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### **How is technology and engineering driving change in China?**

China is in the middle of a revolution...Again. But this time it is not a political revolution or a cultural one; it is a technological revolution. And it is fuelling change in a country that had for so long been stuck in a cycle of backward progress. It is leading the world in technological progress and at the forefront of this revolution are the skilled engineers that are thrusting this nation forward. China's modern Industrial revolution is immense. With the real GDP growth rate standing at a phenomenal 11% last year, China is launching itself in a new era.

China's technological revolution began with an economic one. The embracing of the free market in the late 1970s meant investment was poured into a starving country in the 1980s. High investment in China's industries from foreign countries has fuelled growth which in the mid 70s exported as much as Belgium and was poorer than Cameroon. But I shan't digress into the economics. I'll just say that now China pulls a million of its people out of poverty every month. China is re-enacting its great leap forward but this time it's in the right direction. For millions of Chinese people incomes are rising, and the emerging middle class are benefiting from new technologies like never before. In 1990 less than 20% of Chinese households owned a colour TV. Now over 98% of households own one, transforming the leisure time of Chinese people.

China is making great leaps forward in all areas of production to meet this looming demand. For example China is now the world leader in the production of communications equipment. Its output of computer and office equipment alone was valued at around \$11.5 billion for 2005. It is just one of China's many developing industries that are feeding not only of its own but the world's demand for goods. And International companies are pouring investment in China's industries; and why? It's because they see big profits in China's skilled yet inexpensive workforce. This demand is expected to grow; and China's main task will be to expand and cater for this change. Engineers will be required to do this. And the amount of engineers at the forefront of this modern revolution continues to grow. Last year in China, 600,000 students graduated in a discipline in engineering – a staggering 35% of total amount of degrees awarded were in engineering – compared to only 134,000 students graduating in the USA.

New technology is not only enhancing the average Chinese person's leisure time its effect is stretching further. Over 461.1million, Chinese now own a mobile phone, approximately one third of the population. And with over 368million landlines in use the number of Chinese people being brought together is increasing.

The internet too is transforming the lives of millions of Chinese people. In 2007, 162 million Chinese people logged onto the internet, an increase of 25 million from the previous year, and it continues to rise. As it stands 12.3% of the population access the internet in China. And with it they are fuelling a surge in E-Commerce and opening up this previously secluded country and to the rest of the world. Although the Chinese Government still attempts to censor the internet, people, especially the younger generations, are finding their way around it. On blogs for example, by downloading blogging software, bloggers can avoid the government's censor. It is now estimated that 5 million Chinese people have blogs with 8 million posts occurring each day across them. And with it Chinese people are relishing their first taste of freedom of speech from the autocratic regime. The great firewall of China is slowly being dismantled, blogger by blogger. Technology is setting the Chinese people free.

This year the Olympic torch will shine over Beijing. In the run up to the Olympics this year China has caused a surge in the demand for engineers to deliver the ambitious projects it has planned. When everything is based on impression, money is not the issue as China hopes these games will cement its place on the world stage as forward-looking, forward-thinking and forward-going nation.

The demand for skilled engineers in the capital Beijing alone is huge. Massive capital projects such as Olympic stadium, expansion of its overwhelmed airport and the construction of four new underground lines in the city are but a few of the projects engineers will be expected to deliver within the next few years. Nationally China is planning equally ambitious and exciting projects such as a Maglev (magnetic levitation) train line linking the north and south of the country and many new airports are planned all over the country.

Energy is a smouldering issue in China. As its demand for energy grows, it is consuming more and more fossil fuels. Undoubtedly one of China's biggest priorities is to develop its technologies in renewable energy. In China's coastal city of Rizhao a total of 500,000 square metres of solar panels harness the sun's energy to power 99% of its households. It's a small start for China, but the potential is huge. Engineers and scientists will be needed in this energy hungry country to develop new technologies to ensure growth which is clean, sustainable and doesn't harm the planet.

There seems to be very little stopping China's growth, and with investment pouring into the country. It seems as though China's technological revolution will continue for a long time. New technology has changed the lives of millions of Chinese already, and it shall continue to do so. This once backward nation can move forward in confidence.

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