

Case Study: Online Auction Platform

Chicago Climate Exchange (CCX) is the world's first and North America's only active, voluntary, legally binding integrated trading system to reduce emissions of all six major greenhouse gases (GHGs). CCX needed a solution to allow members to offer for sale greenhouse gas reductions issued by CCX.

Connamara Systems designed and implemented a system that will allow the CCX to hold online auctions of greenhouse gas reduction contracts for their members.

Situation

The Chicago Climate Exchange (CCX) needed a way to allow members to monetize their greenhouse gas reductions. The CCX had previously conducted auctions of reductions using a manual process that required the bidders to enter bids via FAX. The results of the auction were then tabulated manually. This process was labor intensive. CCX realized that as the exchange grew the number of auctions that could be conducted for their members would be limited by this manual process.

Solution

CCX contracted with Connamara Systems to build an online auction platform to meet their current and future needs. Connamara applied agile software development methods to deliver the application. Connamara also developed user stories derived from requirements received from CCX. From those user stories, Connamara business analysts created a full suite of integration tests that were run automatically with each code check-in to a continuous integration and build environment. Engineers creating the application implemented unit tests to provide code level validation of correctness.

The CCX online auction platform allows CCX staff to set-up and administer auctions and to create and maintain member organizations and users. The platform provides the CCX staff the ability to open and close an auction, settle the auction and publish the results.

Users of the platform have preset limits on the amount they can bid based on the funds on deposit in their name. Users can enter multiple bids in an auction provided the sum of those bids does not violate their maximum bidding limit. While the auction is open for bidding, users can cancel previously entered bids and re-enter bids at different prices or for new quantities.

The platform currently supports two types of auctions:

1. Traditional Auctions - sellers looking for buyers
 - a. Single or multi-round
 - b. Sealed or open bids



2. Reverse Auctions - buyers looking for sellers
 - a. Single or multi-round
 - b. Sealed or open bids

Technology

Connamara, in consultation with CCX, chose to implement the solution using Ruby on Rails (RoR). Oracle database was used as a backing store for the application as CCX uses this database vendor throughout their enterprise.

Testing was facilitated by using *Watir* an open source testing framework that allows the automated testing of browser based applications.

For More Information

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