High Tech Industrial Parks in Beijing and Shanghai: The Production of Space and Space of Production

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1, Introduction

During the past two decades, high-tech industrial parks (HTIP) are increasingly being promoted as growth engines in various cities in China to facilitate regional and urban development as well as to generate technological innovation. Large amount of urban and agricultural lands were redeveloped to support the dream to become high tech nodes in the global technological production networks. Among them, Beijing’s Zhongguancun (ZGC) and Shanghai’s Zhangjiang high-tech park (ZJP) have been regarded as the most ambitious and innovative projects that might be able not only to attract huge amount of foreign investments but also to generate endogenous innovation due to the enormous human resources of these two mega cities.

Indeed, the Chinese state in the late 1980s had installed two very important reform programs to rejuvenate the aged R&D system in China, the first one was the 863 plan (1986) and the other was the Torch Program (1988). The former aimed to pool resources and scientists together wherever possible as to bridge and to keep up with international high-technology development in several high technologies. Whereas the latter was intended to learn the experiences and success of the Silicon Valley in order to build China’s technopoles as to revitalize China’s traditional industry, and to promote the creation of new and high-technology enterprises (Wang, et. al.,1998; Zhou, 2005; Segal, 2003). It was in this circumstance that ZGC was designated as China’s first HTIP in 1988, Shanghai soon followed suit. By 1993, 52 nationally recognized zones existed throughout the country, cover 28 of the 31 provinces, autonomous regions and centrally-administrative municipalities. These HTIPs soon have become the growth poles of each region, especially in the city, that mingled high tech industrial development with high rise spectacle in the real estate sector. High tech industrialization has thus mixed up with high rise urbanization, especially in the two major world cities in China, Beijing and Shanghai, which our paper is focusing upon.

We regard the creation and re-creation of HTIPs in China in general and in Beijing and Shanghai in particular as a process of space production in which spatial transformation concurs with China’s pursue for modernity through the strategy of re-territorialization. In this aspect, as Harvey argues, modernity entails the conquest of space, the tearing down of all spatial barriers, and the ultimate ‘annihilation of space
through time’ (Harvey, 1989:205). Thus, to the central state, it wants to open its territory to global capital so as to attract foreign investments and to demand for most updated technologies; to the municipal governments, they want to reorganize urban space through the strategy of building a new HTIP so as to pursue for rapid capital accumulation and technological innovation; and to the district governments, they are able to use the high-tech banner to attract capital investment, especially in the real estate sector. High Tech Park becomes a representation of progress which is hoped to bring high value-added economic activities to the locality and ultimately contribute to the district governments’ revenue. Ultimately, HTIP becomes a territory that fused with various forces that are contesting for its formation and space production.

This paper will be organized as follows. Next section will be the theoretical part that discusses HTIP and re-territorialization process in the globalization age. Following this is the third section that deals with the case of Beijing’s ZGC; the fourth section will discuss the case of Shanghai. The fifth section is discussion and conclusion.

2. High-tech industrial park as a re-territorialization project

Urban development has been experiencing a great transformation in the age of globalization. In the world of fast information flows, cities and regions are regarded as more flexible to adapt to rapidly changing conditions of market and technology than are national governments. Technopoles, THIP is a representation form, have been planned and installed everywhere to promote knowledge learning and creation and to generate national and regional wealth. Technopoles here are defined as cities or regions that ‘contain significant institutions of a quasi-public or nonprofit type, such as universities or research institutes, which are specifically implanted there in order to help in the generation of new information’ (Castells and Hall, 1994: 1). In order to build technopoles, cities or regional governments have to create conditions for firms to reside, negotiate with multinationals for them to stay and foster conditions to nurture small venture firms. In other words, an innovation milieu that involves a favorable condition of social, economic, institutional and cultural environments that may create a synergy effect for knowledge creation has to be implanted (Castells and Hall, 1994: 9; Camagni,
1991). The development of Silicon Valley has become an embryo model for the rest of the world to imitate. Beijing and Shanghai are not exception.

To create an innovation milieu in fact is not only a project for spatial reorganization, but also is an image-making venture that is central to market competition for investment. In order to create a new space for innovation, leaders of city government become entrepreneurs that engage in reorganizing city physical spaces in global campaign for attracting foreign and domestic firms. Thus, technopoles are also space project that involves creative destruction on which certain old historical spaces are destroyed and new spaces are created for building an environment of knowledge creation. Urban entrepreneurialism becomes the political and social representation of the current stage of city and regional competition (Harvey, 1989).

According to Harvey (1989), capitalist accumulation can only continually accelerate temporally and spatially. It is based on both immobile configuration of territory and socially constructed institutions that enable capital circulation. Therefore, each successful round of capital accumulation has been built upon the existing socially produced infrastructures that enable the accelerated circulation of capital through space. Harvey’s perspective on the historical and spatial dimension of capital accumulation can better be described by Massey’s (1984) view that emphasizes the sedimentation of historical layers of a local area. Massey argues that each local area contains not only one form of economic structure; instead, it is a product of long and varies histories. Some forms of organization die away, while some still linger on that have influenced over new round of development. Therefore, viewing from this perspective, ‘the structure of local economies can be seen as a product of the combination of ‘layers’ of the successive imposition over years of new rounds of investment, new forms of activity’ (Massey, 1984:114).

In the globalization stage, the state’s effort in strengthening the economy’s competitiveness and local state’s entrepreneurialism to attract new round of capitalist investments reflect a multi-scalar reconfiguration of territory (Brenner, 1999; Jessop, 2002). For the state, the post-Fordist globalization conditions have facilitated it to loosen domestic regulations in favor of the imperatives of capitalist accumulation. The competitive state has emerged to create friendly investment environment in order to
keep the economy being innovative and competitive (ibid). This re-articulation of the global with the local is an attempt to create a new spatio-temporal fix for managing the local economy to meet the globalization demand through which the valorization of capital can be processing in a much more globalized scale toward a knowledge-based economy.

For city managers, current urban governance has become much more oriented to the provision of a ‘good business climate’ through which all sorts of construction are underway to lure capital into its territory. Although there are no clear receipts, a technopole or HTIP is one of them, to predict which types of plan will success in bringing new investments, city governments are forced to adopt approaches that increase the amount of fixed local infrastructural investments to attract mobile global capital. Space reconstructions and various image-making programs are undertaken to promote the city’s competitiveness. New growth machine, which contains especially the real estate sector, is formed to promote the city’s rejuvenation and re-orientation (Logan and Malotch, 1987; Wu, 2002; Jessop and Sum, 2000). Nonetheless, the interest of the real estate most of the time is in conflict of the interest of industrial sector because the former tends to push up the land price which will eventually hurt the latter’s interest that requires lower investment cost.

Nonetheless, territorialization is also a social process that involves power and resistance. When the central and local states tore down the spatial barriers for HTIPs, they reorganized the city and evacuated the places where people have inhabited for over a long period of time. HTIPs have become a legitimate project for local states to pursue for progress and pressure local residents to comply with it. In China, this new urbanism triggered a large amount of protests and local resistances (Hsing, 2010) through which many local residences were reallocated elsewhere. As the local states continue to pursue for industrial development and innovation, more lands are needed, and more people are evacuated. HTIP becomes spectacle that is in line with naked requirements of land for capital accumulation.

In sum, space is not merely a physical container within which capitalist development unfolds. It involves social and political elements and ultimately shape the ways in which the economy is developed. By encountering the increasingly globalized
world, the state, local government and related actor are continually constructed, deconstructed, and reconstructed the historically specific areas through which multi-scalar re-territorialization has been proceeded to facilitate capitalist accumulation and innovation (Brenner, 1999:42).

China in this specific historical era has been focused much on using the HTIP strategy to develop its economy and to catch up technology with the advanced countries (Ge, 1999; Wu, 2002; Zheng, 2010). As can be imagined, due to each city’s history and various types of heritage, city governments have different capacities and ways to build HTIPs. As will be shown, Beijing’s and Shanghai’s district governments’ have fully utilized the HTIP strategy to develop their economies and to upgrade their development level. In the process, not only the city’s spaces are re-territorialized, but also the city’s territorial organizations are transformed to fit the demand of capital accumulation in a global scale. Details are to be discussed in the following sections.

3, Beijing’s ZGC – China’s Silicon Valley is everywhere in the City

Beijing’s ZGC is described as the most innovative region in China (Segal, 2003; Zhou, 2005, 2008). The achievement of ZGC has been an accumulated and evolutionary process of institutional reforms and learning. At the initial stage of the reform in the early 1980s, the area emerged spontaneously due to the increasingly emergence and concentration of non-state own enterprises in the areas of Haidian district where Tsinghua, Peking Universities and the Chinese Academy of Science (CAS) were located. As the state recognized its potentiality to imitate Silicon Valley in the U.S., because of its high concentration of prestigious universities and R&D institutes¹, ZGC was granted the status of experimental zone to develop. Due to the

¹ There are 68 universities (including China’s most prestigious universities, Peking and Tsinghua), 213 state-sponsored R&D institutes (including the Chinese Academy of Science, CAS), and over 300 thousand students in Beijing. Moreover, Beijing hosts over 36% of the honorary fellows of the CAS and Chinese Academy of Engineering. These figures all indicate that Beijing has more abundant science and technology personnel compared to all other cities in China (ZGCAO, 2008).
limitation of space and to the financial incentives of district governments, the label of ZGC has been extended to other areas beyond the original Haidian district. The synergy of state policies and local states’ initiatives has created an effect of high-tech booming in ZGC.

3.1 ZGC as a technopole project- The central state’s policy

During the earlier stage of China’s economic reform, the Chinese central state had undertaken various incremental approaches to reform the ailing economy that were especially related to the purpose of our research. One of them was the fiscal reform that unleashed the material incentives for local officials to promote their local economies (Oi, 1992, 1995). The second was the reform of the science and technology (S&T) policy that encouraged local government to establish HTIP for promoting foreign investment and the growth of the economy.

China’s fiscal reforms in the early 1990s clearly redefined the localities’ share of the tax revenues and granted them the rights to the fiscal surplus, or residual. In 1994, China experienced a fundamental fiscal decentralization reform called the tax assignment system reform, which included the central-local revenue sharing on a more transparent, objective basis. Local government was granted the power to generate extra-budget revenue beside the fixed ratio of tax. For example, according to the regulation of the state, 60% of land taxes belonged to local government, the rest of 40% belonged to the central state. However, among the 40% of the taxes, 35% will reimburse to local government. Therefore local government has strong incentive to lend the land to developers, because as high as 95% of the income generated by land leasing will return to the pocket of local government (Zheng, 2010:93). This financial decentralization led to the emergence of ‘local state corporatism’ (Oi, 1995), through which local governments tended to push local economic development even without regard for national objectives (Segal, 2003; Zweig, 2002). Local officials routinely manipulate regulations to allow enterprises to receive the maximum tax advantages and exemptions. This keeps more revenue within the locality and adds to the competitive advantage of the enterprises, which also means that of the locality (Oi, 1995:1148).
The unleash of local government’s drive for economic development was also related to the policy of developing the Economic Technology Development Zone (ETDZ, 經濟技術開發區). Local governments used tax incentives or subsidies to attract foreign capital into the zones to create economic growth. These zones needed be approved and regulated by the central state (the Ministry of Commerce), or by provincial government, or by local government. In 2003, there were 6866 ETDZs in China, many cities owned more than one ETDZ. But because the development of ZTDZ had created many problems, especially the forced evacuation of farmers from the land, the central state strictly regulated this development in 2004 and the number of ZTDZ has largely reduced (Zheng, 2010:50).

HTIP was one of the special types of development zones which was promoted and administrated by the Ministry of Science and Technology (not the Ministry of Commerce) in the central state. This HTIP was meant to develop Chinese high technology industries in order to catch up with the advanced countries. The Chinese state’s specific S&T project in developing HTIP was the Torch Plan which was initiated in 1993. By studying the success of the development of Silicon Valley, the Chinese government wanted to use the Torch Plan to promote high tech parks in the country as to create environments conducive to the development of high-tech industries by combining research with production activities. Nevertheless, the Torch Plan did not have much funding as other state initiated projects, the Torch High-Technology Industry Development Center acted like a fund-raiser and broker that collaborated with local government to provide necessary infrastructure and preferential tax and financial incentives to support the development of high tech enterprises (Segal, 2003).

The emergence of ZGC has to do with the reform of China’s S&T system which allowed scientists and engineers to create their own enterprises. In the early 1980s, many non-state sector enterprises were increasingly located on ZGC, or ‘Electronic Avenue”, in Beijing’s Haidian district and showed enormous innovative potentiality of the non-state sector. In 1988 the central government decided to develop this area as the ‘Silicon Valley of China” or called the Beijing Experimental Technology Zone (BEZ). This was the first high tech zone recognized by the central state.
In the initial stage of BEZ’s development, the main administrative office that was responsible for the management of the zone was established under the Haidian district government. In the process, because of the inclusion of other parts of the city into BEZ, a new administrative office was set up under the city government in 1997 to do the coordination works among districts; whereas the zones in the various districts were still managed mainly by district governments. As BEZ had brought about significant number of new high tech enterprises to reside, Beijing city government applied to the central state to reform the administration system in order to speed up technological innovation. In 1999, the central state agreed to rename BEZ as ZGC and set up a new administrative office under the city mayor, called ZGC administrative office with an advisory committee consisted of members such as city Mayor, Minister of Science and Technology, Minster of Education, Deputy President of the Academy of Science, vice Mayor and some university presidents (ZGCAO, 2008). The central state determined to establish ZGC to become one of the most innovative regions in the world.

ZGC has developed rapidly since its inception in the late 1980s and has included even more zones developed by different district governments into it. Although ZGC develops rapidly, it in general still has not created domestic world class enterprises and any leading-edge product. Instead, the booming of the real estate sector in every zones of ZGC has largely transformed the landscape of the city. In 2009, the State Council supported Beijing government’s proposal to re-create ZGC as a National Innovation Demonstration Zone (自主創新示範園區) as to speed up innovation and to create world class enterprises.

3.2 ZGC as city government’s reterritorialization project

Different from HTIPs in other places, such as Taiwan’s Hsinchu HTIP, where the park was originally located in rural agricultural area that was much easier to clean up for development, Beijing’s BEZ was initially located in established city district. The initial plan of BEZ in the earlier stage was to develop 100 acres in Haidian district to host high tech enterprises; however, because of the concentration of buildings and people in this area, the lands that were able to develop were only 10 acres. In the means times, both Changping county and Fengtai’s district governments were eagerly applying to Beijing city for new experimental economic zones in their jurisprudence as
to boost their local economies. These two districts were finally included into BEZ in 1991 as Beijing city government and central state decided to expand the development area of BEZ in order to provide the needed lands for hosting incoming enterprises, especially for manufacturing activities that were not suitable to be located in the inner city.

As the development of BEZ was decided in 1988, the district governments and Beijing city government used every possible approach to develop the designated BEZ areas afterward. Because Beijing was never as constrained in terms of revenue remittance or fiscal burdens as Shanghai, a large proportion of tax revenue collected by the city and district governments was reinvested in BEZ (Segal, 2003). On the one hand, the city and district governments began to set up construction companies to clean up the lands and to build new office buildings for hosting firms. On the other hand, in order to support the newly emerging science and technological companies, the city government set up its own technology fund to support the firms (Segal, 2003:67). Indeed, the BEZ project has brought about not only the booming of the high tech industry but also the booming real estate sector that accompanied with the coming of MNCs and high paid employees.

As BEZ became a symbol of high tech development that was able to generate economic growth, many other district government also began to apply to become parts of BEZ. In 1997, the Electronic city in Chaoyang district and some areas of Yizhuang’s high technology zone in Daxing District were allowed to become parts of BEZ. The district governments of Beijing city were eagerly applying for becoming parts of the booming high tech fashion after 1999 when BEZ was renamed as ZGC. Therefore, ZGC continued to expand afterward. Currently, there are ten ZGC zones under the ZGC banner which are located in various localities of the Beijing municipality. For example, Fengtai zone is located in the southwest area of the city, Beijing’s Economic and Technology zone is located in the east end of the city known as Yizhung, and Changping zone is located in the northwest end of the city. These zones were created by district governments for the purpose of attracting capital so as to create economic growth in the name of high-tech development. In 2006 the state council has finalized the ZGC development plan with total developing area of 232.52 KM², in which 131.84
KM² located in inner city and the rest 100.68 KM² were new developing land that mainly located in rural areas (ZGCAO, 2008). These zones, their locations, and major economic functions are described in table 1.

Table 1: Economic zones of ZGC

<table>
<thead>
<tr>
<th>year</th>
<th>zone</th>
<th>district</th>
<th>specialization</th>
</tr>
</thead>
<tbody>
<tr>
<td>1988</td>
<td>Haidian zone</td>
<td>Haidian</td>
<td>ICT, all high-tech types</td>
</tr>
<tr>
<td>1991</td>
<td>Fengtai Zone</td>
<td>Fengtai</td>
<td>Headquarters</td>
</tr>
<tr>
<td>1991</td>
<td>Changping Zone</td>
<td>Changping</td>
<td>All types including biotechnology</td>
</tr>
<tr>
<td>1997</td>
<td>Electronic Town</td>
<td>Chaoyang</td>
<td>Electronics and others</td>
</tr>
<tr>
<td>1997</td>
<td>Yizhuang Zone</td>
<td>Daxing</td>
<td>Manufacturing for all types</td>
</tr>
<tr>
<td>1999</td>
<td>Desheng Zone</td>
<td>West City</td>
<td>Cultural creativity</td>
</tr>
<tr>
<td>2006</td>
<td>Yonghe Zone</td>
<td>East City</td>
<td>Cultural creativity</td>
</tr>
<tr>
<td>2006</td>
<td>Daxing CBP</td>
<td>Daxing</td>
<td>Biotechnology, pharmaceutical</td>
</tr>
<tr>
<td>2006</td>
<td>Tongzhou Zone</td>
<td>Tongzhou</td>
<td>Electro-optical industry and others</td>
</tr>
<tr>
<td>2007</td>
<td>Shijingshan Zone</td>
<td>Shijingshan</td>
<td>Media and cultural creativity industry</td>
</tr>
</tbody>
</table>


The development of Beijing’s ZGC also has a lot to do with special parks established by universities and R&D institutes. These institutes, following the guidelines of the Torch Program and supported by Ministry of Science and Technology and Ministry of Education, tended to establish their own parks to generate university-firm relationships. Almost every prestigious university in Beijing has its own industrial park, including the most prestigious Peking and Tsinghua Universities. Now Beijing has 10 university HTIPs. The earliest university’s HTIP was established by Peking University in 1992, then Tsinghua University and other institutes followed suit. One of the most successful universities HTIP is Tsinghua’s. It is located in the center of Haidian district, using 25 acres of campus land to redevelop into an area that inhibited with many high-rise office buildings, including a 5-star hotel. Due to the university’s reputation as China’s MIT and its good location, this HTIP has attracted many well known enterprises such as Google, Sun, P&G, NEC and Tsinghua’s university enterprise such as Tsinghua Unis Corp. to reside. This HTIP project has generated large revenue for the university.

Now ZGC, especially the Haidian district, has filled with many glamorous buildings and famous MNCs. The symbol of ZGC signified rich and famous for the
district and which in turn drove district governments and universities to join into the high tech and speculative game. One of my informants said very clearly, ‘once the label of ZGC is used, the price of the real estate jumps’ (Interview data). This echoes what He and Wu (2009) observe in Shanghai, district governments have strong incentive and high degree of discretion in land development to pursue for instant returns and visible achievements, ‘of which property-led redevelopment is the most common form’ (p.298). This property-led redevelopment project, combining the label of ZGC, can be best illustrated in the Fengtai district’s “Headquarter Economy Project” as discussed next.

3.3 ZGC as a form of representation – Fengtai’ s Headquarter Economy

The Fengtai zone was established by Fengtai district government in 1991 and was included into BEZ in 1994. It is located in the southwest corner of Beijing city where 5km² of the land is allocated to BEZ. The motivation of developing this area into ZGC was mainly due to the effort of district government in promoting this area’s economic development. Owing to its historical legacy, the southwest end of Beijing city was described as one of the poorest areas, as the phrase describes ‘The East is rich, the West is prestigious, the North is Poor, and the South is despicable’. The competition among districts drove local governments to use the special economic zone approach to stimulate the economy to grow.

The first stage of the development of Fengtai zone was initiated in 1992 and many local lands were converted for either industrial or residential uses. But after the lands had been developed in few years, due to the rising of rents, most of manufacturing activities moved to Hebei province or outskirt areas of Beijing city and the industrial lands were converted to office buildings again. In the second stage of Fengtai zone’s development, the district government thus gave up developing manufacturing land, due to the failed attempted in the former stage, instead it stressed the importance of office buildings. At this stage, the district government collaborated with a British company
(Daofeng\textsuperscript{2} Co., which actually was a company led by an overseas Chinese) to develop this area into a so-called ‘Advanced Business Park’ or called by Fengtai district government as ‘Headquarter Economy’. The business park consisted of over 500 office buildings, thousands of apartment buildings, a 6-star hotel, and other related recreation facilities and shopping centers. The whole park was obviously a huge property-led project that intended to use the label of ZGC to promote local economic development.

The district government worked very closely with this Daofeng company to clean the land, paved the road, and solved many related barriers in administration in order that this ‘Headquarter Economy’ could be proceeded smoothly. All the expenses of those works were paid by district government and the company had devoted very little resources at this stage\textsuperscript{3}. The district government even asked a university professor to study the feasibility of using the label of ‘Headquarter Economy’ in fitting the technology demand of ZGC. The conclusion, as can be imagined, clearly demonstrated that the Headquarter Economy (as long as big companies inhabited) was the world trend that fitted very well with high technology park development. The Headquarter Economy Project finally received the approval from the administrative office of ZGC (Zheng, 2010: 148). Even more interesting was the fact that the district government granted the Daofeng Company the manufacturing land, whereas the company developed this area into luxurious residential and office buildings and has gained enormous profits from the price differences.

Moreover, the Fengtai district government granted the DaoFeng company to use ZGC’s level of tax incentives to attract firms to inhabit, including tax exemption of the first three-year investment; and reduce to 7.5\% of the tax rate annually from the forth to sixth year; the privilege of paying half of the utilities fees; granted residential permit for

\textsuperscript{2} According to a news report, not any one reporter has ever found the headquarter of this company in UK. Neither can anyone find the details of this company. The authors of this paper also tried to find this company’s details from the Web, but we are not able to find the details of this company and not even able to assure what its name in English from the Web.

\textsuperscript{3} Data adapted from \url{http://www1.ce.cn/cysc/fdc/fc/201009/19/t20100919_20505782.shtml}, available September 19, 2010.
professionals from other provinces, etc. Currently, the Headquarter Economy really attracted many companies’ to inhabit. Most of them were Beijing-based state-owned companies, some were big state-owned companies from other provinces, and very few were MNCs (Zheng, 2010: 150). Because the tax sharing system after the tax reform in 1994, the district government was able to gain a large amount of revenue from this gigantic real estate development. As a result, the originally very small Daofeng Company became a giant real estate developer in the process and the district government gained huge amount of revenue.

The example of Fengtai zone shows clearly how the district government used the label of ZGC to develop real estate sector in the name of HTIP. The real content of Fengtai zone is in fact companies’ headquarters with little relationship with high tech industries. According to a report⁴, many companies in fact were not in the categories of high tech industries, companies such as travel agents, hospital, clothes were also allowed to inhabit in those headquarter office buildings. There was no rigid control procedure for companies to dwell in those office buildings, every building space was for sell. Thus, many office buildings became speculative objects that push the prices of the real estate even higher.

In contrast to the dazzling new buildings, the inhabitants on the land were evacuated in 1991 for the development zone. The land originally located in Liu Quan Cun (六圈村), where more than 2000 acres of land were converted into HTIP through which more than 800 households and almost 3000 people were reallocated. The inhabitants (mainly farmers) only received very minimum amounts of compensation and some of them were not able to find appropriate jobs as they lost their lands. Because some of the 2000 acres of land were still not developed, therefore, some of the people who were evacuated from the farm land went back to live in the areas that were still not used by the district government. Those areas thus became slums that have very

bad condition to live in because the district government wanted to reserve it for future development.

3.4 ZGC as a contesting space

As has been shown above, HTIP has been regarded by different levels of the state in China to promote both local economic development and technological innovation. ZGC, owing to its high concentration of prestigious universities and R&D institutes, has been especially expected to play the role of China’s Silicon Valley with the hope to catch up rapidly toward indigenous innovation. It was in the process when ZGC in Haidian district gained successful development, then the label of ZGC were expanded to other districts. Now ZGC has become a real estate label that outpaced the value of developing high technology industries. It is because technology learning and innovation need time to nurture, in contrast, the real estate sector can generate immediate capital return for both capital and local government.

The booming of the real estate sector has its downside to the development of technology, because it has pushed up the rent costs to a level that is not conducive to the start-ups or smaller firms’ survival in this area in recent years. Many smaller start-ups have already moved out from the expensive area in Haidian district and sought cheaper places on the outskirts of the city in order to survive (Interview data). Nonetheless, if they moved to other cheaper places, they could not find good innovation milieu to support technological innovation. The booming of real estate in ZGC in fact has created an economy that is favorable for big firms, headquarters, and MNCs, that actually suffocates the spirit of entrepreneurism which had brought about ZGC at the first place. While the space is re-reorganized for global and local firms, Beijing’s ZGC has been re-territorialized.

4. Shanghai’s Yangpu— Transferring the old industrial space

Shanghai demonstrates a different case with Beijing’ ZGC. The rebirth of Shanghai began with the redevelopment project of Pudong after Deng Xiaoping’s southern tour in 1991. Integrated with the Pudong project to construct Shanghai’s service and financial center, the Zhangjiang High-tech Park was developed to promote new fields of manufacturing and design, such as IT, semi-conductor, and biotechnology.
Since the mid-1990s, the Shanghai metropolitan government has adopted the strategy of “focusing Zhangjiang” to provide preferential policies and promote formation of a cluster of high-tech research and development. Closely linked with the Torch Program, Zhangjiang was granted the status as “National Autonomous Innovation region” in January, 2011 to strengthen its capacities of original design and branding.

The preliminary design of Zhangjiang was to copy the Silicon Valley model. It incorporated all the required components of state-of-art science based park. Infrastructure and amenity match or even surpass the world standard. However, the case of Zhangjiang is different from ZGC park of Haidian in two aspects. First, Zhangjiang was developed from scratch. The original site of the high-tech park was agriculture farm lands, with little or no existing urban surroundings. Secondly, Zhangjiang is not the home of major universities or research institutions. In the past two decades some university campuses were developed in Zhangjiang, but higher educational or research units have never played significant roles in Zhangjiang’s development. Pressures of urban reconstruction and housing relocation are not major concerns of policy makers either.

Zhangjiang’s development in the past twenty years has contributed to Shanghai’s upgrading of high-tech development. The Zhangjiang case provides a typical Shanghai’s top-down intervention model in which orders come directly from the Metropolitan Administration. A more recent attempt to imitate the HTIP development method but adopt a bottom up approach to rejuvenate urban space is the Yangpu case. In contrast to ZGC’s nurturing of new mingying enterprises based on IT industry, the Yangpu case demonstrates district government’s efforts to renovate and upgrade the heavy and old industries such as steel embedded in the old urban center. Yangpu was the breeding ground of the modern industries in China before and after the economic reform. The development of Pudong after Deng Xiaoping’s southern tour in 1992 shifted the focus of Shanghai’s urbanization to the eastern bank of the Huangpu River. Service sectors also replaced manufacturing as the pillar industry as Shanghai promoted the status of a global city. In the year 2000, Yangpu was lagging behind most of the urban districts in Shanghai in terms of GDP production and social security.
protections. Yangpu was also characterized by outdated infrastructure, idle factory buildings, and dominance of state-owned enterprises.

The start of the new Yangpu project began with the launch of the document of “Guideline of the Yangpu Knowledge Innovation District” released in 2004. In this guideline, the Shanghai metropolitan administration reconfirmed the policy of integration three development elements in this district: university campuses, high-tech parks, and local communities. It is dubbed as “tri-party cooperation”. After less than a decade of development, the new project of rejuvenating Yangpu does not stop at “breeding” or “building” a high-tech center. It has a much more comprehensive goal of urban redevelopment and space utilization. The master design could be realized by Yangpu’s project of establishing the developmental framework of “one center, one city, one river, three quarters”. According to the design, one center refers to the sub-urban center of Wujiaochang-Jiangwan area, consists of Central Intelligence District, southern business center, and knowledge innovation center; one city refers to the new Jiangwan township; one river refers to the creative and cultural center in the north bank of Huangpu river; three quarters refer to the Fudan-Tongji university science zone, Dalian-Kongjiang road’s modern service zone, and modern textile industry clusters along the Huangpu river. The urban renovation project is implemented by ways of branding the old area with knowledge based economy. As demonstrated in the example of ZGC, the Yangpu case also provides proofs of active participation of entrepreneurial-oriented local government. It reflects the important factors of territorial formation and space adjustment in the process of rebuilding a fresh Yangpu. Table 2 demonstrates university science parks in Yanpu and their specialties:

Table 2. Specialties of University Science and Technology Parks in Yangpu District

<table>
<thead>
<tr>
<th></th>
<th>Fudan Scientific Park</th>
<th>Tongji Scientific Park</th>
<th>Yangpu Technology Innovation Center</th>
<th>Shanghai Institute of Technology Scientific Park</th>
<th>Shanghai Ocean University Scientific Park</th>
<th>Shanghai Intellectual Property Park</th>
<th>Shanghai University of Finance and Economics</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT/ Electronics</td>
<td>45%</td>
<td>22%</td>
<td>40.9%</td>
<td></td>
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<tr>
<td>Consultation Services</td>
<td>17%</td>
<td>17%</td>
<td>3.3%</td>
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<tr>
<td>Bio-Medicine</td>
<td>8%</td>
<td>2%</td>
<td>12%</td>
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<tr>
<td>New Materials</td>
<td></td>
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<tr>
<td>Architectural design</td>
<td>46%</td>
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<tr>
<td>Construction</td>
<td>8%</td>
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<tr>
<td>Sector</td>
<td>Yangpu</td>
<td>Shanghai</td>
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<tr>
<td>Creative Industries</td>
<td>17%</td>
<td>12.5%</td>
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<tr>
<td>Machine and Electricity</td>
<td>13.2%</td>
<td>8.3%</td>
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<tr>
<td>Environmental Protection</td>
<td>9.6%</td>
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<tr>
<td>Manufacture Industries</td>
<td>64.1%</td>
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<tr>
<td>Technology</td>
<td>24.8%</td>
<td>50%</td>
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<tr>
<td>Commercial Facility</td>
<td>2.6%</td>
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<tr>
<td>Aquatic Products</td>
<td>58.3%</td>
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<tr>
<td>Cultural communication</td>
<td>13%</td>
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<tr>
<td>Finance</td>
<td>31.4%</td>
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<tr>
<td>Others</td>
<td>15%</td>
<td>4%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4%</td>
<td>4%</td>
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<tr>
<td></td>
<td>8.5%</td>
<td>16.7%</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>10%</td>
<td>25.8%</td>
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</tbody>
</table>


4.1 Yangpu as a case of district autonomy

The state is the biggest manager, operator, and supervisor of the land and space use in China. State’s efforts in transferring and commercializing the space arrangement play pivotal roles in deciding the tempo, speed and direction of urban development. (Zhang, 2005). Since the ultimate goal of the tri-party cooperation in Yangpu is infrastructure upgrading and urban development, the district government has transferred itself into an urban growth machine. Replacing the abandoned and under-used spaces for re-production as creative clusters has become the major task of the district government (Keane, 2009).

Among the various actors of urban development and space rejuvenation, the district government of Yangpu plays the key role in leading and coordinating. As the master of urban land distributor, the district government shoulders the task of land replacement, reservation, and capital accumulation. The establishment of the Yangpu Knowledge Innovation Region is a major vehicle of “branding” the old district with new content. Our interviews with local residents in Yangpu indicated that in the early stage of Shanghai’s development in the 1990s, Yangpu was totally neglected. Even the public transportation system of urban overpass did not provide exit to the Yangpu district. Yangpu was more or less isolated from the booming urban service sectors in Puxi and Pudong. This situation did not match with Yangpu’s potentiality as an area where major universities were located. Well-known universities such as Fudan and Tongji also suffered from the outdated urban district infrastructure. These universities
thus established visible and invisible walls to separate themselves from the surrounding decaying environment.

Different from the usual top-down Shanghai development model, the Yangpu case reflects the bottom-up district initiatives to launch new projects of urban development. According to our interviews, the details of the new Yanpu project were first postulated by the district administration. The Shanghai Metropolitan Administration was in a less active manner in approving the new Yangpu plan. Key policy entrepreneurs such as former district party secretary Du Jiahao and Chen Anjie played crucial roles in promoting fresh ideas of alliance formation. In other words, the district government took initiatives, but the operation of such urban project relied on the common interests of all the stakeholders. The new knowledge based project of Yangpu was also regarded as an echo to the “Four Centers” strategies in enhancing the service sector released by the Shanghai Metropolitan Administration. In 2009, according to a newspaper interview with Chen Anjie, the knowledge-based production consists 31.6 percent of Yangpu’s total service output. Yangpu had established 21 urban production parks, 13 creative and cultural centers. In 2010, the Ministry of Science and Technology in the central state approved Yangpu as one of the 20 “National Innovation Experiment Parks”.

4.2 Yangpu and re-territorialization in Shanghai

The Yangpu experience provides an illuminating case that shows how a local government engages in space production by entrepreneurial ways. As Jane Zheng indicates, local governments have demonstrated a clear “entrepreneurial state” characteristic in their manner of pursuing both local urban growth and their own economic profits. Culture and innovation industry has been a new powerful tool in generating revenues (Zheng, 2010:143). The role of the local state is to form comprehensive alliances with various social actors. These actors include foreign investors, domestic creative workers, and real estate developers. In other words,

cultural and creative industries provide fresh “labels” for the local state to boost up real estate market in particular and urban development in general.

In 1996, Shanghai established the Center for Land Development, which was to function as a land bank for the city. The land bank would purchase land-use rights, negotiate a profit-sharing plan with current users, and put the land parcels in a reserve for resale on the market in open-land auctions or through public tender. A successful land bank could help municipal governments centralize land supplies and coordinate land management and planning (Hsing, 2010:48). In the case of Yangpu, the main body of land banking is Yangpu Land Development Center (YLDC), under direct supervision of Housing and Land Management Bureau of Yangpu district. YLDC regains state-owned lands under the plan of urban development, and put them into reserve.

In the process of Yangpu’s transition toward a knowledge based region, YLDC plays a pivotal role of promoting the transformation of the territory by land use policies. YLDC controls most of the industrial lands which occupy 17.6% of the total land of Yangpu. YLDC also establishes cooperative ties with the Management Committee of Yangpu High Tech Park (MCYHTP) in utilizing newly acquired land. The major function of such ties is to link policies of land use with purposes of industrial upgrading and service enhancing. In a 2005 case of land leasing in Huangxing road, the YLDC requests the real estate developer to get prior approval from the MCYHTP to make sure the function of the new host as knowledge-related industries.6

Through the process of institutional linkages and branding, the Yangpu district government has successfully transferred many industrial lands into service and commercial usages. According to the 2010 statistics, the growth rate of Yangpu’s service sector reached 76.5%, while the knowledge-related service business grew 23%.

6 http://tech.163.com/05/1216/03/252jpsv400091kto.html, Accessed on April 10, 2011; In the 2009 case, the Zhongjian Real Estate Company acquired a new piece of land in the New Jiangwan town in the north of Yanpu with the prices of $3.72 billion RMB. The YLDC requests Zhongjian to move its headquarters to the newly acquired land as the pre-condition of acquisition. 
Tax revenue rose from 3.5 billion in 2003 to 10 billion in 2008. As to the disposable finance of the district government, it increased from 1.6 billion in 2002 to 7 billion in 2008 (Chen, 2009:5).

This transformation process also brings about lucrative economic benefits to the district government. In the master plan of Yangpu’s knowledge and innovation based economy, the “tri-party alliance” serves as a catalyst to simulate the service industry and overall transformation of the district. In addition to the transformation of the university region and surrounding areas, the new Jiangwan Town in the north and new creative and business district in the east have become the new focus of development. For instance, the last case of land bidding in 2010 reflected the ambition of the Shanghai 17th Cotton Textile Company to transfer the idle factory house in the northern bank of Huangpu River into a fashion and creative center.

The University City project promoted by Yangpu district government is another illuminating case. Different from other University City projects like Songjiang University city, the Yangpu project does not start the construction from scratch. The issue of land cleaning, road construction, and resettlement are crucial challenges to policy makers and developers. According to various estimations, the total investment amount of the Yangpu University City for land use reached 100 billion Yuan. (Wan, 2004: 94). The rise of the real estate market in Yangpu has been significant since the release of the project of “knowledge Yangpu”. In June, 2007, a piece of land in the New Jiangwan Township reached the prices of 12509 Yuan per square meter. The price was 6677 Yuan 7 months earlier.

Almost all the actors involved in the Yangpu project serve as engines of land development in the region. For instance, Tongji Technology, a Tongji University holding company, established Tongji Real Estate Management Corporation (TREMC). Under TREMC, there are more than 14 branch companies engaging in various land

development projects. These projects in the Yangpu district include Tongji Square, containing four-star hotels, restaurants, and shops outside the main gate of Tongji University. Other projects include residential housing units under the brand name of Tongji in surrounding areas.

For the Yangpu district government itself, it also controls several real estate related development companies. For instances, companies like Weibaixin and Xinyangpu undertake mainly the business of developing residential housing areas. Even the Yangpu Knowledge Innovation Investment Company is engaged in various fields of real estate development, including hotels, restaurants, and other recreational facilities (Chen and Yu, 2005, p. 57).

As the former party secretary of Yangpu Du Jiahao argued, knowledge based clusters are closely related to the improvement of investment environment in Yangpu. The new attempt to establish a fresh image of Yangpu provides opportunities for developers to promote real estate markets. College parks around Fudan, Tongji and other famous universities, along with green lands of Huangxing Park, provide amenities for better living in the region. The Wujiaochang business district and New Jiangwan Township project will also enhance the urban function and livability in Yangpu. Together with the relocation projects to move 4 million old house units and reconstruction of 4.35 million square meters of land, the Yangpu project is a social engineering requesting participation of all parties involved.  

Expansion of the land used by the universities has become major strategies for the Yangpu district government to promote new brands of a university and knowledge based Science Park. The Yangpu district government released lands around major universities for the purpose of university high-tech parks and new branch campuses. Lands of university campus in Yangpu have been expanded from 4.2 KM² to 6.54 KM². For instance, Fudan has been expanded from 1600 acres to 4000 acres, and Tongji has been expanded from 1500 to 2500 acres respectively. Yangpu district government has

certain shares of the stock in most of the university-affiliated scientific parks. Our interviews show that in the case of Fudan Scientific Park, the district relocated the existing residents and sold the land to Fudan at very low price. Due to the recent booming of the Wujiaochang area, the market price of the real estate of Fudan Scientific Park has been soaring. The rise of real estate prices of these parks benefits all stakeholders, including the district government.

The intervention of the real estate developers creates a dilemma in promoting talent flows and knowledge bases economy. Under the branding of major universities, prices of housing and office spaces were escalated. Start-ups and even research faculties can no longer afford to living in the neighboring areas. In other words, the original idea of knowledge-intensive clusters was distorted due to the commercial and real estate development of the region. Scholars and experts also raise sharp criticism, arguing that many scientific parks have already become real estate parks.

4.3 Wujiaochang project, Tongji Circle, and headquarter economy

Wujiaochang, located in the heart of Yangpu district, was an outdated urban commercial center surrounded by major universities and public facilities. In order to renovate the circle areas of Wujiaochang, the Yangpu district government promoted the Knowledge and Innovation Community (KIC) as the locomotive of refurbishment. Co-organized by Sui-On Group of Hong Kong, the major goal of KIC is to serve as a multi-functional community where people live, study, work and relax.

Since the very beginning, the reconstructing of the Wujiaochang project is not merely a project of Research Park. The main investment and development body of CID is Yangpu Knowledge Innovation Investment Company (YKIIC). The Yangpu district government holds 75% of its stock, while the Shanghai Metropolitan Administration holds the remaining 25%. YKIIC later formed a joint venture with Qiaoguang Corporation which is an affiliated company of the Sui-On group of Hong Kong. Qiaoguang holds 70% of the stock of the new Shanghai Yangpu CID Development Corporation. The YKIIC is in charge of the tasks of relocation, land procurement, and pubic administration. The Hong Kong counterpart undertakes tasks of financial management, business operation and planning. (Wang and Tian, 2008: 53-55). This
The KIC project is a typical case of the collaboration between the district government and private companies. During the field trip the authors found out that the main concern of the local government in the KIC project is to attract private investments to reconstruct the old district. Located in the Wujiaochang district of northern Shanghai, the KIC is surrounded around fourteen universities, including the prestigious Fudan and Tongji University. The goal of KIC is to utilize the attractiveness of major universities, and transfer the old Wujiaochang circle area into a service hub. The KIC thus serves as a mediator between the university, district development, and the private enterprises. During our interviews in Wujiaochang area, one senior manager of KIC indicated that the idea of reconstructing the Wujiaochang area is promoted mainly by the Yangpu district administration. The district government also provided spaces for knowledge production, and preferential treatments for the enterprises. The Yangpu government thus served as a platform of interactions between the major MNCs and universities surrounding Wujiaochang. It is totally different from the Zhangjiang model in Pudong in the 1990s. The residential and recreational facilities also help promote high-quality amenity and living standard in the Wujiaochang area, which later led to the rise of the real estate prices in the last few years.

In brief, the northern Yangpu area, with KIC as the core, has gradually been transferred into a multi-functional business district. The “scientific park” is embedded within a reconstructed auxiliary urban center. In addition to the Wujiaochang—Fudan area, the Yangpu district administration also signed agreements with Tongji University to promote the “Tongji Knowledge Economic Circle.” Located in the south of Wujiaochang district, the focus of such new initiative is to promote new service clusters

10 [http://sd.zhaoshang-sh.com/zsdt/133550822.html accessed on April 5, 2011]
such as architecture, environmental protection, machinery, and other related business pertinent to Tongji’s specialties.\(^{11}\)

4. Discussion and Conclusion

This paper regards developing HTIP as a re-territorialization project through which both central and local states seek to promote economic growth by reorganizing the spatial structure in their territories so as to facilitate capital accumulation. In this re-territorialization process, the central state, the municipal government and especially the district government have played important roles on their parts in reshaping the landscape of each city for the purpose of development and economic upgrading. Different from other property-led development projects in China, this technopole plan involved not only local states and developers but also universities and R&D institutes that collaborated together to develop the territories in the name of high tech development and knowledge innovation. Thus the planned areas, whether they were agricultural or established urban settlements, had to be reshaped for hosting foreign and domestic firms or for office buildings. It was in this process that territorial places had been transformed into globalized space where capital was able to move more freely to engage into manufacturing and R&D activities.

The Beijing’s ZGC and Shanghai Yangpu cases show that district governments had played important role in facilitating their districts to become parts of the booming high-tech or knowledge creation zones in China. The Fengtai district government in Beijing for example has been promoting Headquarter Economy in affiliating with the label of ZGC as to facilitate local economic development. Similarly, the Yangpu district government also used various strategies to take advantage of concentration of universities in its area and hoped to rebuild it to become a national innovation center. Innovation centers and high-tech parks thus have become labels for district governments to promote the construction of office buildings and lure commercial activities into the area. In the process, the real estate sector has brought about the growth of the local economy.

An even more interesting development in China now is that the ZGC label has been extended beyond the territory of Beijing city. Currently, ZGC administrative office has worked with Hebei, Liaoning provinces and Tianjin city governments to create more ZGC zones in those places in order to generate economic value of the label and those places’ technological development. ZGC as China’s Silicon Valley now has become a symbol in campaigning economic development everywhere. Shanghai’s district governments also established their affiliated HTIP in other provinces to promote economic development. The HTIP label have become a fictive commodity that can be sold and extended to the rest of China to lure district government to join into the high tech and innovation game.

However, there are dark sides of the dazzling HTIP phenomenon. First, the booming of real estate market has created an environment in which SMEs are difficult to survive. It is because the district governments have been more interested in luring MNCs or big companies’ headquarters to inhabit into the zones, the rents and prices of the land have been escalating that have pushed small venture firms to escape from the city centers where universities and R&D institutes are concentrated. This in turn has enhanced the image of HTIP as creating good business environments rather than constructing innovation milieus. Second, the re-settlement of the inhabitants in the planned areas often created resentment of local population towards the zones because of district governments’ compensation fees were too low for local people to survive. As shown in Fengtai case, many local people are still living in slum where the lands were planned and not yet developed.

Indeed, HTIP has become a branding competition. But as we have shown, this branding game has been favorable for the property-led development urbanization. As long as the branding of HTIP, no matter it is ZGC or Headquarter Economy, can effectively generate successful economic growth for local economy, space will be produced and reorganized along with property-led development approach in China in the foreseeable future.

Data adapted from http://report.qianlong.com/33378/2011/03/05/1060@6694853.htm, March, 5, 2011.
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