Innovation networks and clusters

Why are innovation networks and clusters important?

Confronted with more intense global competition, rising costs, the growing integration of different technologies, shorter life cycle, and increased pace of innovation, companies increasingly collaborate with external partners—whether suppliers, customers or universities—to stay abreast of developments, expand their market reach, tap into a larger base of ideas and technology, find complementary expertise, access specific skills and competences and get new products or services to market before their competitors. Collaboration also fosters knowledge spillovers among actors, contributes to overcoming co-ordination failures (i.e. situations where business success fails because of a lack of co-operation) by facilitating coordination between actors, and encourage a better pooling of financial and human capital resources for innovation that result in economies of scales and can help support higher productivity and an increase in economies' competitiveness.

What are the different types of innovation networks and clusters?

Dimensions characterizing innovation networks and clusters include:

- **Geographical scope.** Networks may be national, international or global (see International Linkages [1]).
- **Actors involved.** Innovation networks and clusters may involve only firms (see Technological co-operation between firms [2]), or multiple types of actors, such as firms, universities, and PRI (see R&D collaboration of universities and PRIs with firms [3]).
- **Issues of co-operation.** Innovation networks and clusters can spur co-operation on issues as diverse as training, technological development, product design, marketing, export and distribution.

Innovation networks and clusters may take multiple forms, including the following:

- **Formal networks.** These are networks based on contractual relationships among organizations, such as strategic alliances, buyer-supplier contracts and joint ventures.
- **Informal networks**. Informational networks rely on connections between people, resulting, for instance, from employee mobility and social networks.
- **Industry networks.** These networks connect actors that operate in the same industry, e.g. business associations of specific industries.
- **Production chain networks.** These are networks based on actors involved in a common production chain, such as electronics.
- **Global networks.** These formal or informal networks span the world (see International Linkages [4]).
- **University-firm networks** (see R&D collaboration of universities and PRIs with firms [3]). These networks link universities and businesses.

- **Geographical clusters.** This is a geographic concentration of firms, higher education and research institutions, and other public and private entities that facilitate collaboration on complementary economic activities.

What are the key policy dimensions regarding innovation networks and clusters?

The conditions shaping innovation networks and clusters constitute key policy dimensions policy makers should consider, as in the following examples.

- **Intellectual property rights** (see Intellectual property rights [5]): IPRs are crucial for innovation networks and clusters because they protect partners against involuntary knowledge leakage during collaboration.
- **Open innovation** (see Open innovation [6]): The rise of "open innovation," whereby firms tap into external sources to develop innovations strengthens the role of innovation networks and clusters in the innovation process.
- **Globalisation/fragmentation of production.** Greater fragmentation of production and higher specialisation of firms have increased the need for co-operation in order to integrate the different components of products and to get access to complementary knowledge and skills. Competition (see State of competition [7]). Increased competition, shorter life cycle, and increased pace of innovation encourage businesses to collaborate in order to share costs and risks; find rapidly complementary expertise, specific skills and competences; and get new products or services to market before their competitors.
- **Availability of assets for sharing** (see Firms' capabilities and assets for innovation [8]). In order to render co-operation valuable to all parties involved in networks, firms need to have valuable assets to share (e.g. specific skills and competences)
- **ICTs** (see Impacts of ICTs [9] and ICT access [10]). Effective Information and Communication Technologies (ICT) access can significantly contribute to the success of innovation networks by improving information exchange and knowledge sharing.

What are the main approaches to policy in support to innovation networks and clusters?

Policy in support to innovation networks and clusters include among others:

- Cluster policies [11]
- Grants for collaborative R&D [12]
- Innovation vouchers [13]
- Technology platforms and fora [14]
- Technology matching services [15]

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Related Link: Connectivity policy instruments for innovation in firms
International Linkages
Cluster policies

Links
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[3] https://www.innovationpolicyplatform.org/ipp/filters/result-page?topic-filters=11976
[4] https://www.innovationpolicyplatform.org/content/international-linkages?topic-filters=8833
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