Chapter 5
The Interaction between Local and Regional Knowledge-Based Development: Towards a Quadruple Helix Model

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ABSTRACT

By the turn of the 21st century, the significance of knowledge to be the key factor in urban and regional development is well established. However, it has been only recently that attempts have been made to identify the specific mechanism and institutional relationships, through which knowledge-based development takes place. In this regard, very little consideration has been given to the ways that different levels of knowledge-based development communicate to each other. This chapter examines the mutual interaction between knowledge-based development in local and regional level in two different sections. The first section builds upon the third wave of economic development supporting the growth of cluster of related firms and relates it to an empirical case study of knowledge-based community development in Queensland-Australia. It concludes that knowledge-based local developments do not evolve without a regional support network. The second section reviews the “Triple Helix” of university–industry–government collaboration as the basis of knowledge-based regional development in the investigated case study. This review determines the central role of local community as an innovation base for the interaction among the key factors, and suggests a promotion for a Quadruple Helix Model where community works alongside business, university and government in the new economy.

INTRODUCTION

The digital revolution at the end of 20th century has provided great opportunities for communities to play aggressive roles in the new economy and take active part in the process of knowledge production and distribution. The growing number of home-based teleworkers, e-entrepreneurs and high-rank information workers who are very selective on their residential communities heralds a new era that has already been celebrated (Florida, 2002). Scholars, admitting each community to be a unique instance
with its special characteristics, search for some
general elements that can be adjusted to different
knowledge-based local and regional development
projects. Here, the common objective of every
level of knowledge-based development efforts
is the creation of an innovating base to adopt the
new technological paradigm and get renewed. To
achieve this common objective, different levels of
knowledge-based development may adopt atypical
mechanisms that are enforced by different scales
offering contrasting resources and capabilities.
In this regard, very little knowledge has been
produced on the effects that different levels of
knowledge-based development have on each
other. This chapter specifically examines the in-
teraction between knowledge-based development
in the local\(^1\) and regional level. It includes two
main sections where different sides of the mutual
relation between local and regional development
is examined. This two-sided elaboration is to
guarantee that the benefit of each level - local
and regional- is carefully considered.

The first section investigates the progress of
knowledge-based local development in conven-
tional larger regions. It presents some empirical
data collected from a case study of knowledge-
based community development in Queensland,
and reviews infrastructural and institutional chal-
lenges experienced based on lack of awareness in
the regional level. The finding is consistent with
the third wave of economic development theory
(Blakely, 2001; Herbers, 1990; Ross & Friedman,
1990) that emphasizes on a cluster of related firms
as the key factor for prosperity in the new economy.
This section notes that local communities may
start separately using the powerful mediators like
a thoughtful developer, an ambitious local author-
ity and so on. Yet, a long-term knowledge-based
progress is impossible unless the larger region
realizes the opportunities provided by different
communities and supports the growth of specified
clusters of related firms at the regional strategy
making level. It concludes that knowledge-based
local development will not evolve unless a regional
network of knowledge-based firms/communities
gets established and works together.

On the other hand, the second section inves-
tigates the process of knowledge-based develop-
ment in larger regions. It reviews the “Triple
Helix Model” (Etzkowitz, 2008; Etzkowitz &
Klofsten, 2005; Etzkowitz & Leydesdorff, 2000)
where university, business and government have
been introduced as the key factors behind any
knowledge-based regional development. This
section examines the role of the “Triple Helix”
in the progress of the investigated case study and
determines the central role of the community as
an innovation base for the interaction among
these main factors. It suggests a promotion for a
Quadruple Helix Model where community – as
innovation base- is as important as business,
university and government in the new economy.
It concludes that regional knowledge-based
developments will not sustain unless all four
factors- community, business, university, govern-
ment- work together.

There is a dearth of articulated/empirical data
on the characteristics of knowledge-based devel-
opments in Australia. This was the incentive for
a study that this chapter is reviewing some of its
preliminary finding regarding the relation between
local and regional knowledge-based development.
This finding is based on in-depth interviews
and participatory observation in a case study of
knowledge-based development in Queensland
namely Varsity Lakes that has been planned as a
smart mixed-use residential community offering
live/work opportunities to the residents through
the telecommunication technologies (Bajracharya
& Allison, 2008). This study conducted interviews
with a purposeful sample of residents and key
informants at the community. The interviews were
done with people representing main stakeholders
and institutional spheres in the community such
as office park and incubator directors, Lend Lease
(the developer), Bond University, Gold Coast City
Council, private firms, small business support
networks, and residents’ community groups. The
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