



Reverse Auctions: Analysis and Review

Andrew Stein

School of Information Systems, Victoria University
MMC 14428, Victoria University of Technology
Melbourne, 8001, Victoria, Australia
Tel: 61 03 96884332
Andrew.stein@vu.edu.au

ABSTRACT

As organisations extend the reach of their information systems into the supply chain e-procurement has become a driving force for achieving substantial cost savings. One mechanism that facilitates e-procurement is the reverse online auction. Reverse online auctions are delivered by intermediaries and promise to deliver savings up to 20% for the buying organisations. The rhetoric of B2B collaboration has “win-win” scenarios for all who participate in online auctions. Is this true? This paper will analyse a previously reported reverse auction (Stein & Hawking 2002a, Stein & Hawking 2002b) from the viewpoint of the four main players and question the value proposition of the reverse online auction as a tool in B2B e-commerce. The main outcomes show that the auction vendor and buyer were major winners with the both the winning and losing supplier expending considerable time and effort to participate in the auction only to realise that the reverse auction places cost above all other factors in awarding the contract. The importance of cost over service delivery, customer support and buyer-supplier relationship is the basis for a discussion of the viability of the auction model as well as a review of the process one year after the first reverse auction.

INTRODUCTION

The use of auctions as a tool for procurement by businesses existed well before the advent of the Internet. Initially the internet was used to duplicate existing offline auction facilities. In the late 1990's online B2B auctions were proliferating and were being adopted in a wide variety of circumstances. The reverse auction tool has evolved to take advantage of internet technology and online auctions have been identified by many large organisations as a tool to achieve procurement savings. As companies adopt this technology it is important for them to understand the implications of this type of procurement. This paper adopts a case study approach to identify the issues for both buyers and sellers using this type of B2B application.

Procurement and the Reverse Auction

Organisations spend (Aberdeen, 2001) over US\$20 trillion on external goods and services and the supply chain is now seen as a potential business function that can be targeted for cost reduction and efficiency increase. Activities that could be applied to the e-Procurement (Minahan, 2001) process include: advertising tenders; electronic submission of tenders; electronic ordering; internet sourcing via third parties; electronic mail between buyers & sellers; electronic mail in contract management; research into supplier markets and integration of procurement within the financial and inventory systems. Accordingly there are a plethora of tools that have been developed to support these business activities. Many research organisations predict massive growth in the B2B market. Bowles (2000) sees the global B2B market growing to US\$968 million in 2002 and then US\$1551 million in 2004 but these figures pale into insignificance when considering other market analysts predictions; Gartner: \$US2.9trillion by 2003 AMR: \$US5.7trillion by 2004, Forrester: \$US7.29trillion by 2004 (Regan, 2001; Hersch, 2000; Diba, 2001). Whilst these predictions should be accepted with caution there does seem to be a “sea change” in how procurement is conducted in organisations. B2B promises (McGarvey, 2000) to drive costs down and streamline procurement operations. Metcalfe et al. (2001) predict that European companies could achieve a 50% productivity through internet

enabled B2B processes by 2010. O'Malley (1998) saw the Web being “a giant bidding war” and Queree (2000) commented that online auctions were becoming a mainstream business model. The auction model has settled into the B2B marketplace and also was developed for various e-Government (NSW, 2001) applications. Wyld (2001) saw the auction model being used in procurement, disposition of used assets and internal management. Batsone (1999) asked the question whether the price of everything is negotiable? The Web introduces the element of real-time pricing and further elevates the importance of personal price elasticity. Customers will determine the price depending upon the price/value trade-off. No longer is the supply/demand model (Batsone, 1999) determining price, a more complicated customer centric price/value trade-off determines pricing. Airlines use this principle when they have multiple price points for the one product.

Online Auctions

There are several differing auction formats used in online auctions (Wyld, 2001). English, Yankee, Dutch, Sealed bid, Vickrey and Reverse auctions are some formats used. Kafka et al. (2000) predicted that by 2004, \$US746 billion of business will be conducted through online auction models based on dynamic pricing. Many of the Fortune 1000 companies have used online auctions as a tool to reduce prices for goods and services (Emiliani 2000). One of the pioneers of online B2B auctions is Freemarkets, which was established in 1995 and launched their online auction site in 1999. To date they have conducted auctions involving more than 19,000 suppliers from more than 70 countries worth \$US30 billion (Freemarkets 2002). In the first quarter of 2000, they conducted auctions involving 47 Fortune 500 buyers and 4000 suppliers (Jan and Wu 2000). Mayne Group, one of Australia's leading companies with major interests in health-care and logistics signed a three-year deal in 2000 with Freemarkets to manage their procurement and operate online auctions. Other major B2B auction facilitators include Ariba, CommerceOne, Andale, Elcom.com and Verticalnet. The B2B auction facilitators usually work with buyers to select bidders to participate in each auction, develop specifications in detail, and tailor the bidding process to the situation. This service is billed to buyers accordingly. There could be additional costs based on a percentage of the anticipated savings (Messmer 2000). Freemarkets (2002) promote the ability of their auction format to decrease services prices by 16-18% and goods by 2-3%. The reverse auction process involves intensive work on behalf of the buyer and market maker to structure the bidding process and prepare suppliers for qualification.

Research Questions

The primary objective of the study was to analyse an Australian example of reverse auction procurement and analyse the outcomes in view of the three organisational players. This will be presented in a case study. More specifically the research question of the paper is what are the business impacts and value propositions of the reverse online auction.

Methodology

Case study research methodology was used as this paper presented an exploratory look at implications of reverse online auctions. Yin

(1994, p.35) emphasises the importance of asking “what” when analysing information systems. Yin goes further and emphasises the need to study contemporary phenomena within real life contexts. Walsham (2000, p.204) supports case study methodology and sees a need for a move away from traditional information systems research methods such as survey toward more interpretative case studies, ethnographies and action research projects. Several works have used case studies (Chan and Roseman, 2001; Lee, 1989; Benbasat et al., 1987) in presenting information systems case-study research. Cavaye (1995) used case study research to analyse inter-organisational systems and the complexity of information systems. The data collection process included examination of existing documentation, content analysis of email, interview of actors and direct observations. The auction event is presented in previous research by Stein & Hawking (2002a, 2002b). In April 2001 AusBuyer commissioned Auction.Com to make a market for the logistics component of their manufacturing activities. The market was broken down into 19 channels both state and nationally based. AusSupplier received notification that a contract that it had partially carried out for three years was to be auctioned on the Internet. AusSupplier started a six-month exploration into online auctions and B2B procurement. Considerable time and financial resources were expended in firstly learning and then secondly participating in the reverse online auction. The four main participants in the auction event were WinningSupplier, AusSupplier, Auction.Com and AusBuyer.

CASE STUDY

Online Auction Case Review

AusSupplier is a micro-business with 2 full time and 5 part time consultants. It is an “infomediary” or in older language a “middleman”. AusSupplier turns over \$AUD10 million and has a small client base. The role of the “infomediary” is to win a contract for packing and exporting commodities into the Asian marketplace. AusSupplier wins a contract from a large manufacturer (AusBuyer) and then negotiates transport and shipping rates. The commodity that was to be auctioned was worth about \$AUD1.6 million per year. Currently AusSupplier was responsible for about 20% of the contract and a major transport company was responsible for the remaining 80%. AusAuction.Com is a multi-national market leading e-Commerce company specialising in e-Procurement and auctions. They have about 1000 employees worldwide and operate for about 140 large multi-national clients. They have conducted about \$US21 billion in auctions resulting in savings of about \$US6 billion. It is obvious when looking at Auction.Com and AusSupplier the difference in size, technology and more importantly the chasm in understanding e-Business. AusBuyer is an Australian manufacturer that is part of a global organisation based in US. The global organisation was undergoing financial strain due to the poor commodities market worldwide. In order to reduce costs AusBuyer turned to Auction.Com to conduct a number of auction events. business AusSupplier.

DISCUSSION

What are the business impacts and value propositions of reverse online auction?

Auction.Com

Auction.com was the big winner by gaining their initial consulting fees for setting up the auction event and gaining a percentage of the savings from AusBuyer. They can also use this auction event to demonstrate their auction technology to other large Australian companies. In the year from the initial auction event Auction.com have conducted 380 (We-b Plenary, 2002) for AusBuyer Australia wide. Clearly Auction.com were able to demonstrate the value proposition to AusBuyer and have moved to providing “in-house” auction sites to other major Australian organisations.

AusBuyer

AusBuyer appeared to be the next big winner with a tangible savings of a 20+% reduction in the cost of the contract. There were mini-

mal switching costs as they awarded the contract to the company who held the majority (80%) of the contract previously. However, from this Auction.com costs need to be subtracted. An intangible benefit was the pre-qualifying process that identified future suitable suppliers. This is again evidenced by the 380 auctions conducted in the following year (We-b Plenary, 2002) and by the view of Auction.com (Auction.Com Director, 2002) when they highlight the improved supplier processes, transparency and fairness for suppliers in participating in the auction process. The pre-qualifying process can be prone to errors when we consider one of the other auction events conducted on the same day when only one supplier was identified and this was the existing contractor. The auction event still went ahead and resulted in a 5% increase in the contract cost. In this case the auction dynamic was missing and therefore no savings were made. AusBuyer can also use the auction event to determine how low different suppliers can go which can be the basis for future negotiations.

Winning Supplier

Another winner appears to be the supplier who won the contract. However prior to the auction they had 80% of the contract at a price of \$AUD1.28 million. They now have the full contract at approximately the same price. Twenty percent more work for minimal extra money. Wyld (2000) reported that reverse auction can bring about many impacts; shift of power from the supplier to buyer, suppliers leveraged into the auction portal, market makers increase competition and strategic alliance forming between the buyer and auction vendor. These are demonstrated in the case study of Stein & Hawking (2002a, 2002b). There was a considerable shift of power from the supplier to buyer as evidenced by the dramatic drop in contract spend and the market makers did increase competition within the marketplace as evidenced by the increase in bidders in the auction format. Additionally suppliers were leveraged into the auction portal, a strategic alliance was formed between the buyer and auction vendor and finally an internal linkage was created between the supply chain and then auction portal. Emiliani & Stec (2002) in their research in the Aeroparts industry pointed out that winning suppliers view online auctions as divisive and often drop out of the bidding process after 2 years. They also see winning suppliers passing on the drop in income to their suppliers thereby setting up a follow-on reaction down the entire supply chain. Supply chains are promising lean and mean business processes that save 15-20% from your cost base, a very attractive value proposition for the buyer.

Losing Supplier

The online auction is based on the premise that the buyer is being overcharged by its current suppliers, and the online reverse auction will achieve the lowest price. However, where does the price reduction come from? The supplier who eventually won the contract has to provide more services for roughly the same amount of money. AusSupplier, the losing supplier, has prided itself on giving a service second to none. Any glitches in the supply of the commodity, any problems in logistics or shipping never presented a problem. In this case AusBuyer may have been under global pressure to drive down prices, but will there be a price to pay when the contract lapses and a premium needs to be paid to bring in another supplier to complete the contract. This scenario occurred three years prior with AusBuyer and another supplier. Auction.Com addressed this issue of service over price (Auction.Com Director, 2002) when they point out that all suppliers believe they offer the best service. The problem with this is in fact only the buyer can judge who offers the best service and secondly the buyer may place a lower premium on service offerings. The reverse auction allows for transparency in all these issues. Emiliani and Stec (2001) believe that the risk of losing current business coerces suppliers to participate in the auction event. They are electronically coerced, watching other bidders in real time compelling them to bid, this was the case with AusSupplier when they went below their previously agreed low bid.

CONCLUSION

Many analysts (Wyld, 2000; Deise et al., 2000) believe that the use

of the internet as a medium for business provides the opportunity for companies to restructure their supply chains in collaboration with the other supply chain partners. One of the imperatives in the e-procurement model proposed by Wyld (2000) was to build strategic alliance between business partners. This involves both buyers and vendors working collaboratively to provide cost efficiencies and add value to products and services. Many believe that this strategic collaboration is essential to survive in the e-world. The premise of the Value Trust Network (VTN) (Raisch, 2001) sees the supply chain being enhanced by the established relationships between buyers and suppliers, not only by the adoption of Internet technology. If reverse auction e-procurement is to enhance enterprise competitiveness then value must be delivered to ease industry pain points (Raisch, 2001; Emiliani, 2002; Jap; 2000) with trust being enhanced between suppliers and buyer. The question needs to be asked to what extent do reverse online auctions contribute to this value and trust? The whole issue of driving costs down to the lowest possible level would provide a serious impediment to any creation of value (Bartholomew, 2001) and trust. The attributes and skills that buyers would like to foster in their suppliers are placed at a lower priority to price. Do companies really want business only run on lowest price? Rapport (1998) believes that a reverse online auction is only a "quick fix" to satisfy management objectives of increased shareholder value. Smeltzer and Carr (2000) after conducting a number of interviews with companies involved in reverse auctions found that buyers were initially attracted to online auctions due to the promise of a reduced purchase price and believed that the suppliers were motivated by an improvement in communication about the market and the opportunity to obtain increased sales. Reverse online auctions appear to be an essential tool for procurement needs. However many of the companies who use online auctions as buyers are reluctant to participate in them when they become a supplier (Manufacturingnews.com, 2001). There is much hype surrounding e-procurement and its associated tools. Many companies are drawn to reverse online auctions as a means of reducing costs, as a 20% margin organisation will render a \$5 saving for every \$1 saved in procurement. However, these companies need to weigh up the initial savings against the possible detrimental impact these auctions could have on their supplier relationships (Emiliani & Stec, 2002). Reverse auctions used to exploit buyer power and not demonstrating win-win will not lead buyers and sellers jointly solve supply chain problems and collaboratively develop new products and services. Auction.Com director pointed to the developing nature of reverse auctions,

Reverse auctions are challenging current processes, but I am finding the buying decisions are more rigorous and fair than previous because of the process and transparency.

Roddy Martin from AMR Research as quoted in Moser (2002) summed up the balance between buyers and suppliers that must exist in reverse auctions,

How can I incorporate content into a reverse auction? How can I get a good price in addition to the service and support I usually get from my regular suppliers?

The long-term use of reverse auctions by AusBuyer seems to indicate that after a short learning process some of the balance between buyers and suppliers has been restored and benefits are being achieved by all participants along the supply chain.

REFERENCES

- Aberdeen, (2001) *Best Practices in e-Procurement*, Aberdeen Group, Boston.
- Auction.Com Director, (2002) *Response To Conference Paper*, Located in email dated Friday, 9th August 2002.
- Bartholomew, D. (2001) "CoSt vs Quality", *Industry Week*, September 2001, pp.34.
- Batson, D. (1999) Going Once, Going Twice.... *Business* 2, 4(5) pp.141.
- Benbasat, I. Et al. (1987) The Case Research Strategy in Studies of Information Systems, *MIS Quarterly*, 11(3) pp. 215-218.
- Bowles, J. (2000) eMarketplaces: How Digital Marketplaces are Shaping the Future of B2B Commerce, *Forbes*, 166(3) s20-s56.
- Buyers.gov, (2001) *The Federal Technology Service Guide to Best Practices for Conducting Reverse Auctions*, Located at www.buyersgov.gsa.gov Accessed December 2000
- Cavaye, A. (1996) Case study research: a multi-faceted approach for IS, *Information Systems Journal*, 6(3) pp. 227-242.
- Chan, R. and Roseman, M. (2001) "Integrating Knowledge into Process Models – A Case Study", Proceedings of the Twelfth Australasian Conference on Information Systems, Southern Cross University, Australia.
- Deise, M. et al. (2000) *Executive's Guide to E-Business from Tactics to Strategy*, PriceWaterhouseCoopers, John Wiley & Sons, New York.
- Diba, A. (2000) The B2B Boom: What's What, *Fortune*, 141(10) pp. 142.
- Emiliani, M. (2000) Business to Business Online Auctions: Key Issues for Purchasing Process Improvement, *Supply Chain Management*, 5(4) pp.176-186.
- Emiliani, M. and Stec, D. (2001) Squaring Online Reverse Auctions With The CAUX Round Table: Principles for Business, *Supply Chain Management*, 5(4).
- Emiliani, M. (2002) Realising savings from online reverse auctions, *Supply Chain Management*, 7(1) pp.12-23.
- Emiliani, M. and Stec, D. (2002) Aerospace Suppliers' Reaction to Online Reverse Auctions, Submitted to *Supply Chain Management*.
- Freemarkets, (2002) *Why Freemarkets*, Located at <http://www.freemarkets.com/benefits/default.asp> Accessed February 2002
- Hersch, W. (2000) *Ebusiness: More Friend Than Foe*, Located at <http://www.cconvergence.com/article/TCM20000728S0002> Accessed February 2002
- Jan, M. and Wu, D. (2000) *Supply Chain Contracting In Electronic Markets: Incentives And Coordination Mechanisms*, Located at <http://web.mit.edu/orc/www/roundtable/DavidWu.pdf> Accessed February 2002.
- Jap, S. (2000) Going, Going Gone, *Harvard Business Review*, November-December 2000, pp.30.
- Kafka, S. et al. (2000) *B2B Auctions Go Beyond Price*, Located at www.Forrester.com Accessed February 2002.
- Lee, A. (1989) Case Studies as Natural Experiments, *Human relations*, 42(2) pp. 117-137.
- McGarvey, R. (2000) From Business: To Business, *Entrepreneur*, 28(6) pp. 96-100.
- Manufacturing News.Com, (2001) *Reverse Auctions are Creating False Savings for Manufacturers*, 8(10) Located at <http://www.manufacturingnews.com/news/01/0531/art1.html> Accessed February 2002
- Messmer, E. (2002) *Defence Dept.'s Online Auctions Spark Controversy*, Located at <http://www.mwfusion.com/news/2000/0807reverse.html> Accessed February 2002.
- Metcalfe, D. et al. (2001) *Achieving B2B Productivity*, Located at www.Forrester.com Accessed February 2002
- Minahan, T. (2001) *Strategic e-Sourcing: A Framework for Negotiating Competitive Advantage*, Aberdeen Group, Located at www.aberdeen.com/ab_company/hottopics/esourcing/ Accessed December 2001.
- Mosar, E. (2002) E-Procurement – Successfully Using and Managing Reverse Auctions, *Pharmaceutical Technology*, April 2002, Located at <http://www.pharmtech.com> Accessed November 2002.
- NSW, (2001) *E-Procurement Framework*, Located at <http://www.cpsc.nsw.gov.au/e-procurement/framework.htm> Accessed December 2001
- Opensite, (1999) *The Web Auction Revolution: The Strategic Importance of Dynamic Pricing for Today's Business*, Located at www.opensite.com Accessed on December 2000
- Queere, A. (2000) Rosky Budness, *Rolling Stone*, March, pp. 91-92.
- Raisch, W. (2001) *The eMarketplace: Strategies for Success in B2B eCommerce*, McGraw Hill, New York, pp. 233-235.

Rapport, A. (1998) *Creating Shareholder Value*, The Free Press, New York.

Regan, K (2001) Is Big Talk a Big Pain for Ecommerce, as located at <http://www.ecommercetimes.com/perl/story/?id=7160> accessed February 2001.

Stein, A & Hawking, P. (2002a) Reverse Auction e-Procurement: A Suppliers Viewpoint *Proceedings of Ausweb02*, Noosa Heads, Queensland, Australia, pp.156.

Stein, A & Hawking, P. (2002b) Online Reverse Auctions: who benefits? *Proceedings of the 13th ACIS*, Melbourne, Australia, pp.768.

Walsham, G. (2000) Globalisation and IT: agenda for research, in *Organisational and Social Perspectives on Information Technology*, Kluwer Academic Publishers, Boston, pp.195-210.

We-b Plenary, (2002) B2B eMarketplaces, *Proceedings of the 3rd International Working for e-Business We-b Conference 2002*, Perth, Australia, November, pp.256.

Wyld, D. (2000) *The Auction Model, The PriceWaterhouseCoopers Endowment for the Business of Government*, The Business of Government.

Yin, R. (1994) *Case Study Research, Design and Methods*, 2nd ed, Newbury Park, Sage publications

0 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage:

www.igi-global.com/proceeding-paper/reverse-auctions-analysis-review/32087

Related Content

On the Suitability of Soft Systems Methodology and the Work System Method in Some Software Project Contexts

Doncho Petkov, Steven Alter, Olga Petkova and Theo Andrew (2013). *International Journal of Information Technologies and Systems Approach* (pp. 22-34).

www.irma-international.org/article/on-the-suitability-of-soft-systems-methodology-and-the-work-system-method-in-some-software-project-contexts/78905

Interactivity in Distance Education and Computer-Aided Learning, With Medical Education Examples

D. John Doyle and Patrick J. Fahy (2018). *Encyclopedia of Information Science and Technology, Fourth Edition* (pp. 5829-5840).

www.irma-international.org/chapter/interactivity-in-distance-education-and-computer-aided-learning-with-medical-education-examples/184284

A Survey of People Localization Techniques Utilizing Mobile Phones

Levent Bayındır (2018). *Encyclopedia of Information Science and Technology, Fourth Edition* (pp. 6286-6295).

www.irma-international.org/chapter/a-survey-of-people-localization-techniques-utilizing-mobile-phones/184326

Detection of Automobile Insurance Fraud Using Feature Selection and Data Mining Techniques

Sharmila Subudhi and Suvasini Panigrahi (2018). *International Journal of Rough Sets and Data Analysis* (pp. 1-20).

www.irma-international.org/article/detection-of-automobile-insurance-fraud-using-feature-selection-and-data-mining-techniques/206874

Experiences in Applying Mixed-Methods Approach in Information Systems Research

Guo Chao, Alex Peng and Fenio Annansingh (2013). *Information Systems Research and Exploring Social Artifacts: Approaches and Methodologies* (pp. 266-293).

www.irma-international.org/chapter/experiences-applying-mixed-methods-approach/70720