

## Cluster policies

Clusters bring together firms, higher education and research institutions, and other public and private entities to facilitate collaboration on complementary economic activities. “Smart specialisation” is a policy framework to help entrepreneurs and firms strengthen scientific, technological and industrial specialisation patterns while identifying and encouraging the emergence of new domains of economic and technological activity.

### What are clusters?

Clusters are a geographic concentration of firms, higher education and research institutions, and other public and private entities that facilitates collaboration on complementary economic activities. While some of the world’s leading clusters specialise in high-technology industries (e.g. Silicon Valley, Bangalore) they are also found in sectors ranging from wine making to automobiles to biotechnology.

### Rationale and objectives

Clusters are increasingly exposed to global competition and many OECD governments are keen to enhance their competitive advantage and to help firms and entrepreneurs within clusters move up the value chain through innovation and greater specialisation. The main rationale for public policies to promote clusters through infrastructure and knowledge-based investments, networking activities and training, is an increase in knowledge spillovers among actors in clusters and thus the generation of a collective pool of knowledge that results in higher productivity, more innovation and an increase in the competitiveness of firms.

By promoting “smart specialisation” strategies, national and regional governments are attempting to enhance the competitiveness of firms and clusters. Smart specialisation is an evidence-based policy framework which uses indicators, technology foresight and other priority-setting tools to help entrepreneurs and firms strengthen existing scientific, technological and industrial specialisation patterns while identifying and encouraging the emergence of new domains of economic and technological activity.

### Major aspects

Most OECD countries promote a cluster-based approach to innovation (Table 1). Argentina, Belgium, France and Portugal have made cluster policies an integral element of their national innovation strategies or plans. Other countries have programmes to promote the creation of new clusters or to strengthen existing clusters. Recently, Belgium, Germany and the Netherlands have explicitly targeted specific sectors/industries in their national innovation strategies or plans. Several policy tools have been adopted to support clusters and specialisation.

**Networking platforms:** Most OECD countries and regions have policies to promote the creation of networking platforms and collaboration among cluster members. These networks facilitate science-science interactions (between research centres and universities), science-industry interactions and industry-industry interactions. These networks are increasingly used to support cluster-to-cluster collaboration, including across regions and countries.

**Internationalisation of clusters:** Globalisation and competition have fostered both the internationalisation and the specialisation of clusters. This has implications for public support policies. France and Germany are encouraging competition between clusters and targeting public support on the basis of excellence, including at international level.

**Technology specialisation:** There is also a growing effort to foster cluster development around enabling technologies (e.g. information and communication technologies [ICTs], biotechnology, nanotechnology) and emerging industries (OECD, 2010). Indeed, cluster dynamics are a force for the economic, industrial and technological specialisation of a region or country. The revealed technological advantage index for 2007-09, reveals a strong biotechnology and nanotechnology specialisation in Denmark, Singapore, New Zealand, a strong environment-related technologies specialisation in Denmark, Norway, Hungary, Poland and Japan, a strong ICT specialisation in Singapore, Finland, the People's Republic of China and Korea.

**Table 1. Cluster development support policies and specialisation patterns in selected OECD countries, 2012**

Creating and consolidating clusters	Creation of new clusters through co-ordinated action for R&D activities ( <i>e.g.</i> through public funding programmes).	Argentina, Canada, Chile
	Promotion of network structures, service support for entrepreneurs, cluster co-ordination	Argentina, Austria, Australia, Belgium, Canada, China, Colombia, Denmark, France, Germany, Greece, Ireland, Japan, New Zealand, Sweden
Networking platforms	Science-science ( <i>e.g.</i> promotion of collective research centres, centre of excellences)	Belgium, Canada, France, Norway, South Africa, Spain, Switzerland
	Industry-science ( <i>e.g.</i> promotion of public-private networks)	Argentina, Australia, Belgium, Canada, Colombia, Denmark, Finland, France, Germany, Italy, Norway, Poland, Portugal
	Industry-industry: promotion of sectoral networks	Belgium, Colombia, Denmark, Germany, Poland, Portugal, Spain
Technology specialisation <sup>1</sup>	Relative specialisation in biotechnology and nanotechnology	Australia, Belgium, Canada, Denmark, Ireland, Israel, Netherlands, New Zealand, Poland, Spain, Switzerland, United States, Singapore
	Relative specialisation in environment-related technologies	Australia, Austria, Canada, Czech Republic, Denmark, France, Germany, Hungary, Japan, Norway, Poland, Russian Federation, Singapore and Spain
	Relative specialisation in ICTs	Canada, China, Finland, Ireland, Israel, Japan, Korea, Malaysia Singapore and Sweden
Internationalisation	Cluster competition and cluster excellence programmes	Austria, Belgium, Germany, France, Ireland, Japan, Netherlands
(Towards) smart specialisation	Australia, Austria, Belgium, Czech Republic, Estonia, Finland, Germany, Ireland, Israel, Poland, Russian Federation, Spain, Turkey, United Kingdom	

1. Based on Revealed Technology Advantage (RTA) index in Figure 7.2.

Source: Country responses to the OECD Science, Technology and Industry Outlook 2012 policy questionnaire and OECD (2010), OECD Science, Technology and Industry Outlook 2010, OECD, Paris.

**Figure 1. IP5 patents families filed by universities and PRIs in ICT, % of all IP5 patents families applications**

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## Recent policy trends

Many OECD countries and regions are combining clusters policies and specialisation strategies. For example, the states of Berlin and Brandenburg (innoBB) have developed a joint innovation strategy to focus public support on five clusters: health care; energy technology; transport, mobility and logistics; optics; and ICT/media/creative industry. This inter-regional strategy focuses on “entrepreneurial discovery”, on market opportunities through intra-cluster co-operation and on the development of innovative technologies. It has developed an inter-regional structure for venture capital, the Business Angels Club Berlin-Brandenburg e.V. to support entrepreneurs and strengthen innovative enterprises.

Australia’s rural development and corporation initiatives are funded by a coinvestment model based on a combination of industry levies and matching government funding. They bring industry and researchers together to establish strategic research and development directions and to fund projects that provide industry with the innovation and productivity tools needed to compete in global markets. In recent years, Australia has adopted a hybrid model for developing specialisation precincts and hubs to build on areas of existing research strengths, while also funding national collaborative research infrastructure networks. Precincts allow Australia to take advantage of the clustering of research infrastructure and collaboration, and national collaborative networks allow researchers to take advantage of the best expertise and infrastructure, wherever it may be physically located.

## References

- OECD (2009), Cluster, Innovation and Entrepreneurship, OECD, Paris.
- OECD (2010), Science, Technology and Industry Outlook 2010, OECD, Paris, [www.oecd.org/sti/outlook](http://www.oecd.org/sti/outlook) [1].
- OECD (2012), Science, Technology and Industry Outlook 2012, OECD, Paris.

**Related Link:** Business support infrastructure

Innovation networks and clusters

Interface with universities and public research institutes

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[1] <http://www.oecd.org/sti/outlook>