

Made in China: moving up the value chain

‘We are ready for a fight to control the scientific high ground and earn a seat on the world’s high technology table. We will make some serious efforts to strengthen our nation’s competence’

Hu Jintao to the Chinese Academy of Sciences (2007)



China’s Strategy

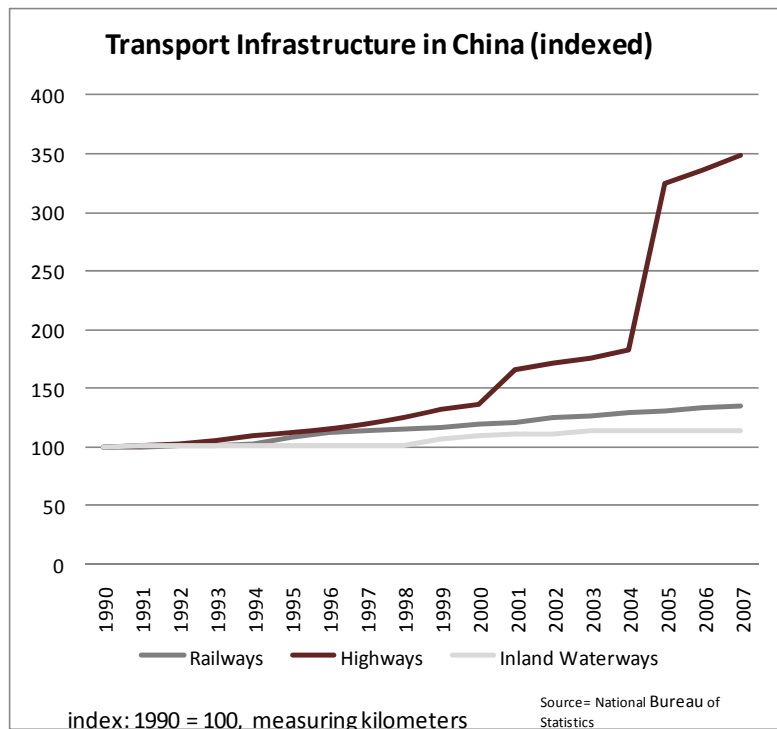
The Chinese government is keen to follow in neighbouring Asian states footsteps and see its economy move up the value chain from lower end more basic products to higher margin more sophisticated products and from OEM to ODM to branded goods sold domestically and internationally. One after another nearby states such as Japan, Korea, Singapore and Hong Kong have taken this path and China wants to be next.

This, like all policies, is captured in China’s ‘Five Year Plans’ set at a national level. The 11th Five-year plan (general central government goals are outlined in Five Year Plans) called for the country to build a competitive advantage based on science, technology, and innovation. Such central high-level guidelines then cascade down as central government ministries and provincial governments develop their own more detailed policies in line with these. The development policy of the Pearl River Delta (PRD), for example, states one of its main goals as “strategic orientation toward high-end development”. China’s efforts to drive the economy up the value chain can be seen in two parts. The first part is strengthening existing companies in their existing industry sectors and encouraging them to capture more value via more efforts in design, branding and innovation. The second part is nurturing the development in China of higher value-add industry sectors which are relatively nascent in China.

In seeking to achieve its overall objective, China is using a number of strategies at its disposition.

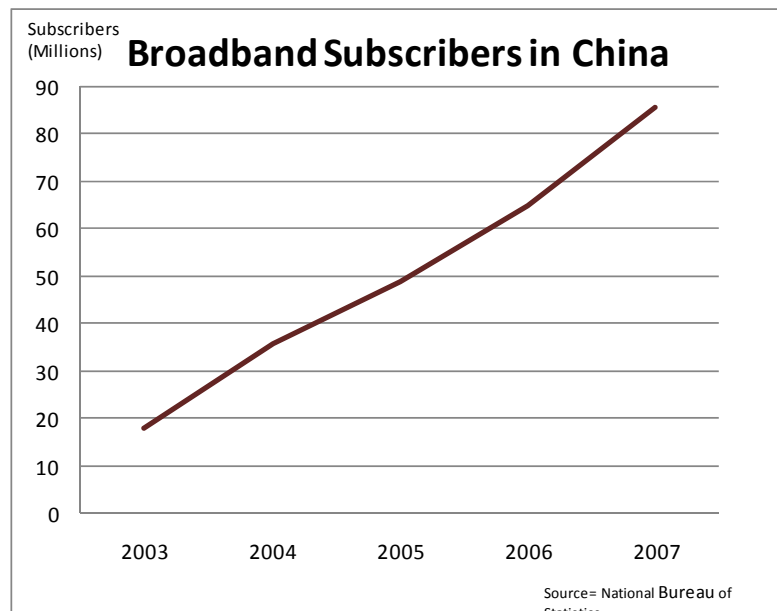
1. Infrastructure

The government is investing in the infrastructure required to maintain a high value-add economy. Logistics, the most compelling advantage China has in discouraging manufacturers from relocating to lower labour cost countries such as Vietnam and India, continues to improve allowing for faster, smarter transportation of goods and people. The main way consumer goods are moved in China is by road¹, and as the graph shows, indexed at 1990 levels, the highway network developed considerably exceeds other transport networks. Since 1990, China has paved 2.56 million kilometres of new highway, not including reconstructed highway



or expressways. Railways have long been central to the development of China, and are used mainly for transporting large numbers of people and heavy bulk resources (such as coal) over long distances. While they have not seen the kind of development that highways have, the rail network is seeing a massive RMB 1.3tr investment between 2009-2011 to expand and upgrade routes. Meanwhile inland waterways have remained relatively stable, although in fact, China has lost 13,000 km of navigable waterways since 1978.

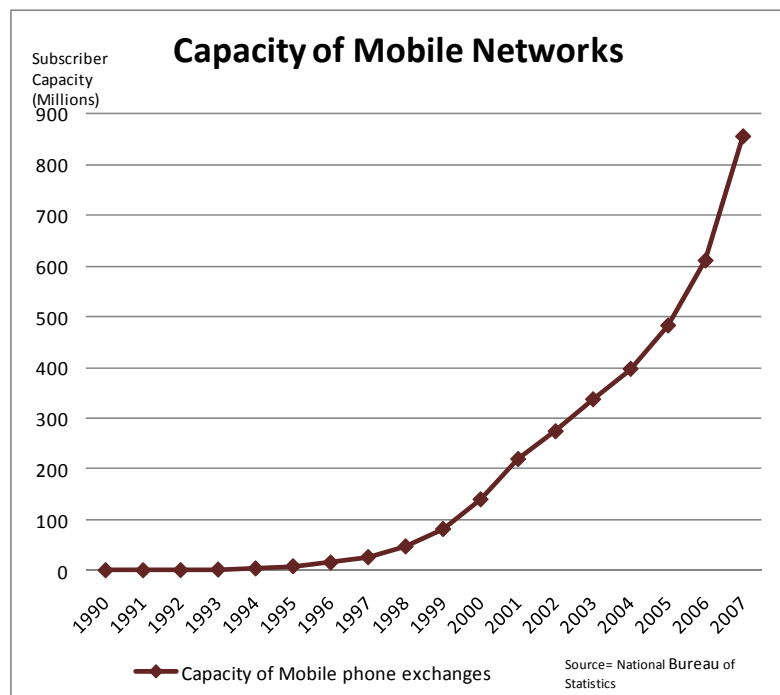
Telecommunication networks, be they mobile or broadband are already good and continue to be improved and rolled-out to an ever greater area of the country to improve communication and collaboration. Both mobile networks and broadband internet access have rapidly increased in China. More than 67 million new subscribers have been added to



¹ Rail and river are of course important too but both have seen significant bottlenecks –in the case of rail, much of the capacity has been devoted to coal haulage. Current investments in the rail network may alleviate these capacity shortages.

broadband internet services since 2003. Meanwhile mobile networks have been improved, widened and upgraded as capacity has increased by 517 million users since 2003.

Financial infrastructures too are to continue to improve in an effort to enable greater and more efficient access to capital, be it debt or equity. In March of this year, the state council approved plans to accelerate the development of services and advanced manufacturing in Shanghai. This is a result of lobbying from Han Zheng, mayor of Shanghai, who recently set forth three goals for the city: the construction of a commodities and futures centre, a bond trading centre, and development of financing and leasing business. This is an effort to link Shanghai's huge shipping industry with finance to become a global financial centre.



2. Focus

China's leaders, ever the pragmatists, recognise a need to do much with China's limited resources and hence seek to achieve this as much as possible by an effective concentration of resources.

The central government wishes to increase specialization of regions of China in certain technologies and is doing this primarily by establishing technology parks and providing financial incentives for companies to base themselves there, creating little 'silicon valleys'. However, the ability for central government to do this is tempered by local protectionism whereby a province will protect its own industry, even if another region's competing industry is more efficient. Furthermore, some observers, such as Prof. Albert Hu, from the University of Singapore, comment that such bases are not especially efficient at creating new leading companies and technologies. The main driver of creating new leading companies, according to Prof. Hu, is Foreign Direct Investment (FDI), which may indeed be attracted by such bases.

Meanwhile, the central government sets policy which explicitly helps certain industries become more efficient and move up the value chain. An example is the 10 Industry Revitalisation Plan which was drafted in tandem with the stimulus package, both being reactions to the financial crisis. China sees this crisis as an opportunity to restructure some industries -this can be effective when industries are dominated by SOEs (state-owned enterprises). However, out of the 10 industry revitalisation plans, only one, textiles, is actually specifically set out to move up the value chain. Meanwhile, the main focus of the plan is the restructuring and consolidation of the steel and auto industries, in order to cut excess capacity and inefficiencies. This will be a difficult task as Beijing finds itself struggling to protect jobs.

As the 10 Industry Revitalisation Plan shows, along with many regional development goals, industry consolidation is a central goal. For example, the Pearl River Delta development policy states its goal is to “form a batch of large enterprises with independent intellectual properties” and create a system whereby “large enterprises lead while the medium and small firms follow with professional auxiliary business.” If this goal is achieved, and these consolidated leading enterprises build on those efficiencies by moving up the value chain, they will pull forward their up-stream partners.

Strategic Research Sectors	Strategic Hi-Tech, Information & Electronics Sectors
Biology, information industry, materials technologies, advanced manufacturing technology, equipment manufacturing, information industry, agricultural science, energy exploration and saving, recycling & environment technologies.	Integrated circuits and software, new-generation network, advanced computing, biomedicine, aeronautics, satellite application, new materials, digital TVs, new generation mobile communications and internet.

Sources: Support plan for electronics and information industry (2009– 11), MIIT, Guidelines on National Medium and Long-Term Development Plan of Science and Technology (2006-2020)

Last but not least the central government has identified key strategic sectors it wishes to focus its efforts on in helping the economy move up the value-chain. These, highlighted above, are the sectors the government wishes to focus on for research funding, incentives and assistance.

3. Investment

Much of the country’s investment plans are influenced by the overall goal and hence help to drive towards it. For example the RMB4 trillion stimulus package, while aimed at propping up the economy at a time of financial stress, also set aside 9% explicitly for ‘industrial upgrading’. These funds are focused on high-tech and service industries, and will be spent primarily on infrastructure to facilitate their development such as 176 ‘high-tech development parks’ and 146 ‘productive technology advancement parks’.

Another large investment, announced in May by Beijing, will see at least RMB 2tr invested in the nurturing of a new higher value-add sector; -alternative energies, namely wind (RMB 1tr), nuclear (RMB 750bn) and solar (RMB 300bn).

4. Fiscal / Tax Incentives

As of 2008, with a new unified enterprise tax law, China moved to a revised tax system which shifted from a focus on tax incentives targeting attracting general foreign direct investment to one which encourages investment, be it domestic or foreign, in hi-tech sectors, as well as certain poorer regions of China. Favoured areas deemed ‘hi-tech’ include; electronic information technology, biotechnology and new pharmaceutical technology, aviation technology, new materials technology, hi-tech services industry, new energy and energy conservation technology, resources and environmental technology, use of hi-tech to transform traditional industries.

Some of these sectors, such as renewable energies, also now benefit from lower VAT. VAT for Biogas is 13%, Wind 8.5% and small hydro-projects only 6%. The standard VAT is 17%.

5. Soft Loans & Financing

Often via the state-owned banks as an intermediary, China actively provides soft loans and other financing assistance to companies it has ear-marked to help drive the effort up the value chain. Such companies are offered soft loans and government grants which in some cases are never repaid.

6. Standards

By domestically developing standards, be they technology or not, China sees an opportunity to both create and dictate future product specifications. If the technology is home-grown then China needs pay less royalties to foreign patent owners. Rather, if foreign companies want to take advantage of what is to become the biggest market in the world for consumer products, they will have to adopt the Chinese standard and pay for the privilege. Moreover, domestic companies can leverage economies of scale and the learning curve achieved by developing products conforming to the home-grown standards and benefit from this when then exporting to other countries who choose to adopt China's standards. A good example of this is the government development of the wireless mobile 3G standard, TD-SCDMA, a clear attempt to reduce dependency on Western technology for this vital industry of the future. TD-SCDMA seems to have failed to achieve adoption overseas but a newer generation version is now under development with the hope of achieving adoption overseas.

7. Catch-up

The government is directing much effort towards industries of the future where they may arguably be less of a road to 'catch-up' than more mature industries. Comparisons are often made to Japan in the 1950s and Korea in the 1970s, where attention was also focussed on becoming leaders in industries still yet to mature. Where in the 70s the burgeoning industry was semi-conductors, in the 00s it is renewable, nanotech and biotech. This can be achieved at a rapid rate through 'catch up growth', by which China borrows technology already developed by other countries without having to invest as much in research and development but rather developing 'me too' technologies and competing in other ways such as simplification, faster turn-around, and of course lower cost.

Challenges

As China progresses on this well-trodden but nevertheless arduous road, it faces a number of mountains to climb.

1. Human Capital

Although China has a large labour force and its universities churn out mind boggling numbers of graduates each year, there appear to be significant human capital challenges. An estimated 7.8 million inexperienced Chinese graduates will enter the job market this year. Foreign multinationals have repeatedly reported however that a large majority of these graduates are not well enough trained to be employable. In the meantime employers experience a serious shortage of highly-skilled technicians, engineers and executives. This low-skill glut and high-skill shortage poses a difficulty for the skill transfer needed for companies to improve the quality of their output, or move to a more value add link in the chain. This is one of the key indirect ways FDI contributes to the Chinese economy – transfer of managerial experience. Compounding the skill transfer problem is employee retention, with annual turnover often at 15-20% if not much higher. Hopping between jobs is common practice in China, and is seen by many as a natural way to progress in one's career; however this of course means that any skill transfer is lost, and firms face a disincentive to train up their employees. Meanwhile, the education system in China encourages little in the way of creativity and initiative, meaning that new graduates often lack those skills most needed as an economy seeks to move up the value chain.

2. Insularity

Whilst foreign firms find the Chinese market a tough one to navigate, at least many have developed know-how from doing business in other overseas markets. Given that China has little to no modern history of overseas business, with much of its exports being handled by middle-men, China finds overseas expansion all the more challenging. Chinese firms invest abroad largely to secure resources, access to markets or technological/managerial skills. However, insufficient international managerial experience among many managers in China results in poor returns on outbound direct investment (ODI). The Shougang Group has been plagued by strikes and labour conflicts in its ventures in South America. Acquisitions in particular, the fastest way by which firms can acquire market access, technologies and skills, are susceptible to managerial problems. Shanghai Automotive's 51% acquisition of Ssangyong Motor Company broke down after the Korean car maker ended up in receivership.

3. Old strategic paradigm

Most Chinese companies approach business strategy from a particular strategic mindset moulded by the situation they found themselves in. Given a large domestic market and large demand from overseas for low-cost China production, most Chinese companies have historically prioritised volume and turnover over quality and margins. They tend to compete on price, hence being obliged to maintain low costs and hence minimise investment levels where possible. Furthermore, Chinese managers are traditionally reactive in their strategies, seizing on short term opportunities thrown up by an unpredictable economic and regulatory environment. This has led to some Chinese companies accumulating significant worldwide market share in their product categories² but enjoying wafer-thin margins and intense competition. Such companies then find themselves in a strategic 'cul-de-sac' and struggle to progress up the value chain. Success in moving up the value chain will require an almost cultural paradigm shift.

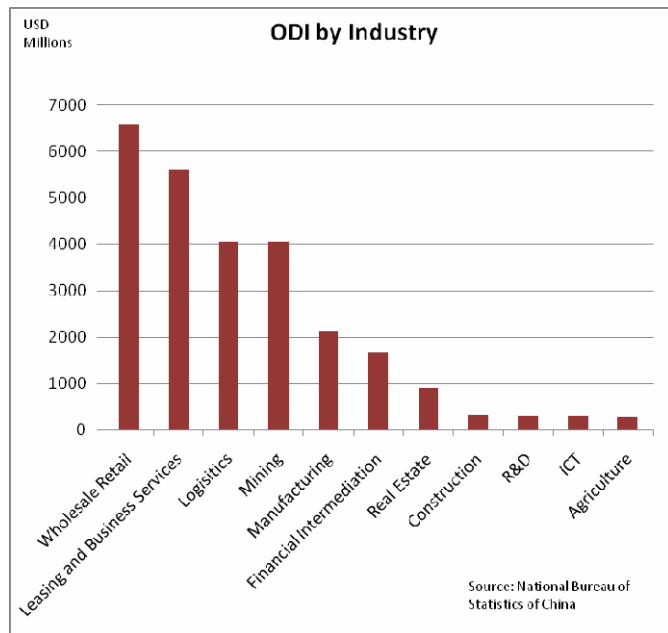
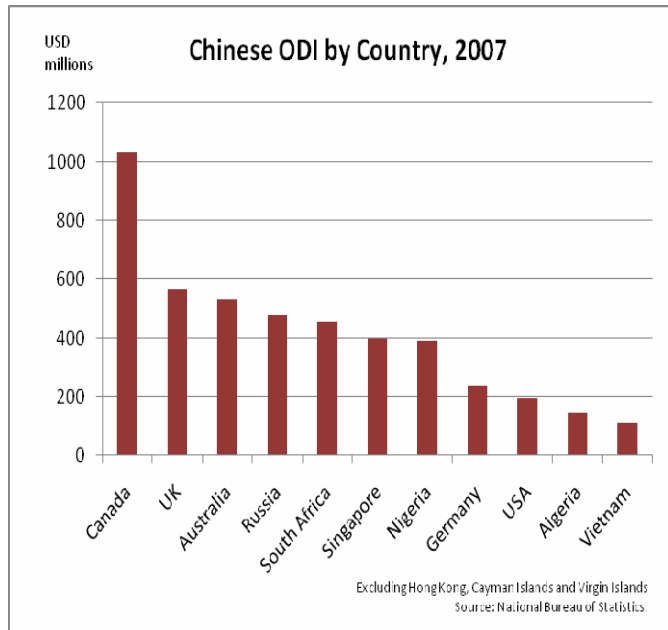
Progress to date

The last ten years has seen more and more Chinese companies shift from OEM to ODM, some build trusted domestic brands, and even a few acquire technology and brands from overseas. Clearly China is on this arduous road –China has left 'Go' and is on its way. We provide below examples of companies who are successfully moving up the value chain. However this is a slow gradual process and for now one struggles to come-up with a long list of companies one can point to as models of success.

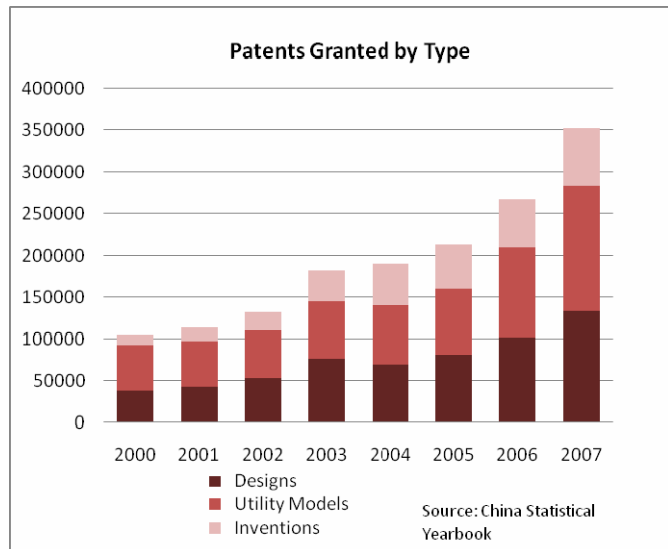
² Eg: Galanz enjoys over 35% world market share in the microwave oven market

A common route to success is to begin the journey in China, typically playing ‘catch-up’ with foreign competitors whilst being cushioned from outright competition by local market knowledge and potentially some temporary regulatory protection. Such companies will often move-up the value chain with brands or technologies which are more compelling to customers in a developing country such as China than their competitors coming from more developed markets. The next logical step is then to expand internationally leveraging the economies of scale afforded by the significant domestic market, and target other developing countries for whom the established value proposition will best resonate. It is no surprise, for example, that Huawei’s first target for international expansion was Africa. Indeed if we look at Chinese ODI by country, there is a significant mix of developed and developing countries, mirroring the strategy of investing in developed regions for technology and market access, while investing in developing regions for market access and resources.

Meanwhile, by industry, investment into distribution (USD 6.6bn) still represents the largest segment of ODI. Other perhaps more value added industries such as Finance, R&D and ICT however, still all feature in the top ten ODI industries, although put together, these are still barely over half the value of ODI in mining (USD 4bn).



Another way to track China's progress is to take a look at successful patent registrations. Since 2000, new patents granted in China have increased three-and-a-half-fold from 10.5 thousand to 35.8 thousand. Furthermore, over this period, patents for new inventions have grown faster than patents granted for design and utility models. Patents granted for new inventions have grown at a CAGR of 27% from 2001-2007, while patents for new designs and new utility models have grown at 17% and 15% CAGR over the same period respectively.



This data confirms that China is making significant achievements, albeit in a few very select industries, and no doubt concentrated in a handful of companies. Moreover, volumes of patents may not necessarily equate with quality as some companies may be seeking to file a number of patents 'around' one owned by a foreign competitor.

Prognosis

We can expect continued breakthroughs in a limited number of sectors by a limited number of companies. With time these companies should be able to pull-thru their ecosystem partners. This is a slow process however which will require and drive revolutions in a number of areas in China such as in the educational system and the level of IPR enforcement. As a result of such long term changes, the default corporate strategy among domestic companies will change and the paradigm will shift. The questions yet to be answered are which industries, which companies, and in what timeframe?

Implications / Conclusions

The implications to foreign companies and investors are significant but depend on their standpoint.

Competitors: foreign firms will find increasing competition in their markets both in China and abroad. Competition not only in terms of price from Chinese products of increasingly comparable quality, but also in terms of innovation and with time compelling brands. Strategies will need to be modified as this competitive landscape changes. New value propositions and differentiation points will be needed.

Suppliers: for foreign firms servicing these evolving Chinese companies, be they consultancies, distributors and retailers, design houses, equipment or component manufacturers, this trend is a

great opportunity, not only for increased business in servicing these Chinese companies but in partnering with them to share in their success.

Investors: both companies and financial investors, be they PE or VC, face unique opportunities by investing in these emerging Chinese companies some of whom may become the Sonys or LGs of the future. The trick of course will be to identify which companies will succeed, although the targeted industries help to give some indication –especially if one looks at industries of tomorrow such as the renewable and biotech sectors.

Given that China is on its way to moving its economy up the value chain, it is advisable to review ones standpoint to seek to benefit from this phenomenon rather than find oneself pushed to the side or become a victim of China moving up the value chain. If one has to directly compete with these leading Chinese firms in the future, new strategies need to be considered. Either way ‘Made in China’ is taking an altogether different connotation.

Case study of domestic Chinese MNCs

China has been performing strongly in expanding the presence of high technology domestic firms and over the past decade a number of Chinese companies have made inroads into high value domestic and foreign markets. These companies have aspirations to become world class brands with international recognition. Four of the most notable firms are:

Haier As of 2008, Haier is the fourth largest white goods manufacturer in the world, producing a range of household appliances such as air conditioners, washing machines and refrigerators. Haier set out a mission plan to become China’s leading brand based on product quality and reliability. The company began to expand internationally, opening a production centre in Indonesia in 1996, expanding in the USA soon after. Initially identifying a niche market in compact refrigerators and electric wine cellars, the Chinese company started to claw into the full size refrigerator alongside global brands such as GE. By 2008 the company had become the biggest producer of fridges in the world, supplying 6.3% of global fridges and 5.8% of washing machines. Thus, over 15% of Haier’s revenues are from abroad. Innovation by Haier has been exemplified through catering to the local market and recognising local needs. For example, when the company discovered that potato farmers were using Haier washing machines to clean their potatoes, heavy duty machines was produced that could be used outside and could clean both clothes and produce.

联想 lenovo Lenovo is currently the world’s fourth largest personal manufacturer after HP, Dell, and Acer. The company produces desktops, laptops, servers, handheld computers, imaging equipment, and mobile phones. Lenovo began in 1984 as a reseller and distributor of foreign brands, and began to manufacture its own brand PCs in 1990 becoming the market leader in China in 1997. In 2004 the company decided to expand abroad and thus bought IBM’s PC business for \$1.25 billion in 2005, which gave it access to a global footprint and new technologies and designs. In 2006 the first Lenovo branded products outside of China debuted worldwide, the Lenovo 3000 range, targeting the small business market segment. The company initially demonstrated innovation in the Chinese market by recognising the increasing demand for Chinese language cards and chose to integrate them into their own PCs. Lenovo now produces 27% of China’s PC market, but still faces stiff competition from foreign brands.



Huawei Technologies Co. Ltd is the largest networking and telecommunications equipment supplier in China. The company is a private high technology enterprise specialising in R&D, production and marketing of communications equipment, and providing customised network solutions for telecom carriers. In 2006 Huawei's global contract sales reached \$11 billion, 65% of which comes from the overseas market. By 2008 sales reached 23.3 billion dollars, and are forecast to make \$30 billion in 2009. Moreover, in 2007 the company became the 4th largest patent applicant in the world. The company reinvests 10% of revenue back into R&D each year. With the introduction of broadband and 3G, the aim of the company is to create an 'experience economy' where operators, equipment manufacturers, application developers, and content providers working together to create value added services to meet this 'experience'. Huawei has set up the inTouch lab in order to achieve this. Moreover, it is a pioneer of environmentally friendly technology e.g. its Base Transceiver Station is engineered to reduce equipment energy consumption by up to 30%.



Founded in 2001 through \$1.5 million private funding, this Chinese company in the solar industry is now in the top three globally. Initially the company assembled solar panels for Japanese and German companies who then sold them on for a large profit, but decided to move up the value chain through moving out of the solar panel business and into the more profitable solar wafer business. The company was Chinese founded and all manufacturing is conducted there, but is listed in the British Virgin Islands. In August 2009 it was awarded a deal to develop a \$700 million power plant in northern China, to become operational in 2010. Renesola recently bought out rival JC Solar in order to greatly increase its polysilicon production capacity from 400-500 tonnes in 2009 to reach 2,900 tonnes by the end of 2010.

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