

# Turning Inefficiencies into Business Opportunities: A Case Study of Chinese Entrepreneurs

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**Abstract:** Inefficiencies occur in every human institution when typically excuses are found or made for not utilizing available and reasonably allocated resources to achieving realistic and achievable objectives. Inefficiencies occur in governments or public institutions, and in private institutions or businesses globally resulting in wastes – in the form of money, materials, quality, time, and energy. Whereas there are many studies and publications about efficiencies in business processes, economics, marketing, production, finance, and most of the functional areas of business, ironically there are few studies and publications on inefficiencies and the fact that inefficiencies bring opportunities. This article presents a case study of how Chinese entrepreneurs are turning inefficiencies into business opportunities.

**Key words:** Inefficiencies, Mass Entrepreneurship, Innovation, Financial Technology, Digital Care, Artificial Intelligence

## 1. INTRODUCTION:

### 1.1 Inefficiencies and Human Institutions

Inefficiencies have steadily become part and parcel of human institutions worldwide where typically excuses are found for not utilizing available and reasonably allocated resources to achieving realistically and achievable set objectives. In the advanced economies which boast of some of the world's top-notch institutions with sophisticated advanced technologies, inefficiencies have become a face-looking problem which inevitably require management attention on how to reduce such menace. Inefficiencies occur in governments or public institutions, political bodies, and in private businesses globally resulting in wastes – in the form of money, materials, quality, time, and energy. Inefficiencies in the form of waste and mismanagement of organization's scarce resource result in most firms operating below their potential.

### 1.2 Inefficiencies and Opportunities

Inefficiencies are not too bad the devil they seem to portray. Inefficiencies could be viewed with positive spectacles as they are positive challenges which lead to opportunities. The modern Chinese entrepreneurs are turning inefficiencies that exist in numerous sectors of the Chinese economy into opportunities.

## 2. FRAMEWORK

This paper provides a simple framework to highlight some of the numerous sectors of the Chinese economy where systematic inefficiencies are being turned into opportunities by Chinese entrepreneurs.



Fig.1

The above framework shows the financial services, health care, public utility services and distribution networks as some of the areas of the Chinese economy saddled with inefficiencies. Also the framework indicates that the provision of virtual services, digital healthcare, and mass entrepreneurship and innovation as some of the numerous opportunities that the aforementioned inefficiencies in today's Chinese economy presents current crops of Chinese entrepreneurs.

### **2.1 Financial Sector Inefficiency**

With few joint venture insurance companies, the financial services sector is dominated by large and yet under-developed banking systems which are controlled by large state-owned banks. In the absence of real shareholder interest, the financial sector of the Chinese economy is saddled with huge non-performing loans (NPLs).

Another area of inefficiency in Chinese financial system is the country's over-reliance on interest as the main income generating tool with less or no diversification plans. With state control of the financial services sector, it is believed that most of the policy objectives set by the Chinese government is at odds with prudent and profit-maximizing banking practice. China has continuous and significant gaps in risk management, internal control, and balance sheet optimization, according to Dr Fred Hu (China's Financial System: Challenged and Opportunities).

According to Ian Fraser, in a 2011 assessment report on the stability of China's financial system by the International Monetary Fund (IMF), the Washington-based institution criticized the "heavy-handed" Chinese government intervention as creating "vulnerabilities" in China's financial system. Even though the report indicated that China has made significant effort towards a more market-based and sound financial system, there is the need for improvement in the areas of structure, performance, transparency, and oversight of the financial markets and institutions. The report highlights the fact that China has made significant strides towards structures that encourage high savings and high level of liquidity, there is still the danger of misallocation of capital and the formation of bubbles, in real estate (Ian, 2011).

### **2.2 The Healthcare Sector**

The health care sector of the world's most populous economy faces continuous overcrowding and long queues of patients seeking medical attention, lack of qualified healthcare personnel, high cost of healthcare services, and inadequacy of healthcare facilities, especially in remote areas of China.

The provision of public utility services is no exemption from the inefficiencies in the Chinese economy. According to Professor Hao Wang of China Institute of Water Resources and Hydropower Research, China has infrastructural obsolescence, outdated utility management and issues of environmental concerns that are overlooked (Utilities Unbundled, issue 12 - Ernst & Young Global Limited).

### **2.3 Old Distribution Network**

Another area of challenge is fragmented distribution networks which results in lack of sufficient geographic reach. Logistics which is translated in Chinese language as "*wu liu*", meaning "*flow of things*" has structural challenges. This flow of things covers transportation, warehousing and management of goods. However, the flow is hampered by weak transportation network, poor information and communication infrastructure outside economic zones, deep seated cultural and bureaucracies, inadequate energy supply, high transport and logistics costs, a poorly educated and trained work force, and domestic trade barriers. The Chinese domestic logistics industry is inefficient making it cumbersome and costly. The problem stems from lack of distributor capability alignment and channel visibility, making it extremely challenging for companies, both local and foreign to gather necessary market data and to expand to lower-tier cities with less developed infrastructure network. Poor warehousing and storage facilities lead to huge losses every year. Over 30% of fruits and vegetable harvested are damaged year-on due to lack of storage facilities and inability to move the products swiftly because of inefficient transport system resulting in losses of over 1 billion US dollars.

### **2.4 Provision of Virtual Services**

In the face of the huge challenges and inefficiencies in the distribution networks, provision of virtual services is on the ascendency as more and more Chinese entrepreneurs are reaching out to the traditionally unreachable populations in rural areas through online services taking advantage of the Chinese government's effort of expansion of internet connectivity.

### **2.5 Digital Healthcare – New Paradigm**

Digital healthcare provision is another area that is being exploited by modern crops of Chinese entrepreneurs and investors in the health care industry.

### **2.6 Mass Entrepreneurship and Innovation**

Additionally, mass entrepreneurship and innovation are seen by many Chinese entrepreneurs as the engine of growth for the Chinese economy.

## **3. LITERATURE REVIEW:**

China, in spite of the fact that it is considered one of the most entrepreneurial countries in the world, experts or analysts within and outside of the country are of the view that entrepreneurship did not play much role in the

economic successes of the country, according to the World Financial Review (Entrepreneurship in China, December 28, 2010). Most observers credit China's economic successes to foreign direct investment (FDI) and the massive infrastructural projects embarked on by the government (Global Entrepreneurship Monitor (GEM)), and published by Babson College in the World Economic Review.

Also, China is seen as not yet an innovative country, reported Global Entrepreneurship Monitor (GEM) researchers, according to the World Financial Review.

The Chinese government had made mass entrepreneurship and innovation the "engine of growth" according to the State Council of the People's Republic of China, March 3, 2016.

The Chinese Premier Li Keqiang in his speech at 2016 National People's Congress was quoted to have mentioned "innovation" 59 times and "entrepreneurship" 22 times (Tse, 2016).

China's entrepreneurship extends beyond the internet and mobile technology industries according to Edward Tse. The energy, healthcare, financial services, consumer, and retail sectors of the economy have witnessed increased number of young and talented entrepreneurs. These gifted young entrepreneurs do not come from only the big Chinese cities like Beijing, Shenzhen or Shanghai, but also from smaller cities. Interestingly, these young and innovative entrepreneurs are not afraid to fail and are ready to undertake what Edward Tse (Tse, 2016) calls "trial and error" which they believe is inevitably part of the entrepreneurial process.

In the energy sector, China the world's largest energy user is compelled (Paris Climate Change deal, 2016) to reduce its carbon emissions. This has called for new technologies to try to deal with the current massive atmospheric pollution from industrial activities in China. Many Chinese entrepreneurs see this challenge as opportunity for big business. However, there is an obvious obstacle in the way – technologies! Which technologies could help Chinese companies reduce carbon emissions? It is important to note that huge investment had gone into what traditionally is called clean energy sources in the form of wind and solar. However, the massive investment and the purported large-scale expansion suffered several setbacks. Solar panel manufacturers were saddled with overcapacity and debt, and so were turbine makers suffered a grid connection bottleneck and delayed payments for a promised feed-in tariff, according to Leslie Hook (Hook, 2013). As part of the numerous setbacks in the use of wind and solar energy were pollution and "the huge variability of wind power and the need for power storage infrastructure", by Mr. Yu Jianmeng, CEO of Shanghai Shenghe New Technology Resources was quoted by Leslie Hook. With the uncertainty surrounding wind and solar for cleaner energy, Chinese entrepreneurs have been searching for niche technologies in the area of safer and cleaner energy generation to enable China to fulfill its pledge to reduce carbon emission.

Perceived as the world's biggest polluter, China has invested billions of dollars into cleaner energy sources. In the recent times, China had invested over \$80 billion into clean energy according to Eva Grey (Grey, 2015). Not much is often mentioned and credit given to China for the country's leadership and effort in clean and renewable energy. China is the world's biggest investor in clean energy, with more funds spent on renewable sources than the US and Europe put together according to Eva Grey (Grey, 2015). Entrepreneurs are considering technologies that could use waste heat in the form of water to generate electricity; technologies that could help the world's leader in coal production (3.874 million tons annually) to burn it more efficiently; and technologies that could help it to tap energy from the crust of the earth, indicated Leslie Hook (Hook, 2013).

Chinese entrepreneurs are taking advantage of every challenge that come up. They view each challenge as an opportunity to create economic value. The Credit Suisse China in its June 21, 2016 edition, published an interview granted by Mr. Vincent Chan, head of Credit Suisse China in which he stated, "Where others see irritating problems, entrepreneurs see opportunities".

According to Mr. Chan Chinese entrepreneurs are turning inefficiencies in commerce and finance to their advantage and discussed what such efforts mean for the future of digital innovation in China.

Another sector of the Chinese economy perceived by many as wasteful and inefficient is the health care sector. Beside the lack of qualified medical personnel, there is often the forgotten or less mentioned problem of inadequate medical facilities (even though majority of the facilities are state-owned), unaffordability of healthcare services, collusion between healthcare providers and pharmaceutical companies (hospitals receive kickbacks from pharmaceutical companies for prescribing their drugs) and the danger of medical doctors giving patients expired and counterfeit drugs (Yip and Hsiao, 2009). According to Yip and Hsiao (2009), the healthcare sector is also flawed with distorted pricing system which exerted too much pressure on healthcare providers leading to over-provision of "high-tech" diagnostic services and expensive drugs. With limited financial risk protection, the poor, especially the rural poor patients bear the brunt of the high cost of healthcare provision.

The above obstacles and numerous other flaws in the Chinese healthcare system had led to many young Chinese entrepreneurs to look for ways to turn these challenges into economic values. In effect hundreds of millions of US dollars have been injected into the healthcare sector of the Chinese economy with approximately \$700 million in venture funding of digital healthcare, according to BCG review by Magen Xia, Lillian Poon, Michael Choy and John Wong (Xia et al., 2015). According to the review, investors support anything digital, from e-commerce to online physician-and-patient communication services to disease management apps. Provision of digital health care services

has been on the ascendancy since early part of 2012. As at the first half of 2016, about \$1.1 billion of investment had gone into digital healthcare provision in China (CB Insight, August 23, 2016). Over \$100 million of investment went into Ping An Good Doctor (Ping An Insurance-Backed medical services app, Spring Rain Software (Beijing-based mobile health care app) and iCarbonX (health data mining startup).

#### **4. FINDINGS :**

##### **4.1 Inefficiencies in the Global Economy**

Inefficiencies are global menace. They are not restricted to poor countries or underdeveloped economies. According to a 2011 study conducted by IBM, inefficiencies are estimated to be nearly \$15 trillion or 28% of GDP globally (Dikos, 2014). The study found that globally efficiencies exist in the form of inventory backlogs, failed product launches, wasted materials and ineffective marketing campaigns.

Sometimes, inefficiency results from mismanagement of the economy instead of mismanagement of individual private firms (Case and Fair – Principles of Economics, 8<sup>th</sup> Ed).

Inefficiencies whether they occur in public institutions or private organizations are the consequence wastefulness and mismanagement of scarce resources. Inefficiencies may happen in different forms and colors. According to George Dikos, inefficiencies may be the results of management making wrongful hiring decisions, poor utilization of assets and resources, failure to implement the right processes, the failure to adopt the right technological solutions, and inability to execute transactions that improve the position of all interrelated parties (Dikos, 2014).

Inefficiencies may lead to losses that run into billions of dollars worldwide. However, there is even a more significant and face-staring threat that has far reaching serious consequences, yet, it largely goes unnoticed and unmentioned in national and international discourses, inefficient land use, according to the Union of Concerned Scientists. According to the Union it is not just limited food supply that result from the inefficient use of land, but it creates waste, health problems and environmental pollution (2013).

##### **4.2 Identifying Inefficiencies – Key to Identifying Opportunities**

###### **4.2.1 Undeveloped and Unsophisticated Service Sector**

Entrepreneurs in China, the world's most populous country have identified inefficiencies in the country's undeveloped and unsophisticated service sector as great business opportunities. These entrepreneurs are changing the old-fashioned distribution network that were physical and human-based into technology-based. These ensure less time, easy transportation and delivery resulting in lowering of distribution costs.

Chinese entrepreneurs are investing millions of dollars in virtual services – online services. With China's roads networks choked with thousands of vehicular traffic, entrepreneurs have found business in the provision of online services such as ordering of food items, most households' products like furniture, toiletries, cooking utensils, beddings, electronic products, and many other products.

Another area of opportunity to the Chinese entrepreneurs is the financial sector. In spite of the tremendous progress made in recent years, the financial sector of the Chinese economy is seen by many as undeveloped and flawed with inefficiencies. While information technology infrastructure of the Chinese financial sector has been improving, it remains a serious obstacle to efficient financial system operation. With a vast majority of its rural areas not connected to internet services, most banks continue to provide services by the traditional labor-intensive face-to-face methods. With the huge number of customers spread over large rural areas, efficient financial services that could reach millions of the rural dwellers are inevitable.

The flaws and challenges in the financial services sector have opened up opportunities for Chinese entrepreneurs and investors. In spite of slowing rate of economic growth, increasing non-performing loans and other factors hindering the efficient functioning of Chinese financial services companies, Chinese entrepreneurs have been investing heavily in technologies to create and support next-generation financial services, such as blockchain and artificial intelligence solutions. Chinese technology giants Baidu, Alibaba, and Tencent (BAT), have created all-encompassing technological platforms that offer their customers with excellent financial and non-financial services (DBS and EY, 2016).

Growth in FinTech investment in China signifies how the modern crops of Chinese entrepreneurs envisage the huge investment opportunities in the financial services industry. The world's most populous nation is leading as a FinTech market globally with investments of US\$8.8 billion between July 2015 and June 2016, which represents an increase of 252% since 2010 according to DBS and EY.

With consumer behavior changing and leaning more towards the use of the internet, capital markets are pursuing aggressively the internet finance sector, and with huge investment into the internet finance industry, FinTech start-ups have been mushrooming.

At the start of the 2016, the market size of China's internet financial service sector was valued at over 12 trillion RMB or \$1.8 trillion with payments or remittances dominating (Ngai et al., (2016).

It is believed that four factors are the driving forces behind the rapidly growing internet finance services sector. First is the Chinese government's expressed support for tech companies to promote internet finance. This is on



the back that rural internet connectivity will be given a boost with the aim of expanding internet connection to the hundreds of millions of rural dwellers. The government's regulatory support was highlighted in 2013 when the People's Bank of China explicitly expressed support for tech companies to embark on internet finance. The second factor is China's highly developed e-commerce sector which boasts of at 30% of the Chinese population already using internet payment systems. Even though the above figure seems small in comparison to China's huge population size, it is a reflective of the country's efforts to modernize its financial services industry. The third driving force is the enormous demand for inclusive financial systems. The aim is to reach and serve the overwhelmingly huge underserved customers. The challenge had to do with the historical protection and strict financial services regulations by the Chinese government. With the government's open support for FinTech, traditional players and new players into the financial services sectors are investing huge sums of money to take advantage of the new supportive atmosphere. Finally, the opportunity to make huge profits had encouraged aggressive investments in innovative digital financial services (Ngai et al., (2016).

The need for online consumer and small and medium-enterprise (SME) finance has also presented huge investment opportunities to Chinese entrepreneurs. The openness of the younger Chinese consumers to online personal finance products, their high propensity to spend and tolerance for financial risk, as early adopters and keen on technological innovation are grounds for more companies investing in highly efficient and yet low-cost FinTech services. Chinese entrepreneurs are taking advantage of the huge young online consumer-base. The huge investment into advanced data application by the non-traditional financial institutions is a reflective of the great opportunities presented FinTech sector. The investment by these entrepreneurs in part is to meet the needs of the SMEs (while reaping economic benefits) which employ 60% of the people and contribute nearly 80% of the country's GDP, and yet is hugely confronted with lack of funding for their development.

With explosive growing younger generation user-bases, IT companies such as Alibaba, Huawei, and IBM are using cost-effective models in providing cloud solutions and platforms. These solutions and platforms allow these companies to reach and serve customers remotely based on demand, and paying for that usage. The efficient and cost-effective FinTech and cloud infrastructure enable customers to access information with minimal spending. With all the huge perceived financial gains by new players in the internet finance, investment into cloud-enabled innovation in the FinTech sector will only increase.

#### **4.2.2 Old Distribution Network**

Another area of challenge which has presented opportunity to Chinese entrepreneurs is China's fragmented and old distribution networks. Transporting goods between suppliers' network, distribution centers, and end users (markets) is a challenge. China has over 650,000 wholesale operators that service the food, beverage, and tobacco sectors alone. Most of these operators are small-scale with annual revenue of about US\$1.2 million. The country also has over 700,000 trucking operators, with majority of them belonging to individuals. Considering the huge size of the consumer market and the demand for logistical services, these small-scale operators do not have enough funding and are unable to meet the demand. Another challenge to the distribution network is the deteriorated nature of China's cold chain infrastructure. It is old, underinvested and unable to meet the ever growing demand for logistic services.

The overall nature of infrastructure such as roads, warehouses and trucks are mostly in bad state. Majority of warehouses are old and highly non-mechanized. Transporting of goods from one point to another has to change hands dozen times from vehicle to vehicle. This increases the cost of moving goods across the country. The lack of cargo hubs that link freight from rail to road adds to the challenge. The logistic challenges persist in China in spite of the fact that the country is home to the world's busiest container port, Yangshan in Shanghai, and Pudong airport which is the third biggest air cargo handler in the world. With infrastructure in expressways stretching some 100,000 kilometers (62,000 miles) and railway lines stretching similar distance, one could think that China should boost of world class logistics industry, but it is rather the opposite which is true.

However, the above logistics challenges have presented great business opportunities to Chinese entrepreneurs and private companies. Huge investments funds, including private-equity funds are now going into creating bigger logistics firms. In the recent years most private investments have gone into information and communication technologies (ICTs) projects. However, the trend is changing. More Chinese entrepreneurs and investors have seen the huge business opportunities in the logistics industry and they are investing hundreds of millions of dollars into the industry. Chinese investors envisage the logistics sector as their favorite because of the sector's opening up and continuous evolution. As the world's largest e-commerce market from 2014, and with domestic consumption and e-commerce thriving and driving growth in the local logistics industry, Chinese entrepreneurs and investors have seen the challenges in the sector such as lack of modernization and innovation as massive business opportunities (John, 2016).

A Singaporean firm, Global Logistic Properties (GLP) based in Suzhou entered into a US\$2.5 billion partnership with several influential local logistics firms with the aim of meeting local logistics demand. Mechanization is at the heart of GLP logistics operations. Efficient operations will lead to lowering operating costs, while serving

larger percentage of clients. Mechanized systems such as wireless scanners and bar codes will enable inventory management to be digitized.

It is not all doom when challenges exist. The world’s most populous nation has fragmented and old logistics systems, entrepreneurs and investors have welcome those challenges as they present them with opportunity to create business and economic values. Businesses are investing billions of dollars into a sector that seemed to be dead on the look and too complicated to enter into with perceived government restrictions and control.

According to Forbes August 6, 2016 publication, Eternal Asia Supply Chain Management of Shenzhen planned working with Shenzhen Capital Group to raise 8 billion Yuan (\$1.2 billion), solely for logistics related projects.

The rapid reshaping of the logistics industry through technology and the internet has resulted in the rapid development of e-commerce and transformation of the retail sector in China and other parts of Asia. This new phenomenon has come as a result of businesses expanding their traditional business portfolio to include distributions believing that the logistics industry will only grow. For example, e-Shang Redwood, Asia logistics real estate developer and operator raised \$300 million in equity investment by a consortium of Chinese investors to finance its logistics operations and build on the rapid development of e-commerce in China and the sub-region (Knowler, 2017).

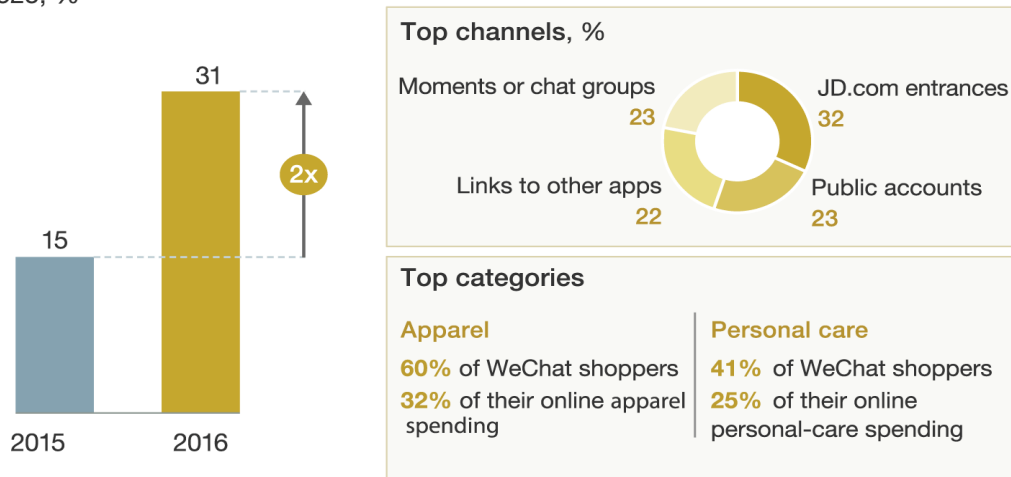
#### 4.2.3 Virtual Provision of Services – Online Services

Another area of the service sector of the Chinese economy which is witnessing massive entrepreneurial interest and investment is virtual services or online services. Lack of internet connectivity has been an obstacle to the rapid development of e-commerce and transformation of retail services in most rural areas. However, as China is making transition, with government support in the form of loosening some of the restrictions on internet use, the massive impact of digital technologies on e-commerce, this area of the service sector has been attracting massive investments from Chinese investors and businesses. An interesting phenomenon in China which is also a driving force behind the e-commerce revolution is the fact that most Chinese prefer to shop online using their mobile phones or tablets at the comfort of their home or office for almost everything, except, probably for fresh vegetables where people will walk down the streets and buy them.

According to a 2015 survey by McKinsey, China boasts of a massive online community of nearly 690 million Internet users and 700 million smartphone users (McKinsey & Company 2016). The survey indicated how most Chinese shoppers use the WeChat app in purchasing apparel and personal care as shown below.

#### Purchases initiated from WeChat doubled in a year.

WeChat users who have shopped from WeChat,<sup>1</sup>  
 n = 525, %



<sup>1</sup>Referring to those who have ever made purchases through WeChat’s JD.com entrance, public accounts, Moments, group chats, or links to other apps.

McKinsey&Company | Source: 2016 McKinsey survey of Chinese consumers

According to McKinsey July 2014 report, China’s digital transformation could see new applications of the Internet accounting for a whopping 22 percent of country’s GDP growth through 2025. It is no wonder massive investment continues to pour into virtual services.

In the recent past some big China’s internet companies were dismissed by investors in Silicon Valley with the explanation that those Chinese companies were marginal and had the tendency of copying Western products. “Not any more” , according to the Economist April 20, 2017 edition. Today they are monsters with increasingly hefty international ambitions”. Alibaba, China’s biggest e-commerce company and Tencent, the world’s tenth most valuable

company, have invested hundreds of millions into online digital technologies, with Tencent estimated to worth \$275 billion dollars according to the Economist.

In spite of all the negativity that so often surrounds Chinese products due to the perception that Chinese products are inferior and also the perception that Chinese products are simply copies of other companies registered brands, Chinese entrepreneurs are turning the negative talking-scale over by investing hundreds of millions of dollars into healthcare techs that are changing the lives of millions of people from around the globe. China boasts of the world's largest mobile healthcare app operators with Haodaifu Online, an example. Haodaifu Online, a digital healthcare company allows patients and doctors from around the globe to communicate using online digital platform or by using a mobile app. The company got over US\$200 million from Tencent and has over 10 million registered patients, one of the largest groups of users of online services in the world, according to Nina Xiang of China Money Network (2017).

#### **4.2.4 Health Care Technology**

Inefficiencies breeds forward thinking. And to entrepreneurs inefficiencies breeds business opportunities. China's Mainland's medical inefficiencies brought huge business opportunities to Chinese entrepreneurs. Patients needing medical attention or assistance at various healthcare facilities in Mainland China spend unnecessarily too long time due to inefficiencies in the system. A patient may have to wait whole day to see a doctor and the diagnoses may indicate issues that could have been handled at home. This trend seems to have improved considerably thanks to huge investment into healthcare technologies.

The need for self-diagnose and monitoring health conditions has become necessary and with increased urbanization the need for high tech healthcare technology has been on the ascendency. The rise of Chinese middle class and the need for healthcare technologies to tackle inefficiencies in the healthcare system have given entrepreneurs and investors a multibillion-dollar market. According to Daxue Consulting, a greater number of Chinese in Mainland China prefer to use technology such as wearable high blood pressure monitor, gadgets that monitor calories in food, and nutrition intake. It is estimated that medical healthcare products market reached 20 billion dollars in 2011.

Chinese entrepreneurs are taking advantage of the fact that more and more of the Chinese populace have become conscious of healthy living and their need for self-use medical equipment. According to Daxue Consulting, the Chinese public is ready to spend, and they are spending money on healthy living techs. No wonder healthcare spending in China is projected to reach \$892 billion by 2018 with subsequent annual growth expected to be 11% (Daxue Consulting, 2016).

To ensure speedily delivery of healthcare services, many Chinese hospitals have adopted mobile application systems. The systems are used to aid healthcare and nursing personal and as tools used to support in-hospital diagnosis according to Eden Estopace (Healthcare Innovation, 2016). According to Eden, China's healthcare technological solutions market will grow to \$6.5 billion by 2020 with expected annual compound growth rate of 11.1%. This projection is up from \$3.8 billion market size as at 2015, according to International Data Corp, reported Healthcare Innovation. International Data Corp projects China's in-hospital mobile app solution market to reach a hooping size of \$156.6 million in 2015, and expected compound annual growth rate of 24.6% catapulting the market size to reach \$471.4 million by 2020.

Investors' confidence is high because of the Chinese government's support and massive promotional efforts in the digital healthcare industry. Should the government continue creating enabling environment; more Chinese entrepreneurs will invest in this industry. The Boston Consulting Group projected that the digital healthcare market will grow from \$3 billion in 2014 to \$110 billion in 2020. According to China Venture the growth is driven by venture investment in addition to the Chinese government's support.

As a show of confidence and support to Chinese businesses and investors, and also as the strongest indication of the government's commitment to lead in the digital healthcare drive, the Chinese government launched operation "Health China 2030". The aim of the government is to have investment into the healthcare sector reach RMB 8 trillion (\$1.16 trillion) and RMB 16 trillion RMB (\$2.3 trillion) by 2020 and 2030 respectively (China Money Network, 2017).

Chinese entrepreneurs' investment contribution to the healthcare industry should be applauded. The perceived inefficiencies in the healthcare services sector have propelled these entrepreneurs and investors into turning them into huge investment opportunities while helping the government to address the challenges the sector is facing. Even though China's healthcare sector may achieve its estimated \$2.3 trillion target by 2030 and still falls short to much the size of the U.S. healthcare market which is \$3 trillion, its technological prowess will be second to none (China Money Network, 2017).

#### **4.2.5 IT and Artificial Intelligence**

The terminology "Artificial Intelligence (AI)" has gone from dream to reality with advancement of information technology in today's world. It has become increasingly obvious that sooner computer-programmed machines with the capabilities of reasoning like humans will take over most of the work that human do.

The United States is undisputedly global leader in artificial intelligence technologies. However, the fast pace prowess and development of AI technologies by China has come as second to none.

Chinese entrepreneurs have seen the massive business opportunities presented by AI technologies and are investing hugely into these technologies. According to Wynne Wang (Wang, 2017), Chinese tech giants like Baidu and Tencent have been investing hundreds of millions of dollars into AI research and AI tech companies have been attracting massive funding, both domestically and internationally. It is estimated that from 2015 to 2016, about 226 AI tech companies attracted an average of 40 million RMB (\$5.9 million) in capital funding according to a research report from 36Kr, an internet media company which focuses on startups, revealed Wynne Wang. Yitu Technology, a Chinese company has developed AI-based facial recognition used by Chinese banks apps. Yitu Technology like many other AI tech companies received venture funding from Zhenfund from China and Sequoia Capital from California, USA.

The drive for the adoption of AI technologies is due to the aging Chinese population and to ensure efficient and fast service delivery. The long queues, long waiting time and all the many paper work that customers of Chinese banks, for example, had to endure to transfer funds from one account to another had been eliminated by AI technologies. Large sums of money could be transferred from anywhere and the transactions are securely verified by face scan using artificial intelligence within a minute, according to Wynne Wang (Wang, 2017). AI technologies boost productivity; even though they could also have disruptive impact on China's economic growth and on the country's workforce. However, with China one child policy, in spite of the recent increase to 2, aging workforce is becoming a challenge. According to a McKinsey Global Institute report, the adoption of AI technology could increase productivity of the Chinese economy to 1.4 percentage of GDP; an addition of 0.8% due to the adoption of AI automation techs (Artificial Intelligence: Implications for China, April 2017).

The ambitious investments by Chinese investors and the adoption of AI technologies have the Chinese government's support. As part of the government's national economic policy initiatives, in 2014, it launched "Made in China 2025, the Robotics Industry Development Plan" and the "Three-year Guidance for Internet Plus Artificial Intelligence Plan". The goal is to create a 100 billion yuan (US\$15 billion) AI market by 2018. "China is facing diminishing demographic dividends. But with AI's augmentation effect, China will again benefit significantly from its large population", according to Deyi Li, an academician and a member of the Chinese Academy of Engineering (Purdy et al.: How Artificial Intelligence can Drive China's Growth).

## **5. RECOMMENDATIONS AND CONCLUSION:**

### **5.1 Recommendations**

#### **5.1.1 Provision of Equal Access to Funds**

There are several difficulties faced by Chinese entrepreneurs. Small private entrepreneurs have no easy access to funds like their large and State-backed companies. The Chinese government in its attempt to facilitate mass entrepreneurship and innovation should avoid partisan allocation of R&D funds. It is the small-and-medium enterprise (SMEs) that are spearheading the massive entrepreneurial innovations in China. The government's determination to create better environment for fair competition is a laudable step in the right direction. However, the government could put in place policy measures that could enable SMEs to have access to loans from local banks or financial institutions. According to Dr Fred Wu (China's Financial System – Challenges and Opportunities), SMEs are the most dynamic part of the Chinese economy and leader in the country's job creation efforts and yet are confronted with hurdles in accessing capital. By encouraging the utilization of the financial markets to facilitate funding of their business investment may be too much of asking for SMEs. Most often the Chinese government's inflationary fighting mechanism tend to hurt small and medium-size banks and decreased bank willingness to lend to entrepreneurs (Hervey, 2011). The Chinese government should create an environment that is devoid of political colorization where local banks are encouraged to cooperate with other financial institutions to provide special financial support to start-up firms and SMEs. Business friendly environment should incorporate policies that provide easy access to capital to all qualified entrepreneurs and businesses.

#### **5.1.2 Provision of Equal Lending Terms**

Large state-backed companies and the favorable lending terms and capped interest rates are further hindrance to entrepreneurship in China. The Chinese government should work to improve or discourage the system where lending favors large and state-backed or state-subsidized companies to detriment of aspiring entrepreneurs and innovators if indeed the government believes that mass entrepreneurship and innovation are the engine of growth for the Chinese economy. As noted by Ebner (2014), the Chinese government's flagship program of mass entrepreneurship and innovation have the potential to halt the contraction or the slowdown in China's economic growth and to change the country's unsustainable dependence on cheap labor over the long term. The government can create enabling environment that provide equal opportunities to all businesses and also encourages start-ups and small businesses without any political discrimination. The growth of entrepreneurship and innovation in the long-term will



largely depend on the support that the government through its agencies and policy makers will offer Chinese entrepreneurs.

### **5.1.3 End to Disruptive Business Practices**

Another known challenge faced by Chinese entrepreneurs is disruptive business practices. This is the practice where companies flood markets with smaller, cheaper and convenient products which often are of lower quality and do not meet market's performance expectations. This practice should be stopped by the Chinese government as it does not auger well for its flagship program of mass entrepreneurship and innovation as engine of growth. The government's policies and actions to combat this menace in the market will definitely add credibility to the fact that its intentions are clear and that the government does not support and neither does it condone bad business practices. The promotion of mass entrepreneurship and innovation as the Chinese government's flagship program is not promotion of flooding markets with smaller, cheaper, and substandard products. Quality should not be sacrificed for quantity. It is strongly advocated for the various associations that represent the interest of Chinese companies to stand up and together with the government fight disruptive business practices. This is to protect the integrity and credibility of Chinese companies and their products and also to quell some of the negative perception of Chinese companies and what they represent in terms of their products in the eyes of the international business community.

### **5.1.4 Enforce Intellectual Property Protection Laws**

Intellectual Property Protection is another serious hindrance to the Chinese government's efforts to see mass entrepreneurship and innovation championing China's new economic growth strategy. It should be a top priority for the Chinese government to put in working and enforceable laws and regulations to protect property rights. For centuries, the Chinese government has been working on intellectual property protection. Laws have been enacted and several regulations have been put in place majority of which increasingly reflect international standards to protect intellectual property. It can be said that China has made considerable progress in better protecting and enforcing these intellectual property rights. However, lack of legal enforcement has resulted in several spilled-over of other companies technologies they brought to China. The lack of legal enforcement and the difficulties in protecting intellectual property rights have been the biggest challenges to majority of companies which intend to enter the Chinese market, according to Forbes contributor Jack Perkowski (Protecting Intellectual Property Rights in China, 2012). The global perception of lack of originality and quality from China are rooted in the phenomenon of counterfeits of all kinds and sorts emanating from China onto the global market. The Chinese government must tackle the violation of intellectual property rights rigorously to gain the confidence of not only Chinese entrepreneurs and businesses but also foreign companies with interest in the Chinese market.

## **6. CONCLUSION:**

Inefficiency is a global menace. It has crept into institutions both public and private worldwide leading to wastes in the forms of money, materials, quality, time, and energy. The irony is that instead of institutional leaders to consider reported inefficiencies in their systems or organizations as opportunity to right the wrongs, they rather come up with excuses resulting in yearly losses of billions of dollars worldwide. However, Chinese entrepreneurs are turning inefficiencies into business opportunities. Inefficiencies in the financial, healthcare and public utility services sectors and old and poor distribution networks have been welcomed as business opportunities and massive investment have been made into these sectors by Chinese entrepreneurs and investors.

There have been massive investment into Financial Technologies (FinTechs) and the growth signifies how the modern crops of Chinese entrepreneurs envisage the huge investment opportunities that inefficiencies in the financial services systems present. There have been over \$8.8 billion investment into FinTech between July 2015 and June 2016 representing 252% growth since 2010.

Chinese entrepreneurs are investing heavily into the virtual services – online services making it possible for individuals and organizations to order things through the internet. People are ordering almost anything from food to electronic devices from the comfort of their homes through online services.

The unnecessarily long waiting time by patients at Chinese hospitals are thing of the past thanks to healthcare technologies. Today, in China certain health concerns can be conveniently monitored by the individuals without having to visit a hospital or see a doctor. The need for self-diagnose and monitoring health conditions has become necessary and due to the high number of urban dwellers the need for high tech healthcare technology has been on the increase. Also, the rise of middle class and the need for healthcare technologies to tackle inefficiencies in the healthcare system have given entrepreneurs and investors a multibillion-dollar market. China's healthcare technological solutions market is expected to grow to \$6.5 billion by 2020 from \$3.8 billion market size as at 2015 which represent annual compound growth rate of 11.1%. In the same way, China's in-hospital mobile app solution market is expected to reach \$156.6 million in 2015, and expected compound annual growth rate of 24.6% catapulting the market size to reach \$471.4 million by 2020. Digital healthcare a preferred choice by majority of Mainland urban dwellers has presented Chinese entrepreneurs with massive business opportunities.

The inefficiencies in China's distribution network which are the result of deteriorated nature of the country's infrastructure present Chinese entrepreneurs with business opportunities.

As the world's largest e-commerce market from 2014, and with domestic consumption and e-commerce thriving and driving growth in the local logistics industry, Chinese entrepreneurs and investors have seen the challenges in the sector such as lack of modernization and innovation as massive business opportunities.

This has resulted in billions of dollars in investment in the sector with Shenzhen Capital Group and e-Shang Redwood raising 8 billion Yuan (\$1.2 billion) and \$300 million in equity investment, respectively solely for logistics related projects.

China's aging population with all its economic implications has led to massive investment into artificial intelligence. AI research and AI tech companies have been attracting massive funding, both domestically and internationally with an estimated 40 million RMB (\$5.9 million) in capital funding from 2015 to 2016.

Chinese entrepreneurs have realized a glaring truth in the threat that the country's aging population presents and the resulting billions of dollars in losses that may be suffered by both the government and businesses, and have embraced the challenge as an opportunity to invest in artificial intelligence.

As a conclusion, inefficiencies in both public and private institutions should not be thought of as dead-end of all good and hope. They should be viewed as thought provoking challenges that present greater business opportunities. They lead to forward thinking and innovation. Chinese entrepreneurs turning inefficiencies into opportunities and economic values is a great example of forward and innovative thinking worth emulating.

## REFERENCES

1. Barton, D., WOETZEL, J., Seong, J. and Tian Q. (2017). Artificial Intelligence: Implications for China. [Online] Available: <http://www.mckinsey.com/global-themes/china/artificial-intelligence-implications-for-china>
2. Case and Fair: Principles of Economics, 8<sup>th</sup> Edition
3. CB Insight (2016). Digital Health Investment in China Tops \$1.1B in First Half of 2016. [Online] Available: <https://www.cbinsights.com/research/china-digital-health-funding-boom/>
4. Daxue Consulting (2016). [Online] Available: <http://daxueconsulting.com/healthcare-technology-in-china/>
5. DBS and EY (2016). The Rise of FinTech in China. Redefining Financial Services [Online] Available: [http://www.ey.com/Publication/vwLUAssets/ey-the-rise-of-fintech-in-china/\\$FILE/ey-the-rise-of-fintech-in-china.pdf](http://www.ey.com/Publication/vwLUAssets/ey-the-rise-of-fintech-in-china/$FILE/ey-the-rise-of-fintech-in-china.pdf)
6. Dikos, G. (2014). Turning Economic Inefficiencies to Business Value
7. Ebner, J. (2014) Entrepreneurs – China's Next Growth Engine. The Diplomat
8. Estopace, E. (2016). Healthcare Innovation (2016) [Online] Available: <https://www.enterpriseinnovation.net/article/chinas-healthcare-it-solutions-market-reach-6-5-b-2020-285265085>
9. Flannery, R. (2016). China Logistics Billionaire Targets \$1.2B Fund As Industry Faces Rapid Change. Forbes Publication. [Online] Available: <https://www.forbes.com/sites/russellflannery/2016/08/06/china-logistics-billionaire-targets-1-2-bl-fund-as-industry-faces-rapid-change/#3c67c36a7a5f>
10. Fraser, I. (2011). IMF Hoists Red Flags over China's Financial System. [Online] Available: <http://www.ianfraser.org/imf-raises-red-flags-about-chinas-financial-system/>
11. Grey, E. (2015). China's Energy Revolution
12. Hervey, D. (2011). China's Entrepreneurial Problems. Harvard Business Review. [Online] Available: <https://hbr.org/2011/12/chinas-entrepreneurship-proble>
13. Hook, L. (2013). Entrepreneurship: Chinese Turn Attention to Water Heat Recovery
14. Hu F. China's Financial System: Challenges and Opportunities. [Online] Available: <http://www.financepractitioner.com/macroeconomic-issues-viewpoints/chinas-financial-system-challenges-and-opportunities?full>
15. John, A. (2016). Logistics firms are still an attractive bet for investors. South China Morning Post. [Online] Available: <http://www.scmp.com/business/companies/article/1966404/logistics-firms-are-still-attractive-bet-investors>
16. Knowler, G. (2017). Chinese Injects \$300 M into Logistics Property Developer. [Online] Available: <https://www.joc.com/international-logistics/chinese-consortium-pours-300-million-logistics-property-developer-20170112.html>
17. McKinsey & Company (2016). The CEO's Guide to China's Future. [Online] Available: <http://www.mckinsey.com/global-themes/china/the-ceo-guide-to-chinas-future>
18. Ngai at al., (2016). What's next for China's FinTech Sector? [Online] Available: <http://www.mckinsey.com/industries/financial-services/our-insights/whats-next-for-chinas-booming-fintech-sector>
19. Perkowski, J. (2012). Protecting Intellectual Property Rights in China. Forbes Publication. [Online] Available: <https://www.forbes.com/sites/jackperkowski/2012/04/18/protecting-intellectual-property-rights-in-china/#5836240e3458>

20. Purdy et al. How Artificial Intelligence can Drive China's Growth. [Online] Available: [https://www.accenture.com/t20170621T111911\\_w\\_/cn-en/\\_acnmedia/PDF-55/Accenture-How-Artificial-Intelligence-Can-Drive-Chinas-Growth.pdf](https://www.accenture.com/t20170621T111911_w_/cn-en/_acnmedia/PDF-55/Accenture-How-Artificial-Intelligence-Can-Drive-Chinas-Growth.pdf)
21. The Credit Suisse China (2016). [Online] Available: <https://www.creditsuisse.com/microsites/next/en/entrepreneurism/videos/chinese-entrepreneurs-turn-inefficiency-into-opportunity.html>
22. The Economist (2017). China's Internet Giants go Global. [Online] Available: <https://www.economist.com/news/business/21721203-tencent-leading-acquisition-spree-alibaba-close-second-chinas-internet-giants-go>
23. The State Council of the People's Republic of China, (2016). [Online] Available: [http://english.gov.cn/premier/news/2016/03/03/content\\_281475300571752.htm](http://english.gov.cn/premier/news/2016/03/03/content_281475300571752.htm)
24. Tse, E. (2016). The Rise of Entrepreneurship in China. [Online] Available: <http://www.edwardtseblog.com/2016/05/19/forbes-the-rise-of-entrepreneurship-in-china/>
25. Union of Concerned Scientists (2013). Inefficiencies in Global Land Use Create Waste, Health Problems and Environmental Pollution. . [Online] Available: [http://www.ucsusa.org/news/press\\_release/inefficiencies-in-global-land-use-0382.html#.WaaDCNExXIU](http://www.ucsusa.org/news/press_release/inefficiencies-in-global-land-use-0382.html#.WaaDCNExXIU)
26. Wang, H. Utilities Unbundled, issue 12 - Ernst & Young Global Limited. [Online] Available: <http://www.ey.com/gl/en/industries/power---utilities/utilities-unbundled---10---chinas-utilities-building-for-a-billion>
27. Wang, W. (2017). China and the Intelligent Future – Bringing Artificial Intelligence to Real World
28. World Financial Review: Entrepreneurship in China, (2010). [Online] Available: <http://www.worldfinancialreview.com/?p=2782>
29. Wu, F. China's Financial System. Challenges and Opportunities. [Online] Available: <http://www.financepractitioner.com/macroeconomic-issues-viewpoints/chinas-financial-system-challenges-and-opportunities?full>
30. Xia et al., (2015). BCG Perspective: China's Digital Health-Care Revolution. [Online] Available: <https://www.bcgperspectives.com/content/articles/biopharmaceuticals-medical-devices-technology-chinas-digital-health-care-revolution/>
31. Xiang, N (2017). China is Quietly Catching up on Healthcare Technology. China Money Network. [Online] Available: <https://www.chinamoneynetwork.com/2017/03/31/china-is-quietly-catching-up-on-healthcare-technology>
32. Yip, W. and Hsiao, W. (2009) China Economic Review. [Online] Available: [https://cdn1.sph.harvard.edu/wp-content/uploads/sites/100/2012/09/hsiao\\_and\\_yip\\_2009\\_-\\_chinas\\_health\\_care\\_reform\\_a\\_tentative\\_assessment.pdf](https://cdn1.sph.harvard.edu/wp-content/uploads/sites/100/2012/09/hsiao_and_yip_2009_-_chinas_health_care_reform_a_tentative_assessment.pdf)