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# Construction of Government-oriented Maker Space’s Entrepreneurial Ecosystem ：A Case Study of Golden Port Maker Workshop

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**ABSTRACT**

In recent years, government-oriented maker space has developed rapidly, in order to promote it develop healthily and orderly, it is necessary to build an entrepreneurial ecosystem faced with government-oriented maker space scientifically. Golden Port Maker Workshop is used as a case study to build an entrepreneurial ecosystem. To analysis with the participating subjects and external environment which proposed in the model, three strategies are given including upgrading the entrepreneurial ecosystem’s internal functions, improving the entrepreneurial ecosystem’s self-organization ability, accelerating the entrepreneurial ecosystem’s agglomeration effect, which promotes the sustainable development of government-oriented maker space in China.

## 1. Introduction

Chris Anderson says in the ‘The new industrial revolution’ that the third industrial revolution is the industrialization of the maker’s movement, that is, self-manufacturing products and personal self-production. In this innovation time, thousands of designers and inventors have already appeared, which indicates the beginning of ‘Maker space’. In 2010, maker and maker space entered into China, Shanghai new workshop became the first maker space in China. In 2015, Premier Li Keqiang convened the meeting to support the development of maker space, the word ‘maker space’ was first seen in the central documents. With the development of maker space in China, maker space has become the important position and gathered innovative entrepreneur of ‘mass entrepreneurship and innovation’. The statistical results of ‘2016 Maker Space Development Report’ shows that as of October 2016, there are 3155 maker spaces in total in China. The tencent institute forecasts that there will be more than 4000 maker spaces at the end of 2016. The file of the State Council says that we should focus on key industries to create industrial innovation ecological community and focus on regional economic development to build entrepreneurial ecosystem. So, building the maker space entrepreneurial ecosystem scientifically has become an imminent major issue.

## 2. The theory model of government-oriented maker space’s entrepreneurial ecosystem

Maker space is the important carrier of ‘mass entrepreneurship and innovation’. The innovation mode has changed while innovation and entrepreneurship have been paid more attention. It has developed to the network integration patterns which emphasizes mutual connection and function of enterprises. Innovation shows the nature of multiple participation and multiple factors, which makes it be difficult to predict the success of entrepreneurial behavior in maker space. Therefore, it is necessary to use a tool to analyze the relationship between the public space and the participants from the macro perspective. Therefore, it can be regarded as an ecological system of maker space and its external participants.

Spilling proposed entrepreneurial ecosystem first. At present, the academic circles believe that there are two types of entrepreneurial ecosystems. One is Cohen and Isenberg’s side of view, they think that the entrepreneurial ecosystem is the entrepreneurial enterprise's external entrepreneurial environment which includes the participating entities associated with start-ups and their corresponding business environment[1,2]. The other is Vogel and Mason & Brown’s side of view, they think the entrepreneurial ecosystem should include start-ups and their external environment[3]. Foreign scholars have put forward the structural model of many entrepreneurial ecosystems, which put forward by Isenberg, entrepreneurial ecosystem framework (hereinafter referred to as the Benson framework) as the most representative. The framework includes the factors of policy, market, human capital, financial, cultural, and support[4]. Bell-Masterson argues that the entrepreneurial ecosystem consists of four species of density, mobility, connectivity and diversity[5]. Mack & Mayer study the six elements of the Benson framework in the evolution process of entrepreneurial ecosystem in the four stages[6]. Dai and Ni use the Benson framework to research the elements of maker space’s ecosystem[7]. Chen summarizes the constituent elements of maker space’s ecosystem[8].

In conclusion, the Benson framework which is proposed by Isenberg provides strong theoretical support for the entrepreneurship ecosystem components. Nowadays, the study of maker space ecosystem of the community is based on the Benson framework. Therefore, this paper uses the Benson framework to construct the government-oriented maker space’s entrepreneurial ecosystem model (figure 1), to further test the effectiveness of the Benson framework in the government-oriented space.

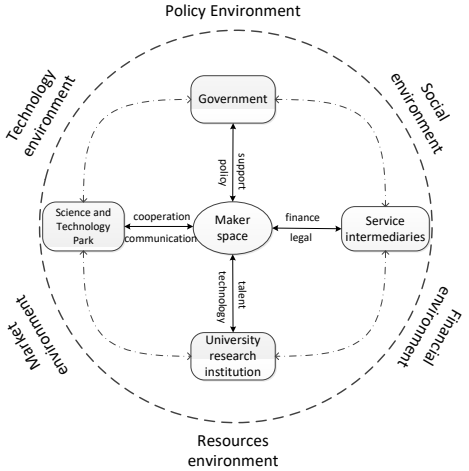

**Figure 1 government-oriented maker space's entrepreneurial ecosystem model**

Government-oriented maker space is that during the early development of maker space, the government takes a series of measures to build a sound ecosystem, in order to guide and lead the development of maker space. The establishment of the model embodies the government's leading role in the whole ecosystem. The government provides policy and subsidy support for maker space, thus creating a policy environment for the industry as a whole. Enterprises in science and technology park not only engaged in high-tech industries, but also contain a total of the space industry chain associated with the upstream and downstream enterprises. University research institutions provide technical guidance and transport the talent for the maker space. The effective integration of scientific research institutions and science parks in colleges and universities provides a good atmosphere for science and technology environment, resources environment and market environment. Service intermediaries provide space for financing, legal and other financial services. The government guides the policy, finance, talent, market and other environments to create a 'mass entrepreneurship and innovation' social environment during the maker space.

## 3. Case study

According to the above-mentioned entrepreneurial ecosystem model, government-oriented maker space is mainly composed of multiple participants and its external environment. The relationship between them promotes the relative stable development of entrepreneurial ecosystem. On the one hand, it can reduce the cost of public space, but also can promote the innovation and communication among the participants. It can improve the overall competitiveness of the participants in the entire ecosystem too. Golden Port Maker Workshop has a strong representative of the government-oriented maker spaces in Zhenjiang, so this paper choose Golden Port Maker Workshop as a case study.

### 3.1 Participating subjects

As the direct participant in maker space, it is composed of three parts: start-up enterprise, start-up project and entrepreneurial service. Golden Port Maker Workshop was set up in 2014, reformed by Thorpe Group Building, which is an entrepreneurial ecosystem of investment, incubation and service. At present, 33 enterprises have settled in Golden Port Maker Workshop. The diversity of internal projects not only promotes the development of the internal economy of the workshop, but also improves the employment rate of Zhenjiang, which stimulates the social and economic vitality.

Government, science and technology park, university research institutions and service intermediaries are the indirect participation entities in the entrepreneurial ecosystem of Golden Port Maker Workshop. Zhenjiang government promotes the development of the workshop, not only gives full play to the financial capital of the guiding role, but also provides convenient from the policy subsidies, infrastructure use, welfare benefits and other aspects of the development of workshop. Science and technology park and university research institutions provide a large number of entrepreneurial talent and creative results for the development of workshop which can effectively transform the innovative elements into innovative results. Service intermediaries, including banks, investment companies, law firms. The operation of the internal start-up enterprises provides financial, legal and other services to reduce the entrepreneurial enterprises in the actual operation of the difficulties.

### 3.2 External environment

The policies formulated by the government for the establishment of the workshop can not only improve the interests of the venture enterprises within the workshop, but also create a favorable policy environment for the development of workshop. With the help of files 'The implementation plan of developing maker space to improve mass entrepreneurship and innovation', 'Identify management regulations of maker space in Zhenjiang' which issued by Zhenjiang government. Golden Port Maker Workshop raises a series of support policies including the introduction of housing subsidies, patent subsidies, fund support, corporate security, listing support and tax incentives.

Effective talent and technology input can improve the vitality of innovation and entrepreneurship, which can enrich the elements of innovation and create a good environment for science and technology. The workshop is adjacent to Jiangsu University, Jiangsu University of Science and Technology. These two colleges can not only provide excellent entrepreneurial talent for the workshop, but also have excellent entrepreneurial tutor for the incubation of workshop to provide a professional perspective of business guidance.

In the entrepreneurial ecosystem, the successful operation of venture capitals cannot be separated with registered of financing, intellectual property, legal advice and other services. Creating a favorable financial environment for the orderly development of enterprises can reduce obstacles. At present, Golden Port Maker Workshop has cooperated with banks and financial enterprises including Industrial and commercial bank, Postal savings bank, Jiangsu bank, Kang Cheng heng capital management company, Clay innovation fund management company limited, Cocoa capital and financial consulting.

The development of internal start-ups is a market-oriented. Demand determines the market supply, only position the market accurately, can it achieve the success of business. On the one hand, the workshop can use the market has developed in Zhenjiang, and cooperate with the enterprises in Science and Technology Park. On the other hand it can also rely on Thorpe Group's favorable resources to complete the success of the internal project incubation, to open up new markets for Zhenjiang, in order to provide a new innovative start-up market.

The workshop is the carrier of the successful incubation of the venture enterprise project, which provides a rich resource environment for the start-up enterprises. The current venture business is not satisfied with the simple physical places, what they need is a free space to let them initiate creativity, then exchange the collision, ultimately become creative results. Therefore, the workshop in the provision of the necessary physical sites and infrastructure at the same time, also need to constantly improve the service system, integration of multi-resources, to build a sound entrepreneurial ecological system.

Entrepreneurs are affected by social and cultural factors. The quality of entrepreneurial entrepreneurs and the unique cultural background of Zhenjiang constitute the cultural environment of the workshop. At present, the workshop has become an innovative business atmosphere of 'encouraging attempt, allow failure'.

## 4. Policy suggestions

### 4.1 Upgrade the internal functions of the entrepreneurial ecosystem

At present, Golden Port Maker workshop has basically formed a government-oriented entrepreneurial ecosystem. Although the internal participation of the ecosystem provides a comprehensive service, however it is lack of targeting. The orderly operation of a well-established entrepreneurial ecosystem is closely related to the service function of the participant, so it is imperative to upgrade the internal functions of the ecosystem. For workshop itself, it should clear its own characteristics, to create a different platform. In order to provide a strong guarantee for the development of the workshop, it is necessary to speed up the delivery of service platform.

### 4.2 Improve self-organization ability of entrepreneurial ecosystem

The self-organization ability of the entrepreneurial ecosystem needs the help of policy environment, the market environment and the resource environment. The operation of the entrepreneurial ecosystem of the workshop also requires the guidance of

the government, and the self-organizing ability needs to be improved. It is necessary to build a sound policy environment to provide legal support for the creation of internal innovation and entrepreneurship. Relying on the

rapid development of the Internet, strengthen the integration of information resources with reasonable planning of the participants in the spatial layout, to improve operational efficiency and enhance the entrepreneurial ecosystem self-organizing ability.

**4.3 Accelerate the agglomeration effect of entrepreneurial ecosystem**

The development of innovation and entrepreneurship project is a process of industrial cluster. It is a whole chain of industrial chain which contains 'creative - business – industry'. The start-up of the internal business of the Golden port workshop limits the development of industrial clusters. The government should guide the development of work space with a reasonable planning of geographical location, through the sharing of infrastructure, service platform and other public resources with minimal cost to complete the maker space's geography of industrial agglomeration. The workshop itself should also strengthen the training and exchange of innovative and entrepreneurial activities to speed up the gathering of internal innovation and entrepreneurship. Making good use of the Internet platform by organizing a similar variety of space to participate in the exchange is important. Finally realize the virtual gathering of maker space.

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