Leadership in different kinds of regional development networks

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Abstract

Purpose – The aim of the study was to assess the effectiveness of network leadership in meeting the requirements for regional development networks imposed by the network society.

Design/methodology/approach – A new framework of three different archetypes of regional development networks was devised. The characteristics of the different networks and the requirements they set for network leadership were assessed as a case study in the Lahti Region, Finland. A special panel of experts of three highly experienced network leaders was organized as part of the present study. Their task was to assess the differences concerning network leadership in different regional development networks. The session was conducted in the (niin sanotut means it was not an inspiration) Inspiration Center in the Lahti Region. Inspiration Center is a platform for brainstorming and stimulation, designed especially to arrive at ideas and form opinions through teamwork. The method used was a half-structured group discussion, planned especially for the purpose of the present study. The method was used to form a convergent expert assessment among the participants.

Findings – The essential differences of the types of regional development networks make it insufficient to talk about network leadership as a general concept. It is important to identify and understand the differences in network leadership required by the different archetypes of regional development networks.

Originality/value – The paper combines leadership, network leadership, and regional development in a novel way.

Keywords Leadership, Regional development, Networking, Finland

Paper type Case study

Introduction

In the new information era, regions have become initiating and active subjects in regional development networks, whereas in the old industrial era regions were relatively passive objects of nation-led regional policies. The nation-led approach supported hierarchical and harmonizing regional policies, but these do not seem to function in the information era. A new network-based approach is needed. According to the new approach, regional development is conducted by a combination of manifold regional programs, and regional development is based on many parallel regional strategies.

As regards regional development, regions are facing the new information era in quite a confused atmosphere. Even if the actors gradually begin to understand the need for a new network-based approach, the old systems and habits still remain strongly rooted in society, thus, causing constant conflicts in regional development. It is essential in the new approach to regional development that many independent regional actors participate in the process. In the European multilevel governance system, actors
from both international and national levels, as well as from the regional level, are involved. In the new strategy-based and program-based regional development, no single organization can assume sovereign leadership over other actors.

In the present study, the role of network leadership is emphasized as a success factor for regional development in the new information era. In the new era, success in regional development requires the utilization of various types of regional development networks. In these, traditional management is insufficient. The aim of the present study is to assess the effectiveness of network leadership in meeting the requirements for regional development networks imposed by the new information era. The paper addresses the questions: what is network leadership in today’s regional development environment, and how does leadership differ in different regional networks? Different archetypes of regional development networks are analyzed and compared.

In the present study, a new framework defining three archetypes of regional development networks was developed. Accordingly, network leadership is assessed in the three archetypes of regional development networks. These are:

1. a large, loose, regional development network;
2. a heterogeneous, multi-actor, innovation network; and
3. a closed, homogeneous, public-actor network.

The empirical material for the present study is gathered from the Lahti Region in Finland. The three archetypes of regional development networks could also be found in the development environment of the Lahti Region. The first network type the “large, loose, regional development network” is represented in this study by the whole network developing the regional innovation system concept for the Lahti Region. The second network called the “heterogeneous, multi-actor, innovation network” is represented in this study by the innovation network aiming to promote innovations emerging from the ageing of the population. The third network called the “closed, homogenous, public-actor network” is represented in this study by the steering group of the Lahti University Network.

New networked development environment of regions
The change brought on by the information society and globalization has significantly changed the environment in which regions act. The sub-national regions are increasingly the real players in international competition. The regions must build their prosperity in a new, network-based environment, which Castells (1996, 1997, 1998) calls “the network society.” Being a successful part of the worldwide networks becomes an essential success factor in the network-based society. Accordingly, it is important to be able to develop a creative networked-based regional development environment in order to increase regional competitiveness in international competition.

The new information era is turbulent by nature. Network-based organizations have proved to be more flexible and elastic than hierarchical organizations. Thus, the constantly increasing pressure in the information era to build flexibility, adaptation, and the ability to react to the changes, and at the same time remain effective, have led to network-based organizations. This process has been independent of the business sector. Essential points in this development are continuous change, speed, and competition (Ollus et al., 1998).
In the present study, networking is seen as one of the basic forms of social organization (Castells, 1996). The main logic of the ongoing development in the information era, both in a space of flows and a space of places, is the logic of networking. Networking has been said to be the third alternative for the coordination of social action after markets and hierarchies (Thompson et al., 1991). As Frissen (1999) says, through information and communication technology, the coordination of functions and activities no longer has to be bureaucratic and hierarchical. In the network-based society, the coordination of social actions increasingly takes place in networks.

A network-based organization can be an internally network-based organization like a decentralized organization, or it can be formed from independent organizations connected by means of partnerships. In the present study, the latter types of organization are analyzed. In a network-based organization, each actor has its own role and functions. As Sotarauta (1999) suggests, network actors can have different motives for their cooperation. A network can be seen, for example, as a channel, a way to minimize expenses, or as a strategic tool. Interactions are expected to be rich. Intended cooperation can take place in setting objectives, forming strategies, producing products, and serving customers.

The functionality of the network can be described from the point of view of density, frequency, contents, and form of communication. The tradition of communication of the network has an impact on the expenses of co-ordination, production capacity, trust, and sharing of common values (Kotter, 1988). Communication also has an impact on the production of know-how, as well as on the creation and spread of innovations.

**Leadership in network-based regional development environment**

*Leadership and network leadership*

The type of leadership needed is always dependent on its actual context, such as time, place, organization, or tasks. A different kind of leadership was needed in the paper mills of the industrial era than in the lean organizations of the network era. More than anything leadership is a social interaction process, helping a group of people achieve its goals. This means that leadership, as Kouzes and Posner (1995) write, is not a place, but a process. Leadership involves skills and abilities that are useful whether one is in the executive suite or on the front line, as well as whether one is on Wall Street or Main Street. Moreover, the studies by Kouzes and Posner show that leadership is an observable, learnable set of practices and that leadership is everyone’s business.

The changes in leadership are not a cause, but a result. The cause lies elsewhere – with “the means of production.” Three things, furthermore, shape the kind of leadership required in the information era. These are the speed of change, knowledge-based work, and the unbundling of the organization. In relation to the speed of change Drucker (1995) has noted, “every organization has to build the management of change into its very structure.” Too many organizations are trying to become flexible and responsive in behavioral terms without recognizing how much inflexibility and unresponsiveness is built into their structures and systems (Bridges, 1996).

The basic definition of network leadership is that it is an action, which directs all the operations and resources of the network to the desired direction. Management by interaction is part of network leadership (Kamensky, 2000). The features of network leadership can be found in all fields of social life. Kickert et al. (1997) pointed out that in order to get results network management is dependent on the actors’ capacity to
demonstrate leadership. It is not only important to create a consensus for a joint course of action between representatives of “corporate organizations,” but also to establish support for these ideas within the organization. Thus, the success and effectiveness of a network project largely depend on the quality of its leadership. Representatives must take risks by accepting new ideas and being prepared to speak up for them in their organization. Sotarauta (1999) identifies the essential characteristics of network leadership. According to him, network leadership should try to help interaction. It should act as a mediator in interaction between different actors. In addition, network leadership should direct activities to seek common goals. Essential features for network leadership are negotiation, communication, persuasion, trade, and visionary skills (Sotarauta, 1999). The communicative strategy of a multi-actor and multi-goal environment needs creative and goal searching leadership.

Sotarauta and Viljamaa (2002) suggest that certain abilities are especially important in network leadership in regional multi-actor networks. These include the ability to:

- involve people and empower them to act as a network;
- make people work to reach joint separate goals and renew the goals in an ongoing process;
- promote interaction serving as an intermediary in interaction between actors, as well as steering activities towards seeking goals and enabling cooperation;
- connect various actors to the cluster from their own starting points;
- create and utilize creative tension in development and create a sense of drama. This means presenting issues so that people become enthusiastic and excited;
- get short-term success so as to sustain motivation; and
- form partnerships competently and to efficiently utilize informal relations.

**Leadership and management**

The concepts of leadership and management are intertwined and somewhat fuzzy in the literature. On the one hand, leadership deals with establishing direction, aligning people, as well as motivating and inspiring. The actions of leadership produce change, often to a dramatic degree, and can potentially produce extremely useful change. On the other, management deals with planning and budgeting, organizing and staffing, as well as controlling and problem solving. The actions of management produce a degree of predictability and order, as well as have the potential to consistently produce the short-term results expected (Kotter, 1996).

In the present study, the actions of leadership and of management are analyzed in the context of regional development and seen to have the following characteristics:

- the actions of leadership give direction to the organization and groups of people;
- the actions of leadership motivate and inspire people and bring positive (sometimes dramatic) changes; and
- the actions of management produce plans and budgets, organizing and controls;
- the actions of management solve the problems, create order, and produce consistency.

The actions of both leadership and management are needed. In any context one has to lead both people and things, as well as structures and processes. In practice, it is
difficult to distinguish between the actions of management and the actions of leadership. Leadership emphasizes change, getting people involved and committed. Without those the leadership task of creating change and something new is very difficult. But management is also needed. Producing changes requires difficult and large projects. Leadership is not enough, but calls for proper management if the leader has to work with bad schedules, unclear plans of action, and lack of control.

Leadership in regional context
The only permanent thing in regional development is change. The recent change of the techno-economic paradigm places strong pressures on the socio-institutional structures. There is often friction in the regional structures to execute the necessary adaptation processes imposed by the changes in the development environment.

Special attention in regional development should be paid to avoiding lock-ins caused by regional path-dependency and on releasing such lock-ins if they have occurred (Maskell and Malmberg, 1995). Grabher (1993) has defined three different types of lock-ins in the regional context: functional lock-ins, cognitive lock-ins, and political lock-ins. The role of leadership becomes decisive in preventing lock-ins and trying to find new paths out of lock-in situations (Tushman and Romanelli, 1985; Kotter, 1988; Beer et al., 1990; Mezias and Glynn, 1993). In the case of regional development, the role of leadership in a network-based operating environment is particularly essential.

Change involves organizational learning. The increasing pace of change tends to invalidate known answers in organizations, demanding continuous learning (Dixon, 1994). Knowledge is attained through learning. Learning generates change that can, in turn, lead to learning, etc. This can lead to continuous learning and development cycles. In a regional context, collective learning is emphasized. Leadership should assist the emergence of interactive learning in regional development networks (Nonaka and Reimnöller, 1998; Harmakorpi and Melkas, 2005).

Borja and Castells (1997) have reflected on which factors successful city networks must fulfill. Among these is leadership, which according to them must be capable of organizing complex projects, managing conflicts and anomalies, as well as processing and disseminating information worldwide. Stewart (1986) describes leadership in regional development in terms of information management, choice, flexibility, responsibility, and politics. The traditional management can be described using words like control, standard, stability, parallel, profession, and task. Stewart emphasizes that the new philosophy does not completely replace the old one. Both are still needed. The new leadership tries to create a learning and innovative economy in the region, where the leadership includes an active interpretation of signals for change.

The relationships between actors in a regional network are more equal and collaborative than in the traditional principal-agent relationship (Frissen, 1999). Thus, network leadership has to handle complex interaction settings and work with the different strategies of the various actors involved (Kickert et al., 1997). Leaders must be capable of coaching, inspiring, and gaining people’s commitment. They must also offer personal examples of excellence (Naisbitt and Aburdence, 1990).

Leadership in regional development is, to a great degree, communication. It is important to create and maintain the communication networks and be able to access those networks for sharing and receiving information (Minzberg, 1989). According to
Thrift (1996), human communication must be emphasized as part of the game, in spite of the strong development in the information and communication technologies.

Regional development can be assessed as a set of games in a network (Sotarauta, 2000). These games can be seen as a series of moves and countermoves, where the players are out to promote their own aims, or those of some group or the whole region. In the space of flows, there are many skills the actor has to master to be successful. The successful actors are able to learn new things. They are innovative. In addition, they can adapt to new situations. In the space of flows, there are certain skills predetermining who leads the networks. The winners understand the dynamics of the flows and the network. They also understand the logic and goals of the players better than others.

The traditional management emphasizing common visions and strategies does not fit very well in the network-based regional development (Sotarauta and Linnamaa, 1999). Traditional management does not take the split power and learning processes in a loose network sufficiently into account. In regional development, leadership deals with many goals and strategies. According to Linnamaa (1999), network leadership builds a foundation for learning and innovative actions. Good network leadership helps to create a good conversation culture. The dynamics of these innovative and learning network-based structures do not gel with the classical strategic leadership and strategic planning.

When building strategies, the talented players of the network influence the strategy more, in spite of the seemingly equal opportunities of the actors. Some players make attractive moves during the game and make the other players see things the way they see them. They are the real leaders of the network. In the development game, a skilled leader tries to keep the alternatives flexible as long as possible so as to get the most out of the continuously changing situations.

For Judd and Parkinson (1990, see also Judd, 2000), leadership in a regional context means the capacity to use external and local resources. They also stress that leadership functions go with democracy and not against it. In times of change, democratic organizations also need leadership to achieve common goals without coercion, bribery, deception, or subordinating personal interests to group needs.

Different kinds of regional development networks and leadership

Archetypes of regional development networks

In a region there are normally numerous different networks affecting different sectors of society. For example, the following kinds can be identified: political networks, sub-regional networks, industry-based networks, and networks based on some common leisure activity.

The diverse and complex nature of the regional development environment reveals the diversity and complexity of the respective regional development networks. Different kinds of networks can have general aims in common and can operate parallel to the regional development environment, but their characteristics can be quite different. Determinants making the regional development networks different are, for example:

- the size of the network;
- the composition of the network;
• the structure of the network;
• the aim of the network;
• the level of shared vision in the network;
• the unity of value basis in the network;
• the time span of actions in the network;
• the working methods in the network; and
• the quantity and quality of contacts in the network.

The manifold determinants characterizing the dimensions of regional development networks lead to an extremely large variation of the types of regional development networks. However, studying regional development networks can be simplified considerably by defining certain archetypes of regional development networks. If the selection of the archetypes is made well, the essence of the phenomena of networks can be extracted although the number of archetypes is kept limited, and the amount of information in the analysis manageable.

A framework of three archetypes of regional development networks was devised for the present study. It is believed that the essence of the phenomena can be reasonably captured by analyzing these archetypes (Harmaakorpi et al., 2003).

The first archetype of regional development networks is called the “large, loose, regional development network.” A shortened version of the name is “large network.” The second archetype of networks is called the “heterogeneous, multi-actor, innovation network.” A shortened version of the name is “innovation network.” The third archetype of networks is called the “closed, homogenous, public-actor network.” A shortened version of the name is “compact network.”

The characteristics of a large, loose, regional network are:
• a meta-network where all the assumed members might not even know they are actual members of the network;
• many of the members do not know each other;
• the value bases of the members are very different;
• the members of the network have many different value systems which are not necessarily overlapping;
• the members have quite different ideas about the aims and methods of the network; and
• the network is formed by many different coalitions.

The characteristics of a heterogeneous, multi-actor, innovation network are:
• the members come from different sectors of society;
• the network has a commonly accepted goal;
• interactive learning is emphasized in getting results;
• it produces several sub-networks; and
• the commonly accepted coordinator steers the activities;

The characteristics of a small, homogeneous, public sector network are:
the network is small;
- the participants of the network know each other well;
- the task for the network is relatively clear;
- the value base for the network is relatively similar; and
- the members of the network generally share the same kind of visions.

The leadership framework for regional development networks

Network leadership is considered an especially important factor in regional development in the information era. The essential differences of the types of regional development networks make it insufficient to talk about network leadership as a general concept. It is important to identify and understand the differences in network leadership required by the different archetypes of regional development networks. This does not mean that there are not many similarities in network leadership in the different kinds of networks.

At least the following determinants of network leadership should be assessed against the different types of regional development networks:

- level of leadership;
- nature of leadership;
- leadership and management skills;
- communication and networking skills; and
- leader’s personal characteristics.

In the present study, the actions of leadership and the actions of management are analyzed on three levels: strategic, tactical, and operational level of development processes. Strategic level refers to the activities of building visions and strategies. Tactical level refers to the activities of making working plans and budgets. Operational level refers to making things happen.

It is often thought that the actions of leadership are emphasized on the strategic level and the actions of management gain importance when one nears the operational level. However, in the present study the view is not so limited. For example, the actions of leadership are important to get things done at the operational level of development processes.

Examples of different levels of development processes, on the one hand, and the actions of leadership and the actions of management, on the other, are presented in Table I.

<table>
<thead>
<tr>
<th>Level of development processes</th>
<th>Actions of management</th>
<th>Actions of leadership</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strategic level</td>
<td>Strategic planning – planning and budgeting</td>
<td>Strategic thinking and seeing – vision, mission</td>
</tr>
<tr>
<td>Tactical level</td>
<td>Action plans – measure of execution, organizing, and staffing</td>
<td>Establishing direction</td>
</tr>
<tr>
<td>Operational level</td>
<td>Controlling and problem solving</td>
<td>Aligning people, motivating, and inspiring</td>
</tr>
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</table>

Table 1.
In the present study, the three archetypes of regional development networks are assessed by a special panel of experts. The following questions, in particular, are addressed:

- In what ways do the archetypes of regional development networks differ?
- What are the requirements for network leadership in the different archetypes of regional development networks?

**Description of the case study**

The questions were answered by analyzing the role of network leadership in one case region, the Lahti Region in Finland. A special panel of experts was organized as part of the present study and charged with assessing the differences concerning network leadership in different regional development networks. The session was conducted in the Inspiration Center at the Lahti Region. The Inspiration Center is a platform for brainstorming and stimulation, designed especially to create ideas and form opinions through teamwork. The method used was a half-structured group discussion, planned especially for the present study. The method was used to form a convergent expert assessment among the participants.

In order to get as reliable results as possible, the panel of experts was carefully selected from among people well acquainted with regional development networks. In addition, each of the three participants selected had been in a demanding position in one of the case networks. One participant had been responsible for the project, which developed the regional innovation system concept – “a large, loose, regional development network.” One was responsible for the regional age business innovation network – “a heterogeneous, multi-actor, innovation network.” One had been responsible for the Lahti Network University strategy process – “a closed, homogenous, public-actor network.”

The large network used in this case aimed at the re-conceptualization of the entire regional innovation system and designing a new innovation policy framework for the region. This led to the “network-facilitating innovation policy” being conducted in the region program (Harmaakorpi, 2006). The member of the panel was the original leader of the process as the director of the Regional Centre of Expertise Program.

The innovation network was started under the Regional Development Platform Method (RDFM) in the region. The aim was to work out a multi-actor innovation network to exploit the opportunities emerging from the consumption habits of the elderly (Pekkarinen and Harmaakorpi, 2006). This led to the foundation of a regional well-being cluster. The member of the panel was the director of the Regional Development Centre Program being responsible for this. The Lahti Region does not have a university. However, it has a network of university sub-units of four different universities. The sub-units cooperate having created a common strategy (Niukkanen et al., 2002). The member of the panel was responsible for this, being a development manager of one of the sub-units.

Using only three experts from one special region has its limitations: one could doubt the generalization of the results as by the authors of this present paper acknowledge. However, such an explorative research approach with only a few albeit really experienced network leaders was seen to be a more profitable way to tackle the aims of the study. Moreover, the discussion between the experts on the panel was seen to deepen the case bringing even more novel aspects to the analysis. The validity and
reliability of the research was assured by choosing highly qualified and experienced network leaders for the panel.

The first phase of the session was to explain the research approach to the participants. The introductory phase also included a general discussion about regional development networks and the framework devised for the present study identifying three archetypes of such networks.

After the introduction, the participants individually completed a form (Appendix, column “Common importance”) in which determinants concerning network leadership given by the researchers had been listed. The participants had to assess the importance of each of the given determinants in regional development networks in general. The determinants assessed were categorized in five groups:

1. level of leadership;
2. nature of leadership;
3. leadership skills and management skills;
4. leader’s personal characteristics; and
5. communicating and networking skills.

The assessments were rated 1-6, 1 meaning the least important and 6 the highest. After the forms were individually completed, they were distributed to the panel of experts who then discussed the individual evaluations. The aim was to reach a convergent expert assessment on the importance of the given determinants in the given context. The participants also had an opportunity to suggest new determinants for assessment.

The next phase was to individually assess the significance of the determinants in the case of each archetype of regional development networks (Appendix, columns “large network,” “innovation network,” and “compact network”). The determinants listed by the researchers, as well as additional determinants suggested by the experts, were included. This was again followed by a general discussion. In the discussion, special emphasis was placed on the differences of the determinants in the different networks. The final assessment of the panel of experts was recorded if and when a consensus was reached. In some cases no consensus was reached. Then an average of the divergent answers was calculated. A summary of the assessments of the panel of experts is presented in the Appendix.

Leadership in the defined network archetypes
Strategic, tactical, and operational network leadership. The experts emphasized that strategic network leadership was more important in large networks and innovation networks than in compact networks. Tactical network leadership was considered to be about equally important in the different archetypes of networks. Innovation networks, unlike the others, according to the experts, places more emphasis on operational network leadership due to the nature of business partnerships in innovation networks. Operational network leadership is needed whenever there is a need for “real fast outcomes” as there usually is in business. The innovation network resembles business in this sense.

In the kinds of regional development networks assessed, the strategic level of network leadership was considered to be more important compared to tactical and
operational level network leadership. The strategic questions, such as reasons for the network-based approach, goals of the network, and values of the network, were considered to be the most essential questions for any network cooperation.

*Formal and non-formal network leadership.* The importance of non-formal network leadership was not considered to be as high in the compact networks as in other networks. One reason is the intimate nature of the compact networks where everyone’s hierarchical position is known and recognized, and, therefore, respected. Also the skill to create a motivating atmosphere and interpret was emphasized in large networks and innovation networks. Compared to the others, the skill to plan, create a secure atmosphere, and express the common will was emphasized in the compact networks. Both the know-how of substance matters and the management of customer needs were considered more important in compact networks than in the others. Furthermore, the skill to handle conflicts of interest, the ability to use existing resources, and the ability to recruit resources, and the ability to acquire facilities were seen as more important in compact networks compared to other types of network. The skill to plan was assessed to be very important in compact networks. On the other hand, the skill to create a motivating atmosphere and interpret were not seen to be important in the compact networks compared to other types of network. The skill to delegate was seen as less important in large networks than in others. And finally, the knowledge of the network, the skill to control actions, and adhere to the agreed plans were assessed to be about equally important in all three archetypes of networks.

Non-formal network leadership was considered to be more important than formal network leadership. The importance of non-formal network leadership supports the idea that new types of network leadership qualities are needed in the network-based society.

*Leadership skills and management skills.* The experts emphasized the importance of visionary thinking and perseverance in large networks. All-round education was also emphasized in large networks. The bigger the network the more important all-round education was considered to be. Integrity was especially emphasized in innovation networks. And finally, creativity and adaptability were seen to be about equally important in all three archetypes of networks.

The actions of the network leadership got relatively high ratings compared with those of network management. In particular, the skill to create something new, the skill to change plans, the skill to follow through on plans, and the skill to interpret got the highest ratings. On the other hand, the actions of network management comprised all the highest and lowest ratings. The highest ratings were for the knowledge of the network and the skill to use the existing resources. The lowest ratings were for the management of substance, the skill to adhere to the agreed plans, the management of customer needs, and the skill to control actions.

Strategic thinking and strategic seeing, as well as establishing the direction of leadership and organizing, and staffing – dimension of management were assessed to be the most important items in the actions of network leadership and network management.

*Network leader’s personal characteristics.* The experts assessed the importance of self-assurance and consistency to be about equally important in all three archetypes of networks. Authority was also seen to be about equally important in different networks although it has no real relevance in any of these networks. Assertiveness was assessed
to be more important in compact networks than in the other types of network. Strategy making and logical thinking, on the other hand, were considered to be more important characteristics in bigger networks than in compact networks.

The most highly valued of the network leader’s personal characteristics were strategy making and logical thinking, perseverance, visionary thinking, creativity, all-round education, consistency, and charisma. These characteristics were considered to be important at the strategic level, as well as at the operational level where there is a need for aligning, motivating, and inspiring people. Less valued network leader’s personal characteristics were self-assurance, assertiveness, and integrity. The least important personal characteristics, according to the panel of experts, were authority, flexible nature of networks, and networks as organizational structure.

The personal characteristics that support the “soft-side” of network leadership were assessed to be more important. Less important, but still important, personal characteristics of network leaders are, according to the experts, more in the tasks of organizing and concerning staffing – dimension and in controlling and problem solving – dimension of management.

Communication and networking skills. Concerning communication and networking skills, the highest rankings in all types of networks were negotiation skills and the ability to listen, which was considered very important. Also the ability to process and deliver information was assessed to be relatively important. The ability to process and deliver information, according to the experts, was seen to be connected to the size of network. It was emphasized in large networks due to the many participants and actors involved. The bigger the network the more important the ability to process information was considered to be. The ability to identify weak signals got surprisingly relatively low rankings. The ability to act perform in public was not considered very important in any of the three archetypes of networks. However, in the large networks it was assessed to be relatively more important than in the others.

Conclusions
A regional development environment consists of many development networks. The present study shows that the regional development networks can be very different in character. The networks can differ, for example, in the size of the network, the composition of the network, the structure of the network, the aim of the network, the level of shared vision in the network, the unity of value base in the network, the time span of actions in the network, the working methods in the network, and the quantity and quality of contacts in the network.

Regions are obliged to operate in an environment of continuous change. The rapid change causes friction in the reigning old structures and ways of acting. Network leadership is seen as an essential factor in avoiding regional lock-ins and enabling favorable development trajectories. Different kinds of network leadership are required in different regional development networks to break the lock-ins. The differences can be seen, for example, in the level of leadership, nature of leadership, leadership and management skills needed, communication and networking skills needed, and personal characteristics of a leader. These aspects are emphasized in the theoretical assessment of regional network leadership and analyzed in this paper.

In the present study, a new framework defining three archetypes of regional development networks was developed following the theoretical assessment. The first
archetype is a large, loose, regional development network. The second is a heterogeneous, multi-actor, innovation network. The third is a closed, homogeneous, public-actor network. In a case study, these three archetypes of regional development networks were identified and assessed in the Lahti Region. In the study, the differences in these network types and especially in network leadership in them were assessed by a panel of experts comprising three highly experienced network leaders in the region. Although possibly lacking in the generalization of the research results, such an explorative research approach with a novel methodology was considered the best way to respond to the demands of the research questions. Furthermore, it was possible to outline the questions of network leadership by this research setting allowing a certain amount of creativity in the empirical part of the research. However, the research results are indicative and illustrative demanding much further research in this special field.

In the overall assessment of network leadership, strategic leadership was emphasized by the experts over tactical and operational network leadership. Non-formal network leadership was considered to be much more important than formal network leadership. Network leadership skills were seen to be more important than network management skills, although some network management skills were seen to be crucial. The most highly valued personal characteristics of network leaders were considered to be logical thinking, perseverance, visionary thinking, creativity, all-round education, consistency, and charisma. The importance of communications and networking skills were highly emphasized. In particular, negotiation skills and ability to listen to others were seen to be crucial.

Leadership in large, loose, regional development networks requires much strategic and visionary thinking. These issues are so complex that the activities of management, like planning and controlling, and skills related to them were less emphasized. Heterogeneous multi-actor innovation networks are very similar to the larger networks when considering the network leadership required in them. However, heterogeneous multi-actor innovation networks are more compact and have clearer goals, making it possible to use the actions of network leadership at the operational level. Because of the compact nature of the closed, homogeneous, public-actor network, tactical and operational levels were emphasized more than in the other archetypes of networks. The actions of management were also seen to be relatively more important in homogeneous, public-action networks than in the other networks. For example, the skill to handle conflicts of interest, the ability to use existing resources, the ability to recruit resources, and the ability to acquire facilities were considered to be more important in this archetype compared to other types of network.

References


Further reading


**Appendix**

<table>
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<tr>
<th>Leadership table</th>
<th>Common importance</th>
<th>Large network</th>
<th>Innovation network</th>
<th>Compact network</th>
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<td><strong>Level and nature of leadership and management</strong></td>
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<td>4. Formal management</td>
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<td>5. Informal management</td>
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<td><strong>Leadership skills and management skills</strong></td>
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<td>1. Substance</td>
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<td>4. Skill to create something new</td>
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<td>5. Skill to solve controversial situations</td>
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<td>6. Skill to use the existing resources</td>
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<td>7. Skill to create a motivating atmosphere</td>
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<td>8. Skill to recruit resources and acquire facilities</td>
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<td>9. Skill to express the common will</td>
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<td>11. Skill to delegate tasks</td>
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<td>12. Skill to make plans</td>
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<td>13. Skill to adhere to the agreed plans</td>
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<td>16. Skill to follow through plans</td>
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<td>17. Skill to make interpretations</td>
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<td><strong>Leader's personal characteristics</strong></td>
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<td>3. Visionary thinking</td>
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<td>5. Perseverance</td>
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<td>12. Charisma</td>
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<td>3. Ability to process information</td>
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<td>4. Ability to identify weak signals</td>
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<td>5. Ability to deliver information according to the audience</td>
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<td>6. Ability to listen to others</td>
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</table>

*Table AI.*
About the authors
Vesa Harmaakorpi is a Professor of Innovation Systems at Lappeenranta University of Technology, Lahti Unit (Lahti, Finland). Harmaakorpi's background is in business. The last eight years he has worked in the university community. His research interests are innovation systems and processes, as well as innovation environments linked to regional development. Vesa Harmaakorpi is the corresponding author and can be contacted at: vesa.harmaakorpi@lut.fi

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