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## **SUCCESS PILOT PROJECT WP1 Appendix 3.5**

### **June 2008**

Management and collaborations in networks for innovation:  
Mechanisms for networking<sup>1</sup>  
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## **1. Purpose of the network:**

Collaborations are formed as inter-organisational relations, which are special forms of networks creating and spanning boundaries of organisations. This chapter is focusing on social networking mechanisms for organising, and managing networks. This is one of the features for understanding collaboration and management of collaborations.

Networking is a new understanding of management in an economy in which uncertainty and turbulence are the norms rather than the exception. Network management in an entrepreneurial turbulent environment is seen as enacting power in a 'negotiated management' process involving partners much more than an established position in a hierarchy where power is exercised. The focus is on obtaining control and power, but also to keep all the actors active even when they are formally out of control of the manager. The question is how to create and maintain the role as project manager on joint projects with other firms. Networking is one way of mobilising resources, through which resources for establishing research and innovation are explored and exploited.

In all research and innovation projects, the legitimacy of both technologies, firms and research teams are important. Legitimate partners, such as: recognised peers and research environments as well as international research funding may be exploited as a viable strategy for establishing a good reputation, and thus a strategy to create legitimacy of own innovation and research.

## **2. Network characteristics**

Smith-Doerr & Powell (1994) provide an excellent overview of network theory, with emphasis on structures, but in a relatively static perspective, they do not include action and fluidity in the strategic processes. Nohria's (1992) strategic perspective on networking establishes a new way of analysing organisations and organising behaviour, in which the environment is constituted as an active part of the interaction. This goes beyond the primitive structural perspective on networks, and allows for action and processes of interaction. Research on entrepreneurship and small business highlights the crucial importance of the fluidity and action perspectives, in specifying various types of personal relations (as developed by Johannisson, 1986, 1994). Structuration, as a process of networking, becomes a fundamental perspective.

Some studies of linkages between businesses focus only on one level, such as on pure economic relations and transaction costs (Williamsson 1975), on regional business networks (Johannisson 2000, Grabher 1993, Bernasconi, Dibiaggio, Ferrary 2005, Ferrary 2003), on systems of firms (Lundvall 1992, Williamsson 1989), or on personal relations (Heimer 1992, Ibarra 1992, Cook 1982).

Networking as a strategic concept have been analysed in the context of entrepreneurs by Johannisson (2000), in management Nohria (1992) and Burt (1992), who has also expanded the concept to brokering. The regional strategies and the lock-in of networks is analysed by Grabher (2005), and strategic alliances as a tool for getting access to knowledge is analysed by Grant & Baden-Fuller (2004). The strategic level often combines business and personal relations, as happens in real life; business relations are used for personal contacts and personal networks are used for business.

The uniqueness of organising via networking is that various contacts in different contexts refer to each other, which imply that a person's or firm's network does not have to comprise a group or an organisation or be tied to one role. Organising in these ways is not covered by other organisation concepts, and is the most complex to study because the boundaries are fluid, fuzzy, and uncertain, and because it is the 'opening' of opportunities rather than the 'closing' of decisions that is the interest of study. Also the bridging and collaborations are opening some boundaries and creating other boundaries. The focus and

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units of analysis are the interrelations and intermediaries, and the personal network is the main building stone for relationships and business change.

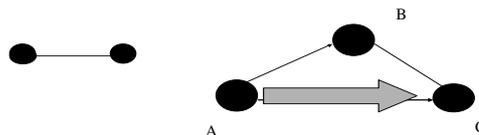
The basic idea is that people have different roles, and they interact with people while maintaining other roles. The communication will, therefore, not only be part of the organisation, but will also have implications and relevance for other roles in life (such as sports, arts, family, friends, earlier students and colleagues). So people carry the knowledge experience and reputation with them, from one role to another. This is why some contexts, such as golf or sports clubs, where 'the right people' can be met are obvious platforms for establishing new personal contacts to be used in career development.

Networks are where one 'intermediary puts other intermediaries into circulation' (Callon 1991, p. 141); which is how networking can be seen as action. In this process, the intermediaries and their patterns transform and change. Some contacts (such as professors, student friends or earlier colleagues) can be dormant or latent for a long period, and then be revived in a recombination for a specific purpose.

### 3. Mechanisms in the functioning and characteristics of networks

A network is built up by dyads between nodes, i.e. the relations between individuals or enterprises. The dyad or the link thereby stresses the interrelations as the unit of analysis rather than the nodes, or actors themselves. Relations are transitive; the link may lead on to other links. When A knows B and B knows C, then A may get access to C. This is the basis for intermediaries, brokers and bridging (Marshden 1982, Burt 1992). This is shown in figure 1.

FIGURE 1 : Dyads and triads

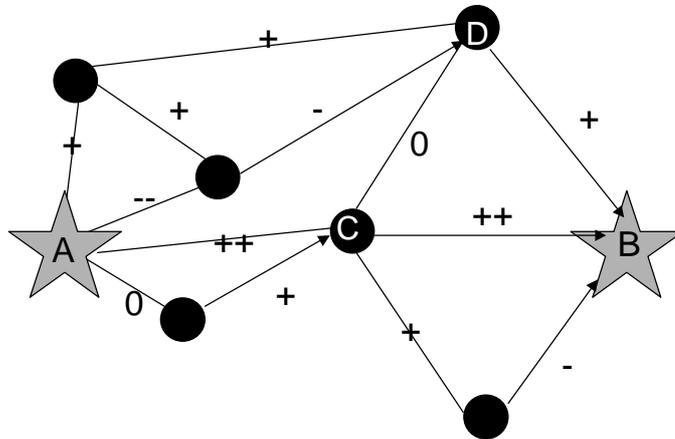


Network relations are value loaded: positive or negative. Whether the relation is positive or negative determines whether and how the recommendation is carried out. This aspect is often overlooked. In personal networks, it may be obvious, but the credibility of firms

will depend on a positive evaluation, which is not evident for entrepreneurs or innovators. Commitment, trust and barriers in network may also be related to this emotional value. Recommendations from close networks contacts may make busy people change their priorities. Negative value may block access, even if it is not 'fair', because it is based on attitudes and a subjective evaluation, and not on measures of performance. In figure 2, B may receive mixed references from A via C and D.

FIGURE 2: Value-loaded networks (Source: Mønsted 2003 p. 127)

A network is open and has no boundaries. There are various kinds of boundaries between subcultures, but networks may transcend these. Networks, however, have a tendency to



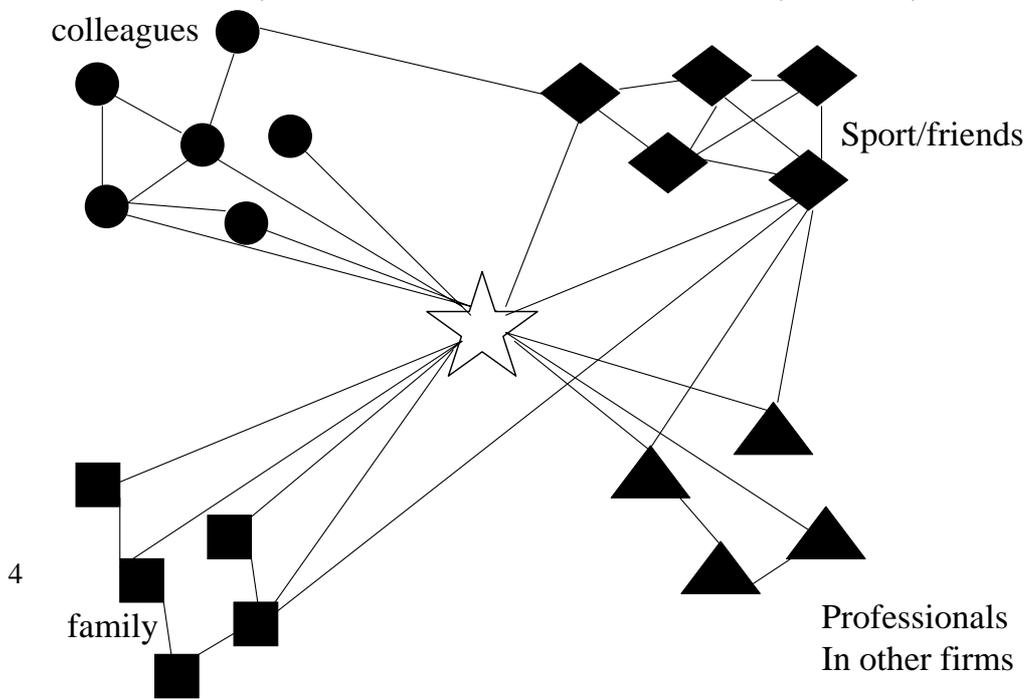
++= strongpositive + = positive  
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align along demographic lines, and create subcultural barriers. The openness and the open-ended nature, though, are important for generating access to resources in a strategic way. Open-ended does not mean that no barriers to interaction exist, as suggested by the emotional value of network ties.

The network of a person does not form a group or an organisation. The idea is that network contacts from different contexts may transfer references and information. A person's network does not create a homogeneous role or reputation, but a certain overflow of information and references from one role and context to another. A network combines personal relations from various roles and time. Colleagues, former colleagues, friends and family constitute a person's network, but not an organisation, nor a group. The diversity and richness of the local network is important for its value. (See figure 3)

FIGURE 3 Segmented networks

Network contacts may be both formal and informal. The boundary is not very clear, as



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some formal contacts develop to become informal and vice versa. As networks are created in different contexts and time, informal contacts may generate access to formal contacts, which may in turn develop into informal friendships.

Network services are not necessarily paid. Informal assistance among individuals has more resemblance to assistance from friends, which is usually expected to be balanced later. The principle is 'exchange', but with a delayed 'payment'. Strong networkers will build up credit, thereby specifying that 'you owe me one' in contexts where extraordinary assistance is provided. This may serve to 'jump a queue', or gain access to services and time from other nodes in the network. It is still related to a kind of barter trade based on 'what is in it for me?' and people would expect a balance in the long run.

Tight networks are mainly isomorphous groups or formations of homogeneous groups along demographical or other social criteria. Such subcultures form a good basis for trust building. Trust is easier to establish with people 'like me' as the frame of reference. Granovetter describes these as 'strong ties' (1973). Multiple relations create close ties. Multiple linkage-patterns, such as where several individuals have established relations between the same two firms, make the relationship stronger than just one connection. Tight networks are usually important for friendship, trust, support and social control. They may create the commitment and the 'glue' in the network. This is the support and social obligation and what constitutes the 'we' feeling and the mutual obligations. They may also be the basis for complex knowledge sharing as a 'community-of-practice' (Wenger 1998).

Network contacts that cross 'structural holes', or weak ties, are considered important for enabling access to new information and influence in the strategic search for complementary resources (Granovetter, 1973). Ronald Burt (1992) has developed these arguments in a more strategic perspective, discussed later.

Socio-centred networks can be regarded (as viewed from the outside) as a spider's web, or as an infrastructure, when the actions and dynamics are frozen in time. Ego-centred networks describe the relations strategically from the point of view of the individual or the firm, and stress the social creation and fluidity of network relations, contrary to the stable structure. This perspective introduces networking as action, emphasising the processes of creating networks and using them as infrastructures.

A network approach allows us to introduce dynamics and a concept of action and entrepreneurship, and thus to combine relations from various contexts and time in order to organize innovative projects. Networks provide entrepreneurial and innovative firms the ability to establish and re-establish project teams, and to form partnerships for projects across firm boundaries. They give access to information, creates alliances and also personal obligations. This process of enacting the environment as an infrastructure, however, introduces the complexity of organising without boundaries.

Some of the strategic mechanisms behind the process of networking are described. Two main forces of networks are essential for the understanding of strategic networking, 1) access/ complementarity/ openness, and 2) control/ constraints/ cohesion/ closing.

The first on access/ complementarity/ openness embrace a number of characteristics. First, it involves access to resources outside the subculture and the strong ties. Second, it yields access to people and resources with a different background and other types of resources – as diversity management requires. Third, it involves surpassing the boundaries to create open doors and to keep options open, in which new opportunities and entrepreneurship are created. This is essential for getting access to complementarity, and creating bridges to other types of organisations.

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The second on control/ constraints/ cohesion/ closing include a number of other characteristics. Control is a social form of exchange based on cohesion of nodes and a joint interest to use the personal relations as a social form of control. The cohesion and glue of the network in collaborations create constraints in terms of mutual obligations, and moving external relations to internal. In a strictly economic perspective, the network can represent a constraint for options. On the other hand it is also 'closing of commitments', a kind of 'certainty feeling' beyond pure economic market relations. In Granovetter's words 'the necessity of trust and trustworthy behaviour for the normal functioning of economic action and institutions.' (1992, p. 38).

These two forces or dimensions also show some of the paradoxes in networking for innovation. The need for openness and diversity for new ideas and knowledge about neighbouring fields of knowledge makes it more difficult to create the commitment, which is so much easier within the closed and homogeneous tight networks. The access to resources as a kind of connectivity (Grabher 2005), and is an essential feature of ICT and other types of communication and high tech firms (Mønsted 2003).

The constraints do limit options and new ideas, but provide a stability and commitment in turbulent settings. It moves relations from being 'external' to being 'internal'. This part of collaboration creates foundations for trust relations, which may open up for better frameworks for sharing knowledge, and for applying new knowledge in a kind of community of practice.

#### **4. Networking for innovation**

A high level of uncertainty is an embedded part of the advanced technological research and innovation. The uncertainty is tied both to technology, to the system where the technology is embedded, such as in energy the distribution net, and uncertainty on market for new technological products, which are not necessarily well established, but have to be created. The creation of markets in the energy sector depends not only on the pure market mechanisms, as many public organisations are involved either directly as owners of the distribution net, or indirectly in the involvement of the distribution net, and policy measures for subsidies for special sustainable energy forms. Uncertainty set the framework for management and planning.

Management of network ties does not provide a hierarchy or 'given' management structure. The problem is how to handle the organising of resources in many collaborations or network relations of parallel projects with different partners. Some partners may be involved in several projects, but others have to be found on the basis of their special expertise for particular projects. Management of these projects is an ongoing process of persuasion and motivation, as well as exchange. Manager's identity in collaborations has to be generated. Managers in network collaborations do not necessarily start by having authority: networking as action and persuasion of participants become important.

Networking is a type of organising across organisations, whether there are joint organisations in a collaboration relation or not. Tight and loose relations and the combination of these create the organisational set-up, and also the infrastructure in which confidence has to be generated in order that joint projects can be formed.

In relation to management in organisations and hierarchies there are no easy means to allocate the extra resources if projects take more time than scheduled, and the open space and fluidity in such loosely coupled projects is difficult to handle and requires a negotiated management approach.

#### **5. Trust and networks.**

Under innovative conditions, personal credibility becomes important for actors for them to earn legitimacy in the form of recommendations from others. If uncertainty is high,

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then personal credibility is in focus, and references from other credible peers may create the required legitimacy. In the personal evaluation involved in these networks, trust plays an important role. Collaboration is both based on trust, and also generates trust in the collaboration. Thus the links between trust, legitimacy and reputation provide for complexity in a process of circular explanatory factors. The process of building up trust in a relationship is a process of experience, which may build up gradually a spiral of trust, where each transaction between actor A and B increases trust if the transaction goes well. The spiral may be broken by just one 'mistrust' incident, where the trust falls below the initial assumption of trust, as figure 4 illustrates.

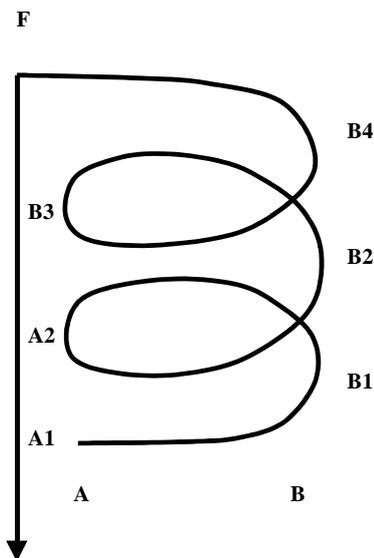


FIGURE 4: The virtuous circle of trust

Trust is not timeless, but is based on experience, continuity, and evaluation of the person and of the project. Trust is built upon credibility and successful relations. A profile of contacts over time may provide an indication of how reputation, credibility and accessible resources develop in collaborations between organisations.

Technical cultures have a tradition for many ties among themselves and they make their own rules as to professional and personal ties. Networks that are 'communities of practice' seem to be tighter, and are based on personal evaluation of skill and trustworthiness (Wenger 1998).

Between professional cultures, there are barriers to communication and problems of legitimacy and trust. Problems may arise when innovative high technology firms seek complementary resources via networks, and need to create collaborations with different disciplines from a "foreign" culture, such as investors. Here the role of "translators" who are member of both communities become important as knowledge brokers. This raises the question as to how to create bridges, and transfer or create trust via a third party.

There are some paradoxes associated with the trust and homogeneity found in tight networks, which allow for close collaboration and joint experience which helps knowledge to be easily understood and applied. Burt (1992) raises the problem of the redundancy and lack of newness in knowledge from tight networks. The access to useful knowledge on the other hand is focused on complementary knowledge and complementary resources, but the easy understanding and trust could easily be a barrier to work on complex innovative projects where complex knowledge needs to be understood. The Community of Practice perspective (Wenger 1998) can be related to tight networks, where joint experience and easy understanding differences helps, but it does not relate to

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a discussion of how to get access to diversity in knowledge and resources, and to understand it sufficiently to act on it. It is much easier to collaborate within a discipline and technology, where you know the codes and concepts. The collaborations within the same discipline will also benefit from this, but do not contribute the creating access to other resources, such as vertical relations, or new ideas of relating to other technologies.

## **6. Complementary competences in networks.**

It is the differences in complementary networks that create other forms of 'glue' in networks and the possibility of specialising and exploiting complementary skills. The need for specialisation, division of labour and the gradual experience of exchange can be linked to sociological theory. Tönnies describes the difference between 'Gemeinschaft', as solidarity based on communality and similarity, and 'Gesellschaft', where solidarity is based on complementarity and rich differences (Tönnies 1991 (1935), Asplund 1991). Important aspects of the solidarity concept could be interpreted as trust-building in network relations, even if the level of analysis is very different. In the analysis of strategic alliances as access to knowledge, Grant and Baden-Fuller (2004) underlines the mutual dependency and specialisation in such alliances. The dependency becomes the "glue" of the alliance.

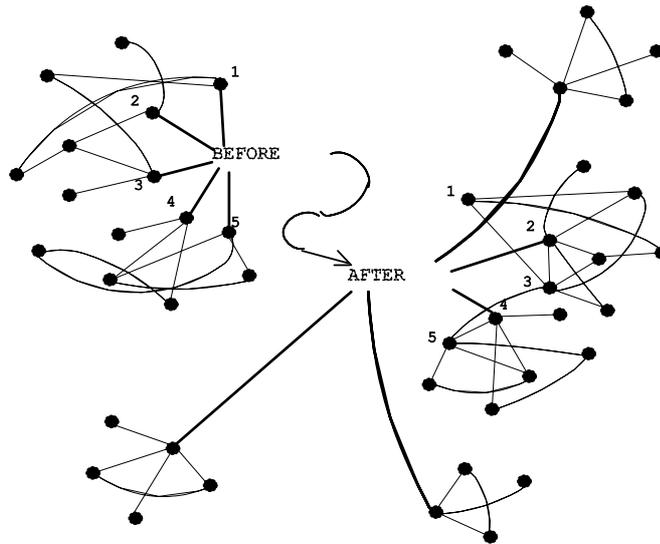
The social psychological view of network structures indicates 'that power or reputation of leadership is attributed to actors in positions with high potential of communication activity and with high potential for control of such activity. Actors with a high level of communication activity are in positions to collect and synthesise information on the group task.' (Marshden 1982 p. 205, Nohria 1992). This view is usually associated with the hierarchical type of communication control seen in large organisations, whereas one of the most interesting aspects of the smaller innovative firms are their volatility, their opportunities to create new ties (thus to change their structures), and their readiness to leave network organisations, if they do not succeed.

Burt's (1992) model uses a rational economic- perspective on networks. He diagnoses the network ties and the redundancy in networks, based on whether those in tight networks provide (and receive) the same information. The redundancy is then seen to be wasting time, but is a chance to revise networks in an almost surgical way. The strategic argument is that it is not necessary to maintain network contacts with several actors in a tight network, who know each other, as it consumes time but provides neither new information nor power positions. The strategy is to build up a role as broker between different tight networks, and to create a power base that makes the others dependent on the broker's role.

The method offers control and power via third persons and helps save time when maintaining and expanding network contacts. It is linked closely to power relations and the role as a strong 'player' as the spider of the web. Intermediaries are used both as bridges to access resources and for social control via third persons. The model presented (figure 5) visualises and introduces strategic thinking into network theory. These aspects of networking stress the connectivity to other resources, such as also shown by Grabher (2005). Power relations are also touched upon, even if they have been nearly taboo in the socio-psychological network theory. However, this model does not respect the mechanisms and foundations of social obligations and personal relations, which are stressed in knowledge based exchange networks, as professional and personal credibility are important indicators for the trust-worthiness of recommendations.

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FIGURE 5. Structural holes in strategic networks (Source: Burt 1992, p. 22)



Using the model (figure 5) in the pure form may be hazardous for small businesses or weak organisations, as they are very easy to be marginalized in networks. It is not possible clinically to cut out certain relations in the network, in order to have time for others that may be more interesting. Trust among 'friends' or professional colleagues is challenged if perceived in an economic rational perspective. The model may be used, however, to increase consciousness of the use of networks. It is based on a diagnosis of where organisations do not have access to relevant knowledge, where they ought to have contacts. It may be relevant to find out who would be relevant as a contact or broker in order to access new important networks.

The paradox is between the necessity to get complementary knowledge and to be able to communicate with people of different backgrounds for forming creative innovations, and the necessity to communicate about innovations which is so much easier within the homogeneous group of the community of practice. The strategic network solution might be to form teams and communities of practice based on diversity, in order to create the tight networks based on homogeneity on some of the social dimensions, or at least create bridges based on similarity.

## 7. Transaction benefits and strategic alliances

Strategic alliance can be seen as a special form of network, just as collaborations. There are strategic objectives, and the alliances are relatively stable with mutual obligations for partners so as to create standards (even, for example, for large corporations in IT), and to manage supply chains and marketing efforts. The strategy and alliance concept combines two different paradigms and theoretical traditions. One is based on strategic economic thinking, closely tied to the classic economic business tradition largely developed in the context of large corporations (Ansoff 1977, Hamel & Prahalad 1994, Lorange & Roos 1992). The other is based on networking as the creation of obligations and trust-based alliances.

Williamson's (1975, 1989) 'transaction costs' perspective presents network transactions within an economic framework, stressing 'transaction benefits'. 'Transaction cost economics suffers from not adequately exploring other available governance structures'. When costs of internalising are too high and reliance on market too risky, it becomes economically 'rational' to organise in networks (Ring & Van der Ven 1994, p.484). There is a need to define the concept of strategic alliances as a form of alliance and networks, which differ from other collaboration forms. A strategic alliance is 'collaboration between two or more firms with the purpose of obtaining a goal of mutual and of high priority to both firms'. Such an alliance could be formalised by a contract of

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stable collaborations where resources are vested from both parties or as long-term obligations. The strategic alliance perspective is mainly based on a perception of the benefits of economy of scale, but there are other objectives, including risk reduction, access to technology, learning, and defence against competitors, commitment, and the creation of standards. One of the problems with the concept is that it is used for many different forms of collaborations, such as e.g. outsourcing, supply-chains, research collaboration, access to technology, access to market ( internationalisation, export agents), setting standards.

The same variables are used as arguments for mergers or acquisitions, but strategic alliances are hybrid organisations in loose relationships with less commitment than a take-overs or mergers. A number of firms may benefit from this type of organising, and thereby maintaining the flexibility and creativity of individual firms. Grant & Baden-Fuller (2000, p. 116) stress that the inter-firm collaboration is most beneficial, 'when the firms' knowledge domains and product domains are incongruent, as this increases the efficiency of knowledge utilization, when uncertainty exists over future knowledge needs, collaboration offers risk spreading benefits, or when collaboration in developing new products and processes can exploit early-mover advantages.' Such alliances appear more beneficial to some sectors in the so-called new economy, and certainly within many types of IT.

FIGURE 6 Networking forces (Source: Mønsted 2003, p. 127

Access	↔	Control
Complementarity	↔	Cohesion
Openness	↔	Closing
Options	↔	Constraints
Independent choice	↔	Obligation & dependency

The network forces illustrated in figure 6 should not be seen as dichotomies, but rather as a number of scales, where balancing in the act of networking may be needed. Networks for innovation include the combined and complex patterns of both 'poles' of these scales, combining tight and loose relations, and reflecting awareness of both openness and constraints.

A strategic alliance is not a form in itself, but is a hybrid organisation, a loose network, where there may or may not be a joint venture as a joint organisation. Such hybrid forms have a series of contradictory aspects, they create neither consistency nor theories, and they open a discussion concerning content and form. Content is about complementarily and innovation, and form concerns the kind of relationship and formality, which is more fundamental for networking processes where known actors and similarity tends to be preferred.

In an economic rationale, the question comes up as to: why do firms want obligations and constraints? Especially for the larger players in the economy, this is essential, and we still see large corporations making collaborations with units within universities or with smaller firms. It is easier to imagine the need for small and vulnerable firms or university departments wanting to create obligations for partner firms as a kind of 'political non-aggression pact' (Mytelka 1991). So partner seeking firms need to have something to offer in a balanced exchange. This could be research, research capacity, or other resources that constitute some strengths or opportunities. Such strengths will make it possible to play the role as the stronger 'player' on some dimensions, as modelled by Burt (1992).

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Collaborations among small high tech firms often develop gradually into an arrangement that only ex-post-facto can be defined as a strategic alliance. In some projects the 'know-who' seems to be more important in the early stage than 'know-how'. In many ways this reflects a networking strategy, but not strategic alliance strategy, because it emerges by collaborating. Combining established network relations and new expertise is a way of creating new projects, as well as generating platforms for new projects. Some relationships may be contractual in the form of alliances, but others are informal. The management of the network is a special leadership-expertise capability that is essential if growth is to be achieved.

## 8. Power and management

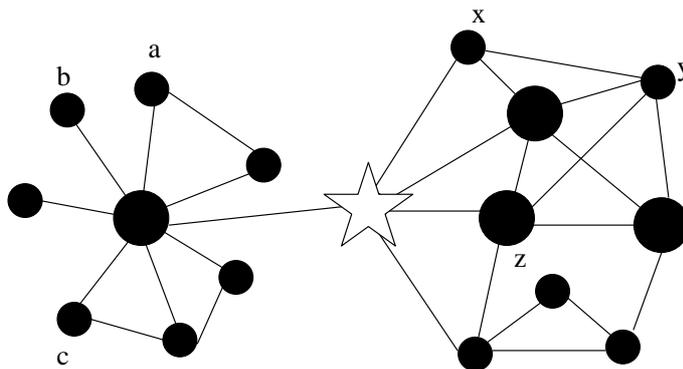
Looking at power in networks goes beyond the usual resource based view on power, to include patterns of relationships and dependencies, and various forms of social control in negotiated interrelationships. In a network perspective, power is not provided by the structure as a position, but rather is constituted in interaction in the relationships.

Power in relationships may be built on resources or other features such as competence. The interdependency is rarely balanced, but may show different aspects of dependencies on different issues. It is important in the analysis of alliances to look at the kind of interdependency and the structure of the network. At the network level, the convergence of those involved involves a combination of alignment and co-ordination. 'Thus the higher the degree of alignment and co-ordination of a network, the more its actors work together, and the less their very status as actors is in doubt.' (Callon 1991, p. 148). They are not homogeneous in terms of production, but they have to fit together based on their complementarity (ibid.).

Power in networks is usually associated with having the power to control information or access routes, as figure 7 illustrates.

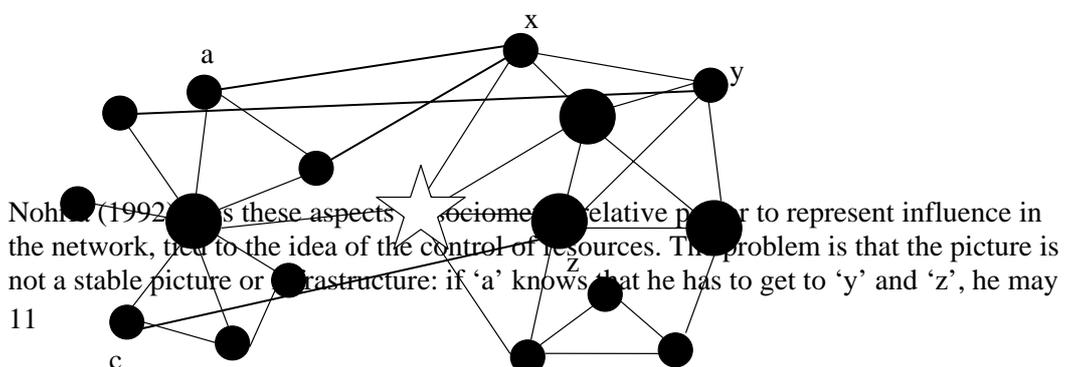
FIGURE 7 Power positions in networks (Source: Mønsted 2003 p.136)

The star establishes a bridge, but also many contacts. If a, b and c need contacts to x, y, z, they have to involve the star at least for the first time, and accessing y, someone else as well. As soon as the contact is established though, the figure changes as figure 8. The star



is no longer necessary as a bridge, and is surpassed, and whether the star maintains his/her gatekeeper role, depend on other resources, contacts or power.

FIGURE 8: changed power role due to new brokers.



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try to reach them directly. The power of the star is greater, at least the first time, if 'a', 'b' and 'c' do not know where to locate expertise. Power is created by combining information control with the role of broker.

The fluidity is embedded in the networking view. 'Those who search for laws and regularities overlook the way in which networks are not in the actors, but are produced by them. And they ignore the way in which networks only stabilise at certain places and at certain times.' (Callon 1991, p. 155).

The power concept is dynamic in the network perspective. The concepts of power and influence are based on a social construction and a process of negotiation. There are many ways of viewing and creating power relations, and of building management in networks. These include creating access to power (acting as if small firms have power and influence), generating power via persuasion in relationships (to create scale in networks or alliances), generating power and influence (to get recommendations and legitimacy), choosing interesting and resourceful partners (making sure both have interest and are complementary to create division of labour, so the strength of the partner reflects on the original actor), and choosing partners who are not dangerous competitors on the main specialisations.

Power balancing involves a very complex evaluation of expertise, opportunities and strength, and in a dynamic way. The creation of power and influence is tied to the leadership role within the networks, and the extent to which the other actors depend on or find the leader useful ( Mønsted 2003, Haugaard 1997).

The management of innovation may be seen as the creation or generation of meaning in context. Fragments of rapidly changing information may not necessarily create meaning. If the context does not cater for sense making, then new information does not create action because it remains passive as data, or even worse, as noise.

Expertise has to be accessible, in tight networks on a virtual basis, or locally where rich communication is possible. In Silicon Valley it could be that there is so much technological expertise in the area, someone can always be found to help on most technical problems (at least in the computer industry). Access to a rich resource network within the technical, management and finance areas is the foundation for using networking strategies for innovation and high tech entrepreneurship. Networking to other people and business without resources consumes so much time. Local access to resourceful people in the social and business worlds mean that networks create short-cuts in the solution of problems. Provided the networks are resourceful, they not only provide better solutions and contacts, but give quick access to knowledge. It is not only the form of organising which is important, but also the content and resources in the network.

## **9. Conclusion**

In this paper, the focus is on the use of networks and decentralised acting to create opportunities and innovations. The dilemmas are seen not as opposites, but more as an awareness of the combinations to form openness and closeness as the clue to innovations. The emphasis is not on transaction costs (Williamsson 1979), but on transaction benefits through the access to knowledge outside the firm. Even if networks are hard to manage and impossible to control, they create new organisational forms for innovations, and we see social innovation as the basis for the 'new economy', as well as for new perspectives on management.

Strategic perspectives on networking include a number of different business activities, where networking is the organising form that both gives access to knowledge and protects social relations and knowledge. The creation of access to new and diverse knowledge is a very important aspect of strategic networking. Alliances and tight coherent networks are also treated as an important dimension of strategic networking, where there are many

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problems for small firms. They have to handle many uncertainties and loose ends, the teams or collaborations they form represent their kind of organisation, and their external relations become seen as internal and 'safer'. The strategic view is to create working units larger than the firm itself, and to try to secure the commitment of partners.

The main way to create leadership in networks is through the two mechanisms of access and control. This is a new perspective on management as leadership, based on acting as a leader, and being recognised as a leader by the network partners so that their commitment is retained. Exit as a strategy is easy for all partners in networks, so network partners can leave at any time, and have to be motivated to stay.

Strategic networking in innovation shows some of the paradoxes of working within a community or network of practice (Brown & Duguid 2000), but shows how the limits of the firm and its boundaries are not closed for new ideas from outside. The internal facilitation of communication and learning is not enough, but there has to be a capacity to communicate and learn across communities of practice.

To understand strategic networking, and the new challenges for management in networks, we have to understand networking, its processes and mechanisms as actions rather than as structures. Management becomes the relationships, and the social construction of a space for negotiated management.

Strategic networking is a way of understanding new demands for leadership within innovation, R&D and high tech entrepreneurship. A leader's power is not given by the structure, but has to be gained by activities beneficial to the networking partners. Leadership and power in networks are created by the high tech entrepreneurs themselves, through what they do and how they negotiate.

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