

Czako, Katalin; Poreisz, Veronika

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## Theory and empirics of horizontal and spatial integration of local communal services

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# Theory and empirics of horizontal and spatial integration of local communal services

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*Katalin Czakó, Veronika Poreisz – Széchenyi István University, Győr, Doctorial School of Regional- and Economic Sciences*

[ckatalin@sze.hu](mailto:ckatalin@sze.hu), [poreisz@sze.hu](mailto:poreisz@sze.hu)

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## **Abstract**

There are three parts of our paper. Firstly, it gives an overview about the various definitions, types and characteristic features of local public services. The second part of the paper presents the goals and factors which affect the integration of local communal services. Horizontal integration means joining the various individual service providers, such as water supply and sewage, communal waste, district heating, street cleaning, public transportation companies. Spatial integration means joining the service providers of neighboring communities, territories, regions. In recent years several examples can be observed for both types of integration in Hungary. Three main factors behind this trend will be discussed in detail: economies of scope argument, economies of scale argument and managerial power and prestige argument. According to the economies of scope argument, local service providers use similar physical assets (such as vehicles, office buildings, maintenance tools and so on) and similar skills and organizations. Joining of the respective customer bases brings synergies in the management of users (metering, billing, call centers and so on), and especially in administration costs. Bigger organizations may be in a better position in order to raise the funds required for financing their projected investments also. The economies-of-scale argument lies behind the spatial extension of the providers of the same service. However, spatial extension leads to the increasing cost of spatial interactions among the various sites of companies also which effect can overweight the potential cost reduction due to the increasing return. Horizontal and spatial integration can be driven also by managerial attitude towards empire building. We present a short survey also about the previous controversial empirical findings of the integration of local communal services in various countries. In the third part our own empirical research is presented, as a case study about the integration of communal waste, district heating, real estate services and other general services in the Western Hungarian town of Győr (which has about 130 thousand inhabitants). Our results suggest a balanced view: cost efficiency argument has some empirical support, but on the other side the changing organizational structure and the joint human resource management have both advantages and disadvantages.

## **Introduction**

The problem of horizontal and vertical local service integration has a very long history both in the research and in practice (Lythgoe, 1942; Rosenberry, 1983). Current economic crisis is increasingly affecting the public sector also, therefore it is essential to consider the organizational forms that may produce cost savings in the provision of public services. The first part of the paper gives an overview about the various definitions, types and characteristic features of local public services. The second part of the paper presents the goals and factors which affect the integration of local communal services. Horizontal integration means joining the various individual service providers, such as water supply and sewage, communal waste, district heating, street cleaning, public transportation companies. Spatial integration means joining the service providers of neighboring communities, territories, regions. We present a short survey also about the previous controversial empirical findings of the integration of local communal services in various countries. In the third part our own empirical research is presented, as a case study about the integration of communal waste, district heating, real estate services and other general services in the Western Hungarian town of Győr (which has about 130 thousand inhabitants). Our results suggest a balanced view: cost efficiency argument has some empirical support, but on the other side the changing organizational structure and the joint human resource management have both advantages and disadvantages.

## **Definition of local public services**

In the first part of the study we are listing general characteristics of communal services and we highlight the managing and leading roles of the local governments and governments. Our theoretical summary is mainly based on Hungarian empirics, but as a comparison we are introducing international cases as well. These comparisons are focusing on how foreign countries can structure and manage their own communal service systems.

Communal service definition is based on tasks and on proceeding these tasks, which satisfy social needs and need to realize and solved on a way of communal organization activity or we can call it, communal management. Beside this definition, local community services are common tasks, which can be defined in the framework of a territory, or other geographically closed area (Horváth, 2002). Community service is a special type of services, which involve characteristics originating from the community. It serves wide range of

inhabitants; groups of inhabitants can use it on a same way and on the same extend. Generally the state, local governments and other organizations supply these services (Dicső, 2010). Due to the fact that common social tasks should be solved by the state or other groups and organizations created by the society, these problems and tasks should be solved on structural way. This is a centralized, unified way realized on local level, most of the cases in form of a local government policy. Important point is, that while local governments are organizing these services and find the solutions they are focusing on local characteristics and specialties (Horváth, 2002; Dicső, 2010).

Categorization and grouping of community services and beside this the utilities is not the same in the literatures and it is not even the same in aspect of statistical categorization. In most of the cases we meet with simple listings, which inform us that what kind of understandings the given author uses and what kind of activities are related to communal services. Hetesi (2000) defines characteristics of communal services on the following way:

- it is a quasi-monopoly situation, a limited competition
- it is happening in the form of social ownership and under control
- it is a continuous activity
- it expands country or region wide
- the connection with the recipients is continuous and it is characterized by huge and capital-intensive investments, which one's ROIs is very slowly.

Compulsory common services related to local communities can be grouped on the following way (Dicső, 2010):

- 1) Human services: elementary education, common culture, health services.
- 2) Social services: services supplying social care, financially or in other forms, for example different caring activities, like special caregivers for old or ill people.
- 3) Technical and infrastructural services
  - a. Utility services: Water supply, sewage disposal, treatment and collection, electronic communications, postal services, transport, energy supply
  - b. Communal services: maintenance of public cemeteries, collection, treatment and transport of waste, chimney services, cleaning public places, public parks.

According to another listing related services to communal service are electronic service and water supply service, district heating service, gas service, phone communication service, public transport services, environmental management services and postal services (Hetesi, 2000)

Local governments are formal organizations with public authority activities, and next to this they are organizers and operators of local service provider institutions. They are obliged to supply the communal services. They can decide whether they solve it by themselves or they solve it on a way of outsourcing. Most important is that local governments are responsible of making these tasks uninterruptedly. Outsourcing can be in the following forms (Dicső, 2010):

- selecting a company via public procurement procedure
- establishing a company to perform these tasks
- making long term agreement about performing the tasks
- solving the task associated with a general form (company)

Prize of the communal services is paid by the recipients. Local government has the price or fee setting-role in some cases of services. (e.c.: district heating, local public transportation). Huge parts of these services should be organized by local governments so they has the decision on which way is it organized (Dicső 2010). In the Table 1 the most important characteristics of local services are summarized.

Table 1 Various characteristics of local communal services

<b>Name of the service</b>	<b>Service Provider</b>	<b>Legal relation to the recipient</b>	<b>Price/Fee</b>	<b>Other Characteristics</b>
<i>Water supply, sewage disposal</i>	Local government, local business organization, outsourcing, concession	Provider are obliged to the recipient for supplying the services	official authority based	
<i>Transport</i>	Company owned mainly by the state or concession group	There is no obligation in form of a contract	official authority based	
<i>Energy supply</i>	Business entity with its own legal independency	Based on a community service contract	market based	Possibility of exclusion
<i>Waste collection, transportation and treatment</i>	Local government or chosen organization by local government	determined by local government	official authority based	Possibility of fee collection

Source: Own construction based on Dicső (2010)

Service providers can be grouped by the followings (Dicső, 2010):

- Public utility is an organization which performs public service and taking responsibility for organizing it. It is owned by the society and based on a public utility contract.
- Organization providing public services: It is not owned by the society, it is operating based on an official license or concession contract (most of the cases they are energy suppliers)
- Business association: business organization which making its activity in form of business activity, giving its own name to that. (tasks are usually insured and defined by the state) There are market factors effecting its activity, it determines prices and fees by itself. Prices and fees are profit maximizing. It is related to the recipients in form of a contract and serving them continuously for the time period of the contract. Most of the cases it is operating in monopolistic situation.
- Concession Company: similar to business association, but does not obtain the necessary property ownership for providing the services.

While servicing the public, the following contracts are possible between the parties (state, local government, provider): utility service contracts, public service contracts and task-order contracts. Task and responsibility of the state is maintaining the smooth processes and improving the service. Connecting to this, the state gives special or normative financial and non-financial supports to local governments and via them to the providers. These supports can be directly or indirectly and they target the operation or it has a goal of capital accumulation. Pricing the fees of public services it is important that fees should cover the cost of the services. Costs are paid by the state and they are coming from the incomes of the services and other supports. Service providers, which are private or public companies, are market players. They determine their prices not only on market issues, but based on profitability as well. Income from these prices in these companies is added to the supports and this base is the whole income (Dicső, 2010).

Intensive research has been conducted of privatization, voucher systems, and government contracting out for social services (Clingermayer – Feiock, 1997; Clingermayer et al., 2003; Donahue, 1989; Ferris – Graddy, 1986). The dilemmas of contracting out can be summarized as the following: wide array of services became contracted out with external organizations. Local governments have increasingly relied on private for-profit, nonprofit and other organizations. External delivery of public services involves partly the same problems facing private firms that contract out some of their activities. However, public-private partnership, as

frequent examples shows, can be the worst solution: private firms with the legislative power of local government are interested in secure acceptance of higher cost and lower service quality.

Public services are provided traditionally by organizations, which are in monopolistic situation. These monopolies can be natural or artificial ones. In artificial monopolistic situation market player is funded based on permission or license as a provider and it assures the monopolistic situation. In other case, in natural monopolistic situation, the situation is created without the contribution of any authority. Important characteristic of natural monopolies is that in case of increasing the supply, the average cost is decreasing. In case of creating a new organization, total cost occurs again in case of a supply increase. Typically monopolies are created or shaped in case of services or activities, which have the potential of building a network structure (e. c.: district heating) or they are unique. In the previous years in Hungary aim of the state was to create the situation of competition, which consisted of privatization, demonopolization and deregulation. These three issues led to the liberalization of public services in Hungary (Mozsár 2002).

### **Previous empirical studies**

The number of empirical investigations in various countries is of course enormous and therefore cannot be reviewed in a short paper. Realizing comprehensive picture and conclusions of public services of more countries is not possible, because each country policy is different and shows unique characteristics and practices are processing on special ways (Cox 2008). Huge part of the literature is analyzing always one country and beside this one sector, for example energy supply service sector (Jandik – Makhija, 2005) or water supply (Saal – Parker, 2000).

The CIRIEC International Scientific Commission on “Public Services/ Public Enterprises” launched a research project on local public services. The main goal was to describe the local public transport, water supply and waste management sector and give an overview of common trends in the investigated countries. They confirmed that EU area show very different models of local public services, there are many different solutions. Firstly they review the general economic and political background. In the 80’s were local public service providers monopolistic vertically integrated firms. The main driving forces against this were coming from political motivation and economic justification, based on the public enterprises were less efficient than private enterprises. The EU Commission indicates through directives



and regulations that public services had to be submitted to the rule of competition (Bognetti – Obermann 2012).

The most important trend by planning and governance are the increasing amount of horizontal and vertical coordination. The role of planning has changed, services have become more complex and spatial extended. In most of the cases new governance structures were created in terms of specialization and spatial integration. Some of local authorities expand their geographic supply areas and range of services for reasons of economies of scale and scope (Bognetti – Obermann 2012).

The public service providers increasing autonomy is an another trend. The reason is to achieve more efficiency. Several cases of mergers and cooperation among different local public utilities represent the intention to provide more effective services. They will achieve better services through close coordination of activities and economies of scale. Several public-privat-partnerships were created to take advantages of joint management and multi utilities in search of economies of scope. The behavior of local public enterprises has become more market oriented. Some of international public utility providers (mostly in the water sector and waste sector) have made diffusion to extend their geographical area. We can say, that corporization is an important trend of local public services (Bognetti – Obermann 2012).

Piacenza's and Vannoni's study (2009) investigates vertical and horizontal economies in the electric utility industry. The authors submit, that the empirical literature of electric utility mainly focuses on three separated research area: scale economies in distribution, horizontal scope economies at one particular stage and vertical scope economies. Their research was made in integrated approach, wich considers both horizontal and vertical aspects of the electricity sector. They results suggest that a median size utility can enjoy cost savings by joining activities. They found evidence at distribution stage of moderate vertical integration gains and of more horizontal scope economies. The conclusion is that a similar reorganization process can be set up by other public utilities (gas, water, railways), were enterprises provide different services (Piacenza – Vannoni 2009).

An another study (Fraquelli – Piacenza – Vannoni, 2004) investigates the cost properties of local public services. Enterprises combine gas, water and electricity utilities. There is an increasing tendency for utilities to become providers of network services. One of the reasons is privatization and liberalization processes in public services. Why transform the enterprises their structure into multi-utility? The authors answer is, that process is the reaction to the limited growth prospect of their core business and on another hand the increasing convergence and relatedness among network market. The multi utility firms are able to

provide customers with better services. The prices are lower, because they can operate efficiently and reduce their costs. They can sell bundles of products which increase the market power of diversified utilities. The benefits are evident both for customers and providers. The authors describe three main motivations behind diversification strategies:

1. Resource theory: firms enter new industries by building on their accumulated set of firm specific assets. They can exploit the assets better via internalization of new activities, rather than by selling excess amount. This process is the presence of transaction costs.

2. Agency view: firms diversify their business to increase managerial power and prestige. They enjoy the benefits from informational advantage over stakeholders.

3. Market power view: firms can through diversification consolidate and increase their market power.

Firms, which combine public utilities (for example: gas, water, electricity) use similar assets and skills. They can achieve a better market position, the joined customer basis brings advantages in administration and in advertising (common billing, customer lists, call center). (Fraquelli – Piacenza – Vannoni 2004).

## **Public Service in Győr**

Győr is located in Hungary in the Western Transdanubian Region, it is the central city of the county called Győr-Moson-Sopron. Inhabitants are nearly 130 000. Economics of the city is improving dynamically, thanks to its industrial factors. Győr is a traditional vehicle-industry city. It was a traditional industrial city in the communism as well. After the regime change Audi has built its second biggest headquarter in Győr. Audi is the main foreign direct investor in the area and presence of this company gave new dynamisms to the economic improvement. Next to this in the international industrial park of the city there are several companies operating, which have great effect on the employment factors of Győr and its agglomeration.

Győr-Szol Zrt is the biggest public service provider of the agglomeration. It is excellent example for integration of public services. This company was founded in 2010 as an integration of four separately operation provider. First one is the formal INSZOL, which activity was asset management in the city and agglomeration. Second one was Communal Service Provider of Győr, which main activity was the waste management. Other two companies had district heating provider and city improving, urban development activities. The motivations of integration were twofold: firstly, due to the new organizational structure

several type of cost reduction can be realized. Secondly, tax optimization also played an important role: there was huge profit from year to year in district heating company, and some deficit in other three companies. By amalgamation the profit tax became smaller.

Győr-Szol has more departments; independence of these departments is visible via the operational form. There are five independent control board, which are related to one Chief Executive Officer. Goal of the integration were increasing efficiency and optimizing the cost of urban management. Next to obtaining savings there was a goal of better satisfaction of needs and shaping the recipient focus in the operation. There are the following departments:

- urban management
- district heating
- investments and implementation
- real estate management
- economic and financial management

There is separated media and communication group of the company, and other administrative issues, related to the company is made by the economic and financial management department (e. c.: HR tasks, billing and fee collection and IT).

Savings emerge in the following areas: cheaper purchases (the most important factor in this regard is fuel, but office supplies and others are also significant), less employees in administrative and physical jobs, less member of supervisory board. According to the original motivation of integration, administration cost can be reduced by the joint financial, human resources and labor departments. This expectation was fulfilled, but for the correct measurement of the cost reduction more investigation and time is needed. Some controversial or disadvantageous effect can be seen also: the spatial complexity of the organization became much larger (the locations of various departments became spatially detached), therefore some elements of the administration became also more complicated or longer. However, we are arranging currently a more sophisticated and detailed assessment about these effects, at present states only this very general statements can be determined.

## **Summary**

In the study we introduce and detail the definition of public services. It is a fact, that based on the analyzed literatures analyses have the topic of public service structures of one country or one sector. Describing public services comprehensively is very affected by regulation of the given country's policy. It is because state and local government has key role

in the definition of public, communal services. There are issues in the definition, which can be typed. These one are the characteristics of service providers, form of the relation between the participants of the service, the form of the contracts and way of fee determination. Integration of services can have cost cutting effect and can provide a comprehensive recipient focused organization.

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