

China's MegaTrends:

(2) Rapid Mobility – A Nation on the Move

Railways

Stepping from Shanghai Pudong International Airport into the world's only commercial Maglev to urban Shanghai is an experience not to be missed. The Maglev has a designed speed of 430 km per hour with a top speed of 501 km per hour. The line is only 31-km long but the Maglev is symbolic of an age of rapid transit dawning on China.

China's break-neck urbanization in closely-linked regional economic clusters demands a huge transformation of her transportation infrastructure. At the forefront of this metamorphosis is the astounding growth of her high-speed rail.

China's railway system is currently only 6% of the world's total length but carries 25% of the world's railway traffic (1). Early in 2006, the Railways Ministry announced an investment of RMB 1.25 trillion to set up a 17,000 km-long high-speed railway system, including 7,000 km of passenger rail. Included are the routes Beijing-Shanghai, Beijing-Guangzhou, Beijing-Harbin, Shenyang-Dalian, and Lianyungang-Lanzhou.

The Beijing-Shanghai high-speed railway will be completed in 2012, and will cut travel time in half from 11 to just over five hours. The Lianyungang–Lanzhou line will connect Lanzhou, a key city in northern Gansu Province, to Chongqing, a provincial-level municipality with a population of 30 million in the heartlands of China.

According to a media briefing on 9 March 2009 by Huang Qiang, member of the Communist Party Political Consultative Committee (CPPCC) and a leading expert of the China Academy of Railway Sciences, a 2240 km long Beijing-Hong Kong high-speed railway will be completed by 2012, eight years ahead of schedule. It will run through the Central Plains and the Pearl River Delta, parallel to the existing Beijing-Guangzhou Railway. The rail system adopted will be similar to the Beijing-Tianjin high-speed railway opened in 2008. The railway has a double track design, with a maximum speed of 350 kilometers per hour. The trains used will be China's independently-developed multiple-unit Hexie CRH3, a model which reached a speed of 394.3 kilometers per hour, the highest speed achieved among all long-distance trains operating in the world today. A non-stop journey from Beijing to Hong Kong is expected to take at most 10 hours, less than half a day (2).

The Lianyungang-Lanzhou line is 1759 km long. The Lianyungang port is in northeastern Jiangsu Province bordering Shanghai. It is a rising logistic hub at the eastern end of a 'New Asia-Europe Continental Land Bridge', sometimes dubbed 'The Modern Silk Road (3),

and a proposed Northern East-West Freight Corridor (4), part of a planned world-wide logistics network linking eastern sea routes with railway networks in Western Europe. Both Japan and the Republic of Korea are within ready reach. As outlined in China's *Agenda 21, White Paper on China's Population, Environment and Development in the 21st Century* (5), Lianyungang is to be developed into an international seaport linking the Pacific Rim with Central Asia, covering 40 countries and regions in Europe, South Asia and the Middle East.

According to the list of the world's top 20 ports published in September 2009 by Alphaliner, a world-renowned international shipping information agency, six of the world's top ten container ports are now in China: Singapore, Shanghai, Hong Kong, Shenzhen, Busan, Los Angeles, Dubai, Qingdao, Guangzhou, Ningbo, in that order, pushing Rotterdam to 11th place (6). At the estuary of the Yangtze, Shanghai's Yangshan Deep Water Port, linked to Shanghai by a 32.5 km-long Donghai Bridge, is capable of handling the world's largest container ships. The port is designed to have an annual handling capacity of 15 million TEU containers by 2012 with more than 30 berths in operation.

Back to railways, up into the Tibetan Plateau, the 1,956 km-long, state-of-the-art Qinghai-Tibet Railway traverses from Xining to Lhasa. This includes a stretch of 960 km at an altitude above 4,000 metres. It incorporates the world's highest tunnel, 1,338 meter-long, 5,010 metres above sea level.

In response to the global financial crisis, China's economic stimulus package has since boosted China's total railway expansion investment to RMB 2 trillion. As a result, China's entire railway system will increase by 60% to a total of 120,000 km, of which one-sixth will be high-speed (over 200 km per hour), at an estimated cost of RMB 2-2.5 trillion. According to the World Bank, this is the world's biggest railway expansion project since the 19th century (7).

Expressways

In addition to rail, China has since the 1990s built an expressway network criss-crossing the country, second only to America's highway system in length. By the end of 2007, some 53,600 km has been built. The aim is to reach a total of 70,000 km by 2020. The Ministry of Communications boasts that China has built in 17 years what took the West 40 years to accomplish.

There is also a massive expansion of roads in the rural areas, part of a strategy to build a 'new socialist countryside' in the 11th Five Year Plan to balance urban with rural development. 300,000 km of rural roads are being constructed between 2006 to 2010, a jump of nearly 50% (8).

Private cars

The vastly expanded expressways and roads have laid the essential groundwork for China's new age of mobility. Their convenience feeds the explosive growth of private cars, a status symbol of China's burgeoning middle-class and a means to mobile individual freedom. During the week-long, so-called 'golden holiday' periods, many drive to relax in the countryside or to scenic spots in other cities. For example, in Zhejiang Province, the Qiandaohu ('thousand-island lake') often attracts an average of 6,000 cars everyday during the May Day holidays.

In 1990, there were only 820,000 private vehicles in China, comprising 580,000 trucks and 240,000 passenger cars, including many mini-vans. The number of private cars was exceedingly small. By June 2007, there were 13 million private cars, out of 32 million private vehicles. In 2008, the number reached over 40 million, including 6.8 million with installed satellite navigation systems. Dramatically, 2009 saw a surge of 44% in private car sales, largely as a result of the government's subsidy of \$8,800 for each hybrid or electric car as part of the economic stimulus package. According to J.D.Power and Associates, a global market intelligence company, China has, for the first time, overtaken the US as the world's largest auto market with total sales of 12.73 million cars in 2009, compared with 10.3 million in the US (9).

Even at the 2009 level, however, China's car ownership is still low at 98 per 1000, compared with a global average of 120 and over 600 for America. There are now over 450 million people in eastern China with a purchasing power of \$7,000 per year, well over the \$6,000 threshold for the take-off of car-ownership. According to Goldman Sachs, China could expect over 500 million cars by 2050.

Air travel

In the air, too, China is witnessing a surge of people mobility. The Beijing Olympics unveiled the golden-roofed new Beijing international airport, a totem of China's new age of air travel. According to a Boeing analysis of the world's civil aviation market, between 2000 and 2006, China's domestic air traffic volume soared 132%, compared with an average of only 15% in the international market. Coming out of the depth of the global financial crisis, August 2009 saw a 43.5% increase in China's domestic passenger air traffic and a 17.4% increase in her international traffic compared with 2008. During the month, over 22 million passengers travelled on China's airlines. Overall traffic was up 24% over 2 years. Domestic air cargo traffic, totalling 2.6 million tonnes annually, has also been rising rapidly, at an average rate of some 19.2% per annum from 1990 to 2008 (10). It is expected that over the next two decades, China's domestic and international air traffic volumes will grow at an annual rate of 8.9% and 10.9% respectively. This expansion is expected in both the business and tourism sectors in and out of China, partly as a result of the dynamic growth of the economies of China and the Asia Pacific Region, and partly due to China's rising middle class. I will expound on the latter in a later chapter.

Passenger air traffic has grown more than 20-fold in the past two decades. In the coming years, anticipating the opening up and expansion of more and bigger regional cities in the inner provinces, China plans to spend \$19 billion to add 97 new airports, bringing the total to 244 by 2020. Thirteen of the nation's airports will have a design capacity of more than 30 million passengers annually. According to the Project 2049 Institute, a US think-tank, China-based airlines are expected to expand their total fleet of about 1500 by spending \$340 billion over the next 20 years on some 3,400 new airplanes, including 1400 large-sized jumbo-jets (11).

Mobile telecommunications

In the coming decades, the mobility of the Chinese people will increasingly be defined by the mobility of telecommunications. China has now some 700 million mobile phone subscribers, the world's largest number by far. Mobile handsets can be seen everywhere across the land. They are embraced by the young as by the old, by swanky city professionals as by poor herds men in the Tibetan plateau. Text messages are cheap and commonplace. About 700 billion were sent in 2007.

China Mobile, a nation-wide network operator with the world's largest number of subscribers, has received a license for TD-SCDMA (Time Division –Synchronous Code Division Multiple Access) transmission, a home-grown wireless technology standard and a forerunner of China's 3G network. By the end of 2009, TD-SCDMA will cover 238 large and medium-sized cities. China Telecom has received a license for a CDMA 2000 network, aiming to reach 100 million subscribers in three years. China Unicom has been allocated a WCDMA network, expected to offer their customers 45 models of 3G cell phones including both domestic and foreign brands including the Google Android-based *UPhone*.

3G networks are expected to cover all large and medium-sized cities as well as most counties by 2010, with provision for 3G wireless wideband Internet access and a burgeoning mobile TV market.

Internet

The 24th Statistical Report on Internet Development in China published by the China Internet Network Information Center (CNNIC) on 16 July 2009 (12) shows that at the end of June 2009 there were 338 million internet users in China, 13.4% more since the end of 2008. China has long had the largest internet population in the world. The current number is well ahead of the official US population of 307 million as recorded by the US Census Bureau. 94.3% of China's internet population use broadband connections. Owing to China's large population, the internet penetration rate is still quite low at 25.5%, compared to over 70% in the US. So there remains a huge potential.

However China seems to be leapfrogging the US where fixed phone lines and desk or laptop computers are preferred for internet access. In China, internet use on mobile phones has increased 32.1% since the beginning of 2009 to reach 155 million. The biggest increase is in the rural areas, where fixed-line and broadband connections are expensive. The roll-out of China's

third-generation mobile phone service with wireless web-surfing support in the coming years is expected to set off a new surge in internet use across the country.

According to the same CNNIC Report, the proportions accessing the internet for entertainment, information and networking were all above 50%. Shopping online rose to 87.88 million, notwithstanding the economic crisis, representing an expansion of nearly 14 million within six months. The use of online payment increased by 4.8%, although the level still remained very low due to security risks.

Notwithstanding China's 'Great Firewall' restricting the internet on certain politically sensitive issues, the explosive growth of the internet has spawned millions of blogs in China with many writing multiple blogs. According to the Internet Society of China, the number of Chinese bloggers has swelled to more than 50 million by the end of 2008. They are diffusing information and knowledge to an unprecedented extent. They also serve to drive the development of civil society as what happened in the outpouring of volunteering participation nationwide during the Sichuan Earthquake. More and more central and local government leaders are consulting public internet feedback as a means to monitor the effectiveness of laws and policies. The resulting impact on China's society and politics over the coming decades is likely to be immense.

People Mobility

In a 2007 workshop paper *A new mobility regime in the making: What does a mobile China mean to the world?* (13), Xiang Biao of the Economic and Social Research Council (ESRC) Centre on Migration, Policy and Society (COMPAS), University of Oxford, highlighted three distinct phenomena of an increasingly mobile China: (a) a 'floating population' of disenfranchised rural migrants in the cities, (b) an international migration of Chinese people taking advantage of liberalized travel policies, including students, manual workers, and illegal immigrants and (c) a growing Chinese Diaspora in many countries maintaining close economic, family and cultural ties with their root country.

While migration from the countryside is set to shape China's urbanization in the coming decades (see my chapter on *Massive Urbanization*), the almost ubiquitous presence of the Chinese people worldwide reinforces the impressions of China as a rising power with an increasingly perceptible global outreach, such as those outlined by Martin Jacques in relation to the Chinese community in Africa and Russia (14).

What is more important, China is embarking on a proactive program of wooing more science and technology-savvy overseas Chinese talent to return to work on innovative research or to set up businesses in their homeland. Life science research and internet start-ups are notable examples. The mobility of these returnees or 'sea-turtles' (15) is set to help hone China's innovative culture and sharpen her long-term competitiveness (16).

Social mobility

Another feature of Rapid Mobility is upward social mobility. According to a report on *Serving the New Chinese Consumer* in The McKinsey Quarterly, 2006 Special Edition (17), the cohort in the annual household income bracket of RMB 100,001 to 200,000 is expected to jump from 0.6% of the total in 2005 to 36.4% by 2025. The number of young entrepreneurs is expected to surge adding about 50,000 US dollar millionaires annually. The new Chinese spenders largely come from the 100 million generally better-educated ‘single-child’ generation, including many born after the 1980s or 90s as well as 21st century new-comers. Luxury goods sales in China already account for 12% by value of the world’s total. This is expected to grow to 33% by 2015. A more consumer-oriented economy is unfolding rapidly in the coming decades. This is borne out by a 2005 Credit Suisse research study *The Rise of the Chinese Consumer – Theory and Evidence* (18). A burgeoning consumer society will help to reduce China’s over-reliance on exports and redress China’s current economic imbalance with the US. I will delve more deeply into this in a later chapter on *China’s Rising Middle Class*.

A survey by Bain & Company and China Merchants Bank (19) reported on 9 April 2009 that the number of Chinese people worth more than 10 million yuan (US\$1.4 million) is expected to jump from 300,000 at the end of 2008 to 320,000 in 2009. According to the Hurun Rich List released on 13 October 2009, China now has 130 USD billionaires despite the credit crunch, compared with only 3 five years ago. 94 in the Rich List are under 40 years of age. 43-year old Wang Chuanfu of BYD (a world leader in electric-car batteries in which Warren Buffet has acquired a 10% stake) is the richest man in China with estimated wealth of US\$5.1 billion, followed by ‘Recycled Paper Queen’ Zhang Yin.

During the past thirty years, China has lifted some 400 million people out of poverty and has already achieved the Millennium Development Goal of halving the proportion of people with income of less \$1 a day from 1990 to 2015. However, in contrast to China’s expanding Rich List, her per capita GDP still ranks below 100 in the world, along with some of the poorest countries in Africa. Some 100 million people are living under \$1.25 Dollars a day. Income inequality remains alarmingly high. The United Nations estimates China’s Gini Coefficient at 46.8, compared with 40.8 in the US. This breeds increasing discontent. This inequality underlines the acute imbalance between China’s economic and social development, one of China’s five major imbalances highlighted in the 11th Five Year Plan. It is to be hoped that such inequalities will abate with improving education, healthcare and welfare and a predominant proportion of population becoming urbanized in the coming decades. (See my chapter on China’s *Massive Urbanization*).

Market and business mobility

Since joining the WTO in November 2001, China is still waiting to achieve full ‘market economy’ status, thereby remaining subject to the imposition of ‘surrogate’ (often unfavorable) cost comparisons in determining ‘anti-dumping’ trade disputes. In accordance with her terms of WTO entry, she will automatically achieve market economy status in 2015 -16. The above areas of rapid mobility will consolidate China’s market economy by facilitating the movement of goods, people, services, capital and information across the country. They are also likely to offer

new opportunities and new thinking for China's upwardly mobile entrepreneurs. There is a good chance that this may spawn a new generation of national business champions.

Conclusion

China's rapid transportation, telecommunications, internet and social developments have created a country constantly on the move, physically, economically, professionally and socially. A vibrant market economy on such a gigantic scale over a long period of national stability has opened up a floodgate for individual and corporate opportunities never before imagined possible. This is happening in an increasingly globalized and interconnected world where the center of gravity is beginning to shift from the Atlantic to the Pacific and from the West to the East. China's One-Child Policy, notwithstanding the resulting gender imbalance, has also created a generation of ambitious and competitive goal-seekers. The dynamism is palpable nationwide to any visiting foreigner (20).

China's looming aging profile and the need for more social provisions will eventually slow down her breakneck growth. Accordingly to Goldman Sach's projections, even if China's economy exceeds that of both the US and India by 2050, her per capita GDP would, by that time, at best equal to that of a moderate-income economy like Turkey. What is more, global resources are becoming increasingly stretched and ecological constraints more pressing as a greater number of countries and peoples in the developing world are all embracing economic growth with a vengeance (12). So China's ongoing development is likely to be fraught with daunting challenges. But no matter what will happen, rapid mobility will remain a defining feature of China for a long time to come.

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- (1) The Economist, Briefing on China's infrastructural splurge, *Rushing on by road, rail and air*, February 16, 2008
 - (2) People's Daily Online, 10 March 2009
 - (3) The Asia-Europe Continental Land Bridge, also called the Euro-Asia Land Bridge, is a 10,900-km rail-link traversing forty countries covering 39.7 million km² or 26.6% of the world's land area with a total population of 2.2 billion, 36% of the world's total. In September 1990, China's Bei-Jiang Line between Urumqi and the border town Alashankou was connected to Kazakstan Railways. This served to link Lianyungang and other ports in east China directly by rail with Rotterdam and other European ports. Within China, the Railway covers 4131 km passing through Jiangsu, Shandong, Anhui, Henan, Shanxi, Shaanxi, Gansu, Ningxia, Qinghai, and Xinjiang, bringing economic benefits to Hubei, Sichuan, Inner Mongolia and other areas. The total population of this region is 400 million or 30% of China's total. From a geographical point of view, the journey by sea from Lianyungang to Rotterdam is about 19,900 km, whereas the land route is 10,900 km. In other words, the Railway is about half the distance of the sea route. Furthermore, trains are faster than ships. Consequently, the land route should represent a huge saving in time and costs. But in reality, cross-border custom tariffs and bureaucratic complications as well as fierce competition with the Trans-Siberian Railway have greatly reduced the usefulness of this Modern Silk Road, as it is sometimes called.
 - (4) The Northern East West Freight Corridor, also known as the N.E.W. Corridor, is a project organized by the International Union of Railways and Transportutvikling AS. It plans to connect the east coast of the United States to East Asia by train and ship. This consists of two main routes. Both routes start from the east coast ports of North America such as Halifax Harbour, then across the Atlantic Ocean to the port of Narvik, from there by rail across the Eurasian Land Bridge (see Note (2) above), through Sweden to Finland and Russia. From Russia there are two routes: either via the Trans-Siberian Railway to Vostochny Port, or though

- Kazakhstan to Ürümqi in China. From Ürümqi the route goes to Lanzhou and possibly the port city Lianyungang.
- (5) China's *Agenda 21* is a blueprint for China's sustainable development in the 21st century developed after extensive research and consultation involving 52 ministries and agencies and more than 300 national and international experts. It was approved by the State Council of the People's Republic of China on 25 March 1994.
 - (6) Maritime Information Centre website posting on 17 September 2009 at http://www.micportal.com/index.php?option=com_content&view=article&id=2437:alphaliner-worlds-top-20-ports-in-first-half-of-2009-&catid=21:world-ports&Itemid=32 (accessed 13 December 2009)
 - (7) The World Bank website : China Quarterly Update, January 2008, at <http://web.worldbank.org/WBSITE/EXTERNAL/COUNTRIES/EASTASIAPACIFICEXT/CHINAEXTN/0,,contentMDK:21640035~pagePK:141137~piPK:141127~theSitePK:318950,00.html> (accessed 13 December, 2009)
 - (8) The Economist, Briefing on China's infrastructural splurge, *Rushing on by road, rail and air*, February 16, 2008
 - (9) Associated Press, 10 December 2009, at http://news.yahoo.com/s/ap/20091210/ap_on_bi_ge/us_china_new_auto_king (accessed 13 December, 2009)
 - (10) Boeing World Air Cargo Forecast 2008 - 2009
 - (11) *China's Commercial Aviation Sector Looks to the Future*, Project 2049 Institute, 2009
 - (12) China Internet Network Information Center (CNNIC), *24th Statistical Report on Internet Development in China*, 16 July, 2009
 - (13) *A new mobility regime in the making: What does a mobile China mean to the world?* Discussion Paper No. 10/2007 presented by Xiang Biao of the Economic and Social Research Council (ESRC) Centre on Migration, Policy and Society (COMPAS), University of Oxford, at the Development Assistance and Emerging Countries workshop, organized by the IDDRI (Institut du Développement Durable et des Relations Internationales) with the support of DGCID (French Ministry of Foreign Affairs)
 - (14) Martin Jacques, *When China Rules the World – The Rise of the Middle Kingdom and the End of the Western World*, Penguin, 2009, pp. 326 – 336
 - (15) Another language pun. 'Sea' is an abbreviation for 'overseas' and 'turtle' is an homonym for 'return' in Putonghua.
 - (16) See for example the article *Steal This Scientist* by Melinda Liu in Newsweek, 14 November, 2009
 - (17) The McKinsey Quarterly, *Serving the New Chinese Consumer*, 2006 Special Edition, McKinsey & Company, pp. 60-69.
 - (18) Jonathan Garner, Credit Suisse First Boston, *The Rise of the Chinese Consumer – Theory and Evidence*, John Wiley & Sons, 2005
 - (19) Bain & Company & China Merchants Bank, *China Private Wealth Study 2009*, 1 April, 2009
 - (20) Time Magazine, *5 Things the US can learn from China*, 23 November, 2009
 - (21) Clyde Prestowitz. *Three Billion New Capitalists – The Great Shift of Wealth and Power to the East.*, Basic Books, 2005