Atlantic Marketing Journal

June 2014

Electronic Reverse Auctions (e-RAs): Professional Selling and Purchasing Students' Reflections e-sourcing Principles

Jacqueline A. Williams
North Carolina A&T State University, jacq@ncat.edu

Kathryn Dobie
North Carolina A&T State University, kaydobie@ncat.edu

Follow this and additional works at: https://digitalcommons.kennesaw.edu/amj

⚛ Part of the Marketing Commons

Electronic Reverse Auctions (e-RAs): Professional Selling and Purchasing Students' Reflections e-sourcing Principles

Jacqueline A. Williams, North Carolina A&T State University

jacq@ncat.edu

Kathryn Dobie, North Carolina A&T State University

kaydobie@ncat.edu

Abstract - This article describes an approach for teaching e-sourcing fundamentals to students via business courses that integrates an "off-the-shelf" electronic reverse auction (e-RA) software platform into the curriculum. Purchasing students acting as Buyers are asked to prepare a request for proposal (RFP), post it via a reverse auction portal, and participate in a third-party hosted "live" bidding session where Professional Selling students acting as Suppliers compete for the business. Student reflections highlight key training issues and reactions to participation in the electronic reverse auction exercise. Findings indicate that embedding e-RA technology into existing curriculum raises awareness of e-sourcing processes, builds an understanding of the importance of e-sourcing, creates an active engagement in setting business performance goals, and reinforces the use of business performance measures to analyze decisions and strategies.

Keywords - experiential learning, electronic reverse auctions, professional sales education curriculum, e-sourcing, reflective learning

Relevance to Marketing Educators, Researchers and/or Practitioners – A Business-to-Business project and software platform exposes Undergraduate students to a seamless integration to electronic reverse auction e-sourcing elements (developing and responding to a Request-for-Proposal, planning and executing bids, and interacting face-to-face as an auction follow-up opportunity). For Practitioners, a pipeline of entry-level performance-ready Supply Chain business professionals are available to recruiters.

Introduction

"I never knew people negotiated sales through bids other than e-bay which is for personal selling and buying. Seeing that there was live bidding for business [purposes] really amazed me. I honestly thought that businesses just bought supplies online through a store instead of auctioning with Suppliers." - Charlotte A. Student

Electronic Reverse Auctions (e-RAs) fall into the category of web-based software solutions on the market today that are designed to help companies launch e-sourcing actions immediately (Carter and Stevens 2007). The e-RAs offer Buyers and Suppliers the opportunity to participate in internet sourcing with a minimal investment compared to more robust Enterprise Resource Planning (ERP) systems. Thus e-RAs are a huge and rapidly growing component of both business-to-consumer and business-to-business marketplace interactions and sales (Jap 2002). In this paper we report on an innovative e-RA curriculum initiative that serves as a means of exposing the next generation of Professional Selling and Purchasing Management business professionals to this robust tool.

An Enterprise Resource Planning (ERP) system uses integrated computer-based technology to manage internal and external company resources, including tangible assets, financial resources, materials, and human resources. Its purpose is to facilitate the flow of information between all business functions inside the boundaries of the organization and manage the connections to outside stakeholders using a centralized company database. In contrast, the e-RA tool is a limited web based sourcing platform linking organizations interested in purchasing products (goods and services) with Suppliers/vendors willing to compete for the sales opportunity through an internet based portal. The e-RA tool can be brought off-the-shelf for a nominal fee and therefore, the benefits of the e-RA tool is available to small and large companies alike in that a huge technology investment is not required to take advantage of e-sourcing opportunities.

Given its popularity amongst sourcing practitioners, it is not surprising that e-sourcing protocols like e-RAs are showing up in undergraduate and graduate school curriculum as part of the supply chain framework (Foster and Lin 2005). This paper describes an instructor-led classroom experience for teaching e-sourcing fundamentals to Professional Selling and Purchasing Management business students using an electronic reverse auction platform. The e-RA project is highly participative and hands-on, and it allows students to discover experientially and reflectively many of the principles and implications of e-sourcing. The curriculum initiative is developed for a traditional university undergraduate student population but can work for a graduate classroom and perhaps in a professional training context.

From a Buyer's viewpoint, connecting a company's corporate buying procurement processes to their Supplier base using the internet is a critical technology-based endeavor for the sourcing function of the firm. Likewise from a Supplier's viewpoint, an understanding of how to get connected to a firms' procurement process via technology is rapidly becoming a required competency to compete for customers. Just

as Purchasing Agents can use auctions to increase their Supplier base, Professional Salespeople can regularly check e-marketplaces for new customer opportunities. Yet there are differences in planning and managing the e-RA event for the Buyer's firm versus the Supplier's firm. Thus we integrate this e-sourcing exercise into the marketing curriculum by embedding it into both a Purchasing Management course and a Professional Selling and Sales Management course to capture the Buyers' and the Suppliers' viewpoints of using e-RAs.

The paper is divided into five sections. The first section of the paper provides a brief summary of e-RA technology. Second, we delineate how the implementation decision and preparation processes differ from the Buyer's versus the Supplier's viewpoint. Third, we discuss e-RA event training issues from both perspectives. Fourth, we share student reflections to reveal the issues, concerns, and student learning based on required participation in a live e-RA event. E-sourcing principles discussed include use of the embedded communication processes in "live" auctions, the auction event closing strategies, and the auction event contract awarding options. Fifth and finally, we conclude with a summary of project design recommendations for others who may be interested in developing an e-RA curriculum.

What is e-RA Technology?

"I started off this project not even knowing what a reverse auction was and ended the project by participating in one. I feel more enlightened and more like a part of the business world now that I have participated in a live bidding session." - Tim B. Student

An electronic reverse auction (e-RA), defined by Beall et al. (2003, p.7) is "an online real-time dynamic auction between a Buyer organization and a group of pre-qualified Suppliers who compete against each other to win the business to supply goods or services that have clearly defined specifications for the design, quantity, quality, delivery, and related terms and conditions." FreeMarkets Online, Inc. first introduced reverse auctions in 1995 and this e-sourcing tool has helped to inspire a radical shift in the procurement process.

Electronic reverse auctions (e-RAs) are growing in importance for several reasons. It is a relatively new buying tool that most firms conclude can be applied to many areas of their sourcing categories including capital goods and services with relative ease. The popularity of the e-RA sourcing tool is due in part to its uniqueness amongst the e-sourcing tools along several dimensions – it is highly effective, it is efficient, it is easy to use, and it is a low-cost sourcing solution. For these reasons e-RAs are predicted to be a mainstay of e-sourcing options for both large and small firms.

Since the 1990s, the popularity of e-RAs amongst supply chain professionals from all types and size companies has increased tremendously. Companies using e-RAs report streamlined workflows, enhanced sourcing flexibility, and increased transparency in the Buyer-Seller relationship. In addition, e-RAs are noted to improve the accuracy and availability of information on both the supply and demand side thus

being touted as a low cost, information rich, and interactive process. The availability of this e-sourcing tool is attributed to the open and flexible internet network that serves to equalize the market.

There are many large and small e-RA software providers. Elmaghraby (2007) presents a survey of current industry practices in designing and running auctions as part of e-sourcing events based on interviews with three of the largest auction software providers -- Emptoris, Ariba, and BravoSolution/Verticalnet. Emptoris, Inc. (**www.emptoris.com**) is hailed as the top e-Sourcing suite vendor focusing on supply and contract management software solutions. Ariba, Inc. (**www.ariba.com**) is also a leading provider of collaborative business commerce solutions by combining software technology with the world's largest web-based global trading community. Verticalnet, now BravoSolution, is another international leader in Supply Management solutions delivered through software covering the full supply management lifecycle (**www. BravoSolution.com/Verticalnet**). These larger e-sourcing information system solutions offer products that serve both the Buyer-side sourcing needs and the Supplier-side sales needs.

The oft cited cost-benefit ratio of e-RAs is resulting in an explosion of e-sourcing activity using this tool (Baker et al 2000). Smaller scale e-procurement solutions vendors offer an e-RA tool that can be brought off-the-shelf for a nominal fee. The benefits of the e-RA tool is available to small and large companies alike in that huge technology investments are not a requirement to take advantage of e-sourcing opportunities. Thus e-RAs are a huge and rapidly growing component of both business-to-consumer and business-to-business marketplace interactions and sales.

The e-RA sourcing tool can be used in stand-alone mode without integration into ERP systems or other sourcing systems and is relatively low-cost to install and use. Many e-RAs are hosted by third party providers, called Market Makers, who act as consultants or enablers in terms of a number of the steps for implementing a reverse auction such as Supplier identification, specification writing, or event hosting. Thus companies can integrate e-RAs into their existing sourcing tools, use e-RAs as a stand-alone desktop tool purchase or license, or use e-RAs through a subcontracted third party provider who hosts the events. In the latter two cases, e-RAs can be arranged with a minimal investment in time, money, and effort.

For the classroom application described in this paper, a local reverse auction platform provider, RFQHosting, was utilized given the on-site local support provided for training as well as event hosting. RFQHosting's mission is to utilize e-procurement solutions to build working alliances and create win-win solutions between Buyers (private corporations, public agencies and non-profit organizations) and the Suppliers of their products and services (**www.rfqhosting.com**). RFQHosting forms partnerships with universities as part of their community outreach, in hopes of assisting faculty in training future sourcing professionals and increasing their brand awareness amongst this demographic entering the business work world. Auction hosting solutions like RFQHosting help level the playing field in e-business with small to mid-sized business by offering an efficient mechanism to link Buyers and Suppliers that was previously the domain of the larger e-sourcing platforms.

Buyer/Supplier Implementation Decision and Preparation

In 2002, a comprehensive study of e-RAs was undertaken by CAPS research (Beall et al. 2003) entitled "The Role of Reverse Auctions in Strategic Sourcing" whereby face-to-face and teleconference structured interviews were conducted with firms who were using e-RAs for sourcing goods, with Suppliers who had participated in e-Ra events, with third party providers of e-Ra resources, and with firms who had chosen not to use e-RA tools for sourcing. The report indicates that from a Buyer's perspective, in every case study (firm) visited, the purchasing function was involved in some way with the decision to conduct an e-RA. The purchasing function was also responsible for preparing the e-RA with input from engineering and/or the internal customer. In contrast, for the Supplier firms' interviewed, the sales and marketing function had sole discretion for making the decision to participate in e-RAs and for the majority of the firms the corporate sales policy was to participate in e-RAs rather than decline to participate. The marketing and sales functions were involved in the preparation of the e-RAs in all of the interviewed Supplier firms. The preparation process involved other functional areas like engineering, finance, accounting, and production but the key units responsible were Purchasing Agents and the Professional Salespeople as we mirrored by developing a project to include both the Purchasing Management course and the Professional Selling course.

From a Buyers perspective there are four key steps to prepare for the e-RA event that was simulated in the Business School curriculum. First, Buyers must clearly define specifications for the bid items (goods or services) that are universally understood by the supply base and distribute these specifications to qualified Suppliers. Second, Buyers must understand the unique characteristics of the bid item's supply market structure (degree of competitiveness and key cost drivers) in order to set an appropriate bid price range. Third, Buyers must specify the auction event format such as what will be revealed during the bid window to the Suppliers (price or rank) as well as closing rules (hard close or soft close), participation rules (bird-watching/observing and off-line communications), and award rules (low price guaranteed the business, post negotiations, or no award guarantees). Bird-watching is a term used for non-participation by Suppliers during an active auction. Buyers can specify that a Supplier place a minimum number of bids during an e-RA in order to continue to view the unfolding results of the auction. Fourth, Buyers must identify and invite qualified Suppliers who are willing to participate in the auction event.

From a Suppliers perspective there are four parallel steps to prepare for the e-RA event. First, Suppliers like Buyers must clearly understand the specifications for the bid items (goods or services). Second, Suppliers must understand the unique characteristics of the bid item's competitive market structure and profitability structure in order to estimate an appropriate bid price range. Third, Suppliers must prepare according to the auction event format such as what will be revealed during the bid window to the Suppliers (price or rank) as well as closing rules (hard close or soft close), participation rules (bird-watching/observing and off-line communications), and award rules (low price guaranteed the business, post negotiations, or no award guarantees). Fourth, Suppliers must identify and analyze competitor strategies that

may be used by those invited and willing to participate in the auction event.

Buyer/Supplier Bid Item(s) and Market Structure

The above mentioned steps for implementation and preparation are simulated in the curriculum through various learning activities. In the Business School curriculum the Purchasing Management course emphasizes the importance of the procurement function for efficient operations, product quality, and supply chain integration. The issues of Supplier selection, performance measurement and relationship development/management, and their impact on the firm and fulfillment of customer expectations are emphasized. The Professional Selling course focuses on the functions and skills surrounding the personal selling effort such as developing persuasive communication skills in a Buyer- Seller context. Thus students in both courses are assigned independent research and reading assignments to be completed early in the semester and to serve as preparation for a "live" bidding session. The classroom instructors select the industry and provide the parameters of the products and services to be open for bid (see Appendix 1).

As Shoenherr and Mabert (2007) case studies found, nothing is exempt from reverse auctions. Events can be done for direct material such as assembly components, computers, electrical devices; events can be prepared for indirect material such as third party logistics, fleet vehicles, freight; and events can be scheduled for services such as third-party repairs and legal services. For the curriculum initiative, the Purchasing class is required to prepare an RFQ (Request for Quote) for respirators to be used in an auto painting facility. The Purchasing students were required to post the RFQ and invite selected Suppliers (Professional Selling students) via the RFQHosting software/system. The Professional Selling students are required to bid for the contract to supply respirators as specified. Guest speakers (practitioners) familiar with the market for safety products presented to both classes and a case-study was assigned to further students' understanding of this product category.

The preparation instructions for the project are close to identical in each class with the exception that the Buyers determine the specifications (and share them with the Suppliers via a formal Request for Proposal). Lecture and discussion are used to present basic terminology and concepts. Guest lecturers (practitioners) discuss e-sourcing in general and reverse auctions in particular. Independent research papers were assigned to build students' foundational knowledge. A short independent research paper (a three page report) requires students to distinguish the differences between types of sourcing requests: a request for quotes (RFQ), a request for a proposal (RFP), a request for information (RFI), and a sealed bid.

The use of appropriate well-written RFPs is crucial to communicating clear specifications to qualified Suppliers. An RFI is a screening device designed to obtain an overview of a Suppliers' capabilities and financial health. RFPs unlike RFIs may be specific enough to decide if the Supplier is qualified to be invited to the e-RA. RFPs asks a Supplier to articulate how it would respond to a specific need. The RFQ is even more specific than a RFP and ask the Supplier to quote a price based upon detailed requirements, terms, and conditions of delivery, quality, payment terms, warranty,

and any other important specifications. As noted in the CAPS study (see Beall et al. 2003), "meticulous preparation is required by the buying firm to clearly specify requirements and by their Supplier to identify its costs, desired margins, and open capacity should they be awarded the business" (p. 46).

An independent research paper assigned to both Purchasing and Professional Selling students familiarizes them with evaluation criteria for Suppliers. The objective of this longer (ten page) research paper is to have students gain a thorough understanding of the product to be auctioned by delineating specifications of the selected good to be auctioned. Students complete a competitive analysis of three potential Suppliers for the good and evaluate Suppliers criteria using several methods -- the categorical method, the cost-ratio method, and the linear averaging method. A website analysis of the competitor/Supplier firms is also required.

Buyer/Supplier Hands-on Training Needs

Schoenherr and Mabert (2007) as well as Beall et al. (2003) CAPS research report indicates that training is a key enabler for the successful implementation of e-RAs. This includes training for both participating Suppliers and the Buyers who conduct the e-RAs. At one buying organization interviewed for the CAPS study, over 300 individuals have each received over 13 hours of training in the use of e-RAs. Buyers must be sufficiently trained in setting bid parameters and Suppliers must be sufficiently trained in making bid entries. Hands-on training using "mock" auctions has increased the adoption rate of e-RAs and removed most of Buyers and Suppliers resistance to their use.
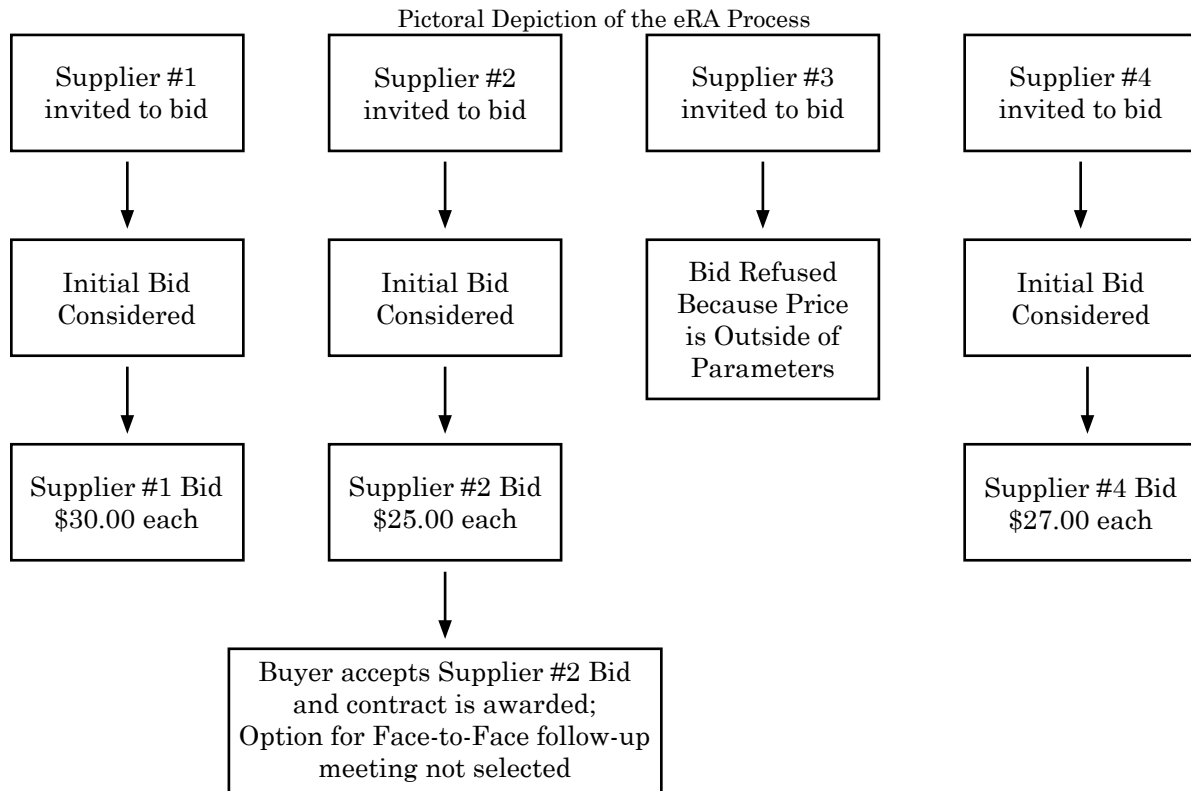
Reverse auction classroom training was facilitated using several venues. A conceptual overview of reverse auctions was presented early in the semester in a lecture-discussion format to a combined Professional Selling and Purchasing class – via a guest speaker presentation with Q&A's by a top executive from RFQHosting. After students complete independent research and readings about reverse auctions during the semester, they access and complete the RFQHosting on-line tutorial. The online tutorial was assigned prior to hands-on computer training offered by the software manufacturer. Both the Purchasing and Professional Selling students were provided the hands-on training at the same time and day but the training was held in different computer labs to simulate the physical separation of Buyers and Sellers during the bidding session. Buyers must be sufficiently trained in setting bid parameters and Suppliers must be sufficiently trained in making bid entries. During the hands-on training a "mock" bid event was set-up and implemented.

A trainer from RFQHosting was responsible for assigning students "g-mail" accounts to log into the system (whereas in "real/practitioner" auction situations the Supplier and Buyer uses their own email accounts). During the first trial of the RFQHosting software, students were asked to use their University accounts (which proved problematic due to "filled" student email inboxes) as the software username and then the students were subsequently emailed a password that could be modified after the first system login. We allowed two weeks for this administrative process and found that some student accounts were not available due to mailbox capacity

issues. Therefore, we modified the process to use preset "g-mail" accounts to set up student usernames and passwords. These accounts were generated by the staff of RFQHosting. At the conclusion of the semester, RFQHosting resets these accounts by changing the passwords. A pictorial representation of the reverse auction (Figure 1) is provided as a handout during the training session.

Figure 1
Pictoral Depiction of the eRA Process

```
┌──────────────┐   ┌──────────────┐   ┌──────────────┐   ┌──────────────┐
│ Supplier #1  │   │ Supplier #2  │   │ Supplier #3  │   │ Supplier #4  │
│ invited to bid│  │ invited to bid│  │ invited to bid│  │ invited to bid│
└──────────────┘   └──────────────┘   └──────────────┘   └──────────────┘
        │                  │                  │                  │
        ▼                  ▼                  ▼                  ▼
┌──────────────┐   ┌──────────────┐   ┌──────────────┐   ┌──────────────┐
│ Initial Bid  │   │ Initial Bid  │   │ Bid Refused  │   │ Initial Bid  │
│ Considered   │   │ Considered   │   │ Because Price│   │ Considered   │
│              │   │              │   │ is Outside of│   │              │
│              │   │              │   │ Parameters   │   │              │
└──────────────┘   └──────────────┘   └──────────────┘   └──────────────┘
        │                  │                                     │
        ▼                  ▼                                     ▼
┌──────────────┐   ┌──────────────┐                     ┌──────────────┐
│ Supplier #1  │   │ Supplier #2  │                     │ Supplier #4  │
│ Bid $30.00   │   │ Bid $25.00   │                     │ Bid $27.00   │
│ each         │   │ each         │                     │ each         │
└──────────────┘   └──────────────┘                     └──────────────┘
                           │
                           ▼
              ┌────────────────────────────┐
              │ Buyer accepts Supplier #2  │
              │ Bid and contract is        │
              │ awarded; Option for        │
              │ Face-to-Face follow-up     │
              │ meeting not selected       │
              └────────────────────────────┘
```

During the hands-on training, it was emphasized that unlike auctions where Buyers raise their purchasing prices to outbid another Buyer, reverse auctions allow Buyers to purchase goods or services from the Supplier that will sell for the lowest price. Thus, an e-RA unfolds as follows: A Buyer (or auctioneer) posts a request for proposal (RFP) describing the product (goods or services) specifications, and subsequently Suppliers prepare a bid package describing their capabilities and bid prices. When the auction is complete, the Buyer evaluates the received bids and selects a winner. The selected Supplier provides the product (goods or services) as described and the Buyer pays the agreed-upon amount.

Students were made aware of the error checking programming that help to eliminate mistakes. The error checking parameters can be set by the Buyer or the enabler. Auction event format rules are set by the initiator of the event, or their enabler, such as what will be revealed during the bid window to the Suppliers (price by bidder or rank of bidder). Other parameters that provide the auction event structure are reviewed during the training such as closing rules (hard close or soft close), participation rules (bird-watching/observing and off-line communications),

and award rules (low price guaranteed the business, post negotiations, or no award guarantees). Closing parameters set by the Buyer can limit (hard close) or extend the bid time (soft close). Soft close rules include establishing unlimited or a specific number of extensions if there is activity within the last two to three minutes or targeting specific bidders (for example allowing the lowest three bidders to continue if they have activity near the end time).

For "live" communication, most e-RA platforms allow Suppliers and Buyers to send instant messages and to upload files. Bird-watching is a term used for non-participation by Suppliers during an active auction. Buyers can specify that a Supplier place a minimum number of bids during an e-RA in order to continue to view the unfolding results of the auction.   Once the bid session is closed the award rules are followed as initially communicated and may or may not include scheduling a face-to-face meeting before awarding the final contract.

For the e-RA curricula initiative a standard bid window of thirty minutes was set. Every student participated in a trial run (bid event). Groups of students (1 Buyer and 3 Suppliers) were scheduled to participate in the trial auction (and subsequently the "live" bid round) as dictated by the number of computers available in two different computer rooms (physically separating the sales and purchasing students).

Student Reflections on the Reverse Auction Event

As part of the course requirements, at the end of the semester students submit a portfolio containing their research papers, guest speaker reports, auction preparation worksheets, and a written reflection on the "live" auction results and on the exercise as a whole. In this section we provide a sampling of student reflections on the e-RA exercise to illustrate the achievement of stage 6, Critical/Intensive Reflection on key training issues and learning goals. A total of 40 students participated in the e-RA exercise. The ratio of Professional Selling to Purchasing students was 3:1. This ratio was effective for structuring the reverse auction bidding since it allowed each of the students role-playing as a "Purchasing Agent" to have the opportunity to interact with three students role-playing as a "Supplier" (therefore, giving the Purchasing students (Buyers) a choice in selecting a Supplier) and providing the Professional Selling students with a simulated competitive environment. Students were allowed to participate in the bidding process two times. This allowed for a chance to improve on one's experience and to try new strategies.

Charlotte's quote (used as part of the introduction of this research) taken from her reflection is used as the introduction to this paper because it concisely shows the lack of awareness regarding e-sourcing processes found amongst the undergraduate students taking the courses. As quoted, Charlotte admits that she was familiar with "e-bay" and thought businesses "just bought supplies online through a store" unaware of the use of auctions by businesses as a sourcing strategy.   Similarly, Tim's quote is used to introduce the section of this paper entitled "what is e-sourcing technology." Tim's reflection indicates how he progresses from no real understanding of what a reverse auction is to feeling "more enlightened" and "more like a part of the business world" after participating in a live bidding session. Cathy's appraisal of her reverse

auction perceptions, noted below bluntly critiques her assumptions about auctions "as a dull and boring" activity that are transformed through her active engagement in learning to a viewpoint of auctions as a "useful" activity.

> *"The concept of bidding [seemed to be] a dull and boring practice to me, but when I began to engage in the bidding sessions I gained a better perspective of it as a whole. In the beginning understanding the process of how and when bidding should be used was just something that did not grab my attention so it was pretty hard to really sit and take in all the necessary information. After the reverse auction speaker presented… the actual hands on opportunity presented itself. Getting the opportunity to actually interact with the reverse auction website and interact with my purchasing peer helped it all come together. This activity demonstrated just how useful online biding can be." - Cathy C. Student*

Peltier, Hay and Drago (2005, 2006) present a model of reflective learning depicting the reflective learning continuum that spans six stages hierarchically leading to the deep integration of new information. The first stage called habitual action is the least thoughtful stage where reflective learning is replaced by routinized action such as rote memorizations. The second and third stages are referred to as Understanding with the first level of understanding (Basic Understanding) relating to learning concepts and the second level of understanding (Deep Processing) relating to application of those concepts.

Understanding requires more active engagement than habitual action but the learner comprehends within preexisting perspectives and thus is still characterized as non-reflective learning. Whereas the fourth and fifth stages represent reflection, a higher order processing component where one moves beyond comprehension of material to an active engagement in learning (questioning what is learnt, evoking previous knowledge and experience, and searching for alternative explanations) to achieve the fourth stage of Deep Understanding. Furthermore, one appraises their experiences, identifies new solutions to problems, improves on past actions, and thinks about the wider implications of their experience when at the stage five level call Reflection. The sixth and final stage of Critical/Intensive Reflection represents a move from questioning assumption and viewpoints to changing conceptual meanings, altering interpersonal perspectives and modifying future behaviors.

There are a number of criteria that students can use to assess their bid performance. Students can demonstrate an understanding of principles related to bid price and the critical need to submit a profitable bid. Students must be cognizant of the bid price range that they are willing to submit (the maximum and minimum price). The bid price submitted should reflect the concept of profitability and/or profit margin. In addition, students can set goals and be prepared to submit more than a single bid.

> *"The overall project has been a tremendous learning experience for me…*
> *Before going into the auction I set my visionary price at $40 and my*

minimum price at $19. I did not want to go below $19 because I knew that the [product] can be sold for $25. Although winning the bid was an important aspect, I knew that I still needed to make a profit. During the bid I was able to bid at least 4 times. My final bid was for $20.50, which was the lowest and I won the bidding session." - Matthew D. Student

Although Matthew (above) uses both the number of bids and the bid price to process his success at engaging in the auction, Erin (below) uses another indicator of bid price quality – her profit margin.

"When starting the bidding I knew that my primary objective was to win the auction against my competitors with a lower bid while providing the necessary equipment that my Buyer was looking for... After the bidding was complete I did under bid my competitor but at a price that I felt was too low. I even guaranteed my purchaser a lifetime warranty on all of the [products] to ensure her that our products were of high quality. I felt that everything I included was an awesome deal and that I should have marked my price up a little higher to ensure that I would gain at least a 20% profit margin." – Erin E. Student

Both Mathew and Erin demonstrate the sixth and final stage of Critical/ Intensive Reflection represents a move from questioning assumption and viewpoints to changing conceptual meanings, altering interpersonal perspectives and modifying future behaviors.

Student Reflections on Buyer-Supplier "live" Communication

"I went into the bidding not knowing exactly what I was doing. My bids were $9000, $8400, $4500, $2400, and $2100. I offered free training for all their employees and provided kits (additional items) at a rate of $10 for every two kits bought. I also sent an IM [instant message] telling the Buyer that my product was durable and would last long... The bidding was over by the time I thought about what else I could offer." – Amanda F. Student

Ad hoc communication functionality (called messaging) exists in most e-RA systems. Most software allows both Buyers and Suppliers to send messages or upload files during the event. Both Buyers and Suppliers can elect to communicate during the bid process. Buyers can broadcast to all bidders or target a specific bidder. A broadcast message can inform all bidders of a common issue that needs to be addressed. A targeted message can ask the Supplier a question or notify a bidder if the rules are not being followed. Questions and misinterpretations that may arise during the event can be dealt with in a fashion that allows full transparency and minimizes the perception of ethical improprieties. As indicated in Amanda's reflection (above) and Alice's reflection (below), students were generally able to successfully manipulate the

communication technologies embedded in the auction platform.

> *"My goals before the auction began were to bid at least five times, send attachments of the additional items offered, and establish some type of communication through the instant message feature. I set the visionary price at $30 and I would only allow myself to go as low as $19... I am proud to say that I believe that I accomplished all of my goals that I established before the auction began. In both [auctions] I was able to bid more than five times. I was able to share all of my attachments and I did not go over or under my limitation on price. I was able to establish communication using the instant messenger tool. I think the auction was the highlight of the course because I came prepared and I set achievable goals beforehand."* - Alice G. Student

Student Reflections on Auction Closing Strategies

Closing strategies refer to the rules for ending an e-RA event. Beall et al. (2003) CAPS research findings indicate that an e-RAs bidding activity fluctuates over the course of the bid window. Initially bidding is moderate, slows midway through, and ends at a frenzied pace due to the high activity level often occurring near the scheduled stop time. This "bidding frenzy" also leads to some bidders submitting unprofitable bids. The Buyer can limit or extend the bid time, establishing unlimited or a specific number of extensions if there is activity within the last two to three minutes. Other closing extensions can be targeted to specific bidders (for example allowing the lowest three bidders to continue if they have activity near the end time). Third party providers often will make available a help-desk so that technical assistance can be available to Suppliers during the auction event.

> *"The reverse bidding auction was pretty interesting to participate in. In the online bidding I decided to start the bidding off really high at $100 per kit but I had the intention to sell the product the whole time at $75 per kit. My competitor would just offer the product a dollar cheaper every time I made a lower bid. My intention was to submit the final offer within the last minute so my competition could not see my offer and respond to the bid... I wanted the Buyer to feel like they were receiving a great drop in price so they can be more motivated to contract with [me]."* - Charles H. Student

As indicated by Charles, students must understand the need to monitor the bid window (start and end time) and competitors bid actions during the event. Charles' comments are illustrative of the critical/intensive reflection where altering internal perspectives and modifying future behaviors are noted.

> *"Going into the bidding I determined that I would not bid below $35.00 in order to meet overhead costs and make a profit off of the sale. In the*

online auction I made the first bid of $13,000 for 100 units. I picked this because I wanted to start off as high as I could. My competitor then made a bid of $4,000. This surprised me because he dropped so low so quickly and I was not expecting that. I decided to bid $3,500 for 100 units after seeing my competitors bid. I began to reevaluate my minimum bidding price of $35.00 per unit because my competitor was dropping his prices so fast and so low and I wanted to stay in the competition. My competitor came back and offered a bid of $3,390 for 100 units. Against my best interest and with my competitive spirit overtaking me I lowered my bid to $3,025 for 100 units and added in free training and free shipping. $3,020 was my competitors bid and at the last minute I lowered my bid to $2,845 and the bid closed before he could bid any lower. I was not very happy with [my] price because it was much lower that what I initially went into the bidding process saying I would bid. I definitely let the competitive aspect of selling get in the way of the financial and economic interest of selling. If I had a chance to do this process again I would make sure to stand my ground on my minimum selling price because selling for too low can really destroy a business's financial situation." - Taylor I. Student

Generally a domestic auction is set to run form 30 minutes to one hour where a global auction is set to run from one to two hours. For the classroom exercise, students had a bid window of thirty minutes and several groups of students are scheduled over a two hour block of time as dictated by the number of computers available in two different computer rooms (physically separating the Professional Selling and Purchasing students). As reported in the reflections, several students were victims of the "bidding frenzy" phenomena.

Student Reflections on Auction Award Strategies

Once the bid session is closed the award rules are followed as initially communicated. The major award options fall into four general outcomes: 1) award business to one or more bidding Suppliers based only on lowest price; 2) award business to one or more bidders that may or may not have been the low-price bidder(s), after considering non-price variables (quality, delivery, switching costs, etc.); 3) award business to one or more bidders only after conducting post-e-RA negotiation session(s) with selected bidder(s); and 4) decide not to award the business to any bidders if pre-e-RA conditions or post-e-RA evaluation and/or negotiations are not satisfactory.

"Honestly, the bidding that took place with the [Buyer] and myself did not go too well for me. It was the first time running through the actual bids and having an understanding of what was going on… I bid significantly lower than the profit margin. My last bid was $19.75 which was gladly accepted by [the Buyer] who more than likely knew that the average price for a single [product] is roughly $25.00." - Jackson J. Student

---

Student reflections, like the above mentioned quote from Jackson, indicate an understanding of having to live with and honor the price bid. Several students acknowledged that they "lost money" or made "unprofitable bids" and expressed regret for the final bids submitted. For the business school curricula we chose to integrate the e-sourcing experience with traditional face-to-face practices by mandating a post-bid meeting (Battier, Huang, and Schwarz, 2007) – option 3 of the award strategies. Specifically, through lecture and discussion students gained an understanding of the real-world issues related to how to get invited to bid and what to do after the bidding process closes. The face-to-face meetings were used to demonstrate how to conduct professional bid follow-up (what to do and what not to do) and to reinforce that the interpersonal interaction remains a valid option as part of the award process.

> *"As a result of the live bid my purchasing agent was satisfied with what our final price would be and was more than willing to meet face-to-face to engage in the furthering of the respirator package that was being offered. Due to my lack of experience in the selling field this process was a bit more difficult for me. After the online bidding process I became comfortable with not having to be face-to-face. With that said on the day of the face-to-face meeting I was not prepared. Being scared is not the worst feeling in the world but being unprepared is." - Jasmine K. Student*

Recommendation for e-RA Curriculum Development

> *"Overall, I felt that the auction process could have been longer. I loved the experience because it gave me an example of some of the things I will be doing this summer pertaining to my job when trading commodities. I love the back and forth competitiveness that was displayed between me and my competitors. I also felt that I should have been more prepared with documents to show the Buyer; but I will have them in my next one."*
> *-Brandon L. Student*

Implementing an e-RA initiative requires strategy on the part of both the buying firm and the supplying firm. In this paper we address the training issues that exist for both groups through a curricula initiative for business school undergraduate students. The two courses incorporating the reverse auction negotiation are undergraduate level courses offered to juniors and seniors as business school electives for a variety of academic majors. In our business school curriculum the Purchasing Management course emphasizes the importance of the procurement function for efficient operations, product quality, and supply chain integration. The issues of Supplier selection, performance measurement and relationship development/management, and their impact on the firm and fulfillment of customer expectations are emphasized. The Professional Selling course focuses on the functions and skills surrounding the personal selling effort such as developing persuasive communication skills in a Buyer- Seller context.

"This has been the most time consuming project I have done thus far, but it may be the only one where I have truly learned something… doing this e-business and professional selling function project taught me most of the material for this course. At first I could not believe I would be doing such an extensive project, but it was not bad at all. The various assignments helped me to better understand buying and selling." - Charles M. Student

This project fits into the overall Business School curriculum as an assignment that can be embedded in the academic major course electives ranging from upper level foundational courses such as a basic marketing course to the capstone courses in marketing, management, and/or supply chain. The project can be used in a single course where students are assigned as either Buyers or Suppliers or the project can be assigned across courses as detailed in this paper. If the e-RA negotiation project is assigned in two courses, optimally the courses should be scheduled at the same time and day during the semester.

Given that e-sourcing is an applied science that is becoming more and more central to business strategy, the integration of a technology based e-sourcing project across two applied disciplines adds realism to the course work as well as an active learning opportunity. Having only one set of students would simplify some aspects of the learning design yet limit some of the realism of the Buyer-Seller dyad, and subsequently some of the effectiveness of the learning. Students can be involved in the project more than once and gain deeper insight into the overall negotiation process by having the opportunity to role practice in the opposite function.

There are many methods of business performance training. In contrast to textbooks, lectures, and case studies that represent forms of solitary training, the use of an experiential electronic reverse auction project can provide a form of reality training in which students demonstrate their business skills under the watchful eye of a training coach. This article advocates the use of a "hands-on" reverse auction project and software platform to foster personal transformations of future Professional Sales Representatives and Purchasing Managers. Students gain exposure to a seamless integration of the functional elements of electronic reverse auctions such as developing and responding to a Request-for-Proposal, planning and executing bids via an electronic reverse auction platform, and interacting face-to-face as a mandatory follow-up opportunity post the virtual interaction. The Students' required reflections assignments on their learning experiences and performance outcomes confirmed their heightened awareness and understanding of the role of electronic reverse auctions in Buyer-Supplier collaboration. The value of this multi-method learning environment for Practitioners is the development of a pipeline of the next generation performance ready entry-level Business professionals.

In conclusion, student reflections indicate an increase in understanding of the theoretical and practical issues associated with the use of reverse auctions. In addition, students indicated that the course experience was positive and will be useful as they become practicing professionals in today's e-commerce environment. These results support our position that as e-sourcing technology finds its way into

the classroom, paralleling its use in the corporate environment, the opportunity to enhance the educational experience and "job readiness" of university students creates a win-win situation for educators and practitioners.

References

Baker Hugh, Cade Scott J. Oudijk Monique, Ramachandran C. V., Roth Jim, Schwarting Detlef, , and Van Leeuwen John (2000) *E-sourcing: 21st Century Purchasing*, Booz-Allen & Hamilton Inc. www.boozallen.com/media/file/80568.pdf.

Beall Stewart, Carter Craig C., Carter Phillip L., TGermer Thomas, Hendrick Thomas, Jap Sandy, Kaufmann Lutz, Maciejewski Debbie, Monczka Robert, and Petersen Ken (2003) *The Role of Reverse Auctions in Strategic Sourcing,* CAPS Research, Tempe, AZ. www.capsresearch.org/publications/pdfs-public/beall2003es.pdf.

Carter Craig R. and Stevens Cynthia Kay (2007) *Electronic reverse auction configuration and its impact on Buyer price and Supplier perceptions of opportunism: A laboratory experiment*, Journal of Operations Management 25: 1035-1054.

Elmaghraby Wedad (2007) *Auctions within E-Sourcing Events,* Production and Operations Management 16 (4): 409-422.

Foster Jonathan and Lin Angela (2005) *Developing Expertise in E-Commerce: A Content Analysis of Students' Knowledge of Online Auction*, Journal of Information Systems Education 16 (1): 85-91.

Gattiker Thomas F., Huang Xiawen, and Schwarz Joshua L. (2007) *Negotiation, email, and Internet Reverse Auctions; How sourcing mechanisms deployed affect Suppliers' trust*, Journal of Operations Management 25: 184-202.

Hawkins, Timothy G., Randall Wesley S., and Wittman C. Michael (2009) *An Empirical Examination of Reverse Auction Appropriateness in B2B Source Selection,* Journal of Supply Chain Management 45 (4): 55-71.

Jap, Sandy D. (2002) *Online Reverse Auctions: Issues, Themes, and Prospects for the Future,* Journal of the Academy of Marketing Science 30 (4): 506-525.

Kaufmann, Lutz and Carter Craig R. (2004) *Deciding on the Mode of Negotiation: To Auction or not to Auction Electronically,* Journal of Supply Chain Management, 40 (2): 15-26.

Peltier, James W., Hay Amanda, and Drago William (2005) *The Reflective Learning Continuum: Reflecting on Reflection" Journal of Marketing Education,* 27 (3): 250-263.

Peltier, James W., Hay Amanda, and Drago William (2006) *Reflecting on Reflection: Scale Extension and a Comparison of Undergraduate Business Students in the United States and the United Kingdom,* Journal of Marketing Education 28 (1): 5-16.

Schoenherr, Tobias and Mabert Vincent A. (2007) *Online reverse auctions: Common myths versus evolving reality*, Business Horizons 50: 373-384.

Acknowledgements

Appendix 1
Buyer and Supplier Reverse Auction Role Descriptions

Purchasing Agent (Buyer) Reverse Auctions Role

You are a Purchasing Director for all Maaco auto paint and repair specialist franchises. You have been with the company for five years. In your role as the Buyer it is important to be familiar with the companies that sell respirators in general, and especially those similar to the 3M "7500" respirators that you are sure will meet your needs.

You have decided to develop a RFQ for respirators and will host a reverse auction using the third-party enabler RFQhosting. You will provide details of your needs in a formal bid requiring each bidder will submit the price per technician when responding to the RFQ. Your research has uncovered some standard parameters for companies like yours listed below regarding the respirators product:

> # of respirators needed = 100 (1 per technician)
> Budget for respirator carrying case = $10.00 per technician
> Budget for training = $10.00 per technician
> Budget for profit margin to Supplier 20%

Sales Rep (Supplier) Reverse Auction Role

You are a Sales Representative for a Safety Products Distributor specializing in brand-name respirators like those manufactured by the 3M Company, North products, and MSA products. You have been a sales rep for five years.

In your role as the sales rep it is important to be familiar with several companies' safety products especially those similar to the 3M "7500" respirators since this is the industry gold standard for respirators and other safety products. You have decided to respond to an RFQ for respirators that will assess bids via a reverse auction using a third-party enabler -- called RFQhosting. The Purchasing Director buys for all Maaco auto paint and repair specialist franchises. The RFP specifies that each bidder will submit the price per technician when responding to the RFQ. Your research has uncovered some standard industry parameters for customers like Maaco listed below:

> # of respirators needed = 100 (1 per technician)
> Budget for respirator carrying case = $10.00 per technician
> Budget for training = $10.00 per technician
> Budget for profit margin to Suppliers 20%