

A NEW PERSPECTIVE ON PERFORMANCE-BASED MAINTENANCE PROCUREMENT BY DUTCH HOUSING ASSOCIATIONS

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ABSTRACT

OTB Research Institute for Housing, Urban and Mobility Studies of Delft University of Technology carries out research on performance-based maintenance contracts with the focus on the clients, especially housing associations. A new perspective on the performance agreement and the attendant cooperation is given in this paper. This cooperation brings along an increased dependency on the maintenance contractor. The dependency and the negative implications can be limited by positively influencing the power balance. A few measures add to this. A housing association should avoid becoming dependent on just one maintenance contractor, while not handing in on leverage possibilities. Moreover, a housing association should closely monitor the condition of its stock. Besides, a housing association should standardize its quality demands for its physical stock and related to the communication with tenants. Next to keeping up-to-date stock-related information, a housing association should closely follow the market of maintenance contractors. Finally, market research of the maintenance chain and of the sector of housing associations is needed to improve the accuracy of measures to be taken.

Keywords: Housing association; Maintenance; Performance agreement; Power balance; Procurement.

INTRODUCTION

The further proceeding professionalization of housing associations requires them to be more critical of the activities that create value for their customers and their position in the supply chain. Procurement is one of the most important ways of managing the supply chain for housing associations.

In the nineties, concepts such as cooperation, partnerships, and integrated Supply Chain Management have received wide interest. The rise and development of result agreements in building maintenance management followed the same track. However, it is generally agreed that 'power' and 'dependence' are important as well for the understanding of buyer-seller-relationships, while not having received the same amount of interest (Gelderman and Van Weele 2004). Cox (2001: 9) posited as well: "(...) it is surprising that the intuitive understanding (...) that all buyer and supplier relationships operate in an environment of relative buyer and supplier power, appears to have been lost by many practitioners and their advisors." So for, no attention has been paid to matters of dependency and power of balance related to the result agreement, while these have important implications for the way of dealing with the relationship. This paper will address the above-mentioned issues and provide recommendations for further research and recommendations for housing associations on how to deal with these aspects.

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RESEARCH PROJECT

The OTB Research Institute for Housing, Urban and Mobility Studies, which is part of Delft University of Technology in the Netherlands, is doing research to the application of performance-based maintenance contracts by Dutch housing associations. It is entitled “Performance-based cooperation in the technical management of housing stock”, and it is part of the Dutch national project ‘System Innovation and Regional Land-Use and Area Development’. Main Dutch housing associations, real estate maintenance contractors and branch organisations contribute to this project. Within the project, a PhD-research is being done about the procurement of technical management by housing associations. This paper appoints to this research.

MAINTENANCE

In the Netherlands, building maintenance can roughly be divided into three types, namely Run to Breakdown maintenance, Preventive maintenance, and Condition-based maintenance. Run to Breakdown maintenance is normally carried out after complains by tenants or at moments of re-let (alteration of tenants). Preventive maintenance is normally performed after periodical inspections. Condition-based maintenance is in the ideal situation ‘just-in-time’ (JIT). Each type of maintenance demands for its own procurement method, and contract form.

Contracts

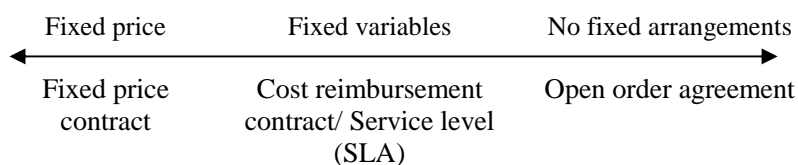
The next primary forms of maintenance contracts can be identified in the Netherlands (Schellevis 1998, Straub and Vijverberg 2003):

1. Fixed price contracts: With these contracts the price is agreed and fixed before the contract is signed. The agreed price is paid irrespective of the builder actual costs, subject to a set of contract conditions allowing them to recover additional costs caused by agreed circumstances (Chanter and Swallow 1996: 227);
2. Cost reimbursement contracts: In these types of contract the contractor is reimbursed for the actual prime costs of labour, materials and plant used plus, either a previously agreed percentage, or a fixed fee, to reimburse him for his management costs, overheads, and profit (Chanter and Swallow 1996: 230);
3. Service level agreements (SLA): These types of contract state the level of performance that must be achieved by the system, instead of specifying the duties or how they are to be undertaken. In case of a service level agreement based on fvted variables, at the onset the variables are decided that determine the final price of services, including a relationship between the price and the performance to be delivered;
4. Open orders: This stands for starting with an order without making agreements about prices and procedures. In practice, this contract form is scarcely used, and only for orders with a restricted financial importance. Moreover, it can be assumed that non-professional principals more often make use of this type of order than professional ones.

Based on two criteria, the forms of contract can be distinguished The criteria are (1) the amount of issues to be fixed beforehand, and (2) the degree of contract-based stimulus to improve performances.

For the fist criterion, the different forms of contract can (roughly) be placed on a continuum ranging from ‘fixed price’ to ‘no fixed arrangements’ (see figure 1).

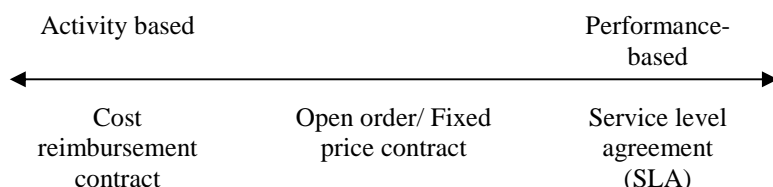
Figure 1. Maintenance contracts, distinguished by the fixedness of arrangements.



Fixed variables might be a tariff per man-hour, a tariff related to the application of materials, a tariff related to the needed time to finish the project(s), or a tariff related to the perceived customer satisfaction.

Furthermore, according to the second criterion, the contracts can be put on a continuum ranging from ‘activity based’ to ‘performance-based’ (figure two).

Figure 2. Maintenance contracts, ranging from activity-based to performance-based.



If a contract is performance-based, the contractor has contract-related incentives to improve its way of working in terms of performance. If a contract is activity-based, the contractor does not have them. Open order and fixed price contracts can be activity-based or performance-based.

Based on these two continuums, table 1 has been created showing a clear classification of the different forms of contract. As the outcome of the open order is not yet clear from the beginning, it is not decided as well if it is activity based or performance-based. The outcome will depend on the contents and the character of the contacts between the contractor and the customer. Fixed price contracts can be both activity based and performance-based too. A fixed price contract forces a contractor to work performance-based if the contractor, within the scope of the contract, is responsible for the work in the longer run (more than one term). In the latter situation, the contractor does have an incentive to improve, next to cost-related issues, quality-related issues. If a fixed price contract is a performance-based contract, we will call it a result agreement. If a performance-based contract is based on fixed variables including an incentive to improve performances, we will call it an incentive service level agreement (incentive SLA).

Table 1. Arrangement of contract forms.

	Fixed price	Fixed variables	No fixed arrangements
Activity based	Fixed price contract	Cost reimbursement contract	Open order
Performance based	Result agreement	Incentive SLA	Open order

As mentioned, this paper focuses on the (long term) result agreement.

THE RESULT AGREEMENT

As displayed in table 1, the result agreement which is currently developed by Dutch housing associations in cooperation with OTB Research Institute for Housing, Urban and Mobility Studies and the Stichting BouwResearch is both performance based and fixed priced. A fixed price is determined for the term of the agreed contract, although in some cases a few variables are built-in to include essential economic trends, such as inflation and market interest. In a fixed price contract, a contractor gets detailed specifications for the work to be done. In the result agreement, however, the housing association just provides functional requirements for the building part(s). This implicates a movement of risks from the housing association to the maintenance contractor. Principals (housing associations) mention a high amount of benefits, which are linked with this achievement-oriented way of working (Vijverberg, Straub and Korse 2003, Huizing and Scholte 1997, Pries 1997). The partnering procurement method aims to eliminate adversarial relationships between client and

contractor by encouraging the parties to work together towards shared objectives and achieve a win/win outcome (Griffiths 1992, Pettipher 1994, Watson 1994). Next to the mentioned positive aspects related to result agreements, this type of cooperation will bring some negative issues. Two counterarguments that are often mentioned by clients are their fear for a disturbance of price competition and a loss of knowledge of their own properties due to the long-term character of the contract (Straub 2002). The first argument can be partly put aside, because it is the responsibility of the purchaser to have a thorough sourcing process, before entering a long-term performance based contract. This sourcing process could include a competitive tender with a selection of potential partners. If all essential aspects (for the shorter and the longer run) are included in the supplier selection procedure, cost-related aspects are arranged as well and should not be a main issue anymore afterwards. The second mentioned argument, a loss of knowledge of own property, could be overcome as well. Since a loss of knowledge of the housing stock would be harmful in the longer run, two options exist: the housing association can keep organizing inspections, or it must rely on the information provided by the maintenance contractor. With the first option, some of the advantages of result agreements will decline: the possible cost-savings and the less needed specialist knowledge. It will mean that both the housing association and the maintenance contractor will have to carry out a periodical inspection of the housing stock, which leads to inefficient processes for the supply chain. The second option, however, will lead to a high and growing dependency on the contractor. A solution can be found by random checks inspections done by maintenance contractors, or by hiring a third party for the inspections. In the next paragraph we will evaluate the (long term) result agreement in the perspective of dependency and the linked power balance.

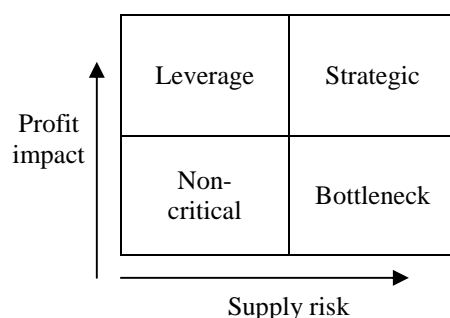
POWER BALANCE AND DEPENDENCY

Kraljic' portfolio matrix, power and dependence

Housing associations usually have to deal with a variety of service and product suppliers, among which maintenance service suppliers. However, not all services and not all buyer-supplier relationships are to be managed in the same way. In general, purchasing portfolio models aim at developing differentiated purchasing and supplier strategies (Gelderman, Van Weele 2003). Kraljic (1977, 1983) developed a convenient portfolio approach for the determination of a comprehensive strategy for supply. Kraljic' portfolio matrix (figure three) consists of four quadrants, which can be distinguished through two dimensions. These two dimensions are 'profit impact' and 'supply risk', and each variable has two possible values: 'low' and 'high'.

Composite main maintenance projects may have considerable influence on the quality of the housing stock and moreover, their financial impact in the long run is often important. If this is the case, this procured service can be called 'strategic' and depending on the relative power of the parties involved, a performance based partnership or collaboration is recommended.

Figure 3. Kraljic' portfolio matrix.



The table 2 below, 'Strategies linked with purchase categories', clarifies that for the strategic items, or in this case strategic services, three strategies may be suitable: diversify, balance, or exploit. A suitable strategy depends on the power balance between the buyer (housing associations) and the supplier (maintenance

contractors). Thus the power balance means the relative power of the purchasing party compared to the supplying party. Pfeffer (1981: 99) furthermore explains that: ‘the relative power of one social actor over another is the result of the net dependence of the one on the other.’ In other words, the relative power in a buyer-supplier relationship is the difference between the dependence of the two parties on one another (Gelderman 2003). ‘Diversify’ means “looking for material substitutes or new suppliers” (Kraljic 1984: 11) in order to keep supply options. ‘Exploit’ means using “a reasonable aggressive strategy (...) through favourable pricing and contract agreements” (Kraljic 1984: 11). ‘Balance’ is neither a defensive nor an aggressive strategy. In addition to the presented Kraljic’ portfolio matrix, Kraljic (1983) has created a purchasing portfolio matrix (figure 2), in which the power balance and the implications are clarified.

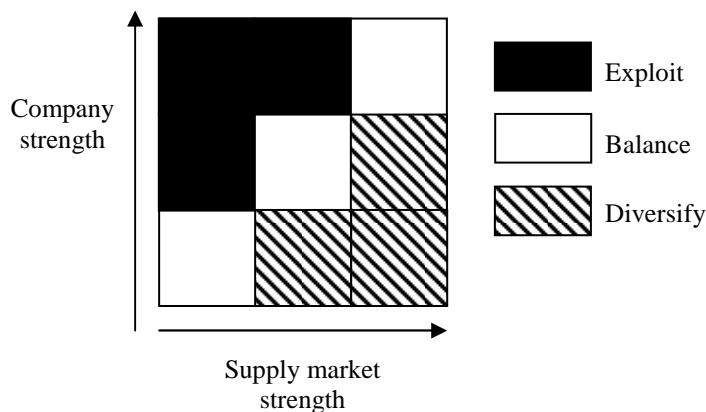
Table 2. Strategies linked with purchase categories (Gelderman 2003).

Categories	Values	Main tasks/strategies
Strategic items	High on both dimensions	Diversify, balance, or exploit
Bottleneck items	Low profit impact, high supply risk	Volume assurance
Leverage items	High profit impact, low supply risk	Exploitation of purchasing power
Non-critical items	Low on both dimensions	Efficient processing

The matrix, which is displayed below, indicates the relative power position of the company in the corresponding supply markets. On items where the company plays a dominant role and suppliers’ strength is rated minimum or low, a reasonably aggressive strategy (‘exploit’) is indicated.

If the strength of the supply market is higher than that of the company, the company must diversify in order to secure supply. In case of a balanced relationship, a company should both not undue aggressiveness, as this could damage supplier relations, and not being too defensive, as this would be too costly.

Figure 4. Purchasing portfolio matrix (Kraljic 1983)



Taking into account the figure above, in case of a strategic service a housing association should try to develop the long-term relationship with the maintenance contractor in a way that suits the balance of power. This balance of power is the result of the proportion of bargaining power between the housing association and the maintenance contractor.

Interpretation of balance of power

Since the privatisation in 1994 of Dutch housing associations, merges have brought about a growth of the average association. The biggest associations will soon pass the amount of 100.000 dwellings, while the average stock in 2001 amounted 4.630 dwellings per housing association (Van Dellen, Van Ens, and Heimans

2002). At the same time, maintenance spending increased from 2,371 billions of euro in 2001 totally to an estimated 2,911 billions in 2005 (CFV 2002, CFV 2003). The majority of the maintenance is being outsourced, particularly planned maintenance (Korse, Straub, and Vijverberg 2003). Housing associations put around 90% of their maintenance production (measured in total spending) to contractors (Van Dellen, Van Ens, and Heimans 2002).

The Dutch construction industry is characterised by many small firms and some large companies and by heterogeneity in the types of firm. Particularly the housing building sector is characterized by competition between many firms (Bremer and Kok 2000). Of all maintenance expenses, fabric maintenance accounts for forty percent, and services maintenance and exterior surfaces maintenance both for thirty percent (Schellevis 1998). The degree of specialisation varies considerably. A lot of (small) companies are specialised in only one aspect of maintenance, for example paintwork. Another group of companies combine expertise from different fields and thus exercise 'total maintenance' or 'real estate maintenance'. Finally, main Dutch building companies have maintenance in their broad portfolio of construction activities. Most of the maintenance companies or divisions are locally or regionally oriented. We can conclude that the Dutch building maintenance industry is a fragmented industry with many small companies and no company that is able to affect market prices. Reasons for this fragmentation are for instance the low overall entry barriers, the absence of important economies of scale and experience curves, and the existence of exit barriers.

As housing associations form the spearhead of this paper, we will concentrate on the aspects that might be influenced by them in altering (improving) the balance of power. Porter (1980) mentions the determinants of 'bargaining power of buyers', and these match the determinants that are pointed out by other authors, such as Kraljic (1983), Sriram, Krapfel, and Spekman (1992), Young and Wilkinson (1997) and Kim (2001). Now the bargaining power of housing associations towards maintenance constructors will be assessed. The bargaining power of buyers is high, when the following circumstances occur:

- *It is concentrated or purchases large volumes relative to seller sales:* With the ongoing consolidation in the branch of Dutch housing associations, their bargaining power towards maintenance companies generally increases. The purchases of maintenance services per housing association increase, relative to the total orders per maintenance company.
- *The products it purchases from the industry represent a significant fraction of the buyer's costs or purchases:* The maintenance services demanded by the housing associations represent a significant fraction of its annual purchases.
- *The products it purchases from the industry are standard or undifferentiated:* Most of the maintenance services can be offered by a wide range of suppliers, however when working together intensively, the service may become differentiated for the housing association resulting from the symbiosis between both organizations.
- *It faces few switching costs:* The switching costs are low but importantly increasing with a partnership being developed due to increasing dependence and investments in the relationship. Investments in the relationship, however, can lead to a greater level of trust between the partners. Trust between partners is a prerequisite for cooperation, and essential for improving supply chain responsiveness (Handfield, Bechtel 2002).
- *It earns low profits:* The financial-economic situation of housing associations varies.
- *Buyers pose a credible threat of backward integration:* As long as a housing association keeps (technical) knowledge of its housing stock up-to-date, the threat of backward integration can be credible.
- *The industry's product is unimportant to the quality of the buyers' products or services:* The quality of maintenance of dwellings, but also the quality of communication with tenants by contractors is important for the perceived quality by tenants, and therefore for the quality of service.
- *The buyer has full market information:* This aspect varies between the different housing associations. However increasingly purchasing management is approached in a more professional way, leading to an ~ ~ increase of market intelligence.

Naturally the bargaining power varies per type of maintenance but also per housing association, depending on several issues, such as the size, the financial-economic situation, knowledge of its own stock, market

knowledge and naturally characteristics of the maintenance contractor. Out of this analysis we can conclude that the bargaining power of housing associations in general towards maintenance contractors is increasing, due to the wave of merges. Moreover, a growing professional approach towards purchasing management has lead to increased market intelligence and therefore bargaining power. However, it is also obvious that a partnership bear some risks for this power balance. In order to handle these risks while enjoying the benefits that bring partnerships, a housing association has to anticipate them. A few recommendations can be given to Dutch housing associations:

- A housing association should avoid becoming dependent on just one maintenance contractor, while not handing in on leverage possibilities.
- A housing association should standardize its quality demands for its physical stock, its quality demands and procedures related to the communication with tenants, irrespective of the maintenance contractor (although naturally both aspects can be differentiated for different target groups).
- In addition to this, well-performing contractors should be openly rewarded, on objective measurable criteria.
- A housing association should closely monitor the changes and actual quality of its stock. This prevents becoming too dependent on the information provided by the maintenance company.
- Next to keeping up-to-date stock-related information, a housing association should closely follow the market of maintenance contractors, at least to keep the big stick. This means keeping up knowledge of all possible suppliers including their prices (micro environment). Benchmarking of maintenance contractors is therefore indispensable. However, it also means having enough knowledge of the structure of the industry (meso environment).

CONCLUSIONS

For Dutch housing associations, maintenance is an important tool in influencing the quality of the housing stock. Besides, well-executed and communicated maintenance may positively affect the relationship with tenants. Therefore the procurement of maintenance is an important issue for Dutch housing associations. This is a main reason for the emergence of partnerships in this branch of sport. The renewed interest in performance-based cooperation in the Netherlands has resulted in the advancement of result agreements. Much attention has been paid to promote the way of working by underlining the benefits of cooperation over the traditional approach. At the same time, attention for dependency and power related issues in purchasing management literature has remained behind. This paper has elaborated that housing associations should well consider all aspects that come along with entering similar forms of cooperation. Performance-based cooperation brings along a growing interdependence between the housing association and the maintenance contractors. The balance of power, however, is dependent on several issues. Through influencing the determinants of bargaining power, a housing association may positively affect the relationship with the maintenance contractor. Naturally the bargaining power and thus the balance of power and dependency varies per housing association, depending on several issues, such as the size, the financial-economic situation, knowledge of its own stock, market knowledge and naturally characteristics of the maintenance contractor. Nevertheless a few general remarks can be made. It is important that a housing association avoids becoming too dependent on its maintenance service suppliers. A few measures add to this. First of all, a housing association should have thorough knowledge of its supplying markets. Furthermore a housing association should keep knowledge of the conditions of its own housing stock. Therefore a housing association has to carry out inspections, while maintenance contractors will have to do the same in order to be able to take the right interventions. A solution may be to assign a third party to hold inspections. Another option is to take random checks of the inspection as done by the maintenance contractor. Then a housing association is not unnecessarily dependent on the maintenance contractor for knowledge of its housing stock and inspections are done twice neither. Another measure to avoid over-dependence on a maintenance contractor, while not handing in on good cooperation, is to standardise quality demands for the different partners. The balance of power in general is expected to move in favour of housing associations, due to an ongoing consolidation in this sector, and the fragmented character of the maintenance industry. Therefore a housing association,

although not handing in on good relations with its maintenance supplies, should avoid being taken in by an unfavourable long-term relationship.

Finally, it has become apparent that information about the maintenance market is scarce, particularly concerning its structure and chain characteristics. The same applies to housing associations as customer of the maintenance market. More research enables a more thorough and accurate investigation of attributive aspects of bargaining power and thus could provide more tools in positively influencing performance agreements.

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