SUMMARY OF THESES

Norbert Kiss

Improving network performance in the health care system: a network-based analysis of the Hungarian health care services

Supervisor:

Viktória Bodnár, Ph.D
Associate professor

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Institute of Management
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Contents

1. Literature review and research objectives

1.1 Relevance of the topic

The 4E (economy, efficiency, effectiveness, equity) performance model for public services, supplemented by trust as the fifth element (Bouckaert–Halligan, 2008), suggests that the span of performance could be measured differently at micro, meso, and macro levels but still in an integrated way. The ideal type of "Performance Governance", as a successor to "Performance Administration", "Managements of Performances", and "Performance Management" builds on direct involvement of a wide range of stakeholders in the society, including networks. The question of how networks fit into the model, how the micro, meso, and macro levels are connected when networks are present, has a wide potential for research.

Studying public networks has become an important stream in public administration and public management research for a decade. The key concepts and key definitions seem to become more universally understood (O'Toole, 1997; Berry et al., 2004; Turrini et al., 2009; Isett et al., 2011; Provan–Lemair, 2012) but there is still a lot to do, primarily due to the high complexity of the problem. Policy (formation) networks and policy implementation (or service provision) networks have been separated for a while in the literature, complemented with governance networks, (Lecy et al., 2014), all having their own research streams and approaches (Berry et al., 2004).

Several authors called for research that joins the somewhat separate research traditions of policy networks and service provision networks; for example, as Rethemeyer and Hatmaker (2007, p.641) noted, "future research should attempt to link policy networks with collaborative networks [...]." These two levels are interdependent so the mechanisms how one effects the other should be defined. Isett et al. (2011) claims that public network studies cannot be easily generalised because they are specific to the policy area, country, or culture. Earlier, I introduced the model developed by Benson (1975) and further propagated by Hudson (2004). Hudson finishes his article by stating that "[w]hat is needed now is application of the framework to empirical explorations of specific problems and contexts." (ibid., p.92) Provan and Lemaire (2012, p.646) also proposes that "comparing multiple networks in a variety of settings with respect to key differences in such areas as governance, task, sector, and design" would be a desirable way for further research.

The research on health care provision networks, by using network analysis, is scarce. There is, for example, limited research on clinical networks from the UK (for example, Addicott et al., 2007) or

on integration forms in the US (for example, Strandberg-Larsen–Krasnik, 2009), or in Swedish local health care (Ahgren–Axelsson, 2005). The topic of cooperation and collaboration and networking appears under the title of integrated care in the health care management research (an overview is provided by Lyngsø et al., 2014) but without referring to the tradition and results of network research in public administration and public management. Coordination mechanisms studied in the integrated care literature cover "referrals, guidelines, chains of care, health information technology systems, network managers, and pooled resources" (Lyngsø et al., 2014, p.4), somewhat similar to the transitional formats between market (referrals) and hierarchy (pooled resources).

This research interest in this field is further strengthened by the fact that organisation of health services is considered as highly problematic in Hungary. While technical efficiency of certain providers has improved (Dózsa, 2010), and health care expenditure, especially public expenditure, in relation to the GDP is considered as low in Hungary (Orosz, 2013), so that the Hungarian health care system is a relatively "cheap one", system-level efficiency is low. Both life expectancy and the number of healthy life years (HLY) are lower than it could be expected based on the average per capita PPP spending, meaning that, on average, other countries are able to produce "more health" by using the same level of financial resources. (OECD, 2011 and 2012) The health provision system is fragmented and full of dysfunctional patterns (Sinkó, 2009). It is expected that better organisation of the Hungarian health provision network could contribute to better system-level performance.

1.2 Theoretical background and research objective

The theoretical background of the thesis is twofold. First, it builds on the literature of public sector performance measurement and management by summarizing recent knowledge about how the term of performance can be defined and broken down to lower-level elements in public services and, especially, in the health care sector. Second, the thesis uses a public network management approach to conceptualize the relations among health care providers and to analyse the management factors that improve performance. The thesis also builds on the basic concepts and the main elements of organising health care services, by using literature from the fields of health policy and health care management, and provides several examples from the health care sector to illustrate the models of the two other areas.

My research interest lays in the intersection of these fields of study. The empirical work is partly descriptive, partly exploratory in its approach. After the literature review it was concluded that

currently available theories do not adequately address how networks fit into the performance model of public services, how health care policy relates to organisational networks in the health care sector, how networks can be "better used" to improve performance, and how the performance of these networks could be measured, or at least how a framework could be set up to better understand what elements of performance measurement should there be. My research ambition is to contribute to the research field of public sector performance management and service provision network theory. Thus, my central research question is a broad one:

How can we better understand what role networks play in the organisation of health care services, and how networks contribute to better performance of health care?

The research was party descriptive, partly exploratory. To provide answers to the research question, concepts of the public performance management model (4E+T) and the public service provision network research were applied to Hungarian cases of policy interventions. The empirical research had no preliminary hypotheses but the research process was guided by such questions as:

- What policy goals and programme objectives can be identified that guide policy implementation?
- How the logic of performance measurement of implementation relates to policy expectations?
- Do networks and network-level performance indicators appear at meso levels?
- What types of networks can be identified during the implementation?
- How are these networks governed?
- What types of network management strategies can be identified?

The exploration process intended to contribute to the refinement of theories and models that describe the performance of public services and service provision networks. Since the research was carried out in the context of the Hungarian health sector, policy implications for the development of the Hungarian health care could be also given.

2. Methodology

The research used a case study methodology. Case studies are effective tools when the research is still in the exploratory phase and theory building is on the agenda (Eisenhardt, 1989). According to Yin (2009), case study is an applicable research method if the field of research is broad enough and the context of the research object has significance, too. Herranz (2010, p.327) also holds case study as one of the "most common methods employed in examining organizational networks."

Considering the main research question, and the ambition to know more about the relation between policy level and service provision level performance, the unit of analysis is the policy intervention. Policy interventions may appear in several forms such as regulatory changes, budgetary changes, complex or specific reform programs, or development programs. Constructs (Eisenhardt, 1989) or propositions (Yin, 2009) that are used to describe cases had been a priori identified based on the review of performance management and network literature; a list is provided in Table 1.

	Constructs / propositions
Performance management	Social needs, policy goals, programme objectives
	Macro, meso, micro levels
	Input, output, outcome, effect, impact, results, trust
	Economy, efficiency, effectiveness, equity, trust level
	Measurement and indicators, level of integration, coherence
	Performance Administration, Managements of Performances, Performance Management, Performance Governance
Network performance	National, regional, county, microregional levels
	Networks, network membership, network boundaries, network lifecycle
	Cooperation, collaboration, integration
	Formal, informal networks
	Mandated, emergent networks
	Shared governance, lead organisation, network administration organisation
	Relationship between the service provision level and the policy level
	Domain consensus, ideological consensus, positive evaluation (trust), work coordination
	Fulfilment of program requirements, maintenance of social importance, resources flows, application/defence of the organisational paradigm
	Cooperative, disruptive, manipulative, authoritative strategy
	Activation/deactivation, framing, mobilising, synthetizing
	Bureaucratically, entrepreneurially, community oriented strategy

Table 1. Constructs/propositions used for the case studies

An embedded, multiple-case study design (Yin, 2009) was chosen. The common use of constructs was, of course, essential for the multiple case analysis, and every effort was made to describe the

cases by using the same structure, but small variations, reflecting the context or the area of the specific policy intervention, are possible. Embedded units in the cases are twofold: primarily, policy, network, and organisational levels were distinguished, and secondarily, each policy intervention was applied to multiple service provision networks. First, the performance measurement model of the interventions were overviewed, based on Bouckaert and Halligan (2008), and then a network-based analysis was provided. The latter was largely built on the framework created by Benson (1975, 1982) and Hudson (2004), and previously tested in the Hungarian health care sector for the case of managed care organisations by Dankó et al. (2005). Different types of cases were selected in terms of network level (community level vs. regional level) and intervention aim (redefining roles in primary care vs. implementing IT to support cooperation mainly in secondary care).

The empirical research used two cases from the Hungarian health care sector. The first case describes a regional e-health development project. Between 2004 and 2008 integrated inter-organisational IT networks have been developed in three Hungarian regions in the framework of the development program financed by EU structural funds. Beyond being an IT network itself, health information technology is interesting from the perspective of health provision because it has the potential to promote new ways of cooperation between organisations: "ICT also helps not only to blur organisational borders but also to create synergies beyond these borders." (West, 2005, cited by Bouckaert–Halligan, 2008, p.184) A tool that may change how organisations interact in a service provision network is an important subject of analysis. The regional implementation is also interesting in this case: when intercommunicability is key for IT networks, the role of regions is also worth researching. The relevance of studying this project is further increased by the fact that the Hungarian e-health programme has been lagging behind even since the end date of the regional projects, and most of the questions about system implementation are still relevant.

The first case written by using document analysis: publicly available government documents (plans and reviews) and journal articles were used. Since the project was carried out several years ago, and the implementation (and the not-too-high impact) did not differ a lot among the three participating regions, it was decided that desk research would adequately address the research aim. Not directly related to this research, but related to the evaluation of recent e-health developments in Hungary, I conducted three background interviews with key experts which helped me in following the "after-life" of the HEFOP project.

Four policy documents were analysed in details: the framework strategy of health IT, the Human Resources Development Operational Programme (HEFOP) which described the EU-funded program, two midterm reviews (one of them was actually finalised after the project close date). While all these documents cover a wider area than the subject of this case, the focus of data gathering was kept on those elements which were relevant to this program.

The second case describes a pilot project in primary care, supported by a grant from Switzerland through the Swiss Contribution (no: SH/8/1). Four general practitioner clusters were created. Each cluster consists of six general practices, and the district health visitors (community midwives) from "pre-existing" primary care providers, and a new staff with public health orientation: two public health professionals, a community nurse, a physiotherapist, a dietician, and a health psychologist. Community involvement is supported by Roma assistant health mediators. Team working or group practices are considered as new phenomena in the Hungarian health care, having individual practices all over the country. The project began the implementation of the GP cluster activities in the summer of 2013, and is expected to run till 2016. Data collected for the monitoring of the GP clusters and the preparation of the midterm review was used in this thesis.

This case was written by using document analysis, semi-structured interviews, and statistical data analysis. To map the formal performance measurement system of the project and the primary care system, the health care strategy (Semmelweis Plan), the relevant project documents, and the quality indicator system of the health insurance fund was analysed. In order to understand how GP clusters actually operate, and what the relationships among cluster members look like, a qualitative analysis was carried out. The qualitative research consisted of three elements:
- Site visits at all the four locations, conducted between February and April, 2014.
- 64 semi-structured interviews with cluster members on sites, covering all the head GPs and public health coordinators (two coordinator in each cluster), all the "new" professional staff, several GPs, district health visitors, and assistant health mediators (see Table 2).
- Reading staff reports from March, 2014 to September, 2014, monthly sent to the central project management team (the project management team had already compiled summary reports each month).

The team, carrying out the site visits and preparing the interviews, consisted of five members (Dózsa Csaba, Kiss Norbert, Kuntár Ágnes, Sinkó Eszter, Wéber András).

GP cluster	Head GP	Public health coordinator	General practitioner	Practice nurse	Dietician	Physiotherapist
Heves	1	1	4	2	1	1
Jászapáti	1	1	2	2	-*	1
Borsodnádasd	1	1	1	2	1	1
Berettyóújfalu	1	1	2	2	-*	1

GP cluster	Health psychologist	Public health expert	Community nurse	Assistant health mediator	District/school health visitor
Heves	1	1	1	4	4
Jászapáti	1	1	1	6	0
Borsodnádasd	1	1	1	2	1
Berettyóújfalu	1	1	1	2	2

* The position was not filled in at the time of site visits.

Table 2. Interviews with GP cluster members

The semi-structured interviews have covered the following areas:

- Work activities carried out by each member ("what do they actually do")
- Mapping internal communication and coordination in the GPs practice clusters (e.g. "communication network", the role of meetings)
- How the new staff members change/complement the work of the GPs
- Perceptions about managing and coordinating roles in the model
- What the cluster members think about the role of GP in the Hungarian health care system
- Perceptions about the patient-provider relation (patients' inclusion into therapy choice, factors influencing patients' compliance)
- Use of IT solutions
- Evaluation of project trainings
- Personal motivation to participate in the model
- Perceptions about key success factors of the pilot model

Statistical data was also collected from the project reports and from the database of the National Health Insurance Fund. Data from the health insurance fund also contained information about a control group (158 individual GPs, randomly selected, but representing the Hungarian population by sex and age). Project activities "in the field" started in August, 2013, but data was acquired from January, 2013. Changes in indicator values, compared to historical GP cluster data as well as to total changes in the control group were quantified. In the case of those indicators which were included in the log frame matrix of the project changes were also compared with target value. All the analyses were prepared by the author of this thesis.

3. Summary of conclusions

3.1 Case 1: regional e-health developments

As regards to the mode of managing performance, the case provides an illustration for "Managements of Performances" state in the design of the framework, but with several shortcomings in implementation. It is clear that the policy level knows that "something should be done" with outcomes and results, and interventions should be planned in a way that shows their contributions to the expected end results, but the selection of indicators was not substantiated. With improvement in indicator selection it could be closer to the ideal of "Managements of Performances" but a better connection between policy and implementation would be needed to move beyond that stage. The question, however, arises: what can we learn from the network approach?

First, about the question of forming regional networks. In some countries, the regional level may play an important role in e-health development. For example, Denmark, where health care services are organised on regional level, is considered as a pioneering country in e-health advancements. After having several HER projects carried out at county-level, and facing the problems of incompatibility between these systems, regions took a bigger role in implementation projects. (Bernstein et al., 2005) Burton et al. (2004) also called for "regional governance structures to encourage the exchange of clinical data". WHO recommendations about e-health strategy put emphasis on the regional level as well: "While eHealth strategies are primarily developed to deliver health benefits for countries, they can also be an important mechanism for facilitating cooperation at the regional level and driving investment in ICT infrastructure, research and development." (WHO, 2012:31) Since cooperation among health care providers is more frequent (and more needed) inside the regions, creating regional development networks seems a logic idea.

However, there are some prerequisites for regionally formed networks to be effective. There are a few tasks that the policy must do, and networks cannot replace the policy level in this role (for example, standardization of communication protocols, or regulatory steps). When the number of network members is high, an adequate network governance structure is also needed. The shared governance / lead organisation mixed model could work in the case of the development project but proved to be unsuccessful during the attempts of expansion. Probably, a network administration organisation model and an authoritative strategy would have been needed.

	Development network	Health provision network
Network type	formal	informal
Network governance type	shared governance / lead organisation	self-organising
Time period (network lifecycle)	definite	indefinite
Service provision network - Operational relationships:		
Domain consensus	organisational IT systems are modernised	unclear roles of providers in the wider health care system
Ideological consensus	perceived as an IT problem	perceived as a health care support problem
Positive evaluation	determined budget makes resource allocation easier	the system is not complete, thus cannot be trusted
Work coordination	create a possibility for inter-organisational information sharing	inter-organisational information sharing was not made useful
Policy network - Contextual influences:		
Fulfilment of program requirements	short-term objectives are met	
Maintenance of a domain of high social importance	policy-level decisions delayed	
Maintenance of resource flows	only for the introductory phase, maintenance and extension was not supported	
Application/defence of the organisational paradigm	short-term indicators indicate success	

Table 3. Network characteristics of the e-health developments

If there is no powerful enough player in a region (either an organisation which is dominant so that able to implement the lead organisation network model, or a network administration organisation) to induce network-level changes, then the regional network will not be effective. This result is also supported by the findings of Tótth (2008) who analysed the role of regional health boards, and found that they did not have the capacity to carry out their regional planning and capacity management tasks. The model of the health boards was also built on a cooperative network governance idea with some 50-100 representatives of the local providers and local stakeholders.

It was also demonstrated that making an inter-organisational system component available for physicians, will not automatically lead to the use of the system. McClellan et al. (2013) described organisational factors that impeded individual physicians in using health information technology after adoption by the organisation. Inter-organisational components can be a case when the usefulness of the technological innovation is even harder to prove for physicians, and well-integrated software solutions are needed. The authors also claimed that financial incentives only work for organisational level adaptation but not for physician level use.

When a policy intervention involves development projects, it is worth differentiating between at least two different types of networks: one that implements the project, and the other which represents the local public service provision network. Both the policy-level program management and the project management will be "success-oriented" in terms of indicators used for measuring project performance, leading to the predominance of easily reachable output indicators. Meanwhile, it would be important to define success criteria and performance indicators for a wider span of performance but it would also be important not to tie these indicators to the performance evaluation of the project. Outcomes and results, and thus effectiveness, are often an accountability of the policy level. One set of indicators should describe what we want to achieve with the projects, and an other set should describe how the policy envisions the changes of the service provision network. It is also essential to have better knowledge about how the service provision network operates in reality, and involve the stakeholders/users into defining the requirements of the development project.

3.2 Case 2: GP clusters

As regards to the mode of managing performance, the case provides an illustration for "Performance Management". At least, up to the point when the policy seemed to decide about the way of primary care reform without seriously building on the results of the respective pilot project. The policy level and the service provision level became a bit disconnected, and from this point, the situation could rather be described as "Managements of Performances". It must be noted that the "Performance Management" state was not perfect, either, since several improvement opportunities could have been identified for the content or the target setting of the performance indicators.

This pilot project has also showed a strong sign of bureaucratic coordination between the project management, including the "centrally located" university expert team, and the local staff. Increased "invasion" of the project management into local network management processes may be a feature of pilot projects. From the one hand, it can be understood because vast interest lays in securing that each location implements (more or less) the same program. But on the other hand, it also means that the pilot project does not truly test the model which is planned to be rolled out: when local networks are "left on their own", network management characteristics may be totally different from the ones experienced during a pilot. While the current practice was identified as a mixed model of shared governance and network administration organisation type governance, a potential expansion of the model most certainly would not have employees all over the country, directly employed by the national institute. Thus, the application of a shared governance mode would me more likely.

	GP cluster
Network type	formal, with informal ties to local stakeholders
Network governance type	shared governance / network administration organisation
Time period (network lifecycle)	definite (for the project)
Service provision network - Operational relationships:	
Domain consensus	new members' roles are formulating, traditional GP roles and district health visitor roles are mainly kept, new members' services are often considered as "extra resources"
Ideological consensus	goals are primarily seen as externally set by the network administration organisation, local planning is underdeveloped
Positive evaluation	high level of trust towards the new members, positive evaluation by the local governments, some internal conflicts are detected
Work coordination	relies heavily on personal communication channels, IT support is inadequate, dual leadership in local network governance
Policy network - Contextual influences:	
Fulfilment of program requirements	not all policy goals have been met in the pilot project, but there are plans for expansion
Maintenance of a domain of high social importance	general poor HR situation of primary care is widely known, but support for this specific model is not granted yet
Maintenance of resource flows	granted for the pilot program, but an expansion would most probably require a "cheaper version"
Application/defence of the organisational paradigm	the network administration organisation's role is played by the central project management

Table 4. Network characteristics of the GP cluster pilot project

A network-based approach also showed that there is a possibility for having four (sub)models instead of one GP cluster model. The original performance measurement system was constructed in a way that looked at the four GP clusters as four locations of the implementation of the same model (where, of course, certain contextual factors may be different, having an influence over the changes in performance indicators at each location). A network-based analysis may lead to a conclusion that the four GP clusters are four implementation of the generic model, thus differences in how these four pieces of implementation operate in terms of network characteristics must also be taken into account when looking for explanations of performance variations. While no special attention was paid in this analysis to the model variations, further research could focus on the measurement of the network characteristics in each cluster as explanatory and outcomes as dependent variables. It is not only the cost-benefit ratio of the medical and public health activities that should be quantified in the end of the project, but how these local networks are governed does also matter.

While this analysis only focused on the network characteristics of the GP clusters, it is important to keep in mind that the primary care is not disconnected from other levels of the health care sector. A multi-level network management approach should also evaluate how GP clusters fit into the "big

picture", and how the redefinition of the role of primary care changes the network dynamics at the higher level. For example, more emphasis of definitive primary care would rearrange domains, would require new patters for work coordination, or could change the ideological consensus about the goals of the health care system. Further research should also include the overview of how the GP cluster model is perceived by other health care providers. Further reallocation of the domains would occur, if the public health approach in primary care proved to be successful, and higher level of integration with social care was implemented. Should wider integration and collaboration be present, even the name of the model may be questionable since it emphasises one role from the health care sector.

3.3 Implications for theory

Based on the findings of the two case studies and the review of literature about performance management and governance and public networks, a modified framework of the public service performance management model was created. How the performance of service provision networks, as an addition to the meso level, fits into the public performance model (Bouckaert–Halligan, 2008) is summarised in Figure 1.

The network appears in the middle, between the organisational micro level and the policy level. Networks may be of various types. The e-health case described a development project where the three regional networks consisted of the consortium member health service providers, mainly hospitals – but an other regional network could have been defined as well, consisting of all the health service providers of the region who were supposed to be connected by the interorganisational IT network. The GP cluster pilot project also had a network for project implementation but the focus of analysis was on the local health network, consisting of GPs, district health visitors, public health and other professionals, and assistant health mediators. Network building with local stakeholders was also present. A common feature of the two cases was that policy level actors and central agencies were collaborating with local network members.

An implication for theory could be that a better distinction within the meso levels is needed. While the macro level performance and macro level actors can be identified at country-level and government-wide (and respective performance indicators refer to country-level indicators as results of policy), the specific policy area and program objectives may also involve central agencies (like the E-health Programme Office or the National Primary Care Institute). These actors represent certain slides of the whole health care policy. Additionally, developmental networks may operate in a different way than service provision networks, even when the members of the developmental project
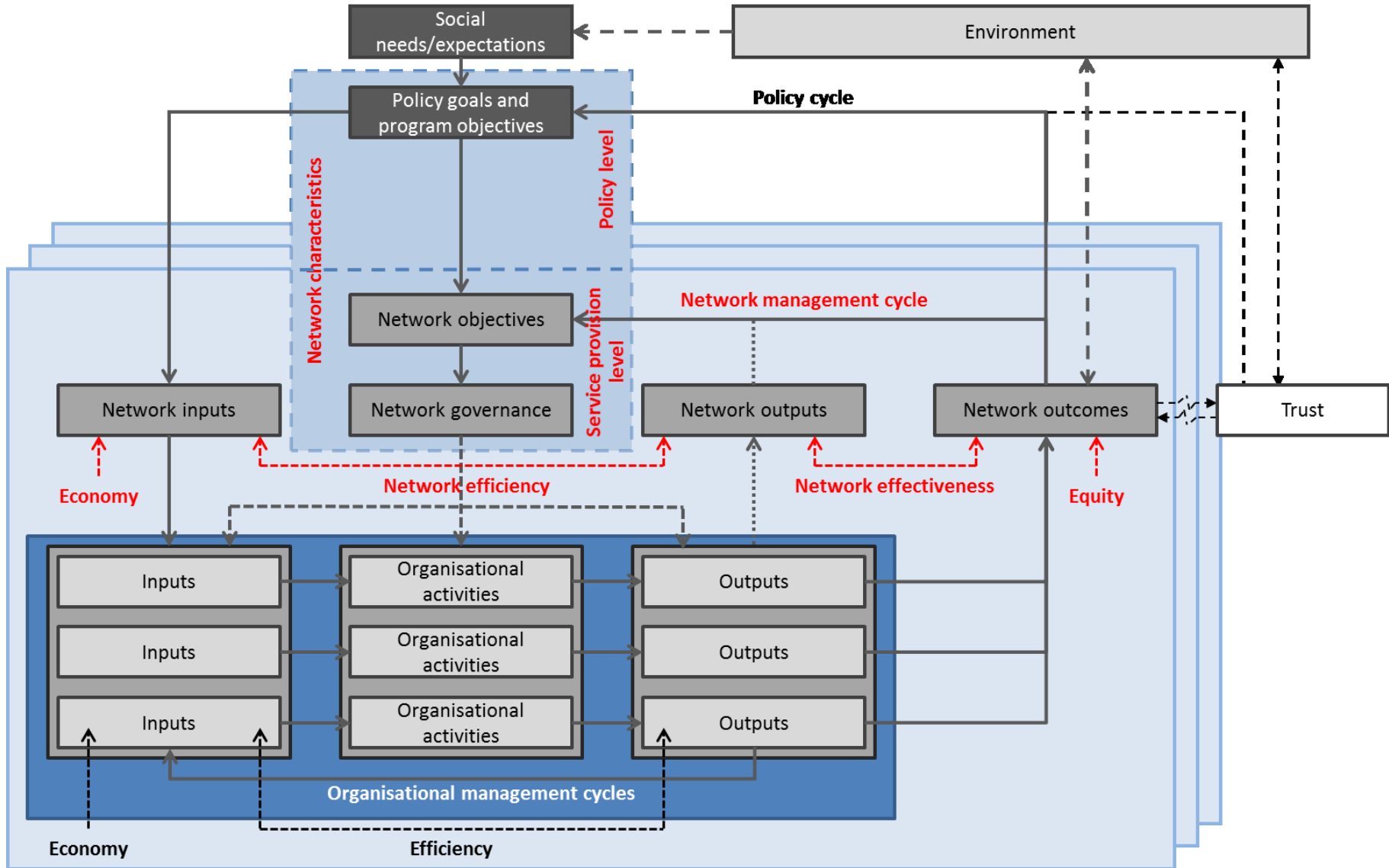
Figure 1. Service provision networks in the 4E(+T) performance model

are the same as in the service provision network. The main difference might lay in having pre-defined network goals (as expected results of the project) and a definite deadline (when the network ceases to exist). Development networks warrant further research.

Per definition, networks are goal-oriented. The thesis, building on Isett et al. (2011), defined networks as a group of goal-oriented interdependent but autonomous actors that come together or being connected to produce outcomes that no one actor could produce on its own. Common goals of networks in the public sector cannot be independent of the policy but the extent of influence may differ. Mandated networks' goals are more externally (policy-)driven; and members of emerging networks have greater freedom in defining the network-level objectives. Both cases showed signs of both mechanisms: predefined project results, action plans, central indicators and target values as well as detailed rules for project implementation put limitations on local goal setting, but networks were also expected to build wider relationships with other providers and the local community. To some extent, network objectives are set by members, taking earlier results (service outcomes of the network) into consideration. When networking is something new for the members, a few cycles of learning might be needed to better understand what they can and should do as network members – thus, network management is cyclical.

Drawing the boundaries of networks is always problematic (Isett et al., 2011), and defining membership for health provision networks can be a difficult task. Those who call for better integration of health services (Lyngsø et al., 2014) are primarily concerned about finding mechanisms that drive all the providers towards the common goal of producing "better health status" for citizens in an efficient way. A network can be considered as a coordination mechanism, laying between markets and hierarchies, better suited for this task. (Huxham–Vangen, 2005) Setting common goals for networks is not easy in the health care. Short and long term interests of individual organisations can differ much. Even if the very high level common idea of creating "better health" is present, economic interest and the domains currently controlled can lead to conflicts of interest: redefining the role of primary care would certainly lead to imbalance in current domains of operations. Interventions by policy will also be directed at helping (or forcing) members together; creation of regional planning boards is an example for this. Multiple membership in networks also occurs: for example, health providers were members of the e-health project as well as the regional health provision network, and GP clusters are also part of a larger health provision network. Conflicting interests and attitudes towards differing expectations and values of multiple networks may be an element of what makes "Management in the network" (Milward–Provan, 2006) difficult.

How much input resources are available for networks and network members are mainly decided by policy. It is a transparent decision in the case of development projects (where there is a set budget), and may be more problematic in budgeting for ongoing operational expenses. A part of resources may be at the disposal of the network as a whole (provided there is legal entity which can handle common resources) but individual budgets of network members are also part of the resource pool the network can "use" in order to solve problems. Network governance (Kenis–Provan, 2009) may have a role in (re)allocating resources among network members but the effect of policy decisions can also be significant. For example, the e-health development project had an allocation in the project plan, so did the GP cluster project as regards to the resources covered by the grant. On the other hand, "normal" health care financing channels of participating hospitals or GPs have not changed. The GP cluster case showed that resource allocation was primarily done by the central project management (acting as network administration organisation), with little room left for local network managers.

How organisational activities are carried out is also influenced by the network and network governance. For example, higher use of interorganisational e-health system depends on how well coordination mechanisms are built into the software as well as the minds of participants. The e-health development projects were dominated by institutional logic and interest: hospital managers and physicians could see what benefits the organisational processes could get from the project, but support for the need of interorganisational cooperation was missing.

Network governance can also be directed at better defining the outputs that are expected from network members. This mechanism builds on the idea that expected outcomes can only be delivered if all the network members are able to produce the right outputs. While the policy is also concerned about this task, a network may be closer to the local level, and may know better what specific mix of outputs is needed to adequately address local problems. This is not a replacement of the bureaucratic coordination in the sector but rather an addition to it (Davis–Rhodes, 2000). Local planning can also deal with the expected output from each member. In the case of the GP cluster the network administration organisation had a significant impact over what outputs were to be delivered by local networks: targets were centrally set for health assessments but more freedom was given to local networks to decide what physiotherapists, dieticians, and health psychologists would do.

Therefore, in the framework of the public service performance model network governance could be directed at input allocation, rule setting for "network-compatible" organisational processes, or defining the desirable mix of organisational outputs. These options could be considered as strategic

network management options from which network managers can choose. Further research is needed into the question whether these three strategic options can be individual choices (so that it can happen that a network manager uses only one of the three options), or a mixture of these network management activities is always needed. Choices made in this regard might also influence network performance – this issue should also be studied in more details. The e-health project focused on resource allocation, and these resources were mainly perceived by hospital managers as a support to solve their own organisational IT problems. The project had not changed care processes, neither rearranged expected organisational outputs. The GP cluster pilot channelled a high amount of extra resources into the primary care, began to reshape care processes, but, at least up to this point, had little effect over outputs, mostly leaving GP outputs as they were.

What type of network governance should be chosen has been highly discussed in literature. (Rethemeyer–Hatmaker, 2007; Provan–Kenis, 2008; Kenis–Provan, 2009; Provan–Lemaire, 2012) The mode of effective network governance depends on several factors, including the objectives of the network, the number of participants (larger networks tend to use "brokered" forms of governance), or distribution of power. The developmental and pilot projects analysed in the case studies had well-defined objectives, definite lifecycle and deadlines, and tended to apply a brokered form of governance (lead organisation or network administrative organisation format) mixed with shared governance for local level decisions. When policy level decisions are also needed for the projects to be successful (such as creating adequate legal regulation for e-health, redefining the roles of GPs), the NAO model, directly connected to policy may be beneficial. On the other hand, when the NAO fails to address the policy level issues, local network performance will also deteriorate.

The network characteristics, relevant for choosing appropriate modes of governance and network management strategies, most probably depends on both local collaboration and policy-level support. To map network characteristics, the two case studies applied the categorisation of Benson (1975, 1982) and Hudson (2004). The dimensions of the local service provision network (domain consensus, ideological consensus, positive evaluation, and work coordination) proved to be useful to describe the factors that influenced network performance. The analyses also demonstrated that local level network characteristics are not independent of the policy level (Rethemeyer–Hatmaker, 2007), policy level support for local networks is valuable. While there are certain difficulties with management in the network as an organisational leader and management of the network as network manager (Milward–Provan, 2006; Provan–Lemaire, 2012), a third management role can also be identified: management for the network. While certain local network level characteristics can definitely be

improved by network members (for example, trust building is essential), there is a policy-level role, too: what policy making or trusted agencies can do to support the local level networks (the "network population") could be called "management for the networks".

Based on the empirical experience with the model of Benson and Hudson, there is still a lot of room for research to better measure the relevant characteristics, and analyse how they influence each other. For example, diminishing trust will most probably set back work coordination, or prohibit members from reaching a new (and from the perspective of expected outcomes: better) domain consensus. Network characteristics that could be probably tested during future research are not shown in Figure 1, more research is needed in this field. Nevertheless, the interrelatedness of the policy and service provision levels (Rethemeyer–Hatmaker, 2007) were demonstrated by the case studies. If we think of networks as an alternative to hierarchy and market, and deliberately create networks to tackle with "wicked" problems or with those where network coordination is expected to deliver better results, it might also be an imperative for the policy maker to provide support for the networks created. Therefore, management for networks is not optional. Success of policy depends on how well the whole population of local networks perform.

As regards to the performance indicators to be used (or the span of performance; Bouckaert–Halligan, 2008), a few illustrations could be collected from the two cases. Taking the interrelatedness of organisational outputs, contributing to network outcomes, into consideration, economy and efficiency indicators are becoming primary indicators for measuring organisational performance. The cases also showed that "summing up" organisational performances is a possible way to calculate network performance, as regards to economy and efficiency. Network outcomes and effectiveness (and equity) were also calculated this way in the cases. However, if it is true that outcomes are those results that no one actor could produce on its own, this practice is questionable. The case studies may represent an early stage in network development, so that attributing outcomes to the network level might be an issue for later development. Still, there are clear signs in the GP cluster case for this issue: several performance measures (e.g. quality of chronic care) could be improved with better care coordination at network level and/or inclusion of other service providers and social care services. The latter is clearly a task for which networks are better suited than individual GPs or central bureaucracy. Defining performance indicator for the local networks might also drive us closer to the inclusion of stakeholders in measurement, as proposed by the "Performance Governance" ideal type of measuring performance (Bouckaert–Halligan, 2008).

An alternative interpretation for the data collected must also be taken into consideration: is it possible to treat the networks as the micro level in the performance model? Defining the development projects or the GP clusters as something similar to single organisations, and place them at the micro level, would certainly make the problem easier. A central problem to the regional e-health development projects was that not all the members of the regional health provision system was a member of the development project (and later the project could not give good enough reasons for others to join the network). In the case of the GP clusters the general practitioners and the district health visitors kept their individual status (and their individual businesses), and even the network managers are called "coordinators". Health care financing rules apply to individual practices, so does the national quality indicator set. Treating the projects or the GP clusters as actors of the micro level would miss this issue, and keep those network characteristics that influence expected outcomes hidden from policy.

There are also a few but evident limitations to this research. The empirical work has been carried out in the context of the Hungarian health care sector so that generalisation of the results to other countries and other public services might be limited. Both projects, studied in the research, were development/pilot projects, funded by external parties (EU and Swiss Fund), with well-defined objectives, definite lifetime, and intensified "success orientation" in terms of the need for delivering the numbers required by the project plan. Both projects, however, included members from the service provision network but "pure" service delivery networks might behave in alternative ways. Policy interventions (as the unit of analysis) were in the focus of the research but the wider policy context of the interventions studied may also be relevant, calling for an even wider use of policy networks: governments usually look at policy goals in "packages". The level of individual physicians was also left out of the analysis. Care processes, however, are often organised by using interpersonal, collegial relationships, thus social network analysis could also contribute to better understanding of this field. Finally, the issue of public trust could not be incorporated into the cases. Trust is an important characteristic of service provision networks, and network members' trust in each other is an important factor of network performance. How clients and the local community trust in networks, and what relationship is there between network outcomes and public trust, were not part of this analysis. This is not a result of a premeditated act but rather a consequence of missing data in the cases.

3.4 Implications for policy

A few policy implications for Hungarian health policy making can also be derived from the research. Due to the partly descriptive, partly exploratory aim of this research, though, these implications

should not be treated as policy recommendations but rather as an input for further evaluation research studies.

The performance measurement practice, reflected by the two cases, was characterised by the "Managements of Performances" state. Better integration of measurement systems across policy and service provision levels could be considered. Careful definition of outputs and outcomes is essential, and could build on the network-approach to a greater extent. The level of local networks, their role, performance expectations towards them, and supporting policies could be beneficial in policy implementation. How network boundaries are defined, is also important. It seems that regional networks could not perform successfully, maybe because of the lack of tradition, maybe because of lack of policy support.

Where the boundaries of networks are defined in the future primary care reform, will be an important factor of how performance expectations should be defined. The need for "managing for networks" applies, too. If networks are created, the adequate support should also be provided for network members and network managers – without the rigidity of too much bureaucracy and hierarchy. Most probably, a "cheaper version" of the model will have to be implemented, should an expansion occur. Therefore, carefully analysing the implementation of the current pilot model not just by applying the standard tools of health economics and health technology assessment but also using organisational and network studies may have a great contribution to policy formulation. How the proposed GP clusters, with a shift in traditional domains of health providers as well as social care, fit into the "bigger picture" is also an interesting question for public policy analysis before the details of implementation are elaborated.

EU-funded projects in the area of health care tend to tackle with policy problems, let it be e-health development, or reforming the primary care sector. It must be kept in mind that the logic of development projects, with pre-defined goals and strong success-orientation in terms of "project indicators" drives both the network members and the policy towards using easily reachable targets, with less focus on the expected outcomes. Even if this "project-logic" cannot be overwritten, longer-term policies and strategies should be put in place to provide a roadmap for the service provision network (and not just a roadmap or action plan for the development projects). The situation can be especially tricky when network development projects are essentially encouraged (or required) to formulate policy.

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