

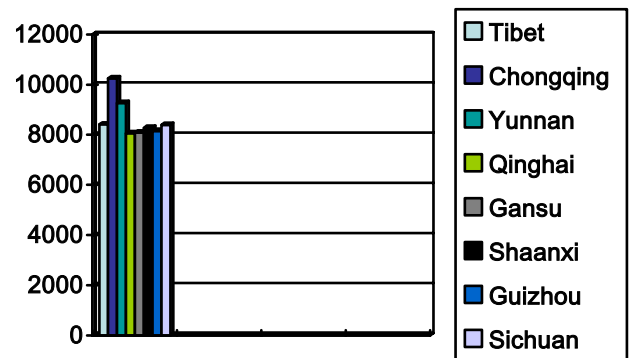
Sichuan Province of China



that are coming out of the province's 43 universities. Currently there are 1.2 million scientists and engineers in Sichuan. There are also 184 state-owned research institutes that contribute to the province's technology boom.

Even though Sichuan has a growing technology sector, its annual income per capita is low compared to neighbouring provinces. For 2006, Sichuan's income per capita was listed as RMB 8,386/person. Tibet has an annual income per capita of RMB 8,411 and Yunnan with RMB 9,266.

Per Capita Income for 2006



Source: Chinese National Bureau of Statistics

Introduction:

Sichuan province is located in China's southwest. It has a land area of 485,000km² and a population of 87.25 million people. The province is bordered by Tibet, Chongqing, Yunnan, Qinghai, Gansu, Shaanxi and Guizhou provinces. The name "Sichuan" literally means "four rivers".

In terms of industries, Sichuan is a manufacturing hub for building materials, food and wood processing, textiles, silk and electronics including products for military and aerospace use. Chengdu, the provincial capital, also has a growing software industry that is fueled by the engineering graduates



Industries:

Software/High-Technology Manufacturing:

Sichuan is in a unique position to experience a high-technology boom. While located in China's southwest and surrounded by mountains, the province has a large number of universities and government-funded research institutes many of which have been in this area since the 1950s. This has laid the groundwork for a strong technology backbone that is supported by lower labour costs compared with China's east coast. The ICT industry in the province saw 70% growth in 2006. These are just some of the factors that have brought companies such as Intel into the area.

Intel has two chip set factories in Chengdu's West High-Tech Industry Park. These factories produce Intel's 65nm processors as well as housing product-testing and employee-training facilities. The company has been in the province since 2003 and currently has 1,200 employees in its plants. In this period Intel has also become Chengdu's largest importer and exporter. It also works with about 90 component suppliers in the area.

According to China Daily, Motorola, Sony, Siemens, IBM, Ericsson, Microsoft, Alcatel and Nokia have set up their R&D operations in Chengdu.

But getting companies to set up operations in Chengdu and the province is not the only thing the city is trying to achieve. The Chengdu city government would like to make the area a regional hub for technology outsourcing with revenues of US \$500 million by 2010. With 60,000 people engaged in the software industry in the city, the government feels the manpower is there to build a strong industry.

According to EuroBiz magazine there is a shortage of qualified high-tech workers in Chengdu – about 8,000 more positions than qualified workers. That

has caused a talent war with new IT graduates able to command as much as RMB 11,884/year to RMB 94,000/year for a chief technology officer.

But the European Union Chamber of Commerce in Chengdu has suggested a solution. It would like to set up an IT league which would avoid a drain of staff from many of the companies in the area and self-regulate intellectual property through an agreed upon disciplinary code. The chamber would also like to organize an internship program for European companies in the city that would allow for Sichuan's university students to gather more practical experience prior to graduation that would better prepare them for the challenges of the industry.

Another area where Sichuan is seen to have an advantage is built-in software for production machinery. The city of Deyang in the province is one of the key areas for manufacturing machinery. The government feels that suppliers in the city can save costs and add a lot of value to their products by using software designed in Chengdu for their products.

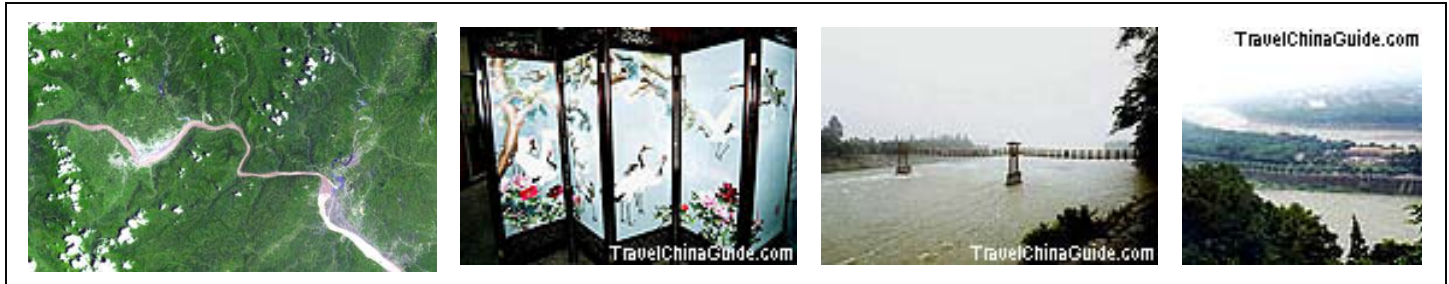
Chengdu has also provided a detailed IP guidebook for foreign companies in the area on city government's efforts to fight IP infringement.

Other IT products of interest:

Sichuan would also like to develop other key areas of its IT sector:

- Information security
- Network services
- IT management and consulting services

Information security is an area where one can expect to see strong growth. This is again due to the fact that Sichuan has a strong network of university and government owned research and development centers. As of 2004, there were 55



privately owned companies registered in this sector. Of these 55, about 20 had already developed their own products and patented them.

Building Materials:

Sichuan is very strong in building materials. Lafarge Shui On Cement Co., a joint venture between France's Lafarge Group and Hong Kong's Shui On Construction & Materials Co. Ltd, recently purchased Sichuan Shuangma Investment Group, one of the largest manufacturers in Sichuan.

The facilities that Lafarge Shui On purchased from Shuangma have a total annual capacity of 3 million tons of cement and are located in Duijiangyan, Jiangyou, and Yibin.

According to the China Daily, Lafarge Shui On first came to Sichuan in 1999 when it established a plant in Duijiangyan that had an annual capacity of 1.4 million tons of cement.

Electronics:

Sichuan is also known as a large manufacturer of electronic products. One of the best-known manufacturers in the province is Changhong Group. It is best known for its color TVs and home appliances. This company also produces IT and telecommunications systems, military communications equipment, satellites and even automobiles and equipment for China's space program. Although the company has such a large product range, it does not provide enough items to cover the needs of Sichuan's wealthy consumer base. That means there is a large potential for many other domestic and foreign brands to move in and meet consumers' needs.

The Hong Kong Trade Development Council lists some of the unmet needs of Sichuan consumers

that include:

- Hi-fi stereo systems
- Small home appliances
- Kitchen appliances
- Large- and medium-sized colour TVs
- Portable entertainment devices such as CD players
- Personal computers and related products

Electrical appliances in Sichuan are distributed through a network of wholesalers, dealers and retailers such as department stores. Most retailers require their suppliers to provide them with three types of after-sales services before they sign a contract. These services are:

- Repair of products that don't meet standards
- Replacement of products that cannot be repaired
- Refund of products that cannot be replaced

If a supplier is unable to set up an after-sales centre in Sichuan province, most dealers and wholesalers are able to offer after-sales services to suppliers for a fee. Most of the major retailers in Sichuan such as Wangfujing and Chengdu department stores as well as the regional operations of stores such as home appliance retailer, Gome are able to purchase in bulk from wholesalers and dealers lowering the cost of having a dealer handling after-sales services.

Natural Gas:

Sichuan has long been known for its spicy food, but soon it will be known to Chinese as a heater of homes as well. Projects are being developed in the province to harness its supplies of natural gas that lay in the Puguang and LuoJiazhai gas fields in the



province.

The Puguang gas fields have an estimated exploitable reserve of 356 billion cubic meters according to China Daily, making it the second largest resource of natural gas in the country. The Puguang field is expected to provide enough gas to provide heating to Sichuan, Hubei, Jiangxi, Anhui, Jiangsu and Zhejiang provinces as well as Shanghai and Chongqing through a regional pipeline. Recently China launched a gas pipeline that runs from Sichuan province to Shanghai, another "energy artery" to fuel the booming but energy-insufficient east following the grand West-East gas project. The 1,700-km pipeline is expected to channel 12 billion cubic meters of natural gas annually from the Puguang field in Sichuan to the central and eastern regions.

The Luojiashai gas field was first discovered in 2003, but production was stopped in December of that year due to an explosion that killed 234 people. The explosion was caused by the high sulphur content in the field. Every cubic meter of gas in Luojiashai contains approximately 150 grams of sulfur.

PetroChina, one of China's state-owned oil and gas companies, selected Chevron Corp. to help it with the sulfur extraction. Other bids came from international oil and gas companies such as Statoil of Norway and France's Total.

PetroChina hopes to extract about 58 billion cubic meters of gas from Luojiashai.

Power Generation:

Unlike many provinces in eastern China, Sichuan does not suffer from power shortages. In fact, according to the online magazine, Emerging China, Sichuan Electric arranged with the Central China Power Grid Company on June 27th to provide 417

million kilowatt-hours of its excess electricity to eastern China and another 632 million kilowatt-hours to Chongqing.

Also in Sichuan province is located the huge Three Gorges Dam project, which currently supplies about 17.2 billion kilowatt-hours of power to various areas across China.

Traditional Chinese Medicine (TCM):

Sichuan province is home to more than 5,000 types of herbs. This has made it a base for the production of a large amount of Chinese medicine. It currently has over 130 pharmaceutical companies and according to the Hong Kong Trade and Development Council, Sichuan has the second largest output of TCM products in China.

Sichuan is also strong in the research and development of Chinese medicine. Chengdu University of Traditional Chinese Medicine is the second oldest in the country. This was one of the reasons for China's Ministry of Science and Technology to set up the first modern production base for the manufacturing of TCM in the province.

Some famous medicine producers in the province include Di'ao Group and Di'kang Group.

Tourism:

Tourism plays an important role in Sichuan's economy. It currently makes up 9.8% of the province's GDP. Some of its scenic areas include Mt. Emei-Leshan Giant Buddha, Huanglong Scenic Area, Jiuzhaiguo Valley and Mt. Qingcheng-Dujiangyan Irrigation System.

Industrial Parks:

Most of the industrial parks and export

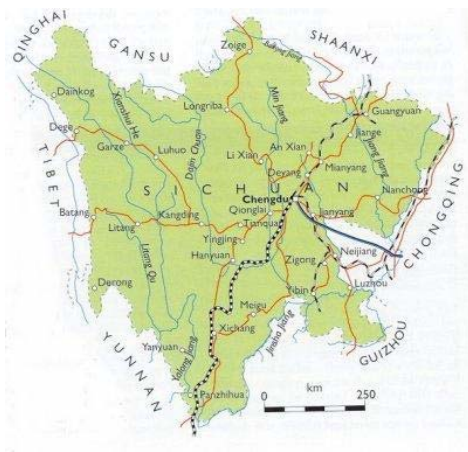


development zones in Sichuan specialize in high-tech manufacturing and services. There are two state-level export development zones in the cities of Chengdu and Mianyang. Large international companies in these two zones include Motorola, AT&T, Siemens, Coca-Cola and Fuji.

The province's other major development zones are:

- Chengdu New and Hi-tech Industrial Development Zone
- Chengdu Economic & Technology Development Zone
- Ziyang Economic and Technological Development Zone
- Chengdu Phoenix Mountain Tertiary Industrial ETDZ
- Chengdu Xindu Industrial Development Zone
- Chengdu Industrial Park for Taiwan and other Foreign Investors

Transportation:



Source: www.paulnoll.com

Though Sichuan is a landlocked province it has one of the best logistics networks in western China. With a network of provincial and national highways,

any of the provinces adjacent to Sichuan (excluding Tibet) can be reached by road from Chengdu with in eight hours. There are national highways running between Chengdu and Shanghai and Chengdu and Beihai. There are also regional highways linking the provincial capital to Changsha and Tibet.

Transportation options are also very good by rail. Sichuan is linked into the Chongqing-Shanghai railway line and the Sichuan-Beihai railway line.

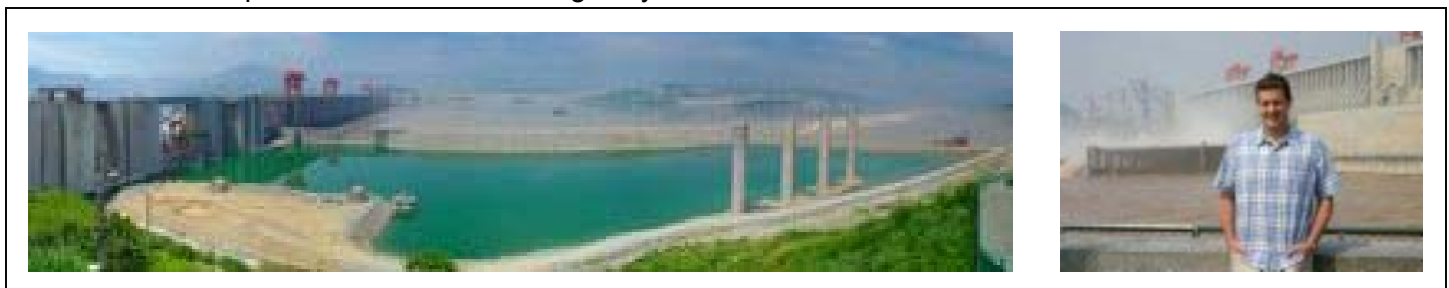
Chengdu's Shuangliu International Airport is the largest international airport in western China. It currently has international flights to Hong Kong, Bangkok, Singapore and South Korea. Domestic airports have been built at Guangyuan, Mianyang, Panzhihua and Jiuzhiguo since 2000.

Sichuan has river ports in the cities of Chengdu and Nanguang.

Goals for Future Development

The Sichuan government is making great progress in helping the province develop to the point that it can become a low-cost manufacturing and outsourcing alternative to China's more developed eastern provinces, but the provincial government still has major goals for itself. Key tasks in the province's 11th five-year plan (2006-2010) include:

- To increase the rate of development in rural areas.
- To strengthen existing pillar industries and promote industries where Sichuan has a comparative advantage.
- To promote innovation.
- To develop the service industry.
- To increase investments in fixed assets.
- To strengthen the capabilities of the government.



Despite past achievements and the above ambitious goals, UK Trade & Investment notes that there is a great income gap between the urban and rural populations in the province. The level of industrialization in the province still remains low and there is a great need for innovation. The organization also states that the conflict between resources, development and the environment needs to be addressed.

Conclusion:

Sichuan has made great achievements in building itself into a manufacturing and high technology R&D and production hub in western China. However, as with many of China's prosperous eastern provinces, Sichuan is still facing many challenges – specifically income disparities between rich and poor and the effects on the environment from heavy manufacturing. Hopefully, Sichuan will be able to overcome these challenges to reach its full potential.



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