Predictive Analytics + Customer Engagement = Bad Debt Prevention

Insights from two experts
Losses from bad debt cost utilities millions every year. By using predictive analytics in their customer strategy, utilities can improve the way they engage customers to prevent bad debt losses. This paper explores some key considerations around bad debt prevention analytics through discussions with two experts:

- **Sachin Chincholi**, Practice Leader Customer Analytics and Interaction, Pitney Bowes Software
- **Bruce Gay**, President Monticello Consulting Group

**The big picture for predictive analytics and customer engagement** | Sachin Chincholi

In this section, we’ll listen in as Sachin discusses the role of predictive analytics for bad debt prevention across all industries, along with some of the challenges with taking on predictive analytics, and how predictive analytics and customer engagement can ultimately come together to help companies be proactive about their bad debt by identifying and working with customers before they become delinquent.

**Key collections approaches**

Most work today falls into two sides of collections and bad debt management:

- **Reactive collections** | Using predictive analytics to determine who to invest effort in for collections and to prioritize collections activities with the aim of ranking those most likely to pay as well as successful outcomes

- **Proactive measures** | Pre-delinquency management to identify the triggers and events that take place before someone starts missing payments so the business can proactively communicate to those customers and keep them on a path away from delinquency.
The way we're approaching these areas today is looking at pre-delinquency management – and this is where we marry up the analytics processes with customer engagement. It is all around getting to your customers ahead of time and getting to them with the right messages through the right channels so that we can change behaviors before they become somebody that the business needs to chase. On the predictive analytics side, it’s taking a lot of the past approaches around ranking, segments and profiling, and creating predictive models to predict successful outcomes – such as who’s most likely to pay because of a phone call or because of a letter, or who is more likely to pay larger amounts. From that, we are able to then use predictive analytics to start prioritizing offers and start understanding who might need a different kind of conversation as well.

It’s not always a one-size-fits-all in collections management. It doesn’t always have to be a very heavy message, because there may be segments of the customer base who would only need an email, not even suggesting that they’re in arrears, but just an informative email from your organization to trigger their minds into, “Oh, wait – I don’t think I paid my bill.” Maybe it’s just someone accidentally forgot versus chronic late payers who you’ve got to chase every month or every 60 or 90 days. So it’s all about using analytics to better segment your customers, understand who needs to be differentiated, and how can we prioritize the communications to ensure the most successful outcomes. And certainly before they become a risk would be ideal.

**Challenges, barriers and opportunities**

Some of the most significant barriers to analytics success in these areas include data, particularly around having the right data, having that data connected, being able to manage the amount of data, and being able to have the right data as well. From our clients, we’re definitely seeing an issue of inaction because of data issues. Sometimes that is just a case of having access to data and being able to understand what’s in there. Beyond data, some of the other challenges around analytics include:

- **People** | Being able to attract and retain the right types of people and the right skill sets, and being able to have enough people to keep up with an organization’s analytic demands.

- **Tools** | Being able to turn all of that data into actual insights and into real information that can be used by the business.

- **Action** | The ability to take action on that data. It’s not going to solve any problems having great models and insights if there’s no way to deploy them into business processes and into the channels that involve customer engagement to actually influence and change behaviors.

With these challenges also come opportunities. With data, the question here is can you get at it? What do you have access to today? It might be operational data, billing data, maybe transactional or usage data as well. And that might exist in many different types of systems. The message here is make sure you’ve got something – something to go on. As far as people go, again, it’s a matter of skills and volume of resources.

Tools are all around bringing in the right technologies that enable efficiency and enable the processes to get us from point A, which is data, to point B, which is process change and insights. And finally, the action piece is making sure that the analytics that you’re chasing are the analytics that are going to solve the business needs and are able to be used within the processes that exist today for customer engagement.
How all of these pieces come together

Ultimately if we were able to bring all of this together, we’d have a very robust customer view that would enable a lot of analytic insights around usage and satisfaction and billing data and marketing data, and even demographic and grid data as well. But the one that everybody has is the billing and payments data. Typically, because it involves money, this is always the cleanest and most readily accessible data as well. Let’s start here. Let’s look at that billing history, let’s look at credit, let’s look at payment history and collections and issues, and bring that information together to kick off a process where we can start creating some productive models, and start taking a look at what types of insights come out of that.

Specifically on the analytic side rolling into engagement and execution, we really see different layers here. One layer is all around predictive analytics. It is really about interrogating the data and understanding and finding the combination or patterns that exist in that data that can explain and predict future behaviors. So it’s all about looking at your past, understanding all the combinations of behaviors and data elements that are going to help us predict what’s likely to happen for each customer in the future. Ideally, what would happen then is you’d get a score or you’d get a probability and you’d rank all of your customers so you can select those most likely to take particular actions. You can become more efficient. You can drive up your successful outcome rates as well. So predictive analytics, it’s all around profiling, visualizing, segmenting, and ultimately prioritizing the conversations and messages that are going to go out to customers.

Another layer is self-service analytics, which is a newer trend. It is all about putting into the hands of the business the ability to ask their own questions, the ability to get their own counts and start making decisions on the type of data that they typically have to go to an IT or business intelligence team for. By moving some of that light querying and reporting back to the business users, we’re freeing up some of those resources—those hard-to-find resources who are more statistically inclined and more driven to predictive modeling—to build valuable predictive models that are going to help transform the business.

Finally, there is the message execution layer, and this is all around taking those predictive models and information learned and feeding them into the channels so that delivered messages are relevant, targeted and part of an automated multi-step, multi-touch, multi-channel communication strategy. So it’s not about trying to do everything manually, and worrying about resources. It’s about getting your best practices and best communication strategy automated and connected into analytics so the customers are getting that right message at the right time through the right channel with the right offers.

An example from the financial industry

Let’s discuss a case study where we ask: How can start dealing with potential delinquency ahead of time – before it becomes an issue that we need to chase? In this financial services example, a traditional bank approached collections with a traditional approach, and they were having an issue with an increased number of indebted customers. So it was becoming hard to keep up, hard to prioritize activities, and ultimately write-offs were becoming rather large.

So from a reactive approach, where customers are in collections, they’ve been 30, 60, 90 days late. And the communication strategy for this company was really just to keep escalating and kind of going after those customers with harsher and harsher messages. If customers are in credit, they’re in good standing. And after 90 days, they start going into the recovery teams,
which might get written off. Perhaps the debt gets sold as well. This client had about three million active accounts; 25,000 of those were falling into collections each month, and about 10 percent of those were ultimately getting written off. About $1.4 million per month was getting written off. So they were looking at ways to start reducing that and changing the patterns that they were seeing, because it just kept growing.

And they found that these delinquent customers went beyond just the usual suspects. It was not just the typical customers that they would be able to predict relatively easily, and not the typical customers that they see every month or yearly that are in collections and in debt, but rather a whole different type of customer. That’s another part of what drove their interest in predictive, proactive analytics, because they didn’t quite understand it.

To change toward a more proactive approach, this company focused on identifying the triggers and identifying the behavior changes that exist in the months leading up to customers becoming delinquent and intervening ahead of time. And this was all around customer engagement and improving satisfaction, and helping those bank resources who are dedicated to collections by not having as many come into collections in the first place.

They provided us with a history of about 4.8 million customers that spans 13 months’ worth of data. So this included some who were in collections, and some who were in clear standing. It also included some customers who were not yet in collections, but may be soon.

The way we approached this was looking at the historical data – so we looked at the first six months of information. So we’re trying to identify the drivers here and we’re trying to build models with this set of data. And we looked at the next six months to say “Well, who became delinquent in that period in the future?” So how could we best take the historical data and identify the patterns and the differences between the customers who became delinquent in the future versus those who did not?

We explored a variety of variables and, ultimately, each of those variables can add a predictive element. When we start combining them, that’s when we start getting a very good prediction. So with this bank’s customers, 13 percent went delinquent just having bounced a direct debit in the last few months. If a customer had two or more, 32 percent of those customers ended up delinquent. And that represented 54 percent of everyone who was delinquent. And if we go through all the other fields – maximum balances, and the number of times they’ve gone into overdraft or credit situations, other scores, ATM withdrawals, interest charges even – it all starts adding up to tell a story of the situations that start resulting in customers going delinquent or into arrears.

So this work ultimately triggers a score card. You’re adding scores for good behaviors; you’re subtracting scores for poor behaviors. And ultimately everyone is going to come out with a unique score in which we can use to rank them. And when we start to understand some of the drivers of delinquency, we can start creating some business processes that help us get in front
of the delinquency. For example, if we know that two or more bounced direct debits creates a very high chance that somebody’s going to become delinquent, when someone has a bounce, perhaps that raises some red flags and that sends them down a process so that they don’t have two, and they don’t become the customer who starts fitting this mold.

Unique programs and communications can then be created and implemented to help everyone individually. The bank was able to move from analytics insights, ranking and scoring to say, “Okay, well how do I now choreograph a communication strategy that is multi-channel, multi-touch, multi-wave, and take the right approach?” Some are going to get auto-pay offers. Some might get an offer to sign up for e-billing. Some might get an energy audit offer. Furthermore, if we know they’re six months away from being likely to go delinquent, how do we communicate with them at that six-month point? How do we communicate with them at the four-month, the two-month point? How do we communicate with them even in the weeks leading up to where we think they’re likely to become delinquent? So that’s all about the follow-up.

With the bank’s call center environment, they’ve taken the data and developed strategies to retain versus push to collections. So what the agents are able to see – inbound and outbound – is that something has happened with this customer that’s made them risky. What the agent is prompted to do is to make a diagnosis here. Is this customer cooperative? Are they aware of the issue? Can they afford it? Do we think they can fix it on their own? Do we need to intervene? And even why – why has something changed? Why have they started paying slower or taking more time between bills?

### Figure 1 – Predictive Modeling Helps Identify Customers with a High Risk for Default

| Predictive model takes the form of a scorecard |
| Customers who match the red boxes are at a higher risk of default |
**Financial stress triggers**
(predictive indicators)

- Over overdraft limit exceeded
- DD bouncing (>2)
- Bank credits reducing (salary not paid in?)
- Account Arrears Score 500-850
- ATM withdrawals reducing

**Revealed circumstances**

- Job loss (temporary/ permanent)
- Currently Employed/ Unemployed
- Illness/Injury (temporary/permanent)
- Marriage/Divorce
- Bereavement
- New baby
- House move

**Treatments**

- Debt counselling
- Reduce/Increase OD limit
- Remove OD facility
- Transfer funds
- Convert debt to loan
- Proactive exit strategy
- Flag PDM risk to other parts of the business,
- Prevent additional sales and marketing activity

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From there, what they’re able to do is use predictive analytics to choose the next best action for that customer and rank those. It might be around offering that customer a restructuring of that debt to a loan, changing the direct deposit or direct debit dates, offering counseling, transferring funds. Whatever it might be, the approach was getting those customers engaged, and getting them engaged through all those outbound channels like email, text messaging, Facebook, Twitter, mail and phone calls. But also through the call center. That’s where a lot of this is going to be the most impactful - when agents and customer care reps are able to start changing the trajectory of these customers.

**Sachin’s advice**

Get as much data in your models as possible, but don’t wait until it’s perfect. You can always start small and grow it. Use your data and ensure you’ve got the tools and the people available to gain value from it. Start pushing the organization to become customer-centric, so marketing doesn’t need to be separate from credit and recovery. And finally, start moving towards the ability to take immediate action on analytic findings so you don’t sit with a model for six months or nine months or 12 months. Rather, take those findings, get them into the processes, and get them integrated so that actions can be taken immediately.
Predictive analytics and customer engagement for utilities | Bruce Gay

In this section, Bruce discusses more of the utility perspective—what utility companies have done with predictive analytics for bad debt collection, where they are now and some results of their implementation of predictive analytics.

Utility trends

Let’s start out by looking at credit and collections trends for utility companies. Key trends include:

- **Increasing delinquency** | There is an increase in delinquency and charge offs, and it varies depending on the utility. We’ve been in this economic situation for four or five years now, and depending on the utility, depending on the area, it is truly a mixed bag. We’re also seeing a trend with an increasing number of complaints in an attempt to avoid payment where customers are using regulations and other tactics to avoid payment.

- **Increasing regulatory oversight** | Another thing that we’ve seen is an increase in regulatory oversight into the credit and collections performance of utilities. Regulators are becoming more involved in credit and collection performance, especially when it comes to protected-class customers – or low-income class customers – and primarily residential customers.

- **Increasing workload** | We’re also seeing an increase in workload for staff. There have been numerous downsizings, retirements, and so the staff that is left – they need to work smarter and more efficiently.

- **Increasing cash flow pressures** | There’s certainly more pressure in increasing cash flow from charge-off receivables and reducing bad debt.

Predictive analytics isn’t all new for utilities

Predictive analytics in the utility industry – it’s actually been around for quite some time. The first utility that I know of that has implemented predictive analytics – basically behavioral scoring – was in 1988. So it’s been quite some time, and there are numerous utilities using it. Many of the investor-owned utilities have some type of behavioral scoring. In some cases they design their own models and their own score cards internally.

Why do utilities use predictive analytics? They use it to reduce costs. They can eliminate blanket collection action, and they use it to increase and improve collection performance. It allows them to focus on the highest priority accounts, depending on what you’re looking to predict. For example, if you’re looking to predict a charge off, you can focus your efforts on the highest risk accounts and focus on those in terms of collection treatment action on those particular accounts.

They also use predictive analytics to improve customer service. How do they improve customer service? It can simply be that you’re limiting collection treatment action on accounts that will self-cure. That can eliminate unanticipated actions such as inbound calls from customers who normally pay, but may have forgotten and are calling about a payment letter they received.

Other reasons for using behavioral scoring include collection agency optimization, settlement offers, payment arrangements, and optimizing and enhancing plans for specific persons depending on their profiles and their risk profiles.
Results from predictive analytics for utilities

So what have utilities experienced through behavioral scoring? There are a lot of different results, and it depends on the utility, where they are and what they’ve been doing. With a utility, a bigger than 90 day accounts receivable portfolio can be reduced by 5 to 10 percent. Now this is just a general conservative number. Potentially they can reduce operational costs by 10 to 15 percent, which reduces bad debt, and they can reduce customer service expenses as well.

Let’s discuss an example from a northeast electric utility. They had an annual bad debt of $25 million. On that bad debt, their average account balance was $486. That’s the total bad debt divided by the number of accounts. But in that portfolio of $25 million, the bad debt from accounts that were greater than 90 days was almost 77 percent. So by and large, the number of accounts was relatively low – somewhere around 25 percent of the accounts were greater than 90 days. But the total balance was the balance of dollars associated with accounts that were greater than 90 days was 77 percent. So the total bad debt from accounts greater than 90 days in this example was a little over $19 million. The average account balance on those accounts was $1,335. So if we look at that 6 to 10 percent, if you can reduce it through behavioral scoring and predictive analytics, if they can reduce the balances on those accounts by 6 percent while they’re still active, they can reduce their bad debt anywhere from $1.1 million to $1.9 million, which is a reduction of bad debt of 4.6 to 7.7 percent.

With this particular company, they had a lot of high balance, high arrearage accounts in their portfolio. And they couldn’t get to all their accounts. They couldn’t treat all their accounts in terms of letters and calls, and more specifically disconnection for nonpayment. So a utility that’s in that situation can certainly make a significant impact on their bad debt through treating accounts more specifically and more targeted through rank order and prioritization, through behavioral scoring and predictive analytics.

Concluding thoughts

Through carefully considering and adopting good predictive analytics and customer engagement practices, utilities can start to reduce their bad debt and improve customer satisfactions. Since each utility faces unique circumstances, the process may vary between companies, so it is important to consider your company’s particular needs before moving forward.

About Pitney Bowes Software

Pitney Bowes Software helps organizations enable lifetime customer relationships. Our software and services are designed to increase the value of every customer interaction, while streamlining operational efficiencies. Together with Pitney Bowes Software, utility organizations can achieve more valuable and long-standing customer relationships built on trust, relevancy and outstanding customer experiences for greater profitability.

For more information on our award-winning predictive analytics solution that can help utilities gain customer insight, maximize debt recovery and reduce collection costs, call 800.327.8627 or visit us online at web.pb.com/utilities-customer-experience-management.