

2007 Innovations Awards Program APPLICATION

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ID # (assigned by CSG): 07-S-17OKELECTRONICTRADING

Please provide the following information, adding space as necessary:

State: Oklahoma

Assign Program Category (applicant): Government Operations - Revenue

1) Program Name: Oklahoma State Treasurer's Electronic Trading System

2) Administering Agency: Oklahoma State Treasurer's Office (OST) and OK.gov

3) Contact Person: Sue MacHugh, Oklahoma State Treasurer's Office Chief Finance Officer and Diana Woods, Marketing Coordinator for OK.gov

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7) E-mail Address: sue.machugh@treasurer.ok.gov or diana.woods@www.ok.gov

8) Web site Address: <http://www.ok.gov/ostbid/>

9) Please provide a two-sentence description of the program.

The Oklahoma State Treasurer's Electronic Trading System is a Web-based application where the Oklahoma State Treasurer's (OST) office conducts real-time, electronic trading on state investments. At this time, the application allows OST to buy and sell Treasury Notes and Treasury Bills.

10) How long has this program been operational (month and year)?

The system was launched in March 2006.

11) Why was the program created? What problem[s] or issue[s] was it designed to address?

The system was built to increase competition, provide for a non-editable auditing trail and eliminate mounds of paperwork, all of which was not available with the traditional methods of conducting trades. OST traditionally conducted trades by phone with a maximum participation of three brokers. Prior to the system, the process could take over half an hour to conduct one trade session. With the new Electronic Trading System, OST can receive quotes from all authorized financial institutions at one time, thus increasing the competition and providing the state with the opportunity to earn the highest returns on its investments.

This system also allows brokers to know immediately if they have not submitted the best quote. During the trade session, a broker's recent quotes are displayed at the top of their screen in chronological order. If they have a current best quote, it is highlighted in blue.

With a built-in automatic refresh function for both brokers and the Investment Officer, quotes are updated every two seconds with new entries in winning order; thus, creating increased competition.

12) Describe the specific activities and operations of the program in chronological order.

Features of the Treasurer's Electronic Trading System include:

- System security features such as SSL encryption and password protection.
- Report generating capabilities for auditing purposes.
- Ongoing display of the current time synchronized with Bloomberg® time.
- Screen display refreshes constantly providing up-to-the-second status of trading session.

Navigation:

With its simple design, the OK.gov state agency template was implemented into the application, providing for a consistent header, footer and left navigation throughout the entire application for all users. Upon initial visit of the site, all visitors view the following options in the left navigation menu:

- Login and Password entry fields
- Forgot Password utility
- Main Menu link (active after login)
- Search Historical Trade Information link (active after login)
- Contact Information link
- User's Guide link (active after login)
- FAQs link

The Process of a Trade:

The OST Electronic Trading Process utilizes a consistent flow for user friendly transactions amongst all users, utilizing the same template. The process of a trade is as follows:

- Investment Officer creates a trade session by completing a session setup form. The Investment Officer may set the session to run for 5 or 10 minutes.
- After the Investment Officer creates a session, an email notification is sent out to all brokers.
- Participating brokers then log in to the upcoming session.
- Investment Officer activates the trade session.
- Once the session begins, the brokers submit quotes utilizing one of two options: 1) fraction or 2) decimal. The system will convert the fraction to decimal.
- Broker confirms quote.
- Quotes are displayed at the top of the broker's screen in chronological order. If they have a current best quote, it is highlighted in blue.
- The Investment Officer's screen displays the incoming quotes from the brokers. The best quote is highlighted in blue.
- For compliance purposes, the Investment Officer screen only displays a Unique Login ID for each broker, ensuring anonymity. Each broker is assigned a Unique Login ID per session.

- The built in automatic refresh function, updates the quotes every 2 seconds. Once a session has expired, the Investment Officer may accept the best quote, or decline all quotes.
- If the Investment Officer accepts the best quote, that broker will receive an acceptance notification and has 60 seconds to confirm or deny their quote.
- Upon acceptance, the broker with the best quote receives a notification screen congratulating them on having the best quote. All other participating brokers receive a notification informing them they did not have a winning quote and what the winning quote was.
- The ability of the application to generate reports is available to all users, allowing them to search previous trading sessions and review details of the session including the winning quote and what institution the quote was submitted by; as well as, other non-winning quotes and their respective institutions. The requested report appears with a "Printer Friendly" version and a "Downloadable CSV" version of the report.

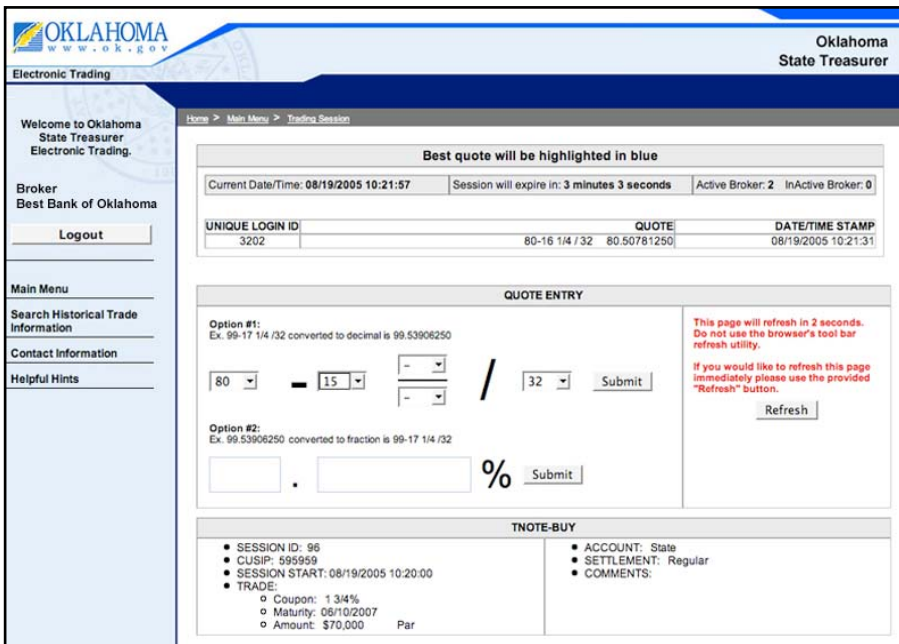
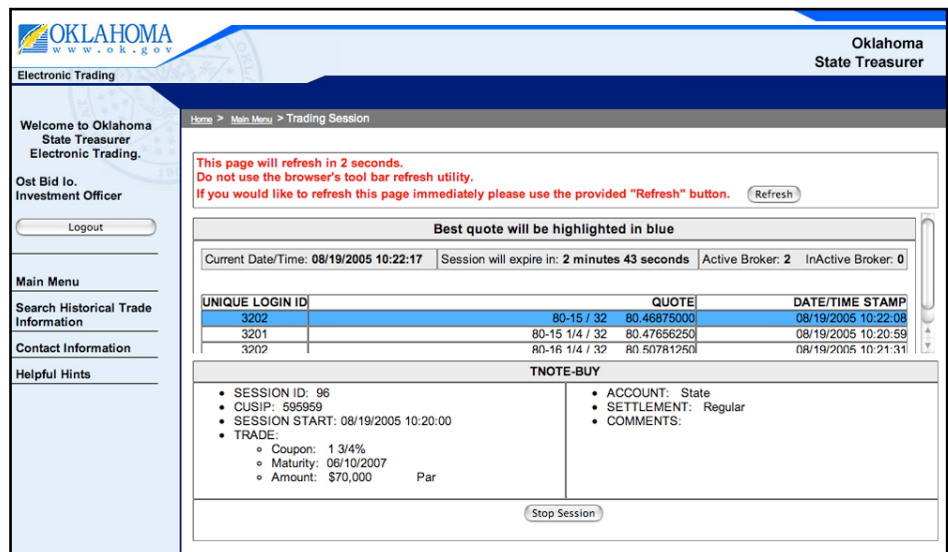


Image A: Broker's screen during a trade session. Recent quotes from the broker are displayed at the top. If the broker has the winning quote, it is highlighted in blue. Broker submits quote as a fraction or as a decimal. Application utilizes formula conducive to Bloomberg® results converting fraction quotes to decimals. System ranks quotes in order of decimal; highest to lowest for T-Note Sells and T-Bill Buys; and lowest to highest for T-Note Buys and T-Bill Sells.

Image B: This is the Investment Officer's screen during a trade session displaying a listing of all quotes. The best quote is highlighted in blue. The built-in auto refresh utility refreshes the screen every two seconds, displaying the most recent quotes. The Investment Officer may terminate the session by selecting the "Stop Session" button.



End-to-end, the OST Electronic Trading System operates with easy-to-use functionality resulting in an application that is highly complex on the back-end, but is simple on the front-end with user-friendly menus, graphics and transactions.

13) Why is the program a new and creative approach or method?

This system is a one-of-a-kind application operating at the state level. OST is the first state agency in the United States to implement a real-time online trading system for state investments with no fees to the participants.

“Our new online trading system is bringing new efficiencies and increased earnings to our investment process. The new system allows all of our authorized financial institutions to participate in investment bids - helping to ensure the state will receive the best possible price and maximize our earnings,” said Scott Meacham, Oklahoma State Treasurer.

At this time, the application allows OST to buy and sell Treasury Notes and Treasury Bills. In less than one year, OST has recently conducted 100 live trades with a total of over \$1 billion dollars traded through this innovative system.

The Electronic Trading System provides two major benefits to the OST broker community: 1) reduced trade time and 2) reduced paperwork. This provides brokers with more time to earn money on other investments.

“OSTbid helps to level the playing field from primary to regional dealers by allowing the broker community the flexibility to go directly to the trading desk. With built-in safeguards like the broker’s 60-second quote confirmation, the application is also flexible to market movement. It certainly instills the e-bay mentality. It also takes away the paperwork,” said Mike Minahan, Vice-President, JP Morgan Securities Inc.

14) What were the program’s start-up costs?

Development Costs consisted of less than \$15,000. An interesting note on cost savings: no formal Return on Investment analysis was done for the application; however, OST estimates an average savings of \$300,000 per year from the time saved by their four staff members plus the competitive pricing received by conducting trades through the Electronic Trading System.

15) What are the program’s annual operational costs?

There are no annual costs for the program, just the upfront cost of developing the program.

16) How is the program funded?

The program was funded by the Oklahoma State Treasurer’s office and development resources from OK.gov.

17) Did this program require the passage of legislation, executive order or regulations? If YES, please indicate the citation number.

No.

18) What equipment, technology and software are used to operate and administer this program?

The application was developed using PHP 5.1.2 and is supported by an Oracle 10g database. It runs on the Apache 2 Web server. The equipment used to house the application is an IBM Blade Center.

19) To the best of your knowledge, did this program originate in your state? If YES, please indicate the innovator's name, present address, telephone number and e-mail address.

No. There are about two or three other states that have implemented this type of program within their state, although not with all the same added functionality. What is significant about the program that Oklahoma utilizes is that it is accessed at no charge to the brokers.

20) Are you aware of similar programs in other states? If YES, which ones and how does this program differ?

Yes. Programs are similar; however, none have the same comprehensive functionality that the OST Electronic Trading System provides. One such system is provided through Idaho's State Treasurer's Office which sells certificates of deposit through their online auction. However, they only conduct the auction semi-annually. The program also differs from OST Electronic Trading systems by applying a charge to brokers for using the system.

21) Has the program been fully implemented?

It has been fully implemented from its original specifications, but future development is planned to be deployed through the 2007 year. OST and OK.gov are currently in the process of developing five additional trade types to incorporate into the application: Agency Discount Note Buy, Agency Discount Sell, Agency Bullet Buy, Agency Bullet Sell, and Agency Less than One Year Buy.

22) Briefly evaluate (pro and con) the program's effectiveness in addressing the defined problem[s] or issue[s]. Provide tangible examples.

- *Increased competition for state investments:* Prior to the system, OST only averaged about 50 trades processed during a year, but to date, they have doubled that amount by use of this new system. OST traditionally conducted trades by phone with a maximum participation of three brokers. This traditional trade process could take over half an hour to conduct one trade session. With the new Electronic Trading System, OST can receive quotes from all authorized financial institutions at one time, thus increasing the competition and providing the state with the opportunity to earn the highest returns on its investments.

This system also allows brokers to know immediately if they have not submitted the best quote. During the trade session, a broker's recent quotes are displayed at the top of their screen in chronological order. If they have the current best quote, the quote listing is highlighted. With a built-in automatic refresh function for both brokers and the Investment Officer, quotes are updated every two seconds with new entries and winning order; thus, creating increased competition.

- *A non-editable auditing trail:* OST auditors have instant access to a non-editable report system. In order to preserve the integrity of each trade, all trade session details are stored in a separate table. Such details include: trade session details, quotes, quote time/date stamp, institution names, and participant login and logout times.

Trade reports are generated as a trade ticket, by chronological order, or by institution. Each of these reports allows OST auditors to review past trade sessions, confirm quotes and confirm quote confirmations by institutions and the Investment Officer. (See a sample of a trade session report on the next page.)

This is a sample of a trading session report that can not be audited.

https://ok.gov/ostbid/rpt_trading_session.php?printer_friendly

Home > Main Menu > Trading Session Report > Session ID - 430

Trade Ticket - TBILL-BUY

Session ID:	430
Session Start (mm/dd/yyyy hh24:mm:ss):	02/27/2007 14:10:00
Session End (mm/dd/yyyy hh24:mm:ss):	02/27/2007 14:15:00
Status:	CLOSED - Confirmed

ACCOUNT		
State <input type="checkbox"/>	Agency <input checked="" type="checkbox"/>	Fiduciary <input type="checkbox"/>

TRADE		
CUSIP 912795ZH7		
Maturity 05/24/2007	\$22,000,000	Discount <input type="checkbox"/>

SETTLEMENT		
Cash <input type="checkbox"/>	Regular (+1) <input checked="" type="checkbox"/>	Skip <input type="checkbox"/> On:

COMMENTS
NOTE: I AM BUYING FROM YOU. THE PREVIOUS TRADES WERE RENEGED. This trade needs to be broken down into a \$12MM and \$10MM trade.

Winning quote will be highlighted.

UNIQUE LOGIN ID	QUOTE	DATE/TIME STAMP	CONFIRMATION
Jp Morgan Securities Inc	5.011%	02/27/2007 14:12:12	ACCEPT
Bank of America	4.99%	02/27/2007 14:11:04	-
Capital Markets Group	4.99%	02/27/2007 14:10:44	-
Merrill Lynch			-
Wachovia	5.005%	02/27/2007 14:11:17	-
B B And T Capital Markets	4.96%	02/27/2007 14:14:48	-
Sanders Morris Harris Inc			-
Raymond James And Associates	5.005%	02/27/2007 14:11:05	-

Winning Institution		
Jp Morgan Securities Inc	5.011%	02/27/2007 14:12:12

Bloomberg Market Rate: 5.01% 98.8170833

INVESTMENT OFFICER

Close this Window

- *Reduced paperwork:* In order to properly document a trade, OST traditionally produced “mounds” of paperwork during and after a trade. Instead of the traditional way of documenting trades, OST needs only one sheet of paper to document each trade conducted. This system removes the paperwork, allowing for a more efficient process of conducting trades for OST.

23) How has the program grown and/or changed since its inception?

The application has performed beyond its expectations. Brokers have shown great support and participation in the application. Their feedback has grown our enthusiasm for the application and its future development. OST administrators are greatly pleased with the application’s performance; in turn, OST and OK.gov are currently in the process of developing five additional trade types. (As mentioned above)

24) What limitations or obstacles might other states expect to encounter if they attempt to adopt this program?

The Oklahoma State Treasurer’s Electronic Trading System has potential to be implemented in many other states. In fact, the state of Arkansas recently requested a demonstration of the system to begin the first phase of implementing this system with their State Treasurer’s Office. The main obstacle other states would face would be motivating their own State Treasurer Offices to pick up the program.

Another obstacle could come in the form of adoption of the program. OK.gov and OST provided users with several ways to become familiar with the system. If other states are interested in the program they should provide a program to train brokers from authorized financial institutions. In OST’s case, most of the brokers were participants of OST’s traditional form of trading (via phone). In order to initiate the process of transferring the brokers from traditional trading to the new electronic trading process, training classes were scheduled in Oklahoma City and Tulsa, OK. The training classes were open to brokers and other interested parties from authorized financial institutions. Brokers from Oklahoma, Missouri, Texas and Kansas attended the training classes. The classes provided an opportunity for OST to train the brokers, promote the application, recruit new brokers, and receive valuable feedback.

As a result of the training classes, OST increased the number of participating brokers by 32%. Registered brokers represent institutions such as AG Edwards, Bank of America, Bank of Oklahoma, JP Morgan Securities Inc., Merrill Lynch, Morgan Stanley and Salomon Smith Barney.

User’s guides are also utilized as a tool for promoting and educating the public about the electronic trading process. Per request, OST will provide a user’s guide to interested parties. The user’s guide depicts the entire trade process and allows OST to give a visual presentation without having to conduct a mock trade session with the new system.

OST also distributes a one page, two-sided, color flyer at meetings and conferences. The flyers allow OST to present the application in a brief, concise, visual manner. The flyer provides readers with a basic description of the electronic trading process and the benefits received from utilizing the system.

We encourage the judges to view a demo of the application as well. Please, give us a call at 1-800-955-3468, and we will schedule a demonstration of the newest technology innovation in Oklahoma.