**The impact of quasi-markets on the processes and the costs of contracting**

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**Abstract**

The aim of this paper is to ascertain the impact of quasi-markets on the contracting processes and the costs of contracting in Finnish health care in the specific case of laboratory services. By means of a comparative case analysis we ascertained the changes in organizational contracting practices and identified the actions affecting the transaction costs of contracting in the case of an autonomous municipal enterprise laboratory compared with the same laboratory as a hierarchically run municipal unit. The research was conducted during the years 2002-2009. The results suggest that introducing quasi-markets into laboratory services increased the cost of contracting; and had a negative impact on the laboratories’ willingness to create new market relationships.

**Key words:** quasi-markets, contracts, transaction costs, municipal unit, municipal enterprise

**The impact of quasi-markets on the processes and the costs of contracting**

**Introduction**

For over two decades public service reform has been a subject of interest in many countries owing to demands for economy, efficiency and effectiveness (Young and Macinati 2012; Bel and Fageda 2007). Contracting in quasi-markets (i.e. internal markets) has been sought as one solution to inefficiencies in public service production (see Lane 2001). Nevertheless, the use of the quasi-markets will not enhance the efficiency of service delivery if additional costs such as transaction costs impair the advantages of technical efficiency (Boardman and Vining 2010; France, Smith, and Lawrence 2002; Ashton 1998). In some cases, a lack of control due to outsourcing, increase in service costs and additional costs of contracting have led to services being taken back into state control (Young and Macinati 2012; Bel, Hebdon and Warner 2007). However, in estimating the efficiency or the costs of contracting one of the major challenges is how these costs can be separated from the organizational total costs (Whitten, Chakrabarty, and Wakefield*.* 2010). For these reasons we argue that the efficiency of reforms cannot be evaluated unless we identify organizational performance and factors affecting contracting costs in practice. In this case-study, we explore and identify the idiographic relationship between organizational actions and the costs of organizing in order to provide a good understanding of the actions affecting the transaction costs of contracting.

Quasi-markets have generally been introduced by making a split between publicly owned purchasers and service providers and consequently the relationships between purchasers and public, private or third sector providers are based on negotiated contracts (Williamson 2008; Warwick 2007; Kähkönen 2005). When operating in the quasi-markets, the public providers have introduced changes in governance arrangements (Allen et al. 2011). New organizational models, such as autonomous municipal enterprises, have a more independent position and better incentives to provide services at lower costs. “Municipal enterprise” as a concept is complex, culturally embedded and difficult to define (Millward 2011; Aars and Ringkjøb 2011; Cruz and Marques 2011; Bel and Fageda 2010; Tavares and Camões 2010; Stumm 1997). The type of municipal enterprise discussed here is an autonomous single-purpose entity belonging to the hospital district (Grossi and Reichard 2008).

In Finnish health care, the main responsibility for service provision rests with municipalities, where the municipal level public health is organized in the health centres. In addition, each municipality is part of one of the 20 hospital districts, which organize specialized medical care for the population of their member municipalities (Vuorenkoski, Mladovsky and Mossialos 2008, 2). The governance models used in Finnish public health care are municipal units, municipal companies and municipal enterprises. Municipal units come under municipal budget and investment programmes. They operate on the principle of full cost recovery (Herrala and Haapasalo 2012). A municipal company is a legally independent entity, operating as commercial businesses, but over half of the shares are still owned by the municipalities or the hospital districts (Herrala and Haapasalo 2012). A municipal enterprise is a part of the municipality or hospital district, but it is an independent business unit, having its own governing board. It is responsible for its own administration and financial management, so activities and also investments are funded with cash flow financing (Pekkarinen et al. 2011). However, the establishment of a municipal enterprise is based on political decisions taken by the municipal council or hospital district and the operation is regulated by the Municipality Act (Herrala and Haapasalo 2012).

In order to develop the Finnish health care system the Government initiated in 2002 the National Project to Ensure the Future of Health Care (Vuorenkoski, Mladovsky and Mossialos 2008, 125). The project focused on following issues: operational and administrative structures of the delivery system, steering mechanisms, financing, operational efficiency, productivity, division of labour and access to treatment. Concerning public laboratory services, the working group memorandum ofthe project included proposals for cooperation between municipalities and hospital districts and the use of market-based organizational models, such as municipally owned enterprises (Ministry of Social Affairs and Health 2002). The municipalities and hospital district political decision-makers converted the first municipal unit laboratory into a municipal enterprise in 1999. By 2008 over half of laboratory analyses were produced by municipal enterprises (Ministry of Finance 2010). Afterwards, one of the municipal enterprises was converted into a municipal company in 2011.

This paper reports on a retrospective case study on the gradually reformed contracting practices and the increased transaction costs of contracting incurred when a municipal unit laboratory was converted into a municipal enterprise. Before the introduction of internal markets the municipal unit produced laboratory services for the hospital district and municipalities without contracts. In addition, for support services required for laboratory operations, such as cleaning, laundry and occupational health services, the municipal unit laboratory could exploit centralized contracts made by the hospital district or other municipal units could produce services for the laboratory without contracts. Therefore, when it was a municipal unit, the laboratory only made contracts with private vendors for specialized equipment, materials and services required for core laboratory operations. When converted to a municipal enterprise, the new operational model required an increase in contracts, because a municipal enterprise made and controlled all contracts with the purchasers of laboratory services and also with the providers of support and specialized services, equipment and materials. In this research we observed the relationships between the type of organization, the contracting processes and the contracting costs.

Relatively few studies have explored the performance implications of organizational choice (Macher and Richman 2006; David and Han 2004; Coles and Hesterly 1998). The costs of contracting in health care organizations have been studied (see e.g. Petsoulas et al. 2011; Marini and Street 2007; Allen 2002; Ashton 1998). Recently, types of transactions have been classified (see e.g. Calmon and Pedroso 2011; Langlois 2006; Furubotn and Richter 2005, 51-64; Barthélemy 2001) showing the effect of cooperation on the level of transaction costs (see Bel and Fageda 2010). However, most studies of reformed governance arrangements have not identified the processes of contracting or factors affecting contracting costs in practice (see e.g. Carter and Hodgson 2006; Macher and Richman 2006; Wang 2003; Marsh 1998).

The authors of this paper carried out a systematic literature review of papers retrieved from the Scopus and Web of Science databases, but we found no studies on the transaction costs of health care laboratory services1. We present a comparative analysis identifying the contracting processes in different types of contracting and the main changes increasing cost factorsof contracting in the case of a municipal enterprise laboratory compared with the same laboratory as a public unit. This paper is organized as follows. After the introduction in the second section we first discuss the phenomena of contracting and the costs of contracting in the health care sector. Next, we describe our methods and data, report findings and finally close with discussion and conclusions.

**On the contracting and costs of contracting in the health care sector**

Not enough is known about the comparative costs of different forms of organization(Allenet al. 2011; Millward 2011; Eggleston et al. 2008; Rainey and Chun 2007, 91). As Fligstein and Freeland (1995) have concluded, many governance theories have not been evaluated because of difficulty in producing comparative measures of operational and organizational costs. Transaction cost theory is used to explain why economic activities are organized in hierarchies, in hybrid forms of organizations or through markets (Williamson 1999). As Williamson (2008, 8) says, ‘Operationalization of transaction cost theory is accomplished by naming and explicating the key attributes of both transactions and governance structures, by working out the efficient alignments between transactions and governance and by empirical testing.’

The main tenet of transaction costs theory derives from the market-failure theory expounded by Alfred Marshall (see Marshall 1920; Pitelis 2010). This theory assumes that the price-output “equilibrium” is based on knowledge of the cost structure, the demand conditions and the type of industry structure (Pitelis 2010, 36). Coase (1937) investigated why firms emerge, thinking that the price mechanism cannot always cause markets to work efficiently and in a firm the costs for negotiating and concluding separate contracts might be less costly than if organization is through the markets. Later, Williamson (1999) described the internal organization as a last resort for organizing transactions effectively. In hierarchies governance is based on administrative controls which often mean low-powered internal incentives. On the other hand, the advantages of hierarchy are that internal contracts can be more incomplete and adaptations to consequential disturbances less costly within firms (Williamson 1991; Williamson 2002). Due to the difficulties in making complete contracts, hierarchies are therefore proposed as more efficient than contracting in publicly financed health services due to the lower transaction costs thereby incurred (Hansen, Mols, and Villadsen 2011; Allen 2002).

Quasi-markets are a hybrid form of governance where service providers, such as municipal enterprises, operate as quasi-independent entities, managing their own budgets and financing operations from contracts with purchasers (Le Grand 1999). While the organization's independence can increase incentives and encourage adaptation, increases in contracting activity are likely to increase transaction costs. Autonomous units need to organize and monitor a number of contracts, co-ordinate their own activities with contracting partners and be able to balance their own and contracting partners’ political and economic interests (Tavares and Camões 2010; Grossi and Reichard 2008).

The working of quasi-markets in health care shows mixed results. Gerdtham, Rehnberg, and Tambourg (1999) in Sweden found that savings can be achieved, but the characteristics of the county councils purchasing services influence efficiency. Moreover, in Norway, Germany and Italy, local authorities had difficulties in formalizing steering relations and controlling the quasi-independent entities (Aars and Ringkjøb 2011; Grossi and Reichard 2008). Many studies challenge expectations of improved efficiency, for example in the English National Health Service (NHS), caused by increases in management costs (Klein 2007; Marini and Street 2007; Hodgson, Farrell, and Connolly 2007; Allen 2002). An analysis of English NHS contracting costs, when replacing block contracting with activity based funding, showed that administrative costs increased due to higher costs of volume control, data collection, contract monitoring and contract enforcement (Marini and Street 2007).

For transaction costs economists, the problem of contracting is the key issue of economic organization. Grimshaw, Vincent, and Willmott (2002) found that contracting in the public sector causes fragmented service provision, locks organizations into contractual arrangements with one provider and reduces expertise in areas where work practices change rapidly. Public organizations also seem to have limited abilities to select contractual partners, to develop the form and content of contracts or to manage and monitor contracts (Field and Peck 2004). In particular, in a case of problematic contracting organizations rely more on cooperation and the models of public administration than market based contracts (Sancino and Sicilia 2013; Hughes et al. 2011; Petsoulas et al. 2011). In the case of health care internal markets with a centralized system and centralized political accountability, lack of incentives for purchasers to seek optimal deals is a major problem (Allen 2002).

Concerning laboratory operations, where the availability of specialized services, materials and human skills is crucial, laboratories are easily locked into contractual arrangements with a few providers. According to analysis based on total costs of organization by Ludwig, Groot, and Van Merode (2009), the outsourcing of more asset specific services, such as laboratory and pharmacy services, is less efficient. Therefore larger hospitals find it economically efficient to integrate asset specific services, but small hospitals chose to contract in order to take advantage of the contractors’ economies of scale. However, hospitals located in rural areas may not have contractors taking advantage of the economies of servicing a number of hospitals (Coles and Hesterly 1998). In addition, as asset-specificity and uncertainty increase, transactions require constant monitoring, because it is difficult to ensure that the other party delivers what is required (Williamson 1991; Brown and Potoski 2005). In particular, outsourcing of health care services easily increases the requirement for monitoring if contract covers several aspects of service production (cf. Sparer 2000).

Knowledge of contracting costs is rarely backed by sound criteria, because production and transaction costs are often determined jointly and transaction costs lack an exact definition (Benham and Benham 2000). In addition, practitioners or researchers not immersed in the culture of transactions in a specific type of organization are likewise unable to isolate easily the factors affecting transaction costs, and new technologies may raise or lower the transaction costs over time. Therefore, it is useful to identify what organizational actions lie behind contracting costs in practice and how the factors affecting transaction costs vary in different organizations and organizational models. This study is a detailed analysis of these factors in hospital laboratory services.

**Methods and data**

In this case study the laboratory services changing organizational form from the municipal unit to the municipal enterprise are analyzed to identify the similarities or differences in the contracting processes and to define, categorize and make concrete the factors affecting the costs of contracting. We posed the following questions: How do the contracting processes differ between the municipal unit and the municipal enterprise types of laboratory? Did the transaction costs of contracting increase when a municipal unit laboratory was converted into a municipal enterprise and if so Why? The crucial data sources are observations, statistics and interviews. Triangulation across data sources is used for further in-depth understanding of operations and contracting processes in laboratories. Details of the data are presented below.

The main theoretical justifications for the case study method here are that the process of contracting cannot be understood properly only by documentary analysis and most of the budget based cost-analyses provide no precise details about transaction costs, because transaction costs manifest themselves in the “black box” of organizations. The investigation of the cases allows an understanding of complex social phenomena in practice and in explaining real-life events like organizational processes (cf. Yin 2009, 4). Even though case studies cannot be used for generalizations, they may afford more profound insights into different cost types with different organizational choices (Carter and Hodgson 2006; Masten and Saussier 2000).

By comparing the laboratory operations as a municipal unit (*ex ante)* and a municipal enterprise *(ex post)* the authors expect to ascertain how the way of organizing changes the structure of contracting costs. As far as comparison is concerned, health care laboratories are generally speaking more amenable to comparison than other health care organizations, because laboratory analyses are similarly technically measureable in all health care laboratories. It allows an application of the findings in laboratories across different cultural and political environments. In addition, laboratory operations are interesting regarding transaction costs theory because of their involvement of a high asset specificity of technology and human skills (France, Smith, and Lawrence 2002). That has an effect on the relationship between the laboratory and purchasers of laboratory services and also on the relationship between the laboratory and vendors of specialized services and equipment required for core laboratory operations.

The research investigating the laboratory operations of one hospital district with two hospitals in its catchment area covers an eight-year study period 2002-2009. In the period 2002 -2003, the two hospital laboratories studied operated as units of the hospital district, providing specimen collection and analyses for the treatment units. The municipalities in the area provided the laboratory services and specimen collection for the patients in the health centres. However, the municipalities sent some of their specimens to hospital laboratories without contracts, because equipment in the health centres was not suitable for all analyses.

The establishment of the municipal enterprise in 2004 was based on the decision taken by the hospital district. In the two hospital laboratories studied the municipal laboratory operations were merged into one municipal enterprise. The integration of laboratory units increased the amount of production (Table 1) so scale advantages of technical operations, such as analyses, were achievable. However in this case the unit costs of production did not fall during the research period. Due to the mergers, the municipal enterprise had two hospital laboratories and thirteen specimen collection stations in the health centres. So, the municipal enterprise provided laboratory services both for the hospital district and for the municipalities having no potential competitors within this rural area.

Table 1.Description of operations in laboratories

The field study in the period 2002-2009 was conducted by the one of the researchers. This researcher started as an employee in another of the public hospital laboratories in 1986. She had the opportunity to observe the operations throughout the research period, working as an employee and later as a manager in the organization. As an employee, from 2002 to 2007, she did not take any notes, collect statistics or other documents. After 2007, as a manager, she took part in preparing and negotiating contracts, took responsibility for personnel administration, concluded employment agreements and had access to the minutes of meeting, documents and statistics, but did not take any notes about her observations in the municipal enterprise. In this sense, she was a kind of “invited intruder” who was expected to understand the system itself as a practitioner, not only as a researcher. However, the social reality of the managerial role may have had an influence in her analysis and thinking. Therefore, the risk of subjectivity is reduced with the interview 2011 and other data. Table 1 presents a summary of the study data.

Table 2. Study data

The study began in 2007, when the researcher was given permission to analyse and gather data on two municipal hospital laboratories from 2004 to 2008 as follows: the operational documents, the profit and loss accounts and interviews of personnel in charge. Later, the researcher was also given access to documents concerning the period 2002-2009 and permission to use all the organizational statistics available for the period 2004-2009.

The separate documents of laboratories covered two periods (Table 2), because between 2002 and 2003 the organizations operated as public units and between 2004 and 2009 as a public enterprise. Fortunately, the documents for the period 2002-2009 were collected on a yearly basis and were comparable with each other for the whole time period. The documents used in this study included the profit and loss accounts, reports of the numbers of employees and services provided. The available contracts and the organizational database of contracts for the period 2002-2009 (Table 2) were analysed in March 2010 applying the following criteria: 1) How many contracts have been made?, 2) When they were signed?, 3) For what purpose were they made?

In March 2011 the managing director and the chief physician of the municipal enterprise were interviewed as a group about the years 2002-2009 (Table 2). These administrators had been working in the organization throughout the research period performing the same tasks. First, the purpose of the interview was to reveal organizational operations *ex ante* and *ex post* the establishment of the municipal enterprise and secondly, to contrast the perceptions of the interviewees with data collected from other sources. The interview consisted of semi-structured questions formulated around the theoretical considerations of quasi-markets and transaction cost theory2. Each interview was recorded and transcribed. Thus, the observations of the operations and specifically the administrators who had been working throughout the period 2002-2009 provided “tacit knowledge” about contracting in the public and municipal enterprise laboratory.

**Findings**

The findings of this paper are separated into the different categories according to the research questions and the origins of the transaction costs. The categories are the types of transactions in two organisational models; contracting processes and number of contracts; relationships between actors and monitoring of contracts. The contrasting cost factors of contracting and management in the municipal unit and in the municipal enterprise, as well as the main changes affecting those costs in the new operational model, are summarized at the end.

A market based operating model of the municipal enterprise increases the unit's independence and demands the use of contracts. The governance of contracting includes decisions on whether a service is appropriate for contracting, selection of suitable vendors, management of the service delivery process, and monitoring of performance and costs of contracting.

***Types of transactions***

In order to understand the findings in respect of changes in the processes and costs of contracting in two different types of organization, we describe contracting and operation in laboratories. The pre and post internal market relationships and contracts in laboratories are summarised in Table 3. We can see that the number of contracts increased when the municipal unit became a municipal enterprise because it was forced into market relationships with other public entities.

Table 3. Pre and post internal market relationships and contracts in laboratories

The municipal unit laboratory produced laboratory services for the hospital district, municipalities and a few private organizations. For the hospital district and municipalities services were produced without contracts but with private organizations the municipal unit laboratory had contracts. The municipal enterprise produced laboratory services for the hospital district, municipalities, individual customers and a few private organizations. During the study period the municipal enterprise has not made the required contract with the hospital district, so it produced services according to previous procedures. With the municipalities, contracts were introduced and with private organizations contracts were used as previously.

Both the municipal unit laboratory and the municipal enterprise made contracts with private providers for the specialized equipment and materials required for core laboratory operations and specialized maintenance services required for analysers. Moreover, both the municipal unit laboratory and the municipal enterprise sent some of the specimens to specialized laboratories for analysis and made contracts for these services. The municipal unit laboratory had earlier purchased the specialized analyses separately from public and private laboratories according to their specialized knowledge. To save on costs, the municipal enterprise centralized purchasing during the research period mainly in one big municipal enterprise of the university hospital. According to the interview data this served to reduce the number of new contracts for purchased analyses, the hours worked on those contracts and the costs of purchased laboratory services because of the scale advantages of a big municipal enterprise. In addition, the centralization of purchasing has reduced the costs of sending specimens to outside laboratories, because the number of packets to be transmitted decreased.

For support services required in the municipal unit laboratories, the hospital district had managed comprehensive contracts with private service providers, or the units of hospitals produced services for the laboratory that paid for their services. Due to internal markets, hospital units became independent actors and contracts were required if units purchased services from each other. The municipal enterprise had contracts for support services both with private providers and with independent units in the hospital district. Those support services requiring new contracts in internal markets are presented in Table 4.

Table 4. Support services requiring new contracts in internal markets

Concerning the premises, the municipal unit laboratories did not have leases for premises, because they operated in premises owned by the hospital district. However, the municipal enterprise as an independent actor needed leases for the hospital laboratories and specimen collection stations, because the hospital district and municipalities owned those premises.

***Contracting processes and number of contracts***

In this case, the contracting processes changed slowly. Actors in the municipal enterprise needed time to create a number of new contracts and learn about how to draw up precise contracts (Table 5). For some large and important contracts, it was found that legal advisors would be needed. But neither the municipal enterprise nor the hospital district employed a lawyer and the municipal enterprise did not retain a private advisor, so no legal advice was given.

*The number of contracts has increased significantly. But the good thing is that we now make precise agreements, document these and stick to them. Earlier contracts were based only on verbal agreements. The handling of contracts has become more efficient, but we have time costs for considering the contents more precisely. In practice the specialists in the units use time for preparing contracts, because they know the details and then we must consider technical details for dealing with contracts. (Managing director)*

Among support services (Table 4), the introduction of the internal markets increased the number of contracts and overlapping arrangements. In the quasi-markets every independent unit of the hospital district made their own contracts for support services even if they purchased services from each other. In addition, most of the independent units still used the same service providers in the internal markets as under the comprehensive contracts due to earlier experiences of them. For example, transportation arrangements between hospital laboratory and health centres were planned and organized to facilitate the fast and efficient transportation of materials and samples under the comprehensive contracts.

Some services, like IT services, had specialized requirements necessitating adherence to earlier practices and therefore the earlier system and operating model was difficult to replace. All IT services for the municipal enterprise were produced by the municipal company, which, in monopoly situation, could plan future services and prices. According to observations, this gave rise to a lively debate, because the total costs of the IT services had increased about 35 % during the research period. However, part of the increase was caused by the development of wider communications networks needed in the area.

In addition, the number of new employment contracts was significant from the laboratory point of view (Table 5). The number of staff increased, because laboratory nurses from health centres were transferred to the municipal enterprise. Therefore, about forty new permanent contracts were made during the years 2003-2009. In addition, the number of employment contracts for nurses substituting for permanent employees was significant. Increase in personnel also had implications for staffing levels in order to ensure that all laboratory units had sufficient and experienced personnel available to cover the services. Because of these changes, the time and costs of administration and managing daily operations in a number of laboratory units increased when the laboratories became municipal enterprises.

***Relationships between actors and monitoring of contracts***

In the internal markets contract variations are affected by the contract incompleteness and information asymmetry between the independent parties. The contracting in the case of the public laboratory services increases the need for monitoring contracts and performance of vendors. However, the monitoring and creation of network activities was not without costs (Table 5).

Before the introduction of internal markets the municipal units worked in close collaboration, which reduced the information problems between actors. Now the internal markets created new boundaries between actors. For example, a new boundary lied between the laboratory and municipalities. The municipalities were interested in the numbers of analyses purchased and the price paid for these, so the municipal enterprise had to report statistics regularly as administrators stated.

*What kind of new costs are there? At least the type of governing costs related to customer services – for example there are more planning work and meetings etc. (Managing director)*

*When all kind of meetings and negotiations have to be documented in a very formal way it costs money, because those documents need to be checked, maintained, and updated regularly (Chief physician)*

*And the reporting about services to customers. They have precise instructions about the demands of reports. That is new. That can be called management costs. (Managing director)*

The municipal enterprise was able to use its independent position to create new networks with vendors of specialized analyses, services, materials and equipment. However, the creation of new market based operating model with new contracts and market relations, required personnel time. In addition, the use of familiar providers was more efficient and affects cost saving at that moment. Therefore the actors of the municipal enterprise placed more value on familiar providers than the option to generate competition between private providers.

Monitoring of contracts was critical, because contracts were made for different periods (Table 5). Most of the contracts were made until further notice and some for a fixed period of time. The usual time period was one year, and the contract period continued if the one to three months’ notice of termination was not given. The point for renewing the contract needed to be clearly marked, because delays could lead to possible extra costs or sanctions. The municipal enterprise did not have an information management system based control system for renewing contracts, although administrators would have liked a system which controlled the duration of contracts systematically. Sanctions or disputes concerning contracts did not occur in the municipal enterprise during the research period, but the termination of one contract was late and that incurred extra costs for the municipal enterprise.

Table 5.Cost factors of contracting and management in the municipal unit and municipal enterprise

Table 5 illustrates the various causes of costs in contracting and management in the municipal unit compared to the municipal enterprise, and also summarizes the main changesincreasing cost factors in the new operating model. The main changes affecting costs were due to increases in the numbers of contracts and personnel. Nevertheless, identifying the main changes affecting costs is not the same as calculating them financially. Thus the main aim of Table 5 is to present what caused the costs and not the costs themselves.

However, according to the interview data the advantage of a municipal enterprise form of governance was that the role of customers and the goal of achieving cost-effectiveness underpinned the functions of management more than previously was the case when it was a public unit. In addition, due to an integrated operation model, technical efficiency increased in laboratories, because the scale advantages of analyses were achievable.

**Discussion and conclusions**

The aim of this paper was to ascertain the impact of different modes of contracting (before and after the introduction of quasi-markets) on contracting processes and costs in Finnish health care. By means of a comparative case analysis we compared the way of organizing transactions and identified the actions affecting the costs of contracting in the case of a municipal enterprise laboratory compared with the same laboratory as a municipal unit.

It has been found that independent actors in the quasi-markets could plan their own future services, which, in monopoly situation could lead to higher prices (Young and Macinati 2012). In addition, the costs of contracting are higher if services require asset specific investments or services have outcomes that are difficult to measure (Ludwig, Groot, and Van Merode 2009; Brown & Potoski 2005; France, Smith, and Lawrence 2002). We suggest on the basis of our findings that the costs of contracting were seen in the organization as an important additional cost. Due to the increase in those costs, the municipal enterprise was unwilling to create new networks with vendors or competition between private service providers. Conversely it wanted to decrease the amount of contracts by centralizing the purchasing process of the specialized analyses. Moreover, both the municipal unit laboratory and the municipal enterprise were unable to easily switch vendors for specialized equipment and materials crucial for core laboratory operations. Similar findings have been reported in other studies (Young and Macinati 2012; Field and Peck 2004; Allen 2002).

According to previous studies contract variations and practices relying on a multiplicity of specific contracts need greater effort and increased costs (Young and Macinati 2012; Lavoie, Boulton, and Dwyer 2010; Grossi & Reichard 2008). In this case, every independent unit of the hospital district made their own contracts even if they purchased support services from each other. From the laboratory perspective, effective coordination between contracting parties, laboratory units, the hospital district and municipalities was important but then again it had an effect on overall costs due to the increased working hours of employees. On the basis of our findings it seems that for support services used by all the units of the hospital district, the bidding process should be carried out centrally. Such centralization and comprehensive contracts would decrease transaction costs, managerial problems and overlapping operations.

In this case, the organizational change was slow and the use of an earlier system and operating model was difficult to replace. Learning by error how to make precise contracts and use the new operating model continued throughout the research period, even though the municipal enterprise was established six years earlier. Moreover, human resources could have been allocated more efficiently if the control of the renewing contracts had been based on information management systems. Altogether, the learning of managerial skills for good contracting and the use of the new operating model took time and increased the additional costs, so the cost saving in organizational operations was seen to be more valuable than chances for wider networks and competition.

Although case studies have many methodological limitations, the other methods for isolating the key factors of costs in contracting are not easy to implement. On the basis of contracting processes and costs, it would not have been possible to isolate in any valid way the measures of analysis, manpower and operational costs throughout the whole research period. The longitudinal study design revealed how the organizations learned to act more effectively during the research period although the change was slow. It is possible that new technologies like the information management system based control systems for renewing contracts could lead to lower costs. According to transaction cost economics, this would change the relative advantage of other governance forms compared to hierarchy (David and Han 2004). Moreover, the laboratory operations were highly specialized and researchers need to have enough experience of the functions of organizations in order to make reliable observations of them. The use of the case study method and especially the opportunity for longitudinal observations and cross-checking with interviews provided a more profound understanding of organizational operations and facilitated identifying the sources of contracting costs in practice.

The study of policy reforms needs to produce more information about the impact of reforms and organizational behaviour in practice. Needless to say, managers and policymakers should be able to respond to changes in apparently increasing contracting costs or at least to be prepared for them. They may be able to increase the effectiveness of organizational operations if they can identify the relationship between organizational actions and the costs of organizing. Therefore, we believe that the results provided are not only important for policy makers, but for all those interested in the additional costs of transactions in contracting-out or partnering public and private laboratory services in global settings. In the future, research on contracting and transaction costs in different organizations, among different services and between different organizational forms will be needed.

**Notes**

1 The search covered the period 1990 - 2011. The search term “transaction cost\*”, yielded 6,894 abstracts from Scopus and 4968 abstracts from the Web of Science database. Search terms “transaction costs\*” AND contract\* AND health\*, yielded 55 abstracts from Scopus and 33 abstracts from the Web of Science database. Some these articles were duplicates found in both databases. The abstracts were read, but we found no studies on the transaction costs of health care laboratory services.

2 Copy of interview questions is available on request from the published address for correspondence.

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Table 1.Description of operations in laboratories

| **Year and change** | **In-house analysis** | **Analysis purchased from outside laboratories** | **Personnel** | **Total costs (100 %) (€) /**  **[Total cost (€) (euro amounts converted into 2009 euro amounts)]** | **Total costs per in-house analysis (€) /**  **[Total costs per in-house analysis (€) (euro amounts converted into 2009 euro amounts)]** |
| --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |
| 2002 | 1156230 | 51718 | 82 | 6158887  [6815425] | 5,33  [5,89] |
| 2003 | 1256355 | 58188 | 83 | 6585678  [7224489] | 5,24  [5,75] |
| 2004 | 1356789 | 71294 | 92 | 7542120  [8257867] | 5,56  [6,09] |
| 2005 | 1538154 | 36775 | 113 | 8823876  [9579200] | 5,74  [6,23] |
| 2006 | 1615323 | 37003 | 122 | 9118471  [9727585] | 5,64  [6,02] |
| 2007 | 1647799 | 36587 | 121 | 9367551  [9748810] | 5,68  [5,92] |
| 2008 | 1664818 | 40404 | 126 | 9860097  [9861082] | 5,92  [5,92] |
| 2009 | 1695691 | 43414 | 126 | 10388493 | 6,12 |
|  |  |  |  |  |  |
| Change (%) between years 2002 and 2009 | 46,7 | – 16,1 | 53,7 | 68,7  [52,4] | 14,8  [3,9] |

Table 2. Study data

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Cases/The period of time**  **Data** | **Municipal unit laboratory**  **(2002-2003)** | **Municipal enterprise**  **(2004-2009)** | **Municipal unit /**  **Municipal enterprise 2011** | **Sum** |
| Operational documents | 8 | 12 | N/0 | 20 |
| Profit and loss accounts | 4 | 6 | N/0 | 10 |
| Contract documents analysed | 34 | 93 | N/0 | 127 |
| Observations of operations | Daily basis | Daily basis | N/0 |  |
| Administrators interviewed | N/0 | N/0 | 2\* | 2 |
| Sum | 46 | 111 | 2 |  |

\* = The interview was conducted in March 2011.

Table 3. Pre and post internal market relationships and contracts in laboratories

|  |  |
| --- | --- |
| **Organizational model** | **Relationships and contracts in municipal unit and** **municipal enterprise** |
| Municipal unit  2002–2003 | * hospital district and municipalities acquired services without contracts * contracts with outside providers for specialised analysis, materials and equipment required for core laboratory operations * support services needed for production were mainly purchased centrally by the hospital district or produced without contracts by other public units * contracts for employment of staff |
| Municipal enterprise  2004–2009 | * contracts with municipalities for services provided * contracts with outside providers for specialised analysis, materials and equipment required for core laboratory operations * contracts for support services with in-house providers of the hospital district and with private firms * leases for premises from municipalities and hospital district * contracts for employment of staff |

Table 4. Support services requiring new contracts in internal markets

|  |  |
| --- | --- |
| **Service** | **Producer in internal markets** |
| cleaning | municipal company |
| laundry | municipal company |
| IT services | municipal company |
| transportation services between hospital laboratories and health centres | 4-5 private firms |
| maintenance services for premises and movables | municipal company |
| pharmacy services | municipal enterprise |
| occupational health services | municipal enterprise |
| services of personnel management for wage-payment | municipal company |
| leases for premises | municipalities and hospital district |

Table 5.Cost factors of contracting and management in the municipal unit and municipal enterprise

|  |  |  |
| --- | --- | --- |
| **Municipal unit laboratory** | **Municipal enterprise** | **Main changes increasing cost factors in the new operating model** |
| * Contracts with vendors for specialized analyses, materials and equipment * Contracts with private service purchasers * Own part of costs for support services produced by the hospital district * Renewing of contracts * Sanctions of contracts and costs of disputes * Competitive bidding procedures for services, materials and equipment * Administration and recruitment of personnel * Managing of employment contracts * Monitoring of contracts * Monitoring of operations in hospital laboratory | * Contracts with vendors for specialized analyses, materials and equipment * Contracts with private service purchasers * Contracts with internal support service providers (IT, cleaning, laundry, etc.) * Contracts with hospital district and municipalities * Renewing of contracts * Sanctions of contracts and costs of disputes * Competitive bidding procedures for services, materials and equipment * Administration and recruitment of personnel * Managing of employment contracts * Monitoring of contracts * Monitoring of operations in hospital laboratory and sample collection stations * Reporting on services sold to municipalities | * Increased number of contracts meant more negotiations and costs of making contracts * Costs of making contracts with support service providers in the hospital district * Increased number of contracts requires more work to enforce contracts * Possible sanctions of new contracts and costs of disputes * Larger number of employment contracts requires more work * Larger number of personnel increases costs of administration and recruitment * Increased number of contracts requires more monitoring * Coordination and cooperation among new contract partners, laboratory units, hospital district and municipalities |