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A Tactical Role for Reverse Auctions: A Market Maker Perspective

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ABSTRACT

Electronic marketplaces have been used for procurement in various industries by both small and large organisations. However, the role of electronic marketplaces in procurement is still unclear and strategies and organisational implications of trading via an e-marketplace are not well defined. An electronic marketplace facilitates transactions between buyers and sellers and a common transaction mechanism for price negotiation is an electronic auction. This paper investigates the role of reverse auctions in procurement including the organisational implications and strategies for using an electronic auction. We use a case study (Revnet) of an electronic auction provider to analyse their role and benefits. The findings show that e-auctions can be used as part of a strategic procurement strategy to reduce procurement costs and improve efficiency and are more likely to be used for non-critical business for products and services that do not require strong ties with suppliers. The success of e-auctions within this context relies to a large extent on the quality of contract specifications. The narrower tactical role for e-auctions that is now emerging in some organisations is shaped by the fear and disdain surrounding their use in the past and in particular the perception of the damage to supplier relationships that their widespread adoption in procurement can create.

ABSTRACT

Keywords:

e-auctions, tactical response, e-marketplaces

1.0 INTRODUCTION

Business-to-business transactions form a major part of the economy and generate wealth for the society in which the business operates. The structure of the marketplace in which these transactions occur has been investigated from an economic perspective over several decades. The two extremes of marketplace structure are the market and the hierarchy. The advent of the Internet enabled the growth of electronic marketplaces where it was believed benefits would accrue to participating organisations and flow on to the customers. These benefits were thought to be mainly economic resulting from increased information transparency, speed of searching and matching

requirements and competition amongst suppliers. The growth of electronic marketplaces was seen as a move away from a hierarchical market structure to a more open market structure.

Electronic marketplaces frequently used electronic auction mechanisms for price negotiation but they have also been used by companies as a mechanism for procurement. The role of the reverse auction for procurement has gained significance in many organisations throughout the world in both the private and public sector. Reverse auctions are used by organisations worldwide for the supply and purchase of goods and services. Many large and medium-sized organisations in North America and Europe regularly run this type of auction. The USA was the first country to use the reverse auction and it was quickly adopted by the manufacturing and automotive industries. The US public sector began using reverse auctions around 2000. The Federal Reserve proposed to spend US\$700 billion in 2008 to buy mortgage related assets from financial institutions to stabilise the financial sector by using market mechanisms such as reverse auctions (Irwin & Applebaum, 2008). The European Union issued a directive supporting the use of reverse auctions in the public sector in 2004 and by 2005 over 30% of all local UK governments had used them. In Australia companies such as Coles, Kodak and Chubb use reverse auctions, but the largest private sector users are those involved in the mining and chemical industries such as Alcoa and Rio Tinto. The public sector in Australia is also adopting the reverse auction and auctions have been run in New South Wales, Victoria, South Australia and Western Australia.

The reasons why organisations are choosing, or not choosing, to use the reverse auction are complex and difficult to determine. However, the main reasons for the growth in reverse auctions seem to be the immediate cost savings that can be achieved, the increased process efficiencies, the continued development of supporting technologies, and the involvement of the public sector in developing guidelines and formalisation of the reverse auction process (Jap, 2002). Many contributing factors are identified as influencing procurement choice but the success or failure of initiatives and the organisational implications of using reverse auctions are still unclear. The New South Wales Government Procurement Guidelines -

success of e-auctions within this context relies to a large extent on the quality of contract specifications. The narrower tactical role for e-auctions that is now emerging in some organisations is shaped by the fear and disdain

Stabilising the financial sector by using market mechanisms such as reverse auctions (Irwin & Applebaum, 2008). The European Union issued a directive supporting reverse auctions in the public sector in

Reverse Auctions, states that "the aim of reverse auctions is to generate value for money; this includes the cost of goods and services, the costs associated with the life of the goods and services, and innovation and value-adding components, these considerations do not always result in the lowest price." This paper will explore the reasons for organisations using online reverse auctions and investigate the relationship between online reverse auction procurement, market theories and organisational strategy.

2.0 MARKET STRUCTURE AND THE ONLINE REVERSE AUCTION

Hierarchies coordinate the flow of goods or services between the buyer and seller, and prices are based on contractual and relational ties with one supplier. Hierarchies are usually dyadic relationships requiring direct communication and the formation of long-term relationships (Premkumar, 2003). Electronic marketplaces with hierarchical structures are initiated and controlled by the buyer.

The main types of auctions are forward or reverse auctions. In a forward auction the seller puts forward a contract and buyers bid increasingly larger amounts to acquire the contract. In a reverse auction the buyer lists a contract and suppliers bid increasingly smaller amounts in order to gain the contract. At the end of the specified time for the auction the contract is awarded to the most suitable bidder.

2.1 Benefits, Costs and Risks

Jap (2002) found that suppliers involved in auctions through an e-marketplace believed that the buyers were using it as a price finding tool, with no intention of awarding the contract to a bidding supplier, and trying to manipulate the price by bidding in the auction themselves. These suspicions were untrue but the buyers found it extremely difficult to convince the suppliers of this.

Reverse auctions can have negative connotations with both buyers and suppliers. This stems from the fact that reverse auctions encourage suppliers to compete by lowering their prices. Criticisms of reverse auctions consider them to be power based bargaining tools that cost both the supplier and the buyer more than other procurement methods. These criticisms are based upon lowest price valuation metrics (Emiliani, 2006), power asymmetries between buyers and suppliers and coercive tactics used by buyers to force supplier adoption (Giampietro & Emiliani, 2007). Management incentives to reduce unit prices and the market maker's claims have to be carefully evaluated before adopting reverse auctions (Emiliani, 2006).

Careful consideration of management motivation and the organisational implications of reverse auctions need to be carefully considered. Focusing solely on the price factor will consolidate the opinion of buyer manipulation or coercion to participate. An emphasis on other factors of supply and the buyer/supplier relationship may mitigate this perception to some extent. In addition, the items to be

auctioned, clear specifications and the prevailing market conditions (such as the number of suppliers) are important factors in realising the expected benefits from the auction.

Table 1 presents a summary of potential benefits, costs and risks for both buyers and suppliers that will have an impact upon the decision to trade via a reverse auction.

Table 1: Benefits, costs and risks of e-auction participation (Chen et al., 2005; Hartley et al., 2004; Jap, 2002).

BENEFITS	COSTS	RISKS
BUYER		
lower transaction costs	increased long term costs	price emphasis
shorter order-cycle times	evaluating suppliers fees and charges	reduced quality of goods delivery
a large pool of potential suppliers	IT, staff and infrastructure transportation costs	relationships
competitive purchase prices	procurement costs	service
less time needed for auction		
world-class suppliers		
gather and analyze market information	pre-qualifying suppliers contract specification	
focus on strategic sourcing		
volume leveraging		
reduce inventory holdings		
reduce total ownership costs		
SUPPLIER		
obtaining market information	reduced profit margins auction fees/charges	price emphasis
an outlet to better manage excess capacity	IT, staff and infrastructure	shorten production runs
business from new customers		increased competition
less time needed for e-auction		long-term relationships
reliance on forecasting for planning reduced		
volume leveraging		
decreased production and shipping costs		

3.0 CASE STUDY

A case study methodology was used to examine the role of reverse auctions within organisational procurement. This methodology is appropriate for explaining the "why" and "how" questions related to the phenomenon where the questions are partly exploratory (Yin, 1994) such as why are organisations using a reverse auction mechanism (or not) and how does this align with organisational strategy (if at all). A reverse auction provider (Revnet) is used as the case study company as it is a major reverse auction provider within Australia with experience in managing

many reverse auctions. In addition, the firm spends considerable time and effort educating organisations on the role and potential of reverse auctions and so Revnet understands the general perception of electronic auctions in the Australian context. The data gathering involved the Australasian director of the company (Ben) and included three in-depth semi structured interviews and follow up telephone discussions to clarify issues from the interviews. The interviews were recorded and later transcribed by the researchers. The interviews were conducted at a neutral location and lasted approximately 60 minutes, over a period of 3 months from July to September 2008.

The interview questions were related to the role of electronic auctions in Australian organisations, the benefits costs and risks associated with their use and the barriers to the adoption. The detailed questions were informed by the factors identified in the analysis of the literature (summarised in table 1). The interviewee was asked to provide examples to illustrate his points where possible.

The interview data was input into qualitative software (NVivo 7) to aid with the content analysis. Coding was undertaken by annotating the interview transcriptions with themes relating to factors identified in the literature and role and use of electronic auctions. To avoid clinging to pre-determined theoretical categories the data was continually re-assessed for themes. In other words, the researchers assessed explanations by looking for patterns and making comparisons between responses. This analysis, coding and annotation was conducted individually by two researchers. The analyses were then compared to discuss and resolve differences. Where these differences could not be resolved easily clarification was sought from the interviewee. Company documents and the company web site were also examined to obtain additional information and verify interview comments. Their web site includes case studies and a wealth of information for clients and prospective clients.

Revnet acts as an independent third-party, market-maker for a specific contract offered by the buyer. It was founded in 2000 in the UK and incorporated in Australia in 2007 and runs reverse auctions primarily in these countries. They have auctioned a large range of equipment, services and consumables from diverse organisations in the private and public sector. They charge a fixed fee per auction which is independent of the price of the auction contract. An average cost saving of around 14% on pre-auction expectations is quoted as being regularly achieved using the reverse auction mechanism.

The Australasian founding director of the company (Ben) has worked with the company for the past 2 years and has extensive experience in management, IT, marketing and consulting.

"I won't claim to be a procurement expert because I'm not. I guess reverse auctions is the thing where we have skill. I have spent the last 18 months talking to procurement people and learning a lot about it, and also I guess honing the story and the value."

Company documents and the company web site were also

proposition, so a) it gels with them you know it won't grate badly with them and b) it generally supports the majority view of procurement people."

The company facilitates the reverse auction for the buyer and suppliers, delivers the software solutions that enable participation in the auction, ensures that the buyer considers the specifications of the contract being offered, and that suppliers are able to participate. The auction is run on a secure web based system that uses industry standard web browsers. A goal of the company was to create a simple interface to reduce the learning curve associated with the adoption of a new piece of software and thus support infrequent participants in the reverse auction. Buyers and suppliers who are already competent at using the Internet or e-procurement tools, such as e-marketplaces, online catalogues, e-mail etc., should have little difficulty using the reverse auction mechanism. Revnet offers support pre and post auction and offers system training to both buyers and suppliers.

The auction itself occurs at a late stage in the procurement process.

"The model which we espouse to the customers and is, I would argue, the standard model around the world especially in the US and Europe is, that the reverse auction is run on the back of full tender suite, full tender process. It is simply an extension of the tender, all of the qualitative criteria remain in place in the same way they have always done, a reverse auction just asks what is your best price?"

Specification of the contract and selecting suitable suppliers to participate in the auction presents the most time consuming and complex part of setting up the auction. The main considerations for an auction are the qualitative and the price component of the purchase. The buyer has to have a clearly specified product to be put forward for auction to reduce ambiguity and provide the framework for supply and delivery. Pre-qualification of suppliers ensures that the suppliers taking part in the auction are able to fulfil the contract especially in terms of quantity, quality and delivery. Other non-contractible attributes such as responsiveness, trust and flexibility are important to varying degrees (Mithas, Jones, & Mitchell, 2008) but these are difficult to specify and are more dependent upon relational ties.

In the reverse auction the buyer posts a request for price (RFP) and the supplies compete with each other to obtain the contract. Bidding starts with the supplier posting an initial acceptable price, and then the suppliers compete by lowering their initial price offering until their best offer is posted or the auction ends. The auction runs for approximately 30 to 60 minutes with the time being extended if a bid is placed near the end of the auction. This allows all participants to respond to the new bid. At the end of the auction the buyer chooses the bid that best meets their requirements which may not be the lowest priced bid.

The greatest benefits of conducting auctions online are the immediacy of the auction and the costs savings that are

The main considerations for an auction are

possible. Revnet are trying to overcome perceptions within organisations that reverse auctions are solely a way to obtain the lowest price for goods and services and promote the time saving benefits of using reverse auctions. Paper based or e-mail sourcing and procurement can take at least 6 weeks to organise and the number of suppliers that the buyer can contact is limited by workload and time constraints. There can be any number of suppliers interested in obtaining the contract and the outcome is known by the supplier almost immediately.

"The contracts that they (the procurement team) must run and that there are too many of them to manage they have to keep pushing them through as quickly as possible and they often don't get time to negotiate them to the extent that they would like too. They either can't negotiate them at all or they'll just speak to the incumbent and so on. Reverse auctions can come in then and start to put in some rigorous negotiation. So they don't necessarily negotiate better than a decent negotiator but they can do it at times when that negotiator can't because they are too busy working on the business critical contracts."

One hospitality organisation, that ran a series of auctions for stationery products, was able to cut costs by a total of 60% within three months and consolidate the supplier base. Procurement of the stationery was moved from the individual business unit level to one purchasing implementation. The auction process involved 17 initial suppliers bidding on 4 individual contracts; this was reduced to 8 suppliers capable of supplying all the stationery needs of the buyer, the final auction resulted in the winning supplier being given the contract to supply all the stationery. These series of auctions represented not only a saving in procurement cost but also in the negotiation and re-negotiation time that would have been required using any other purchasing method.

Emphasising the cost saving as a dollar amount is a double edged sword: it delivers immediate cost saving benefits to the buyer and illustrates improved cost management practices, but the suppliers may feel manipulated by the buyer into offering lower prices than previously quoted, be offended at having to compete against unknown suppliers, and dissatisfied that previous service seems to be disregarded in the auction process. The loss of good will in the buyer-supplier relationship would affect the working synergies between both parties. This could result in the loss of supplier commitment and damage relationships with other suppliers. For these reasons organisations are less likely to take strategic goods and services to auction where it is felt that a sustained relationship and commitment from the supplier is needed. However, taking the first step into the reverse auction arena enables the organisations involved to test the market and the mechanism, and add another sourcing tool into the procurement function.

Reverse auctions are considered to be suited to the purchase of lower risk products especially for new adopters. But the key element in a successful reverse auction and contract fulfilment is the contract specification. The time needed to

identify the purchase criteria and write these into a contract is time consuming; the more complex the contract the more extensive the specifications will have to be. The contracts offered through Revnet are usually unique.

The reverse auction process allows participants to benchmark prices for the contract that is on offer and get real market prices. Revnet generally run reverse auctions that are price positional, ie, no pricing information is available to the suppliers only the positions of the bids, first, second, third, etc. are known. When all the positions are clustered around one point that point is an indication of the true market value for the contract.

"The great thing about a cluster is you can now forget about price entirely and choose on qualitative factors alone, because they are all the same price effectively."

Control over the auction process resides with the buyer in terms of which items to auction, which suppliers to invite to participate and which bid to choose. The suppliers control the bidding process and will have established, prior to the auction, acceptable pricing and a walk away price, at which point they will cease to bid. Revnet acts as a neutral third party which reduces the risk of damaging buyer supplier relationships that may already be in place. Additionally it provides the buyer with increased knowledge of market prices and supplier information. The suppliers are also able to ascertain where their pricing strategy fits with the competing suppliers. This could lead the suppliers to investigate costing and pricing and may result in more fundamental organisational change if their pricing was not clustered with the lead positions in the auction.

The number of suppliers in an auction is potentially unlimited but in reality it is limited by the number of suppliers able to fulfil the contract, the pre-qualification criteria and the time and effort expended by the buyer on pre-qualification of the suppliers. Suppliers that have existing relational ties with the buyer will require less investigation in the pre-qualification stage than unknown suppliers. Prior relationships and supplier knowledge could also influence the final decision on the choice of supplier. The number of suppliers does not have to be large to run a successful reverse auction, 4 or more suppliers are required to generate sufficient competition within the auction.

The perception of risk prevalent in procurement is partly due to hearsay. *"the perception is usually not borne from experience it's borne from what they've read or heard from somebody else which is blunt instrument, damages supplier relationship, ignores quality"*

There are also risks involved in presenting the idea of reverse auctions to a higher level of management or other stakeholders because of these negative perceptions. There are risks at an organisational and individual level. At an individual level self preservation and credibility are factors affecting adoption in the organisation.

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"So procurement people will automatically shy away from reverse auction and even when they do understand how reverse auctions can work and realise that this can be an effective tool and can be used properly. As soon as they mention this to a stakeholder or somebody else within the organisation they are very likely to get a strong push back because they don't understand how reverse auctions work but they have a perception of reverse auctions, so, from an individual perspective there is risk. Me, as a procurement person, would say, 'this could damage my career it's risky.' Then in terms of the outcome of the reverse auction the risk is the exposure to their credibility, again for the procurement person, and that is 'we go through the reverse auction if I push it and we don't make a good saving again I am exposed, I am at risk."

4.0 DISCUSSION

The choice of using the reverse auction, or not, is a tactical decision within a strategic procurement approach. Reverse auctions can be used as a tactical response to strategic sourcing initiatives such as cost savings and increased process efficiencies, and demonstrate the transparency of purchasing decisions. These tactical decisions are mostly concerned with reducing transaction costs and obtaining lower unit prices. The impact of the reverse auction on the supply base results from the strategic sourcing decisions of the organisation. It is possible to expand the supply base to identify more potential suppliers or to use the auctions to consolidate the supplier base. The ability for organisations to source goods and services from international suppliers via the auction, potentially increases the supplier base. A strategic decision to consolidate the supply base could be implemented through the use of the reverse auction mechanism and provide additional advantages of volume expenditure. In some industry sectors such as energy, mining or food certain contracts can become a template for repetitive or routine purchases. The use of reverse auctions in this way becomes more of a programmed decision rather than a strategic initiative. This seems to emphasise lowest unit cost and undervalue the non contractible elements of supply. However, shorter term contracts are not as susceptible to changing market conditions and would require less re-evaluation on renewal allowing the use of reverse auctions to become a more programmed response.

Economic theories of markets and hierarchies are complicated further in practice by the use of reverse auctions within procurement. Glassberg and Merhout ((Glassberg & Merhout, 2007) suggest that a market structure is most suitable when transaction cost is a primary concern, new suppliers are needed, the market is highly fragmented or for commodity purchases. The ideal efficient market allows many buyers and sellers to freely interact and conduct transactions. A neutral, third-party, electronic marketplace can achieve this to some degree, supported by auction mechanisms. However, the role for reverse auctions in procurement in many organisations has characteristics of a hierarchy: the auction is instigated by the buyer, who

controls the final outcome; only selected suppliers are invited to participate; and a dyadic relationship is formed, although the relational component, significant in some hierarchical relationships, may be low at the commencement of the contract.

Contract specification is the foundation for successful use of reverse auctions. Goods and services covering a range of complexity, from food labels to ground services, have been successfully bought and sold using a reverse auction mechanism. However, the more thorough the contract specifications are the higher the likelihood of successful contract realisation. This applies to both the buyer and the supplier. Clearly specified contracts reduce the ambiguity between what the buyer expects and what the supplier agrees to deliver. This is a key factor in achieving the anticipated benefits resulting from the use of the reverse auction.

The strength of the social ties between business partners has an impact on the use of reverse auctions. Goods and services most suited to reverse auctions are those that require less of a strategic relationship and are associated with non-critical business operations (figure 1). Although this is the area where most reverse auctions occur there is some cross over into more strategic areas.

Individual and organisational perceptions affect the adoption and use of the reverse auction. The bad publicity and perceived damage to supplier relationships resulting from e-auction use in the past have created a hurdle for their more widespread adoption and use. The risks attributed to cost management can be quantified and process efficiencies can be identified but individual preferences for standard procurement practices and a self preservation ideology (risk aversion) will inhibit wider scale adoption within organisations. To some extent the true value and benefits associated with electronic auction use may be constrained both in adoption levels in Australia and the scope of application within individual organisations because of this risk aversion mentality. These are organisation and context specific and add an extra dimension to the success or failure of the reverse auction mechanism in procurement. In Australia, government trials of reverse auctions and the associated successes or failures should help to generate a more rounded perception of reverse auctions leading to the legitimacy of reverse auctions in both the public and private sector

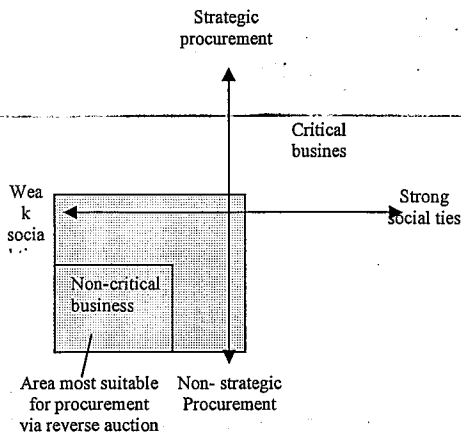


Figure 1: Relationship and strategic use of reverse auctions

4.1 Limitations and Future Research

The research is based on one case study and the attitudes of the organisation. These perspectives are from the market maker's perspective and not necessarily the perspectives of organisations adopting or not adopting reverse auctions. The findings may not generalise to other reverse auction market makers.

Buyer/supplier relationships are a concern for organisations. The maintenance and development of these relationships has been under represented in the literature. However, this goes beyond the initial procurement initiative and forms part of the contract management function within the trading organisations. Research into the relationships developed during and after the initial contract would extend the literature on reverse auctions.

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