HOW AI CAN HELP THE COLLECTIONS INDUSTRY

An Arum whitepaper

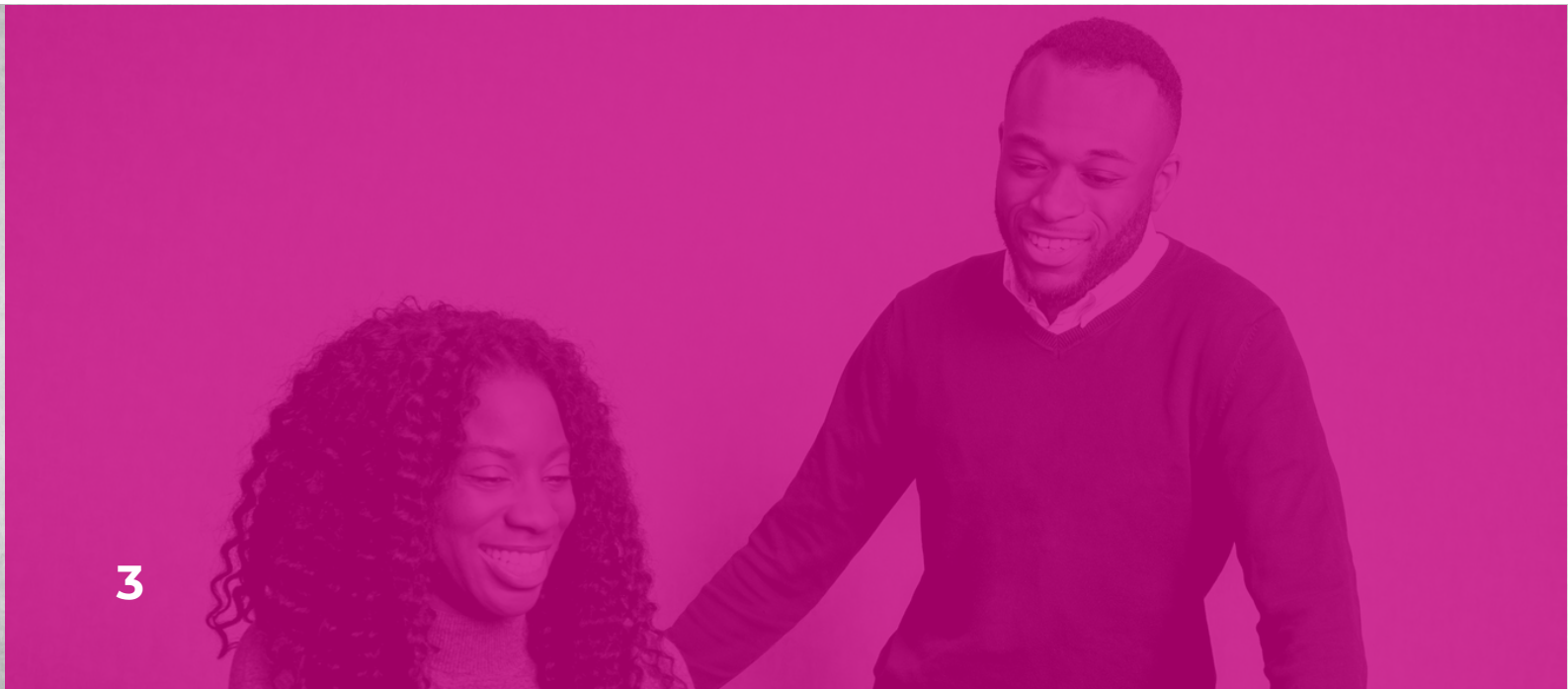
Contents

INTRODUCTION

AI has been thrust into the spotlight in recent months, with the advent of generative AI such as ChatGPT, ChatSonic and Google Bard. These solutions are writing homework for school kids, creating blogs (I promise you it hasn't written this piece!), writing poetry, designing custom images and much more, all from a simple human request, with the AI presenting the output under different guises, e.g., as if a kid wrote it, or a professor.

The "generative" aspect is key; this is where the AI generates a response based on the request, using a virtually unlimited amount of data points available on the web to respond. These aren't static data points like we might find currently within a collections operation that would restrict the data the AI can use, but a virtually unlimited amount of data points that the AI can harvest in seconds, infinitely faster than any human. It staggers the mind what the AI can do with all this data and just what it might lead to.

Generative AI could be revolutionary in the collections space, with its ability to recognise a request, verbal or written, and then generate an appropriate response.



EPISODIC VS. PROCEDURAL MEMORY

When considering AI, we should also be aware of the difference between “episodic memory” and “procedural memory”:

Episodic memory

Refers to the ability of an AI system to remember specific events that have happened. This could include things like the results of previous experiments, the actions that were taken in a particular game, or the conversations that have been had with a user. Episodic memory can be used to help AI systems learn from their experiences and to make better decisions in the future.

Procedural memory

Refers to the ability of an AI system to learn how to perform tasks. This could include things like how to play a game, how to translate languages, or how to write different kinds of creative content. Procedural memory is often used in conjunction with episodic memory, as the episodic memory can provide the context for the procedural memory.

For example, an AI system that is learning to play a game might use its episodic memory to remember the results of previous games. This information can then be used to improve the system's performance in future games. The system might also use its procedural memory to learn how to perform specific actions in the game, such as how to move the pieces or how to attack the opponent.

Episodic memory and procedural memory are both important for AI systems. Episodic memory allows AI systems to learn from their experiences, while procedural memory allows them to learn how to perform tasks. Together, these two types of memory can help AI systems to become more intelligent and capable.

Here are some specific examples of how episodic memory and procedural memory are used in AI:

Episodic memory examples

Used in reinforcement learning algorithms. Reinforcement learning algorithms learn to perform tasks by trial and error. They remember the results of their previous actions, and they use this information to improve their performance in the future

Procedural memory examples

Used in natural language processing (NLP) models. NLP models learn to understand and generate text by analysing large amounts of text data. They store this information in their procedural memory, and they use it to perform tasks such as translation, question answering, and summarisation.

In this piece, I will explore AI through the lens of collections and recoveries, looking at how it can help organisations and their customers, what we should be concerned about, and what the regulatory implications are.

THE THREE CORE AREAS OF AI

First of all, a disclaimer; AI is a vast subject, with numerous experts writing about it. I don't profess to be an expert by any stretch of the imagination, and for the purposes of this article I have taken a layman's approach to make the associations to collections easier and more familiar.

Having said that, I have found that AI can be classified into three core areas:

1. Artificial Narrow Intelligence (ANI)

Refers to the type of AI that is designed to perform a specific task or set of tasks. ANI is also called 'Weak AI', as it can only perform tasks that it has been programmed to do and cannot go beyond that. Examples of ANI include virtual assistants like Siri, Alexa, and Google Assistant, IBM Watson, image recognition software, and most chatbots. ANI is currently the most common type of AI, is widely available and has been for some years. ANI is closely related to Machine Learning.

2. Generative Artificial Intelligence (GAI)

Refers to the type of AI that can perform any intellectual task that a human can do. GAI is designed to learn and adapt to new situations, solve problems, and reason about abstract concepts.

Unlike ANI, GAI is not limited to a specific set of tasks. One of the potential benefits of GAI is the ability to automate many tasks that are currently done by humans, leading to increased productivity and efficiency in many industries. We are already seeing GAI tools in the collections space, and there have been widely reported stories about GAI helping to create vaccines that would take humans months or even years to accomplish.

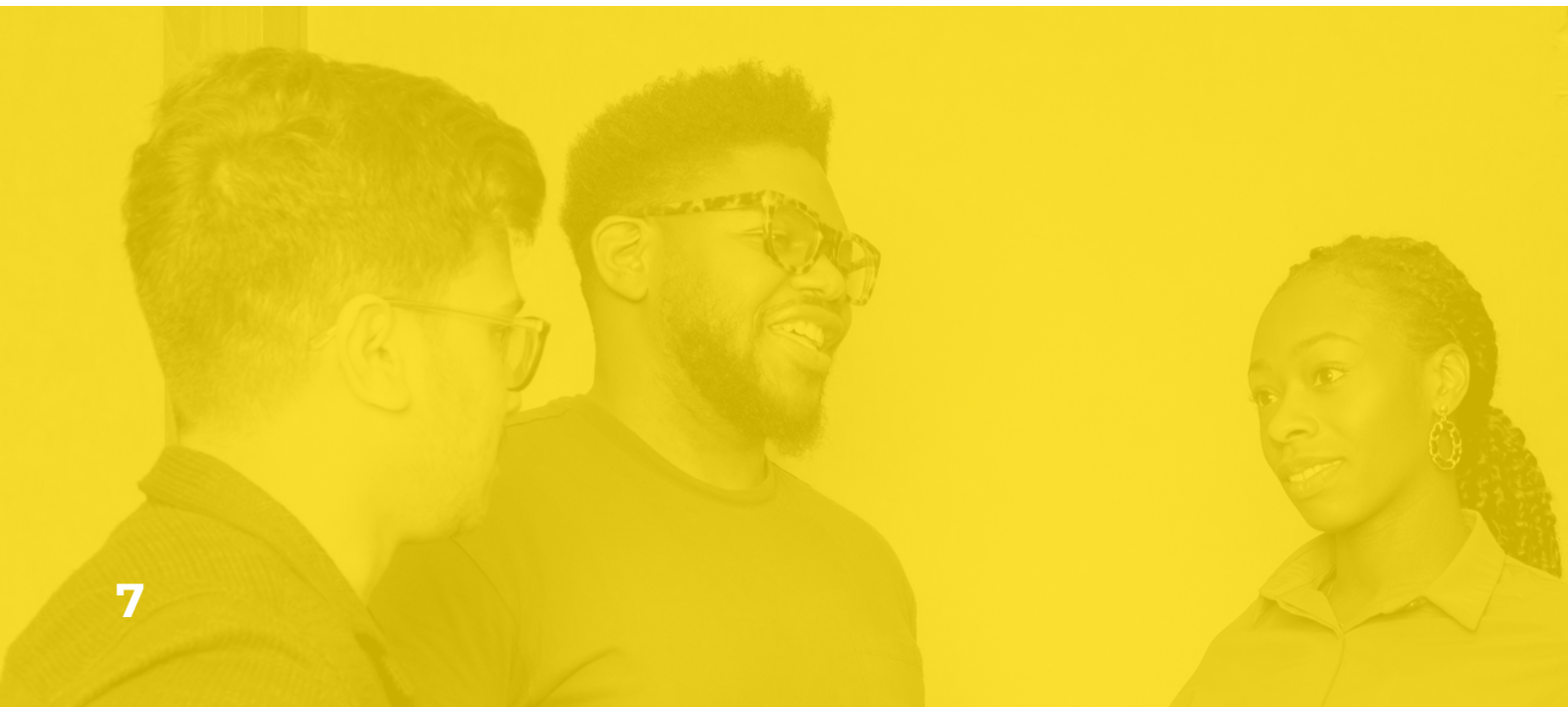
3. Artificial General Intelligence (AGI)

Refers to a hypothetical type of AI that would possess intelligence far surpassing that of the brightest and most gifted human minds. It would be able to solve problems that are currently beyond human capabilities, and it could potentially have a profound impact on the future of humanity. This is the stuff that science fiction movies are based on.

Now that we have a basic understanding of the types of AI out there, I want to look at how both ANI and GAI are being used and could be utilised within collections.

ARTIFICIAL NARROW INTELLIGENCE (ANI) IN COLLECTIONS

Machine Learning (ML) is closely related to ANI in collections and is a field of computer science that gives computers the ability to learn without being explicitly programmed. Machine Learning algorithms are trained on data, and they learn to perform tasks by identifying patterns in the data.



There are two types of Machine Learning:

Supervised learning

When the Machine Learning algorithm is given labelled data, meaning that the data has been tagged with the correct output. The algorithm learns to associate the input data with the correct output.

Unsupervised learning

When the Machine Learning algorithm is given unlabelled data. The algorithm learns to identify patterns in the data without being given any guidance. For example, clustering customer data by identifying similar patterns.

Machine Learning has been used extensively in the collections industry to improve the efficiency and effectiveness of debt collection efforts:

Pre-delinquency

The use of Machine Learning to predict which up to date customers require attention if they appear to be in financial difficulties

Predicting the likelihood of payment / default / roll

Machine Learning algorithms can be used to analyse historical data to predict the likelihood of a customer paying their debt. This information can be used to prioritise customers for collection efforts and to focus on those debtors who are most likely not to pay. These types of predictions have been around for years without Machine Learning, and historically they have been based on credit / behaviour scores and expert input. The ML-based approach is often called 'Optimisation'.

Forbearance recommendations

Based on a variety of data and possible combinations of solutions – long-term, short-term, interest concessions, out of policy decisions.

Personalising communication

This includes tailoring the message, the tone, and the timing of communication to the individual customer. This can help to improve the effectiveness of communication and to increase the likelihood of payment.

Language recognition

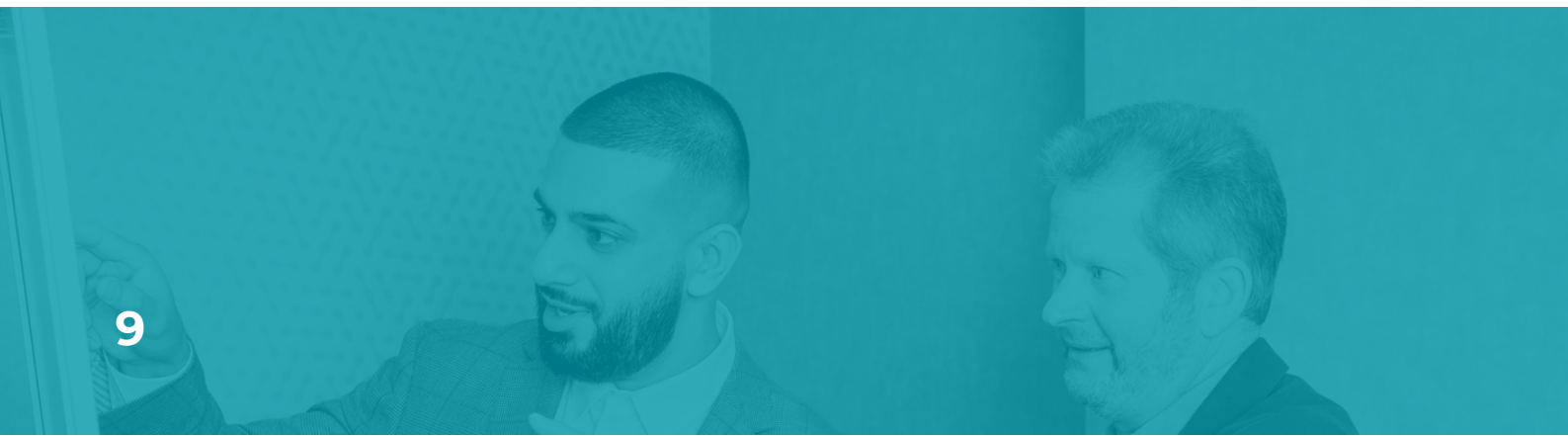
This can be a powerful tool to enhance the customer experience and improve how organisations can provide support. Some organisations struggle with supporting non-native English speakers which can cause a lack of engagement.

Automating tasks

By identifying patterns in data and using those patterns to make predictions or decisions. For example, a Machine Learning algorithm could be trained to identify fraudulent transactions by analysing historical data of fraudulent transactions. Once the algorithm has been trained, it can be used to automate the task of identifying fraudulent transactions in real-time. Similarly, Machine Learning algorithms can be used to assess risk.

Combining RPA and ML

Many businesses use Robotic Process Automation (RPA), which is not a type of Artificial Intelligence but rather a technology that allows businesses to automate repetitive tasks. However, RPA and ML can be combined; RPA can be used to automate tasks, such as data entry, while ML can then be used to make decisions or predictions based on the data that is entered.



Speech analytics and Machine Learning

This can be used to extract insights from customer conversations, such as vulnerability and customer dissatisfaction, and then make a decision, for example if an escalation is required. It can be used to extract insights from customer conversations that would otherwise be missed and ensure 100% of calls are audited for policy compliance.

Modern collections platforms

Many already deploy Machine Learning in areas such as contact timing, channel type, message tone, next best action, policy exceptions, strategy optimisation, debt placement and reconciliations and automation.

Chatbots

These can utilise Machine Learning to learn from the conversations they have with customers, and they can use this information to improve their responses in the future.

How chatbots utilise Machine Learning

There are two main types of chatbots:

1. Rule-based chatbots

These are programmed with a set of rules that they use to respond to user queries

2. Machine Learning chatbots

These are trained on a dataset of user conversations. This allows them to learn how to respond to user queries in a more natural and human-like way

Machine Learning chatbots are becoming increasingly popular, as they offer a number of advantages over rule-based chatbots. For example, Machine Learning chatbots are able to learn and adapt over time, which means that they can become more accurate and helpful as they interact with more customers. Additionally, they can be used to personalise the customer experience, which can lead to increased customer satisfaction.

Here are some examples of how Machine Learning is used in chatbots:

Natural language processing

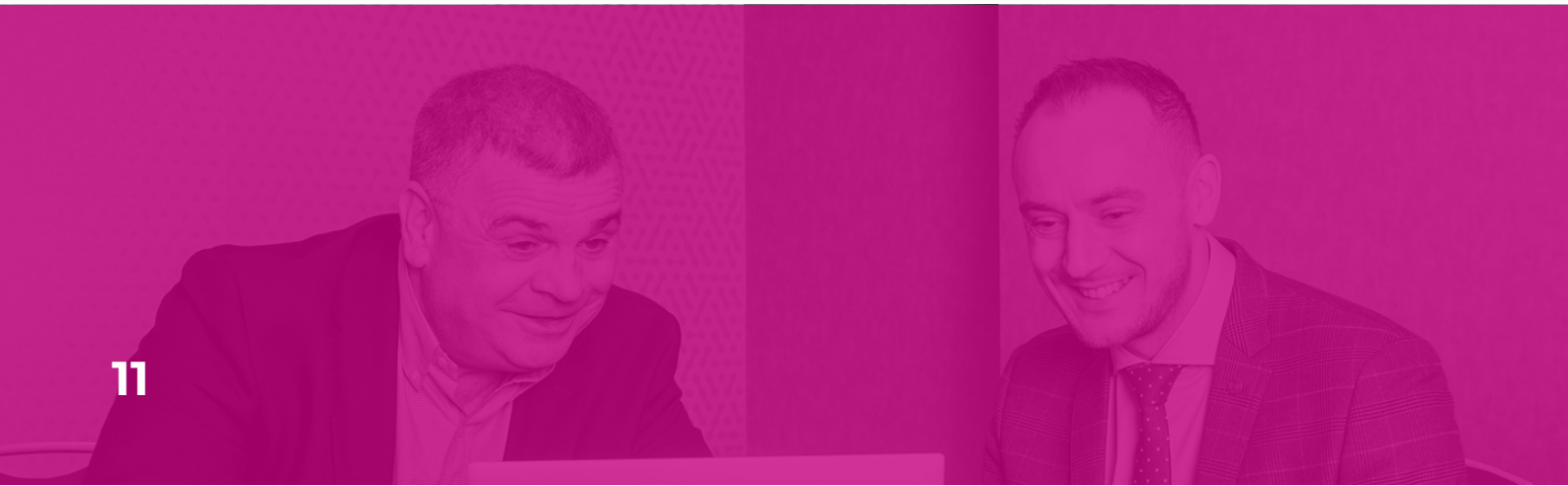
Machine Learning is used to understand the meaning of customer queries. This allows chatbots to respond to customers in a more natural and human-like way.

Sentiment analysis

Machine Learning is used to identify the sentiment of customer queries. This allows chatbots to respond to customers in a way that is appropriate to their emotional state.

Recommendation engines

Machine Learning is used to recommend products or services to customers. This can be done based on the customer's past interactions with the chatbot or based on the customer's financial situation. Think here about recommending payment options / forbearance.



GENERATIVE ARTIFICIAL INTELLIGENCE (GAI) IN COLLECTIONS

Generative AI can be used to create new content, such as text, images, or music. It is still a relatively new technology, but it is already being used in a variety of industries, including the collections industry.

What's it currently being used for?

Creation of personalised chatbots

These can interact with customers in a more natural and engaging way. The chatbots are trained on a dataset of customer conversations and they can use this information to generate responses that are tailored to the individual customer.

Personalisation of messaging

This is more likely to persuade customers to pay their arrears. The messages are tailored to the individual customer's situation, and they are designed to be more empathetic and persuasive

What are the benefits?

Working 100% of accounts

Generative AI-based chatbots can dial an unlimited number of accounts. Think about your dialler penetration and the upside of 100% penetration every day, aligned to AI driven chatbots who can handle the majority of customer conversations.

Operational cost reduction

AI-based chatbots that can replicate a human agent could reduce the human agent overhead. In many markets it is difficult to hire and retain good collection agents and this difficulty is potentially reduced through an AI solution.

Regulatory compliance

All AI-based conversations could comply with all regulations and internal policies, removing control risk.

Expert agent allocation

The use of AI-based chatbots could result in human agents being able to be ringfenced for the more difficult customer scenarios, such as vulnerability.

What are the concerns?

This is still new technology, and, rightfully, many businesses are nervous about its application, especially in regulated environments. Some of the challenges associated with using it are:

Data requirements

Machine Learning algorithms require data to train and operate. This can be a challenge for businesses that do not have access to large datasets.

Bias

Generative AI algorithms can be biased, depending on the data they are trained on. This could lead to the creation of content that is discriminatory or offensive

Explainability

It can be difficult to explain how AI algorithms make decisions. This can be a challenge for businesses that need to explain their decision-making process to regulators or customers.

Data privacy

Generative AI algorithms require data to train and operate. If this data is not properly secured, it could be used to create fake content or to attack other systems.

Data quality

The quality of the data that is used to train generative AI algorithms is critical. If the data is biased or inaccurate, then the generated content will be biased or inaccurate as well.

Transparency

It is important to be transparent about how generative AI algorithms work. This will help to build trust and ensure that people understand how the algorithms are making decisions.

REGULATING AI

There is a growing body of regulations governing the use of generative AI. It is important to stay up to date on these regulations and to comply with them.

EU and UK

The European Artificial Intelligence Board (EAIAB) is a proposed body that would be responsible for coordinating and overseeing the development of artificial intelligence in the European Union.

The UK left the EU in January 2020, and as a result, it is not eligible to participate in the EAIAB. UK proposals are likely to be more flexible and less prescriptive than the EU's proposals as well as being led at a sectoral level, allowing space for innovation.

The UK government has its own plans for AI regulation. In December 2021, the government published a white paper on AI regulation, which sets out a framework for regulating AI in the UK. The white paper proposes a risk-based approach to regulation, with different levels of regulation depending on the risk posed by the AI system.

The UK government is also considering establishing its own AI board. The board would be responsible for providing advice to the government on AI policy and regulation. It is possible that the UK and the EU could cooperate on AI regulation in the future. However, it is not clear what form this cooperation would take.

Financial services

The FCA is still in its formative stages of considering how to regulate AI, and a lot of work has been done to gather information.

A joint survey by the FCA and the Bank of England earlier this year found that 72% of respondent firms reported actively using or developing AI applications, with the trend expected to triple in the next three years.

Benefits reported by respondents include enhanced data and analytic capabilities, operational efficiencies and better detection of fraud and money laundering.

Other resources

- A pro-innovation approach to AI regulation – a UK Government policy paper
- Artificial Intelligence Public-Private Forum – set up by the Bank of England and the FCA to further dialogue on AI innovation and its safe adoption within financial services
- Innovation, AI and the future of financial regulation – a speech by the FCA at the Innovate Finance Global Summit

CLOSING THOUGHTS

There are obvious benefits to the use of Artificial Intelligence; used correctly it could have many positive impacts, especially in ensuring good outcomes for customers. However, it needs to be implemented properly and with a concrete understanding of the data it uses and the decisions it makes.

The decisions are the crucial part – how we make sure the correct decisions are made, for the right reasons, and not biased or discriminatory. Unexpected bias or discrimination would be disastrous for the firms involved.

I also wonder about the future of the collections landscape as we know it now; reductions in collections agents, less human overhead required for analytics and strategy creation, reduced compliance team staffing, reduced reporting resources – the list goes on. We talk about AI helping to eliminate controls risks – but could it result in new controls risks that we haven't contemplated?

It seems that there will always be a place for collections agents as AI won't be able to handle every customer scenario with the same skill as an agent, not for a while anyway. However, the analytical, monitoring and reporting resources as well as admin (whose main role is to handle those instances that fall outside of standard automation and other exceptions) seem to be roles that will be slimmed down.

Perhaps in 3-5 years' time when AI has taken hold, there will be new skillsets required to support it. Just what will the future operating model look like?

It's going to be a very interesting journey.

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With credit to Matt Washington, Senior Consultant, Arum

ABOUT THE AUTHOR

Nick is a collections and recoveries professional with over 30 years' experience, domestically and internationally.

He has enabled many organisations, large and small, across multiple sectors, to fast track to an optimal operating model designed specifically for each organisation, taking into account their constraints and with due regard to regulatory compliance and customer experience.

Arum has been trusted for 25 years across the globe to improve collections and recoveries.

Our unrivalled industry expertise, independent advice and practitioner support enable clients to unlock the power of debt technology, streamline collections and recoveries operations, and provide better customer outcomes.