Networks and network performance in the public sector

Norbert Kiss

Corvinus University of Budapest, Institute of Management
Budapest Centre for Performance Management
x--norbert.kiss @ uni-corvinus.hu--x

ABSTRACT

The network approach is often used to describe the relationship of public organizations since the complexity of social needs requires the cooperation of many organizations. Public sector research is mainly directed at policy networks, and less attention is paid to local service provision networks. This paper points at a problem which arises in the relation between the policy level and the local service provision level: since the above mentioned complexity requires the assistance of several different public organizations, local providers can be considered as members of several networks at the same time, leading to multiple roles assigned to them. I propose a framework to classify networks in the public sector, based on the scope of cooperation (sectoral and territorial networks) and the level of cooperation (operative and strategic networks).

INTRODUCTION

Networks as an alternative way of coordination are gaining popularity in economic theories and management studies. Using a network approach for analysis is especially suitable in the public sector since government agencies, other public institutions, and public service providers are interrelated and interdependent in various ways. While public policy expectations are expressed in terms of outcomes, these outcomes are results of activities carried out by several agencies, public organizations, not-for-profit organizations, and for-profit organizations (public networks or 'hybrid' networks).

When examining performance measurement in a public sector setting, it is fundamental to make a distinction between economy, efficiency, effectiveness, and equity (the four E’s). Inputs should be distributed among, and used by public organizations as to fulfill social expectations as much as possible (that is reach as high effectiveness as possible). Based on these four basic notions of performance, the relation of outputs and outcomes should be clarified as well. A public organization—a single member of a public network—may usually enhance only its efficiency. Overall effectiveness (in terms of outcomes) is dependent of lots of other network members. Since public policies use terms of outcomes when setting end goals for policy programs, from a network perspective it means that they define expected performance in network level.

From the aspects of policy implementation, however, it is essential that outcomes should be translated into terms of outputs which are expected from single public organizations—these performance expectations will govern the actual behavior of public service providers. In terms of network analysis, this problem concerns how network performance can be defined in the public sector, and how network performance can be related to network members’ performance. The nature of this relation is basically affected by the characteristics of public sector networks, such as their structure and interdependencies within them, power distribution, trust, communication channels, organizational interests. Understanding how these characteristics may influence policy making and implementation is crucial for earning higher network performance in terms of expected social outcomes.
While nowadays this ‘networked nature’ of policy making and implementation is central to public sector research, less attention is paid to the performance of local service provision networks. One problem which arises here is that a single public organization can be considered to be a member of several policy networks, causing multiplicity in goals and objectives to follow. If objectives are more consistent between these networks, then more opportunities will arise for utilizing synergies between networks. This level of goal consistency will be a driver of network performance. This problem forms a research gap in present literature.

The structure of this paper is organized as follows. In the first part I overview the research traditions that can be connected to network research in the public sector, analyze how performance can be interpreted in the public sector, define what network performance means, and introduce Benson’s and Hudson’s framework for understanding what network performance means in the dynamics between public policy making and local service provision. In the second part of my paper I propose a framework for classifying networks in the public sector, based on two dimensions: the scope (sectoral, territorial networks) and the level of coordination (operative, strategic networks).

NETWORKS IN THE PUBLIC SECTOR

Research streams in public sector networks research

O’Toole (1997:45) defines networks as “structures of interdependence involving multiple organizations or parts thereof, where one unit is not merely the formal subordinate of the others in some larger hierarchical arrangement” and adds that “networks exhibit some structural stability but extend beyond formally established linkages and policy legitimated ties.” Networks can be intentionally created ‘top-down’, by setting up rules that settle formal linkages, or encourage single units to interact with each other—and networks are also emerging ‘bottom-up’, by a consequence of members’ interactions.

In accordance with the trend of bureaucracy deconstruction, networked approaches of public service provision are gaining popularity: increasing flexibility, and decreasing bureaucratic transaction costs (Williamson, 1985) are making the rationale for networked governance. However, critical opinions hold that using networks serves as a means to ‘distance the state from the problem’ by using local agencies and not-for-profits in a large number: “networks can be a symbolic-political choice when there is a pressure for state action yet disincentives for the state to definitively address policy problems.” (O’Toole–Meier, 2004:683)

Nowadays it is not debated among researchers that the network approach can and should be applied to understand how the public sector works. Berry et al. (2004) separates three major traditions of network research—the sociological, the political science, and the public management traditions—and discuss how the concepts of social networks and policy networks can contribute to the further development of the public management networks research agenda. The starting point of the social network analysis stream is that “structure matters” (ibid:545): network structure affects micro-level, individual characteristics (such as attitudes, satisfaction, power, and other behavioral issues), and vice versa, as well as macro-level antecedents and outcomes (where the research is focused on, for example, board interlocks, joint ventures, alliances, and shared knowledge). The principal questions of the
Policy network stream are “how policy actors achieve the policies they desire”, and “how actors’ roles and the network structures themselves influence policy outcomes” (ibid:546). The public management network stream focuses on two questions: “How do networks—especially network structure—influence effectiveness in public service delivery? And, how managers’ actions affect networks and their performance?” (ibid:546)

While the latter two streams are directly connected to public sector analysis, social networks influence public sector research to the extent as human behavior affects all kind of networks and other institutions. The role of network analysis in understanding the specific working mechanisms of the public sector can be found in two areas: in policy networks, and in service provision networks. Being engaged in working out policy programs and setting policy objectives at policy level, the ‘frontline’ where public services are actually provided for citizens (where citizens ‘meet’ policy objectives, and get high or low satisfaction with them) can be found across a wide range of organizations—members of the service provision network.

Policy networks, service provision networks, and their performance

Public sector research, using network theories, is mainly directed at examining and explaining how policy networks work (for a review and evaluation about policy networks, see Klijn–Koppenjan, 2000). Much less attention is paid to analyze local service provision networks. Or, to put it in another way, while the network approach is relatively often used to explain how policy objectives emerge from the clash of conflicting interests caused by competition for resources such as budget and legitimacy, the role of networks and network management is less understood in implementing those objectives (in the management of local service provision networks). Health provision (with general practitioners, out-patient care, hospitals, rehabilitation centers, pharmacies and other providers) and transportation (with urban means of transportation, trains, buses etc.) are good examples of how public service provision is based upon local level network management: effective and efficient service provision requires the coordination of network members (e.g. referral protocols in health care, or schedule harmonization in transportation).

When talking about the performance of public services, and about how this performance can be influenced and managed, an attempt is made, in fact, to make a connection between public policy and public management—or, in terms of networks, between policy networks and service provision networks. The standards of the public services are set up and maintained by public policy making (influenced by policy network members), through elaborating policy programs. Financial sources needed for service provision are mainly ensured by the policy level, too—but services, indeed, are carried out by provision network members. Their behavior is influenced by rules and other (mainly financial) influential factors that are set up at policy level: policy makers are striving to shape the environment of local providers in a way that motivates them towards fulfilling policy goals. Additionally, local provision network members’ behavior is also affected by local circumstances such as territorial specialties or local politics. Monitoring the performance of service providers ensures that the performance of local providers can be evaluated. This evaluation may affect program objectives, and may lead to changing the ‘rules of the game’. Performance levels of service providers is summed up in order to evaluate whether policy objectives are met—in this sense, this sum creates network performance. (See Figure 1.)
Before further investigating into how performance can be managed in public sector networks, it is needed to clarify what categories of performance should be differentiated, and how these categories can be connected to various networks and network managers’ responsibilities. Regarding this issue, I refer to the concept of *four E’s* (see Figure 2, based on Bouckaert–Van Dooren, 2003).

![Figure 1. The connection between public policy making and service provision](image)

![Figure 2. Performance in the public sector – The four E’s concept (based on: Bouckaert–Van Dooren, 2003)](image)
Economy measures refer to the volume of inputs used during operations. Performance indicators based on economy are often used in the public sector: for example, the size of budget, the number of employees, or cost per number of employees are popular measures in spite of their apparent shortcomings. Economy measures can only be used for benchmarking when outputs are homogeneous enough (for example, two agencies with exactly the same profile)—which is rarely the case for public sector organizations.

Efficiency measures are intended to compare input-output ratios. Resources (inputs) are used in order to produce public services (outputs) consistent with organizational objectives. For example, treatments provided are outputs of hospitals, and these outputs should be ‘produced’ by using the least possible inputs. Efficiency measures are gaining importance from management aspects when a public organization is financed normatively, based on its output performance (see, for example, DRG-financing for health care providers). Comparing efficiency measures, of course, presumes that all the inputs and outputs can be valued in ‘a common platform’, which usually means that can be ‘translated’ to terms of money. In spite of the fact that these ‘translations’ can be difficult in the public sector, resource allocation decisions—based either on implicit, or explicit reasoning—are considering this kind of ratios to a great extent.

Effectiveness measures concern outcomes. The operation of public organizations is effective if organizational outputs are produced in an appropriate quantity and quality, with using input resources efficiently. For example, health provision is considered to be more effective if health outcomes (that is the overall health status of a citizen or a covered population) improve. Outcomes can rarely be attributed to a single organization in the public sector: other organizations (in a contingency view: environment; in a network view: other network members) do also affect performance. For example, health status is affected by such factors as prevention in schools, or the system of social benefits. While social needs and expectations are mainly formulated in terms of outcomes, it is not easy to assess effectiveness due to ambiguity of relations between outputs and outcomes (for example, what level of prevention activities should be sponsored to improve health status in the long run).

Equity measures refer to whether citizens or groups of citizens have equal opportunities to get public services in the same quantity and quality. For example, health provision is based on medical needs and not on social status. Equity can be controlled to some extent if anti-discrimination rules are set at organizational level but this problem should be addressed ‘systematically’ from policy level.

From public management aspect, the key question of how the performance of public services can be improved is central. While economy and efficiency can be basically managed at organizational level (in the management cycle), effectiveness and equity is to be mainly influenced by the public policy cycle. From a network approach it means that network management is a policy issue. It must be noted, however, that this approach assumes that there is a clear role of network manager, and this role belongs to the policy maker—which is not certainly the case since the relationship of policy makers and service providers is more interrelated, and influenced by power distribution and politics. When managing network performance, one has to be aware of the fact that the scope of the environment (or in terms of networks, the other network members and the relationships with them) should be identified in order to be successful with network management activities.
What is network performance, and how to deal with it?

Having clarified what performance means from the aspect of policy making and service provision, we can move on to the concept of network performance. The question raises what additional value—what synergies—networking has in the public sector at all, and what network performance really is. Sometimes network performance is defined as the difference between the sum of the performance of distinct units and the performance of the unified network. It has been not clearly stated, however, suggested, in this paper so far that I define network performance as the aggregate performance of the whole network rather than as just the ‘synergic plus’. This sounds simple—but the question of synergies cannot be avoided. Network performance, in fact, will depend on how network membership is defined.

Let’s see an example. The overall network performance of the railway can be described as the time needed to get from one point to another (let’s say 4 hours). Similarly, this time will be the performance of the bus network as well (4 hours 20 minutes). But what happens when an improvement can be reached if interchanging between the railway and the bus network, and the travel time decreases to 3 hours 40 minutes by using both trains and buses? By setting up a unified network of means of transportation, and exploiting synergies, 20 minutes can be saved. As a result of the fact that a unified network is created, a ’20-minute-synergy’ emerged. According to the ‘synergy approach’, the network performance is equal with 20 minutes. According to the ‘whole network approach’, the network performance is 3 hours 40 minutes. Network performance becomes more complicated if we take costs as well into consideration (and not even mention long term, indirect effects of transportation in the development of the regional economy). In and around a large city the transportation network should be considered as a unified network. From the regional viewpoint this rings true but problems arise when the same railway lines are treated as elements of a country-wide (or Europe-wide) transportation network as well, or when roads and motorways are also added to analysis.

My another example comes from health provision. It would be very inefficient in medical care if everybody could visit an outpatient specialist without any waiting, just after having a referral from the GP—an optimum can be found in capacities operated, considering costs of capacities, and costs of queuing. If there is no relationship between GP’s and outpatient care institutions, queues will occur, and people will spend time with queuing, even when capacities at outpatient care are operated at optimal level. However, if an information linkage is set up, and an appointment scheduler system is introduced (that is: primary and secondary care is treated as a unified network, with focus on patients), waiting times can be reduced (network performance can be improved). At this point, another example can be shown with a less direct network relationship: the relationship between these two levels of health provision will be better if medical student at universities trained in a manner which focuses on patients’ health status, and not on treating disease episodes.

Summing up, network performance in the public sector should be specified in terms of outcomes, referring to social needs and expectations, and should be targeted at a level of unified networks. The analysis and management of network performance, however, faces a big problem here: network members does not ‘exclusively’ belong to one network but play multiple roles at several different networks. Taking complexity and interrelatedness of public service goals into consideration, one may conclude that every public sector organization can be attached to several networks during analysis (not even mentioning here ‘hybrid’ networks,
consisting of for-profit and not-for-profit organizations as well), Agranoff and McGuire (1998:69) cite the case of economic development: “Like the hub of a multispoked wheel, the development manager is connected to all of the spokes—each representing a different strategic task; each consisting of networks of different composition, scope, and size; and each with its own set of management challenges and responsibilities. [...] Insofar as the performance of a particular policy sector is dependent on the effectiveness of organizational and network design, development of the capacity to organize and manage these processes is critical to both public policy and management.”

In order to understand the multiple roles individual public organizations may play in different networks and analyze how network performance can be managed knowing this multiplicity, a first step is to categorize these public sector networks, and map their possible relations—here is the point where there is a research gap in literature. Before introducing the proposed framework addressing this research gap, another question should be targeted: what factors influence network performance?

**Beyond network performance: ‘enhancers’ and ‘obstacles’**

Having overviewed what network performance means, the forthcoming question comes without saying: how network performance can be enhanced. From an analytical point of view, researchers seek for ‘proxy variables’ that describe various network characteristics influencing network performance in a positive or negative manner. In this sense, network management consists of activities that support the build-up of ‘enhancers’ and limit the effects of ‘obstacles’. From a public policy viewpoint this ‘game’ is exactly the same: policy makers strive to set up rules that serve the build-up of ‘enhancers’ and prevail negative effects of ‘obstacles’. Literature suggests that these enhancers can be, for example, the level of trust within the network, or the existence and use of communication channels—these factors can be considered as ‘proxy variables’ of network performance: if network members trust each other to a greater extent, network performance will be higher. In terms of institutional economics, researchers are seeking the factors that decrease transaction costs in the network. In terms of public policy making and implementation, these factors are central to the rule setting process since these are the ones that influence the behavior of public service providers—these are the factors that link policy networks and provider networks.

At this point I refer to a general framework which describes this interrelationship. According to Benson (1975, 1982), as cited by Hudson (2004), effective local network partnership depends upon the equilibrium obtained in four dimensions: domain consensus (agreement regarding the appropriate role and scope of each agency), ideological consensus (agreement regarding the nature of the tasks faced), positive evaluation (or trust) towards other organizations, and work coordination (the alignment of working patterns and culture). Internal and external contextual factors that influence the equilibrium levels that can be reached are as follows: the fulfillment of program requirements, the maintenance of a clear domain of high social importance, the maintenance of orderly, reliable patterns of resource flow, and application/defense of the organization’s paradigm (see Figure 3 for an overview of the model.)
Super-structure: Operational relationships

<table>
<thead>
<tr>
<th>Degree of domain consensus</th>
<th>Degree of ideological consensus</th>
</tr>
</thead>
<tbody>
<tr>
<td>(= to what extent the roles and responsibilities of different network members are clear)</td>
<td>(= to what extent network members agree on problem definition and problem resolution)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Degree of positive evaluation</th>
<th>Degree of work coordination</th>
</tr>
</thead>
<tbody>
<tr>
<td>(= to what extent the workers of network members trust in each other)</td>
<td>(= to what extent working patterns and cultures are aligned in a network)</td>
</tr>
</tbody>
</table>

Sub-structure: Contextual influences

<table>
<thead>
<tr>
<th>Fulfillment of program requirements</th>
<th>Maintenance of a domain of high social importance</th>
</tr>
</thead>
<tbody>
<tr>
<td>(= to what extent provider networks undertake tasks which are consistent with present policy requirements)</td>
<td>(= to what extent the agenda has public legitimacy and support)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Maintenance of resource flows</th>
<th>Application/defense of the organizational paradigm</th>
</tr>
</thead>
<tbody>
<tr>
<td>(= to what extent the resource flow is predictable and reliable)</td>
<td>(= to what extent participants are committed to the agency’s way of doing)</td>
</tr>
</tbody>
</table>

Figure 3. A framework for analyzing local network partnerships (Benson, 1975; Hudson, 2004)

According to Benson and Hudson, the performance of a local service provision network will be better if the equilibrium in the four dimensions of the super-structure is reached in higher levels. A local network performs better if:

- the network members are on consensus about the distribution of responsibilities for certain tasks, goals and objectives followed by the members are consistent with each other, and the unnecessary duplication of resources can be avoided (for example, in a health provision network the distribution of tasks between primary care and secondary care is clarified)—as described by the degree of domain consensus;
- the network members have a consent about the ‘nature’ of the problems they face as well as possible ways of solution (for example, in the case of health provision, the main goal is to improve the overall health status of the whole population—the task is not to manage hospitals and other institutions, or to treat diseases, but to focus on patients’ health and relevant data, to improve health instead of treating disease episodes, and to take prevention activities into consideration as well)—described by ideological consensus;
- the network members trust each other, and relevant information is shared, the relationships between members is shaped by rather commitment toward common goals than differences in negotiating power (for example, joint development projects are initiated where asset specific investments are also made)—described by positive evaluation;
- interorganizational processes are well coordinated (for example, treatment protocols that meet local requirements and possibilities are put in place, and the flow of both physical material and information is well-organized)—described by the degree of work coordination.

Performance levels in all the local provision networks will be influenced by the sum of performance levels achieved by the whole ‘community’ of provision networks. It will be also influenced by the performance of the supervisory body (that is the way it succeeded with managing the network). The reasoning behind is that the macro-level success of the whole public policy program will be decided upon whether expectations are met or not in service provision. All the local networks may perform better if:
  - public policy program requirements are fulfilled in a higher number of local provision networks, or to a greater extent;
  - social legitimacy concerning a policy program is higher (that is the program is known and its importance is acknowledged wider in the public);
  - financial and other resources are secured for the continuity of operations in a transparent manner, which encourages long term thinking;
  - local provision members ‘use the same language’ to describe problems and solutions as policy makers and the supervisory body do.

The framework describes well the interrelatedness of policy level and service provision level, and the performance of one policy program and its connected provision networks. In order to utilize the synergic opportunities between various networks, objectives set at various policies and at organizational strategies should be consistent with each other. The most obvious clash of consistency can be observed in the relation of local/regional networks and sectoral policies (e.g. country-wide network of education, or health provision). What is rationalization from one aspect might mean destabilization from the other.

The more inconsistencies exist between these objectives, the less synergic opportunities can be utilized between and within networks. This way, the consistency of goals and objectives of public policy programs and public service provision networks is an important influencing factor of network performance. It should be noted, however, that it would be illusionary to think that ‘total consistency’ can be reached in a sphere where politics and political actions are continuously bringing imbalance into the system. What also brings imbalance, and is inherent of the network approach, is the question of who becomes network manager in a network. Or “is the network really ‘managed’ by anybody, let alone a specific, identifiable network manager?” (Berry et al., 2004:548)

Should it be done by an ‘appointed’ network manager, or as a consequence of network interplay, higher network performance can be reached if policy objectives and strategic goals are managed in a coordinated manner. Research must be done into what characteristics of networks influence the level of this coordination.

**A FRAMEWORK FOR MAPPING PUBLIC SECTOR NETWORKS**

In this part of my paper I propose a classification of network types in the public sector, based on two dimensions which influence performance management characteristics to a great extent (see Figure 4).
The first dimension regards the scope of coordination. A distinction can be made between networks emerging from the same sector, and covering organizations country-wide (e.g. health care institutions, education), and networks based on territorial interdependencies (e.g. local municipalities and their institutions: hospitals, schools, and other community services). This kind of ‘dual governance’ has a significant effect over the network performance: the supervisory authorities of both the geographical region and the sector try to influence the performance of the organizations belonging to ‘their’ networks in order to get through their policy objectives. It follows that each public sector organization can be considered as a member of two different networks at the same time, where performance levels expected by different governing bodies are not necessarily consistent with each other. Network members will try to satisfy two different sets of expectations which leads to the emergence of multiple goals.

The other dimension concerns the level of coordination. Where the coordination among the members of the network includes daily interactions, resource transfers, and where the cooperation at operational level requires significant joint efforts, we can identify an ‘operative network’. For example, health provision where the patients are referred from one place to the other, or transportation where passengers change from bus to train and vice versa. Where the coordination is made ‘only’ at a higher level, and mainly covers decisions of resource allocation, we can identify a ‘strategic network’. For example, education is a strategic network because network decisions shape the allocation of capacities between schools but there is no regular ‘transfer’ of students between institutions. Organizational objectives must reflect, of course, the expectations of other network members (e.g. primary schools must refer to entrance requirements of secondary schools) but no daily interaction is needed.

Network performance will be better if the consistency of the objectives of territorial and sectoral supervisory bodies can be earned at higher, strategic level. Operative networks require the operative coordination of members’ activities by their nature, however, strategic cooperation, strategic thinking, and strategic level performance management are often missing. A high level of operative coordination may result in high local (organizational level) efficiency but the overall effectiveness of the network may remain poor due to the lack of strategic coordination. To earn high levels in network performance, both strategic and operative networks need a supervisory body or an influent group of network members which are able to introduce and implement strategic performance management across the whole
network, as well as maintain strategic level coordination between territorial and sectoral agencies, reducing negative effects of the ‘multiple goals’ phenomenon.

The framework can be illustrated by the case of the Hungarian managed care organizations (MCO’s). MCO’s were created in selected regions in a ‘pilot’ policy program in order to refer to local health care needs better. A network to be managed by an MCO will basically cover local health care providers (GP’s, outpatient care institutions, hospitals). In the ‘Hungarian model’ MCO’s were not granted real authority to motivate health provision network members towards coordinated strategic objectives so their strategic network management capabilities were rather limited. Country-wide financing rules caused ‘multiple goals’, linked health care providers to the sectoral network, and undermined commitment towards locally set objectives. Local communication was strengthened with schools which served as primary means of prevention activities. MCO’s tried to influence regional development plans as well with their ideas—with very limited success. The creation of MCO’s more or less improved the information linkages in the local network by sharing patient data and analyzing it from the aspects of health status but further improvement was hindered by inability to implement effective strategic performance management systems, and set objectives consistent across various network members. Figure 5 shows a territorial, operative network of an MCO interferes with other types of networks when trying to implement its goals.

<table>
<thead>
<tr>
<th>Level of coordination</th>
<th>Operative network</th>
<th>Strategic network</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>health financing</td>
</tr>
<tr>
<td></td>
<td></td>
<td>GP’s, outpatient care</td>
</tr>
<tr>
<td></td>
<td></td>
<td>hospitals</td>
</tr>
<tr>
<td></td>
<td></td>
<td>home care</td>
</tr>
<tr>
<td></td>
<td></td>
<td>education</td>
</tr>
<tr>
<td></td>
<td></td>
<td>social benefits</td>
</tr>
<tr>
<td></td>
<td></td>
<td>schools</td>
</tr>
<tr>
<td></td>
<td></td>
<td>regional development</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NFP’s</td>
</tr>
</tbody>
</table>

**Figure 5. The networked ‘problem map’ of MCO’s using the framework**

**CONCLUSIONS**

Linking public policy level performance and performance expectations set at public service providers is an important question of public sector research. Since the problems that public agencies face usually require the contribution of several different public organizations, the network approach can provide us valuable explanations in this field. The network performance in the public sector should be defined in terms of outcomes, and can be improved if synergic opportunities between interrelated public sector networks and network members are utilized. One of the problems which arises here is that service providers can be considered as members of several networks, leading to multiplicity of organizational goals. If performance expectations are consolidated at a strategic level between networks, the overall network performance can be improved. As a first step in research, public sector networks should be classified according to network performance management characteristics. This paper proposes a framework with two dimensions (scope and level of coordination) and
separates sectoral and territorial networks in one dimension, and operative and strategic networks in the other.

During further research case studies should be prepared to understand what opportunities can be used to improve network performance in each of the dimensions of the framework, and to investigate how single public organizations cope with ‘multiple roles’ originating in the different expectations of different network managers. Political aspects should also be included when examining how policy networks and public service provision networks work and interact.

REFERENCES


