

Reverse eAuctions and NHS procurement: Executive Summary

Introduction and conclusions

Introduction

The primary focus of this paper is the contribution of “reverse eAuction processes”, characterised by on-line, descending price bidding, to NHS procurement strategies. There has for some years now been considerable interest in the use of such auctions in the procurement of goods and services by both private and public sector organisations. Over the last year or two, this interest has been particularly intense in the UK public sector, and it has been accompanied by claims of substantial gains when these types of arrangements are introduced.

This assessment draws upon some of the key lessons from the economics and the management studies literatures on auctions, before going on to provide an evaluation of the published data and claims concerning reverse eAuctions for NHS procurement. The evaluation is informed by interviews that were held with a number of suppliers of medical equipment, and with the NHS Purchasing and Supply Agency (PASA).

Conclusions

We found that many of the claims that have been made about the actual or potential contribution of reverse eAuctions – as this term has come to be conventionally (though in our view misleadingly) used – to the improvement of public procurement processes are simply not credible. It was striking that, during the course of our research, we did not find anyone else who believed the claims either. Many of the projected benefit numbers are at variance with what is known about the effects of auction design in other contexts. The methods used to arrive at the numbers were often vague and ambiguous, and where they were clearer they were manifestly flawed. We do not think that they would long survive the rigorous scrutiny of either a well constructed Regulatory Impact Assessment or external audit.

None of this is to imply that there have not been significant advances in procurement effectiveness, and that there have not been areas where purchase prices have fallen substantially. We do not, for example, doubt the value of eProcurement in general: modern communications and IT offers a range of opportunities for buyers, particularly in terms of speed and the ability to process large quantities of data. It enables buyers more easily to search out and communicate with new potential suppliers, and to increase levels of participation in competitive tenders. In general terms, economic transactions costs are reduced. What is inappropriate is to attribute the benefits of overall improvements in procurement to the adoption of on-screen price bidding.

At one level, it might be argued that the current, apparent fashion for “reverse eAuctions” is of little consequence. One danger, however, is that those who are less well informed may well be misled by the grandiose claims that have been made. Individual buyers in the NHS, located away from the main centre of procurement expertise, may be tempted by promises of large savings to spend rather more of taxpayers’ money than they rightly should. Sellers may be discouraged from product

development and innovation, by false expectations that price is all that matters. Longer term buyer/seller relationships, which are universally agreed to be of great importance for complex products and services, may be damaged if confidence is lost.

In short, ‘spin’ or ‘hype’ can be costly.

Lessons from the Economics and Management Studies Literatures

“Reverse eAuctions”, in the sense of on-line, descending price bidding arrangements, have been promoted as something new, exciting and different, offering the potential for large cost savings for buyers. In the context of today’s public sector in the UK, the term is, however, typically being used to denote just one particular type of eAuction arrangement – that is, one option among several. Recognising this is a first step in understanding that, whilst there may indeed be novelty and excitement, claims of large cost savings from adoption of a single, particular option are, at least if made generally, simply not credible on the basis of past theory and evidence.

Specifically, analysis of, and experience from, auction processes indicates that there is no reason to expect that, at least as a general matter, descending price bidding arrangements will lead to lower prices than, say, sealed bid tenders – which, if handled electronically, can properly be viewed as an alternative type of reverse eAuction. Indeed, there is a range of circumstances in which descending price bidding arrangements can be expected to be inferior to sealed-bid approaches, even if the buyer is interested only in price. Of particular note in this context are the problems that can potentially arise when one or more bidders has/have known competitive advantage: weaker competitors may then be discouraged from participation, and, as a result, stronger competitors could win business at prices higher than might otherwise be the case.

Such problems may not always be immediately apparent at the outset of introducing “reverse eAuctions”, since sellers new to the process may fall victim to the ‘winner’s curse’, where they bid at too low a price in order to win the contract and then struggle to fulfil the contract or make any profit on the deal. Equally, more sophisticated sellers might be willing to bid low initially precisely because they can foresee the future returns from market power that will result.

The cumulative weight of economic analysis and evidence gives every reason for being sceptical of ‘magic bullet’ solutions, and for proceeding with caution in auction design. Adoption of auction formats does not resolve underlying problems of market structure – for example, few sellers and/or high barriers to entry – and apparently small variations in the detail of procurement formats and rules, and in the detail of the relevant context, can have substantial effects on performance.

The management studies literature on reverse eAuctions suggests that particularly important areas to consider when assessing particular cases include:

- The ease of clearly specifying product features ahead of an auction event;

- The potential impact of particular types of auction arrangements, and perceptions of those arrangements, on buyer-seller relationships.
- The extent to which identified gains should more appropriately be attributed to other factors, such as the introduction of competition from new suppliers, the aggregation of purchase volumes, and reductions in product differentiation.
- The extent to which identified gains can exceed actual realised cost savings as a result of factors such as: the buyer not actually selecting the lowest bid; the buyer not purchasing all of the items that are taken into account in gross savings figures; and, inadequate account being taken of indirect losses (for example, as a result of increased problems surrounding product quality and/or delivery performance).

Reverse eAuctions in NHS procurement

The reverse eAuction processes established by PASA have a number of interesting features. The contracts let by PASA are framework agreements, not purchase contracts: actual purchasing decisions are made by relevant units within the NHS. If a popular analogy is to be used, PASA is closer to offering supermarket ‘shelf space’ for a range of products, in that the effect of a framework agreement is to secure a listing in a NHS e-catalogue.

Further, the bidding arrangements are sequential: first there is a sealed-bid tender process, followed by an optional on-screen bidding process. On figures that we have been given, over 90% of competitions for listings in the on-line NHS catalogues do not go on to the second, descending price bidding stage, and there seems to be no current trend for this percentage to decline substantially. That is, on-screen, descending price bidding is used only in a small minority of cases.

These features can go some way to mitigate potential problems that can be associated with the bidding process. In particular, the fact that more than one framework contract will typically be let serves to mitigate the potential for descending price reverse auctions to discourage less efficient firms from competing. Similarly, the fact that the process is not a ‘winner takes all’ arrangement, based simply on the lowest price offered, means that concerns about adverse effects on quality are, at least to some extent, mitigated.

Published results from cases to date in the UK health sector

The principal claims of eAuction savings in NHS procurement relate to the results of thirteen pilot online eAuctions that were undertaken by PASA in 2003/04 (one auction was for IT hardware, six were for food, and six were for medical products). Thus, for example, the PASA publication *eResults*, which presented ‘trail blazers’ and asked readers to ‘invest in similar systems’, stated that:

“When the level of savings NHS PASA achieved – over £16m with 13 contracts – are on offer, e-Auctions have got to be a top priority.” (p3).

This level of saving – over £16m – greatly exceeds the savings that PASA itself (in a less ‘promotional’ results document) attributed to the relevant, on-screen eAuctions: the total savings as against ‘Budget/Current Baseline’ was shown as £16.5 million, but 85% of this was associated with the initial tender process, and only about £2.5m (6% of the baseline total, 15% of the claimed savings) was related to the descending price bidding part of the process.

eResults further included the heading – again based on the results of the 13 pilot eAuctions – that “*e = £270m off the bottom line*”. This £270m figure appears to have been generated by assuming that eAuctions could deliver a 6% saving across 30% of the NHS’s £15bn of non-pay revenue spend. There is no indication that this assumption – that substantial gains could be achieved by 30% of NHS procurement being sourced by eAuction – is based on any kind of detailed assessment of the specific conditions relevant to each of the different types of products/services concerned. The pilots are likely to have focused on more straightforward product types, for which on-line eAuctions might be expected to lead to more positive results. Furthermore, the vast majority (£1.7m) of those gains that were identified as resulting from the pilot eAuctions (£2.5m) related to just one product (IT hardware).

It is also far from clear that – in practice – PASA consider that a substantial extension of the usage of online eAuctions is either likely or desirable. Rather, online eAuctions appear – quite sensibly – to be being considered as one procurement option that can be beneficial in a limited range circumstances (approximately 20-25 eAuctions have been (or are due to be) conducted by PASA in 2004/05 and 2005/06). It would appear, therefore, that there is something of a disjunction between the ‘promotional’ material on the benefits of online eAuctions and the approach actually being taken by PASA.

The above comments relate only to the manner in which PASA’s published results have been presented. There are however, a number of reasons to expect that these results overstate the gains actually achieved in the pilots, potentially to quite a significant extent. In particular:

- The rationales for the baseline expenditure estimates are unclear and unarticulated. From an organisational point of view there would have been little incentive to begin with a ‘tight’ ‘budget or current’ baseline.
- Stiff competition from overseas will likely have been applying downward pressure on commodity prices, regardless of procurement method used, yet the influence of this factor is not addressed in the assessments.
- Where bidders knew the normal tender process would be followed by an eAuction, they may well set relatively higher tender prices to allow a margin for price cuts in the eAuction. Again, this obvious, potential effect of the change in auction design is simply ignored in the interpretation of outcomes.

- Realised savings will, in practice, depend on actual purchasing decisions that are made by individual NHS Trusts, which may not match the (optimistic) volumes assumed in the calculations.

Experiences with reverse eAuctions in the health sector

Whilst there was a significant level of negative comment in relation to the use of reverse eAuctions for NHS procurement, the majority of suppliers interviewed were not at all averse to some use being made of descending price bidding procedures in relation to healthcare products. The key concerns and criticisms of suppliers typically related to: the manner in which procurement requirements had been *specified*; the manner in which competing bids had been *assessed*; and, the range of types of product for which a descending price bidding stage in the process might be considered appropriate. Particular problems that were highlighted included:

- Clinical input in product specification and assessment processes – a number of suppliers took the view expressed in one interview that: “*We really don’t know where they [PASA] get their clinical input from*”.
- The significance of price – a recurring comment in interviews with suppliers was that the PASA was overly focussed on price, at the expense of other relevant factors, particular product and service quality.

Although we are not in a position to make an assessment of PASA performance in relation to these specific and difficult issues, supplier comments point to the relevance of more general issues concerning transparency and information gathering/processing. Thus, for example, a lack of transparency with respect to clinical input appears to have been associated with a significant lack confidence in the product specification processes undertaken by PASA ahead of reverse eAuctions. Further, the dispersal of information between different groups (clinicians, buyers, suppliers), with each having different types and degrees of knowledge in a given case, points to the importance of processes by which differences in information/view can be *mediated*. Mediation processes can be extremely important for perceived levels of legitimacy, which in turn – as indicated in the management studies literature – can be of some importance for buyer-supplier relationships.

The potential significance of these issues is emphasised by the fact that there do appear to be significant gaps between reality and perception in some areas. Thus, for example, we found a significant gap between the way in which PASA professionals viewed the procurement process, and in particular the descending price bidding stage of the process, and the way in which it tended to be viewed both by suppliers and by those responsible for publicising the outcomes of reverse eAuctions. It is important to recognise that these differences, by and of themselves, can have adverse consequences.

For example, if suppliers perceive that a much higher weight is being given to price, this perception will tend to alter their bidding behaviour. Faced with their own quality/cost trade-offs, suppliers will tend to downgrade quality (whether of product or service) in order to be able to offer lower prices. PASA will then, in effect, be

fishing in a lower quality pool, with the possible result that products/services with the most favoured combination of quality and price will simply not be offered. Lack of investment in product-quality improvements would be just one potential manifestation of this general problem.

The key point here is that, *whatever* the chosen balance between price and quality, failure to communicate that balance in a credible way to market participants is likely to lead to biases in bidding behaviours that will, ultimately, be to the detriment of the buyer.