
Cost Saving Through Competitive Tendering: The Case of Refuse Collection Revisited

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Abstract

The public sector has been under significant pressure for some time to improve the value-for-money (VFM) obtained from resources in relation to services provided. One example of this has been the introduction of Compulsory Competitive Tendering (CCT) to some services; among them refuse collection. Competition has been perceived as the key to driving through improvements in the efficiency of the service and thus lowering cost.

Following this introduction, research interest blossomed. Using data from years when the scheme was initially voluntary and then subsequently compulsory, researchers identified that significant cost savings could be achieved. Following very quickly on their heels, further work made a number of criticisms and cast doubt over the validity of the results obtained. However one area that appears to have been overlooked in this phase is the issue of charging out indirect costs or overheads on the basis of activity measures which are linked to direct resource consumption.

This paper utilises the archival material of one particular local authority and identifies the extent to which the approach to charging out of these indirect costs can potentially lead to further reservations about the level of cost savings implied by the quantitative models. It suggests that the issue of cost recharging cannot be ignored if any real sense is to be made of the real level of cost saving achieved from the competitive tendering process when applied to refuse collection.

Introduction

Since the Labour administration of 1976 there has been significant pressure on the public sector to reduce as a proportion of the national economy, and to manage its remaining activity on the basis of improving the value-for-money (VFM) obtained. This has been achieved by changing the nature of governance within the sector away from a public services ethos to a more market orientated approach.

In local government the drive for value for money took a variety of forms. Changes to the source of funding and to controls over expenditure, were accompanied by compulsory competitive tendering (CCT), and deregulation of activities, to encourage private sector competition (Tonge & Horton, 1996). This included the formal establishment of the Direct Labour Organisation (DLO) and its subsequent transformation into the Direct Service Organisations (DSO). This change brought with it new tendering regulations¹, accounting regulations and financial return requirements for the 'in-house' provider. Hence, the new market within which the DLO/DSO operated constituted a regulated market, rather than a free one. It was the 'competitive' element that was crucial to the process, for only with genuine competition could real improvements in efficiency be realised (Parker & Hartley, 1990), (Dunsire, Hartley, Parker, & Dimitriou, 1988).

Originally the DLOs had been established in the late nineteenth century as a mechanism by which local authorities could ensure that they obtained VFM from private contractors (Flynn and Walsh, 1980). DLOs that undertook local government work in preference to the private contractor were seen as saving money which benefited both the local authority and its taxpayer. Using the 'in-house' DLO removed the profit element from the local authority cost, reduced the risk of private contractor price fixing through a cartel arrangement and placed quality of work under the more immediate and direct control.

However, by the time of the 1980s, the view over the need for DLOs had been put into reverse. This could be seen in publications emanating from organisations such as the Institute for

1 The Conservative Government, which took office in 1979, through the Local Government Planning and Land Act (LGPLA), which came into effect in 1982, required compulsory competition of 60 percent of building works, highway maintenance and general building. Local authority maintenance employees were still permitted to carry out the remaining 40 percent of the work under the Act. In addition to the above, requirement thresholds were set relating to estimated contract values above which local authorities had to seek tenders. The rules relating to proportion of work put out to tender and the associated threshold established in the act were not to remain fixed for very long and all the thresholds have been altered through a series of incremental changes in the subsequent years (Carnaghan and Bracewell-Milnes, 1993).

Economic Affairs (IEA), where authors such as Carnagham & Bracewell-Milnes (1993), in a research monograph, expressed concern about the inefficiencies and general lack of accountability of the DLO.

Politically this subsequently manifested itself in relation to refuse collection in the Local Government Act (LGA) 1988 which extended the scope of CCT to include services such as: refuse collection, building cleaning, street cleansing, grounds maintenance and vehicle maintenance. The driving force from the centre was to remain vested in the Secretary of State who was granted the power to add to the range of services at any time. The subsequent Labour Government's moves to modernise local authority services included the abolition of compulsory competitive tendering (CCT) and its replacement with 'Best Value' (BV) (Iles & Wilson, 2001).

Thus, it can be seen that the true cost of providing public services is a matter of keen public interest, and it both has been, and continues to be, a driver of political action in this arena.

Previous Research Evidence - failure or success on the cost control front?

Previous research was principally focussed on the earliest applications of CCT. Researchers were interested in the effect on overall cost of the introduction of competition, in the nature of any savings made, and in whether greater savings could be made by the private sector or by DLOs. There was consensus that the introduction of competitive pressure reduced costs, and broad agreement as to the amounts to be saved. However there were varying conclusions as to the nature of those savings, and as to whether the private or public sectors could generate the greater reductions in cost.

The Audit Commission (AC) (1987) investigated and published their research on the experience of (CT) in three service areas - refuse collection, vehicle maintenance and repairs/improvements to council houses. The findings when published were as follows:

- costs are higher for services not subjected to competition;
- significant cost savings would accrue to all local authorities if they could obtain performance equivalent to the top 25% of local authorities. Cost savings would be:
 - house maintenance - 20%
 - vehicle management - 25%
 - refuse collection - 15%
- highly competitive DSO/DLOs have costs which are lower than the average external suppliers.

Academic research studies have given support to savings of 20% to 30% for e.g. cleaning services. Hartley and Huby (1985) referred to 26% savings, Domberger, Meadowcroft, & Thompson, (1986), estimated average cost savings of around 20% where private contractors were used and 17% where the DLO retained the service. Extending competitive tendering to the whole local authority sector was envisaged as having the potential to reduce costs by £80 million in 1984/85. Essentially they felt that improvements were due to the increased productivity of labour and greater use of technology without there being any detrimental impact on quality of the work undertaken.

Cubbin, Domberger, & Meadowcroft, (1987), explored the source of the efficiency gains on the basis that those who were critical of CT alleged that the main source of savings derived from lower wages and reduced fringe benefits, rather than better management of resources and higher physical productivity. Their results did not support the view that the bulk of the recorded cost savings arose from lower wages and fringe benefits. However, Granley and Grahl (1988) also queried the way that the cost reductions were achieved and felt that in most cases it was cuts in

jobs, hours worked or pay and conditions which was the key approach adopted rather than genuine improvements in work organisation or reductions in the overhead. In addition, they identified some cause for concern linked to the number of outliers, where the pattern of costs were affected by a small number of high cost authorities and in the case of times series analysis this did not confirm the evidence of reduced costs. Walsh (1991) identified lower cost and employment levels arising from CT, but could not reach any firm conclusions about the benefits derived from CT.

Chaudry and Uttley (1993) in their study of refuse collection suggested that the process of competition led to nominal gross savings of 22% and that while there was evidence of an increase in tendering costs as a result of CCT legislation, the net savings were at least 18.4%. Szymanski and Wilkins (1993) looked at refuse collection over the period 1981 to 1988 (prior to the introduction of CCT) and found that where competitive tendering had been undertaken a similar picture to that of Ganley and Grahl (1988) emerged. Competitive tendering reduced costs by 20%, 'in-house' cost reduction due to competitive tendering was lower, but not significantly different, while most of the cost savings could be identified with productivity improvements. This research was further extended by Szymanski (1996) and Bello and Szymanski (1996) to include the period of CCT itself and the findings confirmed a number of ideas previously promulgated:

- Average refuse collection costs had fallen by 22% when compared with the last full year before competitive tendering was held.
- Where contracts had been let to the DSO, as opposed to an outside contractor, CCT had led to a significantly smaller drop in costs.

Knox and Young (1995), investigating the effect of CCT on refuse collection and street cleaning in Northern Ireland, found that the extent of the savings varied between authorities, but averaged out at 25% across those authorities providing data. Alone of the academic researchers they confirmed the Audit Commission finding that DLOs were capable of achieving lower costs than the private sector. Given that all contracts were won by the 'in-house' DSO, they concluded that:

'From the results of the 26 competitions in round one the implication is clear, namely, that the private sector delivers the service in a less cost-effective manner than the local authority.'
(P 605).

Just across the border, a study by Reeves and Barrow (2000) of the contracting out of the refuse collection service in the Republic of Ireland showed that substantial cost savings - 41% in 1993, 48% in 1994 and 47% in 1995 - could be made.

Szymanski (1996) identified that the vast majority of the costs of the collection service were labour costs and that cost variations can arise from a number of sources:

- authority specific endowments
- service specification
- productivity of labour and equipment
- input prices

Discussion of Previous Research

It has to be noted that a number of studies were clustered round those areas with the greatest potential competitive activity. Such studies tended to be based upon limited contract experience, confined, as they invariably were, to the first round of contracts. The consequence of this was to emphasise the 'short-term' perspective and possibly lead to the confusion of key issues.

This is typified by an over-emphasis on the short-term reactions of the DLO to the threat of competition, and an understatement of the importance of the cultural learning curve. Furthermore, there is little consideration of the approach of private contractors to the establishment of a strategic position in the market place. What might be termed "loss leading" as against genuine operational efficiency is not really explored i.e. the notion that price is not always the best indicator of optimal cost or mix, especially in the short-term. As a result, strategic value-for-money changes to operational efficiency could be incorrectly inferred or be confused with opportunistic pricing behaviour in pursuit of an attempt to gain market share. Evidence in support of this view is provided by Szymanski and Wilkins (1993), who found that while savings were seen on initial contracts, there was also evidence that the trend was reversed some four years later. The first round thus provided evidence of under bidding - deliberate or otherwise, but still evidence of potentially opportunistic behaviour.

Further concern has been expressed about the cost savings achieved by CT on the basis that the evidence is not based upon an appropriate 'standard of rigour'. Boyne (1998) identifies that problems were apparent in a number of studies with regard to their 'superficial clarity' manifesting itself in ways such as :

- i) they analysed only a small number of councils
- ii) they failed to test whether the results were statistically significant
- iii) the measures of spending used were questionable

Boyne (1998) further states

'an added restriction on the meaning to be extracted from the studies is that the actual sample size for some of the key issues concerning competitive tendering is substantially below the headline figures e.g. Chaundy & Uttley (1993) received responses from 37 councils on the impact of competition on refuse collection. However only 14 councils provided the information on cost savings and only seven replied on the issue of transactions costs'.

In fact there was general concern about the lack of consideration of the potential for additional transactions costs across the studies generally, with only two studies taking this issue into consideration -specifically Chaundy & Uttley (1993).

Another feature which appears to have been overlooked and may well have a significant influence on the research results obtained, is the issue of cost allocation i.e. the process of allocation, apportionment and absorption (3As) of indirect or overhead costs adopted by the respective local authorities, and in the service area of refuse collection in particular. This issue will be further explored below.

The 3As Effect

The cost of the service as portrayed in the annual budget statement and the year-end financial report will be affected by this costing decision choice, and raises the issue as to whether that choice results in a realistic reflection of resource usage by the service and aids the identification of the 'true cost' of providing the service. Such issues will have a significant impact upon the subsequent use of the data for empirical models of the refuse collection service and for research linked to the identification of cost savings.

This importance can best be illustrated when the definition of cost that has been built into the models for use within the studies is investigated. Table 1 provides the definitions of the cost variable used by some of the key studies for illustration purposes.

Academic Authors	Definition of Cost Variable used for the Research Project
Domberger, et al (1986)	'Gross expenditure. This includes expenditure on employees, premises/depots, provision of disposable sacks, dustbins and sack holders, and expenditure on transport and movable plant, agency services, establishment expenses and other running expenses. Establishment expenses include an apportionment of central and departmental administration where such apportions are made. Expenditure on premises and transport and movable plant includes all capital financing. Charges and contribution to Repairs and Renewals Fund in respect of vehicles and movable plant.' P 84.
Szymanski et al (1993)	'total gross expenditure on refuse collection, including employees, premises and depots, supply of sacks and dustbins, transport, support services and agency services including payments to contracts.' p128
Knox et al (1995)	'Full-cost accounting therefore provided an opportunity to assess whether savings had been achieved by CCT. The questionnaire sought to compare gross cost, including overheads, of carrying out each of the defined activities in the year preceding CCT with the winding tender figure for the contract' p598
Bello & Szymanski I (1996)	'C (cost) is measured as the local authority's net expenditure on refuse collection. That is, total expenditure less any income generated by these services' p885 'As indicated by the equation the cost of refuse collection should increase with output Q (i.e. the volume of waste collected.)

Table 1. Definitions of the cost variable used in the empirical models.

All of the definitions above utilise an approach based on the budget and year-end financial reporting systems of the local authority, which are in turn based upon a standard classification principle. (See Coombs and Evans, (2002), for a detailed discussion of the costing methodology for re-charging central services). Central to the approach is the allocation, apportionment and absorption of indirect cost and overheads by the various subjective headings. Hence, there will be elements of the service cost classified as direct and presumed to exhibit a close functional relationship with output, and this will appear to be confirmed on the basis of statistical analysis. However, this will be due not to the economic consumption of this particular element or resource, but to the basis upon which that cost is charged out or recovered via the service, which will be on the basis of some assumed or implied relationship between the indirect resource category and the direct resource cost or feature (direct labour wages or direct labour hours) to which it is being related. This will give the impression that this element of the cost varies with the activity or output of the service, when in fact it may well be a fixed cost. Thus, isolating a particular service area and its costs for the purposes of assessing without giving due consideration to the 'cost content' could possibly have the following consequences:

1. lack of clarity regarding the 'true' cost of the service
2. the cost of the service is not necessarily the same as the cost to the local authority e.g. apparent cost savings on the refuse collection service may not equate with the cost savings to the local authority of a particular change.

This issue places accounting numbers at the heart of the problem of the interpretation of the 'true' cost of the refuse collection service, the level of costs savings to be achieved by CT and the degree of meaning that can be attached to any comparative analysis being undertaken. This reinforces the view that accounting numbers provide for an accounting/contracting nexus which penetrates organisational practice (Seal, 1999).

The problem of cost allocation and its impact on comparative analysis has been raised in other parts of the public sector². Evans & Bellamy (1995) drew attention to the issue of high fixed cost government departments, where the cost structure was dominated by fixed labour overheads. In such circumstances they noted that conventional costing systems treated such items as either line item (inputs).

'or as an average allocation to each service or product output. Neither of these approaches is helpful to management, and evaluation with resource usage information lacks decision usefulness' (p36).

The issue then becomes one of how to undertake research which can mine beneath the aggregated data provided in summary financial statements (up to twenty years before) and explore how local authorities went about their 3As. This would then provide an insight into the likely impact of the local authority's approach to cost allocation on research findings of cost saving within the refuse collection service, when researchers have used empirical models.

Research Methodology

This study draws upon archival material linked to one Borough Council / District Authority ('Local Authority 'X'). The archival material in question contains a very detailed report undertaken by officers within the finance department of the local council³. The report takes the form of a management accounting analysis of the 'efficiency of the current domestic refuse collection service when compared to alternative methods of collection' for Local Authority 'X'. The costing information had to be remodelled from the absorption full-costing format (of the type that appears in the annual budget report and the year-end financial statements) to a version that had a high degree of utility to management for decision making purposes.

This report has significantly more detail contained within its pages than subsequent reports made available in the public domain, and this level of cost detail could not have been captured within existing empirical studies, as they were reliant upon data sources e.g. CIPFA (SIS) and/or Department of the Environment statistical returns, which were themselves based upon financial data which had, as its underlying costing methodology, full-absorption costing, which fed the financial reporting system of the local authority.

Hence, this research project represents a starting point for the investigation, analysis and understanding of the role of cost classification as it impacts upon on an individual local authority's view of the cost of its refuse collection service and any implied potential savings that might accrue from changes to the delivery of that service. In addition, its impact upon the research results obtained by the broader 'economic model' perspective will also be considered.

² In the context of the NHS, Northcott & Llewellyn (2002) identified that one of the main factors contributing to the lack of confidence in utilising reference costs for comparative purposes i.e. between trusts was the difference in cost allocation practice adopted by trusts. A lack of standardisation of cost allocation methods was a major problem in securing comparable data.

³ Support is given to the report's authority and authenticity by the signature of the Director of Finance, the designated Assistant Director of Finance and an independent external advisor at the time.

The Case Background (Local Authority 'X's context)

The domestic refuse collection service in operation at that time was a 'back door' method of domestic refuse collection and this had been the mode of operation for many years. The service was having to be provided within the then current legal framework: The Public Health Act, 1936, Local Government Act, 1972, the Control of Pollution Act 1974 and Waste Disposal Regulations 1987.

The operational objectives for the domestic refuse collection service of the local authority 'X' were:

- i) to provide a weekly back door collection (52 collections per annum);
- ii) to provide the service efficiently and cost effectively
- iii) to provide the service free of charge to domestic properties, but to make reasonable charge for special domestic refuse collections.

The local authority needed to investigate the cost efficiency of the domestic refuse collection service at that time and compare it with alternative methods of collection. The complex environment within which the local authority was operating the service required a fundamental review of the efficiency of the current service provision alongside that of the alternative methods 'in terms of level of service provision, costs and resources utilised, in order to help the determine the best all round service for the Authority'. (Local Authority 'X', 1987)

The management accounting information that it prepared was intended to inform management on the 'efficiency of the current domestic refuse collection service when compared to alternative methods of refuse collection' (Local Authority 'X', 1987). As a result the information had to be remodelled from the absorption costing format of the type found in the annual budget report and year-end financial statements to a format more appropriate for a marginal costing decision making scenario.

Financial Review of the Existing System

The project report includes the following initial contextual observations:

'The estimated cost of the domestic refuse collection service in 1987/88 was £859,100 and represented 15% of total net rate fund requirement.'

Local Authority 'X', (1987) p4.

'In 1985/86 the local authority's net cost of refuse collection per head of the population (including trade refuse) was £7.37. In comparison the overall range for English non-metropolitan districts varied from a low of £3.64 to a high of £12.06, with an average of £7.93 net cost per head of the population. (Source: CIPFA Waste Collection Statistics, 1985/86 Actual).

Local Authority 'X', (1987) p4.

Both of the quotes above taken from the project report identify the significance of refuse collection as a resource cost to the local authority and to the fact that the cost incurred by this local authority had a reasonable approximation to the family average for this service, with a slightly favourable variance⁴.

⁴ The total cost of operating the refuse collection service had been rising steadily over the ten years up until 1986/87 except that:

'In 1984/85 costs fell as a result of a management review, which reduced the number of refuse rounds from 10 to 9. Costs fell in 1985/86 because the number of spare vehicles covering both the domestic and trade services was reduced from 3 to 2'

(Local Authority 'X' (1987) p5.)

Cost Analysis of the Existing System

The project report then goes on to identify the main component elements of the local authority's domestic refuse collection cost structure as being:

	% of total cost
Employee Expenses	71
Running Expenses (incl. cost of premises etc.)	5
Transport Expenses	21
Establishment Expenses (incl. technical and administrative staff costs)	3

Each of these categories is then analysed into its key components, each of which is then split between essentially variable and fixed elements in relation to the decision whether or not to continue providing the service via an 'in-house' section. For instance, the employee costs were shown to consist of:

- Gross pay (which comprised: basic pay, bonus and additional payments - all variable)
- Wages On-cost (expenditure on items of a general nature relating to the employment of manual employees - all variable.)
- Cleansing Section On-cost (foremen, share of various administrative costs such as telephone and travel - mostly fixed)
- Wages Administration On-cost (represented central administration staff with payroll responsibilities and the costs of the 'wages make-up team' - all fixed).

The report also gives insight into the kind of allocation methodology which may be used, and demonstrates that the behaviour of some costs would be easily misconstrued without inside information. For example, Running Expenses includes a charge for premises costs which is calculated like this:

'The Council Depot, from where all domestic collection crews operate, is used by many services. In order to charge out the running costs of the depot, a Depot On-cost account is operated. The depot overhead rate apportions the costs to services as a percentage of the allocated gross pay of depot based employees. The average on-cost rate applied in 1986/87 was 11%.'

Local Authority 'X', (1987) p 9

Similarly, 'Establishment Expenses' is shown to consist mainly of cross-charging of proportions of the time of various specialists from other departments:

'Establishment expenses comprise those costs associated with the central administration of the domestic refuse service...The majority of administrative time is spent by line managers from within the Technical Services Department ...Notable additional support services come from the Borough Treasurer's department, where time is spent by the Work Study unit in monitoring the service...'

Local Authority 'X', (1987) p 11.

The report notes that, given that this expenditure was based upon a work-load spread across a range of individuals from more than one department, the activity time involved, as a resource cost, would constitute a fixed cost to the decision under consideration.

Thus the overall cost profile, in decision making terms, for the refuse collection service may be summarized as follows

Element	(£)	(£)	(%)	Variable Cost (£)	Fixed Cost (£)
Employee Expenses:					
Gross Pay	347,700			347,700	
On-cost	180,630			135,470	45,160
Wages Ad.					
On-cost	32,900	561,230	71		32,900
Running Expenses:					
Depot Oncost	38,010				38,010
Skip Repl.	4,750			4,750	
Stores Oncost	1,950	44,710	5		1,950
Transport Expenses:					
Transport	161,950			161,950	
H&P Oncost	8,100	170,050	21		8,100
Establishment Expenses:					
	21,020	21,020	3		21,020
Total Expenditure	797,010	797,010	100	649,870	147,140

Table 2. Domestic Refuse Collection Cost Structure 1986/87

Significance of the analysis

The total cost of the refuse collection service for this local authority in 1986/87 was £797,100 of which £649,870 (81.5%) was identified as being of a variable cost nature and £147,140 (18.5%) was identified as being of a fixed cost nature in relation to the refuse collection service.

Even if establishment expenses (£21,020) are removed from the analysis, what is left is (£126,120) a range of indirect costs identified within the report as fixed costs which are charged against the refuse collection service on the basis of their 'on-cost' or 'overhead' status. These fixed costs represent 15.8% of the total cost of the refuse collection service. If the local authority was to adopt a competitive tendering strategy and award a contract on the basis of a tender price, irrespective of whether an 'in-house' unit or a private sector company won the contract there would be elements of cost, currently charged to the refuse collection service, which would disappear as a refuse collection service cost, but not as a local authority cost.

Hence the full-absorption cost comparisons that have been a feature of the empirical studies may overstate the level of the cost savings resulting from the CT of refuse collection. In the case of this local authority it has the potential to be anything up to 15.8% of cost. (The exact level would be determined by any potential cost savings that might ensue from the fixed cost category.) Overstatement may occur because the costing system does not truly mirror the underlying

economics of the local authority. The empirical models tend to assume that all the direct costs incurred in the provision of the service are variable to the service itself and to the authority in total, and that there will be no element of cost within the direct cost figures that might behave in a different way. i.e the pattern of charging out for a resource will always reflect its true economic usage. However, this case study, based upon one local authority, demonstrates that this need not be case i.e. that essentially fixed resources utilised by the refuse collection service are being charged into direct cost categories on the basis of activity or operational data which is essentially variable.

In addition to this, it is apparent that the refuse collection service of the local authority is a high volume activity with reasonably straightforward processes. As a consequence of the local authority using volume base methods for recovery of indirect and overhead costs for its services, and for its refuse collection in particular, this service is likely to be 'over-costed', on the basis that its volume of activity will be the source for the recovery of a range of costs linked to other more smaller, but more complex service areas of the local authority.

Conclusions

The public sector has been under significant pressure to reduce its proportion of economic activity, and that which it is authorised to undertake has had to be managed on the basis of improving the value-for-money (VFM) obtained. This has been achieved by changing the nature of governance within the sector away from a public services ethos to a more market orientated approach, and specifically in the Local Government Act (LGA) 1988, the scope of CCT was extended to include refuse collection.

However, before the legislation, some local authorities were undertaking competitive tendering of refuse collection on a voluntary basis, which meant that interested researchers could investigate the level of cost savings over a longer time frame. A number of these projects used econometric models of a sample of local authorities to determine the level of the cost savings.

Using the available report it was possible to identify the cost of providing the refuse collection service on a marginal cost economic decision making basis rather than on a full-cost absorption costing basis that would have been the basis for budget reports, annual reports and statistical returns. As a result it was identified that up to 15% of fixed indirect cost might be alluded to as savings when contracting out the refuse collection service, when in fact they would more likely be recharged through the local authority's costing system to other parts of the local authority. Hence the true cost of the refuse collection service can be obscured by charging systems which do not reflect real economic usage.

Unfortunately it is extremely unlikely that detailed data will be available for other local authorities for the 1980s or 1990s, but given the general level of cost savings implied by the models (circa 20%) and that this case suggests that up to 15% of the service costs might not be saved but re-allocated to other service areas, there is at least some grounds for supposing that the potential cost savings may have been overstated. In addition, given the uncertainty relating to the contractors' pricing strategy, there is a real issue around the identification of the true cost and the resulting cost savings of the refuse collection service. In effect this paper does not identify what the true cost is, but provides an indication that clarification of the indirect cost recharging system used by a local authority could be a significant influencing factor on the result and needs to be taken into consideration.

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