



Conversational AI and Machine Learning

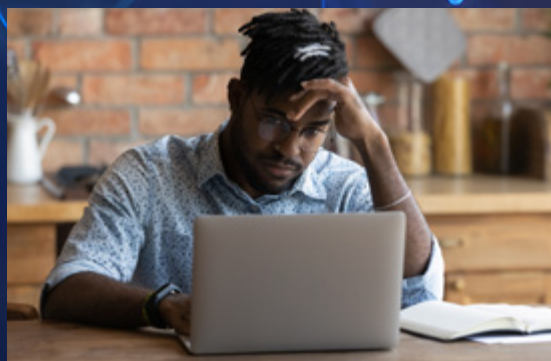


How **Omnireach** has analysed
the Credit & Collections Industry

September 2024

We have analysed over 150 million conversations with Credit & Collections customers to understand how they interact with our platform.

This is what we have learnt...



INTRODUCTION

Saascoms Omnireach is a conversational platform that centralises Webchat, SMS, e-mail, WhatsApp and Social-Media onto a single engagement platform. Omnireach AI conversational technology is utilised by 31 collections organisations in the UK, who, on average, process 4.8 million interactions per month. Clients include utilities, telecoms, vehicle finance, home shopping, personal finance and student loans.

At the heart of **Omnireach** is a powerful and trainable AI chatbot, 'Saasbot', that communicates in 92 languages and analyses conversations using sentiment, key phrases, and Natural Language Processing. Saasbot is contextually aware and through AI machine learning, becomes progressively smarter.

The AI engine has monitored and analysed over 150 million conversations and agent responses within the collections environment over four years, ensuring our Natural Language Programming (NLP) has a 93.7% intent and sentiment match success rate. This makes it possible for AI to identify up to 80% of customer intents at adoption stage.



// **SAASBOT HAS ANALYSED OVER 150 MILLION CONVERSATIONS, COMMUNICATES IN 92 LANGUAGES AND USES AI TO LEARN**

THE STUDY

Saascoms analysed conversational data from Omnireach related to Credit & Collections clients. The goal being to identify the top/frequent customer interactions to understand how Omnireach AI can automate the customer journey.

The results may also be used to guide agent training, marketing communications and signposting within the Credit & Collections industry.



// THE GOAL BEING TO IDENTIFY THE TOP/FREQUENT CUSTOMER INTERACTIONS

METHODOLOGY OF DATA ANALYSIS

The data was analysed by various methods, including data collection from our Debt Collection Agency (DCA) Large Language Model (LLM), data preprocessing including tokenisation, normalisation and ensuring anonymisation.

The tokens were then transformed by Bag of Words (BoW), Term Frequency-inverse Document Frequency (TF-IDF) and Word Embeddings. Saascoms then ran intent recognition to classify the data, employed neural deep learning modules for complex intent recognition. The data was then evaluated to assess the performance of the intent recognition model.

TOKENISATION OF TEXT

We identified the most frequent terms to infer common intents:

- **Account**
- **Payment Updates**
- **Pay**

INFERENCE OF COMMON INTENTS

The most common interactions are based on the following:

- Payment-related inquiries or confirmations (e.g. 'payment', 'pay', 'paid').
- Account-related issues or updates (e.g. 'account').

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**THE DATA WAS THEN
EVALUATED TO ASSESS
THE PERFORMANCE
OF THE INTENT
RECOGNITION MODEL.**

COMMON THEMES AND INTENTS

ACCOUNT

01 Financial Struggles and Payment Holds

Customers often request to put their accounts on hold due to financial difficulties such as job loss or unexpected expenses.

// Hi I'm really struggling to pay and wondering if you could put my account on hold for a little. I've lost my job and got interviews all week to get another but I'm really struggling at the minute."

02 Issues with Payment Plans

Customers express confusion or frustration regarding the status of their payment plans.

// I am constantly getting text messages to call even though I have already set up a payment plan for what I can afford per month. Why is this happening?"

03 Account Information Updates

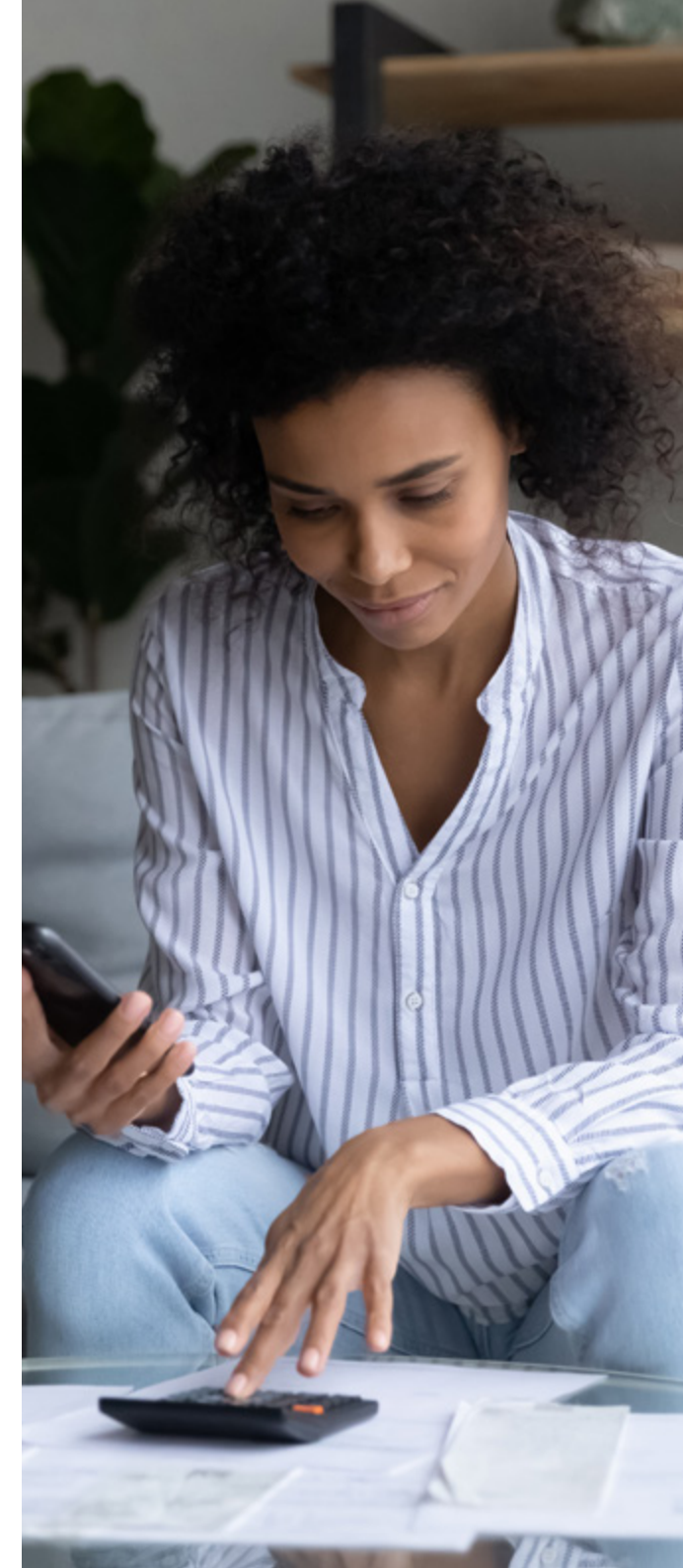
Customers provide updates to their contact information and request that account-related information be sent to their updated contact details.

// My email address is johnsmith@abc.co.uk and my phone number is 01639 97342. Yes, any info to the account can be sent to my email address."

04 Settled Accounts and Erroneous Messages

Customers complain about receiving messages about overdue accounts that they believe have already been settled.

// I have been in email correspondence with Finance Ltd about these messages as this account was settled on the 16th of April and I do not appreciate all these texts telling me it is still overdue. Please rectify your system."



COMMON THEMES AND INTENTS

ACCOUNT

05 Wrong Account Association:

Customers report that they are receiving communications about accounts or debts that do not belong to them.

// I am sick of these mails from you and Finance Ltd. I do not owe them nor have I ever as I've never had an account with them."

06 Account-Related Anxiety and Mental Health Concerns

Some customers mention the impact of account issues on their mental health and financial stability.

// This debt is affecting my mental health which I can provide medical evidence for. It's given me huge anxiety and I've been suffering from severe panic attacks due to stress."

07 Requesting Account Details for Legal or Financial Management

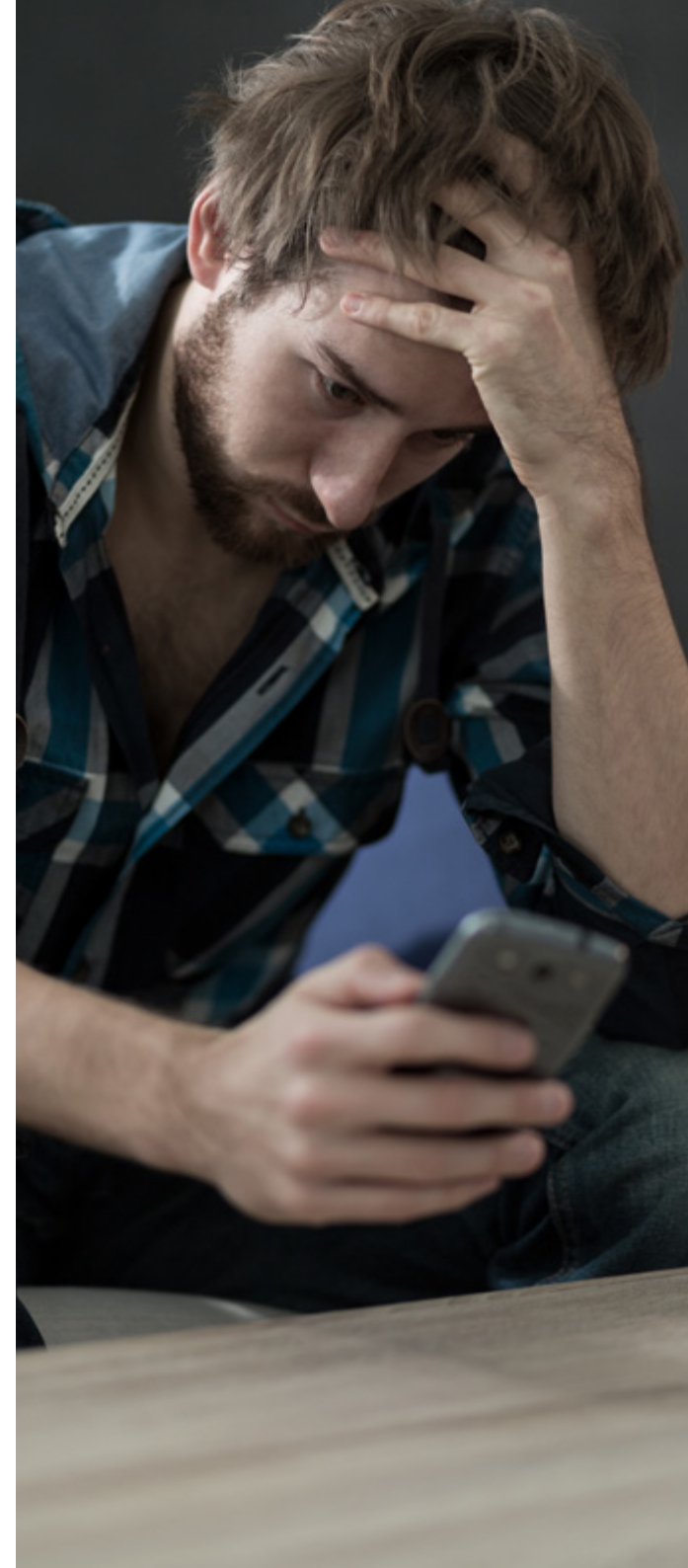
Customers request specific account details needed for financial management or legal processes such as setting up an Individual Voluntary Arrangement (IVA).

// I'm needing the opening date of the original account and the amount owed as it was supposed to be set up in an IVA."

08 Authorisation for Account Communication

Customers provide authorisation for account-related information to be sent to specified contact numbers or individuals.

// Yes I am authorised. You can send account-related info on this contact number."



COMMON THEMES AND INTENTS

ACCOUNT

09 Direct Debit and Payment Issues

Issues related to the cancellation of direct debits and the impact on payment plans are common.

// Direct debit cancelled. There's £1,234 outstanding on your Finance Ltd account. Please call us to discuss your account and arrange for the payment plan to be reinstated."

10 Confusion about Account Balances

Customers express confusion regarding outstanding balances or recent payments seeking clarification.

// Hi I have had no contact from Finance Ltd regarding this overdue balance and have recently just paid off my contract with them so I am confused as to what this is for."



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**IDENTIFICATION OF COMMON THEMES AND
QUERIES MAY BE USED TO IMPROVE TRAINING,
AI RESPONSES AND COMPLIANCE PROCEDURES.**

COMMON THEMES AND INTENTS

PAYMENT UPDATES

01 Setting Up Payment Plans

Many customers reach out to set up or adjust payment plans to manage their debts more effectively.

// I need to set a repayment plan. I did send an email but it seems to have never reached you guys. Unfortunately my mental health got affected and I was struggling to deal with this."

02 Clarifying Payment Details

Customers often need to confirm or clarify the specifics of their payment arrangements such as the amount, frequency, or method of payment.

// Something that is reasonable. I want to be able to clear all my arrears etc. so if there was a monthly payment of £50 on every 20th that would be amazing if that's possible."

03 Resolving Payment Issues

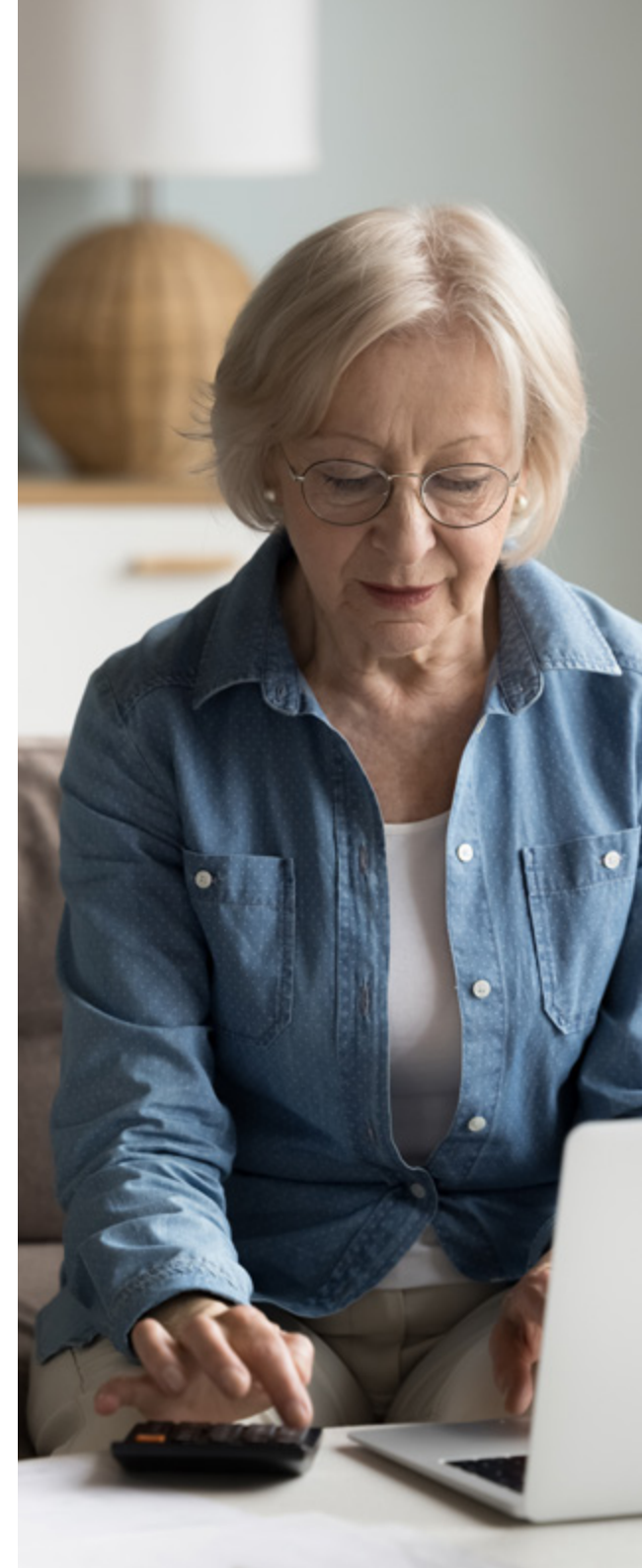
Customers report issues with payments they believed were completed but still show as pending or missed.

// I recently paid the existing balance of my Finance Ltd credit card and took the balance down to zero but I have since been charged and told I have missed payments. How can this be?"

04 Requesting Refunds for Fees

Some customers request refunds for late fees or other charges that they believe were applied in error.

// This is the first time I have ever made a late payment. I believed this had already been done hence the error. I have now received an email confirming it has been received. Is it possible to please refund the late payment fee?"



COMMON THEMES AND INTENTS

PAYMENT UPDATES

05 Immediate Payment Commitments:

Customers notify the service provider of their intent to make a payment soon often specifying the date and reference details.

// Thanks. Expect payment tomorrow morning. I will add Finance Ltd in reference; due to space I may only add the last 3-4 digits."

06 Struggling with Payments:

Some customers communicate their financial difficulties and seek assistance or more manageable payment options.

// Hi I'm Miss Smith. I'm seriously struggling to make the monthly payments on my Finance Ltd account. I've recently received a letter from yourselves regarding this matter. Can I talk to someone relating to my problem please?"

07 Issues with Online Payment Systems:

Customers encounter problems when trying to set up payments or payment plans online and seek alternative solutions.

// Hi I am trying to set up a repayment plan for my account balance but I can't do this online."

08 Payment Plan Details:

Customers may need additional information or documentation such as bank statements to proceed with payment plans or financial reviews.

// Ref ABC123, John Smith, ref Finance Ltd. I want a payment plan and need my bank statements as my accounts are due urgently. I've been to the branch and they said to deal with yourselves."



COMMON THEMES AND INTENTS

PAY

01 Requesting Payment Plans

Customers frequently inquire about setting up payment plans to manage their debts over time.

// Can I set up a monthly payment plan to pay off my balance?"

02 Confirming Payments

Customers often seek confirmation that their payments have been received and processed correctly.

// I paid my bill yesterday. Can you confirm if the payment has been received?"

03 Making Immediate Payments

Some customers notify the service provider of their intent to make a payment soon or ask for the necessary details to do so.

// I will pay the outstanding amount tomorrow. What reference should I use?"

04 Payment Issues and Errors

Customers report problems with payments such as incorrect amounts being charged or payments not being reflected in their account.

// I paid my bill last week but it still shows as unpaid. Can you help?"



I WILL PAY MY OUTSTANDING AMOUNT TOMORROW.

COMMON THEMES AND INTENTS

PAY

05 Financial Difficulties

Customers experiencing financial hardship often ask for assistance or more flexible payment options.

// *I'm struggling to pay my bills this month. Can I get an extension or a reduced payment plan?"*

08 Billing Cycle Queries

Questions about billing cycles, due dates, and the timing of payments are common.

// *When is my payment due and what period does it cover?"*

06 Updating Payment Methods

Customers may need to update their payment details such as changing their credit card or bank account information.

// *I need to update my payment method. How can I do this?"*

09 Automated Payment Setup

Customers often ask about setting up automated payments to ensure they never miss a due date.

// *How can I set up automatic payments for my monthly bills?"*

07 Refund Requests

Some customers request refunds for overpayments or charges they believe were made in error.

// *I was charged twice for the same bill. Can I get a refund for the duplicate payment?"*

10 Payment Confirmation Requests

After making a payment, customers may ask for a receipt or confirmation for their records.

// *Can you send me a confirmation email for my payment?"*

TOPIC MODELLING ANALYSIS

Using Latent Dirichlet Allocation (LDA), the key topics identified in the customer messages are:

TOPIC 1

PAYMENT
PAY
MONTH
PLAN
SET
ACCOUNT
MAKE
PAID

TOPIC 2

ADDRESS
ACCOUNT
EMAIL
RECEIVED
LETTER
SEND
SENT

TOPIC 3

MONEY
NUMBER
ACCOUNT
OWE
DIRECT
PAYMENT
CONTACT
PAID

TOPIC 4

ACCOUNT
PAY
PAYMENT
BANK
TAX
PAYMENTS
ID
CUSTOMER
PAID

TOPIC 5

PAY
DATE
PAYMENT
DEBT
CONTACT
SET
HMRC

Topics are sets of words that co-occur in conversations. These topics provide an overview of the main themes discussed in the customer interactions, focusing on payments, accounts, communication, and debts.

