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# BRIDGE FOR CITIES

Belt & Road Initiative:  
Developing Green  
Economies for Cities

## 3<sup>rd</sup> “BRIDGE for Cities” Event

9 to 11 October 2018  
Vienna International Centre  
Vienna, Austria

## CASE CITIES BOOKLET

Trieste – Friuli Venezia Giulia  
Autonomous Region, Italy

Shanghai, China

Chengdu, China

[www.unido.org/](http://www.unido.org/)



## **RATIONALE**

The 3<sup>rd</sup> “BRIDGE for Cities” event, which revolves around sustainable urban-industrial development, aims to advance the implementation of the Belt and Road Initiative (BRI) in tandem with the 2030 Agenda for Sustainable Development, with which the BRI shares many similarities. The goal is to establish a platform centered on demand-driven matchmaking through which government stakeholders, development agencies and business-sector investors can share their demands and challenges, forge partnerships and negotiate investment.

The 3<sup>rd</sup> “BRIDGE for Cities” event aims to showcase concrete examples of urban-industrial solutions with 4 case cities and their municipal leaders highlighting ongoing and future projects in a variety of sectors. This document has been drafted to facilitate the preparation of an overall case, including potential projects, for each case city. The contents of this document will be presented during the city-centered ‘Urban-Issue Hub’ sessions during the second day of the 3<sup>rd</sup> “BRIDGE for Cities” event.

This document was prepared, with support of UNIDO technical departments and the case cities, to showcase the cities’ potential by providing comprehensive information on their challenges, solutions and priority sectors, while highlighting their competitive advantage to attract potential investors.

## CONTENTS

1. TRIESTE – FRIULI VENEZIA GIULIA AUTONOMOUS REGION, ITALY.....	4
2. SHANGHAI, CHINA.....	11
3. CHENGDU, CHINA.....	18
4. ANNEX 1.....	24

# 1. TRIESTE – FRIULI VENEZIA GIULIA AUTONOMOUS REGION, ITALY

## EXECUTIVE SUMMARY

Friuli Venezia Giulia is a strategic Region in the heart of Europe at the cross-roads of major European transportation routes and renowned for its multicultural and economic dynamism.

## INTRODUCTION ON THE CITY OF TRIESTE

Friuli Venezia Giulia and in particular the City of Trieste are considered a bridge between Western and Eastern Europe and a platform towards the Mediterranean area. On many occasions the international relations of our Region have played an essential role contributing to the stability of the Western Balkans area and, thanks to the Port of Trieste, provided a hub for building up new connections for the Adriatic cross border and transnational cooperation of South East Europe and its macro-regional development strategy. Furthermore, the geographic position allows Trieste to play a strategic role in the industrial and economic connection between Europe and Asia as well, mainly taking into consideration the Belt and Road Initiative.

Trieste, first Italian port in terms of tonnage and largest port with a railway connection, is a perfect port gate with deep water (18 m) able to quickly ensure the connections between the heart of Europe and the Far East in a sustainable way, with direct shipping lanes and intermodal terminal services through the railway. Moreover, Trieste is a free port with a unique scheme in Europe for the development of a sustainable global industry.

The Port Network Authority collaborates actively with other territorial entities to realize an innovative port system on the northernmost point of the Mediterranean, at the crossing of the “European corridors” East-West and South-North, and along the New Maritime Silk Road and the BRI railway lines, strongly oriented on internationalization and with the capacity to be a driver for the coastal area between Trieste and Monfalcone. To do so, international developers can find a system of infrastructures and professionals operating in the global supply chains (starting from those interested in improving environmental performances through the use of railway), with the opportunities offered by the high tech industry of the whole regional territory (for instance in the shipbuilding or circular economy sectors), which take advantage of the condition of “international free port area” as well as the tradition and expertise of the manufacturing industry of the territory. The project of territorial development, supported also by the Port Network Authority is based on the realization of the new operational areas, regulated by a development plan (2016) which authorizes the expansion up to 93% of the current operational areas due to interventions with a low environmental impact. Indeed, the recent “management integration” carried out between the port and the local development agency (Coselag”), and the projects of collaboration with innovation and research centers, contribute to making Trieste a leading example of institutional collaboration for the development of an innovative and sustainable industry, on the footsteps of the great industrial leaders of the territory (e.g. Fincantieri, Illycaffè).

## CHALLENGES AND PRIORITIES

The Region is tackling some important issues such as land-locked productive areas, ICT development and full integration of research infrastructures in the core of the city.

At the regional and EU levels, the Friuli Venezia Giulia Region supports the European corridors through France, Italy, Slovenia and Hungary and along a northern route from the North Adriatic to the Baltic sea. The FVG Region is the only region in Italy to have reached a special agreement with Bavaria towards the aim of promoting mutual trade from and to the port of Trieste. Finally, the region, together with Turkey, benefits from the high-functioning motorways of the sea.

In order to challenge new forces which aim to reshape the global investment landscape, we must adopt an even more comprehensive and systematic approach for improving investment conditions.

This includes:

- Implementing policies and strategic infrastructures to facilitate and reward long-term investments;
- Fostering skills that are essential for more resilient economies and more inclusive societies;
- Supporting innovation.

In the framework of the development model of the “port-city” of Trieste, the Port Network Authority, in a triangular perspective “Port-City-Industrial parks”, is working in order to:

- a) Promote, together with international investors, (in particular those interested in the development of the Maritime New Silk Road and the BRI) the development of the new infrastructure included in the development plan of the port to serve the East-West commercial routes;
- b) Promote, through investments in production capacity (stations, lines) and operational capacity (managed with its own company), a system even more strongly oriented to the integration between ship and train, in order to further increase the already consistent part of the railway within the port, in favor of sustainability;
- c) Promote the territory of the Friuli Venezia Giulia Region and its c) intermodal railway platforms, as an Italian railway hub also for the terrestrial Silk Road (the “South” entry via Budapest) in synergy with the rail flows connected to the port;
- d) Focus on the development of the potential, not yet totally expressed of the “International Free Port” established by the International Paris Treaty which is not amendable, through the progressive creation of demarcated free industrial areas (brand “FREESTE”) and by applying the new Government Decree of 2017 which indicates the Port Network Authority as the entity in charge of the regime of the free port, with relevant customs benefits for foreign investors;
- e) Promote further use of advanced technology in the management of the port and the systems of data interchange, by developing, in collaboration with international stakeholders, crucial innovations for the future of logistics (e.g. IoT, Blockchain, data-ports, etc.);
- f) Focus on the development of the territory, of advanced industrial parks, in collaboration with local scientific and innovation institutions (e.g. Science Park), attracting also in BRI areas, innovative and knowledge-intensive companies (e.g. new companies from the “circular economy”, companies involved in the management of big data) in order to create mutual benefits for foreign investors and local partners;
- g) Promote international corridors of “trade facilitation” with relevant ports of the Far East (starting from Shanghai) involving if possible the authorities (e.g. Customs) in order to facilitate the bilateral exchange between companies from both sides.

## **WHY INVEST IN THIS CITY? SUCCESS STORIES AND EXISTING SOLUTIONS**

For logistics players, to invest in Trieste means to invest in a strategic port with deep waters (within reach by ships of every dimension) which has extensive opportunities to grow arising from a development plan recently approved, and to serve the European territory from South (e.g. Germany) in a sustainable way through the railway, reducing by almost 5 days the route, in comparison with the ports of Northern Europe. In recent years, following the internationalization, large international players of shipping and logistics (e.g. Steinweg, MSC, Dsdf) decided to enter with new capitals and activity in the port of

Trieste, to benefit from the expected growth and to participate in the development of infrastructures and services related to the railway connection (e.g. successful opening of the railway connection with Budapest – 12 intermodal trains by week). Wartsila, the Finnish multinational located in Trieste and world leader in “marine technologies” has become a dealership platform of the industrial port, to manage the huge transport of motors and generators that are sent all over the world from the port of Trieste.

In 2018 the free logistic zone “FREEESTE 1”, with large covered spaces (including those for the controlled temperature) will be opened.

In 2019 the new terminal will be opened (“Logistics Platform”), built with high environmental quality systems, that will allow the port to develop opportunities for break-bulk logistics;

In 2020, the railway capacity (today of about 12.000 trains per year) will exceed 20.000 trains, resulting from construction of the new Campo Marzio terminal (co-financed by the European Union) and other local facilities.

The project TRIHUB, for the development of the hub function of the FVG Region within the European framework, is one of the six projects which has currently been included in the group of projects of the initiative through the European Union/China Connectivity Platform. The integration of academia, science, industry, finance, and management as well as public and private institutions, in line with international experience, demonstrates that successful programmes supporting trade and economic activities can no longer be separated from synergic and combined actions within the modern consolidated global economy. The common thread must be integration, no longer regional or national, but international, through a network of systems encouraging and supporting the creation, growth and consolidation of technological companies.

The peculiarity of the Trieste System, see below, allows the planning and implementation of a regional development program that is unique at the international level, which is illustrated by the presence of the Free Port becoming fully implemented. In such a framework, the idea of the Agreement signed by Area Science Park and Samer Group & Co. Shipping SpA to launch the FREEWAY TRIESTE project in 2018, has been developed and is instrumental to the territorial integration playing an important role into the global market of opportunities.

<http://www.freewaytrieste.it/>

The FREEWAY TRIESTE is a public and private programme designed to create the best and most effective conditions and services for the establishment of new industrial activities in the Port Area of Trieste. In this case, industrial activities are characterized by innovation of product, process and market, as well as interesting advantages of both the intermodal logistics of Trieste and its competitive advantages induced by the international free port regime: for deposits transits and handling of goods, outside European Union or from Extra European Countries to European Union.

An Indonesian company importing and distributing algae in the European food sector is the first player to take advantage of Freeway Trieste. The food additive industry is facing a shortage of good quality red seaweed to be used as raw material for the production of gelling and texturizing agents. The proposed project looks to develop seaweed cultivations (specifically *Gracilaria* spp, *Gelidium* spp, etc.) in lagoon areas and along the costal belt of the Southern Mediterranean, territories that were historically dedicated to this kind of farming. The added value and technical and scientific support have been studied and will be implemented.

Coastal areas of the southern Mediterranean Sea are characterized by the presence of small villages with populations having a low economic income.

The project will have different objectives, among them:

- Improve the quality of life of rural populations by providing a sustainable source of income that doesn't compete with fertile land usage;
- Improve the environmental condition of the coastal areas by increasing biodiversity;
- Reduce the impact of CO<sub>2</sub> emissions by creating a biomass able to absorb them in part.

The following benefits can reach local communities:

- Fishermen communities would see the immediate economic benefit of the activity which would bring earnings through the sale of the dried seaweed to various consolidators;
- Seaweed-based food additives' producers would see an increase in the supply of good quality raw material;
- Local food manufacturers will find food additives (agar-agar, carrageenan, alginates, etc.) at a more competitive price.

Finally, the sustainability of the entire project will be secured by the Indonesian company that is ready to sign agreements to acquire algae production from Mediterranean Countries and with the technical contribution of Freeway Trieste and possibly UNIDO, to develop finished products for the biomedical sector.

## POTENTIAL LOCATIONS IN CITY OF TRIESTE

Friuli Venezia Giulia is a region with the potential to boast an extraordinary system of enterprises, infrastructure and production chains and clusters. A "knowledge system" and tradition of cooperation with both neighboring and distant regions, make Friuli Venezia Giulia an area that stands out, even at the European level, for its excellence in research and innovation, by hosting internationally renowned scientific and technological companies.

The infrastructure system of Friuli Venezia Giulia consists of over 466 km of railway lines, an airport, a motorway network connected with those of Austria and Slovenia, three ports, one of which is substantial in Trieste with boatyards, an industrial terminal and an oil terminal as well as touristic ships and ferry traffic. The infrastructure network can also count on the inland terminals/logistics hubs for the trade of goods and change of transport mode (air, water, road, rail).

Within the port facility of Trieste, there are many opportunities for the localization of new initiatives of logistics or industrial development, in particular:

- Area of the industrial canal of Trieste (specialized logistics heavy lift, logistics for controlled temperature, etc.);
- Areas and buildings included in the territory controlled by the agency for local economic development ("Coselag") – opportunity for the development of industrial parks on innovative supply chains;
- Sites of covered depots within the new logistics area FREEESTE 1, in Bagnoli della Rosandra.

Friuli Venezia Giulia, has an economy based on small and medium-sized enterprises among the most developed in Italy and has a high concentration of scientific excellence centres and technology and research parks. The region pays close attention to economic development policies, thus being in one of the top positions in Italy for guaranteed business support. The Region is also a tourist destination of excellence, owing to the seaside and mountain resorts and historical cities which are concentrated within an hour's drive. All of this is enhanced by the excellent food culture and locally produced wine. You can enjoy numerous sports by way of the 7 golf courses, 130 km of ski slopes, 14 horse riding schools and 23 marinas or you can simply relax in one of the beautiful spas in the area.

Friuli Venezia Giulia is characterized by a significant number of scientific institutions, structures of fundamental and applied research as well as national and international training institutions, operating mainly in the fields of life sciences, physics, mathematics, environment, engineering, social sciences and humanities. Together with the Ministry of Research, the regional administration supports the development of a very effective network system for technology transfer. To promote the enhancement of scientific potential for economic and social purposes, Friuli Venezia Giulia's Science and Innovation System (SiS) is active. It aims to set up a "Scientific network of excellence" for the development of the territory. Together with the AREA Science Park (Trieste), a leading science and technology multi-sector park in Europe, the Science and Technology Park Luigi Danieli of Udine, the Technology Centre of Pordenone and the Consorzio Innova FVG work together as mediators for innovation.

## **SUPPORT PROVIDED BY CITY ADMINISTRATION, AND REGIONAL AND NATIONAL LEVEL ADMINISTRATION**

A strong commitment of the regional Government in the framework of the European Smart Specialization Strategy led to a complete reform (the so called "Rilancimpresa FVG" package), which contributed to reducing the red tape, the credit crunch among the regional enterprises and which stressed the importance of some strategic sectors such as Advanced Manufacturing (ADMA), biotech, domotic and smart health. The Regional Investment Agency is active in catalysing capitals and know-how also through cooperation with the main regional financial institutions.

The Friuli Venezia Giulia Region represents an innovation ecosystem which interacts globally and which seeks to become increasingly attractive to highly qualified human resources, to companies and start-ups and to financial capital and which continues to develop and fine-tune its policies of innovation and smart specialization. The development plan for the industrial sector of the region calls for the revival of the manufacturing and service sectors through the improvement of governance and the framework of the industrial areas, the attraction of entrepreneurial initiatives, the creation of new enterprises and their consolidation, the revitalization and specialization of businesses in line with the areas identified by the Regional Smart Specialization Strategy (on which measures were focused to stimulate private investment in research development and innovation) coordinated with support instruments called for by the community programming to maximize the efficiency of the public resources invested.

The key sectors are agri-food, mechanical engineering, home system, and maritime technologies. Agri-food is one of the most significant sectors of the regional economy with over 527 million Euros turnover in exports (+12% compared to 2014), more than 1,100 companies and 7,800 employees (2.2% of the regional total and 7.3% of manufacturing) in late 2015. Notable among the most representative products in exports are: coffee (Trieste is one of the centres of European excellence in this field), wines and cured meats.

**Mechanical Engineering:** the engineering industry, which includes the metallurgy sector, the manufacture of metal products and of machinery and equipment, is the leading sector of the region's exports, amounting to around 6 billion euros a year, with approximately 57,000 employees and over 3,700 businesses in 2015.

**Home system** is a sector that has traditionally characterized the Friuli Venezia Giulia region, and consists of all the production activities of manufacture goods that are placed in households. Its most important components are the timber and wood industry and the enterprises that manufacture furniture, with more than 1,440 million euros in export turnover in the first three quarters of 2014, more than 2,800 companies at the end of 2014 and approximately 20,000 employees in 2015.

**Maritime technologies:** the sector of the economy of the sea is one of the most significant in the regional economy (3.6% of companies) with more than 995,3 million euros in export turnover in 2015



which equals 26.8% of the nation-wide ‘blue’ economy (3.7 billion euros). Between 2011-2015 Italy’s north east saw an increase of 1.5% for companies in the sector, in marked contrast with national and European data, owing to the diversification implemented by many operators, again as part of the ‘blue’ economy and with attention given to this sector by the regional strategy.

## **SUPPORT PROVIDED BY CITY ADMINISTRATION, AND REGIONAL AND NATIONAL LEVEL ADMINISTRATION**

Smart health: this sector includes over 150 companies in the region active in the field of healthcare in three closely related areas - biomedical technologies, bio-informatics and the development of innovative therapies. Facing powerful markets worldwide in recent years, this sector has increased staff and turnover, confirming its high potential.

The Port System authority and the Consortium of local development, controlled by the authority, operates as a “one stop shop” and has specific technical offices at the disposal of interested stakeholders, to illustrate the investment and business opportunities within their respective areas of responsibility, and in particular for the evaluation of the possible models for use of the benefits derived from the “free zone” in relation to the requested specific activities.

## **INVESTMENT INCENTIVES**

The Region supports businesses that want to invest and produce in Friuli Venezia Giulia through incentives and benefits that can also be tax related, for structural needs as well as for research, development and innovation.

Link to contributions, subsidized financing and tax incentives: <http://www.investinfg.it/cms/en/index.html>

Regarding the internationalization process, the Region gives technical assistance facilitating access to regional stakeholders to programs, grants, and projects from international organizations of the UN system, World Bank, IMF, OECD , EBRD and EIB.

## **FURTHER INFORMATION**

<http://www.investinfg.it/cms/en/index.html>

Port Network Authority of the Eastern Adriatic Sea

**Vittorio Torbianelli**  
Special Projects Units  
vtorbianelli@porto.trieste.it  
+39 3471407944

Communications and Media Relations  
**Vanna Coslovich**  
vcoslovich@porto.trieste.it  
+39 3316542551

Consorzio per lo Sviluppo Economico Locale della Venezia Giulia  
 (“Coselag”)

## UNIDO “BRIDGE FOR CITIES” ROADSHOW IN TRIESTE, ITALY

26 March 2018

The Trieste Roadshow was held on 26 March 2018 during the “Belt and Road Forum – Friuli-Venezia Giulia: A Strategic Partner for Europe – China Economic Relations” (“Belt and Road Forum”).

The organization of the Roadshow was made possible thanks to the strong support from UNIDO’s Investment and Technology Promotion Office in Italy, which gathered together relevant stakeholders at national, regional and municipal levels.

One of the successful outcomes of the Roadshow and of the Forum in general was the wide participation from different actors involved in the economic development of the City of Trieste and of the Region Friuli-Venezia Giulia at large.

Representatives from local Chambers of Commerce and from the business sector, as well as diplomatic, regional and municipal representatives, took part in the event and discussed the potential of the Belt and Road Initiative for local development, notably from an infrastructural point of view.

The major output achieved by the Roadshow was to secure the full engagement from local government in UNIDO activities and to make Trieste one of the case cities for the 3rd “BRIDGE for Cities” event.

Moreover, the foundation for cooperation between UNIDO and the World Trade Centers Association – which will be crowned by the signing of a Memorandum of Understanding during the 3rd “BRIDGE for Cities” event – was laid on that occasion.



Trieste roadshow with a strong attendance of urban-industrial stakeholders.

## 2. SHANGHAI, CHINA

### EXECUTIVE SUMMARY

Shanghai is an international center of economy, finance, trade, shipping, scientific & technologic innovation and a cultural metropolis as well as a national historical city, aiming to be an excellent global city and a modern socialist international metropolis with world influence. The drive to implement the Shanghai 2017-2035 master plan of striving for city excellence is leading to opportunities that are expanding connectivity across almost every aspect of city life. These range from the provision of healthcare and education, to the environment in which citizens live and business opportunities in the fields of smart city, circular economy and intelligent manufacturing. To facilitate industry transformation from factor- and investment-driven to an innovation-driven model, the Shanghai Municipal Government has introduced a series of initiatives, consisting of redefining industry development as an engine for innovation, encouraging intelligent manufacturing based on the application of information and communication technology, and mainstreaming green industry concepts into a new low-carbon pattern of development. The bold moves Shanghai is making today is firmly believed to help it become one of the world's truly smart cities, thereby having a greater contribution to the world's better future.

#### Strategic Target of Shanghai:

- To speed up the development of an advanced manufacturing industry.
- To enhance the development of a modern service sector.
- To actively cultivate new patterns of technologies and new industries.
- To realize the modernization of agriculture.
- To expand a new space for the “going global” strategy.
- To deepen the domestic regional economic co-operation and exchange.
- To facilitate key projects.

### INTRODUCTION TO CITY OF SHANGHAI

Shanghai is the core of the world class city cluster in the Yangtze River Delta area, with a population of more than 24 million as of 2017. The average yearly growth rate of GDP in the past five years reached 7.1%. In 2017, total GDP was reported at over RMB 3 trillion. Shanghai is a bustling commercial city, with revenues from commodity sales exceeding RMB 1.1 trillion, placing the city first amongst all major Chinese cities. Shanghai is an international trade center with annual container throughput originating in Shanghai exceeding 40 million TEUs. The total import and export volume of goods in the Shanghai customs area was 5 trillion 969 billion and 24 million yuan in 2017, an increase of 14% over the previous year. The China International Import Expo will be held in Shanghai, and new types of trade such as cultural trade, technology trade and cross-border e-commerce will continue to develop rapidly.

The number of national level financial institutions in Shanghai has reached 13 and has formed a complete multi-level financial market system with the establishment of a global RMB product innovation, trading, pricing and settlement center. There are 1,537 financial institutions of various types in Shanghai, including the Shanghai Stock Exchange, Shanghai Futures Exchange, China Financial Futures Exchange, inter-bank currency and bond market, gold exchange and foreign exchange trading center. Shanghai is also home to many commercial bank headquarters as well as the headquarters of the People's Bank of China Shanghai Branch. Shanghai is a vibrant city famous for innovation, with thousands of companies being registered here daily; the company vitality index level reached 80%. The total R&D expenditure of the whole city is equivalent to around 3.8% of the city's GDP. To support the development of the private sector in Shanghai, the municipality has launched a specialized service platform named as “Shanghai Enterprise Service Cloud” to boom the development of SMEs in value chains, and connect relevant resources needed.

## CHALLENGES AND PRIORITIES:

### Challenges:

Shanghai is under the pressure of function transformation, continuous population growth and environmental resource constraint, hence the city must break through the development bottleneck, curb urban malaises and achieve transformation of the urban development model from factor- and investment-driven to innovation-driven in the future.

### Priorities:

#### *More Dynamic: An Innovation City*

- Construction of a national innovation system.
- Lead the growth of the Yangtze River Delta region.
- Bridgehead of the Belt and Road Initiative.
- World-class Yangtze River Delta Urban Agglomerations with competitiveness.
- R&D input will be 5.5% of the gross regional product.
- Added value of finance will be 18% of the entire city's GDP.
- Total annual inbound tourists will be 14 million.
- Industrial land for development of advanced manufacturing in the industrial base will be no less than 150 square kilometers.
- International travelling passenger volume will reach 38%, and the rate of international container transit will be no less than 13%.
- The coverage of high-speed wireless data communication network will be up to 100%.

#### *More Attractive: A Humanistic City*

- The birthplace of Haipai culture, which combines southern and Western cultures.
- The city is, and has always been, a melting pot of different ethnic groups, both domestic and international.
- Magnanimousness to innovation and toleration to failure.
- A city beaming with stylish charm, resorts to the unswerving quality improvement create a happy and healthy humanistic city.
- High approval from its citizens with active participation and profound cultural heritages.

#### *More Sustainable: An Eco-City*

- Develop pilot spaces and infrastructures for green, low-carbon and sustainable development.
- Increase ratio of renewable energy sources in primary energy sources.
- Reduce total carbon emissions by about 5% compared to the peak in 2025.
- Annual mean concentration of PM<sub>2.5</sub> will be controlled at around 25mcg/m<sup>3</sup>.

## WHY INVEST IN THIS CITY? SUCCESS STORIES AND EXISTING SOLUTIONS:

### COMPETITIVE ADVANTAGES OF INVESTING IN SHANGHAI

#### *Talent Highland*

Shanghai has a total of 64 higher education institutions (including private colleges) with more than 500,000 students enrolled and more than 130,000 graduates per year. 48 institutions provide graduate and postgraduate programs, with more than 140,000 graduate students enrolled and around 50,000 graduates. There are 300 schools specializing in middle to higher education for adults and nearly 700 vocational training schools. In 2017, the average monthly salary of a fresh graduate in Shanghai was RMB 5,386. The average monthly salary for undergraduates was RMB 4,793 and for graduates holding a master's degree or above the average salary was RMB 8,001. More and more foreigners have chosen to work in Shanghai in recent years. So far, There are about 88, 000 foreigner experts and 86,000 foreign employees in Shanghai. 120,000 overseas students choose to work or start their own

business in Shanghai. Foreign employees in Shanghai are engaged in a variety of sectors from advanced manufacturing to modern services, and from traditional business to newly booming industries.

### ***Gateway for the “Belt and Road Initiative”***

Shanghai will strategically strengthen the internal and external linkage to the Yangtze River Economic Belt to integrate the mission of the national “Belt and Road Initiative”, “Four Centers Initiative”, the construction of a science and technology innovation center and the establishment of the Shanghai Free Trade Zone. Shanghai will also establish strategies to undertake a number of national key functions and to create a few open collaborative platforms. The city will fully match the demand of the market and the role of the market in resource allocation decisions and company functions. Shanghai will be dedicated to solving the demands in the development of two-way investment and trade.

### ***City Security***

Shanghai is one of the metropolises of the world with the lowest rate of public safety incidents such as criminal cases and fires and is therefore one of the safest cities. A third party company’s survey showed that Shanghai residents’ feeling of public safety and satisfaction has reached above 80 points for several consecutive years.

### ***Protection of Intellectual Property Rights***

Shanghai Intellectual Property Court, Shanghai Intellectual Property Exchange and Shanghai Academy of International Intellectual Property Rights constitute a complete system for the protection of intellectual property rights in Shanghai.

### ***City Infrastructure***

Shanghai has well-connected city infrastructure including two international airports, six railway stations and the longest metro transit mileage in the world.

### ***Ecological and Liveable City***

In 2017, the overall air quality of Shanghai has been improving with the Air Quality Index (AQI) reaching 75.4%, which was 9.8% higher than the base year of 2013. The average annual PM2.5 concentration was 39 micrograms per cubic meter, which was 37.1% lower than that of 2013. Forest coverage rate of the whole city reached 16.2%. Shanghai has 24 city level and district level public libraries, 50 archives, 125 museums, and 24 cultural centers for the public. There are 273 performing arts groups and art exhibitions in the city, making Shanghai a must-visit city for internationally renowned performing art groups.

Success Story of Shanghai City can be found in **Annex 1**.

- Category 1. **INNOVATION AND ENTREPRENEURSHIP**
- Category 2. **INNOVATION ON CITY ADMINISTRATION**
- Category 3. **CIVIL SERVICE**
- Category 4. **DIGITAL DRIVEN DEVELOPMENT**
- Category 5. **INDUSTRY TRANSFORMATION**

## **POTENTIAL LOCATIONS IN CITY OF SHANGHAI**

### ***Center of Economy:***

Xuhui District, Lingang Area

### ***Center of Finance:***

Lujiazui Financial and Trade Zone

### ***Center of Trade:***

Shanghai Hongqiao Central Business District (CBD), Waigaoqiao Free Trade Zone

### ***Center of Shipping:***

Hongkou District, Baoshan District

### ***Center of Scientific & Technologic Innovation:***

Zhangjiang Science City, covering 94 square kilometers, is located on a strategic position in New Pudong Area, between the city centre of Shanghai in the West and Pudong International Airport in the East. It is the largest and most important science city of China and aims to grow into a sub-center of Shanghai's scientific innovation, which can provide a dynamic entrepreneurship environment, complete living facilities, convenient transportation, beautiful environment and a unique cultural atmosphere.

As core park of Zhangjiang Science City, Zhangjiang Hi-Tech Park is one of China's first state-level high-tech zones approved by the State Council as well as the core park of Zhangjiang National Innovation Demonstration Zone. Through a strong innovation atmosphere, a plurality of talent accumulation and a powerful innovation platform, Zhangjiang Park attracted a large number of top hi-tech enterprises and small-medium sized innovative enterprises, and is the birth place of new technology, new pattern and new format. Over 10,000 companies have registered in the park mainly covering information technology, bio-medicine, cultural creativity and low-carbon environmental protection.

Zhangjiang Science City has also accelerated the construction of key national-level scientific projects. And a series of R&D centers of renowned universities will also be based in Zhangjiang. They include a University of Science and Technology of China innovation center focusing on quantum information science and technology, a stem cell research center associated with Tongji University and a robot research center associated with ShanghaiTech University.

The science city aims to attract 500 renowned scientists and experts by the end of 2020. Over 20,000 professionals from abroad and overseas graduates will work in Zhangjiang by then. The Administration of Overseas Talent offers a one-stop service for overseas professionals along with a batch of new policies to ease green card and work permit rules.

### ***Yangpu District:***

The Yangpu District, located in the northeast of Shanghai, on the northwest bank of the lower Huangpu River, has created its own path of innovation-driven transformation and development from its previous role as one of China's oldest industrial centers and a hub of intellectuals. In 2010 Yangpu was nominated by the Ministry of Science and Technology as one of the country's first pilot innovation districts in 2010, and identified as a key base of Shanghai's efforts to become a global innovation center and demonstration zone.

Yangpu has taken advantage of its intellectual and educational resources to promote regional innovation and development. The district is home to 14 higher education institutes including Fudan University, Tongji University and Shanghai University of Finance and Economics, along with over 100 scientific research institutes. Yangpu authorities have launched cooperation with 11 universities within the district or around the city to build a number of key platforms. They also pair up with 23 local research institutes and enterprises to promote high-tech projects in the fields such as the Internet of Things and the application of China's self-developed Beidou Navigation Satellite System. The district government has been offering supportive policies, services and funds specifically for young entrepreneurs. For example, the district has explored the establishment of community banks devoted to small and medium sized tech firms and has looked into the cluster development of early-stage startup investment funds and international innovation acquisition funds via cooperation with foreign investors. In addition, the district has chosen banks and financial institutions to pilot the integration of equity and debt financing services for corporate innovation.

In the process of facilitating international talent attraction, Yangpu District seeks support from its overseas talent base and devotes to the nurturing of innovative talents and start-ups. New convenience-

granting entry-exit policies have been also officially released in 2016. Foreign talents who work with the innovation industry or own start-ups in Yangpu District and fulfill relevant conditions as required will be granted convenience in the application of a port visa, the change of an R visa, permanent residence and S1 visa. Yangpu will build an Innovation Economy Corridor in its west, a Makers' Eco-community in its central area and develop its riverside area into a waterfront innovation hub during the period of the 13th Five-Year-Plan (2016-2020).

## **SUPPORT PROVIDED BY CITY ADMINISTRATION, AND REGIONAL AND NATIONAL LEVEL ADMINISTRATION**

The Shanghai Municipal Government is now promoting a “One-stop Online Government Service” brand by launching online public service tools such as “One-stop Service Platform” and “Shanghai Enterprise Service Cloud”, which improves Shanghai’s business operations environment as well as government service standard.

“One-stop Service Platform” promotes the online and mobile service for personal affairs and business sectors, whilst, “Shanghai Enterprise Service Cloud” provides one-stop and integrated consulting service and support to enterprises. Meanwhile, Shanghai Municipal Government is streamlining its offline administrative procedures and the KPI of completing all the procedures in one application has been set. There are Shanghai Municipal Government documents that provide policy support for technology innovation and small-medium enterprises which are lacking technical and financial support.

Preferential policies related to Innovation can be found as below:

- “Opinions of the Shanghai Municipal Committee and The Shanghai Municipal Government on accelerating the construction of a world-renowned scientific and technological innovation center” highlights four critical points including:
  - Releasing market access controls in emerging industries such as “Internet plus” and increasing the proportion of purchases of innovative products and services by small and medium-sized technology companies.
  - Building “talent highlands” for innovation and technology enterprises and promoting international students work at Shanghai directly.
  - Encouraging researchers’ self-employment and part-time work in technology and innovation companies.
  - Promoting the listing of unprofitable but sizable technology innovation enterprises.
- “Carry out trials of comprehensive innovation reform in Shanghai and accelerate the construction of a world-renowned science and technology innovation center” provides guidance to set up innovation centers: By 2020, having a basic framework for a global influential center for scientific and technological innovation. By 2030, focusing on building the core functions of a global influential center for scientific and technological innovation. The guidance based on the reality of Shanghai breaks through the obstacles which restrict the development of innovation and technology, establishes the law of the government management system which is suitable for innovation development, constructs market-oriented scientific and technological achievement transfer mechanisms, implements the income distribution system, stimulates market innovation and the system of enterprise as the main body of innovation investment, establishes a positive and flexible innovation talent development system and promotes formation of cross-border integration of open cooperation.
- “Shanghai’s 13<sup>th</sup> five-year plan for scientific and technological innovation” highlighted that improving the support system for science, technology and finance forms an investment and financing system featuring active agglomeration of venture capital investment, strong credit support from commercial Banks and diversified social capital investment, and gives full play to the role of finance in promoting scientific and technological innovation and entrepreneurship.

Efforts should be made to cultivate a large number of small and micro enterprises, and a number of “hidden champions” with industry competitiveness as well as a number of enterprises with global or regional market advantages.

## INVESTMENT INCENTIVES

Shanghai has introduced and implemented a slew of preferential policies to facilitate the development of high-level free trade and investment, which is aimed at helping foreign investors navigate China’s market. Industrial development policies have been formulated by Shanghai authorities to promote the development of Intelligent Manufacturing, Bio-medicine, Artificial Intelligence, Block chain, Modern Service, Smart City, Software and IC Industry, Energy Industry and Circular Economy, Cross Board E-commerce and Science and Technology Innovation.

Preferential policies according to business nature include:

- R&D Center:
  - Several Opinions for Supporting Foreign R&D Centers to Participate in the Construction of Shanghai Science and Technology Innovation Center with Global Influence.
  - Notice on Continuous Implementation of the VAT Policy of Procurement Equipment in R&D Institutions.
  - Notice of the State Council on the Adjusting of Taxation Policies for Imported Equipment.
- Regional Headquarter:
  - Provisions of Shanghai Municipal Government on Encouraging Multinational Companies to Establish Regional Headquarters.
  - Notice on Issuing the “Measures for the Use and Management of Special Funds for Encouraging the Development of Multinational Companies Regional Headquarters in Shanghai”.
- Trade-oriented Headquarter: Several Opinions on Encouraging Companies to Establish Trade-Oriented Headquarters in Shanghai for Domestic and Overseas Markets.
- Foreign Talents: Notice on Issuing “the Measures for Foreigners to Enjoy Relative Treatments of Permanent Residence Status in China”.
- Science & Innovation Center:
  - Notice of Administration Measures on Supporting the Import Tax Policies for Scientific and Technological Innovation.
  - Ministry of Public Security’s Exit and Entry Policies on Supporting Shanghai Science and Innovation Center Construction.-Opinion of Shanghai Municipal People’s Government on Accelerating the Contributions of the Technology Innovation Center that have Global Influence.

In addition to the above stimulus, there are several economic zones located in suburban areas of Shanghai, which still provide incentives to enterprises that choose to register there. Foreign investors can take this opportunity to check and update their business strategy and take advantage of such incentives.

## FURTHER INFORMATION

ITPO Shanghai:

Ms. WANG Lihua l.wang@apmenet.org 86-21-38933833

Ms. WANG Chengling clwang@apmenet.org 86-21-38933830



## UNIDO “BRIDGE FOR CITIES” ROADSHOW IN SHANGHAI, CHINA

20 April 2018

The Shanghai “BRIDGE for Cities” Roadshow was conducted on 20 April in the afternoon session of UNIDO Day during the 6th China Shanghai International Technology Fair (CSITF).

Thanks to strong support from UNIDO’s Investment and Technology Promotion Office in Shanghai, the Roadshow gathered attention both at national and international levels, as the solutions proposed have been selected to be fully in line with the Shanghai’s development strategy. Government involvement was testified by the presence of representatives from the National Development and Reform Commission as well as Shanghai Municipality. The Shanghai Municipality was involved throughout all stages of preparation of the Roadshow as well as in the following steps necessary for the case preparation. Moreover, the representatives from Chengdu Government participated in the Roadshow to sign the agreement for the forthcoming Chengdu roadshow.

Equally decisive has been the involvement of investors and partners from the business sector. In particular, Vienna Business Agency attended the Roadshow and promoted the possibility of developing concrete projects involving investors from Vienna and Shanghai, notably in the field of Smart City.

As a concrete outcome, a business plan competition took place during the Roadshow. After preliminary screening, the top 5 finalists were selected to compete in an open competition where they presented their business plans in front of the audience and judges. Finally, Westwell Technology won, thanks to its smart port project and its innovative business plan. The project will be presented during the 3rd “BRIDGE for Cities” event.



Shanghai roadshow speakers and business plan competition winners.

### 3. CHENGDU, CHINA

#### EXECUTIVE SUMMARY

Chengdu, called by “Rong” for short, is the provincial capital of Sichuan, the most important economic, scientific and technological, financial, cultural and creative, foreign exchange center and integrated transport and communications hub. Chengdu vigorously develops a life-related service industry, accelerating the construction of a Beautiful and Liveable Park City. Adhering to the international and far-sighted vision, Chengdu plans the development outline for Tianfu New Area and updates the overall urban planning. Chengdu vigorously pushes the implementation of the policy of “Treatment of Three and Increase of One”, the construction of Tianfu greenway and Longquanshan municipal forest park. Chengdu deepens the management of basic service list and dynamically adjusts system reform, sparing no effort in making achievements in employment, housing and other practical matters that concern people’s life.

Chengdu initiates the construction of Longquanshan municipal forest park with an area of 1275 square kilometers and Tianfu greenway with a total length of 16930 kilometers. With a metro operation length of 180 kilometers, and the overall fulfillment of unified urban and rural social security system, Chengdu once again tops the list of China’s happiest cities.

Chengdu, the capital of Sichuan Province, PRC, is one of the three most populous cities of western China, located in the fertile Sichuan basin. It is subject to a mild, humid, monsoon influenced subtropical climate with typically at least 280 frost free days, and an average monthly summer temperature of about 25C°.

With over 4500 years of city civilization history and over 2300 years of city building history, Chengdu is reputed as “Land of Abundance”. With an area of 14.3 thousand square kilometers, Chengdu has over 16 million permanent residents and over 20 million people in management. In 2017, Chengdu’s GDP reached 1.39 trillion RMB, fixed-asset investment reached 940.4 billion RMB, fiscal revenue 420.7 billion RMB, urban and rural per capita disposable income 38918 RMB and 20298 RMB respectively.

As cities in China often comprise very large administrative areas, Chengdu in total covers about 12,400km<sup>2</sup>, including substantial peri-urban and rural areas of the fertile Chengdu plain. Registered household population in 2014 was about 14.4 million, of which 10.2 million are considered urban population. Estimates for population of the metropolitan area exceed 18 million inhabitants. Chengdu has the privileged status of a sub-provincial city, which ranks it above prefectural level in the Chinese administrative divisions. It has direct jurisdiction over 11 districts, 4 county level cities and 5 counties.

The state council of China has designated Chengdu as the western China centre of logistics, commerce, finance, science, technology, transport and communication, while it continues to have important functions in manufacturing and agriculture. The main industries include machinery, automobile, medicine, food, aerospace and information technology.

Chengdu is an important national and international air transport hub, ranking 4th place in the national air transport statistics by passenger turnover. It provides important national high speed railway links and economic services to the broader western region, functioning also as access point to the Tibetan plateau. Historically Chengdu played an important role as starting point of the southern silk road and the international significance as regional hub of western China remains vital: 16 nations maintain consular sections in Chengdu, and more than 282 of the “Fortune 500” companies have established branches in Chengdu. An additional international airport to be opened in 2020 is under construction, as an essential element to develop Chengdu as a global city. Since March 2018 Chengdu is also connected by direct freight rail connection with Vienna and other cities in Europe, reducing the container travel time to about 12 days, which is less than half the time required by conventional marine transport.

## CHALLENGES AND PRIORITIES

The development of Chengdu as **Park City** was declared as an explicit goal during a visit of president Xi Jinping in February 2018. While high-tech manufacturing, ICT-, new economy and trade are essentially driving the economic rationale of Chengdu, agriculture and agro-processing activities in peri-urban and rural parts continue to be significant, and are valued and promoted as a counterbalance. They are also recognized as opportunities for the further development of complementing the tourism-, hospitality-recreational-, and creative services industries.

A central feature of the urban development priorities of Chengdu as Park City is the goal to include a nearby mountain ridge, Longquan Mountain, into the urban fabric as “Urban Forest Park” of about 1200 km<sup>2</sup>. This is part of a substantive effort to change the spatial development trajectory of the city. At present the urban core activity and historic centre of Chengdu is located in a basin, surrounded by two mountain ridges (urban and rural form of “two mountains and one city”). Through expansion of the urban fabric towards south east, including the new airport development and massive investments in tunnelling and other transport infrastructure, the intended future urban form of Chengdu is envisioned as “one mountain with two wings”, with Longquan Mountain urban forest park as an integral core element. Currently land use at Longquan Mountain includes fruit tree cultivation and silviculture among others.

According to the terminology of the current Master Plan, the massive spatial urban restructuring effort will be realized through: “eastward development, southward extension, westward control, northerly reform, and mid-improvement” of urban Chengdu.

Tianfu New Area, (total planning area: 1573km<sup>2</sup>), located in the South-East of Chengdu, plays an essential role in this effort of spatial modification and reform of urban function and activity patterns: A newly developed world ranking science city and entrepreneurial innovation incubator are to be established, equipped and connected through a massive greenway program to allow and encourage non-motorized transport options (cycling, walking, etc). Components of Tianfu New Area include: Chengdu Hi-tech Development Zone (South), Chengdu Economic & Technological Development Zone, Shuangliu Economic Development Zone, Pengshan Economic Development Zone, Renshou Shigao Economic Development Zone, Longquan Lake, Sancha Lake and Longquan Mountain.

Chengdu intends to develop the East New Town along mountains and waters, and to press forward the urban and rural form of the city towards a multi-level networked urban structure featuring “one heart, two wings, three axes and several centres”. This includes ambitious expansion of a second international airport by 2020 and expansion of high quality public transport through new metro lines and intensified bus-transit systems. The subway currently features about 9 lines and 120 km and coverage is planned to be extended to 19 lines and over 500 km network length by 2025. In 2007 Chengdu was already awarded “national forest city” by the national greening committee and the state forestry administration. Since then additional urban tree cultivation, three dimensional greening of facades and rooftops, and other green space development initiatives were conducted to improve urban climate and living conditions.

The development of a green civilization was referenced by President Xi Jinping as key legitimation for the massive investment into green infrastructure. It includes aesthetic arguments and the broader goal to maintain ecologic integrity, and cultural heritage, but moreover specifies the intention to develop along industrial ecology principles, and in particular to realize:

1. A mode of production that is resource saving, environmentally friendly, based on circulating economy, and highly efficient by:
  - Strengthening a green industry network;
  - Building a clean and efficient green resources system;

- Innovating the industrial pattern of rural rejuvenation;
  - Creating new forms of business and fostering new scenes to drive new consumption.
2. A simple, low carbon, healthy and elegant way of life showing the value of life in the park city by:
    - Cultivating and inspiring the subject consciousness of citizens, including ecological ethics and green consciousness;
    - Optimizing the supply of green public service;
    - Creating a healthy and comfortable living environment.
  3. The transformation mechanism of ecological value by
    - Establishing an accounting system of green GDP;
    - Building a platform for ecological value;
    - Improving the price mechanism of resources and environment;
    - Perfecting the trading system of environmental resources and interests;
    - Promoting trading of rights of energy, water and carbon emissions.

Cities provide unique opportunities for the design of circular, regenerative and waste free economies. Their particular density and scale of activity allows them to lead the global transformation towards a resource efficient, resilient and sustainable future. A baseline assessment of Chengdu's material and energy flows (urban metabolism) is recommended to systematically link economic activity patterns to regional and global environmental pressures.

Chengdu holds a unique position within China, as a highly developed inland hub for research-, manufacturing- and service sector activity, counter-balancing the somehow un-even economic development pattern, which is skewed towards the coastal regions. It is intended to serve as a gateway between western China and the vast Euro-Asian markets with the new freight railway connection to Europe and the second international airport as crucial links. The development of Tianfu New Area as a state level development zone provides testimony for high level government commitment and support for investments in Chengdu, with the aim to develop it comparable to exceptional economic growth hubs like Shanghai's Pudong New Area, Tianjin's Binhai New Area, Chongqing's Liangjiang New Area and Shaanxi's Xixian New Area.

The park city development of Chengdu in itself is an outstanding example of integrated urban planning. This includes the recent master plan for development of a 1200km<sup>2</sup> urban forest and tree planting activities in the existing city structure, as well as development of new towns, with their economic strategies. In this context, several ongoing development projects should be emphasized to illustrate elements of the urban development dynamics:

1) Since urban agriculture is a central component of the Park city strategy, UNDO proposes a project for innovative urban agricultural production that simultaneously addresses environmental concerns, reduces food transport requirements, and improves self-sufficiency and production efficiency. Through the establishment of a Polydome, a scalable ecologic farming solution based on symbiotic agriculture principles will be demonstrated. Polydomes maximise species intercropping, and feature organic, toxin free integrated pest control management, aquaponics, vertical farming, as well as mushroom cultivation and animal production. They utilize ubiquitous sensing techniques, spatial/temporal system optimization, as well as robotics, all of which will be subject to research and demonstration. The Polydome unit will constitute an innovation hub to integrate research and education on agricultural activity with tourism, including hotels and conference facilities.

2) Marketing of horticultural products is a significant agricultural activity in Chengdu peri-urban areas. With the recently completed railway connection to Europe, export of cut flowers and leaves as well as potted plants becomes feasible. To safeguard against the unintended spread of

pathogens associated with distribution of living plants and soil or growth media, a phytosanitary clearing station for regulation of these business activities is under construction.

3) Greenway constructions for facilitation and amplification of non-motorized transport (walking, bicycles, etc.) are a remarkable element of the Chengdu Park city strategy that improves life quality. These planning elements also involve water flow regulation and flood-control features, which are integrated elements of the urban development strategy. Moreover they have a close link to agricultural practices such as paddy farming, and measures for control and improvement of water quality.

## **POTENTIAL LOCATIONS IN THE CITY OF CHENGDU**

As part of the nationwide China western development strategy it is anticipated that in the long run Chengdu will form a Megalopolis with Chongqing, about 250 km south-east (“two cores”). For that matter, in 2011 the plan for Chengdu-Chongqing Economic Zone was formulated.

Chengdu now has two state-level development zones, namely Chengdu Hi-tech Industrial Development Zone (established in 1991) and Chengdu Economic & Technological Development Zone (approved at state level in February 2000). Moreover, the Chengdu export processing zone was ratified in April 2000 and the Chengdu cross strait technology industry development park was established in 1992. Most recently The Tianfu New Area was launched in 2011 as the national level development zone of Sichuan Province was approved by state council (covering 1578 km<sup>2</sup>). It involves in total: 3 cities, 7 counties (city, district) and 37 towns and villages. Essential elements include the creation of a new Science City, and incubator for advanced manufacturing and high end service clusters.

Further details at:

Chengdu Municipal Government

[http://www.chengdu.gov.cn/english/business/2016-01/12/content\\_6316526e0cco47dbb17bc35928feb952.shtml](http://www.chengdu.gov.cn/english/business/2016-01/12/content_6316526e0cco47dbb17bc35928feb952.shtml)

## **SUPPORT PROVIDED BY CITY ADMINISTRATION, AND REGIONAL AND NATIONAL-LEVEL ADMINISTRATION, IF APPLICABLE**

The infrastructure of the development zones was constructed to meet the criteria of “seven accesses and one levelling”, which refers to access to roads, rainwater discharge, sewage discharge, tap water supply, power supply, telecommunication, gas supply, and one flattened land.

As component of the China Western Development Program, a series of preferential policies on fiscal taxation, finance, industry, land, ecological support, etc. have been issued for Chengdu. These are advantageous policy support relative to the coastal cities in eastern China.

Regarding overall industrial Development policy:

[http://www.chengdu.gov.cn/english/business/2016-01/12/content\\_093ff937155d413784ab9d9924088fa2.shtml](http://www.chengdu.gov.cn/english/business/2016-01/12/content_093ff937155d413784ab9d9924088fa2.shtml)

Regarding preferential tax treatment of foreign investors in Chengdu, including preferential policies of Tianfu New Area:

[http://www.chengdu.gov.cn/english/business/2016-01/12/content\\_4ccfb1e8bf444f578e4e0867ed15686b.shtml](http://www.chengdu.gov.cn/english/business/2016-01/12/content_4ccfb1e8bf444f578e4e0867ed15686b.shtml)

## **INVESTMENT INCENTIVES**

- Preferential policies for the Western Development Program include: Taxation (custom duties and enterprise income tax).
- Land related policies, (options for land tenure of up to 50 years, exemption of land transfer fees, and land compensation fees).

- Regarding introduction of foreign investment (capital), lower volumes of investment are required than in eastern China, and the operating period can be extended to 40 years, which is 10 years longer than in eastern China.

Further details are summarized at: [http://www.chengdu.gov.cn/english/business/2016-01/12/content\\_bfa801dabaof4c9580c59c458ac9fe18.shtml](http://www.chengdu.gov.cn/english/business/2016-01/12/content_bfa801dabaof4c9580c59c458ac9fe18.shtml)

## **FURTHER INFORMATION**

Chengdu Municipal Government

<http://www.chengdu.gov.cn/english/business/index.shtml>

<http://www.chengduinvest.gov.cn/index#/home>

Go Chengdu

<http://www.gochengdu.cn/news/invest-in-chengdu-ideal-place-for-innovation-entrepreneurship-c248p1.html>

Invest in Chengdu

<http://www.investinchengdu.com/>

Contact

Tel.: 86-028-61885500

Fax.: 86-028-61885504

## UNIDO “BRIDGE FOR CITIES” ROADSHOW IN CHENGDU, CHINA

29 August 2018

The Chengdu “BRIDGE for Cities” Roadshow was held in Chengdu, China on 29 August 2018. The Roadshow has been organized in close cooperation with the National Development and Reform Commission of China and with the Chengdu Municipal People’s Government.

The Roadshow focused on the concept of “Park City” and on how the principles of Green Economy, like the support for waste recycling, sustainable industry and urban agriculture, will contribute to the livability of modern cities. Chengdu was selected to be one of the cities for case studies, because of its experience and achievements in the field of ecological transformation. Chengdu can therefore help in identifying the steps necessary to balance industrial development and environmental protection, and how to balance rapid urbanization and improvement of urban residents’ living standards.

The debate was enriched by the presence of international economic and financial experts, representatives from Chengdu municipality, diplomatic envoys and UNIDO experts, and was followed by a series of study tours in Chengdu Jinjiang Green Park and in Guixu Ecological Park. One of the concrete outcomes of the Chengdu roadshow has been the conduction of a “Business Plan Competition”, which gathered a number of enterprises operating in smart urban technologies, urban cultural industries, circular economy and urban agriculture related to Chengdu’s concept of “Park City”.

After a pre-selection process, the top five business plans were selected and presented at the roadshow. SkyFarm – the winning company – presented an innovative project for urban agriculture, which envisages the creation of sustainable urban farms, maximizing the use of urban surfaces. The intentions of investment were also signed with the winners of the competition. The involvement of potential investors and venture capitalists in the competition ensured all the business plans to be transparent, bankable and sustainable.

In addition, several projects were collected to explore potential cooperation opportunities between Chengdu and UNIDO, including but not limited to, Dujiangyan irrigation area restoration, aquaponics farm, farmcity skyfarm, as well as e-charging.



Chengdu roadshow dignitaries with Mr. Xie Ruiwu, Executive Vice Mayor of Chengdu.

### 3. ANNEX 1

#### CATEGORY 1. INNOVATION AND ENTREPRENEURSHIP

#### CASE 1. BIG-DATA EXCHANGE PLATFORM

#### CASE INTRODUCTION

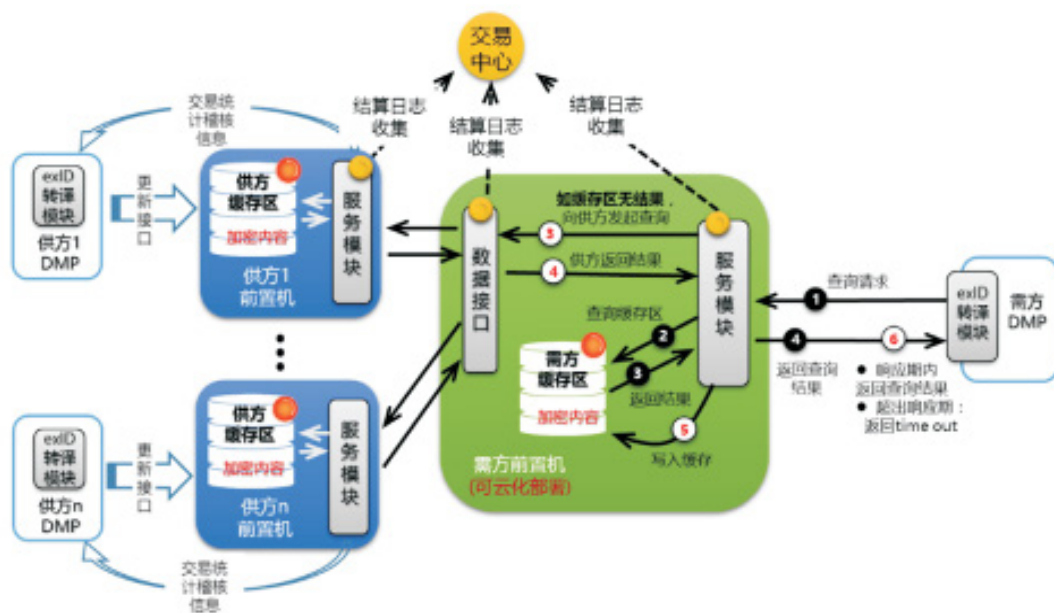
The big data transaction platform for the public described in this case study (i.e.: “data online transaction and distribution system”, hereinafter referred to as data transaction system), realizes big data for the public with the focus on these three aspects: data mining, data transaction and data application. Furthermore, the System is divided into three levels: price discovery, value transfer, and business application and thus provides a highly efficient environment for further development in the field of big data.

In light with Shanghai Municipal Government’s overall requirements like “risk controllable, technology-led, and leading in scale”, the platform construction focuses on the key issues of large-scale data circulation security. The core idea for our approach is combining technology with rules. The use of our innovative IKVLP six-element technology, independent property rights identification technology, data distribution technology with twofold encryption and data interconnection rules for application scenarios will promote data aggregation in a new way and enable the comprehensive protection of personal privacy and data security.

“IKVLP” six-element data control technology, innovative use of K-anonymous technology and “software-defined” front-end technology are used to strictly prohibit the transaction of raw data resources and ensure that only data which is anonymous and untraceable, enter the network.

#### CASE CONTRIBUTION

After establishment of Big Data Platform, the present data-collecting method will be greatly enriched so that more data resources could be used to empower various industries including finance, education, medical treatment, etc. Moreover, the platform could also bring about indirect economical increase by industries of data evaluation, data processing, and data liquidation service. A new business model is created by Data-Exchange Platform and the case is of great significance and highly innovative in data related industries.



Flow Chart of Data Exchange.





Data Connection Diagram.

## CASE 2. SHANGHAI PUDONG SMART CITY RESEARCH INSTITUTE – A RESEARCH INNOVATION PRACTICE

### CASE INTRODUCTION

Shanghai Pudong Smart City Research Institute is one of China’s leading research institutes in the field of Smart City. Business scope of the institute covers areas of strategic planning and solution of Smart City, research on development of Information Technology industry, Smart City Standard and Evaluation Index, and Capacity Building on Smart City. Besides, the Institute holds annually the China (Shanghai) Smart City Innovation and Development Summit. Holding the mission of developing into world-renowned research institute on Smart City, the institute is striving to build up a platform for governments, agencies, enterprises and other stakeholders to work together to implement the Smart City of Shanghai.

### CASE CONTRIBUTION

Ever since its establishment in 2012, the institute focuses on the field of Smart City, and has provided top-tier policy planning services to a number of major cities in China, including Shanghai. Also the institute has launched and published the “Smart City Evaluation Index Version 1.0”, and the “Smart City Evaluation Index 2.0”.

The Smart City Evaluation Index developed and released by the institute has offered a valuable theoretical foundation, implementation guidance, and an evaluation method for Shanghai in its effort to transform into a Smart City. Also the Smart City Evaluation Index will be applicable to other cities to some extent.



## **CATEGORY 2. INNOVATION ON CITY ADMINISTRATION**

### **CASE 3. SMART TRANSPORTATION IN SHANGHAI**

#### **CASE INTRODUCTION**

A national research undertaken in June 2016 shows that out of the 70 super and middle size cities in China, Shanghai ranks first in the number of users of Internet + public affairs mobile application, and the most popular application is the “Smart Public Transportation”, which accounts for 22.24% of users. The Application has become the instant helper for Shanghai citizens. Developed and put into use in the end of 2013, the Smart Public Transportation mobile application has currently covered 970 public transportation routes and 14 thousand buses.

In the bus station of Heng Feng Road in Shanghai, Miss SUN who is waiting for her bus to come comments that she needs to take Bus No. 109. Previously she always has to rush to the bus station for fear that she may miss one. Ever since she downloaded the mobile application of Shanghai Smart Public Transportation, she no longer needs to rush down as she can check the arrival time of the next bus any time she wants, which puts her mind at ease a great deal. The mobile application consists of four major functions: map of buses, bus exchanges, buses nearby, and instantaneous bus arrival. The function of Buses Nearby allows you to check bus routes within distances of 300 meters, 500 meters, and 1000 meters; the Instantaneous Bus Arrival function provides information of the arrival time and present position of the next 3 buses from your bus stop.

#### **CASE CONTRIBUTION**

Up to now there are 3.5 million downloads of the mobile application with hits amounting to 20 billion per day. Moreover Shanghai has launched other relevant transportation mobile applications including Shanghai Subway, Shanghai Parking, and Shanghai Traffic Jam Index. These applications have contributed to more smooth transportation in Shanghai by providing accurate information and instant guidance on highway, subway, parking lots, etc. It is expected that by doing so, the expressway congestion will be decreased by 20% and driving efficiency of city roads in peak hours will raise by 20%.

## **CATEGORY 3. CIVIL SERVICE**

### **CASE 4. AI CARE AND AI FINANCE, ALL FOR A BETTER LIFE**

#### **CASE INTRODUCTION**

YITU’s AI + Finance is the largest AI service provider in the sector, which has covered many areas of finance including banking, Internet finance, securities, fund, insurance, and auto finance. We are already an industry leader with 50% of market share in some segments within the FSI industry in China. YITU Healthcare owns a world-class interdisciplinary team, including technology scientists, big data experts and senior medical consultants. YITU is the first of its kind to successfully apply AI technology to clinical medical detection use for higher efficiency and accuracy at prestigious hospitals in China.

YITU is partnering with around 100 of the top Triple A hospitals on scientific research projects to constantly improve our solutions for the sector. Key partners include West China Hospital (Huaxi Hospital), Zhejiang Provincial People’s Hospital, Guangzhou Women and Children Medical Center, Zhejiang University School of Medicine Children’s Hospital, and others. Solutions for healthcare help doctors diagnose lung cancer and other diseases much more quickly by reading CT scans and identifying what might be suspicious. The products expand the doctors’ capability to make diagnoses more efficient and accurate and remarkably relieve the pressure of doctors from too much medical demand.

## CASE CONTRIBUTION

YITU Technology offers a wide range of High-tech products that contribute to the Smart City construction of Shanghai. Product Categories include, but are not limited to:

- **Branch Intelligence Solutions**

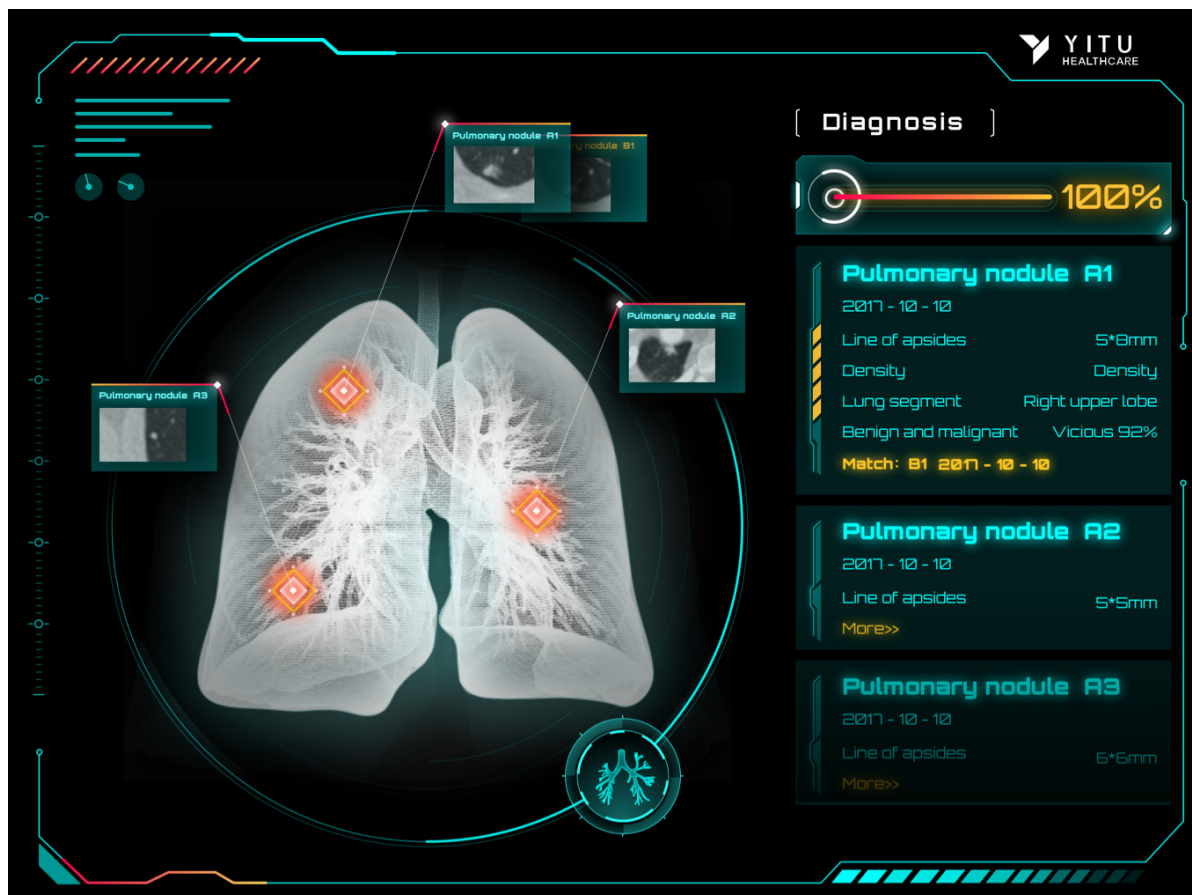
BI system can realize video surveillance and intelligent analysis on BI data on the basis of front-end snapshot camera and background public cloud.

- **Remote Identify Verification Solutions**

YITU provides identity verification by three functions including liveness detection, face verification and identity card OCR in verification SDK of mobile phone.

- **Intelligent Auxiliary Diagnosis on Chest CT Image**

Based on deep learning technology, this system can read Chest CT image within seconds, analyze sizes, characters and anatomical locations of lesions, diagnose whether they are benign or malignant by combining clinical information, and provide structured diagnosis reports.



- **Intelligent Auxiliary Diagnosis on Children's Skeletal Age**

Based on deep learning technology and TW-3 standards of bone age measurement, this system can automatically calculate children's bone age with precision of +/- one month compared to experts' diagnosis.

- **Ultrasonic Intelligent Auxiliary Diagnosis**

Based on deep learning technology and doctors' clinical diagnosis experience, this product can automatically detect suspected lesions from different types of ultrasonic images of mammary gland, thyroid gland and other organs, and provide diagnosis reports for lesion classification.

- Intelligent Auxiliary Diagnosis on Pediatric Outpatients**  
 This is a pediatric clinical assisted diagnosis product based on pediatric experts' experience, mass clinical medical records and advanced deep learning technology.
- Intelligent Medical Record Search Engine**  
 This is an intelligent platform for searching, viewing and analyzing electronic medical records, which is based on advanced deep learning and NLP technology.
- Clinical Intelligent Scientific Research Platform**  
 This assisted scientific research platform covers the entire research work flow, including clinical data preparation, data processing and data analysis.



## CASE 5. ANTS PLAN – TO MAKE EVERYONE EDUCATED

### CASE INTRODUCTION

With the belief of that “we strongly believe that only through education, can we solve the problem of poverty; only through internet, can we make the education fairer”, Ants Plan was set up by Huijiang, the largest online learning platform of China, a high-speed road of learning, which provides equal learning opportunities for learners and equal sharing opportunities for knowledge workers. Huijiang has become a successful company with 180 million registered users and 150 million mobile users, valued at over 1 billion USD and preparing IPO in Hongkong.

Responding with the national call for “Mass Innovation and Entrepreneurship”, since it’s set up in March 21, 2015, Ants plan has established nine entrepreneurial bases and a makers’ town in Shanghai. It has invested in more than 100 high-tech educational enterprises, served thousands of educational creators and provided tens of thousands of jobs. With a clear goal, it has iterated four times in the past years. The 1st version is a traditional incubator to provide education startups much cheaper office space than the market. In the small ecosystem, high-tech makers in the educational industry communicate with each other and share resources. It makes us realize that only when industries gather, can they have nuclear fusion and make great power. With start-ups developing fast, it upgraded to version 2.0, maker’s town to build a home for young makers in August 2017, by cooperating with Gaoqiao Town government to build the first educational makers town in China with lower price office and lower price apartments. Now after one year, it has become a scenic spot for innovation and entrepreneurship, receiving many visitors from governments, companies and overseas groups. Meanwhile, it also entered version 3.0. Education is the infrastructure of all industries. The core of any industry’s transformation and development is not lands or capital, but talents, so it plans to focus on the local leading industry to create an ecosystem. Ants Plan has also entered version 4.0. Last year, it received more than a hundred

batches of overseas visits. Recently, China promoted the bridgehead strategy of one belt, one road; responding to it, calls for online education to take the lead.

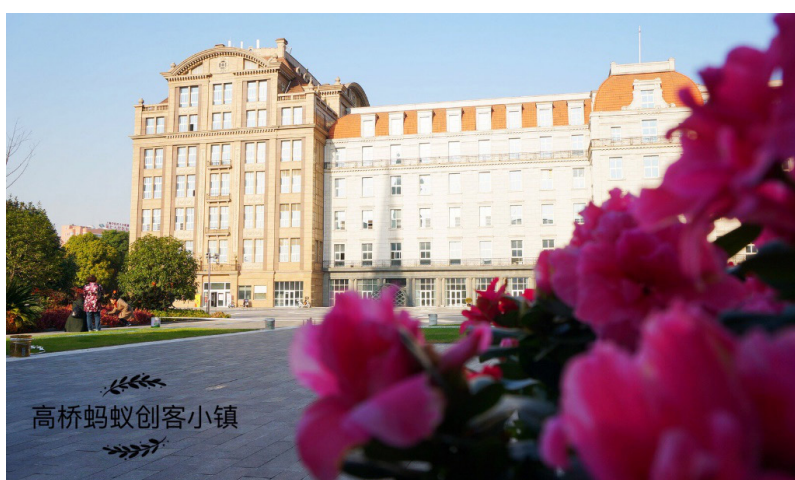
## CASE CONTRIBUTION

Through restless efforts, Ants Plan has built the educational entrepreneurial ecosystem. The first section is basic education. With technology and the Internet, we expect to make learning easier, fairer and happier. In the second section of vocational education, we aim to improve the level of employment. We establish skill colleges with secondary technical colleges and undergraduate institutions. The third section is industrial education. The core of industrial reform is talent. To promote industrial transformation, the best means is to cultivate talents to serve the local leading high-tech industries.

Ants Plan is the accompanying runner of educational makers by providing Ants Nesting to build a home for all the youth in the world. Ants Fund will incubate Ants Empire and invest in leading high-tech industries as well as Ants Education to train talents precisely serving makers. Ants Plan is also the dream partner of government in precise investment on the leading industry. Ants Plan will serve for the building of smart city by improving education.



Presentation at Harvard University.



高桥蚂蚁创客小镇

Educational maker's Town in Gaoqiao.

**CATEGORY 4. DIGITAL DRIVEN DEVELOPMENT**  
**CASE 6. SMART PORT SOLUTION BY WESTWELL**

**CASE INTRODUCTION**

Shanghai WestWell Information and Technology Company Ltd., a leading AI solution provider with core competitiveness from China. WestWell is committed to empowering various industries such as smart port, smart mines, industry 4.0 with full stack of AI solutions, with a combination of brain-inspired intelligence chips and AI algorithm. The self-developed DeepWell, is the world's 1st embedded "on-chip learning" AI chip. Referring to the bionic brain treatment method, DeepWell uses Sodium and Potassium processor architecture. After deeply studying the clients' industry operation process, WestWell team's self-developed AI solution integrated with industry operation environment that could truly solve their pain points.

Until now, WestWell has achieved commercial breakthroughs in computer vision, autonomous driving, and big data applications. Its clients are from various well-known port groups, customs supervision sites and mining companies in China.

**CASE CONTRIBUTION**

As the autonomous driving pioneer in China, WestWell has developed the world's 1st autonomous container truck and world's 1st autonomous straddle carrier in January 2018. Westwell's autonomous container trucks and autonomous straddle carriers can help logistics companies and terminals improve work efficiency and save labor cost by more than 50%. In September 2018, WestWell launched an electronic autonomous heavy truck, named Q-Truck. The Q-Truck is cab-free, with a multi-caliber customizable standard towed saddle that could adapt to needs of different manufacturers and multi-scenarios. The Q-Truck could be fully charged within 2 hours, or change battery within 3 minutes, and the mileage is more than 30km.

Since 2015, WestWell has released an AI terminal tally system called WellOcean. The system can self-identity the info of the containers and trucks. Now, WellOcean has already deployed over the terminals in mainland China. Like the company slogan says "From Human to Human", WestWell is committed to let machines imitate the way a human brain processes issues, thinking like a human, brings more AI intelligent solutions to different industries.



The world's first truly full-time driverless electric Q-Truck by WestWell.



The world's 1st driverless container truck developed by WestWell.



Q-Truck Launch Ceremony.

## CATEGORY 5. INDUSTRY TRANSFORMATION & UPGRADING

### CASE 7. BIG DATA ANALYSIS SYSTEM OF CIVIL AIRCRAFT SAFETY MONITORING

#### CASE INTRODUCTION

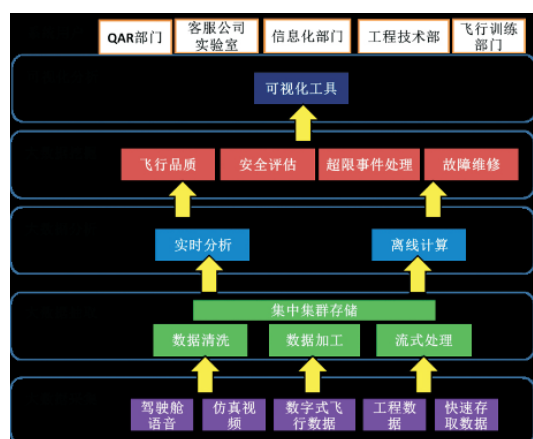
Along the new generation of IT, timely grasping the health status of the global aircraft fleet by analyzing flight-data collected cyclically, flight quality monitoring and providing the flight safety analysis as a service to customers is inevitable for the entire period an aircraft is operated. The big data analysis about civil aircraft safety monitoring in this case provides flight quality monitoring services to airlines. This system can read and download the digital flight recorder (DFDR) or cockpit voice recorder (CVR) and receive data from the airline's uploaded Quick Access Recorder (QAR) through dedicated hardware and software. At the same time, the wireless fast access recorder (WQAR) data can be pushed to the commercial data receiving server through GSM/WCDMA and the Internet.

For the ARJ21 and C919 models, the binary data of QAR, WQAR and DFDR is decoded into engineering

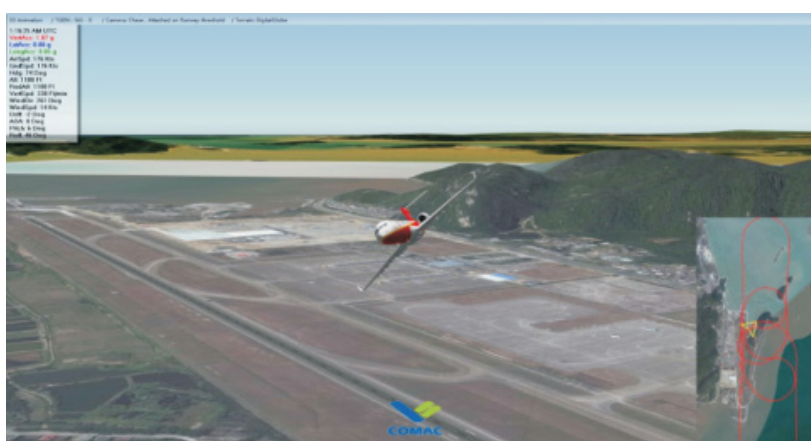
values in the decoding software such as AirFASE according to the aircraft parameter specification manual and synchronizes the time of CVR cabin sound script and flight data, in order to use the generated engineering value data to realize flight simulation reproduction. Based on the system, it can carry out over-limit event detection, data analysis and statistical analysis of different needs and assist the bureau and airlines in conducting unsafe incident investigations. It can also provide customized parameter interface services for commercial customer's service, design, and production departments as well as airlines to meet the customized flight data requirements of different business departments.

## CASE CONTRIBUTION

The application of the civil aircraft safety monitoring big data analysis system built by COMAC can provide flight quality monitoring commissioning services, and the accumulated data of flight quality monitoring can also provide essential information for aircraft design department, flight training, maintenance engineering, etc. Analytical data and feedback suggestions, assisted in the development of aircraft-based management during the entire life cycle of aircraft and provides added value to the commercial aircrafts ARJ21 and C919 in operational safety and improves the competitiveness of domestic aircraft. Based on the analysis of big data, the maintenance plan of the aircraft and the commercial operation of the enterprise are reasonably arranged, which saves maintenance and operating costs. It is also possible to reduce fuel consumption and greenhouse gas emissions through analysis of jet fuel consumption. In addition, enhancing the civil aircraft safety. The monitoring big data analysis system can provide aviation operators with aircraft safety data support, which can reduce the delay and unplanned suspension caused by flight safety reasons and ensure the convenience and safety of passengers.



Civil Aircraft Monitoring System



Simulation of airplane flying.

## CASE 8. TESLA'S NEW INVESTMENT IN SHANGHAI

### CASE INTRODUCTION

Tesla Inc. is an American electric vehicle company, headquartered in Silicon Valley, California, USA. The sales volume in 2017 reached 103,000. Shanghai Municipal Government fully supports the construction of intelligent manufacturing industry's development such as Tesla. Whilst, National Development and Reform Commission released a document that canceled the restriction of foreign proportion of shares (no more than 50%) and the number of joint ventures, which has paved the way for Tesla's deal with Shanghai Lingang Area Development Administration and Lingang group to build a new auto plant in Shanghai, its first factory outside the United States, that would double the size of the electric vehicle maker's global manufacturing.



## CASE CONTRIBUTION

The project may be seen as a demonstration one in that it will only be implemented in Shanghai. However, if successful, it is envisaged that the project may be up scaled to include more industrial sectors and/or regions and cities in China.

## CASE 9. TRANSFORMATION & UPGRADING OF INDUSTRIAL PARKS

### CASE INTRODUCTION

Long Yuan Tian Ce (LYTC) is headquartered in Shanghai, China, and takes “Industrial Park + PPP” and “Industrial Town + PPP” as its core products. At present, LYTC has invested in, constructed and operated a number of industrial parks and industrial towns, and has built a complete, green, low-carbon, modern industrial system.

### CASE CONTRIBUTION

LYTC practices ecological concepts; adheres to green development; and infiltrates the concept of “green and low carbon” into the whole process of design, planning, construction and operation management services in the park. LYTC also builds a green and intelligent energy management platform, enterprise energy management center, green ecological livable environment service, green transportation system, green energy supply system, etc. in the park, so to provide green and intelligent one-stop service solutions for enterprises participating in the park construction; promote the greening of industrial forms; help transform and upgrade local government industries; aim for an efficient, clean, low-carbon and circular economy; and promote “inclusive and sustainable industrial development”. With the aim of efficient, clean, low-carbon and circular economy, we will promote inclusive and sustainable industrial development and achieve high-quality development.



FOOTNOTE: Special Thanks to Shanghai Pudong Smart City Research Institute, who has made tremendous contribution to the selection of the Best Practices in Shanghai.

## Notes

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**UNITED NATIONS  
INDUSTRIAL DEVELOPMENT ORGANIZATION**

Vienna International Centre, P.O. Box 300, 1400 Vienna, Austria  
Telephone: (+43-1) 26026-0, Fax: (+43-1) 26926-69  
E-mail: [unido@unido.org](mailto:unido@unido.org), Internet: [www.unido.org](http://www.unido.org)



**FINANCE CENTER FOR  
SOUTH-SOUTH COOPERATION**  
南南合作金融中心

Finance Center for South-South Cooperation, 1102-1106, 11/F,  
Two Pacific Place 88 Queensway, Admiralty, Hong Kong, China  
Telephone: +852 3758-2366, Fax: +852 3758-2879  
Email: [general@fc-ssc.org](mailto:general@fc-ssc.org), Internet: [www.fc-ssc.org](http://www.fc-ssc.org)