

32<sup>nd</sup> IASP World Conference on  
Science Parks and Areas of Innovation 2015

Beijing, China

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**New Community - Industry-City Open-Type Innovation  
Community**

*Parallel session 7:*

Cities, parks and areas of innovation

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Hosted by:

## New Community - Industry-City Open-Type Innovation Community

**Abstract:** Since its birth, a science park has remained to be an effective carrier of promoting the technological innovation and accelerating the technological achievement transformation, a cradle land and disseminator of innovation spirit and innovation culture and an important part of urban, regional and national innovation systems. At present, a new round of technological revolution and industry revolution is gestating and rising in the world; the people who can accelerate the pace of technology innovation can win the development superiority and initiative in the new round of global competition. Therefore, science parks have attracted greater attention from all walks of life in different countries and regions in the world than ever. Under this background, the paper deeply analyzes the main challenges and opportunities faced by the global science parks at present, discusses the construction direction and development path of future science parks and takes Tus-Fashion Science and Technology City (Suzhou) as an example to analyze how to build the next generation of science parks - "industry-city open-type innovation communities" under the general background of fast promotion of globalization, informalization, industrialization and urbanization based on the profound influence of the mobile Internet, cloud computing, big data and other new-generation information technologies on people's work, life and social intercourse mode and the demand change of the "generation after 90s" and other new-generation innovative and entrepreneurial talents. The paper is mainly divided into the following four parts:

## I. Research Background

Firstly, analyze the major revolution brought about by the current new technology to people's work, life and social intercourse mode: in terms of business mode, the characteristics of rapid dissemination of information and the change of people's sources of information in the Internet era have had a profound influence on enterprises' business processes, competition rules, etc. In terms of urban industry development, the boundary between industries are becoming more and more fuzzy (e.g. In the production service industry and the life service industry, new technologies and new industries have changed the traditional industrial development mode and improved the traditional industries.), and the trend of infiltration and integration between industries will become increasingly obvious. In terms of urban space characteristics, the urban space compatibility will be stronger and stronger; as more and more work can be done "online", people's behaviors will be less and less restricted by space; in terms of urban management operation, the application based on the Internet of Things, cloud computing and other new-generation information technologies, social networks and other tools and methods as well as the construction of "smart" cities will greatly improve the efficiency of urban operation and management.

Secondly, analyze the current "Innovation 2.0", which stresses user orientation, social practice and mutual and open innovation so as to put forward the new requirements on the innovative and entrepreneurial environment. We shall arrange the current open innovation methods (including EU's Living Lab mode) of various countries and analyze the existing deficiency and future improvement direction of the current mode and its integration and interaction with the science park development.

Thirdly, have a social survey to discover what environments are more acceptable to the new-generation innovative and entrepreneurial talents ("generation after 90s") for their innovative and entrepreneurial activities, namely what essential factors should be available in an area to attract the new-generation innovative and entrepreneurial talents. The paper takes TusPark and TusPark (Kunshan) subordinate to Tus-Holdings Co., Ltd. as the examples to carry out the on-site investigation and in-depth understanding. The innovative and entrepreneurial core factor is "people". Therefore it is conducive to the further improvement of innovative and entrepreneurial service efficiency of science parks to fully understand the requirements of innovative and entrepreneurial talents.

## II. Existing Problems in the Development Mode of Traditional Science Parks

### 2.1 "Lonely Island" Development Mode Separating "Industry" from "City"

It is not closely associated with the surrounding environment. In particular, under China's "GDP-oriented" development mode adopted during more than 30 years of rapid development since China's reform and opening-up, most science parks and high-tech development zones not only have the problems of "industrial city ignoring life demands" caused by excessively focusing on the industrial development and ignoring the popular life demands but also have the problems of "living city ignoring industry" caused by blindly construct buildings and ignoring the development support of relevant industries. In the large cities or extra-large cities in China, the problems of long-distance commutes and "tidal" traffic congestion arising from the spatial mismatch of "industry" and "city" are especially prominent.

The four typical industrial areas in Beijing, including CBD, Finance Street, Zhongguancun West Area and Yizhuang Development Zone, are taken as an example to respectively represent the business service space, the high-tech service space and the manufacturing industry functional area. The traffic survey data in Beijing

in 2010 is used to analyze the commuting time and commuting distance of employees. The results (see Table 1) show that the average commuting distance of the four industrial areas is 10km to 13km, and the average commuting time of them is 50min to 55min, which are higher than the average level of Beijing. It can be seen that the “industry and city separation” phenomenon of industry concentration areas is more serious.

**Table 1 Comparative Analysis on Average Commuting Distance and Average Commuting Time of All Industrial Areas**

Functional area	Average commuting distance (km)	Average commuting time (min)	Average commuting speed (km/min)
CBD	12.06	55.26	13.1
Finance Street	10.39	52.12	12.0
Zhongguancun West Area	9.88	50.01	11.9
Yizhuang	12.7	52.98	14.4
Average level of Beijing	9.68	44.59	13.0

**Data source:** Li Xiuwei, Zhang Yu. “Industry and City Integration” Development of Beijing Based on the Implementation of Urban Planning [C]. China Conference, 2013.

## 2.2 The Obvious “Homogenization” Problem in Science Parks

In terms of urban planning and construction, the south is the same as the north, large cities are the same as small cities and the inside and outside of the city are the same. The local characteristics, historical characteristics and national characteristic are cast away like a pair of worn-out shoes, but the similar lawns, squares and sculptures replace them to form the similar urban street scenes in different places or areas. The similar science parks and residential communities have been built largely, which lose their own cultural characteristics and are difficult to find their own soul end-results; in terms of industry development, they lack the endowment combination with local resources; the following-suit and blind construction causes the cutthroat competition of industry development between science parks and further results in serious “isomorphism”.

## 2.3 Loose Contact between the Members in Science Parks

The lack of the effective “communication space” results in failing to give full play to the innovative “aggregation” effects of science parks. On the one hand, there is not the mutual cooperation and exchange platform between the members in science parks, and the enterprises only carry out the “physical” aggregation in space and lack the chemical reaction generated by the “exchange and cooperation”; on the other hand, the “enclosing wall” development lacks the exchange with the surrounding environment; in addition, there is also no exchange and cooperation between science parks, and therefore science parks fail to become the real “nodes” of science park development network.

# III. Main Characteristics of the Industry-city Open-type Innovation Community

## 3.1 Fully Integrated into the City

Science parks and technological innovation areas should not be the independent plots in the city; the traditional real estate mode of “good plot for high profits” will no longer be competitive in the future, and therefore the development of future science parks shall pay more attention to the connectivity of the whole city and the integration with urban development and the science park planning and urban planning shall be comprehensively considered in the future. Another reason for promoting the integrative development between science parks and cities is that the science park should be the undertaker of regional and urban innovation mission. Wang Jiwu, the president of Tus-Holdings Co., Ltd., has pointed out that the science park boundary will disappear with the integration between science park development and city development and the trend of “the large science park will become larger, and the small science park will become smaller” will occur in the future. Regarding “The large science park will become larger”, for instance, Zhongguancun and even a larger urban area can be used for technology innovation and used as the science park, and the whole Beijing city can be regarded as a large science park; “the small science park will become smaller” means that science parks will develop towards a more professional direction. Additionally, the future science parks and incubators should be integrated into not only the whole city but also the rural development system; urban development and rural development are closely related; for instance, the biological science and technology may be related to the agricultural production in all aspects and therefore they can form one or several study clusters in the science park. Thirdly, in the functional form, the professionalization should be a very important trend of science park development. In the era with the rapid change of external development environment, the science park should continuously pay attention to one or several field to ensure its sustaining leadership so as to realize the professional development.

### **3.2 Close Contact between the Members in the Open-type Innovation Community**

In the current world, entrepreneurs’ thinking is more meticulous, the financing mode is more complex, the short-term profit demand is more prosperous, and the development of social network is more rapid. Therefore, science parks should create a more open environment, build more hub-type incubators and establish more exchange and cooperation platforms. Firstly, establish a contact between new graduates and industries to help them understand the market. Under the circumstances, the network relation between parks and between park and enterprise is very important. Secondly, connect successful enterprises with newly-established enterprises to generate a “chemical reaction” between them. This is just like a large number of molecules interacting in the chemical reaction; it is impossible for us to control the reaction between molecules, but we can establish a good platform and then see what happens here after a period of time. Thirdly, make enterprises more directly connect intellectual properties with wealth creation. At present, the cooperation between university and enterprise promotes the transaction and technology transfer of intellectual property, and there are still many problems occurring in the United States. Fourthly, establish the closely-linked communities in science parks to have the good exchange and cooperation between individuals, so as to remove obstacles, enhance the trust between people, and support the cooperation or innovation.

### **3.3 Build the “Virtual” and “Real” Innovation Communities via “Internet+”**

Firstly, the application of cloud computing and Internet will result in the significant change of science park form, and all services and support provided for enterprises today can be realized in the network and cloud; in addition, the current entrepreneurs of “generation after 90s” more need the portable and mobile office space with low cost, and therefore the future science parks with physical form may be more and more unimportant and science parks will more tend to the “virtualization” or “virtuality and reality combination”. Additionally, the penetration of the current Internet (especially mobile Internet) into people’s work, life, social intercourse and other fields is ubiquitous; for the development of science parks in the future, the “Internet + science parks”

mode and the ubiquitous and widely-connected innovation communities shall be built. Under the promotion of new formats and new forms of the Internet, TusPark Operation Management Co., Ltd. puts forward the “Internet + science parks” operation mode which integrates the “Internet+” with the business of traditional science parks and industrial parks and simultaneously is added with ubiquitous computation, data and knowledge, so as to create the ubiquitous innovation atmosphere. Based on networking and big data, the TusPark operation system carried out the work of park planning, investment and intelligence import, innovative service, property management, customer relationship system, park network support and other aspects.

#### **IV. Case Study of Tus-Fashion Science and Technology City (Suzhou)**

TusPark (Suzhou) is a new-generation high-tech park invested, constructed, operated and managed by TusHoldings in Suzhou Industrial Park, which is located at the core area of the Blue Sword Lake in the north of Suzhou Industrial Park and has a total land area of 133,333.46 square meters (200 mu) and a total building area of about 175,000 square meters.

TusPark (Suzhou) fully absorbs the development essence of international top-level science parks and takes the “wisdom, low carbon and fashion” as the development concept so as to build a new-generation international and smart demonstration park of technological innovation and entrepreneurship. In terms of IT infrastructures, we shall adhere to high standards to achieve the full coverage of the cloud computing environment, so as to provide the work, life style and “poetic dwelling” space in line with the “cloud computing” information era for the park-entering enterprises and individuals and easily share the convenience and fashion brought about by the “cloud computing” and “Internet of Things”.

##### **4.1 Overall Concept**

Science and technology are the first productive force; finance is the first driving force; culture is the first soft power.

The integration development of science & technology, finance and culture is the only way to accelerate the economic transformation and upgrading and implement the innovation-driven strategy.

Trend of business mode innovation

Ubiquitous networking

Ubiquitous financialization

Ubiquitous fashion-orientation

##### **4.2 Combination of Online and Offline Incubation Spaces**

Under the background of the rapid penetration of the Internet and especially the mobile Internet into the innovation and entrepreneurship, Tus Fashion Science and Technology City (Suzhou) keeps pace with the times to launch the O2O incubation mode: On the one hand, the online incubation services are established through various innovative and entrepreneurial service platforms, including (1) smart park management system, (2) smart innovative and entrepreneurial system, (3) smart retail and business circle system, (4) culture and art copyright trading system and (5) traditional enterprise e-commerce evolution platform; on the other hand, the diversified group innovation space clusters are actively built, including (1) Tus Entrepreneurial Plaza and incubator cluster, (2) various technological innovation spaces mainly used as offices, (3) various culture innovation spaces mainly used as studios, (4) SHOWROOM and various show fields and (5) fashion

life experience and exhibition center, etc.

**4.3 Build the Characteristic Parks through the Full Use of Local Dominant Culture Resources in Suzhou**

Suzhou is a fashion city in the world, which has led the fashion for hundreds of years. “Suzhou Image”, “Suzhou Pattern”, “Suzhou Artistry” and “Suzhou Style” form the complete, mature and advanced industry chain of design, manufacturing, promotion, sale and even right of speech of fashion products. From the history review to the envisagement of reality, the development of fashion industry is an important grasp on the economic transformation and upgrading of Suzhou at the present stage. Based on the superior resources of Suzhou, Tus Fashion Science and Technology City (Suzhou) not only promotes the deep integration between scientific technology and culture and builds the “everlasting CCDIE”, but also prepares to establish Tus Fashion Institute, holds International Fashion Week and Designers Carnival and constructs the fashion life show experience block in the spatial form. In addition, the establishment of fashion industry (designers) incubators and fashion industry funds promotes the traditional folk craftwork and industrial art modernization of Suzhou.

**4.4 Promote the Industry and City Integration to Build the Closely-connected Work-life Space**

Firstly, the functional division of Tus-Fashion Science and Technology City (Suzhou) follows the principle of “local division, overall integration”, and the appropriate crossing and overlapping of urban functions create the ambiguity space and promote the industry and city integration, life and work integration, life and entertainment integration, scientific technology and culture integration, etc. Secondly, the principle of “walking guidance” is advocated to arrange the living, employment, education, shopping, culture and other functions within the range of walking distance (about 500 meters) so as to form the complete walking space system. Thirdly, the principle of “friendly neighborhood” is advocated to create various indoor and outdoor communication spaces and closely connect the home life with public activities so as to promote the vigorous development of neighborhood communication.



Figure 1 Functional Structure of Tus-Fashion Science and Technology City (Suzhou)