china inroads

f t in w

CHINA'S SMART CITY PROJECTS AND DEVELOPMENTS

Article by

Valérie Hoeks

Valérie studied Sinology and co-founded China Inroads. She has been active in China since 2000. Valérie creates a bridge between customer requirements and the implementation of their plans in China.

China Inroads supports innovative companies in their expansion to the Chinese market. "China belongs to the Chinese." This philosophy is the guidance for how we match companies with the right parties and markets in China, to create a successful and effective venture.

t in

Picture this: A coastal city with shiny new buildings. Trees are planted on every side of the street and the air is automatically purified each hour. You can pay with your phone and charge your car at every parking place. The catch? This isn't a modern science fiction novel, but happening as we speak. These technologies are being developed in China, often in cooperation with Western companies.

Becoming smart

Cities as the one pictured above are a prime example of the smart city concept. Since IBM put the term forward in 2008, smart cities are a hot topic and an international buzzword. This concept revolves around the combination of human capital and technology to create a sustainable environment. In a smart city, information and communication technology can be used to promote sustainable economic development, improve the infrastructure, and heighten the quality of citizens' life while encouraging them to participate in this process.

With the recent urbanization and rising middle class, this concept is very attractive to the Chinese government. Reinder Sanders, director business development at the Dutch company Plugwise, says that urbanization is problematic for the cities' infrastructure because "once income rises a car is often the first thing people purchase because it is an important status symbol. If everyone buys a car, the infrastructure can't handle it anymore, so decreasing the number of cars is often a priority. The government can for example try to solve this problem by improving the public transport."

McKinsey Global Institute wrote in 2009 that China's urban population will grow from 527 million in 2005 to 926 million in 2025. Cities with a population exceeding 1 million are likely to increase from 153 to 226 in that same period. In 2011 the Chinese National Bureau of Statistics also announced that China's urbanization rate had surpassed 50 percent. This was the first time in China that more citizens were living in cities than in rural areas.

These modern cities need to be designed, and that's where companies such as Royal HaskoningDHV come in. Royal HaskoningDHV has been active in China for more than 30 years and is one of the leading engineering companies. Theo Klink, director rivers, deltas & coasts China, explains how Western knowledge can help in this case.

"Cities are expanding rapidly, even small cities eventually have millions of inhabitants."

"We have done some big coastal development projects, where we mainly provide them with a conceptual master plan. We Dutch can combine 'building with nature' and 'living with water' philosophies, which is valuable for the Chinese who are often not used to living close to the water."

As mentioned before, an important drive for developing smart cities in China is the rising middle class. Another report from McKinsey in 2013, considers consumers with household incomes between 106,000 to 229,000 yuan to be the upper middle class. According to McKinsey, in 2012 this segment accounted for just 14 percent of urban households. Their estimates for 2022 show a turnaround, with 56 percent becoming upper middle class and 14 percent mass middle class, which are household incomes ranging from 60,000 to 106,000 yuan.

These modern, rich citizens have certain demands, which the government must meet. In a survey 96% of those defined as middle class said they own a computer and 90% own a digital or video camera. Desktop computers (88%), HD TV (83%) and DVD players (70%) make up the remaining top five gadgets owned; a noteworthy 0% of those surveyed claimed to not own any of the gadgets listed.

To use all these electronic appliances the city must have a regulated power supply. Companies such as Plugwise develop innovative and practical solutions with which the supply and demand of energy can be better coordinated. Reinder Sanders remarks that "concentrated urbanization leads to a concentration of energy on specific spots. This may easily lead to blackouts or burnouts of the network, which then hampers the economy. With smart technology Plugwise regulates the supply and demand in a sustainable way."

Rising from the sea

A project that shows the potential for Sino-Dutch cooperation is the 'Smart Island City Zhongshan' project where Royal HaskoningDHV made crucial contributions in 2011. The city of Zhongshan on the west side of the Pearl River Delta, a short distance from Hong Kong, Shenzhen, Guangzhou and Macau, is by Chinese standards a rather small city of 3 million inhabitants. The city takes its name from the 'father of modern China', better known in the West as Sun Yat-Sen.

copyright: Royal HaskoningDHV & Kuiper Compagnons

The city authorities commissioned Royal HaskoningDHV and KuiperCompagnons in 2011 to prepare a technical and strategic study and an urban design plan for the coastal expansion which will have a total surface area of 20 km2. The government had the ambition to develop the city of the future, a unique new waterfront smart city 'Cuiheng New District'.

The goal was to develop a 'blue and green eco city' with minimum environmental impact and maximum ecological value, by deploying a nature-driven design approach. Royal HaskoningDHV used the Dutch 'intelligent use of the sea' to develop a conceptual master plan and a technical feasibility study for a sustainable eco-friendly water city on the islands. Among others, this resulted in systems that can utilize tidal movement and redirect sediment, thereby decreasing the risks associated with living on the coast. March last year, the Cuiheng District was officially opened and recognized as an important strategic platform for the long-term development of Zhongshan.

Opportunities and challenges for Western companies

Even though there are many smart city projects, the government estimates that in China as a whole 600 to 800 smart city projects will be announced during the 12th Five year Plan (2011-15), there are some challenges to overcome in the Chinese market. Sanders says that different plug-ins and voltages can already be an obstacle. "Another surprising technological challenge, was the fact that our energy-saving app didn't work at first in China when we arrived. In the end we found out this was because our app checks if there's an internet connection via Google, which is of course unavailable in China."

But the Chinese side certainly will profit from a deeper cooperation. According to Sanders "there are many technologies in the West that we can export to China. They don't have to invent the wheel again, they can buy it from us. Our smart plug-ins for example, allow the user to monitor the energy usage of all the appliances in one building and adjust them how he wants to. We are now building these plug-ins in the Shenzhen Police Academy building and they found out that 43% of the energy was used outside office hours." Klink thinks the food, agriculture and water sector are also very interesting for Western companies.

"Western companies can actively design the concepts and do the master planning for the cities."

"We have a well-developed horticultural industry and can help big cities with their food production and transportation. Besides this, a city with canals will need to think about the construction of roads and bridges. Roads are often a priority, but you also have to think about the height of bridges for example. Those are things they might not realize directly, but we know this because of our own background."

Lastly, both men have some practical advice for Western companies looking to enter the China smart city market. Theo Klink warns that "some companies make the mistake of producing some prototypes, offering these for free on the market and hoping that they will sell out. But if you have innovative technology or an interesting concept, the Chinese are willing to pay."

Reinder Sanders emphasizes another important factor: "At Plugwise, we profited greatly from the connections of our Australian office which has already been active in China for more than 20 years. It is really essential to have a trustworthy local partner, otherwise you will spend years preparing without being able to really do something. Try to look for partners through networks and don't partner up with just anyone."

The smart city concept is still going strong in China. In the future it will undoubtedly catch up with the old science fiction novels.

"What CI can do for you to increase your chances of success?"

At China Inroads we have an extensive local network, allowing us to support you in finding the above mentioned local partner and proactively guiding you through China's rules and regulations. In these processes we emphasize the long-term commitment needed to build a sound business in China. So if you need advice on how to introduce your innovative technology to the Chinese market, we are sure to be of use!