

## ► CLUSTERS AS DRIVERS OF INNOVATIVE ACTIVITY AND ECONOMIC GROWTH

The area of innovation is both over theorized and under examined, with dueling theories everywhere about how we get something new into the market. Some people see it as uniquely about the individual, irrespective of anything else. Many of the early industry looked at the entrepreneurial scientist as the star of the innovation space. Most people now look at institutions, communities, or groups that have similar or complimentary sectors operating together and in competition.

These systems are sometimes geographically located, but they do not have to be, especially in the world of digital media where you are able to talk to a collaborator anywhere in the world, at any time of the day. In this kind of world, proximity may not be as important. We sometimes refer to this as the innovation system or innovation network. These spaces are really about the flow of things that we do not transact. We exchange willingly or unwillingly with people around us because we get some benefit of being in a system with spill-ins and spill-outs and the related excitement of competition.

The reality though is that most people and industrial sectors anchor on a community in a way that attracts firms that are competitors or collaborators, both within the core of the production or knowledge creation system, but also upstream and downstream. So, as people invent new plant varieties, new farm machinery or new digital bits for computers, cars or combines, companies get value from being in the same place. Communities are really about where you do business.

In the clustered world, a set of forward and backward linkages gets formed as markets create an opportunity for enterprises doing

interesting things to agglomerate into communities, leading to what are called thicker labor markets, with more and better jobs available within the community. Extensive forward and backward linkages make it easier to find somebody to take your product and your service to the next stage of value capture or value creation.

Most of the important things in clustered communities are transacted or traded in ways that make the industrial space function. The evidence suggests that sectors are often highly concentrated in particular geographies because they develop deep traded interdependencies. Thick labor markets make it easier for workers to find jobs and employers to find recruits.

Traded interdependences are at the heart of the cluster idea. Every community wants one, but it is still an unproved assertion that you can build them. Clearly, immobile resources and large markets are reasons for firms to relocate. But some assert governments can also attract firms by providing subsidies and tax credits and investing in specialized capital to reduce the costs and barriers to entry.

Clusters certainly have potential to add value. There is a fair bit of evidence that agglomerations of firms and people in larger centers generate more value for the labor and capital that is located there, whether they exhibit industrial clustering or not. There are economies of scale and scope that encourage people to move to larger centers that are diverse and dynamic. In fact, the return to labor rises three to five percent every time a community size doubles. However, you may have countervailing costs. It is not like the whole world will be sucked into one big urban center because

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congestion costs will mitigate against the benefits of agglomeration.

So, clusters are good. You do not want to fight them, but you do not want to put all your money in building the underpinnings of clusters. In the absence of colocation of higher order activities, clusters can be temporary and ephemeral.



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Dr. Phillips earned his Ph.D. at the LSE and practiced for 13 years as a professional economist in industry and government. At the University of Saskatchewan, he was the Van Vliet Research Professor, created and held an NSERC-SSHRC Chair in Managing Technological Change in Agriculture, was director of the virtual College of Biotechnology, and was founding director of the JSGS. He has had appointments at the LSE, OECD, European University Institute in Florence, University of Edinburgh and University of Western Australia. He was a founding member of the Canadian Biotechnology Advisory Committee and was on the boards of Canadian Agri-food Policy Institute, Pharmalytics and Ag-West Bio Inc. He has held over 15 peer-reviewed grants worth more than \$250 million and is author/editor of 15 books, and over 60 journal articles and 55 book chapters.