Chapter V

Industry Clusters in Peripheral Regions: A Biotechnology Case Study

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Abstract

This chapter examines a nascent biotechnology cluster in a city that lies outside Canada’s industrial heartland. The purpose of the study was to focus attention on the nature of cluster development in peripheral regions. The research findings reveal that many support services are provided to Halifax-based biotechnology companies and made use of by companies. However, barriers to development still exist, and support organizations and companies are not certain that a cluster truly exists in Halifax at this time. What results is a case study of a cluster at an early stage in its development cycle and in a peripheral region. The authors encourage other researchers to examine cluster development outside of major industrial centers.
Introduction

The view is widely held that industry clustering and regional economic development go hand-in-hand. Over the years, studies have linked the collocation of companies to industry growth and success. This has led many governments and other organizations to develop programs to encourage and support companies in cluster development. This chapter represents one more study of cluster development. It has three distinguishing features: (1) its emphasis is not on clusters in major centers but rather on those located in peripheral regions; (2) the analysis focuses on support service provision and use in an early stage cluster; and (3) an attempt is made to identify the factors that influence cluster development.

The setting for the research reported here is the biotechnology industry in Halifax, Nova Scotia, Canada. Given projections of its impact in fields such as agriculture, energy, and human health, most developed nations have targeted biotechnology as an industry for development. In fact, many regions within countries emphasize biotechnology. In Canada, for example, biotechnology companies are primarily concentrated in Montreal, Toronto, and Vancouver, but other cities and regions have ambitions in this regard. Halifax is one such city with plans to grow its biotechnology industry.

The chapter begins by examining the literature on innovation and clustering, particularly as these apply in peripheral regions (i.e., those located beyond industrial centers). The development of biotechnology in the region is traced, and the scale of activity is compared to that in other Canadian centers. The chapter then presents analysis from a study conducted among 38 biotechnology companies and support organizations. A number of questions are examined, including the services that are provided to companies and the extent to which these are used, the barriers identified as impeding further development of the industry locally, and the degree to which companies and organizations regard a cluster to exist. These data and the resulting discussion provide insights into the characteristics of a nascent cluster in a peripheral region as well as the challenges facing the industry in getting to the next stage of development.

Literature Review

In this section, we briefly review work on innovation and industry clustering before turning to contributions that have addressed these questions from the standpoint of peripheral or less favored regions.

Innovation is crucial to development, and progress and has attracted considerable research attention. Whereas the traditional literature viewed innovation to proceed in a simple linear fashion within the confines of the firm, this has changed, and innovation is now seen as having a complex and systemic nature. The latter viewpoint argues that innovation occurs in an evolutionary, non-linear, and interactive fashion that involves communications between numerous participants, some of whom are employees of the innovating company, while others may reside in research institutes, financial organizations, regulatory bodies, government agencies, and elsewhere. This conception of innovation is reflected in studies that show