

Mitigating Mortgage Losses Before Loans Become Delinquent

The science of predictive modeling can help mortgage lenders identify potential losses and apply solutions much earlier than traditional methods





Background

Before the subprime lending crisis erupted in mid-2007, mortgage and home-equity lenders had relatively low delinquency rates and losses. During good times, a number of financial institutions took a “book and ignore” approach toward their real estate portfolios, paying little attention to mortgages and home-equity loans until they became past due.

That approach went out the window when foreclosure rates began to accelerate in 2007 and more than 2.2 million default notices, auction sale notices and bank repossessions were reported on some 1.3 million U.S. properties — an increase of 75% over 2006.¹ The trend continued into 2008, with one in every 194 U.S. households receiving a foreclosure filing in the first quarter.²

Today, lenders are struggling not only to build the infrastructure needed to handle the rising number of defaults, but also to identify borrowers with the greatest chance of becoming delinquent before they fall behind on their payments. We believe the science of predictive modeling, which financial institutions use on a variety of fronts today, can help mortgage lenders with both tasks.

Understanding predictive modeling

Predictive modeling applies data mining techniques and algorithms to create mathematical formulas used to forecast and segment future events, such as identifying borrowers with a greater propensity to move to foreclosure in the next 90 days.

By identifying such borrowers early in the pre-collections life cycle, lenders can focus on their high risks and tailor their mitigation efforts accordingly. For example, instead of having pre-collections representatives directly contact all potentially delinquent borrowers — a costly process, to be sure — lenders can employ predictive modeling to segment those borrowers into multiple risk levels. The most likely to default could receive an active treatment, such as a live telephone call once they are past due, while the least likely to default may simply receive a passive treatment, such as a letter.

The process of predictive model development starts with 200 to 300 internal and external variables that are typically distilled to some 50 to 75 final variables that effectively describe the risk of a borrower moving towards foreclosure. Examples of internal variables include loan type, interest rate and the relationship between the value of the collateral and the outstanding principle. External variables can come from a variety of sources, including government agencies, such as the Bureau of Labor Statistics and Office of Federal Housing Enterprise Oversight, and extensive vendor data repositories.

Once the process of building the model is completed, each loan receives a numeric score that brings together all the underlying information in a way that maximizes segmentation. Scoring, however, is not a one-time event. As events occur during the course of the loan life cycle, such as the loss of a job, a medical complication or a change in the market value of the house, the loan score is refined to reflect the potential change in exposure.

Predictive models are the product of deep data analysis with science, not subjectivity, driving the development. Technical methods designed and performed by statisticians determine the most effective set of risk characteristics that make up the predictive model and the appropriate weighting to be assigned to each variable.

Ultimately, this quantitative process results in objective output produced by a mathematical formula — giving lenders the ability to sift through thousands of loans and focus on those most at risk. By employing a combination of business rules and statistical modeling, the process enables lenders to winnow thousands of delinquent loans down to a relative handful that they can do something about before the loans enter the foreclosure stage.

This is a blending of both science and art that can result in improved pre-collections outcomes, help people stay in their homes, and improve the profitability of lenders through the effective allocation of resources and reduced charge-offs. For example, using predictive models to segment accounts by level of risk can not only help pinpoint the 15% to 20% percent of accounts in a low-risk portfolio that will self-cure, but also reveal the best collections channel at the lowest cost for accounts in that risk segment.

Proactively managing the entire portfolio

Although the short-term focus should be on those loans and lines of credit that are currently overdue, a broader perspective is necessary to properly manage a mortgage lender's entire loan portfolio. For example, some loans that have never been delinquent may have a higher propensity to move toward foreclosure in the near future as interest rates reset and external factors change.

Historically, very few lenders employed pre-collections treatment strategies. If they did, the strategies principally centered on home-equity lines of credit. Lenders would sort these non-delinquent borrowers into simplistic risk bands based on utilization and line amount. They would then contact borrowers, request updated financial information and obtain updated credit bureau data. There was no triaging in place for primary lien mortgages. And, while housing prices continued to rise, this resource-intensive and experience-neutral approach appeared to work, despite its economic inefficiencies.

¹ “U.S. Foreclosure Activity Increases 75 Percent in 2007,” <http://www.realtytrac.com/ContentManagement/pressrelease.aspx?ChannelID=9&ItemID=3988&acct=64847>

² “U.S. Foreclosure Activity Increases 23 Percent in First Quarter,” <http://www.realtytrac.com/ContentManagement/pressrelease.aspx?ChannelID=9&ItemID=4566&acct=64847>

However, in the current market environment, lenders often have little time to react before loans sour. The traditional approach is totally inadequate and the inefficiencies in the current approach are exacerbated. Lenders need to identify which loans have the highest likelihood to be “saved”. For example, if a lender has 100,000 loans and 15% are past due, there’s little chance its pre-collections resources can perform financial triage on all 15,000 accounts. Put another way, if a loss mitigation resource has a stack of 200 randomly generated delinquent accounts to investigate; it’s highly unlikely that they will contact the most urgent files. Predictive analytics removes the randomness from the process and goes far beyond simplistic rules, such as loan-to-value or delinquency.

By focusing pre-collection resources on loans and credit lines that have a higher likelihood of moving toward foreclosure, in addition to those that are currently overdue, lenders can get ahead of the foreclosure curve by offering creative loss-mitigation strategies before homeowners fall into crisis mode and stop responding altogether.

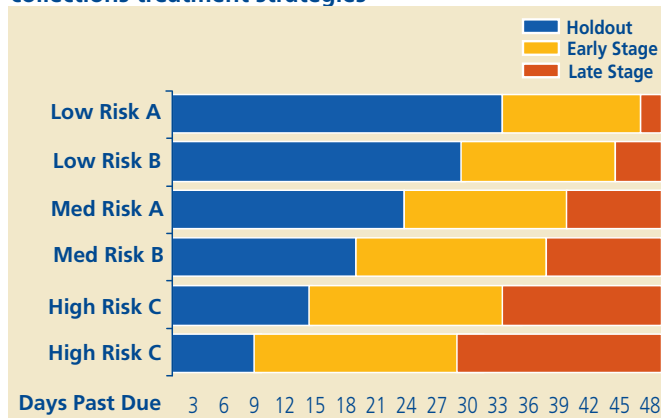
When and how to contact borrowers

Use of data mining and predictive modeling in loss mitigation and collections can provide greater precision when predicting the level of risk and the probability of moving towards foreclosure for each segment.

Risk segmentation is used to determine the specific risk level of an account within a portfolio. It leverages data components and predictive modeling by using loan characteristics, past payment behavior, and a multitude of other data sources. Accounts with similar risk characteristics, typically stratified across high-, medium- and low-risk categories, are placed in appropriate segments for risk mitigation and collections treatment.

The bar chart below shows an example of how lenders can differentiate their treatment strategy (e.g., holdout from treatment, dialer campaign and manual calling) by level of risk relying on segmentation accuracy to determine the right treatment at the right time and for the right cost. (See Exhibit 1.)

Exhibit 1: Example of risk-segmented differentiated collections treatment strategies



The most effective lenders continuously challenge their strategies and processes — not by simply making small adjustments to telephone “dialer” campaigns, but by completely changing their paradigms. The results of complete process “challengers” have led these lenders to improved collections effectiveness and reduced expenses.

Lenders need to change their approach

The immediate lending crisis has highlighted the fact that many Americans do not know that they can receive help from their lenders. In this environment, lenders need to be more skilled and agile with loss mitigation and collections techniques when they interact with their customers.

The most effective lenders are challenging traditional collections practices, and leveraging analytics and enabling technology more than ever. These days, we believe it pays for lenders to question and change many business-as-usual loss mitigation and collections practices.

Often borrowers will not reach out to their lenders until it is too late. More than half (57%) of delinquent homeowners do not know that their lenders may offer ways to keep them in their homes.³ In addition, 33% mistakenly believe there is nothing a lender could do to stop the seizure of their home.⁴

Lenders that reach out to those most at risk, through effective use of predictive analytics, have a good chance of healing this information gap, reducing the risk of default and keeping borrowers in their homes. By using predictive analytics, lenders can identify loans that face the highest risk of moving towards foreclosure earlier than they could before. This can enable lenders to take action through creative loss mitigation strategies, in many cases, even before mortgage loans become overdue.

Enabling technologies for more effective collections

In addition to using predictive modeling to identify borrowers with the greatest potential for defaulting on their loans, lenders can employ enabling technologies to enhance collector effectiveness by leveraging insights from the output of the predictive models.

- Collector toolkits:** Enabling technology and predictive analytics can empower collectors with various toolkits designed to increase collector efficiency while lowering operational costs. These toolkits include mortgage payment modification strategies, payment and mortgage term extensions, automated letter campaigns, and virtual phone messages — all driven by output from the predictive models. For example, when collectors are on the phone with borrowers, they can dynamically discuss specific strategies for extending the term of a mortgage or moving from an adjustable-rate reset to a fixed-rate mortgage. Each loan receives detailed output from the predictive models, indicating which course of action makes the most sense, based on the risk of the loan moving towards foreclosure. Additional tools for collectors can also leverage the use of “skip vendors” to locate delinquent borrowers when in-house contact strategies have not been effective.
- Telephone dialer campaigns:** Telephone dialer campaigns are another tool that leverages the power of predictive modeling to help lenders reach customers more effectively. Lenders can create dialer campaigns for early-stage, low-risk accounts or late-stage, high-risk accounts or some other combination. These accounts are loaded on the dialer and calls are made automatically based on the specific campaign. The length of time that the dialer works each account can vary by the predictive scoring and other parameters, such as staffing levels and product type. For example, one account may be called at 15 days past due while another is called at 30 days, based on the score from the predictive model.

Leveraging predictive analytics

Staffing models consider the number of accounts, desired penetration rate given the dialer campaigns scheduled, and average amount of time spent on each call. To maintain full dialer campaign coverage, the hours of operation also need to be adequate, as the risk profile of the portfolio can differ from campaign to campaign. Treatment strategies should incorporate evening and weekend staffing, also referred to as “primetime scheduling” — those hours when collectors are most likely to make contact with delinquent customers.

Collectors also need to receive training to acquire and demonstrate the desired skills to reach customers and secure a promise that ultimately results in a payment to bring an account current. To ensure that these results are not only achieved, but also sustained over time, collectors typically receive incentives based on the dollars they collect compared to the potential dollars at risk to the lender. Predictive analytics provide the base for which lenders can deploy tactical collections activity – such as dialer campaigns, ongoing performance metrics, staffing, and scheduling to accounts at risk of default.

Monitoring performance

In any collections operation, it is essential to imbed appropriate metrics to measure performance. Such performance tracking enables lenders to adjust their collection models and treatments to increase effectiveness over time as well as help keep collections resources focused on the right loans. Common metrics used to track the effectiveness of loss mitigation activities include:

- Penetration rates by risk segment that measure how often collectors work accounts placed on dialer campaigns and the effectiveness of collectors across the spectrum of risk to the institution;
- Right-party connects that measure the percentage of calls resulting in a connection with the borrower, co-borrower, or responsible party;

- Promises taken and promises kept that measure the percentage of right-party connects resulting in a promise to pay from a customer and then tracking the percentage of promises that are actually kept by risk level — after all, not all accounts have the same risk to the business;
- Dollars available for collection/dollars at risk that track all dollars past due and any applicable late charges on a customer's account; and
- Dollars collected that capture total dollars collected at the individual agent level, which can include payment by phone or via the Internet.

Collections management should also analyze each risk segment, tracking delinquency volumes for 30, 45, 60 and 90 days past due, foreclosure rates for the number and percentage of homes foreclosed, and charge-offs that assign a dollar value to each mortgage that is written off. The riskiest loans may have higher delinquency rates, but management should also see the impact of the predictive models in reducing foreclosures in the areas under focus.

Performance needs to be carefully monitored and strategies adjusted to realize continuous improvement of collections efforts.

This table shows collector-level metrics that include a ranking exercise to compare individual collector performance. In addition to tracking collector performance metrics, it is common for organizations to monitor actual collector calls. Supervisory staff listen to previously recorded conversations to determine whether the right dialogue and tone are used, given the urgency of the collections scenario for each particular customer account based on the assigned level of risk.

Why choose Deloitte?

Deloitte Consulting LLP offers specific services designed to help mortgage and home-equity lenders in their efforts to develop predictive modeling solutions. These services are based on our deep and broad strategic and tactical experience, knowledge and skills.

Exhibit 2: Example of representative agent metrics

Agent Name	Accts	Total Calls	Penetration Rate	RPC	RPC %	Promises Taken	Promises Taken %	Promises Kept	Dollars at Risk	Dollars Collected	Daily Rank
Agent 1	111	210	189%	45	21%	29	64%	75%	\$1,665,000	\$16,650	1
Agent 2	95	166	175%	34	20%	22	65%	66%	\$1,425,000	\$14,250	2
Agent 3	159	210	132%	36	17%	23	64%	65%	\$2,385,000	\$23,850	3
Agent 4	114	200	175%	36	18%	22	61%	66%	\$1,710,000	\$17,100	4
Agent 5	108	150	139%	25	17%	16	64%	65%	\$1,620,000	\$16,200	5
Agent 6	111	211	190%	37	18%	25	68%	64%	\$1,665,000	\$16,650	6
Agent 7	115	210	183%	35	17%	21	60%	65%	\$1,725,000	\$17,250	7
Agent 8	138	210	152%	38	18%	23	61%	64%	\$2,070,000	\$20,700	8
Agent 9	141	201	143%	36	18%	22	61%	64%	\$2,115,000	\$21,150	9
Agent 10	129	199	154%	33	17%	19	58%	63%	\$1,935,000	\$19,350	10

RPC= “Right-party connects”
Daily Rank is the ranking of data by “Promises kept.”

Deloitte serves 75% of the top 25 financial services organizations and provides services in all areas of default management. Our team includes former credit executives who understand:

- Loss mitigation and collections and recovery operations, processes and policies;
- Effective default management practices in financial services institutions, captive finance and telecommunications; and
- Predictive analytics, with an informed and practical mindset to proposed solutions.

Deloitte's time-tested approach to helping our clients perform collections and recoveries assessments and achieve operational improvements has provided substantial benefits to clients. Our solid approach – based on our deep understanding of the fundamentals of collections and recovery management and our hands-on operations experience – is designed to help our client keep the impact on their environments to a low level during the project, which has often resulted in their achieving faster realized tangible benefits.



³ "Foreclosure Avoidance Awareness Largely Unaffected by Market Problems," http://www.freddiemac.com/news/archives/corporate/2008/20080131_07ropersurvey.html

⁴ "Homeowners late on loans often don't seek help," USA Today, Feb. 1, 2008. http://www.usatoday.com/money/economy/housing/2008-01-30-mortgage-delinquencies_N.htm

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