The impact of scoring technology on collections

White paper
Executive summary

Technology has had a tremendous impact on the collections industry over the past decade as collection professionals sought better, more streamlined ways to collect debt in the face of consolidations that rocked the industry beginning in the mid-1990s, coupled with explosive growth fueled by the rise in credit granting. Collectors must now consider revamping internal processes in order to achieve the efficiencies necessary to compete effectively in this constantly changing and evolving marketplace. One of the big enablers of this transformation is scoring technology.

This paper examines the role of scoring in collections and how that role evolved as collection practices shifted from slow, manual processes of the past to sophisticated methodologies of today, including scoring, behavioral modeling and decisioning/adaptive control systems.

Section I of this paper addresses the current state of the collections industry. It provides a historical perspective on how the industry began and how it has evolved.

Section II examines the key trends that shape the collections landscape, extrapolating what the future holds for collections. Technology investments and how they impact future success in collections are also discussed.

Section III covers the use of scoring in collections. This provides a perspective on how the use of scoring methodology branched out from the credit-granting arena, where it began and has been traditionally used, to the collections sphere, where large retail card issuers were among the first players to embrace scoring as a tool.

Section IV delves into how scoring/decisioning strategies vary across the collections life cycle. Delinquent accounts flow through a unique collections life cycle requiring different techniques to cure the problem. The stages of the collections life cycle include early, mid, late and post-charge-off. This section discusses how scoring technology–enabled solutions play a critical part in addressing the key challenges and strategies at each stage of the collections life cycle.

Section V describes the key functions of adaptive control systems and decision engines. As the use of scoring in collections grew, it became a key factor in driving the use of decisioning engines in collections. As scores were incorporated into debt portfolio segmentation schemes, creditors had to augment those decision processes by deciding on the type of strategy to be used on each account or set of accounts.

Section I: State of the industry

An industry perspective

It was not until the 1920s, when automobiles were purchased under the installment plan for the first time, that consumer debt became popular. By the late 1930s, retailers started granting extended period charge accounts to customers. During that
period, credit consisted almost entirely of retail charge accounts granted to preferred customers of large merchants. Account balances were paid monthly, and those that were not paid were turned over to local “mom-and-pop” collection agencies with manual systems for servicing. Within 20 years, consumer debt became widely accepted and had grown to about $21 billion. By the early 1960s, it was up to $56 billion, and going into the year 2000, that number was expected to exceed $5.4 trillion (Source: Strategic Research Institute – February 2000).

Industry consolidation was the key factor during the 1990s. Consolidation began in the credit industries and continued into the collection industry. Some of the key financial industries that consolidated and impacted the collection world include bankcards, retailers, wireless and telecommunications, banking, finance companies and automotive.

Consolidation of the financial industries also drove the consolidation of accounts receivable management companies and collection agencies. By the end of 1998, the largest collection agency accounted for less than 5% of the total industry’s revenues, and the top 100 agencies combined accounted for approximately 32% of the entire revenue stream.

The 1990s were also a time of significant growth for the collections industry. Until recently, industry size had been measured by contingent collection revenue, which at the end of 1998 was approximately $6.5 billion. With the growth of new business lines bringing additional noncontingent revenues to the industry, the new total is estimated at $9.5 billion and could be even higher.

At present, the dominant players in the collections industry have become larger in size and fewer in number, reflecting a continued trend of mergers and acquisitions. Overall commercial and consumer debt worked grew more than sixfold, fueling growth in the distressed debt sales market. (Source: Thomson Financial Credit Collections 2001). These industry dynamics bring new market opportunities for collections professionals as new business lines with debt sales emerge with continued outsourcing, the growth of the Internet and global opportunities.

Section II: Key trends impacting the future of collections

Forces changing the collections industry — key trends

Changing industry dynamics have brought new market opportunities. Key developments and market trends impacting the collections industry and future growth include the surge in consumer debt, the consolidation of major credit grantors and collection agencies, the introduction of new business lines, outsourcing, growth of the Internet and the relaxation of international barriers opening up global opportunities.

Surge in consumer debt
Consumer debt has grown at an astounding rate, and today, there are estimates that it will reach and exceed $6 trillion. This, in turn, has produced record numbers of bankruptcies and huge amounts of delinquent debt. According to triannual survey
data published by the Federal Reserve, the median consumer debt servicing as a percent of overall income has risen sharply. The household debt-servicing burden continued to increase through the past decade (see Exhibit A).

**Exhibit A: Household debt servicing burden as a percentage of income**

![Bar chart showing the percentage of household debt servicing burden from 1990 to 2000.](chart.png)

Source: Federal Reserve

**Consolidations**
Other industry consolidations, such as in telecommunications, banking, credit cards, retail, automotive and utilities, impact the collection industry. Industry consolidation means that these organizations have bigger portfolios and can negotiate lower pricing in return for providing larger quantities of business to agencies. The collection agency business becomes price driven. This competitive price push has caused collection agencies to go through similar consolidation periods in order to gain efficiencies of scale.

**Emerging new business lines**
The sale and purchase of charge-off-debt portfolios has opened up a new market for agencies and credit grantors alike. Some entrepreneurs are even bundling the debt and securitizing it similar to a bond offering.

**Outsourcing**
Outsourcing became the buzzword throughout the 1990s and will be the single greatest source of new business going forward. Enterprises of all kinds are farming out services that used to be in-house activities. In particular, agencies with receivables management expertise will benefit from this trend. Also, government agencies at all levels are turning over the collection of their receivables, particularly the collection of delinquent income taxes, property taxes, fines and assessments.

**The Internet**
The growth of the Internet, fueled by exponential increases in online sales (see Exhibit B) will translate into more collection activity, as a growing percentage
of those purchases (generally made by credit card) becomes delinquent. As a consequence, more Internet-based tools that will slash administrative and operational costs for both creditors and collectors will be required.

**Exhibit B: Growth of online sales**

<table>
<thead>
<tr>
<th>Year</th>
<th>Sales (in billions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002</td>
<td>110.7*</td>
</tr>
<tr>
<td>2001</td>
<td>73.9*</td>
</tr>
<tr>
<td>2000</td>
<td>44.8*</td>
</tr>
<tr>
<td>1999</td>
<td>18.1*</td>
</tr>
<tr>
<td>1998</td>
<td>7.8*</td>
</tr>
</tbody>
</table>

*Projected

Source: National Retail Federation, Forrester Research, Inc.

New Internet-based debt brokerages have been developed, creating opportunities for online auctions of bad debt. These auctions create an online environment where creditors place their bad debts and agencies actively compete for the business — both for debt sales and for placement of contingent fee paper.

A number of modeling companies and debt auction firms introduced scoring models (combining account-specific demographics with agency collection performance) that drive these auctions and provide sellers and buyers of debt portfolios with the ability to quickly assess estimated recovery amounts.

**The future of collections — success factors**

Most companies involved in collecting debt — either the creditors or the agencies — need to recognize certain key success factors:

**Speed is critical** — Collectors must understand the delinquent customer and make contact to establish a repayment plan. The first company to contact the customer is usually the most likely to collect the debt.

**Information intelligence** — The development of systems to understand customer behavior is happening in every industry. Today’s savvy collectors are building customer databases that store customer information, including elements like credit bureau data attributes and scores, demographic attributes, phone number, address, employment, housing and performance information. Information intelligence is also developed through the use of scoring and adaptive control techniques. Understanding its customers allows a company to streamline procedures and activities — eliminating manual costs while maximizing success rates.

**Monitoring future events/behaviors** — The use of triggers adds another dimension to the way that collection decisions are made. Fresh customer information can be rapidly identified and immediately acted upon.
**Integrating cost-effective, technology-based solutions** — The integration of power dialers, speed dialers, predictive dialers and collection software with information intelligence will become the norm.

**Implementing Web-based solutions** — User-friendly interfaces and quick connect times will enable real-time data feeds to end users from alternative data sources and will augment traditional processes.

**Technology investments**

An analysis of technology investments reveals that at least 86% of the top 250 collection agencies continued to dedicate significant dollars to technology investments between 1995 and 2000 (Source: Thomson Financial 1998–2000 Directories).

The question: Do technology investments alone represent a guarantee for better collection decision quality and/or higher recovery?

The answer: Technology is only one important component of an organization’s total business processes. Technology alone does not necessarily translate into guaranteed success. Instead, organizations must plan properly for the future and clearly define the role of technology within the framework of an appropriate management model that is best suited for their business.

Other key components of success include:

- Having a clear vision of the competitive direction of the collection industry
- Developing business plans that are appropriate and competitive in the future collection environment
- Having a solid company infrastructure that performs at a high level
- Developing risk-management resources capable of monitoring and managing the performance of the scoring/adaptive control technology
- Integrating technology within other core business processes
- Reacting quickly to changes in the environment in order to capitalize on new opportunities

Scoring/adaptive control technology is an enabling process that provides companies with many competitive tools to build success, including the ability to:

- Empirically quantify risk (scores)
- Segment portfolios into smaller, more homogenous groups (segmentation)
- Implement complex decision strategies (decision tree technology)
- Test new ideas before going into live production (“What if” testing)
• Implement “rapid learning” processes (Champion/Challenger testing)

• Monitor portfolio quality and detect changes as they occur (reporting)

• Rapidly deploy new strategies (the adaptive control concept)

In summary, scoring and adaptive control technology will represent the keys to competitive success for those collection organizations that are able to incorporate this enabling technology within their core business practices.

**The Experian Advantage**

Effective collection strategies begin with accurate and reliable information. As one of the world's largest suppliers of information, Experian® collects and maintains data on more than 205 million credit-active U.S. consumers, 98 million U.S. households and 14 million U.S. businesses.

Blending the strength of its robust database with instant access and unparalleled accuracy, Experian has developed a wide range of superior collections solutions that span the entire collection cycle, including:

- Services for locating/verifying debtors and skip tracing

- Highly predictive scoring models to prioritize collections

- Account scoring and portfolio segmentation tools using sophisticated behavioral models

- Automatic database maintenance for the most up-to-date record-keeping

- High-volume direct-mailing services and state-of-the-art carrier route tracking tools

Experian's end-to-end collection solutions suite can help customers streamline their entire collection and recovery process and save time and resources. These solutions can be accessed via multiple methods ranging from traditional delivery vehicles, such as hard-copy reports, to automated computer-to-computer (CPU to CPU) data transmission and Internet-based delivery.

**Section III: The use of scoring in collections**

Credit scoring is a tool that has been used by credit grantors since the early 1960s to provide a quantitative measure of the risk represented by a customer. Most traditional risk scores rank order risk such that low scores measure high probabilities of a customer's becoming seriously delinquent. Conversely, high scores denote low probabilities of a customer's becoming a serious collection problem. The score scale for many recovery scores is similar to traditional risk models — low scores denote low collectibility percentages (high risk), whereas high scores denote high collectibility percentages (low risk). The key factor is that the score identifies the specific risk rate or collectibility percent of that individual.
Scoring has been slowly catching on in the collection world. Among the first to utilize scoring for collections were large retail card issuers, travel and entertainment and bankcard issuers that had to sort through large numbers of delinquent customers and select those that were most likely to pay. Scoring technology was effective because the volume of delinquent accounts was very large and the balance of the accounts was relatively low.

Scoring for collections was adopted by large companies in industries such as auto financing, telecommunications, wireless communications, banks, mail-order companies and others. These large companies were able to afford the investment in the internal infrastructure necessary to implement custom behavioral scoring and adaptive control technology. Custom behavioral scores are custom scores developed based on the various performance variables contained within a creditor's accounts receivable system.

Scoring technology for collections then spread to second-tier and smaller companies through large service bureaus (FDR, TSYS and others), providing behavioral scoring/adaptive control systems. Generic credit bureau scores were developed at the three major credit bureaus and became another tool that could be used by smaller companies to assist with collection activity.

The most commonly used bureau scores were those developed to forecast customer risk. These scores generally were loaded on the creditor's accounts receivable system, where they could be accessed over the next three to six months. Service bureaus and generic bureau scores are attractive to second-tier and smaller companies as they are purchased on a per-transaction basis and do not require significant technology investments.

The collection agency business was the last to move to scoring technology as a very desirable means to use internal resources more efficiently. Today, collection agencies utilize either generic recovery scores that are available at the three credit bureaus or custom scorecards for their unique business needs. Recovery scores help an agency prioritize its collection activities and have been developed with different objectives:

- Some are developed to identify who is likely to repay any amount of debt
- Others are developed to forecast the relative recovery amounts of each account

Recovery scores are based on credit bureau information because an agency has very little data to assess a customer with at the point that it receives a new placement. Credit reports provide a complete picture of the debtor's credit obligations — a much more robust set of information to assess a delinquent or charged-off customer.

This movement toward the use of scoring to assist in collections was further accelerated as collection agencies moved into pre-charge-off collections and could see the benefits and results achieved by creditors using scoring processes at similar levels of delinquency. Typically, behavioral scores are used for early-stage collection activities as opposed to bureau risk or recovery scores.
Scoring models represent a major advancement over the traditional collection strategies. The score empirically provides an assessment of collectibility and can be used together with traditional collection practices to take collections to a higher level.

**Section IV: Decisioning strategies & the collections life cycle**

Delinquent accounts flow through a unique collections life cycle requiring different techniques to cure the problem. The different stages of the collections life cycle include early-stage delinquency, midstage delinquency, late-stage delinquency and post-charge-off. The timing for these stages varies depending on the type of industry — credit cards generally have longer collection cycles (charging off at 180 days), whereas installment lending typically has a much shorter life cycle (with charge-offs occurring between 90 and 120 days). Companies lending to sub-prime, high-risk customers have very short collection cycles, with activities starting as soon as a customer becomes delinquent.

Scoring/adaptive control is a set of tools that can help creditors and collection agencies manage their customers through all stages of the collections life cycle.

**Early-stage delinquency**

Creditors handle most early-stage collection activities, although it is becoming more common to outsource these activities. Early-stage delinquency has a unique challenge. There are a large number of early-stage delinquent customers, and 85-95% will pay with minimal effort on the creditor’s part. The challenge is to sift through the large numbers to identify those that are true problems.

Creditors use their resources to identify those customers that are most likely to not pay. Thus, scoring and decisioning technology is used to assess risk and sort through the large numbers of delinquent customers. A typical strategy for early-stage delinquency is contained in Exhibit C.

**Exhibit C: Early-stage strategy example**

![Early-stage strategy example diagram]

8
In the above example, collectors are aggressively focused on the high-balance, low-collectibility customers while at the same time applying soft-touch treatments to high-collectible and low-balance accounts. Creditors try to provide good customer service to low-risk customers with the soft-touch techniques.

Companies with huge portfolios commonly organize collection activities in collection centers and utilize automated techniques to manage the early delinquency problems. Predictive dialers are very important tools.

**Midstage delinquency**

The challenge to creditors changes as delinquencies continue to progress to higher levels. Collections become much more difficult and specialized. There is much more outsourcing of activities to third parties. The challenge of midstage collections is to contact and communicate with the customer.

The number of delinquent customers is much smaller due to the early-stage collection efforts. Creditors want to contact customers and set up repayment plans as quickly as possible. If there is no valid address or phone number, skip-tracing activities are undertaken so that communication with the customer can occur. Collection success is much more limited, with approximately 40-65% collection rates. Thus, the cost of collecting an account increases dramatically.

The use of scoring and decisioning technology continues as creditors revise their estimates of collectibility. Problem issues are assigned to specialized departments such as bankruptcy, legal and skip tracing. Creditors begin to invest in skip-tracing activities — buying information from skip location services or directory assistance to locate the customer. A typical strategy for midstage collections is contained in Exhibit D.

**Exhibit D: Midstage strategy example**

![Midstage strategy example diagram]
In the above example, the collector targets efforts on the high-balance, high-collectible accounts while using light activities on the low-balance, low-collectible accounts.

**Late-stage delinquency**

Creditors are very concerned with customers in late-stage delinquency. The number of late-stage delinquents is relatively small due to the early-stage and midstage collection activities. People in late-stage delinquency are more difficult to locate or have serious financial problems. The challenge is to resolve the delinquency and minimize the loss. Success rates fall to 20-35%.

Creditors use their most experienced collectors on these accounts and use very aggressive techniques to resolve the accounts. Some of these activities include legal action, foreclosure and repossession. Creditors are much more likely to outsource these accounts to third parties.

Key tools for late-stage collections include skip-tracing services to collect phone and address information. Creditors also use triggering activities to identify customers. Triggering activities most commonly come from credit bureaus where the customer has initiated some type of credit activity, such as opening a new account, inquiring for new sources of credit, filing bankruptcy or beginning to repay delinquent debt. This allows a creditor to inquire into the source of the activity and gain new knowledge of and insight into the customer.

Creditors at this stage focus their efforts on those customers that have the highest probability of success.

Exhibit E is an example of a late-stage collection strategy.

**Exhibit E: Late-stage strategy example**

<table>
<thead>
<tr>
<th></th>
<th>Low $</th>
<th>H</th>
<th>High $</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low collectibility %</td>
<td>Aggressive</td>
<td>Aggressive</td>
<td>Aggressive</td>
</tr>
<tr>
<td>Normal</td>
<td>Aggressive</td>
<td>Normal</td>
<td>Aggressive</td>
</tr>
<tr>
<td>Normal</td>
<td>Normal</td>
<td>Aggressive</td>
<td></td>
</tr>
</tbody>
</table>
In this example, collections focus heavily on high-balance, high-collectible customers while de-emphasizing small-balance, low-collectible accounts.

**Post-charge-off/Recovery**

Creditors face a unique challenge in determining how to maximize their net recovery on charged-off accounts. The key questions that must be answered are:

- Do we keep an account in-house and continue to collect from the customer?
- Do we place the account with an outside agency for a fee?
- Do we give up on the customer and simply sell the bad debt to a third party?

Exhibit F offers an example of a score-based decision strategy to assist with the above questions.

**Exhibit F: Retain, place, sell decision**

In the above example, creditors would keep the large-balance, high-collectible accounts in-house while selling low-collectible accounts to a third party. It should be recognized that prices negotiated with agencies vary based on the quality and balance sizes for both contingent fee placements and debt sales.

Collection agencies have a different perspective as they are in the process of acquiring new accounts from creditors. Typically, very little information is passed from the creditor to the agency. The agency’s challenge is to gather as much information about a customer in as short a period of time as possible and then to assess the collectibility of the customer.
Collectibility of post-charge-off accounts is very low — varying between 5% for customers who have been charged off for a long time to 25% for customers who have been recently placed.

Information about charged-off accounts is available from many different sources, including credit bureaus, demographic data sources, Internet sources, phone directories and proprietary database sources. Once information has been gathered, agencies then segment the accounts for collection activity. Certain examples of specialized segments include skips, foreclosure, consolidations and legal action. Collection teams manage customers with valid addresses and phone numbers.

An example of a scoring decision strategy for an agency is contained in Exhibit G. Agencies focus on those accounts that will provide the greatest return — most typically high-balance, low-risk accounts.

Exhibit G: Collection agency strategy

<table>
<thead>
<tr>
<th>Balance</th>
<th>High collectibility %</th>
<th>Low collectibility %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low effort</td>
<td>Aggressive</td>
<td>Low effort</td>
</tr>
<tr>
<td>Aggressive</td>
<td>Low effort</td>
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<tr>
<td>Aggressive</td>
<td>Low effort</td>
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</tbody>
</table>

In the above example, the collection agency targets accounts that are highly collectible and uses minimal contracted efforts on small-balance, low-collectible accounts.

Section V: Adaptive control systems and decision engines for collections

The need for decisioning tools has grown with the use of scoring models. Once a score is used, a creditor must determine the type of strategy to be employed on each account. Adaptive control systems are used to incorporate all available information into a decision process that prioritizes collection activities.

Key functions of adaptive control systems include:

Segmentation of portfolio — Collectors must be able to break down their portfolios into smaller homogenous groups. Examples of segmentation include...
breaking a bankcard portfolio into Classic, Gold and Platinum cards; breaking an automotive finance portfolio into new, used, lease and luxury groups; and segmenting a portfolio by the level of delinquency (i.e., one cycle, two cycles, three cycles or more delinquent).

**Score calculation and implementation** — The system must be able to calculate custom scores or incorporate generic scores into decision processes.

**Integration of multiple data elements** — Collectors must be able to integrate multiple data elements into the decision process to produce the optimal set of collection strategies. This includes factors like the balance of the account, the level of delinquency, past payment history, balance-to-limit ratio and other factors.

**Champion/Challenger testing** — Champion/Challenger is a process of running two different, randomly assigned decision strategies simultaneously to determine which strategy provides the best results. The Champion strategy is the strategy that has worked the best in the past, whereas the Challenger is a newly devised strategy used to see if performance can be improved. By using Champion/Challenger, companies can rapidly learn those techniques that provide greatest success.

**Strategy determination through decision strategy trees** — Adaptive control systems must be capable of implementing very complex decision strategies. This is most commonly done through the use of decision trees.

**“What if” testing** — This allows a hypothetical strategy to be thoroughly tested using past customer results before placing it into production.

**Reporting system** — Given the complex nature of adaptive control systems, it is critical to have a reporting system that highlights the system’s overall performance. The reporting system must be able to analyze the scoring results, the decision strategy results and the Champion/Challenger results for each segment in the system.