

Science of Networks: An Economics Perspective

In economics the central problem is an efficient allocation of resources to meet the population needs. Over decades and until today there one could see two competing approaches – modes of coordination – regulation by a government vs. self-regulation by market. The first mode is associated with centralized hierarchical structure – “big government” - the second mode in its “pure form” does not have any hierarchy. Unfortunately both modes, particularly in their extreme forms, do not produce efficient allocation of resources, as the old and recent history shows.

In the process of designing institutions for sustainable development for Central and Eastern Europe in the late 1980s and beginning of 1990s, we discovered that there is a third mode of coordination – the NETWORKS. These are flat (non-hierarchical) and voluntary organizations, which played growing roles in contemporary economies. One of the most popular and efficient forms of coordination are **industrial clusters** related to certain location. Although the phenomenon of industrial agglomeration impact on efficiency was known since the late 1880s, the new research on clustering by P. Krugman and M. Porter brought new inspiration for economic research.

Porter defines clusters as geographic concentrations of interconnected companies, specialized suppliers, service providers, firms in related industries, and associated institutions that can cooperate and compete in particular fields [Porter 2008, 213]. The cluster embraces much more than a traditional supply chain or an industry and includes academic institutions providing training, research and consulting services, governmental agencies influencing cluster activities (e.g. standard agencies) and non-governmental organizations (e.g. industry associations) providing important services (e.g. lobbying and networking).

My current research focuses on what makes cluster an efficient agent of coordination? Why the most advanced and most competitive economies have the largest number of well performing clusters and the developing economies are facing serious problems to build and maintain clusters? How important is the internal communication and trust within a cluster for the synergetic effects of cluster performance?