

AI Meets AR

Data Scientists Weigh in
on a \$9 Billion Problem for
Community Associations

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Let's begin with some basic economics for community associations. We will not dig too deep into the numbers, but an overview helps underscore the need and the potential value of solutions.

First, we should grasp the scope of the issue. Based on [2023 data from the Community Associations Institute](#) (CAI) there were 28.2 million homes in community associations that generated \$108.8B in assessments within the US.

\$108.8 billion

Assessments Collected From Homeowners

Assessments fund many essential association obligations, including professional management services, utilities, security, insurance, common area maintenance, landscaping, capital improvement projects, and amenities like pools and club houses.



The Problem

Based on a sample of 1,333,821 units across the country, community associations report that an average of 8.42% of units become past due. There is no data to specify the dollar amount associated with those delinquencies, which could be disproportionately high if we assume higher assessments are more likely to become delinquent, or low if we assume lower assessments are more likely to become delinquent. Therefore, we will assume that the national delinquency rate corresponds to the total annual assessments reported by CAI, which means **communities are likely carrying \$9,157,940,620 in delinquencies and collection costs.** That would be \$325/year in carrying costs per home. In a recession, these amounts can *double* or even *triple*.

Of the 8.42% of units that become delinquent, 4.08% are resolved within the first 90 days, and the remaining 4.34% are referred to third parties for escalated action. Resolutions that happen within the first 90 days are achieved by managers and boards at a relatively low cost. These make up a small portion (\$705,109,250) of the \$9.2B mentioned above since the

principal balance is low and there are no legal fees incurred. Still, managers that embrace new technologies, including workflow automation and AI, have improved these recovery times while removing hours of wasted labor from monitoring past due accounts and managing payment plans. The 4.34% of delinquencies referred to third parties totals a staggering \$8,452,831,369 in assessments, including legal fees and related collection costs. This is the area of greatest economic harm to communities, both in terms of the economic burden and the length of time it takes to resolve these accounts.

The Opportunity

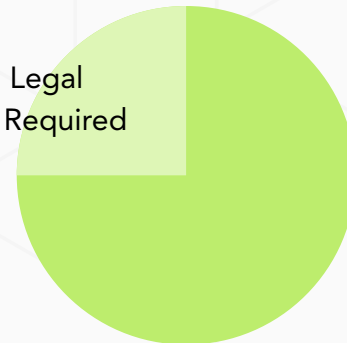
AI and workflow automation currently has the potential to resolve 70% of all delinquencies, returning **\$6,274,500,000 to communities** in a fraction of the time with no need for human intervention or legal action. That creates an extra \$223 annually per home that can be used to improve the community and bolster reserves.

\$8.4B

Expensive and time consuming to collect receivables greater than 90 days old.



\$2.16B Legal Action Required



\$6.3B

Artificial intelligence (AI) and automation opportunities.

U.S. Community Associations, Housing Units & Residents

Year	Communities	Housing Units	Residents
1970	10,000	0.7 million	2.1 million
1980	36,000	3.6	9.6
1990	130,000	11.6	29.6
2000	222,500	17.8	45.2
2002	240,000	19.2	48.0
2004	260,000	20.8	51.8
2006	286,000	23.1	57.0
2008	300,800	24.1	59.5
2010	311,200	24.8	62.0
2011	317,200	25.4	62.7
2012	323,600	25.9	63.4
2013	328,500	26.3	65.7
2014	333,600	26.7	66.7
2015	338,000	26.2	68.0
2016	342,000	26.3	69.0
2017	344,500	26.6	70.0
2018	347,000	26.9	73.5
2019	351,000	27.2	73.9
2020	355,000	27.5	74.1
2021	358,000	27.7	74.2
2022	362,000	28.0	75.0
2023	365,000	28.2	75.5

[2023 data from the Community Associations Institute](#): Homeowners associations account for 58-63% of the totals, condominium communities for 35-40%, and cooperatives for 2-4%.

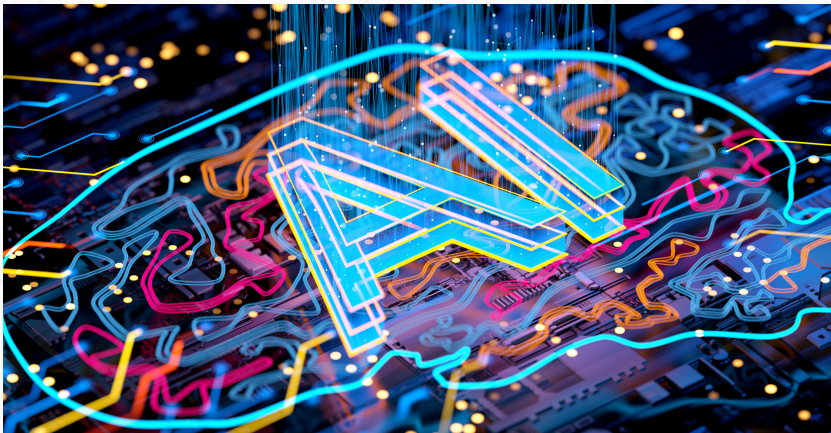
Where AI is Already Working

Many industries have already incorporated AI into their collections process. Specific examples are compelling and show that the community association industry needs to play catch-up.

[Collect.ai](#) is using AI to collect over \$7.6 Billion in AR for 50+ companies in Europe including applications for [rent collection](#).

[Elise AI](#) has reduced apartment rent delinquencies by 52% for their clients.

[Gartner](#) has identified 28 companies that offer cloud-based applications to automatically manage collections.



In a recent article titled [5 Ways Generative AI is Transforming Accounts Receivable](#) we see how businesses are already incorporating AI to revolutionize their AR functions and reduce manual tasks that are prone to errors.

One of those ways is *Personalized Collections Strategies and Correspondence*.

- ✔ Generative AI enables businesses to develop personalized collections strategies and letters tailored to individual customer preferences and payment behaviors.
- ✔ By analyzing vast amounts of customer data, including communication history, payment patterns, and credit risk profiles, AI algorithms can recommend the most effective collection approaches for each debtor.
- ✔ GenAI can prepare personalized reminder letters for each customer. Whether it's sending reminders, offering discounts, or negotiating payment plans, personalized collections strategies enhance debtor engagement and increase the likelihood of timely payments.



Gartner on CFOs and AI

Based on a [2024 survey by Gartner](#), number one on the list of priorities for CFOs is leading transformation efforts.

// The focus on transformation efforts aligns with the increased interest in GenAI and other disruptive technologies. This also speaks to the role the CFO plays in evaluating and aligning investment in these transformative technologies, both in finance and across the enterprise.”

Marko Horvat, Vice President, Research in the [Gartner Finance Practice](#)

McKinsey on Digital-First Collections

Helpful parallels can be drawn from an [article by McKinsey & Company](#) that addresses how digital communication is transforming collections and improving repayment times by as much as 5x for mortgage lenders. What they describe as “critical capabilities in the customer-assistance stack” includes proven value drivers in three key areas: digital-first customer journeys, analytics-driven intelligence, and technology enablement.

McKinsey goes on to say that a digital-first solution should be powered by an AI-led advanced-analytics stack. This means moving away from what they describe as a *broad-brush approach* that uses a linear contact strategy. (That would aptly describe the collections policies used by most communities.)

While standard notices at predetermined intervals may still be required, they could – and should – be supplemented by AI-led decision making and communications tailored to each person. “Based on data-driven decision making, advanced-analytics-driven intelligence can be injected into collections journeys to create a more responsive and personal service.”

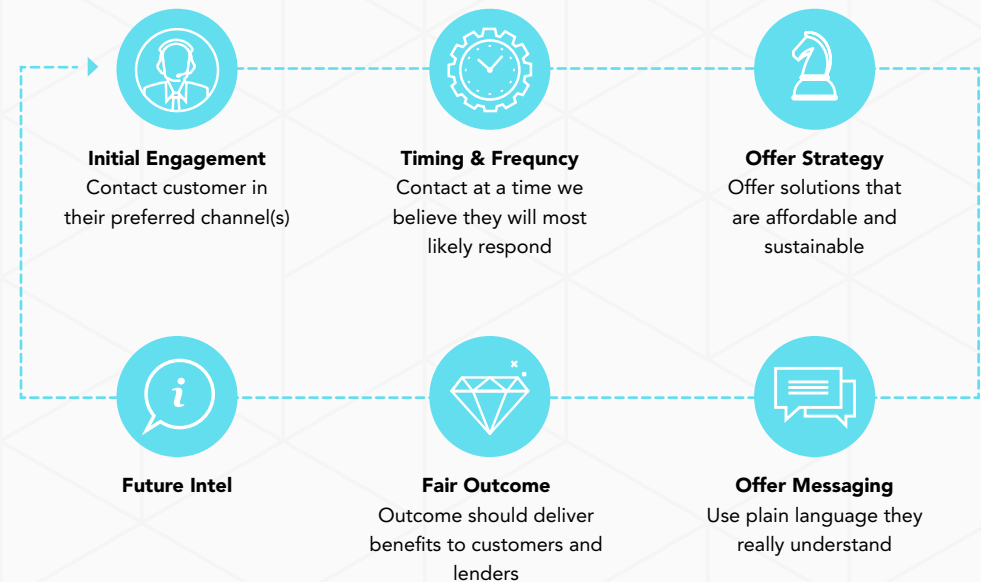


AI-led decision making can replace a broad-brush approach

Typical current-state linear-contact strategy



Dynamic future-state contact strategy



Advice from Experts



Jason Harper is the President and Founder of [Ready Signal](#) and the past CEO and Founder of RXA. He holds two machine learning-based patents and contributes to data science publications as part of a larger community effort to advance the field of AI and data science. In his analysis of community association delinquencies, Jason states “The integration of AI and predictive analytics into the community association industry represents a monumental shift. By leveraging these technologies, we can significantly reduce delinquency rates, optimize collection processes, and ultimately save billions of dollars. This is not just about improving efficiency; it’s about empowering communities to thrive financially.”

Drawing on his experience in other sectors, Jason offers these insights: “In the same way that retail businesses use AI to personalize marketing and drive customer engagement, community associations can utilize these technologies to create customized communication strategies. This personalization increases the likelihood of timely payments and reduces the incidence of delinquencies.” Jason also notes that “The parallels between the community association industry and the banking sector are striking.

Just as workflow automation revolutionized legal collections during the 2008 recession, AI and predictive analytics are poised to bring about a similar revolution in how we handle delinquencies in community associations. The potential savings and efficiencies are simply too significant to ignore.”



Brent Bassett, an attorney and technologist, was at the forefront of [workflow technologies](#) that helped law firms during the recession of 2008.

The banking industry had historically used local law firms for collections, but some larger firms developed solutions like workflow automation to process legal actions and bank integrations to remove the burden of manually transmitting and updating delinquency data. These solutions quickly moved from a helpful resource to a necessity based on the volumes of legal actions required during the Great Recession.

Brent is now bringing his experience to the community association industry. “The parallels to the banking industry are clear” says Bassett. “What was a cottage industry prior to 2008 quickly evolved into a sophisticated and highly efficient network of select law firms that could manage massive volumes of data and processes at a fraction of the cost. The community association industry is poised to do the same.”

Advice from Experts

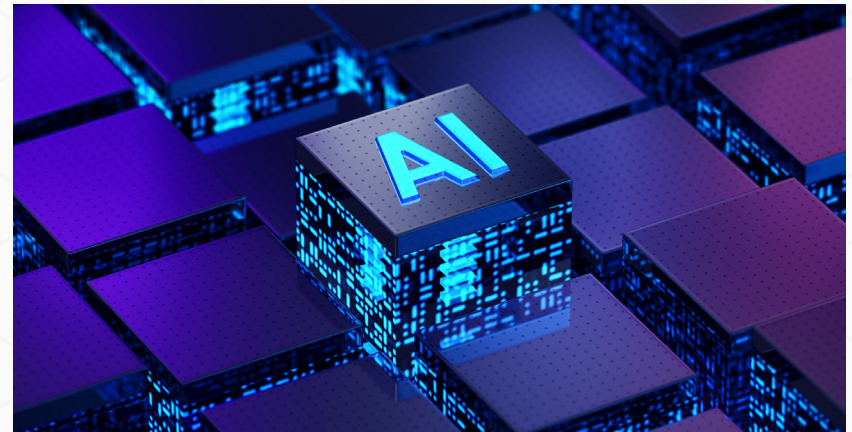


Jonathan “JP” Prantner is the Chief Analytics Officer at [OneMagnify](#). His approach to applied mathematics has pushed analytics to the limits for over two decades. At OneMagnify, he leads efforts surrounding applied artificial intelligence and machine learning as well as integrating advanced analytics with data visualization platforms. Jonathan is a celebrated thought - leader and recipient of multiple data science patents.

Jonathan offers this perspective based on how other industries are leveraging AI: “The application of predictive analytics and AI in the community association industry is akin to the advancements we’ve seen in financial services, where machine learning models predict credit risk with remarkable accuracy. By leveraging similar technologies, community associations can proactively identify high-risk delinquencies and implement tailored intervention strategies, significantly reducing overall collection costs.”

Likewise, JP notes “The integration of AI-driven decision support systems within community associations mirrors the advancements seen in supply chain optimization, where predictive analytics forecast demand and optimize inventory levels.

Similarly, AI can predict delinquency trends and optimize collection efforts, ensuring financial stability and operational efficiency.” When discussing a collection algorithm for community associations, JP shares that “By employing advanced data science techniques, such as clustering and classification algorithms, community associations can segment delinquent accounts and tailor their collection strategies accordingly. This data-driven approach ensures that interventions are both effective and efficient, ultimately leading to higher recovery rates and lower operational costs.”



Promising Results

The opportunity referenced in the opening of this study is already being realized by early adopters of AI and workflow automation that are resolving up to 70% of their delinquencies with zero labor and increased revenue. This is the culmination of data tracked over a 20-year period of collection activities, beginning with intuitive efforts that led to several advancements that are now being accelerated by AI. This historical data was the basis for a patent-pending algorithm that will continue to evolve and improve as future data is ingested by the AI engine.

These are details on how best practices have evolved, along with the progress our industry will realize as these practices and technologies are adopted:



Standard Sequential Workflow: This is what most managers already do; a series of prescribed communications at predetermined intervals. As we noted above, this is the baseline for our study where nearly half of all delinquencies are resolved but only \$705M of the total \$9.2B is recovered. Introducing AI at this stage is helping managers reduce labor costs and recover this “low hanging fruit” faster.



Rules-Driven Workflow: Data analysis and intuitive experience has allowed us to continually improve resolution rates for communities to the point where roughly half of all accounts referred to collections can be resolved without legal action. Using this informed method of collection, a resolution rate of 50% is significant at \$4.2B but still time-consuming and relatively expensive.



AI-Based Workflow: This is where things get exciting. We are scratching the surface with initial resolution rates of 70% that are achieved in a few months for an average cost that is under \$200 per delinquency. The machine learning capabilities of this closed-AI system will continually improve based on experience. We are confident that resolution rates exceeding 90% will be achieved.

Will We Lead...or Follow?

The landscape around collection methods is changing in other industries. A common complaint within the community association industry is how slow we are to recognize and adopt advancements. We are at that point as it relates to delinquencies.

As industry leaders, it is our duty to foster proactive discussions and evolve past outdated methods that are influencing legislation and increasing burdens on boards, managers, and community members.

The traditional “broad brush” approach has yielded inconsistent results that can be particularly punitive for the delinquent homeowner while saddling the rest of the owners with significant carrying costs. Legal action is a vital tool, but it should only be employed as part of a community-focused strategy that aims to meet homeowners where they are and provide solutions.

Now is the time to collectively embrace a more thoughtful and technology-enabled approach that benefits all community association members.



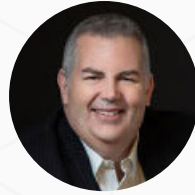
About the Authors



Jason Harper

President, Ready Signal

Jason Harper is a seasoned data science leader and entrepreneur with over two decades of experience in analytics, machine learning, and artificial intelligence. He is the founder of RXA, Ready Signal, and Weave Workforce, pioneering in consulting, data-as-a-service, and workforce optimization software. Currently, he serves as the Managing Director of RXA at OneMagnify, where he continues to drive the strategic direction of this data science consulting firm, delivering innovative solutions to global clients.



Brent Basset

Director of Product, TechCollect

Brent Bassett leads the charge in revolutionizing how community associations manage and collect delinquent accounts. With a strong background in product leadership and development, Brent spearheads the creation of AI-driven solutions that empower community associations and redefine the collection of past due assessments. His expertise in leveraging AI and data-driven insights has been instrumental in developing TechCollect's cutting-edge platform, which analyzes thousands of data points to recommend the most effective collection strategies for delinquent accounts.



Jonathan Prantner

Chief Analytics Officer, OneMagnify

Jonathan Prantner is the Chief Analytics Officer at OneMagnify. His approach to applied mathematics has pushed analytics to the limits for over two decades. Jonathan's career has spanned educational research, automotive, consumer packaged goods, travel and healthcare. At OneMagnify, he leads efforts surrounding applied artificial intelligence and machine learning as well as integrating advanced analytics with data visualization platforms. Jonathan is a celebrated thought leader and recipient of multiple data science patents.



Prepared by



Contributors

