Chinese industrial park planning strategies informed by American edge cities’ development path - case study of China (Chongzuo)-Thailand Industrial Park

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Abstract

Edge cities and industrial parks are both significant phenomenon in cities’ development process. While edge cities are the products of American suburbanization and urban sprawl, industrial parks are the most important driving engines of Chinese cities’ economic development. Through a comparative analysis of American edge cities and Chinese industrial parks, our study proposes, from three (3) perspectives, namely city’s, region’s and network’s perspectives, five (5) industrial park planning strategies, i.e., industry-city integration, developing comprehensive urban functions, enhancing the quality of living environment, urban systemization, as well as digitalization, as informed by American edge cities’ development and characteristics. Meanwhile, it offers an empirical comparative study of the planning of the China (Chongzuo)-Thailand Industrial Park, applying the five strategies into urban planning practice in China.

1. Introduction

In the late 1980s, China enjoyed a booming period for industrial park construction. Many industrial parks were constructed in this period to facilitate industrial development and to better adapt to the economic globalization and industrial transformation in the new era. Since then, industrial parks in China have become the most important driver...
of the stimulating Chinese economy as well as institutional and technological innovation, and have made important contributions to China’s urban economic development. However, the industrial parks that were built during this early booming period suffered from bad planning, homogeneous urban functions, lack of competitive edges and other development bottlenecks. With the continued development of the information and communications technology (ICT) industry and the evolution of the Chinese market economy in recent years, these industrial parks are not able to meet the new demands. As a result, renovating industrial parks has become one of the hottest research areas for Chinese scholars, with “Industry-City Integration” and other new concepts emerging. [1-3]

Since the 1970s, “edge cities” have emerged in America as a major form of human settlements for middle class population during the suburbanization process. Since then, many Chinese and American scholars have been involved in the research of edge cities. For example, Joel Garreau first proposed the concept of Edge City in “Edge City: Life on the New Frontier” and the systematic criteria for identifying them, he even argued that edge cities are the future orientation of American urban development, and the best choice based on Americans’ lifestyle and value system. [4] In recent year, edge cities have attracted more attention among Chinese scholars. Among them, Yue Deng [5], Xiaojuan Wang [6], Wei Li [7], Guo Zheng [8] and Wenjing He [9] and others explored the pattern formation mechanism of edge cities in the Shanghai and Beijing areas. Pengjun Zhao [10], Xinguo Yuan [3], Hui Cheng [11] analyzed the lessons learned from American edge city development in order to inform China’s industrial park development. Guilan Weng analyzed residents’ cognitive recognition and willingness to move into edge cities, using the Tianjin metropolitan area as a case study [12]. Yuting Liu etc. systematically reviewed edge cities’ research progress and practical development both in China and abroad [13]. Overall, the current edge city research emphasized the concept, recognition criteria, and formation mechanism analysis. Very few studies compared edge cities’ development and characteristics with their Chinese counterparts. The authors believe that edge cities’ evolution and transformation history exhibits some degree of similarity to the development of China’s industrial park. In view of this, the authors explore planning strategy to revive China’s industrial parks as informed by edge cities’ development process and characteristics, and demonstrates it with the planning of the China (Chongzuo)-Thailand Industrial Park.

2. A comparative study of Chinese industrial parks and American edge cities

2.1. Definition of edge city

Garreau provided a descriptive definition for Edge City in his book “Edge City: Life on the New Frontier”, i.e., the newly developed business, employment and population center, located around the outskirts of the former downtown center, which 30 years ago was farmland and villages or purely residential land [4, 6, 9]. In addition, Garreau proposed five functional standards, identified 123 edge cities, 78 “quasi edge cities” and 5 edge cities which were being planned at that time in 45 traditional US metropolitan areas [4, 13]. Research both in China and overseas show that edge cities are in fact, urban complex of residence, employment, transportation, recreation and other typical urban functions, but with relatively low building density. Therefore, we believe edge city can be defined as urban complex developed in the suburbanization process, with population and residence suburbanization as a precursor to the industrial (industrial, commercial and advanced services industries, etc.) relocation, complemented by implanted leisure and entertainment facilities and ecological and cultural services.

2.2. A comparative analysis of edge cities and industrial parks

We compared American edge cities with Chinese industrial parks, and found different levels of similarity in their respective development path, infrastructure support, industrial development, driving forces and construction results. (Table 1).

2.2.1. Development path: different paths, same destination

American edge cities emerged from the residential suburbanization process in the 1950-60s. They are primarily products of population relocation to the suburbs. Firstly, the middle-class population with skilled professions were attracted by the higher quality of life in the suburbs. This, in return, led to the development of supporting
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