

Whole Loan Pricing and Bidding System

Business Requirement

A large global investment and banking securities firm was looking to implement a new platform that would analyze, optimize, structure, and price their whole loan portfolios. Specifically, the client needed:

- To optimize the sizing of the deal for a securitization exit strategy, with the rules of optimization based on rating agency guidelines.
- To have daily mark to market of loan prices.
- To have multiple real time prices to aid in its portfolio bidding process.
- A risk assessment of its loan inventory.

The ultimate goal of this project was to design and develop a system that would provide the client with the most accurate and efficient pricing information for their whole loan portfolio business needs.

Beyondbond Solution

To achieve the desired results Beyondbond first reviewed the clients' current system, which was a Visual Basic spreadsheet with limited modeling capabilities. In redesigning it from an excel/VBA format into a Java based platform, Beyondbond created a multi-module system. This system contained a state-of-the art mortgage analytic tool, with the ability to price inventory, create multiple prices for its bid loan portfolios, warehouse the information, and generate detailed risk reports. Recognizing the global scope of the client, it was designed to be fully accessible on the web and allow for multiple users.

After a careful design and development process, the system featured several elaborate components including a:

- **Repository** – allowing for the warehousing of loan inventories, the ability to incorporate new loan portfolios, retrieve existing deals, and the creation of new deal structures.
- **Optimizer** – a powerful analytical tool producing the best structuring results.
 - It employed multiple levels of dynamic analysis – running various default, prepayment scenarios, NRSRO sizing conventions, and risk models (with various ARMs and fixed rate prepayment models).
 - Cashflow analysis – produced future cashflows, and graphically depicted interest and principal distributions.
 - Guarantee levels for Agency loans – applied scenario assumptions based on the level of guarantee desired for each pool.
- **Pricing Engine** – provided the best price based off the analysis performed by the optimizer.

- Incorporated real time market information into the pricing calculation.
 - Generated mark to market prices on loan inventories, and multiple prices for the bid pools.
- **Report Generator**
- Reports are generated off a myriad of results, these include established bucket and customized reports.

Another important aspect of the system was speed & efficiency. While the old system processed limited information in minutes, this new product generated complete loan portfolio results in a matter of seconds. The system was outfitted to ensure the bank's need for accuracy and updated platforms. The multi-module system fully analyzed whole loans via various scenario assumptions, while incorporating current market information at the touch of a button.

Success Factor

Good financial analytical and modeling skills and a thorough understanding of the rating agency criteria allowed Beyondbond to create a fast and reliable optimizing engine. The support of the trading desk and the rating agencies ensured that the project stayed focused, and on track, meeting its expected delivery date.

Business Value

In our ever increasing global market, clients are constantly calling on new innovations to aid in the analysis of financial structures. In creating this platform, the speed of the optimizer exceeded the client's expectation. It allowed the client to expand their business, by making quicker and better decisions relative to its competitors.