Regional Innovation Policy and Venturing Clusters in Japan

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Summary

This paper reviews regional innovation policy in Japan. "Technopolis" policy, the first technology-based regional development policy in the world, was implemented in Japan. Nonetheless, technology-based regional endogenous development did not occur. Then, regional technology transfer was pursued. In order to make use of universities and public research institutes in a region for development, university-industry collaboration and cross-over, such as university spin-offs, were promoted. Within this background, new technology-based regional development policies have been introduced based on a cluster approach. These policies are the knowledge cluster Initiative and the industrial cluster program.

However, existing companies have difficulty in carrying out innovation. This paper argues that a cluster to create new start-ups that carry out innovation is also needed and explains a new concept of venturing cluster. Based on this new cluster concept, this paper analyzes the situation of Sapporo in Japan, where many university spin-offs are being created in the biotechnology field.

Key Words: technopolis, regional innovation, venturing cluster, biotechnology, Japan

1. Introduction

A region, on one hand, draws attention regarding competitiveness. The reason is that competitiveness is based on a region though competition is global. On the other hand, innovation is the engine of growth and a source of competitiveness. Thus, regional innovation is one of the key issues for global competitiveness.

Though regional development is an old topic in economics, technology-based regional development or regional innovation is fairly new. This paper reviews the regional innovation policy in Japan from the oldest regional innovation policy in the world, "technopolis" policy, to current regional innovation policies. It also discusses a new concept of "venturing clusters"
to compliment current policies and provide an example of a venturing cluster, Sapporo venturing cluster.

The next section analyzes technopolis policy and its results. Then, current regional innovation policies, Knowledge Cluster Initiative and Industrial Cluster Program, are discussed. These policies try to solve remaining issues of technopolis policy, such as university-industry linkage, but creating new players for innovation are still needed. Thus, the last part of this paper proposes a concept of a venturing cluster and discusses its example to understand the dynamics in a venturing cluster. Finally, some concluding remarks are presented.

2. "Technopolis" Policy\(^1\) of Japan

2.1. The First Technology-based Regional Development Policy

Technopolis policy was the first technology-based regional development policy in the world, though many regional development policies were formulated in the past. The concept of this policy was proposed in "the Vision of International Trade and Industry in the 1980s" by the Japanese Ministry of International Trade and Industry in 1980. Its special law was enforced from 1983\(^2\). The Japanese government approved 26 regions as technopolis regions, although the government originally intended to construct just one technopolis. The word was the combination of "techno-", which means technology, and "-polis", which means a city in Greek.

The objective of technopolis policy was to construct a region with harmonized functions of industry, academy and living amenities. For the industry function, technologically-advanced industries were to be developed. They were - aircraft and parts industry, space industry, optoelectronics industry, biotech industry, mechatronics industry, electronics industry, new materials industry, fine ceramics industry, general machinery industry and software industry. For academy function (R&D function), constructed or reinforced were public research institutes, universities, corporate R&D centers and third-sector research institutes. For living amenity function, the location was important. A technopolis should be a part of large cities of 200-300 thousand inhabitants, and within a day-trip distance to the three large cities: Tokyo, Osaka and Nagoya.

For technology-based regional development, the main approaches were introducing high-tech

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2) The law was abolished on December 18, 1998.