# Network Strategies for Regional Growth

Edited by Martin Johanson
and Heléne Lundberg

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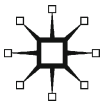



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# Preface

The year 2001 saw the initiation of the Strategic Networks project at Mid Sweden University in Sundsvall, Sweden. Its aims were to study inter-firm networks founded in specific regions for regional development purposes, and to interact with practitioners and businesspeople to provide feedback to participants in such initiatives. We have previously reported findings from the project in a book called *Regionala strategiska nätverket i praktiken* (Regional strategic networks in practice) in 2009.[1] Over the years, we have extended the research team by establishing contact with other researchers, in Sweden and abroad, who were studying the same phenomena. We decided to publish some of our findings jointly, resulting in the present book. In the process we have enjoyed financial support from several organisations, and are grateful for the generous assistance of EU Mål 2 Regionala fonden, Framtidens bioraffinaderi, Landstinget och Länsstyrelsen i Västernorrland, Tillväxtverket, and Centre for Research on Innovation and Industrial Dynamics at Uppsala University (CIND).

Sundsvall and Uppsala, Sweden, 15 October 2010
Martin Johanson
Heléne Lundberg

[1] L. Hallén, M. Johanson and T. Roxenhall, eds, *Regionala strategiska nätverk i praktiken* (Lund, Sweden: Studentlitteratur, 2009).

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# 1
# Network Strategies for Regional Growth

*Heléne Lundberg and Martin Johanson*

The past twenty years have seen a shift in the economic policies pursued in many countries. Networks and networking have become buzz words in business, academe, and regional and national governments as the traditional macro-perspective on economic conditions has increasingly been superseded by a greater interest in the micro-economic business environment (Wilson 1995). The focus is no longer on specific companies or on the market in general; instead, specific relationships and networks between companies in a region are the object of policy-makers' priorities. Vast public resources are now being poured into projects and programmes that aim to support the development of relationships between various companies in a specific region in order to achieve growth (see Figure 1.1). Governments worldwide are addressing regional and local development issues using a more decentralized approach, paying increased attention to resources and knowledge available at the local level and accessible through networking. As a result, regional plans and strategies often incorporate the aim of developing and maintaining relationships between companies in a region in order to achieve growth.

This tendency apparently started in the 1980s in small countries such as Denmark and New Zealand, which are highly dependent on foreign trade and on strong small and medium-sized enterprises (SMEs). However, accompanied by achievements in the research community, which introduced concepts such as relationships, partnerships, alliances, clusters, and networks, all emphasizing the strengths arising from cooperation and interaction between companies, this development also took off in the USA and in the European Union. In Europe, regional development is viewed as a key to achieving national growth, and the structural funds have distributed vast resources to support various regional network strategies. Although this tendency has become prevalent, the logic just presented is relatively under-researched and merits greater research attention. This book therefore aims to improve our understanding of these types of regional development networks, exploring why they exist, how they function, and what they achieve.


*Figure 1.1* The logical chain: economic policy–networks–growth

## Background

Increased interest in regional development among policy-makers was spurred by an upsurge in interest in regional issues on the part of researchers, which was manifested in greater attention to the cluster concept and the somewhat overlapping concept of industrial districts. That some industries tend to co-locate in agglomerations has been well known and documented since the works of Marshall (1891). However, interest in this observation was revived and strengthened late in the 20th century, as Porter (1990, 1998a, 1998b, 2000) and Piore and Sable (1984) brought the issue of regional advantages back into focus with their research into the value and importance of regional clusters and successful flexible production in industrial districts. In particular, the social dimension, emphasizing local networks of social relationships and interactions giving rise to both the voluntary and involuntary transfer of information and experience, has become a salient and often-cited characteristic of modern agglomeration theory (Saxenian 1994; Maskell 2001).

However, the cluster concept not only serves an analytical purpose but has also become 'a key political tool' (Martin and Sunley 2003: 6), providing important inspiration for regional development measures worldwide. Academic interest in clusters, however, has still not resulted in any fully elaborated models or hypotheses able to give guidance on how to undertake cluster development or cluster support measures. Such research is hampered by the fact that most of the successful clusters currently under study were not planned from the beginning, and, in addition, the conditions under which they currently exist are unlikely to be identical to those that originally set the cluster formation process in motion (Bresnahan *et al.* 2001). The cluster phenomenon thus remains elusive: each cluster is unique, with its own long path-dependent history. It follows that regional development measures come in various shapes and sizes. However, there is usually a common theme of local interaction and mutual learning as the intended path towards regional development. In a survey of 238 cluster development initiatives around the world, fostering networks among people and companies was found to be the most frequent objective (Sölvell *et al.* 2003: 9).

Cluster theories discuss a number of potential advantages accruing to companies as a result of co-location in a particular region. Some of these advantages are available to all companies, often due to pure agglomeration

effects, such as economies of scale regarding transportation, education, and a common labour pool. Other externalities are more specific and of interest or accessible only to particular kinds of companies; for example, competitors may cooperate in certain business areas or intensify their competition through ongoing comparisons and rivalry. The extent and importance of cluster advantages, however, has been questioned. Enright (1996) argues that here has been too much focus on the internal operation of clusters, to the neglect of external factors important for the success or failure of clusters, a point also made by Lazerson and Lorenzoni (1999). Appold (2005: 19) concludes that 'while there is an impressive and growing literature documenting the co-location of critical economic activities, evidence for local connections is limited'. He suggests that co-location results partly from mimetic behaviour, as location decisions are made under conditions of uncertainty with symbolic connotations of identity and legitimacy.

However, despite unsolved theoretical issues and the lack of specific guidelines for cluster support and development, governments and international institutions still formulate policies and support programmes to promote regional development. Although they should perhaps refrain from such action, doing so would still influence business conditions, as it would prolong present conditions for better or worse. The alternative to passivity is to undertake some sort of action, usually under the influence of a particular theoretical understanding of economic life. The cluster concept is attractive to regional development practitioners as it concerns the critical issues of knowledge development, innovation, and competitiveness, which are fundamental to economic development. It is thus not particularly surprising that the increased research interest in clusters should be reflected in the inclusion of the concept in international, national, and regional economic development plans (Sölvell *et al.* 2003). What is surprising is the limited number of studies and evaluations of regional development programmes informed by cluster theory, especially considering the vast resources dedicated to such programmes (Sölvell *et al.* 2003).

## Engineered network contexts

Interaction and communication between individuals in a community is often described as a key factor determining regional success, as in Saxenian's (1994) study of the networks in Silicon Valley, California. However, although cluster theory pays close attention to social interaction as a vehicle for knowledge transfer, knowledge development, and business exchange, in real life social interaction cannot be taken for granted, even within agglomerations. It is not uncommon, even in the presence of physical industrial agglomeration, for there to be only minor interaction

among the companies in an area. 'In Massachusetts, for example, more than four hundred companies ... were involved in some way in medical devices. ... Executives in the cluster had never come together before despite the fact that firms shared many common constraints, problems, and opportunities' (Porter 1998b: 204).

There is therefore an underlying assumption on the part of researchers and policy-makers that increased mutual knowledge and interaction among individuals and companies in a region will benefit the business community and thereby the region. Attempts to stimulate interaction have accordingly become prevalent in development ventures, supplemented by other common measures, such as providing business consultation and training (Sölvell *et al. 200*3).

As the cases presented in this book indicate, regional development programmes worldwide increasingly focus on the networking characteristics of successful clusters. Networking programmes use an engineered process, whereby a triggering entity actively strives to create some sort of cooperation among a group of actors (Doz *et al.* 2000). The opposite of an engineered process is an emergent one, in which no intervention by a triggering entity is required. Emergent processes develop spontaneously, often when environmental changes in the market present a threat or an opportunity for a number of companies with perceived interdependence. Over time, however, emergent forms will become intentionally or rationally structured as a result of institutionalizing pressures (Powell *et al.* 1996).

Emergent processes are characterized by member self-selection, but Doz *et al.* (2000) argue that the presence of a triggering entity gathering a group of companies is essential to the emergence of networks when interdependencies or other grounds for increased interaction and cooperation are difficult for the actors themselves to recognize. Government agencies, consultants, specific companies, or entrepreneurial individuals may then assume this triggering role and set out to create a shared, unifying perception of the need for increased collaboration among a group of selected members. An appointed hub will be needed to organize and coordinate the interaction between them. Such gatherings of companies in a particular region, usually chosen on the basis of a number of cluster criteria, thus form an engineered network context that is created to stimulate communication, interaction, and learning among member companies, thereby acting as a vehicle to foster regional development.

However, due to the broad and varied definitions of cluster – for example, 'a geographically proximate group of interconnected companies and associated institutions in a particular field, linked by commonalities and complementarities' (Porter 2000: 15) – what is labelled a 'cluster' may vary greatly in theory and practice. 'What are claimed to be clusters often turn out, on closer empirical inspection, to be small and only loosely connected collections of similar or related firms' (Martin and Sunley 2003: 21). The

local conditions called 'clusters' by local politicians and civil servants, forming the basis of engineered regional strategic networks, display great variation. This variation, of course, gravely hampers the development of best practice for the triggering entity. It does not, however, diminish the need to study these arrangements in order to improve their processes and outcomes.

## Strategic networks in relation to clusters and industrial districts

Companies are thus often gathered in engineered regional strategic networks, an arrangement displaying similarities to the strategic networks defined by Jarillo (1988: 32) as 'long-term, purposeful arrangements among distinct but related for profit organizations that allow those companies in them to gain or sustain competitive advantage vis-à-vis their competitors outside the network'. Being planned and formalized, strategic networks have appealed to politicians and public administrations as a means to achieve regional development in a purposeful and manageable way.

Strategic networks are in some respects similar to clusters/industrial districts but display several key differences. First, strategic networks may span vast geographical distances, and social interaction is mainly discussed with regard to the relationships among the companies included in the network. As member companies may be located in different countries, the spatial dimension in such cases is likely to present obstacles to communication and cooperation in terms of cultural differences and lack of trust (Ford 2002; Boschma 2005). Cluster researchers, on the other hand, emphasize the importance of local 'in the air' transfer of knowledge between individuals and companies through social interaction in various local arenas, outside as well as during working hours (Maskell 2001; Dahl and Pedersen 2004). Being co-located in the area implies access to information and knowledge, while embeddedness confers contextual meaning on the information obtained, facilitating its use. In this tradition, the social network is a crucial concept and a key success factor.

Second, network boundaries may affect the activities undertaken, as in strategic networks the hub is restricted to dealing with a specified set of actors. However, these actors still have ties to other companies that, although they are not participating in the strategic network, will influence it via the restraints inherent in the relationships (Blois 1998). There are boundaries to clusters as well, but these are more 'in the eye of the beholder', as clusters can be studied at varying levels of aggregation to expose different issues (Porter 2000).

Third, the word 'strategic' indicates that strategic networks are planned and rationalized *ex ante*. Companies scan the market for suitable partners, in search of complementary skills and resources needed to handle a

particular threat or to take advantage of a particular opportunity. Clusters, on the other hand, are self-organizing entities that evolve over long periods.

Fourth, in strategic networks, working arrangements are specified in written contracts and fulfilled in a formal organization based on control. Clusters, on the other hand, are said to involve the interplay between production and daily life activities, resulting in a governance mechanism characterized by mutual trust and underpinned by an underlying threat of community social sanctions (for instance, Becattini 1991). There is therefore less need for formal agreements.

Fifth, in strategic networks, goals are specified for a predetermined time horizon, although the underlying purpose is long-term in nature, while cooperation in clusters is described as being of a long-term, evolving character.

In summary, strategic networks are more manageable than clusters, as they encompass only a limited number of companies. Furthermore, they have specific boundaries and a formal organization. The activities and processes in strategic networks, however, may be hampered by a lack of trust and personal relationships – characteristics said to be crucial to successful clusters – and by the relationships member companies have with external actors. The hubs of strategic networks thus face a major challenge in promoting interaction and cooperation among member companies. Furthermore, when strategic networks are created for regional development purposes, new dimensions are added and the picture becomes even more complex.

## Regional strategic networks

There are two key differences between the strategic networks discussed by Jarillo (1988) and the *regional* strategic networks discussed here. First, the strategic networks of Jarillo are formed by companies themselves on the basis of some kind of business opportunity, whereas in regional strategic networks formed for a regional development purpose, the sample of companies is taken from companies located in a particular region. Second, this sample of companies, often supplemented by university representatives and/or government agencies, is often made by consultants or civil servants as part of a regional development strategy formulated by a regional government. It thus follows that while the strategic networks discussed by Jarillo (1988: 32) are governed and coordinated by a 'hub' having 'special relationships with the other members of the network' on a business-exchange basis, regional strategic networks have a much looser business-exchange basis on which to build and therefore need extra resources to finance the hub function. Some sort of hub/coordinator is accordingly usually appointed and paid by state sources. However, the hub/coordinator's role is very complex, since there are few business relationships on which

to build from the beginning – that being the reason for the undertaking. The hub must therefore motivate the chosen companies to participate in the network by means of promotional and coordinating activities that they will find useful and valuable. These activities will lead to the development of social and business relationships that foster the interaction among regional companies that is claimed to characterize economically successful regions. The hub thus plays a key role in the network, and Porter (1998b: 265) argues that 'instigating communications is the essence of successful cluster initiatives'.

Regional strategic network initiatives are often supported by international, national, or regional funding and organized according to a political logic as projects with a predetermined life span and a focus on distinct targets, measurable objectives, short-term assessments, and evaluations of specific activities. In the political agenda, however, network initiatives are expected to become gradually transformed into processes operating according to a business logic with characteristics such as interaction, emergent goals, long-term processes, and relational performance with unclear dimensions. When network initiatives mature, they are expected to become transformed into structures sharing some of the typical characteristics ascribed to clusters or industrial districts, that is, socially embedded business relationships, trusting personal relationships between business actors, and knowledge spillovers (Capello and Faggian 2005).

Hallén and Johanson (2009) contrast emergent with engineered cooperation, and interregional with regional cooperation (Table 1.1). Business networks, clusters/industrial districts, and industrial networks all represent emergent forms of cooperation, while strategic networks and regional strategic networks represent engineered attempts to build inter-firm cooperation and learning. Though each of these four types of cooperation has specific characteristics, the types are not mutually exclusive. Business networks, per definition, are all-embracing, as they are based on all the direct and indirect relationships between the actors in the market (Johanson and Mattsson 1994). Business networks thus subsume and include the companies that are part of more specific forms of cooperation. Furthermore, regional strategic networks constitute a subset of strategic networks, distinguished by differences in formation and processes.

*Table 1.1* Four types of cooperation among companies

| | **Emergent** | **Engineered** |
|---|---|---|
| Interregional cooperation | Business networks | Strategic networks |
| Regional cooperation | Clusters and industrial districts | Regional strategic networks |

Regional strategic networks aim to enhance knowledge capital and social capital in a particular region to enable its resident businesses to compete more comprehensively and successfully. The central vision is that such networks should 'unlock important synergies, encourage innovativeness, raise efficiency, and thus strengthen the competitive advantages of the regional economy. ... As a byproduct, local network building may also enhance political competencies and social commitments' (Staber 1996: 4).

Their geographical delimitations give regional strategic networks a resemblance to industrial districts but constitute a major difference from strategic networks, as defined in business theory by Jarillo (1988) and others, as such networks may cover vast areas.

Regional strategic networks tend to be less formal and use weaker membership contracts than do business-exchange or R&D-oriented strategic networks. Furthermore, regional strategic networks often include a rather large number of companies gathered under vaguely formulated goals. Under such circumstances, formulating a common purpose is problematic as members differ, for example, in maturity, cost structures, and business strategy (Staber 1996).

The above comparison of industrial districts, strategic networks, and regional strategic networks in terms of geographical proximity, boundaries, organization, governance mechanism, and time horizon is summarized in Table 1.2, adapted from Lundberg (2008).

In summary, we find that regional strategic networks constitute a very complex phenomenon involving simultaneous ongoing process at three

*Table 1.2* Comparison of clusters/industrial districts, strategic networks, and regional strategic networks

| **Characteristics** | **Clusters/industrial districts** | **Strategic networks** | **Publicly financed regional strategic networks** |
|---|---|---|---|
| Origin | Emergent | Engineered by leading (hub) company | Engineered |
| Motive | Business exchange | Business exchange or R&D cooperation | Regional development through increased regional business exchange |
| Geographical proximity | Close to varied | Varied | Close |
| Organization | Self-organization, based on shared culture and social relationships | Hub company | Hub appointed but with a mission to foster sustainable self-organization |

levels: the region, the participating organizations, and the individuals representing their organizations in the regional strategic network. At each level, various tangible and intangible effects may develop. However, several challenges face initiators, coordinators, and participants if the visions and goals of these networks are to be realized. These networking initiatives are undertaken in various settings and under varying circumstances, so it is important to improve our understanding of the effects of such variation on processes and outcomes. More research is also needed into how outcomes can be registered, measured, and valued to enable the improvement of processes and outcomes in terms of efficiency and goal fulfilment at all three levels. In addition, further knowledge of outcomes would provide valuable information on the purposes for which regional networking initiatives may be used.

> We have surprisingly little systematic knowledge of these [cluster] initiatives, their structure, and their outcomes. As more and more resources are devoted to efforts to foster cluster development, the need to understand best practices has become urgent. Cluster initiative practitioners have to find the approach that both builds on the international experience and reflects their unique local environment.
>
> (Sölvell *et al. 20*03: 5)

## Some characteristics of regional strategic networks

We feel it is impossible simply to cherry-pick the advantages presented in the literature on clusters, business networks, and strategic networks and expect them to emerge automatically from regional strategic networks, which superficially share some characteristics with these other types of industrial agglomeration. Based on Sölvell *et al.*'s (2003) observations and the above analysis, one can identify three main areas in which these specific characteristics are evident: network arrangement and structure, actor roles and functions, and network processes.

### Network arrangement and structure

A network has a structure, a set of relationships between companies, but this does not mean that all networks share the same qualities. The number of companies and the number of relationships vary, as does the strength of these relationships. The number of companies joining a regional strategic network determines how many relationships could potentially be developed among the network participants, and since relationships are the cornerstones of a network, the number of companies is crucial. In other words, the more companies in a network, the more relationships can be developed. However, as time and resources are limited, in business in general and in engineered networks in particular, the greater the number

of relationships that are to be developed in a network, the weaker these relationships are likely to be. This may not be a disadvantage, however, depending on what the network aims to achieve. Weak relationships are beneficial for information access (Granovetter 1973) and also favour the seeking and obtaining of resources (Lin 2001). Such relationship benefits arise not only from direct relationships between network participants but also from relationships with more distant actors, as relationships can provide access to other networks and span structural holes (Burt 2004). If such relationships with other networks can be mobilized, they will be strategic assets for the network and counteract the threat of lock-in effects (Grabher 2004) that might otherwise impinge on networks oriented towards a particular region.

Relationships with other companies may provide information and knowledge, but this may not be enough to make weak, newly developed relationships function as a cooperation platform in the way intended by financers and policy-makers. It has been indicated that weak relationships are less suited for transferring complex knowledge, which tends to require a trusting, frequently renewed, and strong relationship between the two parties (Hansen 1999). A smaller network may therefore be better suited to facilitating the development of a few strong and deep relationships, which may be more effective for participants if the aim is to cooperate closely in production, R&D, marketing, or other business areas. Nevertheless, a lot of companies and a lot of relationships mean that companies can distribute the costs of network activities among more participants, thereby achieving increased economies of scale. In other words, if the aims of the network are costly to achieve, it would be advantageous to have more companies in the network.

The arrangements of companies and relationships in networks vary, possibly significantly influencing both network operations and results. It is

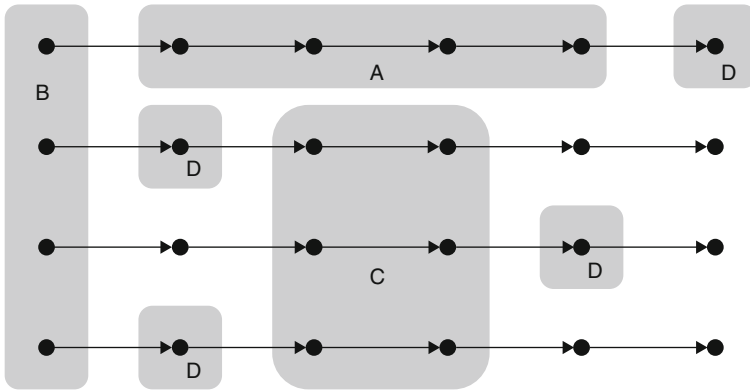


*Figure 1.2* Four network types

possible to identify four types of networks. In Figure 1.2, which attempts to illustrate a number of value chains, the arrows symbolize buyer–seller relationships between companies.

*1. Networks consisting of buyer–seller relationships (see A in Figure 1.2)*

These networks consist of existing or future relationships, in which companies currently or in the future will buy or sell from each other. This means not only that they share interfaces but also that they have a common goal, namely to do business. On this basis the network activities can be designed and performed, which also implies that it will be relatively easy to specify and plan what the network should do and achieve before it commences operations. The critical question in this case is whether these relationships already exist – that is, are the participating companies currently buying and selling? – or whether this a goal for the future. The shared logic and goal can constitute a platform for developing new or improving existing relationship-related activities, such as transportation and logistics, production processes, and product development. However, this process is likely to take more time in a network founded to develop buyer–seller relationships than in pre-existing networks. In existing relationships, companies are likely to have developed a shared language and knowledge base, and mutual experience and trust prevail. For networks of existing buyer–seller relationships, it can therefore be questioned why anyone should financially support already-viable companies and relationships.

*2. Networks consisting of relationships between competitor companies (see B in Figure 1.2)*

In this type of network, companies share a language and a knowledge base; they also all possess almost the same resources, since they produce similar goods or services. However, the network companies do not have a shared goal. They act according to the same business logic but do not do business with each other, only with other companies; instead, they compete to do business better than the other companies in the network. This gives rise to two prevalent situations in a network of competitors, situations with quite different consequences. The first situation implies that the companies follow the competition logic and maintain distance from the other companies in the network. However, maintaining distance from other companies runs counter to the whole idea of developing new relationships and creating a network, posing a significant obstacle to the network in its ambition to produce positive outcomes for the member companies. In the second situation, in contrast, the companies act according to the cooperation logic. They cooperate, sharing information and knowledge, but this leads to complicated new situations and questions: What are these networks planned to achieve? What are the side effects when competing companies begin to cooperate? Are these

networks compatible with existing legislation? Should governments and public organizations stimulate and support the development of cooperative relationships among competitors?

*3. Networks consisting of companies in an industry (see C in Figure 1.2)*

This type of network is a mixture of the previous two types and resembles what we tend to denote as a cluster. Companies in these networks have largely the same background, being part of the same industry and possessing similar resources and competencies. These companies easily understand each other's problems and opportunities. This also means that they share a single view of business. Here we find companies that are both business partners and competitors. Since they are located in the same region, they also share the same labour market, which means that, over the years, workers tend to shift among the companies in the networks. These networks are characterized not only by predictability but also by some suspicion. The shared location implies shared social networks and social control but can engender fear that another firm, in particular a competitor, may take undue advantage of transferred information or other resources. The critical issue is finding the right balance in the network in terms of numbers and competencies and developing a trusting and open interaction climate in which the companies share experiences and knowledge for the common good.

*4. Network consisting of dispersed companies (see D in Figure 1.2)*

These networks are fairly common and are often put together for political reasons, such as to reduce unemployment, increase equality, or strengthen the link between universities and business. In this network type, we find companies from different industries that neither buy from or sell to each other nor compete with each other. In business terms, they are very distant from each other. This means that they lack a common denominator and have a limited absorptive capacity (Cohen and Levinthal 1990) for information transfer and knowledge development.

Consequently, these networks tend to have vague goals, remote from the participating companies' daily operations, making it difficult for the coordinating hub to offer the participants anything other than general network activities. Instead, the regional development goal, or maybe a more general social context, must provide the glue that holds the network together. The social context can be a substitute for the lack of experience gained from doing business together. Nevertheless, despite such social platforms, these networks have difficulties finding shared goals for the involved companies, goals from which all companies can benefit. This means that such networks must spend considerable time defining what activities should be performed. All these factors imply long-term preparation and a long start-up period. Overall, these networks risk being vague, insipid, and characterized by low