



Thematic Network ERIK – European Regions Knowledge based Innovation Network

Thematic Working Group “Clusters and Business Networks”

Introduction

Throughout Europe regional clusters have become an important element of policy for growth and employment. Some Spanish regions, Catalonia and the Basque country in particular, have used cluster methods for many years, as have Denmark and the Netherlands. Sweden, the United Kingdom, German and Italian regions, and Finland are examples of more recent adopters. And there are many examples outside Europe of countries applying similar ideas.

Evaluation is becoming an increasingly important theme in these initiatives. Data is needed to more systematically select appropriate clusters and define action agendas for them. And data is needed to evaluate the impact of these actions, not the least to provide politicians with evidence that they can put in front of the voters and tax payers that have to support these efforts.

To evaluate clusters, they first need to be identified. This is where the Cluster Mapping Project, initiated by Professor Michael Porter at the Institute for Strategy and Competitiveness (Harvard Business School), provided a significant step forward. He looked at the actual distribution of economic activity across space to identify in which industries employment is geographically concentrated rather than widely spread, and which individual industries tend to locate together, i.e. form clusters. This process allowed the creation of 41 clusters, each defined by a set of detailed industries. For each region of the U.S., there is now data on the level and growth of employment and wages as well as other economic performance indicators (available at www.isc.hbs.edu). These cluster definitions have also been used to map the cluster structure in Sweden, and are currently applied to all 10 new EU member countries. In this respect, much focus has been on mapping and identification, supported by generic policy on cluster support.

To evaluate the potential for cluster growth and to inform policy, information about performance outcomes is not enough. It is critical to furthermore understand the business environment conditions at a specific location that make it more or less feasible for companies in the cluster to reach high levels of productivity and innovation. Such data is, however, hard to get across the different dimensions that matter, especially if one is looking for comparisons. Both so-called "hard" statistical data on issues like infrastructure or R&D spending and survey data that solicit the subjective views of



companies are useful. The not-for-profit Foundation Clusters and Competitiveness, an initiative of the Catalan government and other European regions, has created a survey tool that enables regions to create such data (www.clustercompetitiveness.org). It helps to take stock of how the managers that take decisions in companies view their location to inform effective efforts to upgrade the cluster environment.

To fully evaluate cluster policies, an array of indicators has to be used. Economic goals, such as the cluster's employment and wage growth, are ultimate goals of cluster policies but because they are also influenced by many other factors they are a problematic short-term indicator. Changes in business environment quality, especially in those areas targeted by cluster initiatives, are another candidate for evaluation and more directly related to policies. Repeated surveys of the kind discussed above can deliver such data. Finally, operational performance is a direct reflection of cluster policy quality although it is not a policy goal in itself. Through international surveys of cluster initiatives (see the Cluster Greenbook on www.cluster-research.org) we are getting data towards being able to benchmark cluster initiatives against the operational best practice in the field.

It is important, therefore, that the indicators identified and agreed by the Clusters and Networks thematic working group do not seek to further propose similar activity or policy, rather that they focus on the environment of cluster support and development (in particular bearing in mind the RPIA's of the partners in the ERIK network, which ultimately aimed to support and develop SME initiatives).

Background

During the first phase of the TWG considerable work was undertaken into the background and concept of 'clusters and networks', clearly looking at understanding and identifying individual clusters and policies in partner regions, pilot action evaluations, and potential for cluster identification. As a result a vast number of potential indicators were developed which attempted to cover a wide span, including cluster identification and mapping.

It is proposed that the TWG now focus on a narrower area of potential policy influence, and subsequently fewer more focussed indicators.

What Makes Clusters Grow?

Rosabeth Moss Kantor has attributed economic success to three factors: concepts, connections, and competencies.

A. Concepts

Innovation, imitation, and entrepreneurship are what propel virtually all competitive clusters. While the success of an individual firm may depend on its ability to protect its own technological advances, new products, or designs, the success of the cluster in which it operates depends on the opposite – widespread diffusion, access to new innovations



and information, and spin-offs of new enterprises. The porosity of clusters presses competitors within the cluster to continually improve and innovate in order to maintain their advantages over imitators.

Innovation. Innovators generate and commercialise new ideas, find more efficient production processes, or create new markets. Although university and advanced research centre-based R & D attract much of the resources and attention of governments, many of the most valuable innovations are improvements in business and production routines devised by employees, such as in applications of existing technologies, design of production and management systems, marketing of products, and organisation of labour. Customers, suppliers, competitors, and tool builders are important sources of these innovations. The current competitive advantage of Italy's ceramic tile companies, for example, is largely a result of relationships between equipment manufacturers and users.

Imitation and competition. Innovation builds a strong company, but imitation and the competition that follows generate the scale for a strong cluster. Imitation is as important to a cluster as innovation because it's what circulates new concepts and practices among companies and spurs further innovation. It is the reason that companies look for benchmarks among their peers. Many of the imitators become innovators by improving upon that practices they adopt and this cycle of innovation and imitation drives clusters towards excellence. If a cluster has a collective persona and its markets are global, it views imitation as strengthening the cluster.

Entrepreneurial energy. Entrepreneurial capacity is the fuel that drives the expansion of the cluster growth. Recruitment may be a vitamin regimen that fortifies it, but it's the rare location that can recruit a cluster. The genesis of most clusters can be traced to the employees of one or two companies who left to start their own companies. The impetus in some cases was survival when a parent firm downsized, or went out of business, or moved. The hosiery firms in Italy's Castle Goffredo were established by skilled workers of the German-owned company Noemi who, when the firm declined in the 1950s, bought surplus equipment and became entrepreneurs. But a more common stimulus for entrepreneurs has been to exploit a different niche market, become an independent supplier, or develop a new concept – the route taken, for example, in the development of Ireland's information and communications technology cluster.

B. Connections

The most successful clusters build mechanisms that can speed the movement of ideas, innovations, and information from firm to firm throughout the economy. The dynamics of clusters, not the individual accomplishments, create the learning region and innovation cluster. The mechanisms and entities for collecting and disseminating knowledge – the gatekeepers, brokers, and intermediaries that encourage and facilitate all forms of associative behaviour – provide the value embodied in social capital that is so important to cluster competitiveness.



Networking and networks. The single most important operating principle of competitive clusters is the ability to network extensively and form networks selectively. Networking is the process that moves and spreads ideas, information, and best practices throughout a cluster and imports them from other places. A “network”, as used here, is the collaborative structure among small and mid-sized enterprises (SMEs). By the late 1980s, networks had become a popular policy tool throughout the industrial world. These networks were formally structured coalitions of firms that ranged from joint ventures created by legal contracts to business associations formed by nothing more binding than annual membership dues. The formers depended heavily on co-operation and trust, the latter on the value of services and networking opportunities. A region that is home to a critical mass of interdependent companies and that has a social infrastructure as well as a set of intermediaries facilitating associative behaviour and specialised support services produces networks with or without government-sponsored network programmes.

Connections and intermediaries. The limits or constraints to achieve participation in a successful cluster are largely a function of lack of “connections”, or deficits in social capital. Some of a region’s stock of social capital resides in its civic and professional associations, and its economic value is deeply embedded in the functions of groups that bring people together to share ideas and knowledge. A variety of entities that work with clusters, including technology centres, NGOs, or skills councils, serve as gateways to information, knowledge, and labour and as linking agents.

C. Competencies

Although many factors affect the competitive advantages of clusters, none is as important as its competencies they embody. Learning and knowledge transfer represent the lifeblood and skilled labour the gene pool, of clusters.¹

Specialised Work Force. The skills and knowledge of the work force have soared to the top of the list of businesses’ requirements. As businesses become more technology dependent, they need more highly skilled, educated, and talented employees. While other cluster inputs such as parts, suppliers, and services can today be more easily sourced from afar using the Internet and overnight deliveries, the work force remains a local resource constrained by acceptable commuting patterns. Changing demographics and preferences only reinforce the critical nature of a skilled labour supply. Declining birth rates in industrialised nations along with diminished interest among youth in pursuing industrial careers, have increased the pressures to locate where a labour pool already exists.

Industry leaders. Behind every successful cluster is a group of innovative firms led by people, who value learning, are committed to their community and, therefore, are willing to work toward a collective vision for their industry. These leading companies may have

¹ Jane Jacobs, *The Nature of Economics*, New York: Modern Library, 2000



a niche or rapidly growing market that is not threatened by competition, or it may face such intense global competition that the benefits of mutual support and learning outweigh concerns about confidentiality. The key to building and sustaining a cluster organisation often rests with the support of these benchmark companies.

Talent. Regions are beginning to use incentives to recruit talent as they once recruited branch plants. Universities want faculty who will attract research dollars and bright graduate students, and clusters – especially in knowledge intensive sectors – need bright young people to attract other new firms and young companies. Talent is attracted not just by salaries but by the chance to interact with peers in their field, opportunities for professional development, and membership in local professional associations. Less advantaged and peripheral regions (or even low-income communities in relatively advantaged regions) have trouble keeping their best and their brightest graduates from moving to the “cool” places that can offer recreation activities, high culture, choices of good jobs, and that cater to diversity.

Tacit knowledge. Successful regions are home to institutions, individuals, and organisations that serve as storehouses and disseminators of undocumented knowledge. The knowledge resides in research and technology centres and their staff, educational institutions and their employees. It extends well beyond whatever may be recorded. Those that develop and work with new technologies, techniques, and systems know far more about how it works under a variety of circumstances than is ever documented.

Key Focus

Based on the above, it is proposed that the indicators focussed on the areas of concepts, connections and competencies as follows:-

Concepts

- Innovation – strategic regional focus (eg RIS, RIAP)
- Imitation & Competition – a collective persona of a cluster and international markets strengthening the cluster
- Entrepreneurial capacity – exploitation ability through new start up and spin out activity

Connections

- Networks – regional, national and international
- Intermediaries – access to those who know and make the connections
- Infrastructure – physical and non, including support services and financing

Competencies

- Skills & Training – skills levels and access to new opportunity
- Tacit Knowledge – access to knowledge in research and technology centres, staff, companies and information
- Technology – strength of regional technological infrastructure



Indicators for consideration

The proposed list of indicators is shown in the attached table and is focussed on the areas below. In accordance with the process adopted by the other TWGs it is not intended to break the indicators into groups or sub-groups but to present them as an accessible list.

To ensure commonality and ease of use, the common metric (0,5,10) adopted by the other ERIK network TWG's will also be used.

The indicators are proposed based on the following precept:-

Concepts – Innovation, Imitation & Competition, Entrepreneurial Energy

Innovation and entrepreneurship are the engines of cluster development growth. Most clusters have been formed by entrepreneurial employees of existing employers in pursuit of expanding supply chains or new market potential or in response to a corporate downsizing/closure. Although both innovation and entrepreneurship are influenced heavily by a region's educational process and cultural norms, they can be enhanced by deliberate supporting policies.

Connections – Networks, Intermediaries & Infrastructure

Major investments in an important element of a cluster – often research and development or large industrial parks – are common ways to build a cluster's reputation and attract additional firms. Some regions have attempted to purchase clusters with sufficient investment but with mixed success. Access to individuals and organisations with expertise and knowledge, to peer networks and formal infrastructure is key to continued growth of a cluster.

Competancies – Skills & Training, Tacit Knowledge, Technology

Companies value access to a labour pool that is familiar with the operations of their businesses and able to apply their skills in the particular work environment of the cluster. To be sure, "commodity skills" that are easily transferable are wanted by all employers. But the "leveraged skills" that are industry specific are scarcer. Even more specialised, firm-specific "proprietary skills" are learned on the job and enable companies to build internal intelligence; such skills also foster knowledge spillover as people change jobs.



Bibliography/References

BERTINI, S. (1994) SME Systems and Territorial Deuelopment in Ita&. Working paper No. 6. Bologna:Nomisma, Labouratorio di Politica Industriale. October.

KANTOR Rosabeth Moss (1995), World Class, New York: Simon & Schuster, 1995

MILLER P (2001) Business Clusters in the UK: a first assessment, DTI London UK

ROSENFELD S A, (2003) Bringing Clusters into the Mainstream of Economic Development

ROSENFELD S A, (2002) Creating Smart Systems, a guide to cluster strategies in less favoured regions

ROTHWELL, R. (199 1) External networking and innovation and small and medium-sized manufacturing

firms in Europe. Technovation, 11, pp. 93-111.

ROSENFELD, S. A. (1995) Industrial-Strength Strategies: Business Clusters and Public Policy. The Aspen Institute for Humanistic Studies, Washington, DC.

ROSENFELD, S. A. (1996) Ouerachieuers: Business Clusters That Work, Prospects for Regional Development. Chapel Hill, NC: Regional Technology Strategies, Inc.

SAXENIAN , A. (1994) Regional Advantage: Culture and Competition in Silicon Valley and Route 128, Cambridge:Harvard University Press.

STERNBERG, E. (199 1) The sectoral cluster in economic development policy: Lessons from Rochester and Buffalo, New York, Economic Development @arterb 5, November, pp. 242-356.

www.larevueparliamentaire.fr