smog engulfing the city has brought about many consequences and inconvenience. Along with health consequences, high levels of harmful emissions have led to hundreds of flight cancellations and frequent road closures due to low visibility levels.

The shorter lifespans of Beijing's residents has also been related to the city's high pollution levels. Compared to residents living in the southern cities, the average lifespan for Beijing's residents is five to six years shorter. The air pollution in Beijing causes lower birth rates and higher adult mortality from respiratory related diseases. Although the smoking rate has not increased, lung cancer rates have risen over 60% in the past decade.

Beijing's air pollution issue has directly affected the health of its citizens. If it remains unsolved, it can turn out to limit the future success and expansion of the city.

b. Property Prices

The Chinese are known for buying properties due to a myriad of reasons such as it being a stable form of investment, the face culture, sign of social status and so on. Beijing being home to some of the best institutions and the central government renders it one of the most desirable places to live in China. The high economic growth of Beijing created job opportunities which attracted many talents from all over the world. Therefore, the rising population and income chasing after limited supply resulted in the sky high prices of housing. From 2000 to 2016, Beijing's population doubled to 21 million with a corresponding GDP expansion of 800%. The resulting increase in average income by more than seven times inevitably led to a near corresponding increase in residential property prices (Refer to Annex A Table 4).¹⁶ This has caused resentment amongst the young people as many could not afford the houses.

The government has tried to curb the rise in property prices, with President Xi stressing that "houses should be for living in, not speculation". However, the housing sector is one of China's main pillar of economic growth and the largest source of wealth for households, therefore

¹⁶ Source:

<https://www.forbes.com/sites/nusbusinessschool/2018/05/07/property-prices-continue-to-surge-in-china-despite-government-cooling-measures-heres-why/#2478441d6d2d>

many homeowners are angry with the sluggish property market due to the cooling measures put in place.¹⁷ This means that the central government would not want the price of housing to fall too drastically as it would have adverse effect in terms of both the economic and social aspects.

c. Migrant Population

According to the latest development plan, Beijing plan to cap its population at 23 million by 2020. The latest figures released by the National Bureau of Statistics showed that the population of Beijing dropped from 22,000 to 21.7 million in 2017, a decline of 0.1 percent¹⁸. As urbanization resulted in the decrease in attractiveness of megacity, thus the urban-rural migration has slowed in recent years.¹⁹ However despite so, overcrowding is still a common problem in Beijing.

The Beijing urban *hukou* are allowed to purchase three types of housing which are (1) Commercial Housing; (2) Economically Affordable Housing and (3) Low-rent Housing. However, these choices are unattainable by rural migrants since one Square Meter would cost around 30,000 RMB. Therefore overcrowding arises due to two main reasons, firstly, the finance limitation has forced the rural migrants to migrate in cities and rent small houses; thus, overcrowding cannot be avoided. Secondly, the rural migrants adopt some economic strategies to bring money to their hometown and save on daily expenses, hence overcrowding is not necessary for them.²⁰

This too reflected a jarring social issue of the rich poor disparity; the rich lives in the well-guarded Downtown Beijing, whereas the poor lives on the fringe of the city as the exorbitant housing prices forces them out of downtown. As the poor are unable to afford proper housing, safety hazards are common among their dwellings. One prominent case would be the Beijing fire that happened at Xihongmen Town in November 2017 which killed 19 people. The area housed about 175,000 inhabitants and about 150,000 of them are migrants and the place is known to be plagued by fire hazards.²¹ After this incident, the municipal government launched a sweeping campaign that required tenants of substandard and unsafe housing to move out.

In order to slow down migration to China's biggest cities caps have been placed on residency permits that provides access to schools, community services and hospitals, and tearing down informal housing often used by workers who move from other regions. Beijing plans to tear down at least 40 million sq m of illegal structures, roughly the area of 28 London Hyde Parks,

¹⁷ Source: <https://www.scmp.com/news/china/society/article/2168025/public-anger-china-spreading-property-prices-drop>

¹⁸ Source: <https://www.straitstimes.com/asia/east-asia/beijing-shanghai-record-first-population-decline-in-40-years>

¹⁹ Source: <https://www.straitstimes.com/asia/east-asia/number-of-people-in-beijing-shanghai-down>

²⁰ <https://www.sciencedirect.com/science/article/pii/S1687404815000711>

²¹ Source: <https://www.nytimes.com/2017/11/19/world/asia/china-fire-beijing.html>

and shut 500 manufacturing firms this year. Their aim will be to have no increase of such illegal structure.

d. Loss of culture

As China becomes more globalised, she is losing her culture and history bit by bit. Many historic sites have been compromised or demolished over the past two decades to make way for China's rapid economic growth and massive urbanization.

In Beijing, one of the city's most controversial issue is the demolition of Beijing's historical courtyard alleyways, called *Hutong*. At the height of the city's headlong rush to modernity in the 1990s, about 600 *hutong* were demolished each year, displacing many residents, estimated up to 500,000.

Remaining *hutong* owners are worried that they too will lose their courtyard houses that have survived centuries of war and revolution, the strain of collective ownership, and the turbulence of early economic reform. Passed down from generation to generation, they are often last-remaining monuments to their entire family.

The compensation schemes given to these families have also left them in an awkward situation where they are unable to afford a new home in the old city and as a result, they are forced to move into shoddy high-rise communities on the city's outskirts.

Even in traditional historical sites like the Forbidden City, it has become very commercialised to suit the tourism and even local standards as a sightseeing location. Not only has it set up their very own online store on Taobao, they've also incorporated many modern trends into their products, for example, "Forbidden City Style" lipstick and souvenirs.

6. Conclusion - Is Beijing sustainable?

Table 1: Population of Beijing²²

(10,000 persons)

	Permanent population	Migrant Population	%
1978	871.5	21.8	2.5
1998	1245.6	154.1	12.4
2017	2170.7	794.3	36.6

Table 2: GDP of Beijing and Breakdown by Industry²³

(100 million Yuan)

	GDP	Primary Industry	%	Secondary Industry	%	Tertiary Industry	%
1978	108.8	5.6	5.1	77.2	71.0	26.0	23.9
1998	2406.2	77.9	3.2	844.4	35.1	1483.9	61.7
2017	28014.9	120.4	0.4	5326.8	19.0	22567.7	80.6

Table 3: Average Wages of Fully Employed Staff and Workers in Urban Entities²⁴

(Yuan)

	Average Wage	SOEs	COEs ²⁵	Others
1978	673	703	471	-
1998	12285	11971	8800	15989
2017	134994	150622	58900	132062

Table 4: Comparison of key property price indices²⁶

	Beijing	Shanghai	Singapore
Price to Income ratio	46.02	44.37	21.48

²² Source: http://tjj.beijing.gov.cn/tjsj/ndtjzl/2018ndtjzl/rkyjy_6680/201801/t20180110_390655.html

²³ Source: http://tjj.beijing.gov.cn/tjsj/ndtjzl/2018ndtjzl/gmjjhs_6678/201801/t20180110_390654.html

²⁴ Source: http://tjj.beijing.gov.cn/tjsj/ndtjzl/2018ndtjzl/rkyjy_6680/201801/t20180110_390655.html

²⁵ Collectively Owned Enterprises

²⁶ Source:

https://www.numbeo.com/property-investment/compare_cities.jsp?country1=China&country2=China&city1=Beijing&city2=Shanghai

Mortgage as percentage of income	363.1%	353.5%	131.5%
Loan Affordability Index	0.28	0.28	0.76

Annex B

1. Zhongguancun (中关村国家自主创新示范区), home to both established and startup tech companies. 7,430 (64.82%) of the 11,463 companies registered in 1 of these 6 zones are based here.
2. Beijing Financial Street (北京金融街), where headquarters of large state banks and insurance companies are located.
3. Beijing Central Business District (CBD) (北京商务中心区). Most of the city's foreign companies and professional service firms are based in the CBD.
4. Beijing Economic and Technological Development Area (北京经济技术开发区). Pharmaceutical, information technology, and materials engineering companies are based here.
5. Beijing Airport Economic Zone (临空经济区). In addition to logistics, airline services, and trading firms, this zone is also home to Beijing's automobile assembly plants.
6. Beijing Olympic Center Zone (奥林匹克中心区), entertainment, sports, tourism and business convention center.²⁷

Annex C

The smart restaurant that Haidilao spent 100 million yuan on differs from other restaurants in several ways. Firstly, upon entering the restaurant, patrons are greeted with a 360-degree wrap-around projection with six different themes, instantly creating a high-tech dining experience for the diners. There are also the eye-catching food-delivery robots zooming around the restaurant serving food to the customers. These robots combine the three navigation technologies of laser radar, depth vision and robot vision to advance, turn and identify obstacles. The dish-serving process is also a highlight of the technology used by the restaurant. The central kitchen sends packaged dishes to the restaurant warehouse. After a customer has placed orders, a robotic arm will pick up the dishes and check the quality of the dishes by scanning a barcode unique to each individual dish. If the dish has expired, it will automatically be discarded. Otherwise, the robotic arm will dispense the dishes and the robot waiters will deliver the food to the customers' tables. The brain of a smart restaurant is the "Intelligent Kitchen Management System". Through the IKMS system, Haidilao can monitor the operation of each machine, the sales of dishes, inventory and preservation status in real time. This system is mainly divided into three parts: First, the WMS system (warehouse management system): the data of all the stocks in the store, whether dishes, ingredients or snacks, are stored in this database. Second, the MES system (production management system): the system

²⁷ http://www.bjstats.gov.cn/tjsj/yjdsj/lldgd/2018/201811/t20181112_410791.html

manages the amount of stores in the inventory, estimated number of patrons for the next day, and the amount of dishes to retrieve from the central kitchen the next day. Third, the EMS (energy management system): through this system, Haidilao can monitor the water consumption and electricity consumption of the equipment in the store. If there is abnormal data, it can identify the cause.

Annex D

Momo is a Location-Based social search and instant messaging mobile app.²⁸ Unlike WeChat or QQ, China's other popular social networks, Momo allows strangers to connect based on interests and location, similar to Tinder or Grindr.²⁹ In Nov 2014, Momo filed for a NASDAQ IPO, 3.5 years after its creation.³⁰ In May 2018, Momo completed its acquisition of Tantan, a leading Chinese social and dating app, for \$600.9 million dollars in cash and 5.3 million newly issued Class A shares.³¹

Annex E

PKU launched Yuanpei Program in 2001, and Yuanpei college was formed to host the program in 2007. Yuanpei College offers up to 300 students a unique liberal undergraduate experience in which they can freely select modules from a variety of disciplines, choose their own major, flexibly extend or shorten their education span, and study and live in the college accommodations.³²

Annex F

AIIB is a multilateral development bank that aims to invest in sustainable infrastructure and other sectors in Asia and beyond to connect people, services and markets.³³ While it was proposed by China in 2013³⁴, it soon became clear that AIIB is not, and cannot be a policy bank of China alone; rather, it is a multilateral organisation with a close emphasis on collective

²⁸ <https://www.immomo.com/aboutus.html>

²⁹ <https://sampi.co/china-mobile-marketing-momo/>

³⁰

<https://techcrunch.com/2014/11/09/momo-a-flirting-app-with-180m-users-is-latest-chinese-tech-firm-to-file-for-a-u-s-ipo/>

³¹

[https://nordic.businessinsider.com/a-guy-who-grew-up-in-stockholms-suburbs-just-sold-the-tinder-of-china-for-\\$735-million--/](https://nordic.businessinsider.com/a-guy-who-grew-up-in-stockholms-suburbs-just-sold-the-tinder-of-china-for-$735-million--/)

³² http://newsen.pku.edu.cn/News_Events/News/Campus/8701.htm

³³ <https://www.aiib.org/en/about-aiib/index.html>

³⁴

https://www.washingtonpost.com/business/china-says-new-bank-to-complement-existing-institutions/2015/03/21/5a881afa-cfca-11e4-8730-4f473416e759_story.html?noredirect=on

decision-making. It is projected that Asia will need to invest \$1.7 trillion per year in infrastructure until 2030 to maintain its growth momentum, tackle poverty, and respond to climate change.³⁵ AIIB therefore provides a credible alternative to Asian Development Bank and World Bank, having received Triple-A credit ratings from Moody's, Fitch and S&P.³⁶

Annex G

Figure 1: Air Quality Index³⁷

Air Quality Index Levels of Health Concern	Numerical Value	Meaning
Good	0 to 50	Air quality is considered satisfactory, and air pollution poses little or no risk
Moderate	51 to 100	Air quality is acceptable; however, for some people pollutants there may be a moderate health concern for a very small number of people who are usually sensitive to air pollution
Unhealthy for Sensitive Groups	101 to 150	Members of sensitive groups may experience health effects. The general public is not likely to be affected
Unhealthy	151 to 200	Everyone may begin to experience health effects; members of sensitive groups may experience more serious health effects
Very Unhealthy	201 to 300	Health warnings of emergency conditions. The entire population is more likely to be affected
Hazardous	301 to 500	Health alert: everyone may experience more serious health effects

³⁵ <https://www.adb.org/publications/asia-infrastructure-needs>
³⁶ <https://www.aiib.org/cms/en/search/index.html?query=credit%20rating>
³⁷ <http://airnow.gov/index.cfm?action=aqibasics.aqi>.