



BOOK OF DREAMS

Banking & Financial Services

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Perform live chat with citizen customers
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For each scenario:

- Scenario Vision
- Primary Persona
- Scenario Storyboard
- Solution Design Best Practices
- Solution Architecture

Banking & Financial Services Book of Dreams

Lead Management System



Scenario Vision



Context

- Daniela is a relationship manager (RM) at Contoso Banking. She is part of a team that covers personal, home and car loan products for customers.
- Every quarter, Daniela gets assigned a set of targets in terms of number of leads, dollar value and products sold. In addition to these business targets, Daniela also has a set of operational metrics

Current State

- ⚠ The metrics and quarterly targets are sent by the manager to Daniela over emails. It is upto each RM to keep a track of their progress toward goals and plan their strategy to achieve the same
- ⚠ Leads were also sent to each RM as a dump of excel e-mails. RMs use their excel trackers to mark changes in the lead status.
- ⚠ At the end of every week or once in two weeks, Daniela updates the CRM with the lead information
- ⚠ Daniela uses a variety of 3rd party tools and apps to keep track of her action items, follow ups. She misses a few follow-up meetings as information is scattered across different systems
- ⚠ Opportunities won and opportunities lost were reported in CRM but difficult to track the various activities that led to a result unless the RM is diligent in updating
- ⚠ There is little to no analytics on RM velocity, time to close deals leading to lack of forecasts and scrambling to reach targets

⚠ - Points of Friction

Future State

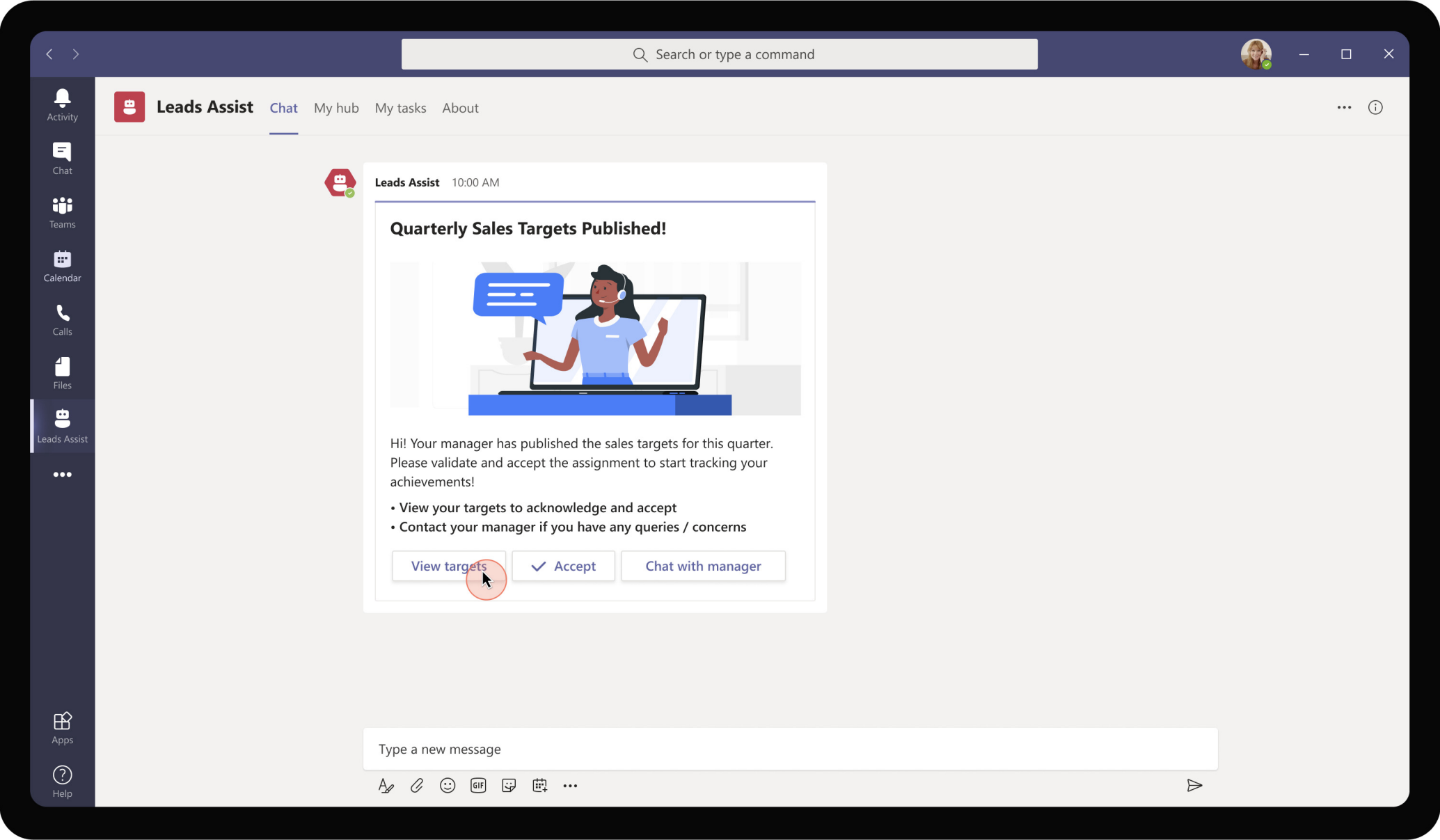
- ✓ Leads management app on Teams publishes the targets right within Teams and allows RMs to get in touch with managers for queries
- ✓ Leads are neatly laid out in a filterable list view. App also proactively identifies insights about each lead with a conversion confidence score
- ✓ Any activities on the lead such as e-mail contact, calls, follow-ups are automatically logged to CRM backend
- ✓ The app handles lead status tracking, action items, follow-ups, scheduling meetings, mails and texts reducing context switch
- ✓ App proactively nudges RMs to take action on planned leads for the day, scheduled follow-ups and even provides talking points
- ✓ Based on the time to close of deals in the past, assigned leads confidence scores, the app provides an estimate of conversions to be made each week to achieve the quarterly targets



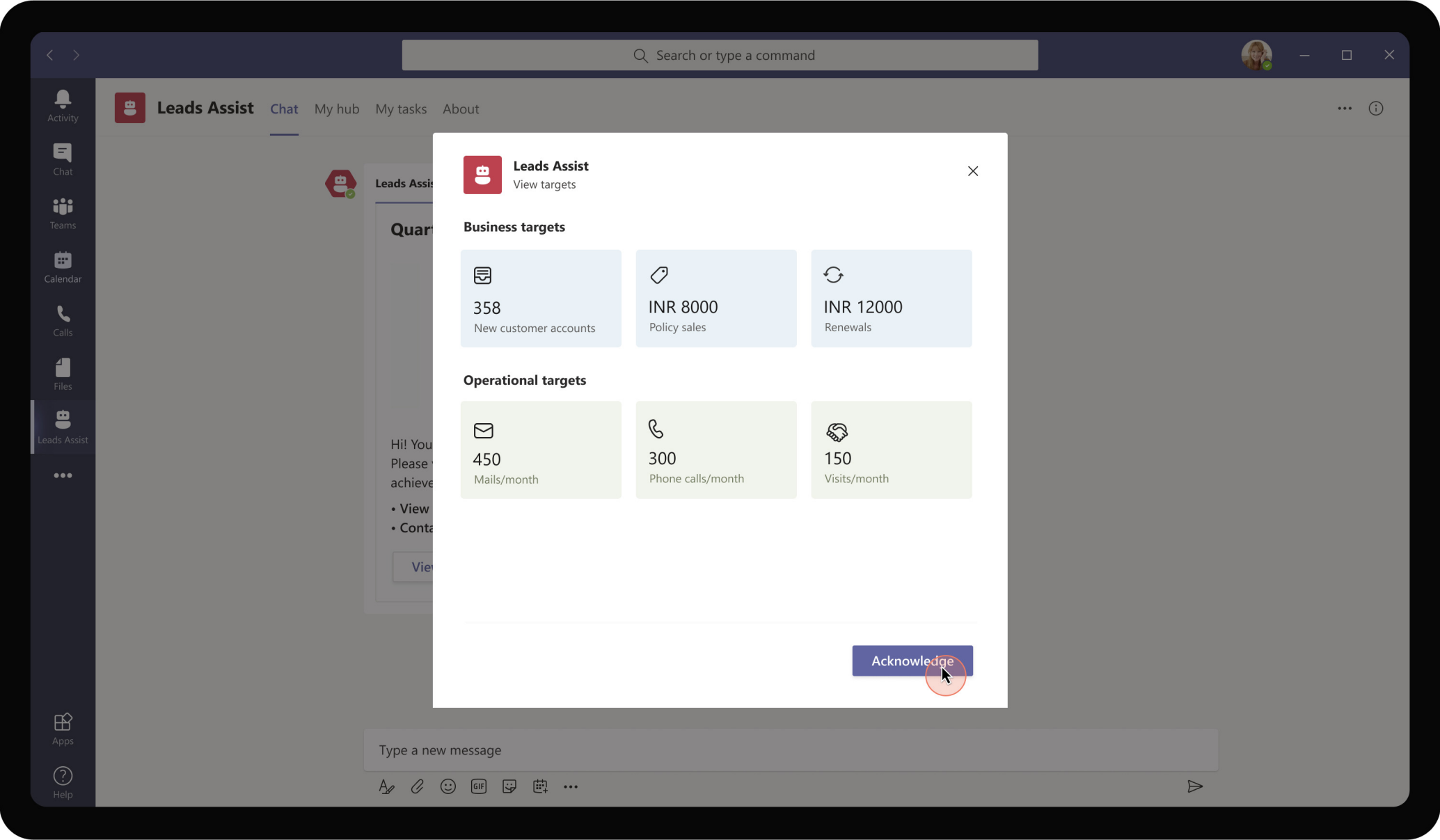
Daniela Mander, Banking Relationship Manager

Daniela is a relationship manager at Contoso Banking. She is one of the top performers in the organization. She is excellent at customer relationship management and people skills. One of the primary challenges she faces is maintaining logs of her customer interactions in multiple tools and platforms.

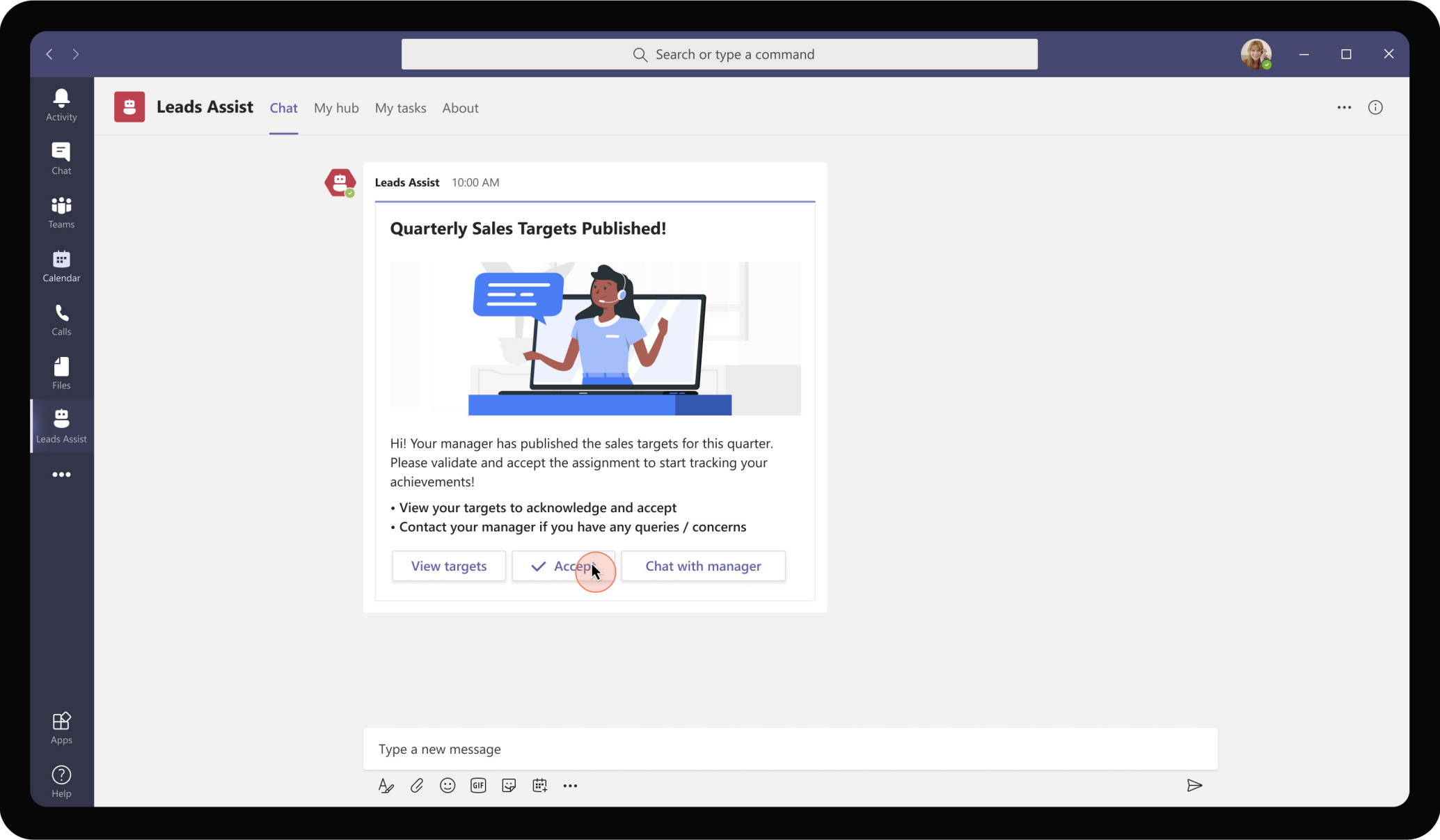
Daniela's manager announced the sales targets for the upcoming quarter. Once finalized, Daniela is responsible for meeting the targets, converting leads to customers



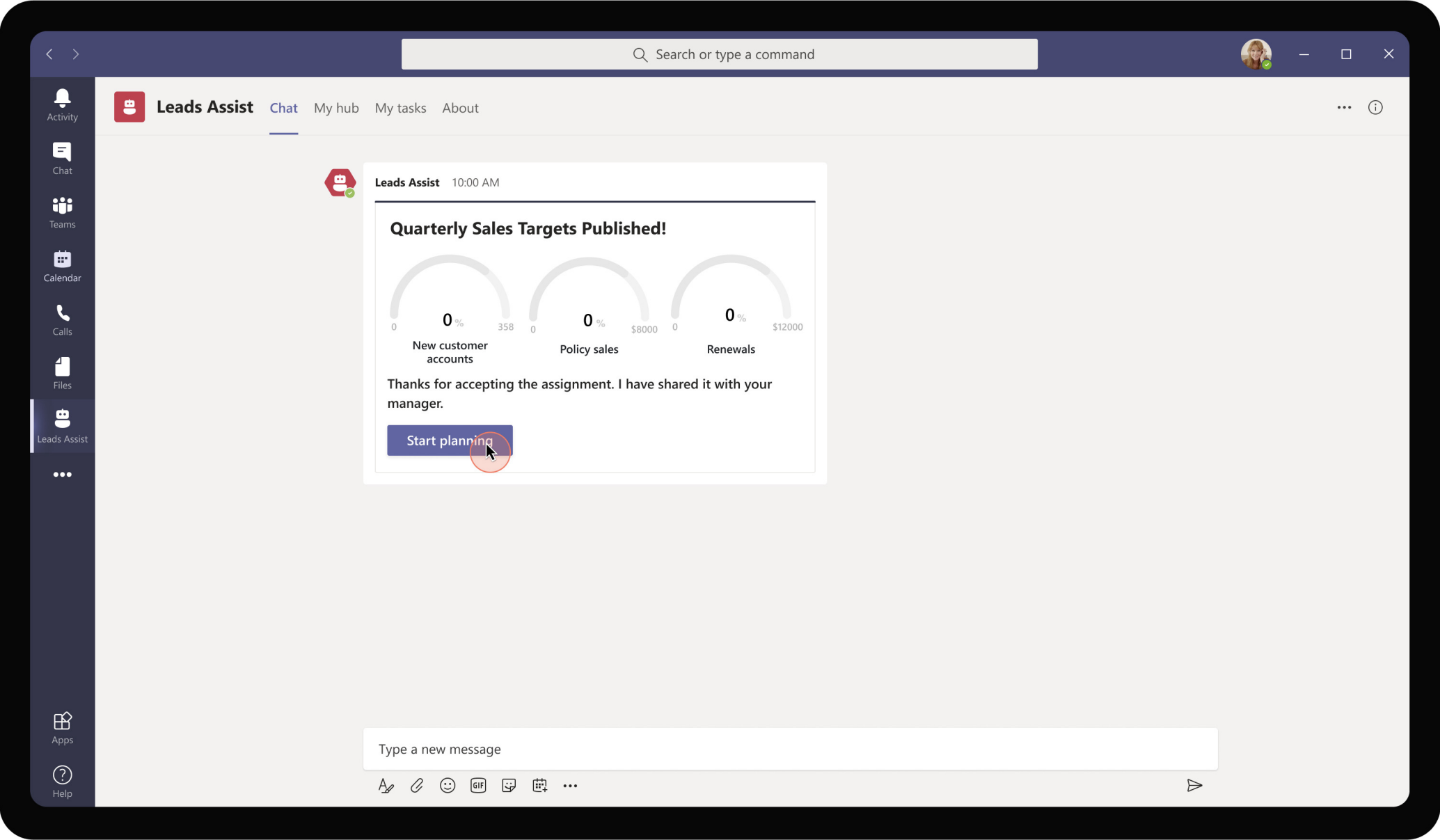
As Danie as announces the targets for the upcoming quarter the app notifies each relationship manager in the team with the new targets for the quarter. The RMs have an option to chat about discrepancies in the target or raise any concerns if required directly from the app



Daniela reviews the targets assigned to her to confirm that it is in line with her expectations and achievable. She proceeds to acknowledge that she has viewed the targets



As the targets provided for Danie a are achievable and Danie a has no further questions to discuss with manager she proceeds to accept the target set for her.



Once accepted, the adaptive card refreshes to show a counter indicating Daniela's progress towards her quarter goals. The app also prompts Daniela to start planning her strategy to achieve the targets.

The screenshot displays a user's personal hub in the Leads Assist system. The interface includes a search bar at the top, navigation tabs for 'Leads Assist', 'Chat', 'My hub', 'My tasks', and 'About'. A left-hand sidebar contains icons for Activity, Chat, Teams, Calendar, Calls, Files, Leads Assist, and Help.

Activity overview (Yearly view): A line chart showing activity from January to December. The legend indicates: Teams calls (1654), Emails (1654), and Texts (1654). The chart shows fluctuating activity levels throughout the year.

Target progress (Quarter 3 view): Three progress gauges showing performance against targets.

- New customer accounts: 82.3% (Target: 358)
- Policy sales: 95% (Target: \$8000)
- Renewals: 50.3% (Target: \$12000)

 A tip below the gauges states: "Tip: You would have to talk to 15 leads per day to achieve your sales goals per your current lead conversion rate".

My day (Scheduled):

- Intro call with Babak Shammas (8:00 AM–9:00 AM) - Teams meeting
- Quarterly Target – Review discussion (10:00 AM–11:00 AM) - Teams meeting

Open leads (82) (See all): A table listing leads with columns for Customer, Status, Email, and Source.

| Customer | Status | Email | Source |
|--------------|----------|----------------------|------------|
| Aadi Kapoor | New lead | aadi.kapoor@mail.com | Email |
| Aaron Buxton | New lead | aarbux@mail.com | Newsletter |
| Miguel Silva | Demo | miguelsi@gmail.com | Social |

To-do (See all): A list of tasks for the day.

- 12 Jun, 8:00 AM–9:00 PM: Call John
- 12 Jun, 8:00 AM–9:00 PM: Defaulted loan status
- 12 Jun, 8:00 AM–9:00 PM: Discuss loan terms
- 12 Jun, 8:00 AM–9:00 PM: Rate approval
- 12 Jun, 8:00 AM–9:00 PM: Demo prep

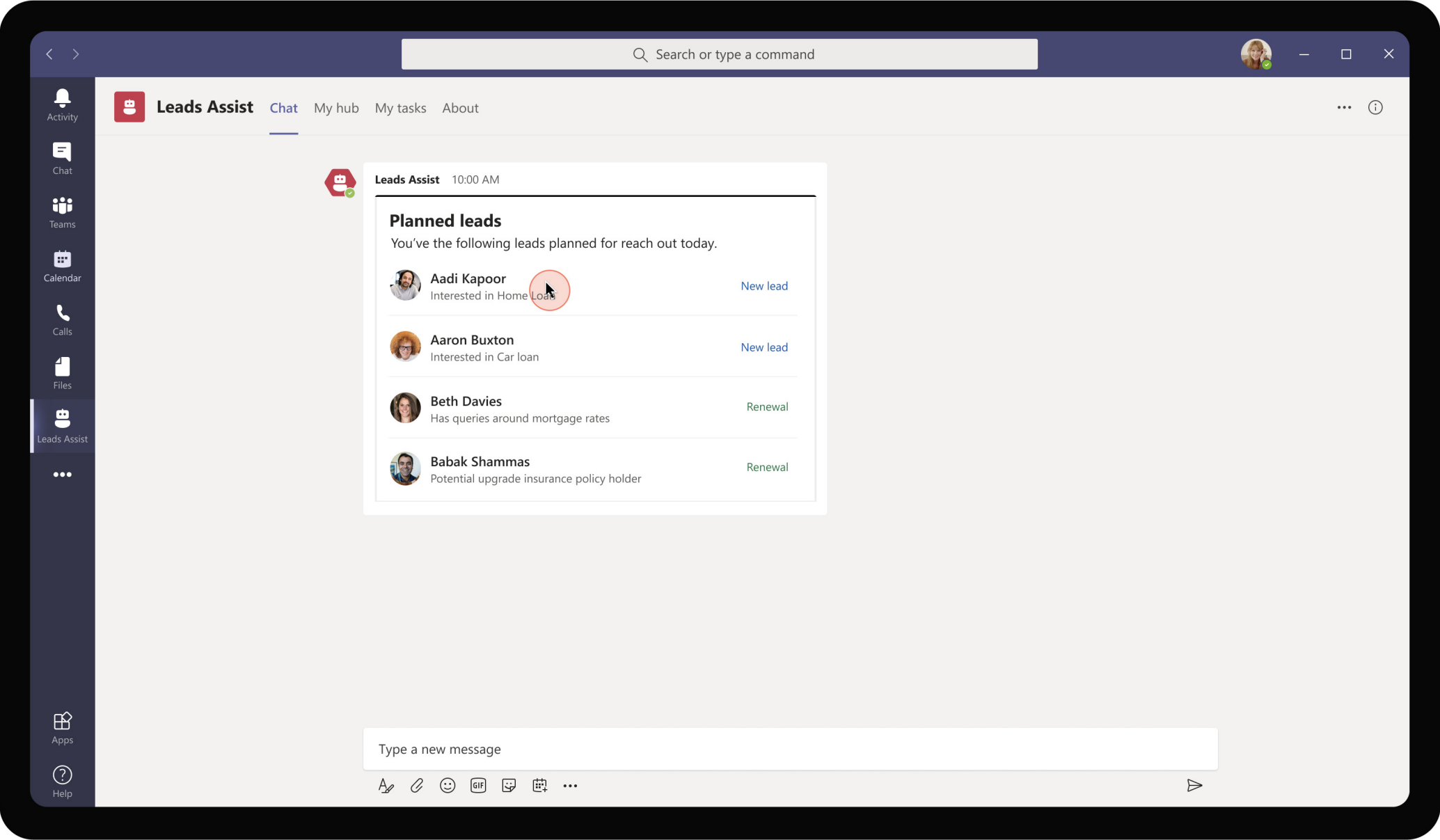
Daniela is taken to her personal hub which shows her activities - # calls made, # emails sent to leads. It also shows her progress in previous quarters to help provide a retrospective view and plan her activity. Daniela has the option to select a few leads to reach out during her day.

The screenshot displays the Leads Assist dashboard with the following components:

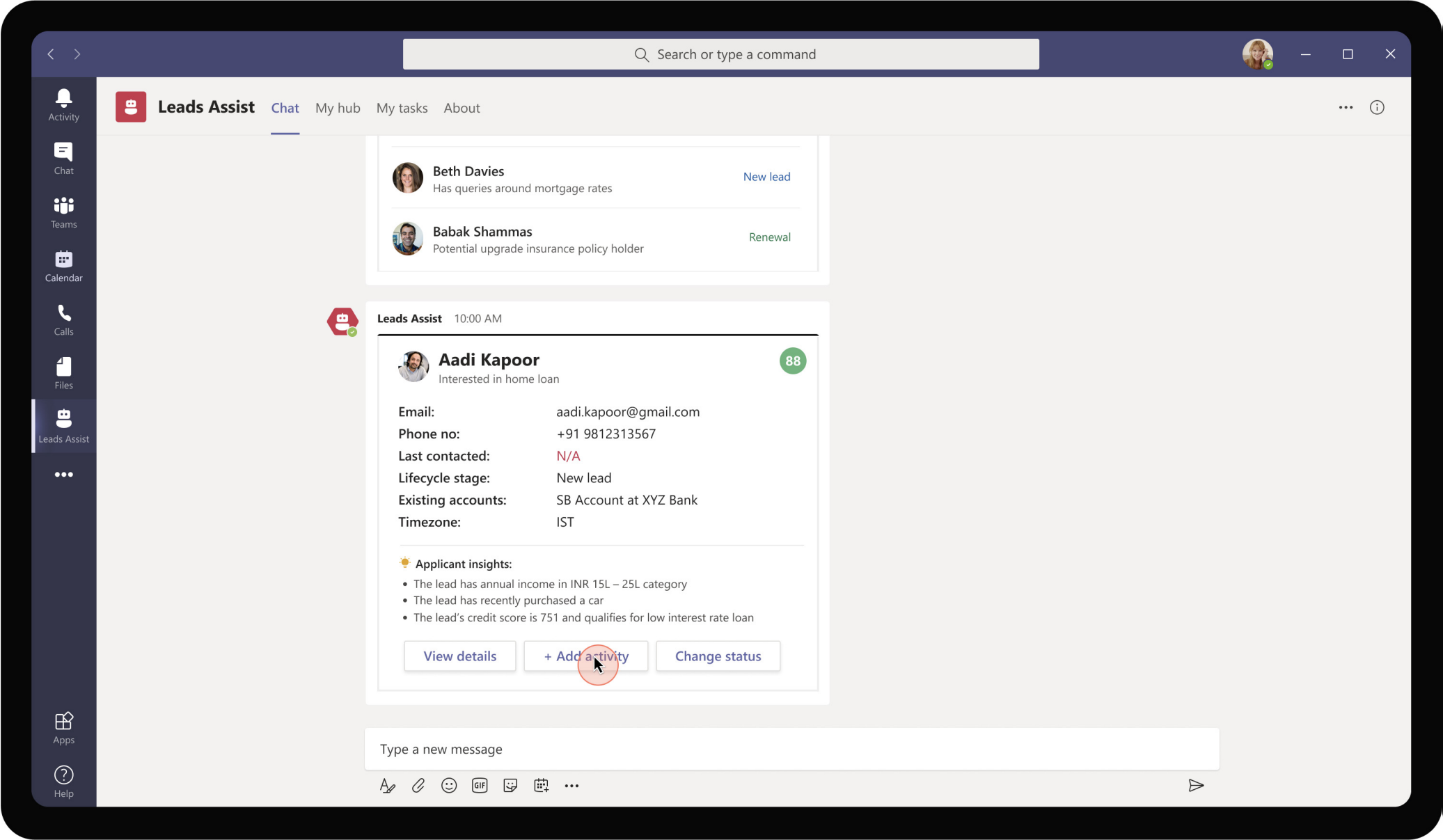
- Navigation:** A top bar with a search field and a user profile icon. A left sidebar contains icons for Activity, Chat, Teams, Calendar, Calls, Files, Leads Assist, and Apps.
- Activity Overview:** A line chart showing activity from Jan to Dec. The legend includes Teams calls (1654), Emails (1654), and Texts (1654). The chart shows fluctuating activity levels across the months.
- Target Progress:** Three progress gauges for Quarter 3:
 - New customer accounts: 82.3% (Target: 358)
 - Policy sales: 95% (Target: \$8000)
 - Renewals: 50.3% (Target: \$12000)
- My day:** A section for unscheduled and scheduled activities. It lists Aadi Kapoor and Aaron Buxton with 'Add activity' buttons. A scheduled item is 'Intro call with Babak Shammas' from 8:00 AM to 9:00 AM, categorized as a 'Teams meeting'.
- Open leads (82):** A table listing leads with columns for Customer, Status, Email, and Source.

| Customer | Status | Email | Source |
|--------------|----------|----------------------|------------|
| Aadi Kapoor | New lead | aadi.kapoor@mail.com | Email |
| Aaron Buxton | New lead | aarbux@mail.com | Newsletter |
| Miguel Silva | Demo | miguelsi@gmail.com | Social |
- To-do:** A list of tasks with due dates and times:
 - 12 Jun, 8:00 AM–9:00 PM: Call John
 - 12 Jun, 8:00 AM–9:00 PM: Defaulted loan status
 - 12 Jun, 8:00 AM–9:00 PM: Discuss loan terms
 - 12 Jun, 8:00 AM–9:00 PM: Rate approval
 - 12 Jun, 8:00 AM–9:00 PM: Demo prep

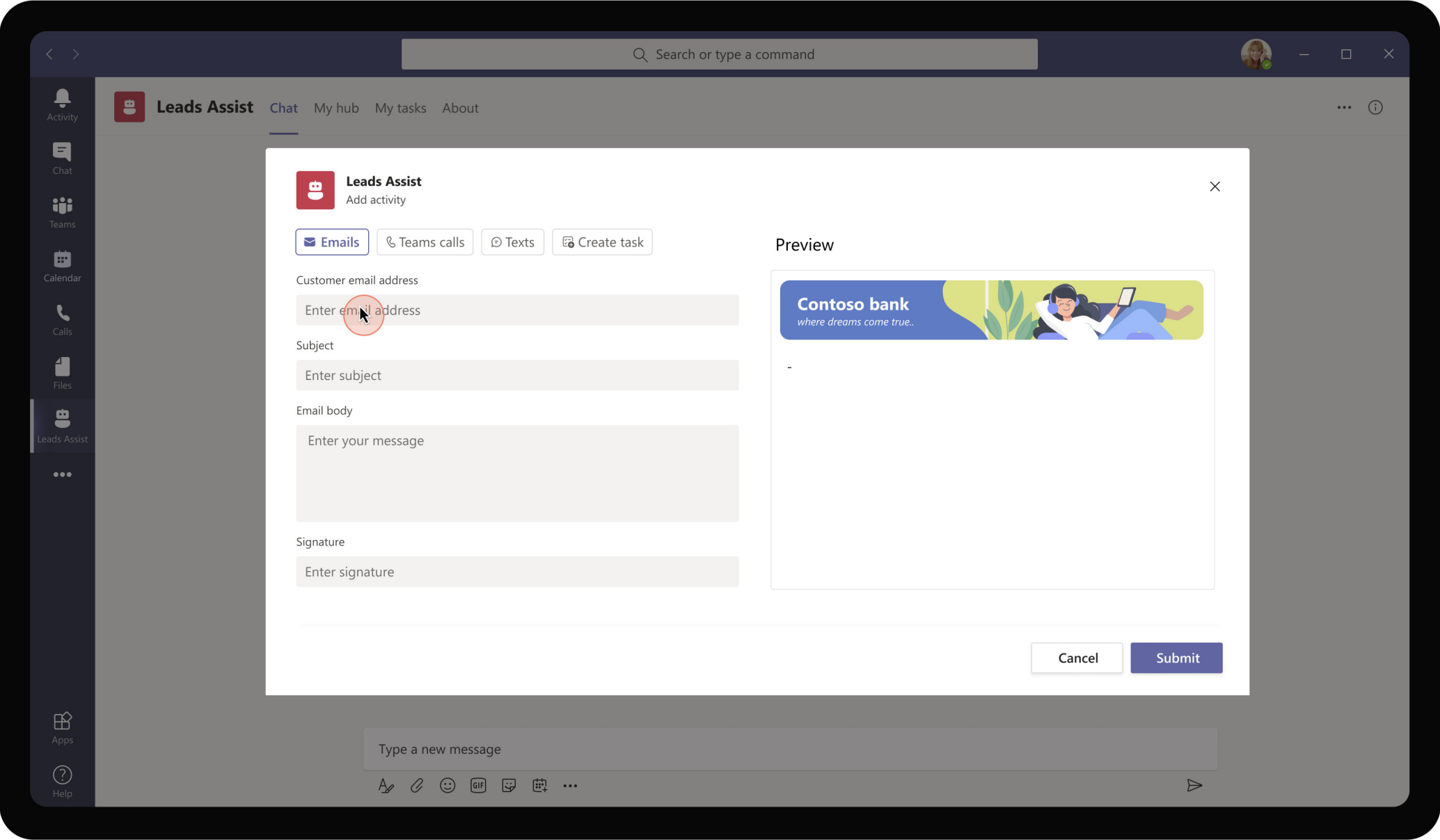
As Danie a chooses the leads she wants to reach out to it gets added automatically to her calendar and the app reminds her at regular intervals to make contact with the selected leads.



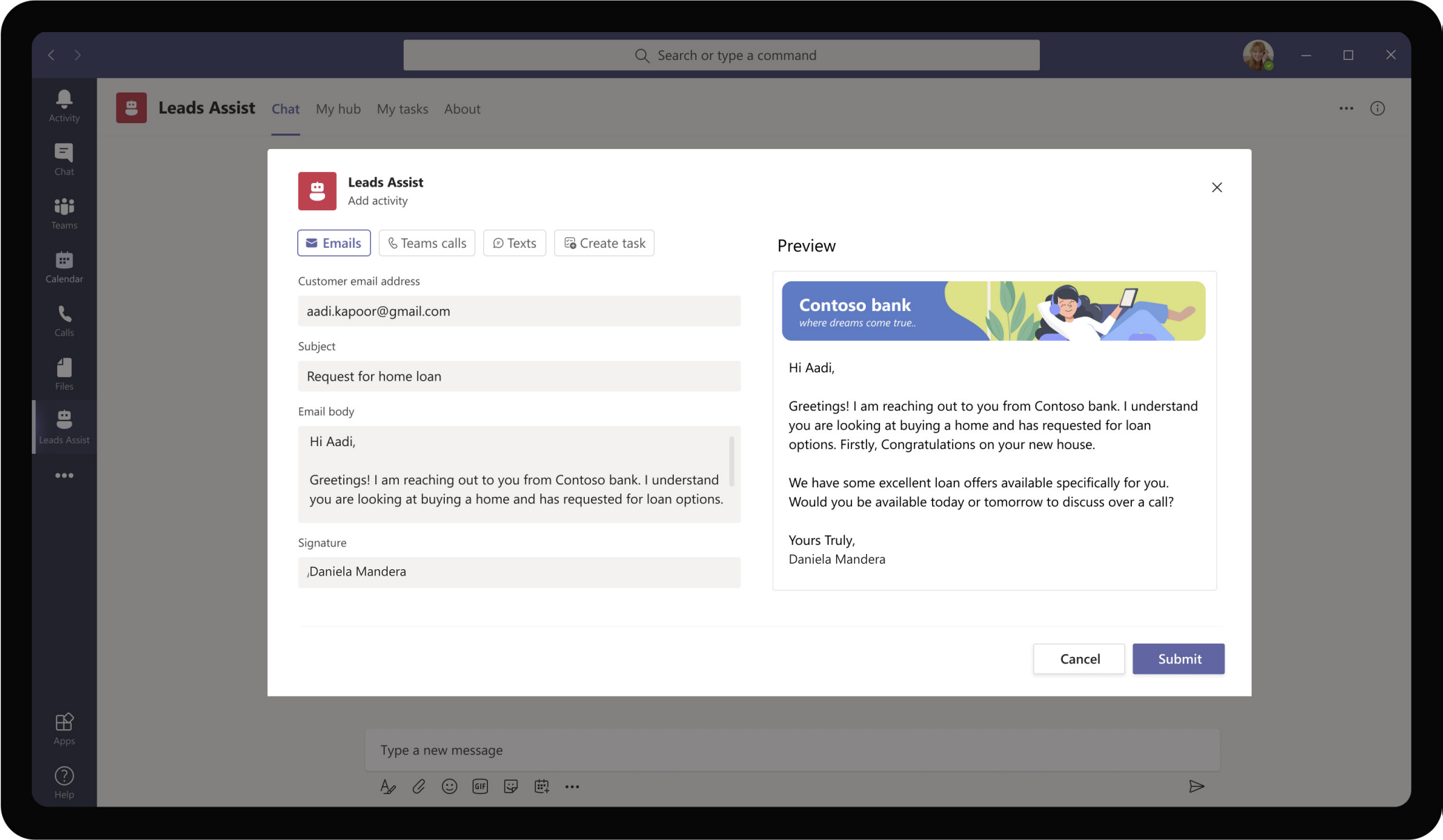
As the app notifies Danie a of the leads she clicks on the first lead to learn more about their profile and background to have a more informed conversation with the lead



An adaptive card shows up with basic information from CRM about the lead Aadi Kapoor. In addition, the app suggests insights into the preferences and demographics of the lead as recorded in the CRM. Daniea sees that the lead qualifies for a few loan offers.

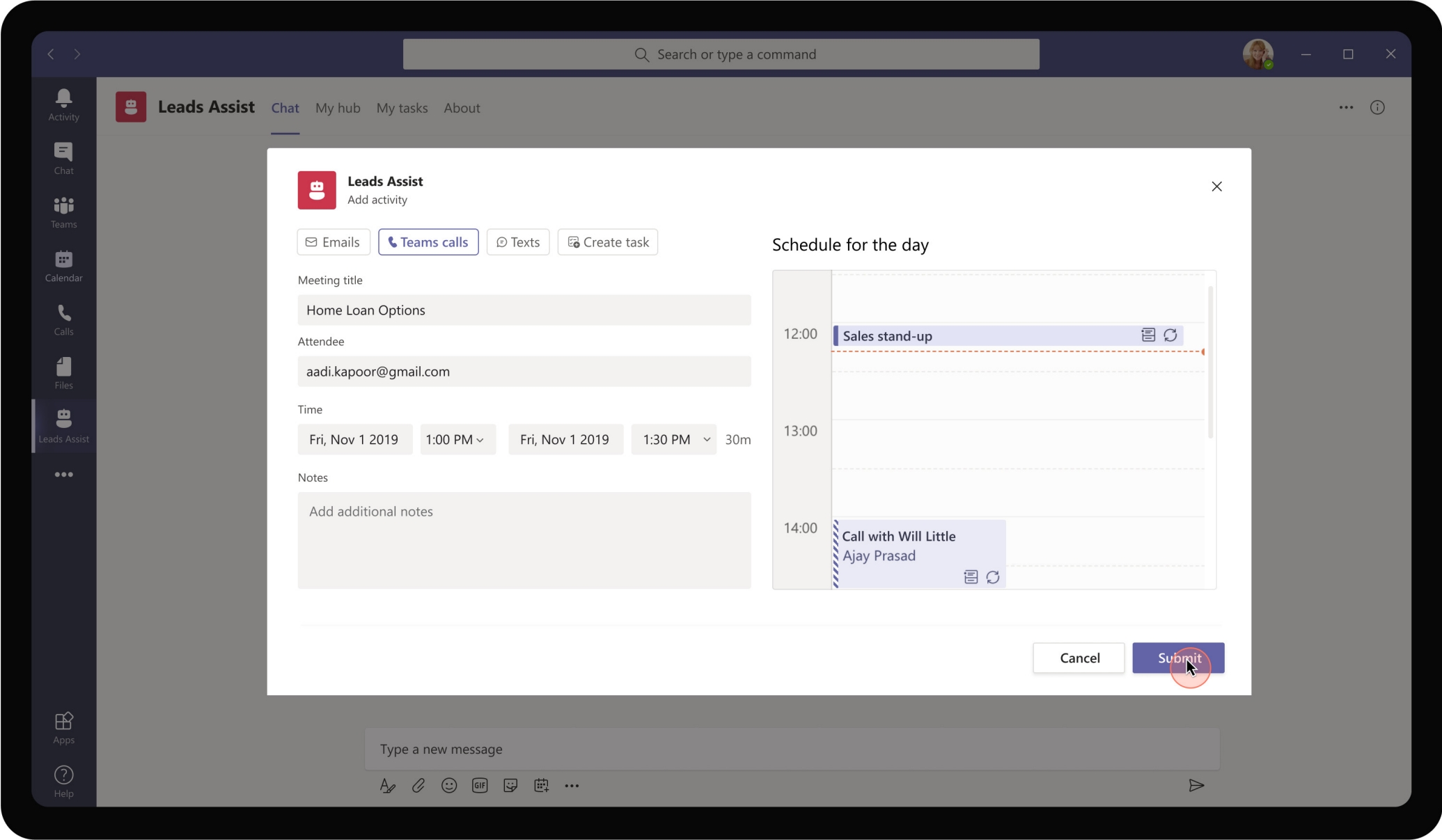


Daniela reaches out to the lead initially via e-mail. The app provides her the ability to draft an email directly from Teams. It is pre-filled with letterhead and other relevant details that need to be sent out to a potential customer.

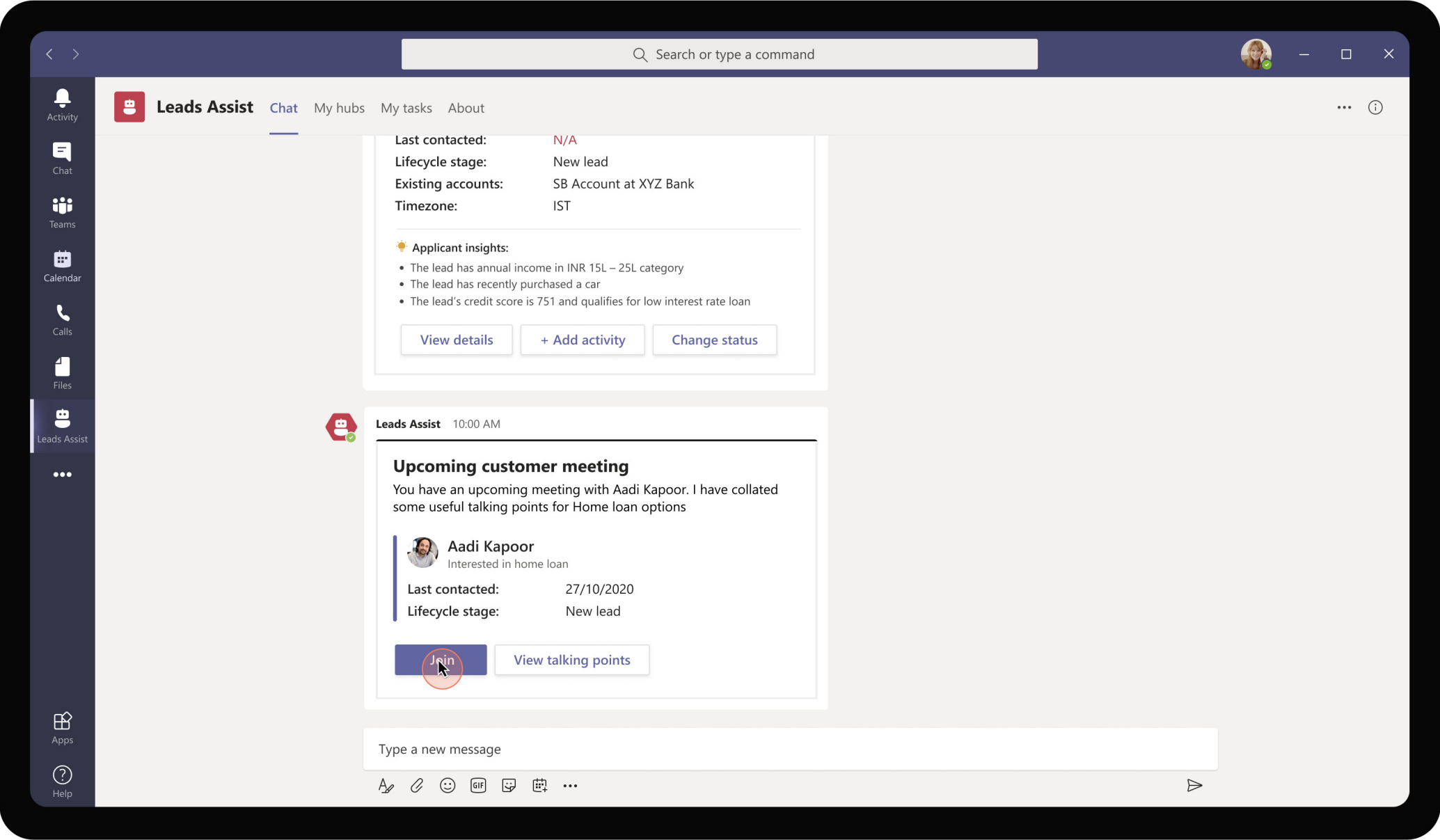


Daniela gets to know from CRM information that Aadi is purchasing a house and is eligible for home loan offers as well. She proceeds to draft an e-mail to check Aadi's interest in home loan options from Contoso bank

After a couple of days, Aadi Kapoor replies to the e-mail sent by Daniela enquiring about loan options and requests for a call.



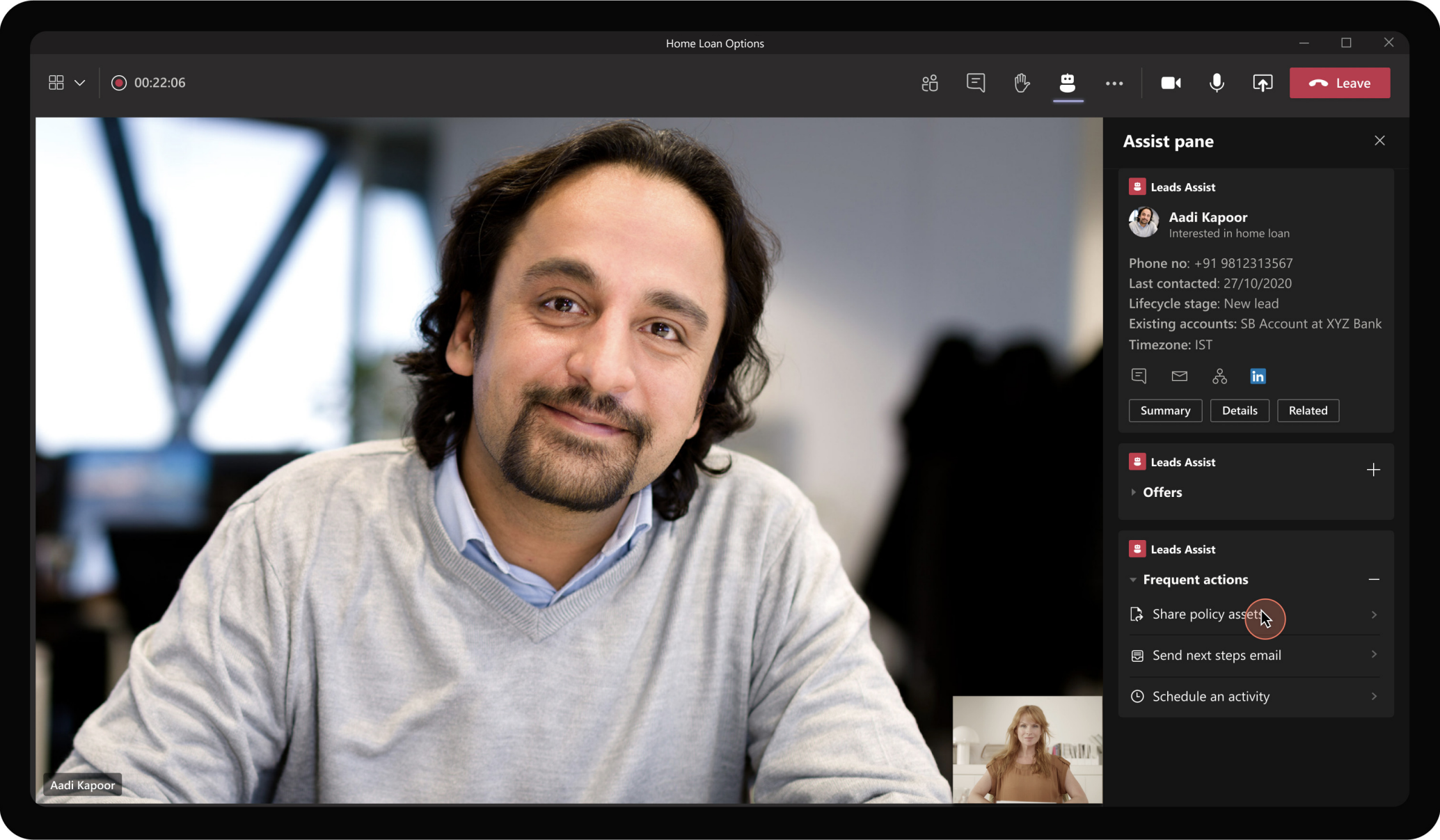
Danica uses the app to schedule a call with Aadi. The app provides flexibility to add additional attendees if required and suggests suitable time to schedule a meeting with the lead.



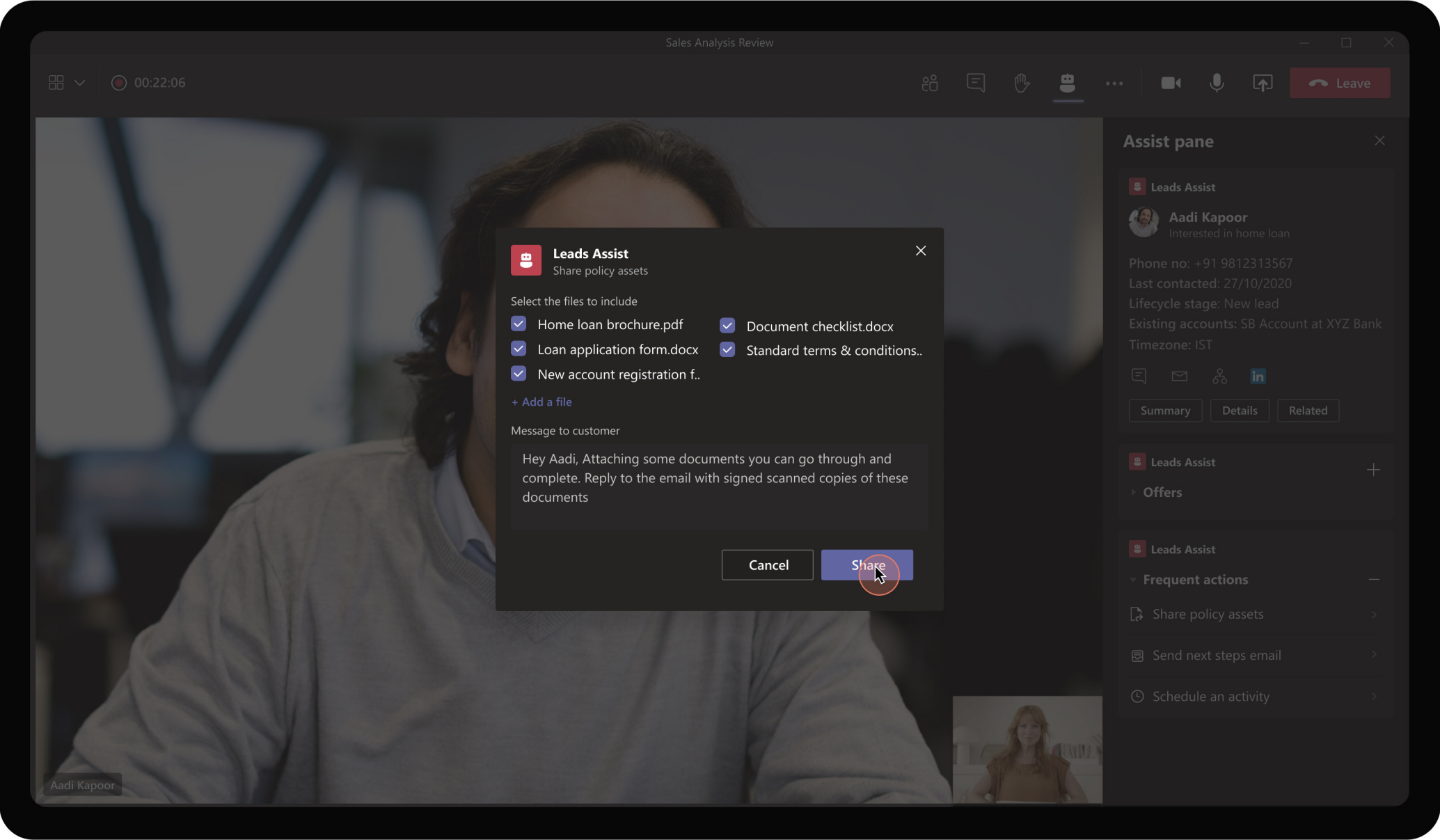
At the scheduled date and time the app proactively reminds the relationship manager to join the meeting and suggests some talking points as well for preparation.



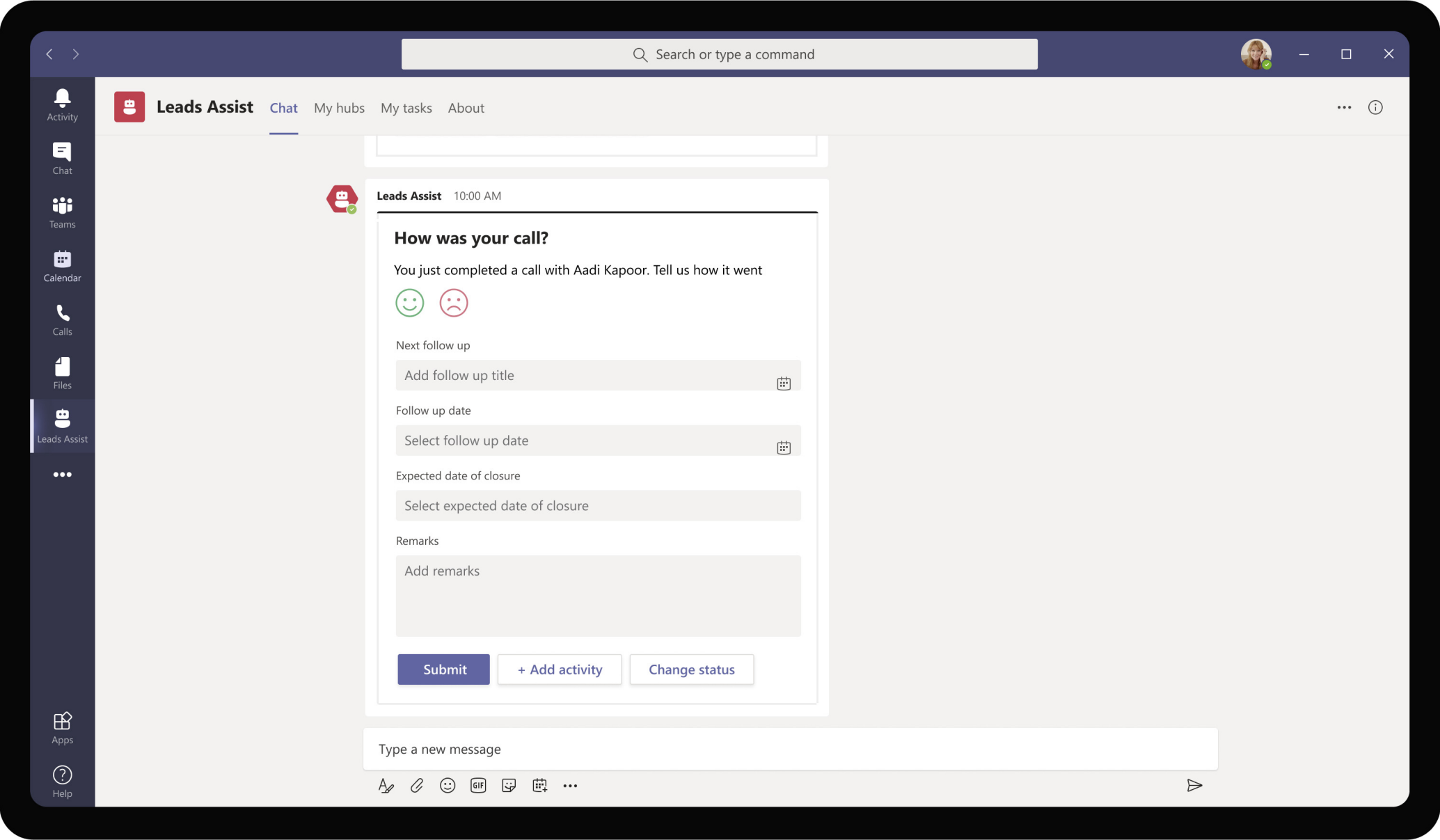
As Danie a joins the call with the lead, the app shows basic information about the customer on the meeting side pane. It also brings up customized offers, discounts and talking points available for Aadi Kapoor



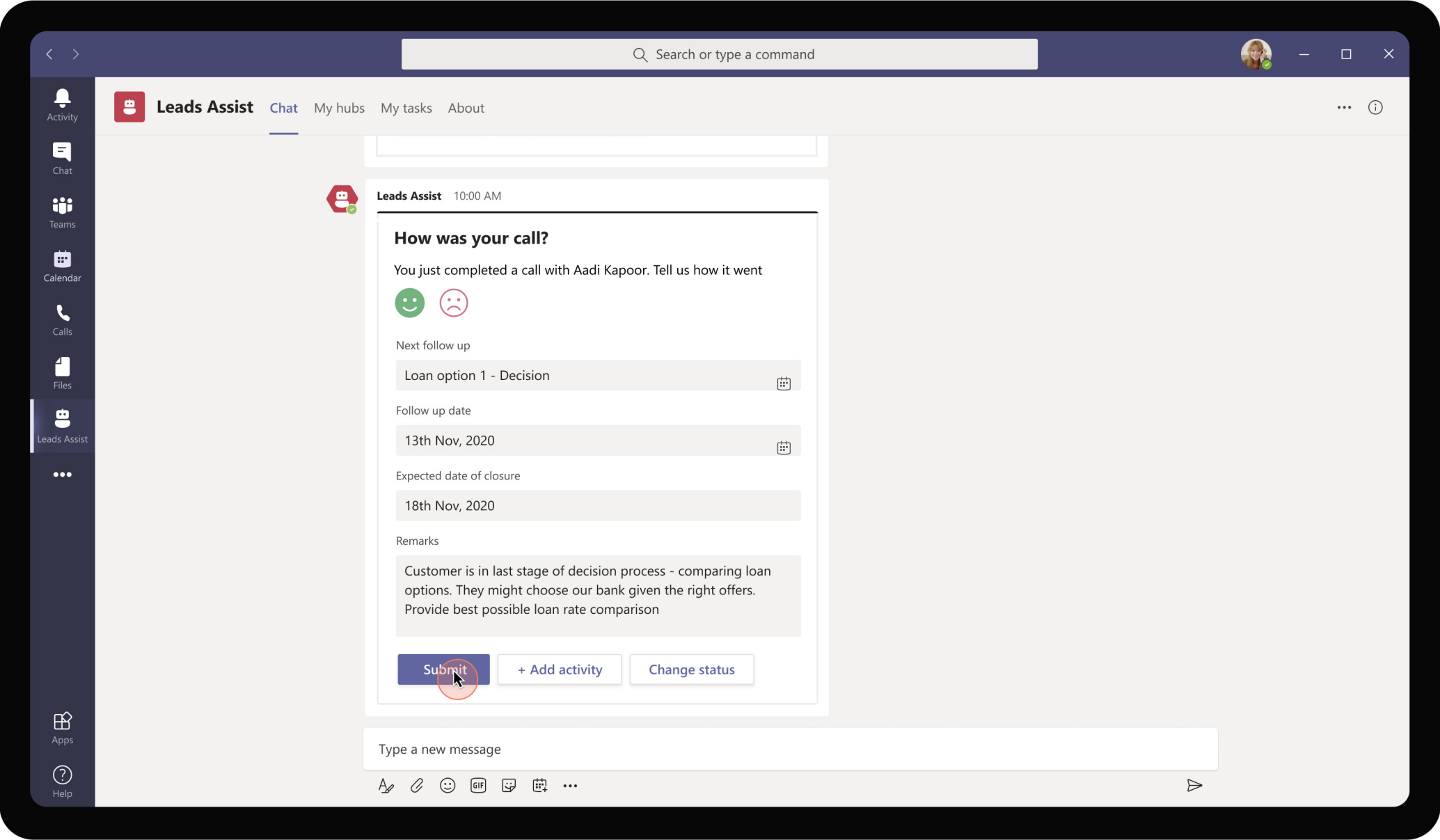
Daniela can use the side pane to perform frequent actions such as sharing of documents e-mails to the lead while on the call. Daniela chooses to share an asset related to the home loan policy under discussion.



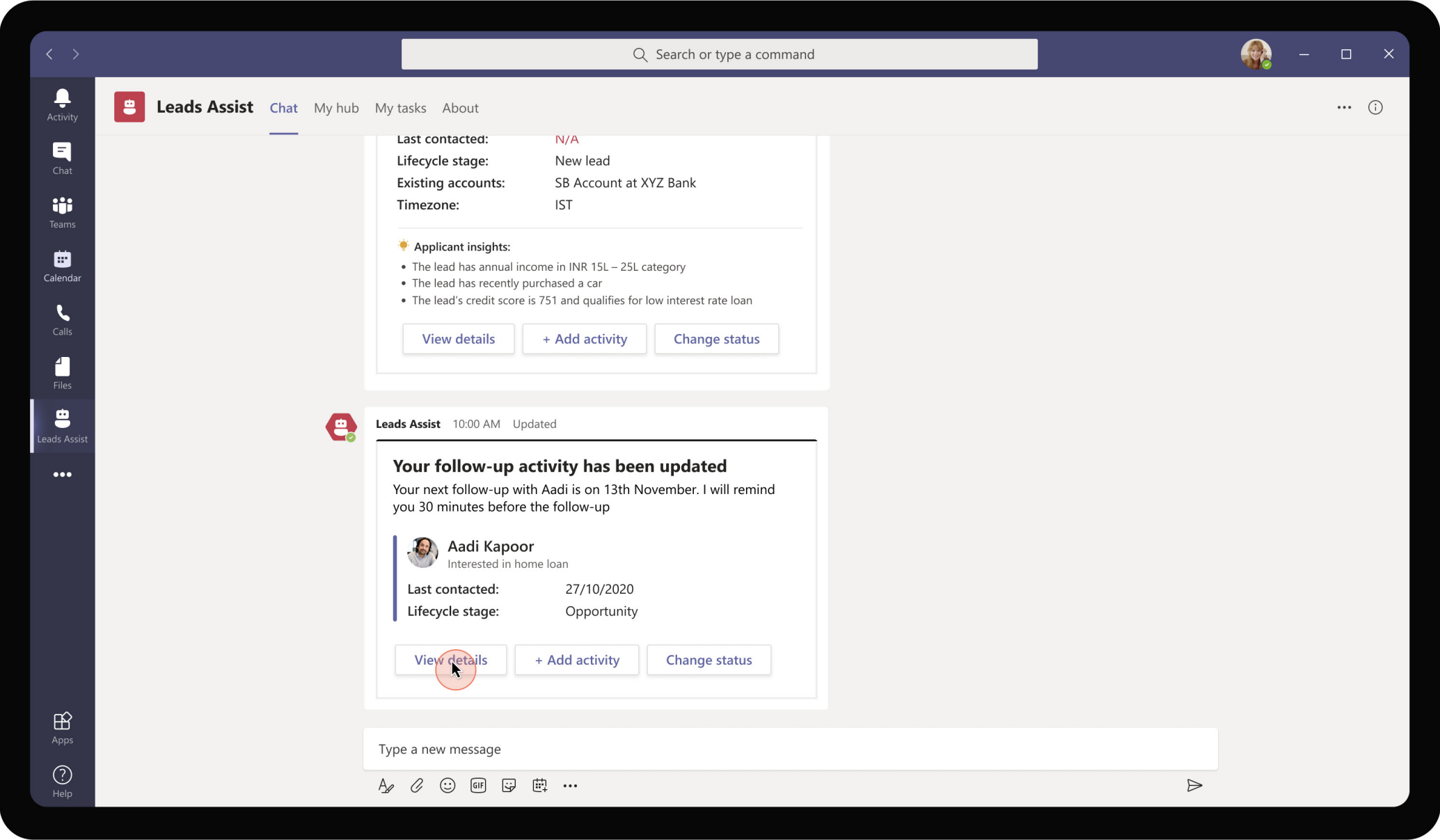
The app prompts a dialog box for Daniela to view and choose the files to be shared with the lead. Optionally Daniela can also add a note along with the message. On clicking 'Share' these files are sent as attachments in e-mail to Aadi Kapoor.



Post the call with lead Daniela is prompted to enter her experience speaking with the lead and document any follow-up activity that would be required.



Daniel makes a note that Aadi is in last stage of decision making process and would potentially choose Contoso's loan offer given the right rate offered. This will be useful to keep in mind during follow-up calls



The app makes a note of the experience and the follow-up activity. It will prompt Daniela to take action on the day of scheduled follow-up easing her life in tracking lead relationships.

Aadi Kapoor gets back to Daniela and agrees to proceed with Contoso's loan offer. Daniela tracks Aadi's win in the CRM and identifies other opportunities

The screenshot displays a user's personal dashboard in a lead management system. The interface includes a top navigation bar with a search field and a user profile icon. A left sidebar contains navigation icons for Activity, Chat, Teams, Calendar, Calls, Files, Leads Assist, and Apps. The main content area is divided into several sections:

- Activity overview:** A line chart showing 'Teams calls', 'Emails', and 'Texts' over a 12-month period. All three metrics are consistently at 1654.
- Target progress:** Three progress gauges for 'New customer accounts' (82.3%), 'Policy sales' (95%), and 'Renewals' (50.3%). A tip below states: 'Tip: You would have to talk to 15 leads per day to achieve your sales goals per your current lead conversion rate.'
- My day:** A section for 'Unscheduled' activities with entries for Aadi Kapoor and Aaron Buxton, each with an 'Add activity' button. Below is a 'Scheduled' activity: 'Intro call with Aadi Kapoor' from 8:00 AM to 9:00 AM, categorized as a 'Teams meeting'.
- Open leads (82):** A table listing leads with columns for Customer, Status, Email, and Source. A red circle highlights the 'Opportunity' status for Aadi Kapoor.
- To-do:** A list of tasks for June 12th, including 'Call John', 'Defaulted loan status', 'Discuss loan terms', 'Rate approval', and 'Demo prep'.

In order to track the lead status to completion, Daniela uses her persona dashboard view to click on the Opportunity stage of Aadi Kapoor.

The screenshot displays a user interface for a Lead Management System. At the top, there is a search bar and navigation tabs for 'Leads Assist', 'Chat', 'My hub', 'My tasks', and 'About'. A vertical sidebar on the left contains icons for Activity, Chat, Teams, Calendar, Calls, Files, Leads Assist, and Apps. The main content area is divided into several sections:

- Activity overview:** A line chart showing 'Teams calls', 'Emails', and 'Texts' over a 12-month period. All three metrics are consistently at 1654. The chart is set to a 'Yearly' view.
- Target progress:** Three progress indicators for 'New customer accounts' (82.3%), 'Policy sales' (95%), and 'Renewals' (50.3%). A tip below states: 'Tip: You would have to talk to 15 leads per day to achieve your sales goals per your current lead conversion rate'.
- My day:** A section for 'Unscheduled' activities with entries for Aadi Kapoor and Aaron Buxton, each with an 'Add activity' button. Below, a 'Scheduled' activity is listed: 'Intro call with Aadi Kapoor' from 8:00 AM to 9:00 AM, categorized as a 'Teams meeting'.
- Open leads (82):** A table listing leads with columns for Customer, Status, Email, and Source. A dropdown menu is open for the first lead, Aadi Kapoor, with 'Opportunity' selected. Other leads include Aaron Buxton, Will Little, and Miguel Silva.
- To-do:** A list of tasks for 12 Jun, including 'Call John', 'Defaulted loan status', 'Discuss loan terms', 'Rate approval', and 'Demo prep'.

She proceeds to mark it as a won opportunity in the drop down that appears.

The screenshot displays a CRM dashboard for 'Leads Assist' with a central notification window. The notification, titled 'Leads Assist Customer won', features a celebratory icon and the message 'Congrats for converting the lead to a customer opportunity!'. It shows that the estimated opportunity value of INR 2,82,000 has been converted to the same amount. Below this, a section for 'Other related opportunities' lists several items: 'Life insurance policy renewal', 'E243 loan', 'Home insurance', and 'Platinum credit card', each with a close button. A text input field for adding more opportunities is present, along with a 'Notes' section containing the text 'The customer is already looking at potential home insurance policies'. A 'Save' button at the bottom right of the notification is circled in red. The background dashboard includes an 'Activity overview' chart, 'My day' tasks, and a 'To-do' list.

As Danie a marks the opportunity as won she is prompted to enter further details around the customer and cross-sell, up-sell opportunities present. This will be tracked in CRM by same / other departments.

The screenshot displays the Leads Assist CRM interface. At the top, there's a search bar and navigation tabs for 'Leads Assist', 'Chat', 'My hub', 'My tasks', and 'About'. A left sidebar contains icons for Activity, Chat, Teams, Calendar, Calls, Files, and Leads Assist.

Activity overview (Yearly): A line chart showing 'Teams calls' (blue), 'Emails' (pink), and 'Texts' (orange) from Jan to Dec. All three metrics show a total of 1654 for the year.

Target progress (Quarter 3): Three progress gauges for 'New customer accounts' (82.3%, target 358), 'Policy sales' (95%, target \$8000), and 'Renewals' (50.3%, target \$12000). A tip below states: 'Tip: You would have to talk to 15 leads per day to achieve your sales goals per your current lead conversion rate'.

My day (Unscheduled): Lists Aadi Kapoor and Aaron Buxton with 'Add activity' buttons. A scheduled item 'Intro call with Aadi Kapoor' (8:00 AM-9:00 AM) is also shown.

Open leads (82): A table listing leads with columns for Customer, Status, Email, and Source.

| Customer | Status | Email | Source |
|--------------|--------------|----------------------|------------|
| Aadi Kapoor | Customer won | aadi.kapoor@mail.com | Email |
| Aaron Buxton | New lead | aarbux@mail.com | Newsletter |
| Will Little | New lead | willlt@mail.com | Newsletter |
| Miguel Silva | Demo | miguelsi@gmail.com | Social |

To-do: A list of tasks including 'Call John', 'Defaulted loan status', 'Discuss loan terms', 'Rate approval', and 'Demo prep'.

On marking 'Customer won' Daniele gets closer in achieving her sales targets successfully. Opportunity stage changes are recorded in CRM backend

Solution Highlights – Best Practices

Key Solution Design Considerations

Platform Extension Points

- **Personal Scoped App** The app is completely personal scoped because target setting, progress towards the target are personal and not done in collaboration with other RMs.
 - Personal Tab – The tab is used for presenting the highly visual analytics of operational metrics, velocity information and filterable view of leads. Tab is required to show all this information in one hub with flexibility of UI elements.
 - Personal Bot – Personal bot is mainly used for notification, reminders and alerting users about lead management.
- **Apps in Meetings** are used to surface relevant information needed by the RM in converting a lead. Meetings / Calls are a core component of RM's day to day activities so meeting extensibility is a core component.
- **Task Modules** are used primarily for adding an activity – sending e-mails, performing calls and adding reminders. These actions are means to an end (performing activity on a lead) and should be done within the flow

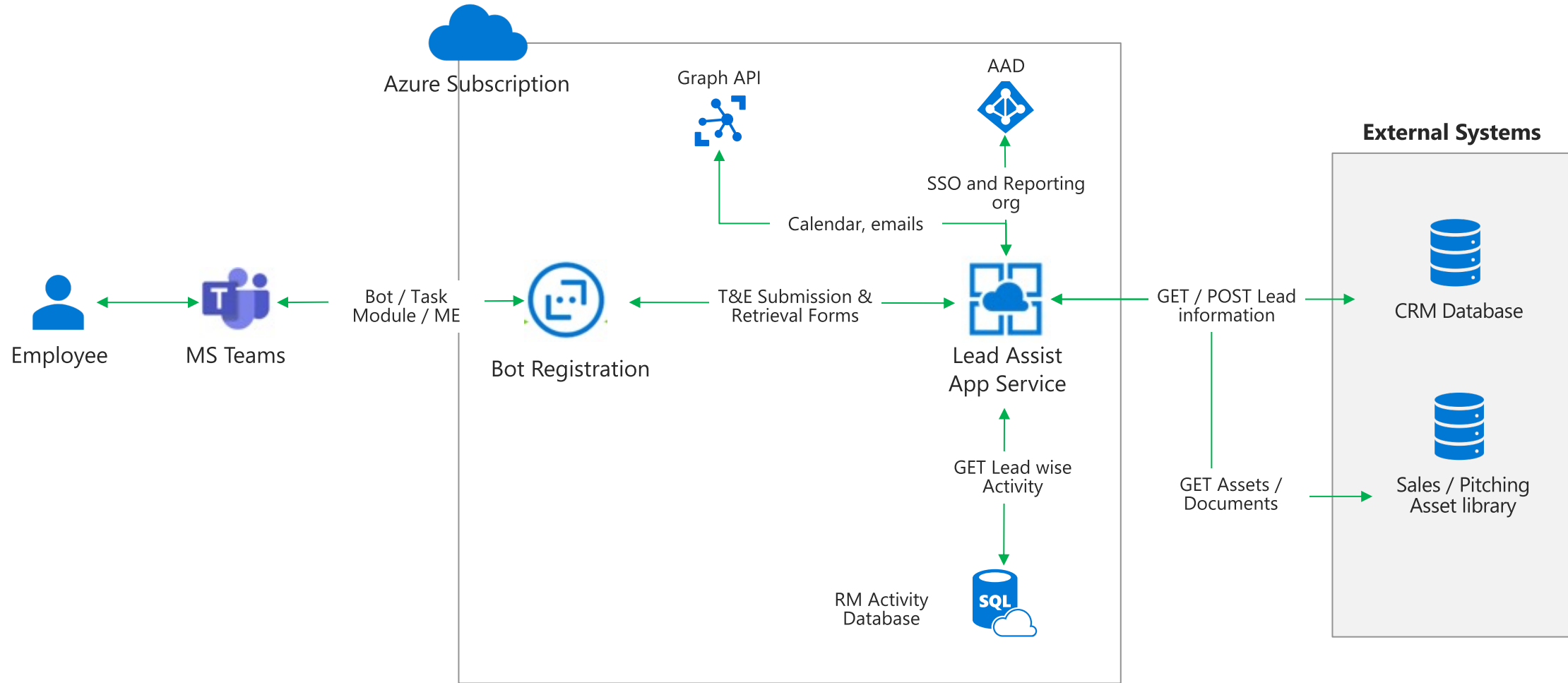
User Experience

- **Card refreshes** are used to update the card status instead of sending multiple different cards about the same request. This ensures that readability is easier, and app does not spam with multiple cards for updates.
- **List cards** are used for providing a single consolidated view of leads with summary information around the lead. This provides a high level view which RMs can delve deep into on a per lead basis.
- **Proactive Messages** are sent at scheduled time to remind RMs about upcoming calls with leads.

Graph API

- The app utilizes **Send Mail** Graph API to create and send e-mails via signed-in user's account to leads.
- The app also uses **Create Event** Graph API to create Teams calls between leads and RMs and Calendar Graph APIs to read and show calendar events

Solution Architecture



Banking & Financial Services Book of Dreams

Business to Consumer Chat Center



Scenario Vision



Context

- Daniela is a relationship manager (RM) at Contoso Banking. She is part of a team that covers personal, home and car loan products for customers.
- As part of her job responsibilities, Daniela is required to handle customer inquiries about products assigned to her. Leads from these inquiries are expected to be converted to customer opportunities contributing to her targets.

Current State

- ⚠ Customers typically reach out to Contoso banking RMs in the form provided in the website. All requests are sent as e-mails to a common mail box
- ⚠ The monitored mail box is triaged daily and assigned to Daniela based on the type of query.
- ⚠ Daniela respond over e-mails for all queries received and waits until the customer replies next. Live chat is not a supported option
- ⚠ All conversations history and customer information should be manually read and updated in the CRM by Daniela regularly
- ⚠ Handling more than one customer at a time becomes increasingly challenging due to multiple e-mail threads.
- ⚠ The RM has to manually prepare notes, talking points during calls with customer by going through customer info in CRM and past email threads.

Future State

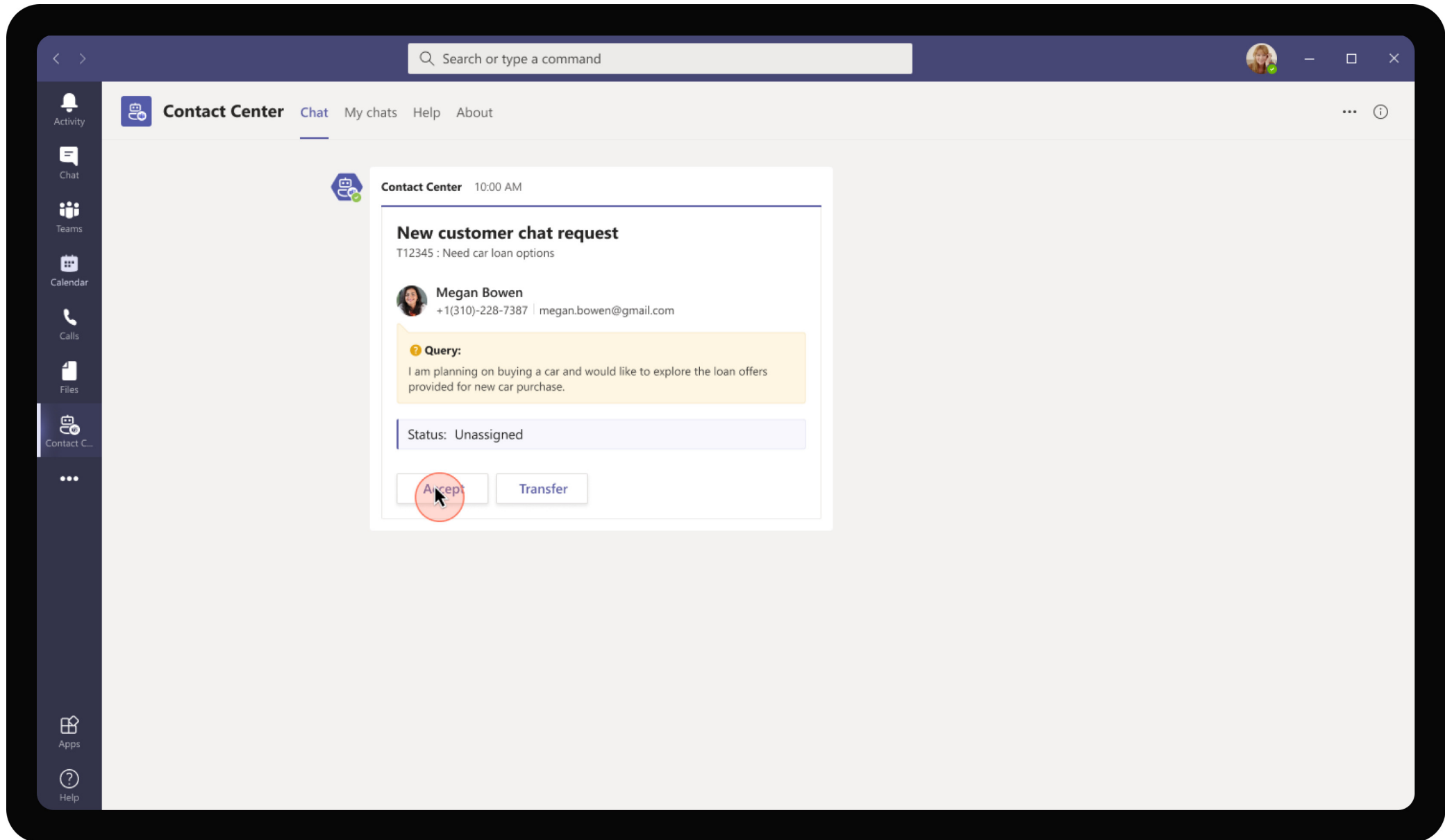
- ✓ As soon as a customer requests information on an inquiry, a chat request is initiated and assigned to Daniela
- ✓ Daniela accepts the chat and starts interacting with the customer from within Teams. Triageing happens automatically based on type of query
- ✓ Live chat is supported using the app and it also supports chatting with multiple customers in parallel
- ✓ Conversations with each customer is automatically tracked and recorded in CRM. It also provides basic info & talk track for the RM
- ✓ The app also provides option to schedule meetings with the customer instantly and provides in meeting experiences to the RM
- ✓ During the meeting, the app provides talk track with customized offers and discounts for Daniela.



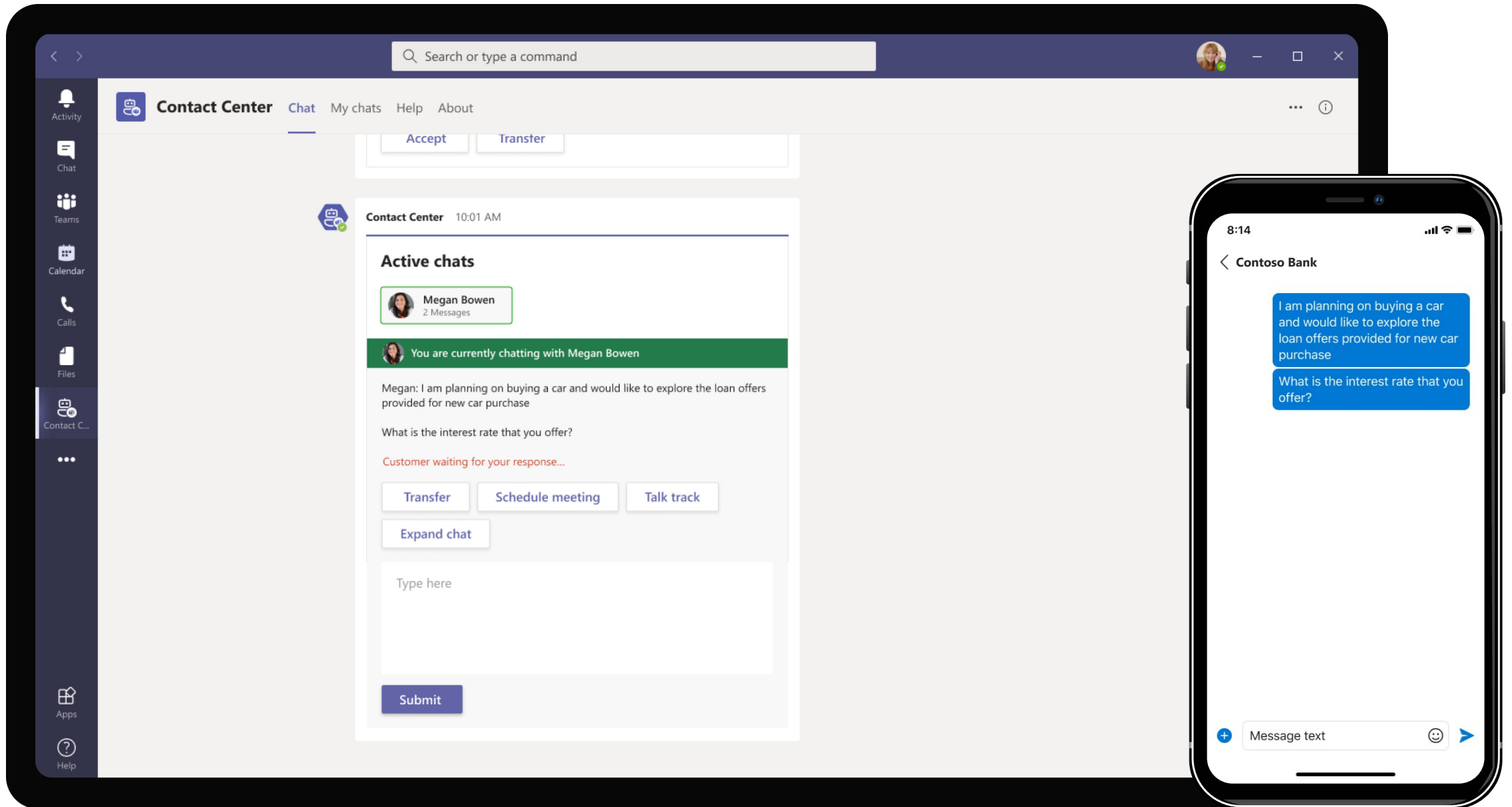
Daniela Mander, Banking Relationship Manager

Daniela is a relationship manager at Contoso Banking. She frequently handles inquiries from customers regarding loan options. She works with the leads to clarify their concerns and win customer sales.

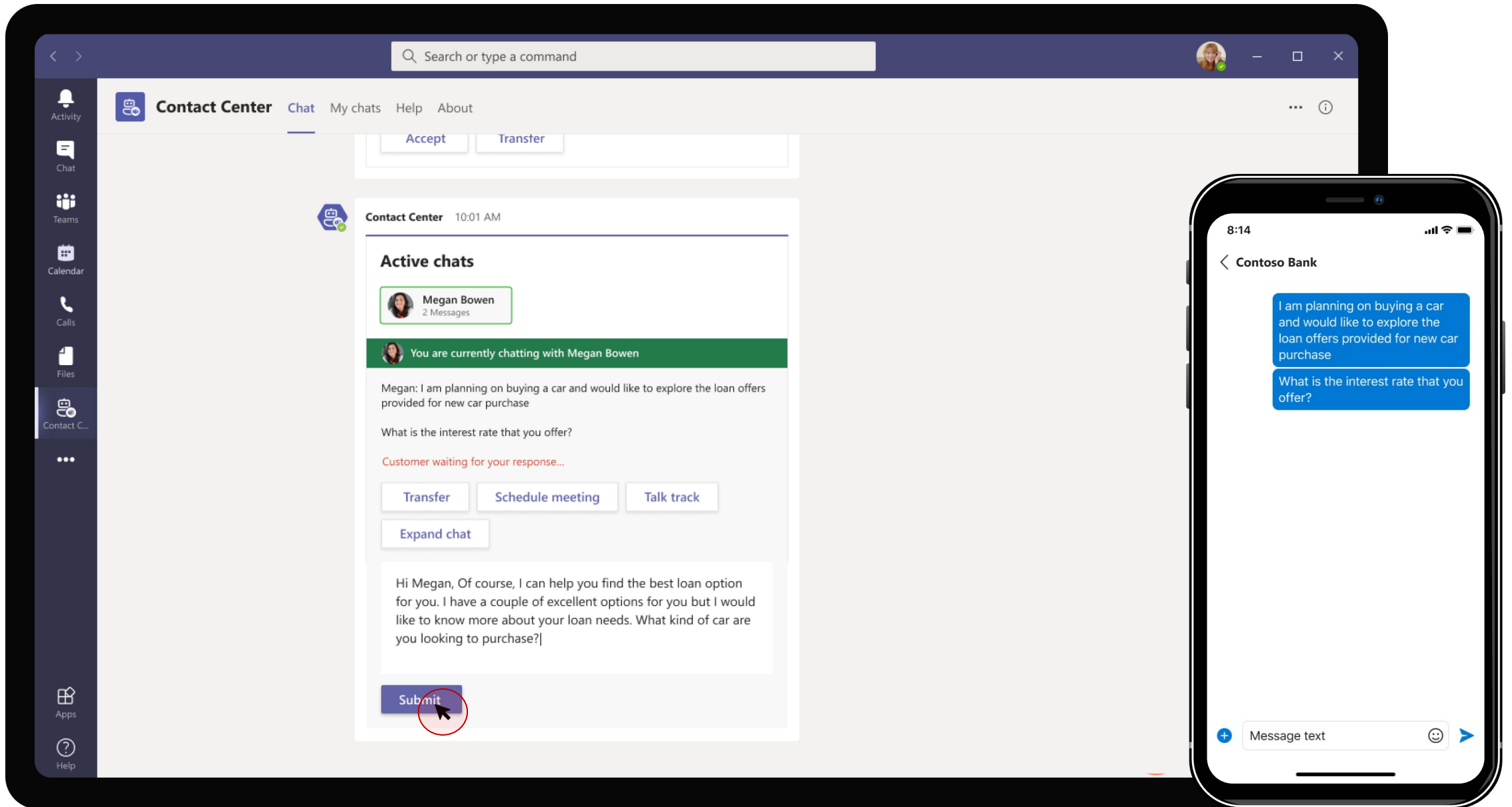
Megan Bowen, a potential customer, has reached out to Customer support service in the bank's website with a query regarding car loans



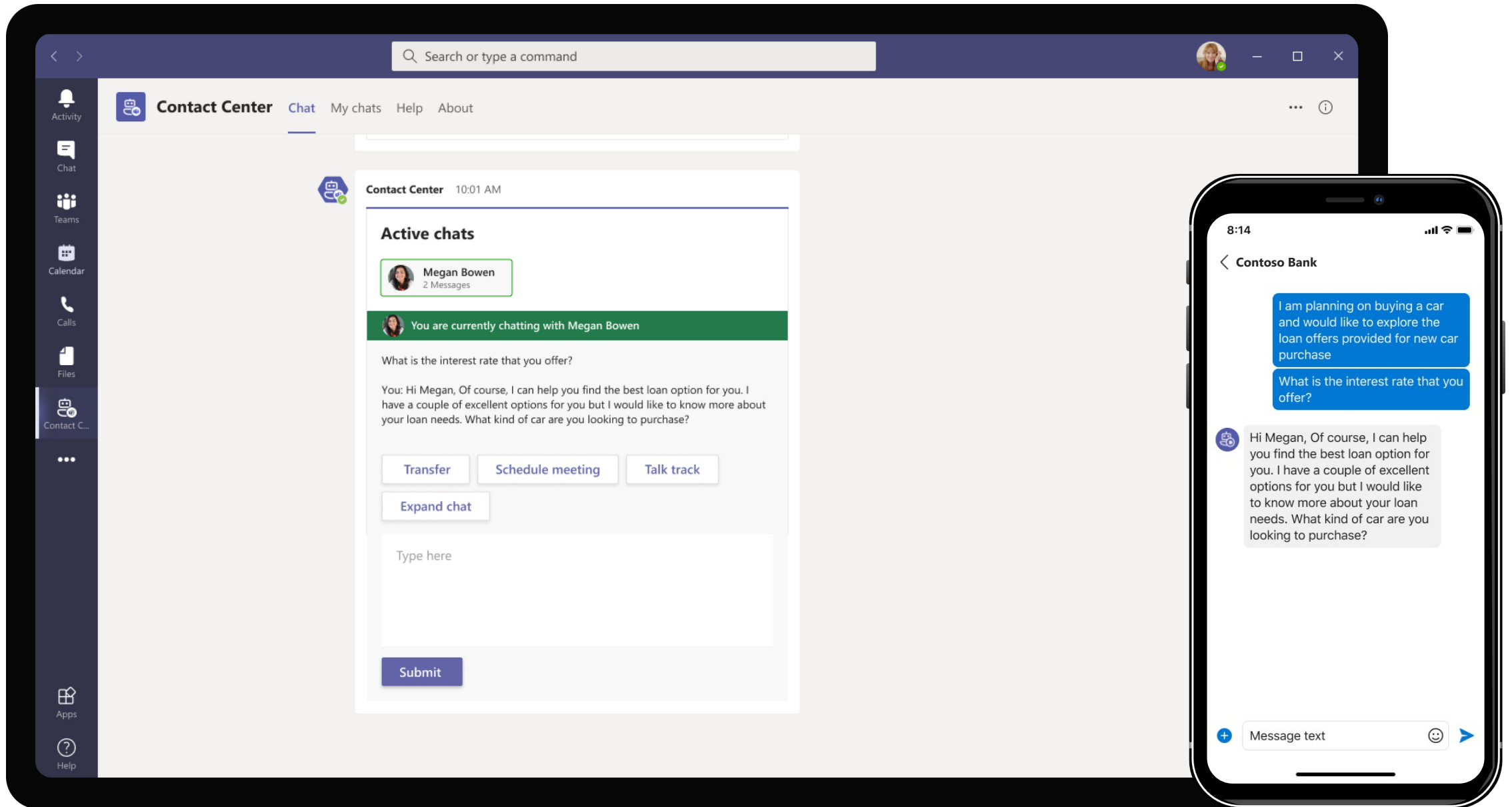
As Megan initiates a chat request to a relationship manager, the app checks for the type of query, available RMs at that time and sends an adaptive card for Daniea as she is available to handle the query. The card provides the query that Megan has raised for context.



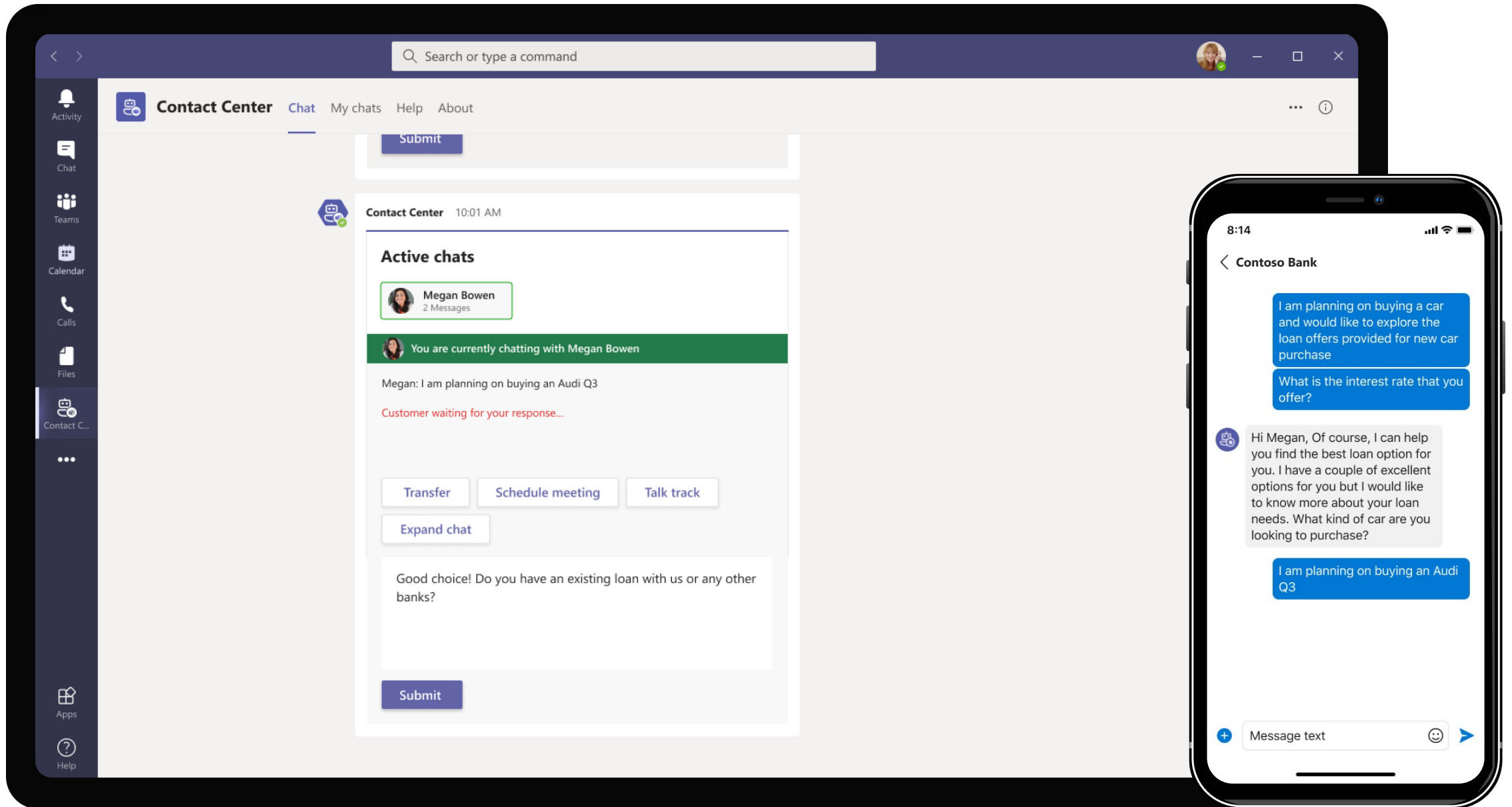
On accepting the request a new card is posted in the chat clearly indicating the customer that Daniea is currently chatting with. The card has a text box where Daniea can type responses to the query and initiate live chat with Megan.



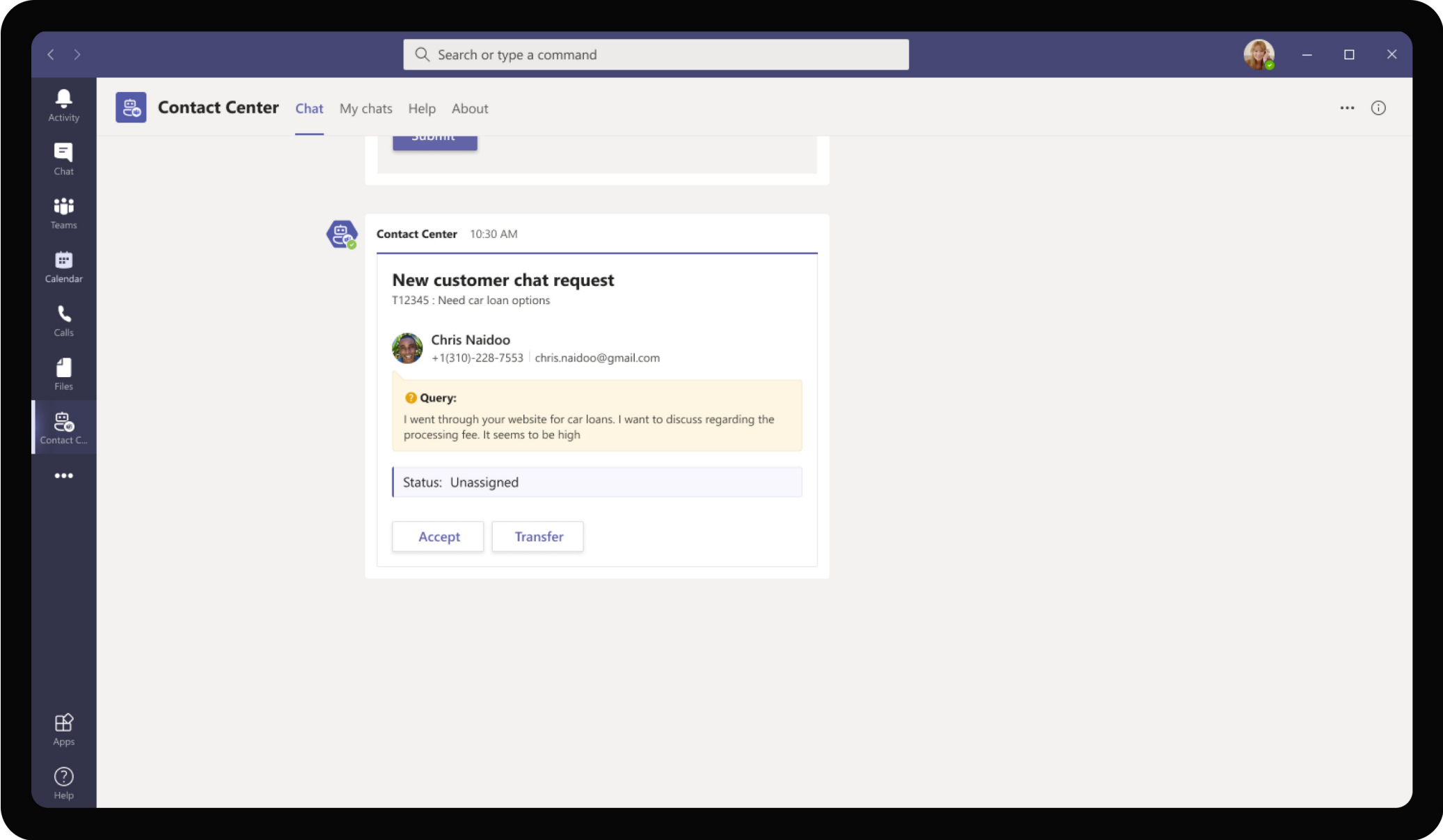
Dani e proceeds to write a response to Megan in the text box. She asks a follow up question to Megan to narrow down the loan options that would fit Megan's needs.



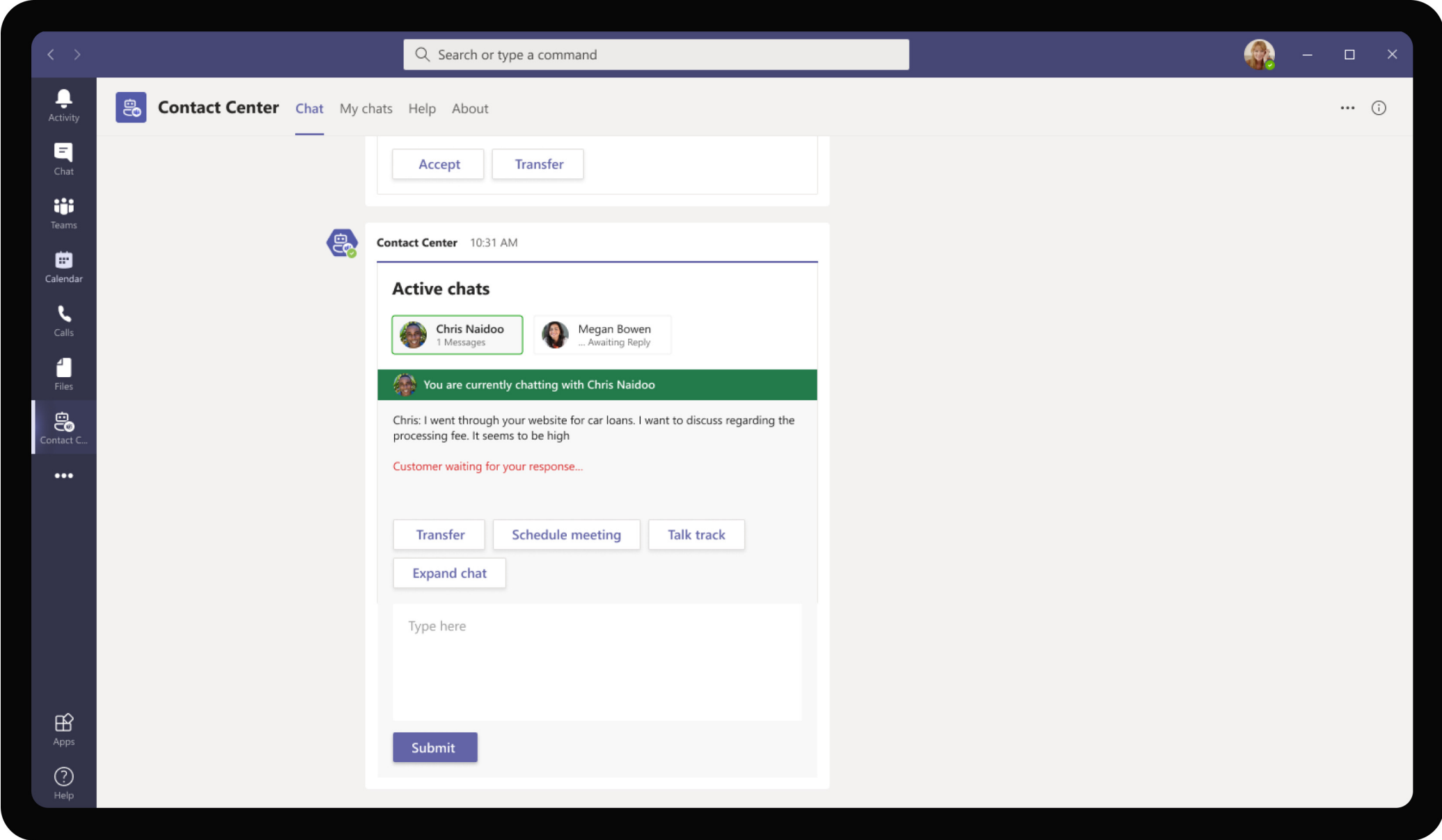
On clicking submit the message gets sent to Megan on the web chat on Contosos site. Megan sees the message from Danie a on her mobile as a response from a bot chat.



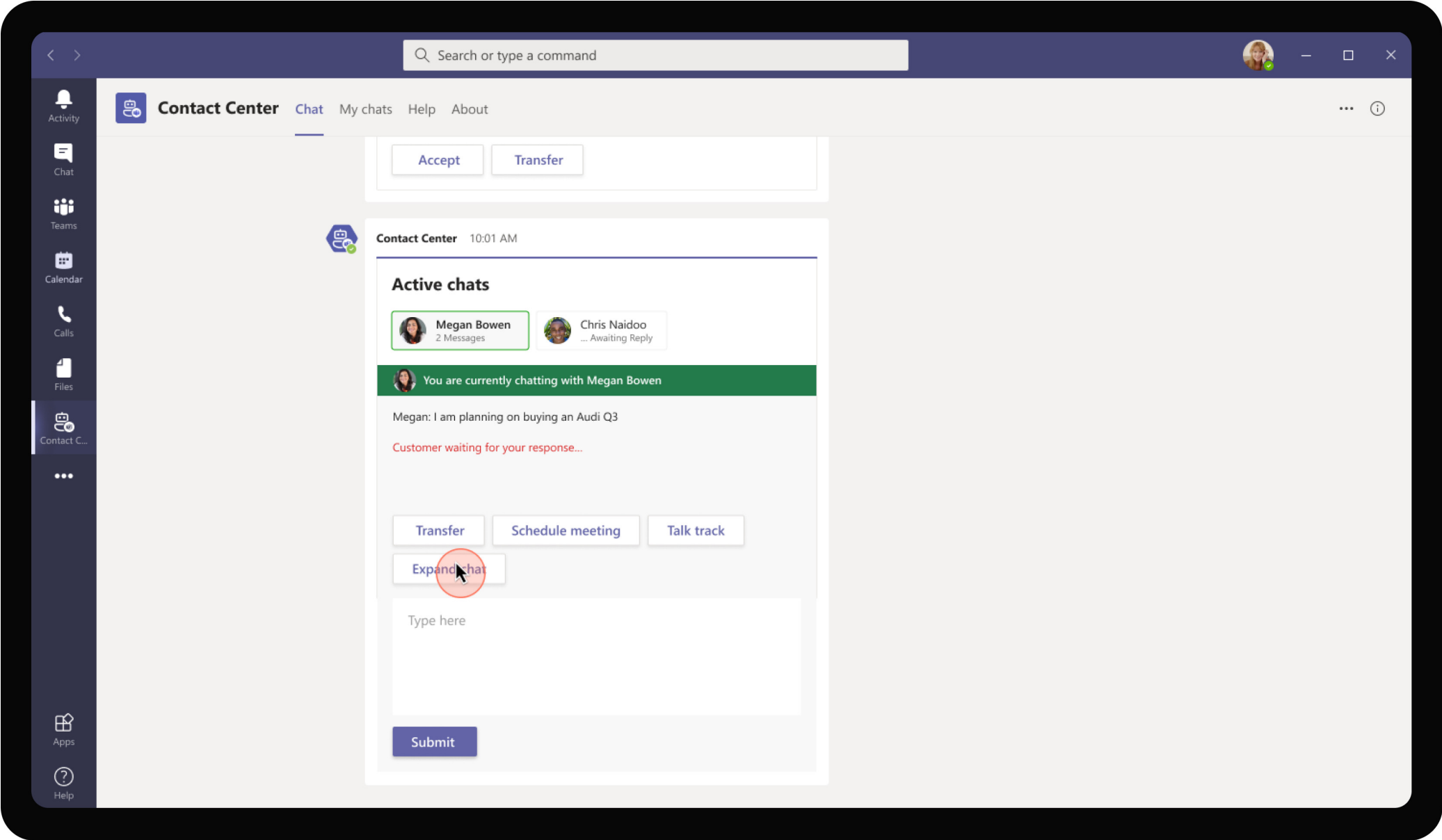
As Megan types a reply from her mobile on the web based bot, the response is updated on the adaptive card for Daniela to view. Daniela proceeds to type a response on the text box at the bottom.



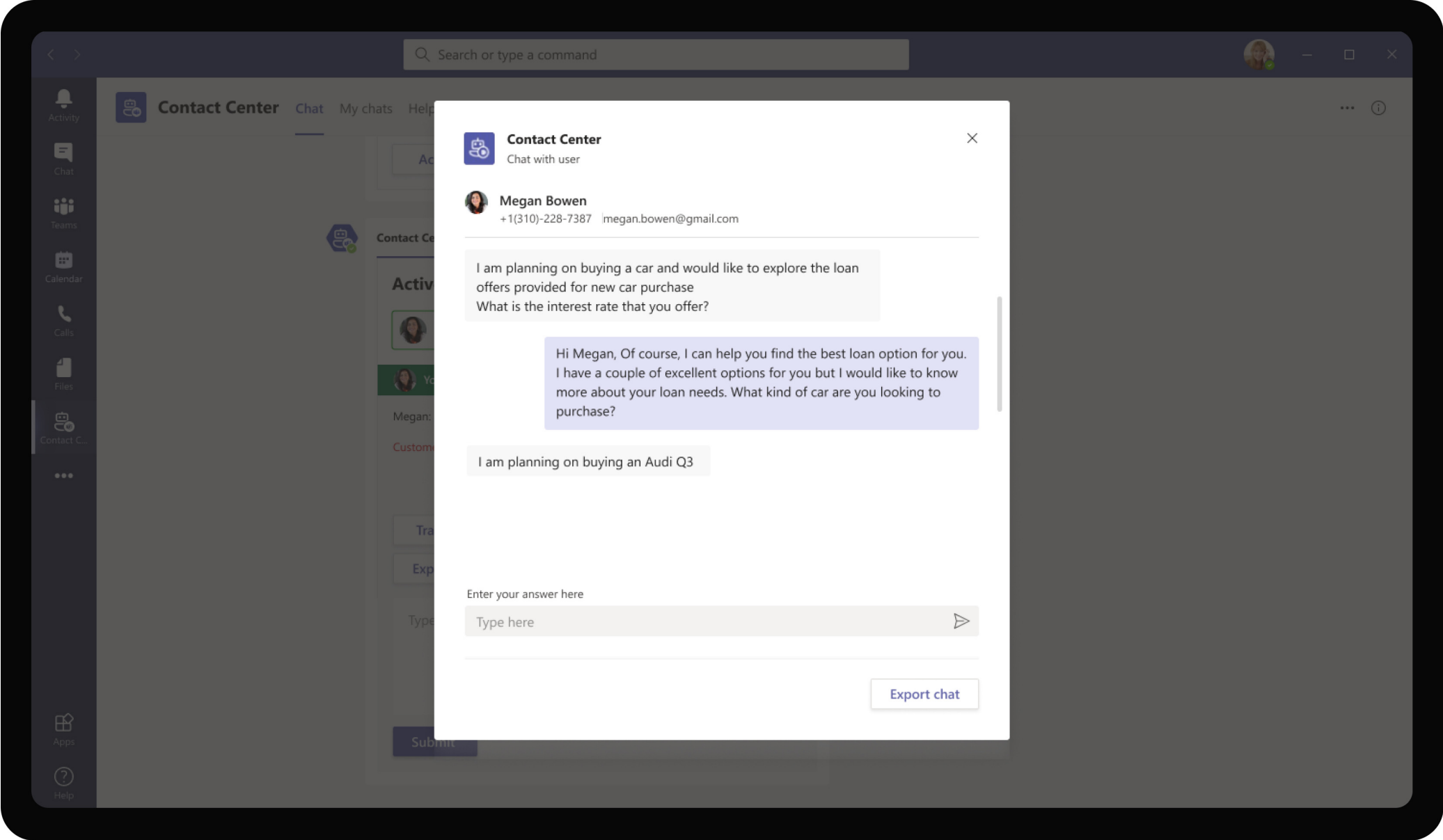
While Daniea is speaking to Megan regarding a card loan options, another potential customer Chris Naidoo also wants to clarify a few questions around car loan fees and submits a chat request on Contoso Banking's mobile app.



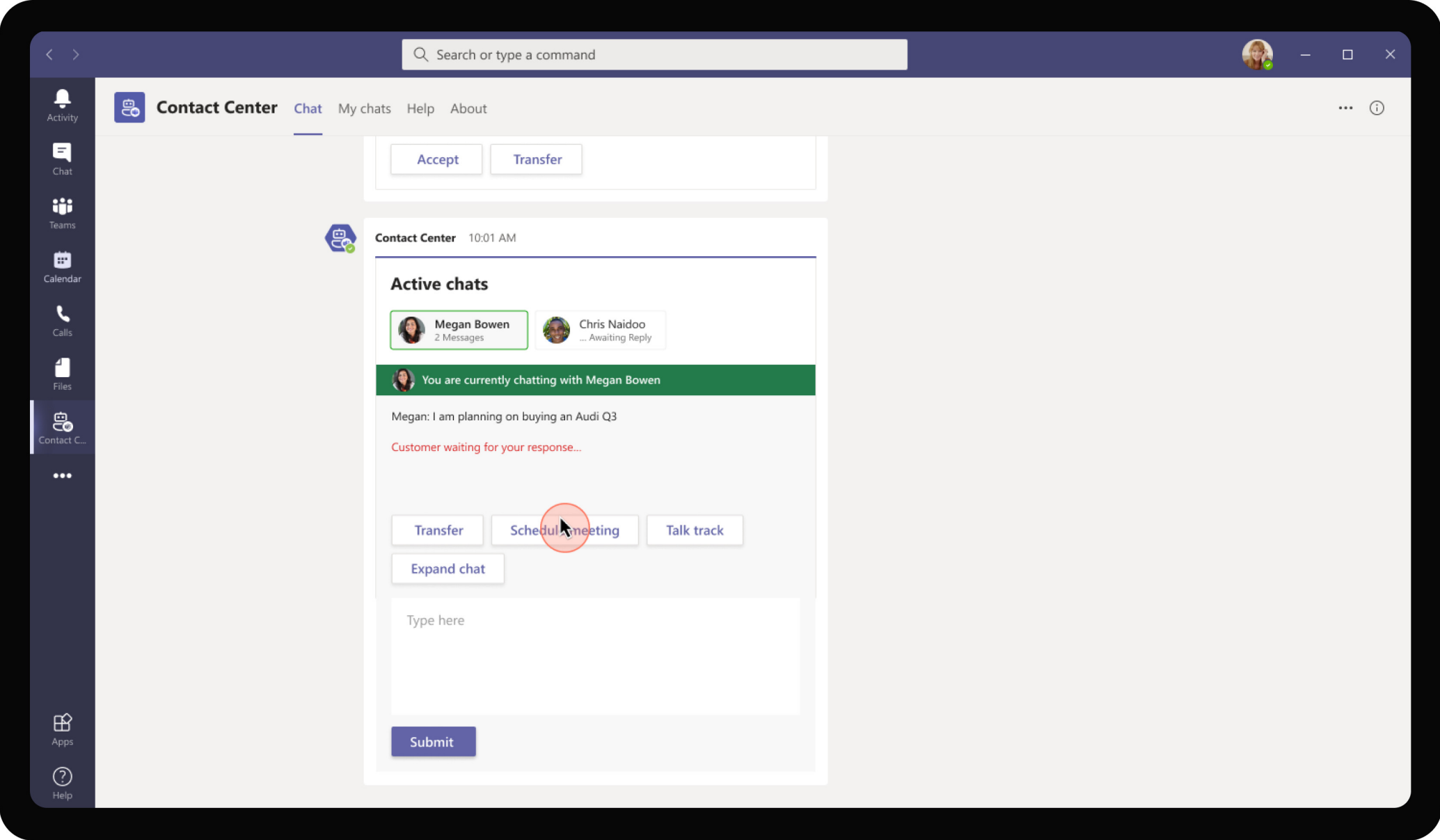
Since Daniela is available to support more customers in parallel she accepts the chat request. An adaptive card appears which shows both Megan and Chris's chat history while clearly highlighting the selected customer for chatting.



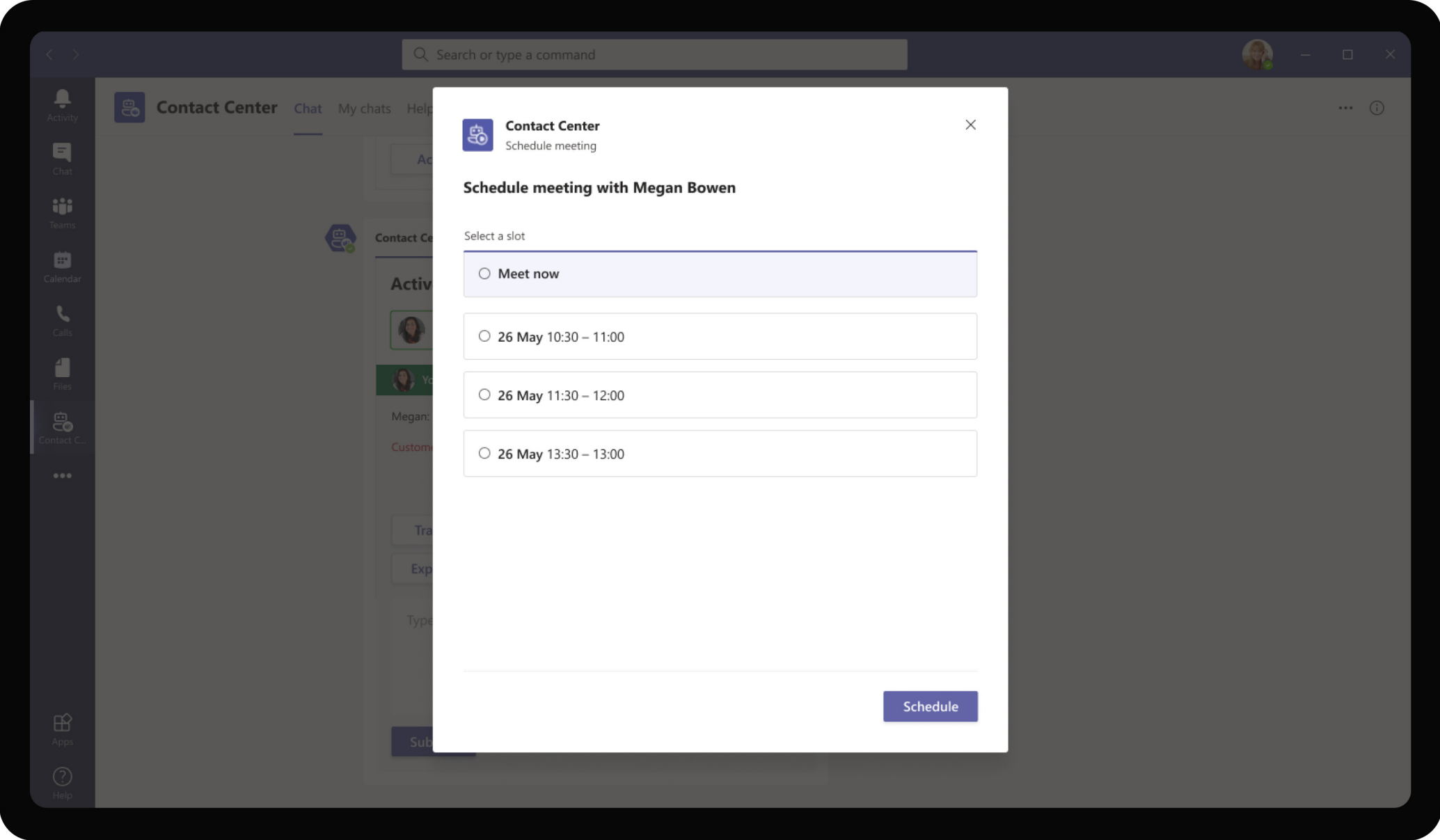
Daniela can switch easily between chatting with Chris and Megan by clicking on their respective buttons. Any chat messages sent by Daniela will be sent to the currently selected customer.



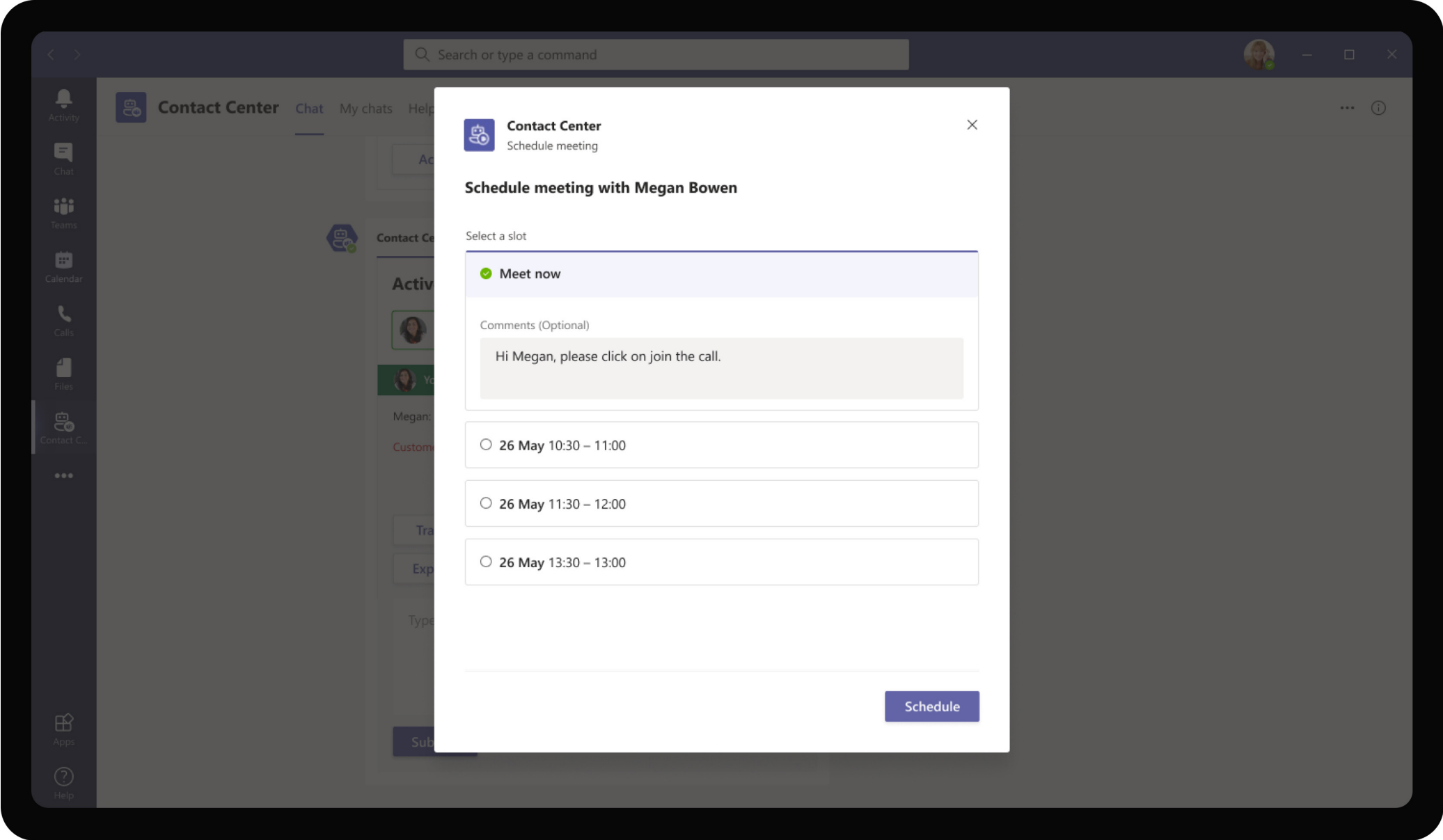
As chat conversations go longer Daniela can expand chat to open a task module with the entire chat history with the customer. Daniela can also use the text box in this view to continue chatting with Megan.



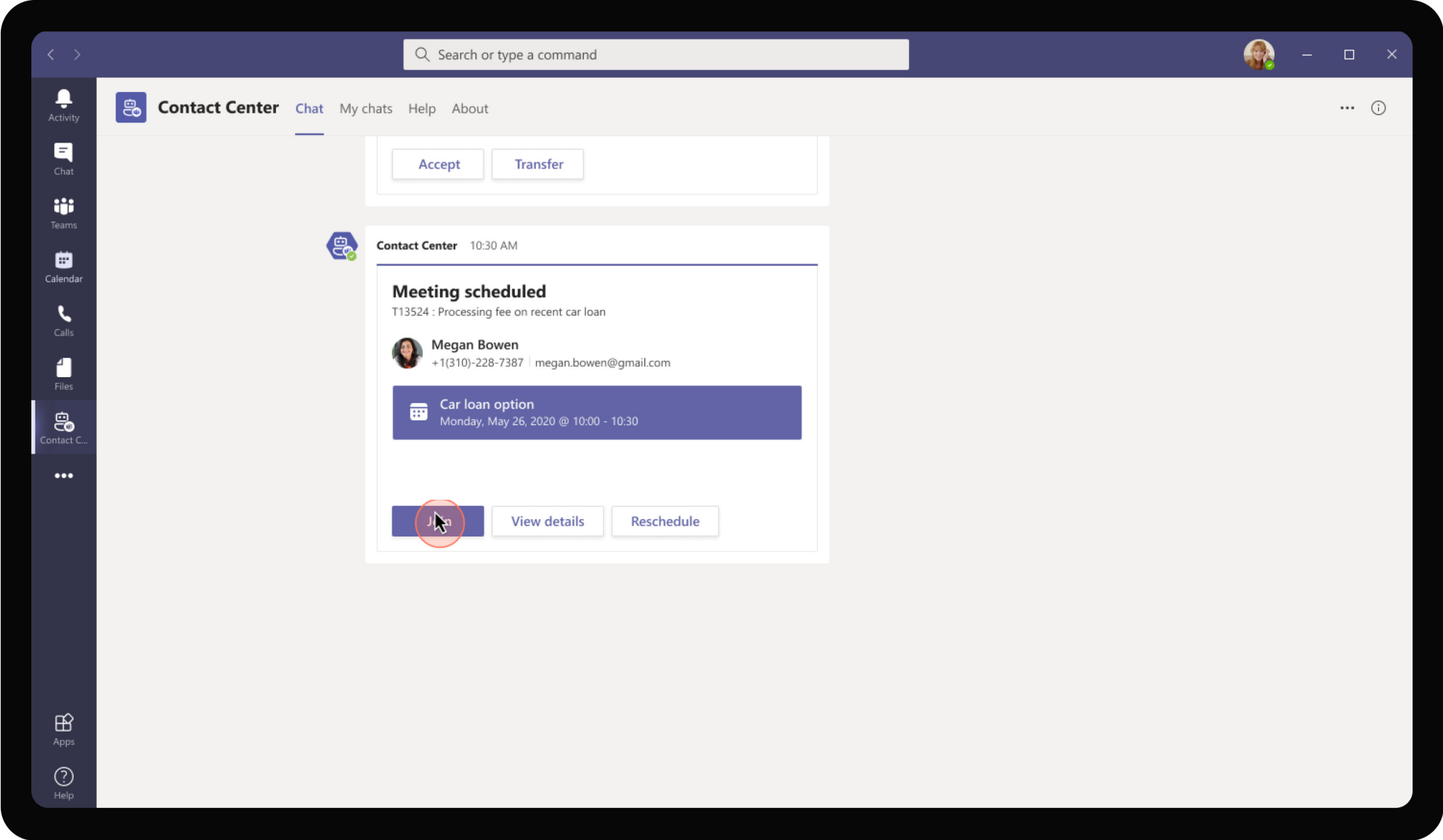
Once Danie a gets enough information from the customer from chat if the customer wishes Danie a can continue rest of the discussions over a call where she can share more information with the customer.



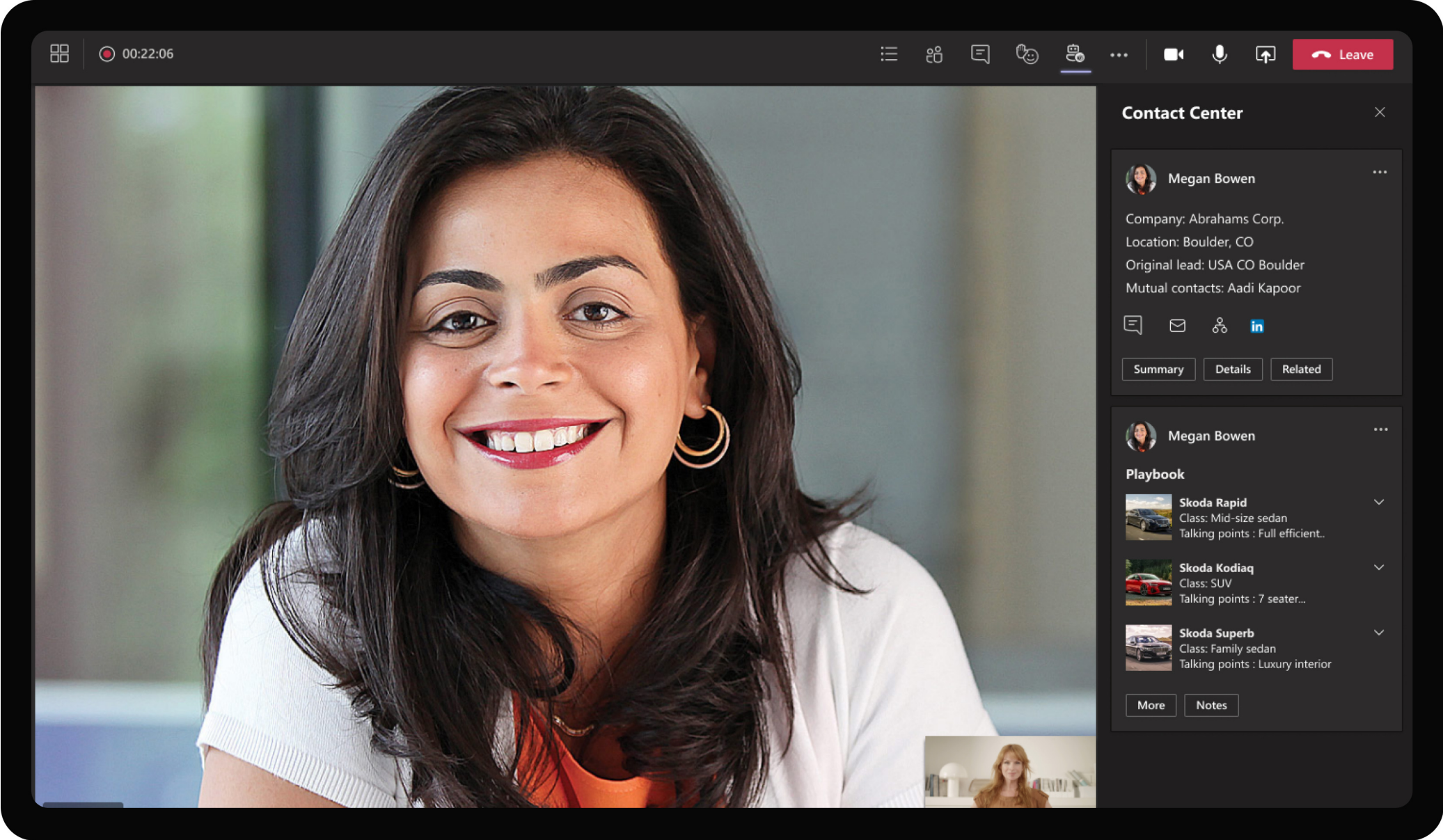
The app proposes a few slots for scheduling the meeting as per availability in Danie's calendar and preferences provided by Megan, if any.



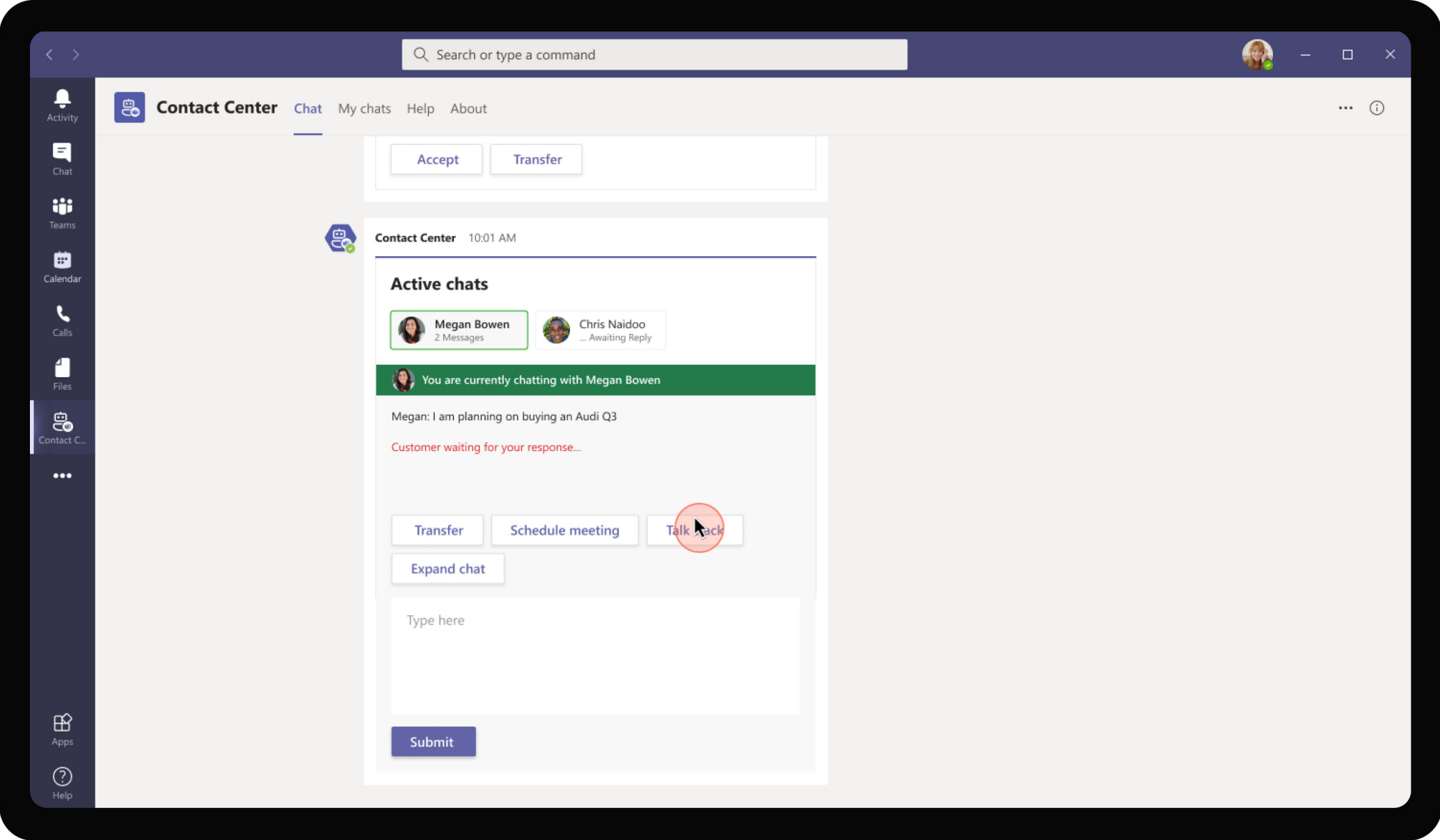
Daniela may also choose to meet immediately with the customer. In this case, since the customer Megan wants an immediate response and clarification, Daniela schedules a call.



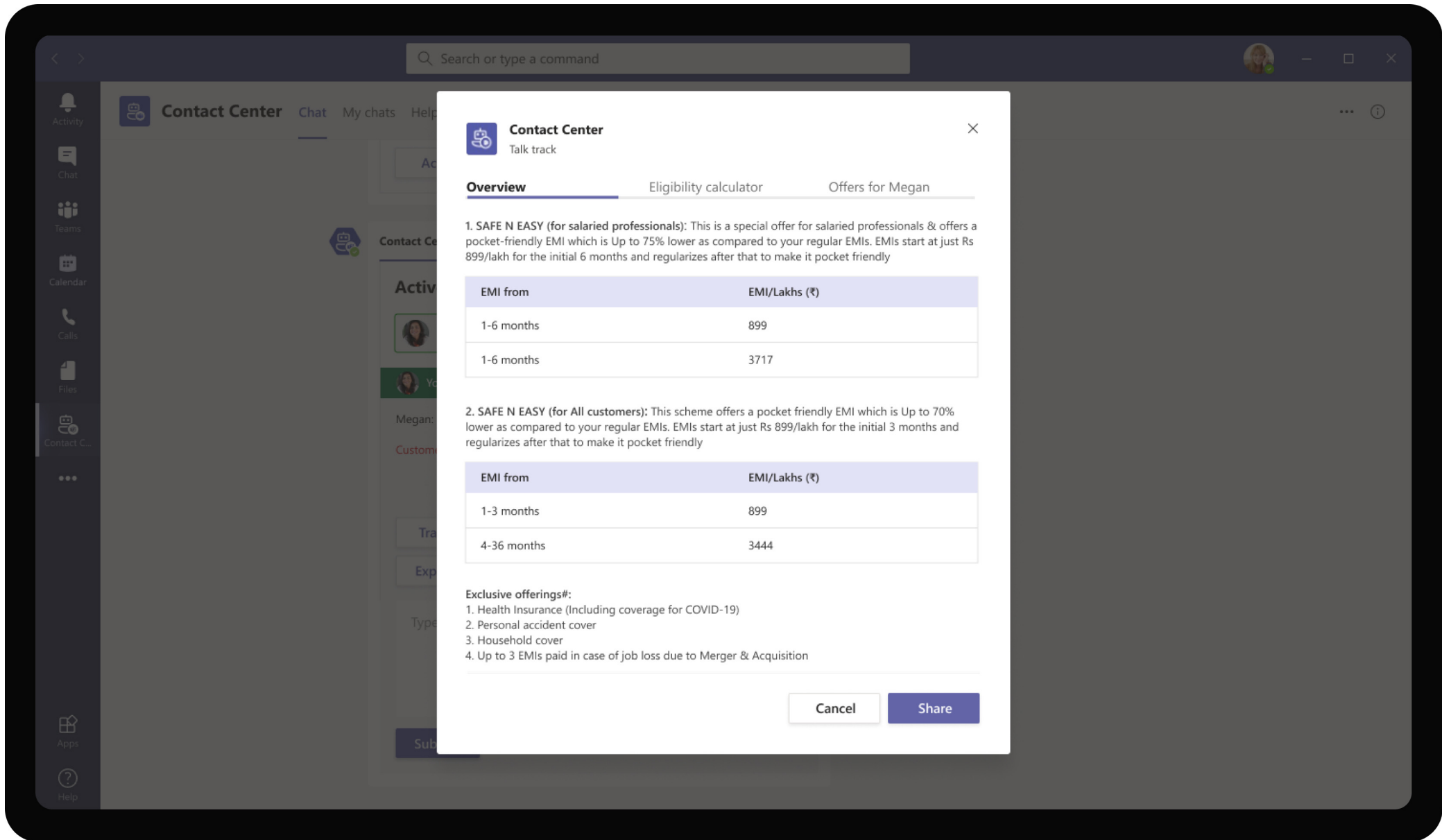
The app schedules a meeting with Megan a



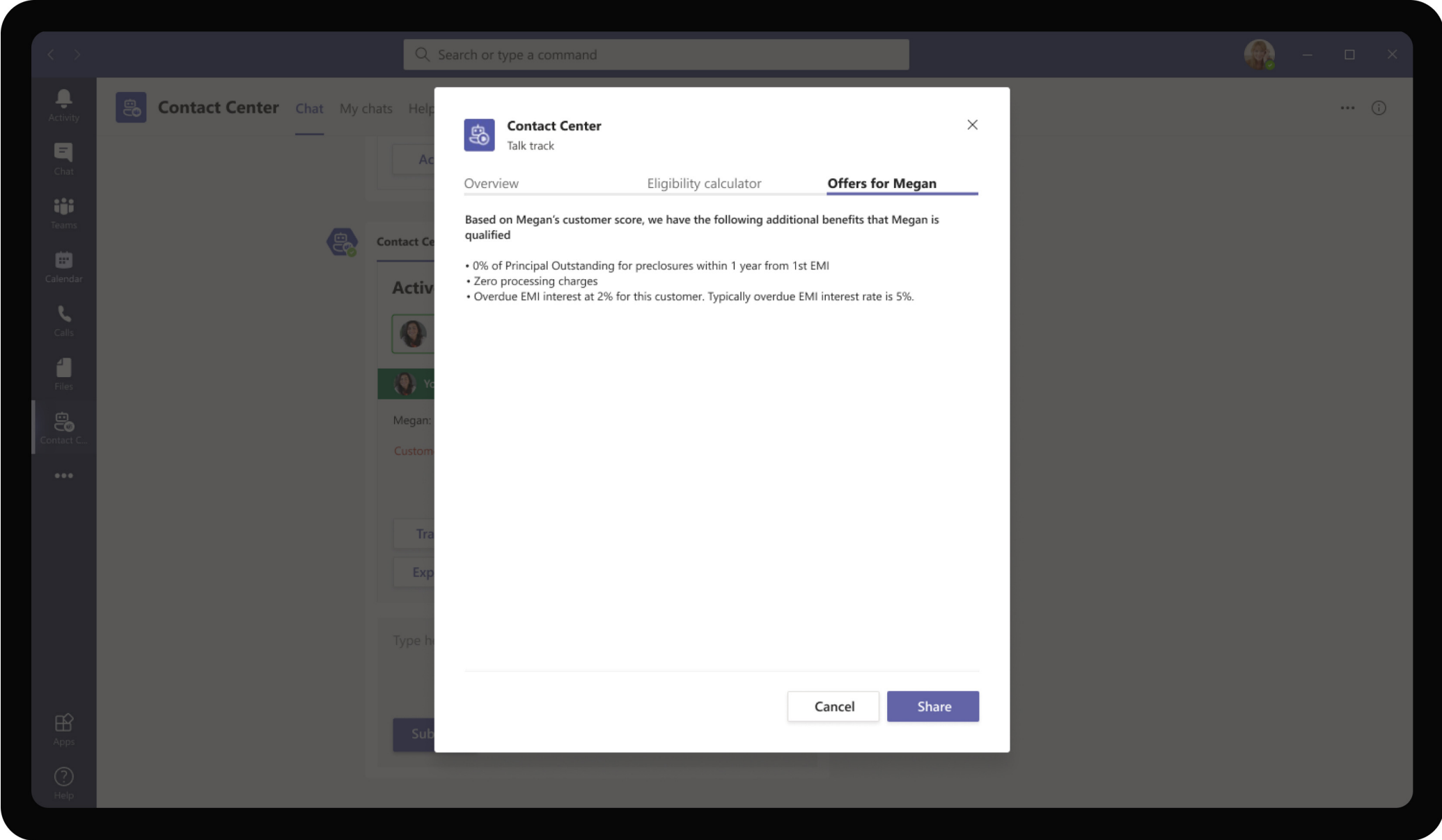
During the call the app provides basic information about the customer to Daniela to help her provide loan offers that will be relevant to the customer. In addition it also shows loan offers available for various categories of cars for Daniela to refer during pitching.



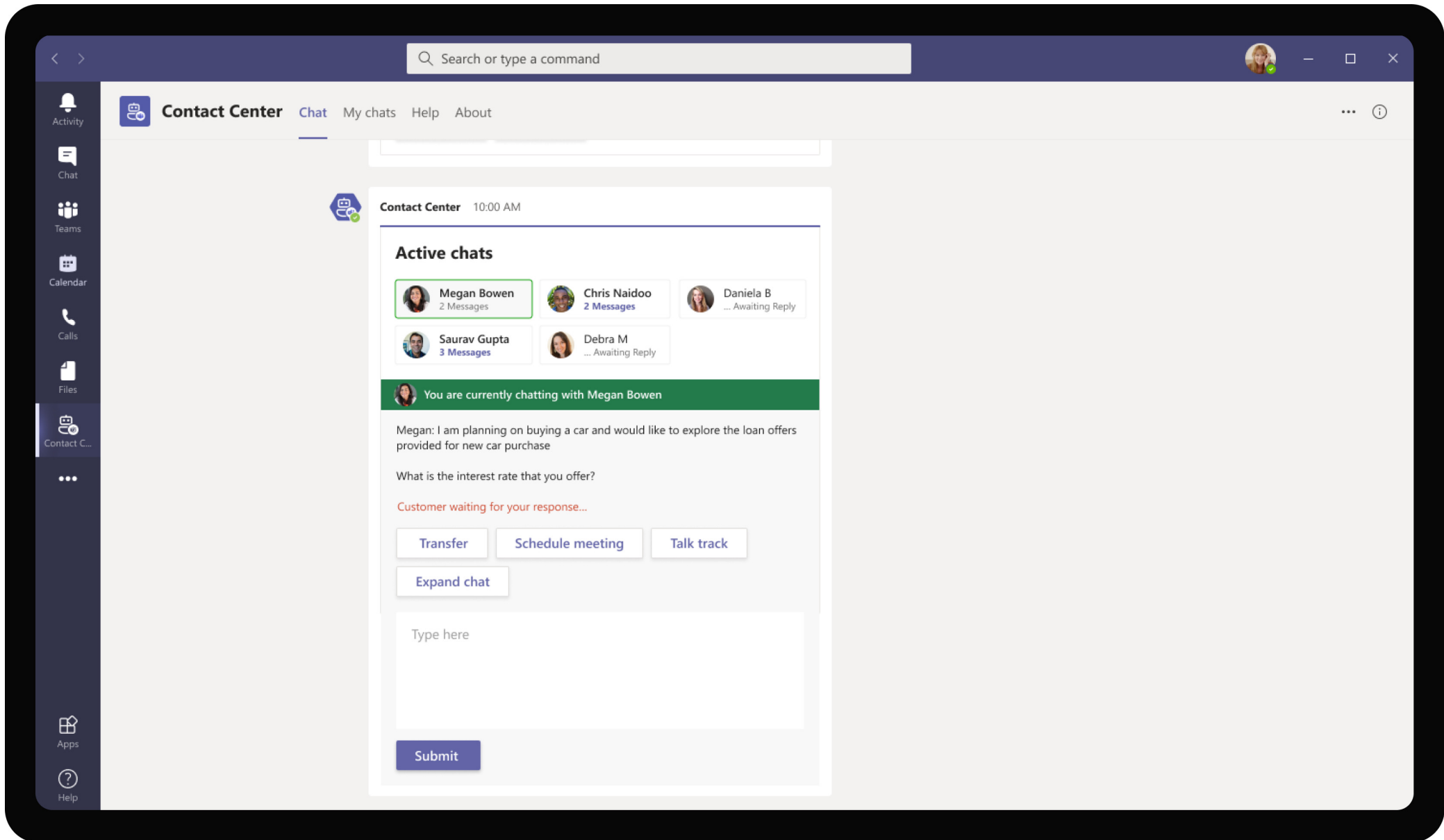
Even outside calls, the app provides curated and customized talk track depending on the type of queries that come from customers. Daniela can refer to the talk track while chatting with customers.



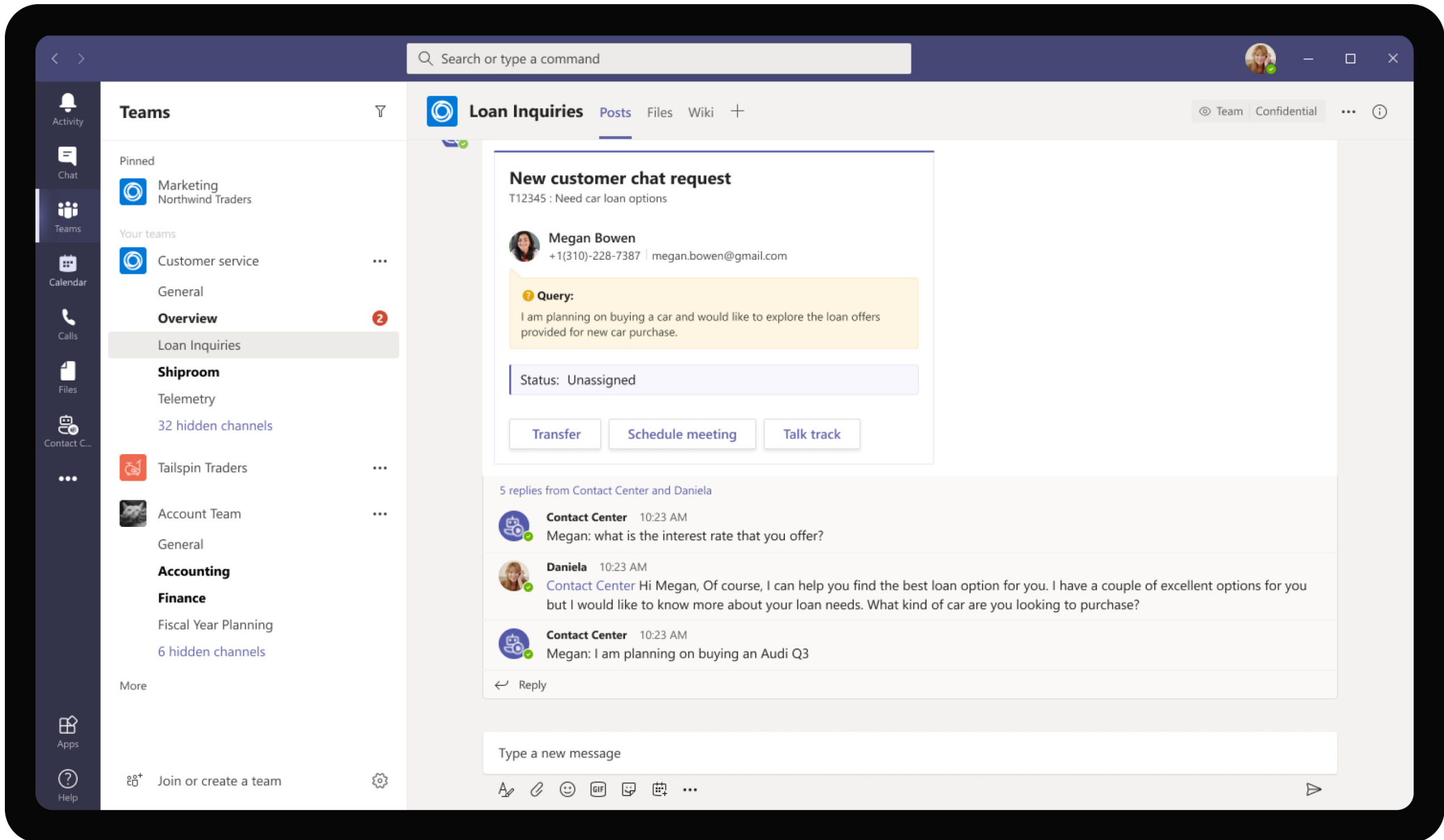
Clicking on the talk track opens a task module with overview of various loan options available for the particular customer. Daniela can pick and choose that best matches the customer need.



If there are specific offers, discounts that the customer qualifies for, the app also provides Daniela with that information. This allows Daniela to have a more personalized conversation with Megan.



Daniela can have up to 5 parallel conversations with different customers at a time using the app. The card updates to show unread messages for each customer chat allowing Daniela to switch to customers who are waiting for responses.



Alternatively, the app can also be configured to work in channel scope where the customer conversations are visible for all RMs. RMs can collaborate to provide responses to open chat requests to any customer which is key during training phases.

Solution Highlights – Best Practices

Key Solution Design Considerations

Platform Extension Points

- **Personal Scoped App** The app is defined to be predominantly personal scoped app with a bot to maintain privacy.
 - Personal Bot – Personal bot acts as a bridge between the RM on Teams and the customer on a client platform such as client mobile app / Messenger or other chat platforms.
 - The bot makes use of [Bot Framework Channels](#) to connect two parties interacting via two different channels. Microsoft Bot Framework supports interworking of multiple channels
- **Channel Scope (Optional):** The last screen also represents a possible approach of implementing the RM <-> customer chat experience in channel scope as threaded messages. Visual complexity in adaptive card is lower as channels allow for threaded messages. However, all customer conversations are visible to all RMs and members of the Team / Channel.

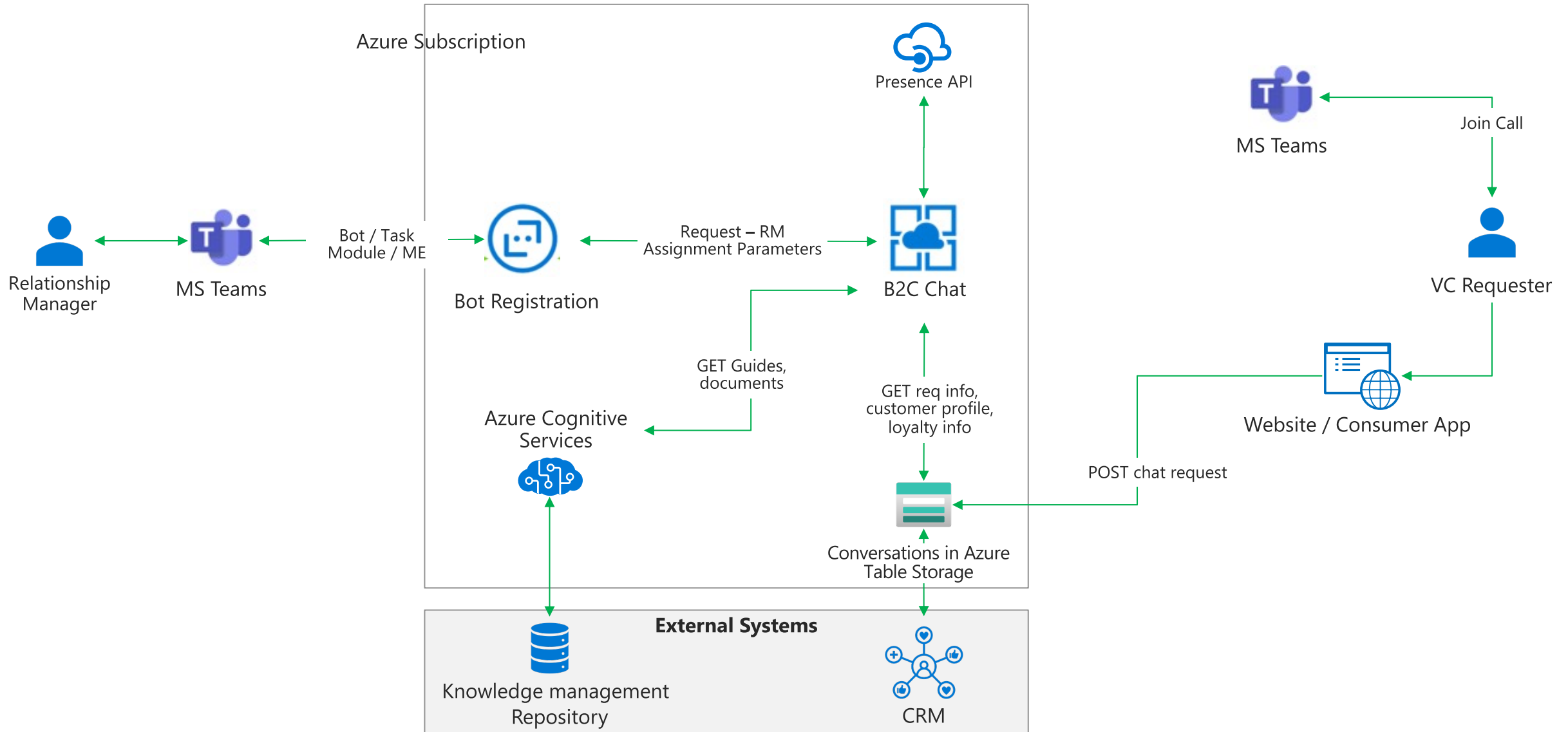
User Experience

- **Proactive Messages** are sent to RMs whenever a customer initiates a chat request to speak to an RM
- **Card refreshes** are used extensively to refresh same card when a new customer reply comes through or after an RM accepts an additional chat request. Since conversations are going to be multi-turn and between multiple customers at a time, it is imperative that the RM doesn't get spammed with multiple cards for each reply.
- **Meeting Extensibility** plays a key role when a text chat gets escalated into a Teams call for further information. With the app showing information right on meeting side panel, RM is empowered to provide accurate and relevant info instantly to customers.

Graph API

- The app uses [Create Event](#) Graph API to create Teams calls between leads and RMs and Calendar Graph APIs to read and show calendar events
- App makes use of [Presence](#) Graph API to assign incoming chat requests to RMs who are available at the time of request.

Solution Architecture



Banking & Financial Services Book of Dreams

Approval Assistant



Scenario Vision

Employee



Context

- Daniela, a relationship manager at Contoso Banking is handling the creation of marketing asset for a discount flyer that is scheduled for distribution to customers announcing new year offers
- Daniela needs to get approval from various stakeholders in her branch before she includes the flyer in the marketing communication.

Current State

- ⚠ Daniela sends draft of the flyer as an email attachment to each stakeholder separately. She avoids sending a group e-mail so as to not spam everyone in the mail thread in case there are replies from approvers
- ⚠ One of the approvers approves the document directly and sends the approval as a message over e-mail. Daniela notes the approvals in a separate excel list
- ⚠ Daniela also receives comments from a couple approvers to make a few modifications on the file. She makes the changes and sends a reply email for all approvers again walking through each modification and context
- ⚠ Daniela doesn't hear from the approvers, so she sends a reminder e-mail again to her approvers
- ⚠ Once all approvers have provided approvals, Daniela confirms the approval and sends the final document to all.
- ⚠ She maintains a record of approved versions separately
- ⚠ All approvers go through multiple separate e-mail threads which quickly becomes cumbersome when 10+ approval requests come per day

Future State

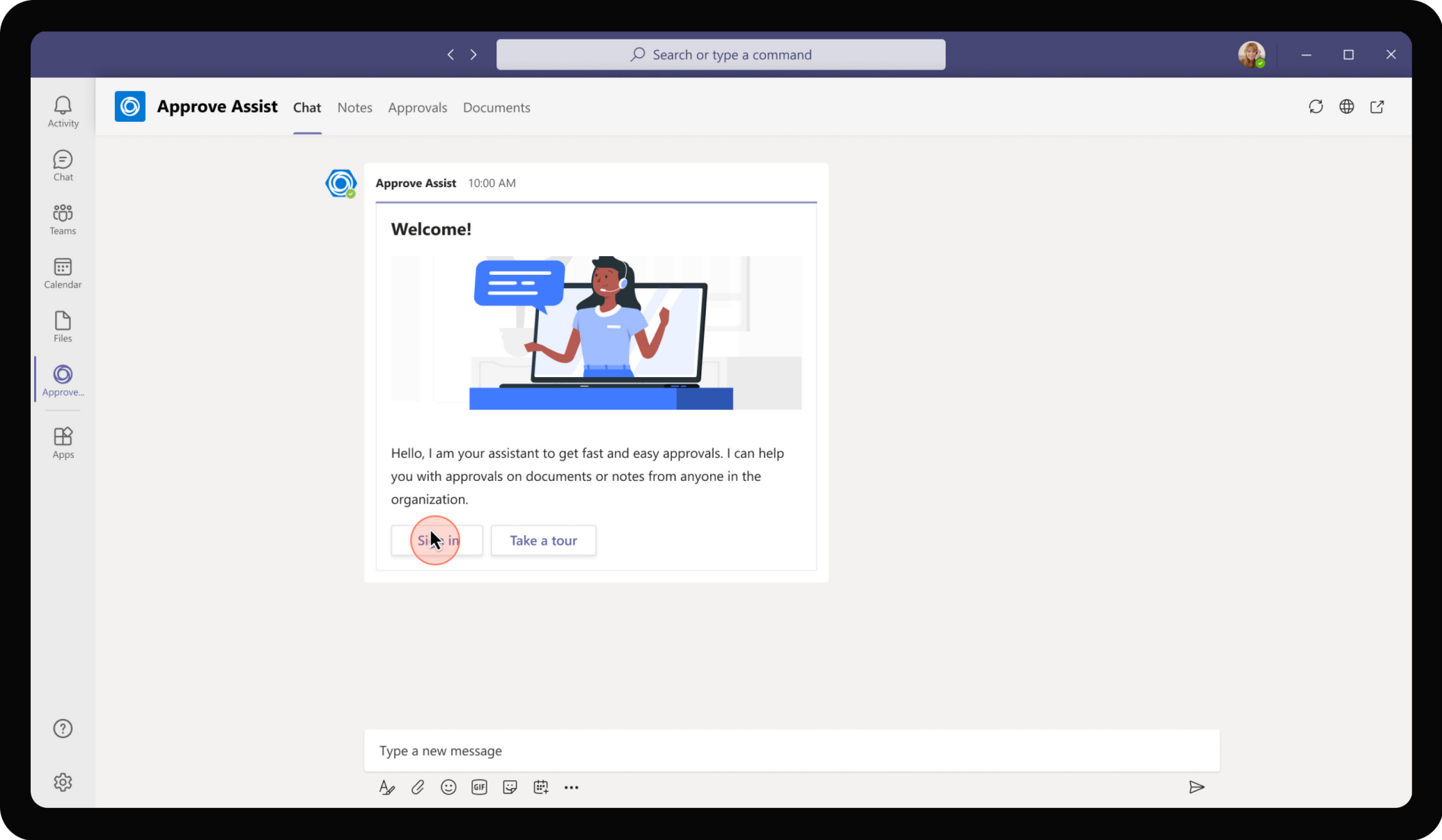
- ✓ Daniela uses Approve Assist app to submit an approval request for either multi level approvals or horizontal, concurrent approval requirements. While approval is submitted once, it tracks approval for each approver separately.
- ✓ All approvers get notified of submitted approval request on the Teams app. As approvals come through, the app keeps track of pending and completed approvals leaving Daniela to focus on actual work
- ✓ Reviewers can provide comments on the app directly which is available for other reviewers too without spamming them with messages.
- ✓ Updated file with modifications can be added to same approval request by Daniela reducing e-mail threads and spamming approvers
- ✓ Once all approvers have provided approvals, the final document is available for exporting as a PDF to all.
- ✓ Old approvals are automatically maintained for all stakeholders for downloading at any point of time in the future
- ✓ All approvals maintain an audit log which clearly shows the progress on approvals



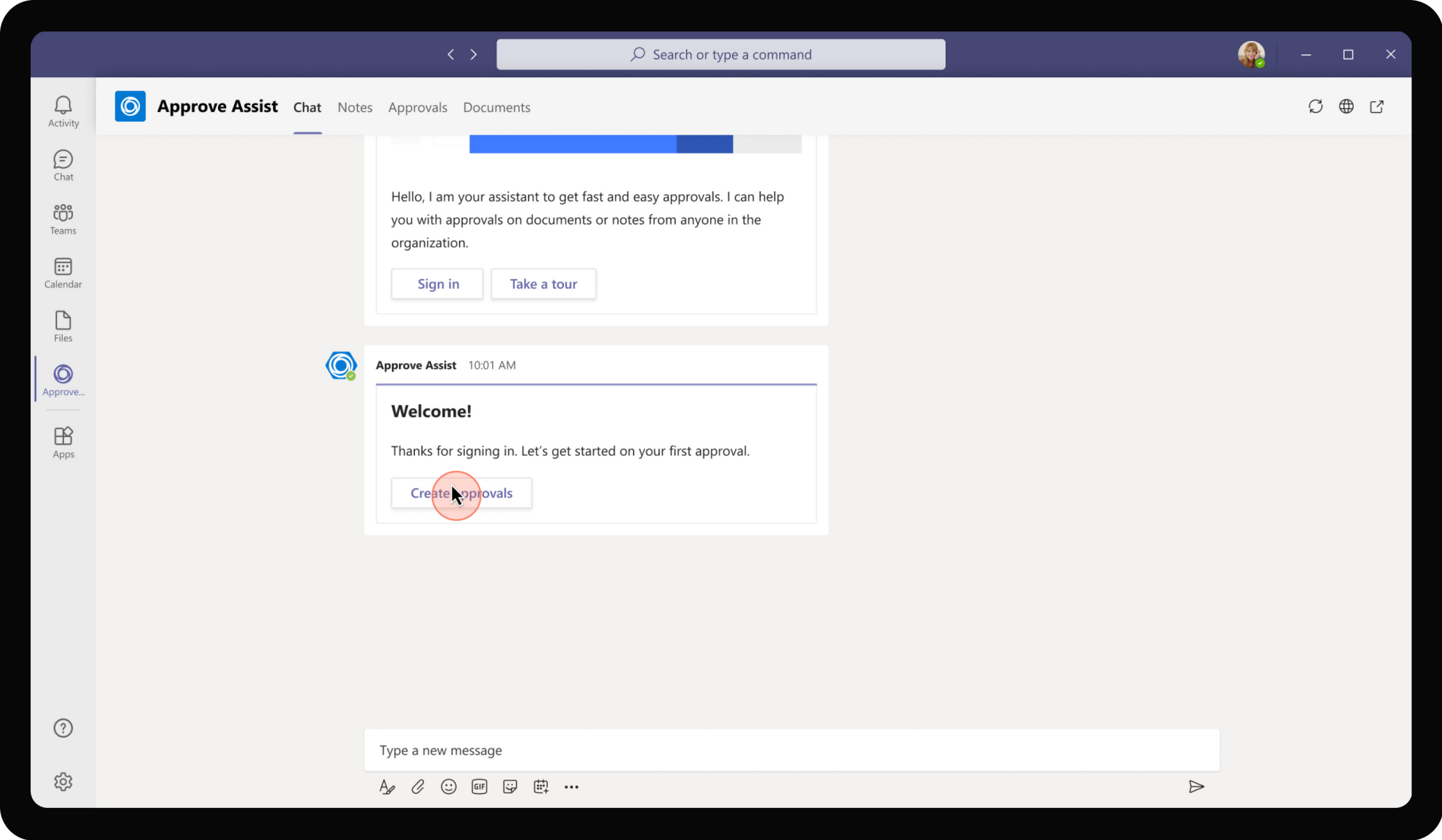
Daniela Mander, Relationship Manager

Daniela is a relationship manager at Contoso Banking. She handles customer inquiries, internal administration. She frequently creates customer facing assets, marketing flyers which are then distributed to customers

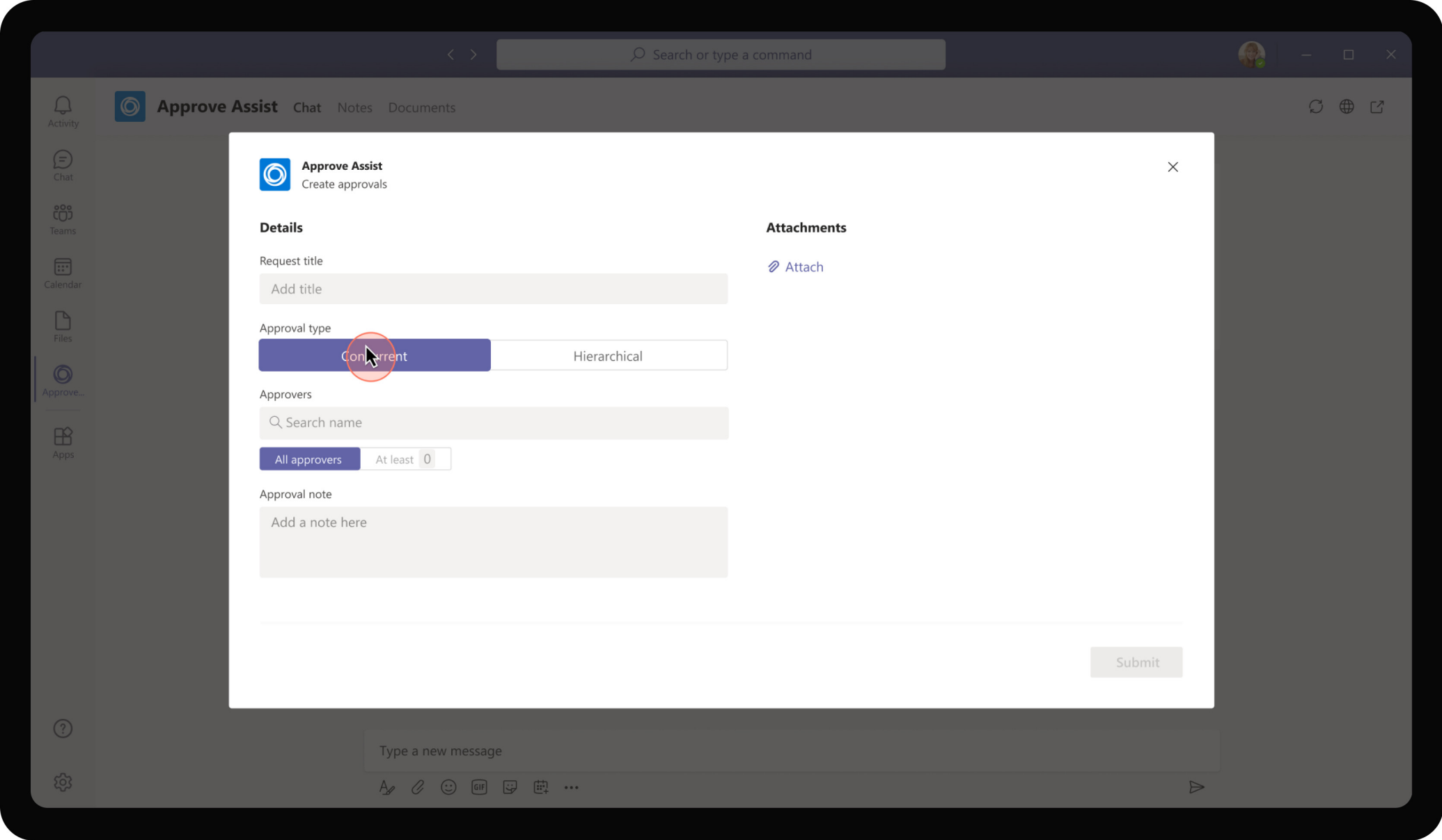
Daniela is tasked with designing a flyer for Contoso customers announcing them about new loan offers, rate discounts



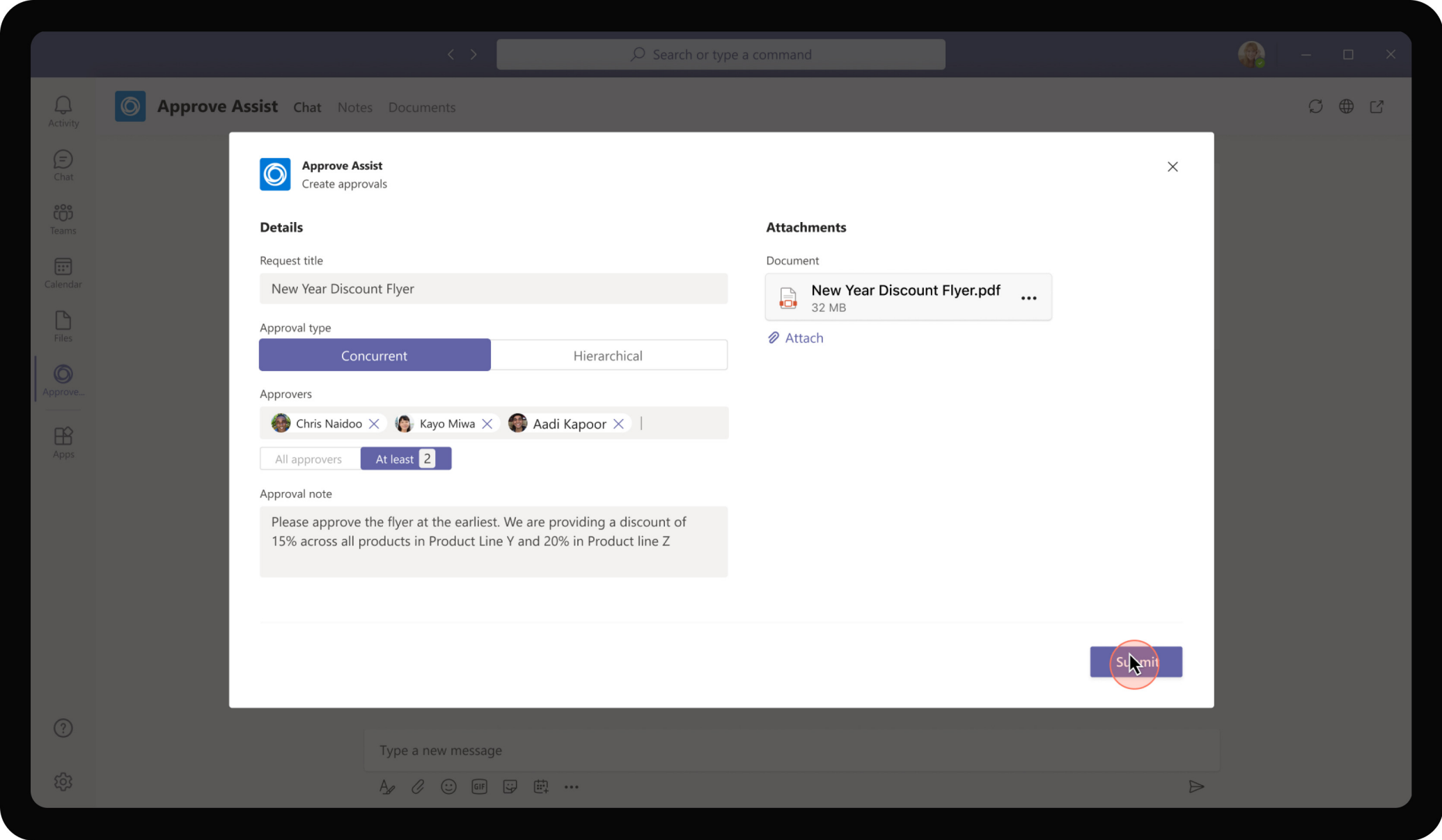
As Danie a adds the Teams app she is welcomed with a message walking her through how the app can help her find information inside the organization and prompts her to sign in to make use of approvals



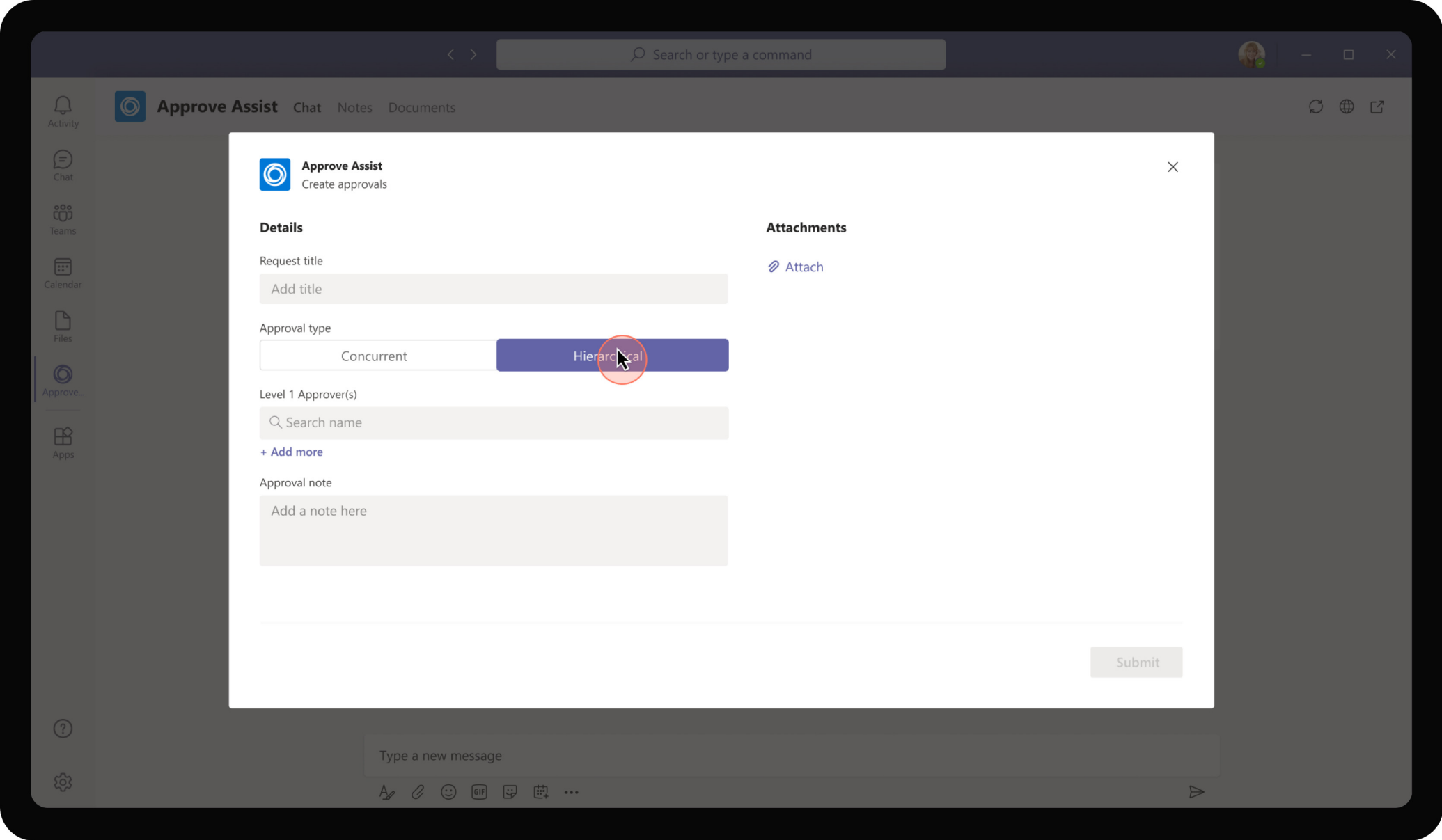
Daniela gets to create her first approval by clicking on the bot message. In addition to this entry point, the app also has a bot menu command that allows Daniela to create approval requests at any point of time.



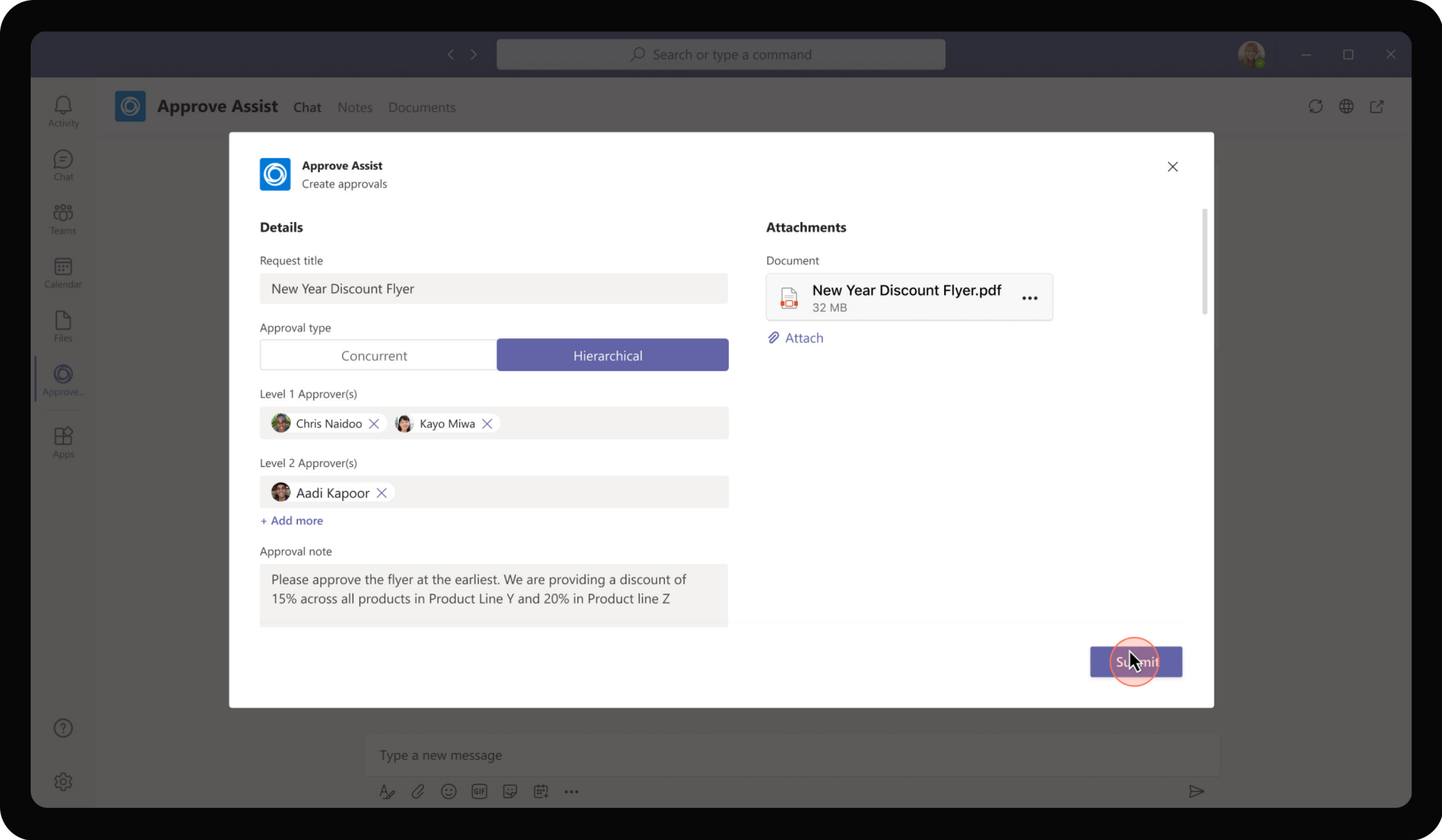
The approval creation process allows Daniele to specify details around the type of approval required. Concurrent approvals to be used when multiple people have to approve an item and the order of approvals does not matter. All approvals can happen simultaneously



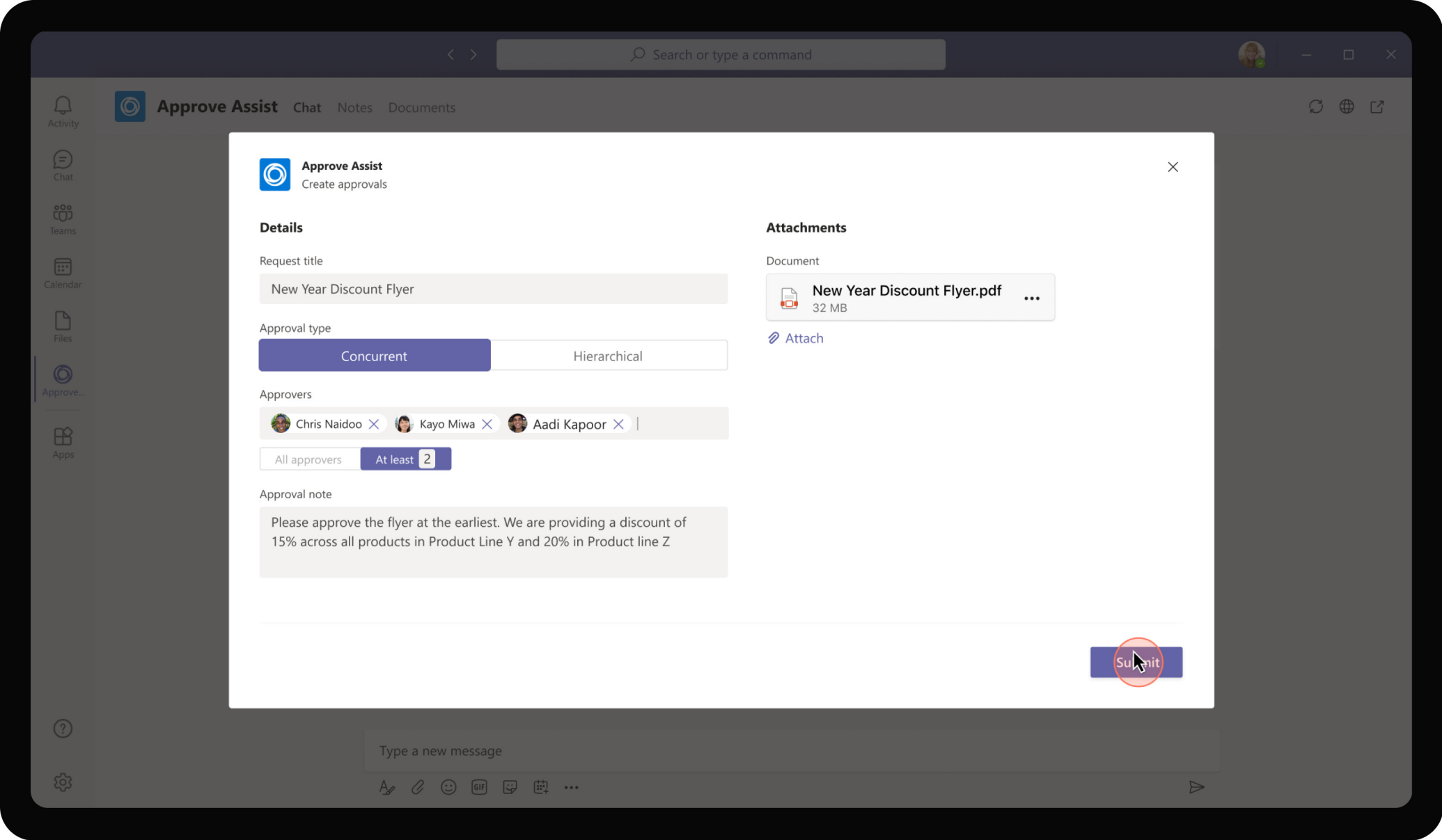
Under concurrent approvals, Daniela has to choose if she requires approvals from all approvers in order to move forward or if partial number of approvers would suffice.



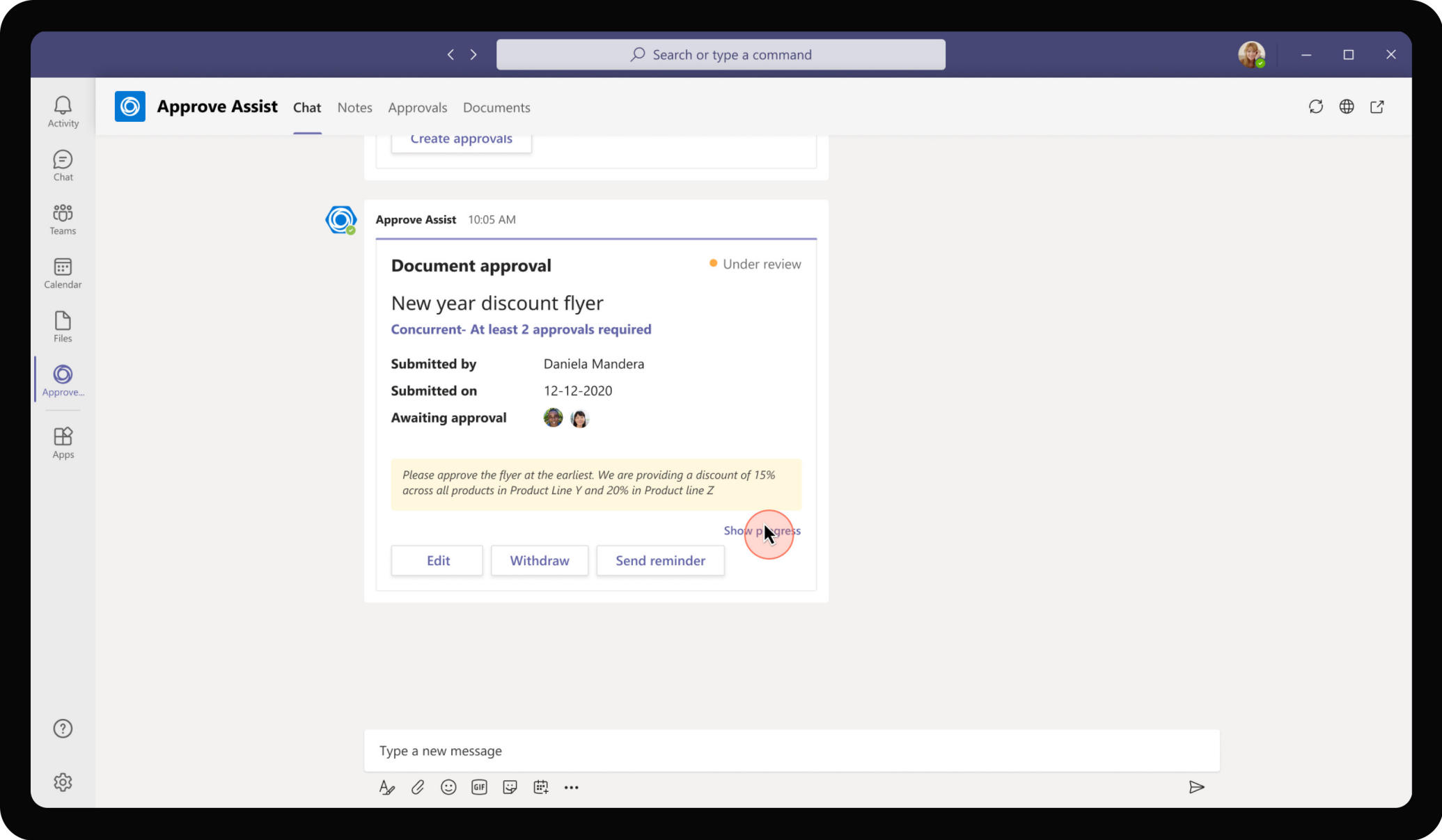
The app also provides option to get hierarchical approvers. This is to be chosen when the approval has to happen in a specified order. This is typical in scenarios where there are multiple levels of approval and the item to be approved goes to each level after being approved in the previous level.



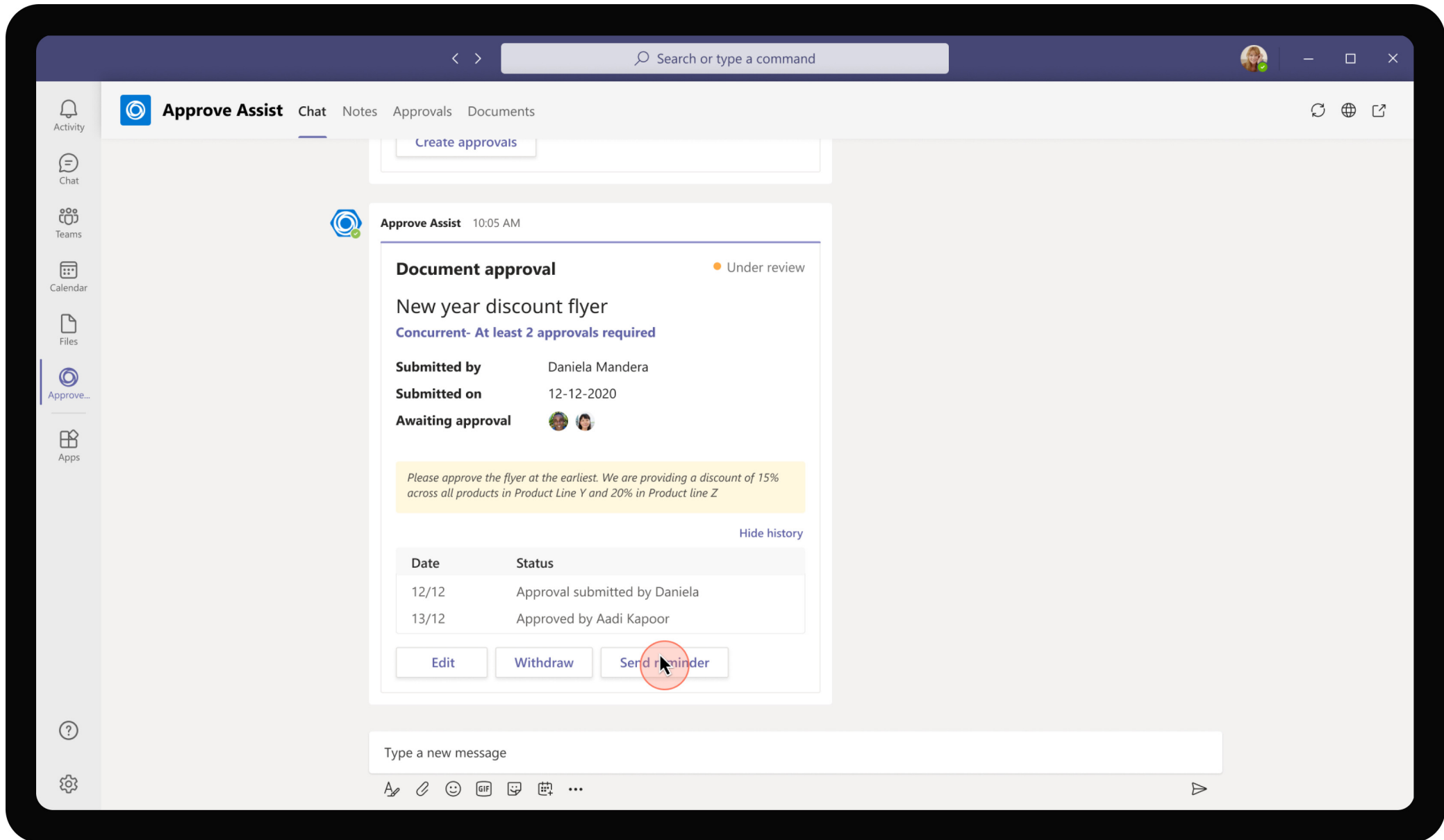
If Hierarchical option is chosen, the app provides Daniel with option to provide approvers in each level of approval. Once all levels are complete, the item is considered to be approved.



For the New Year Discount Flyer that Danie a has designed she chooses to get concurrent approvals from at least 2 approvers of the total of 3 people in the approval list.

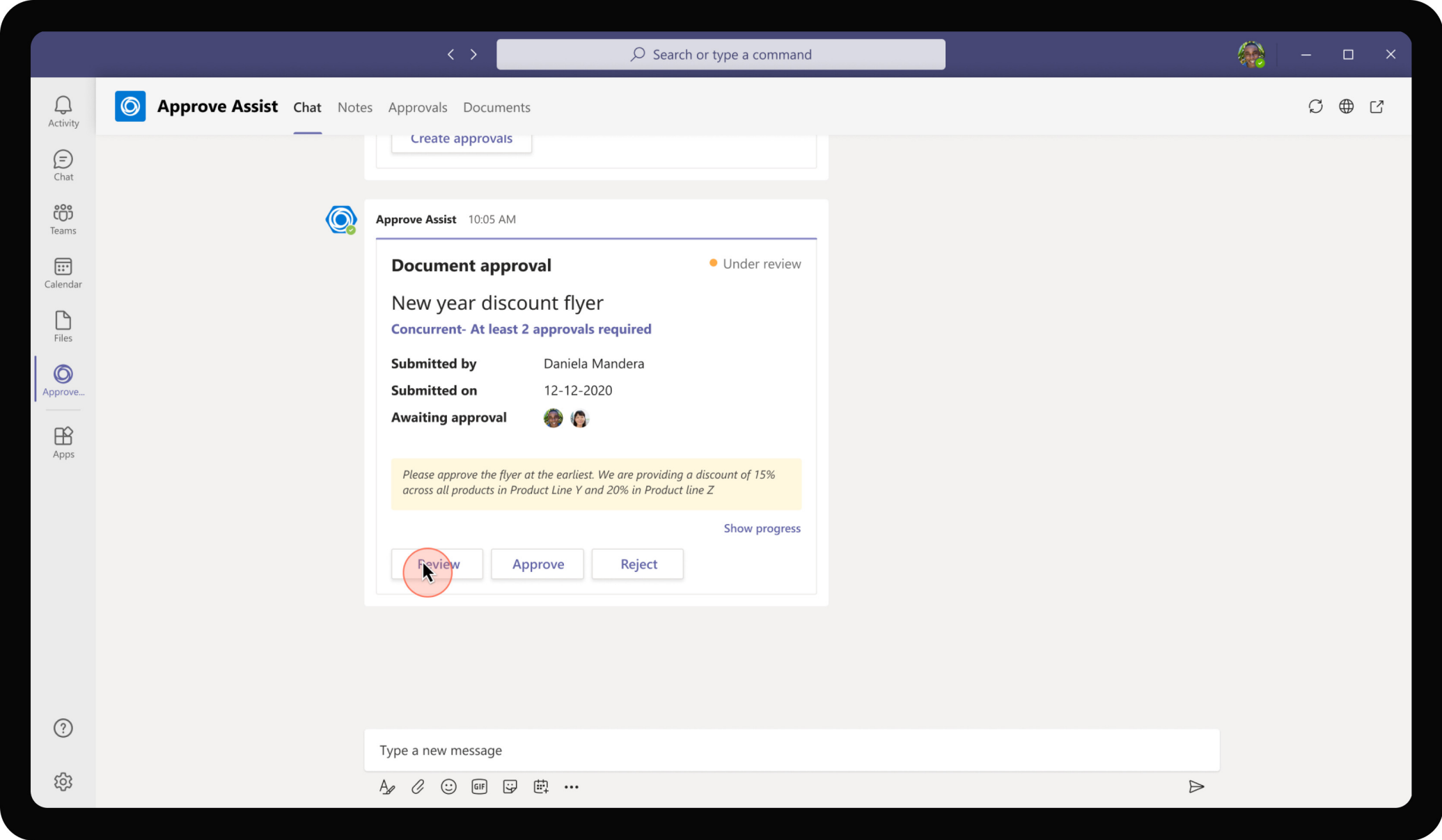


As Daniela submits the approval request, the app presents an adaptive card that shows the approval note, current status of approval, and approvers that Daniela is waiting for.

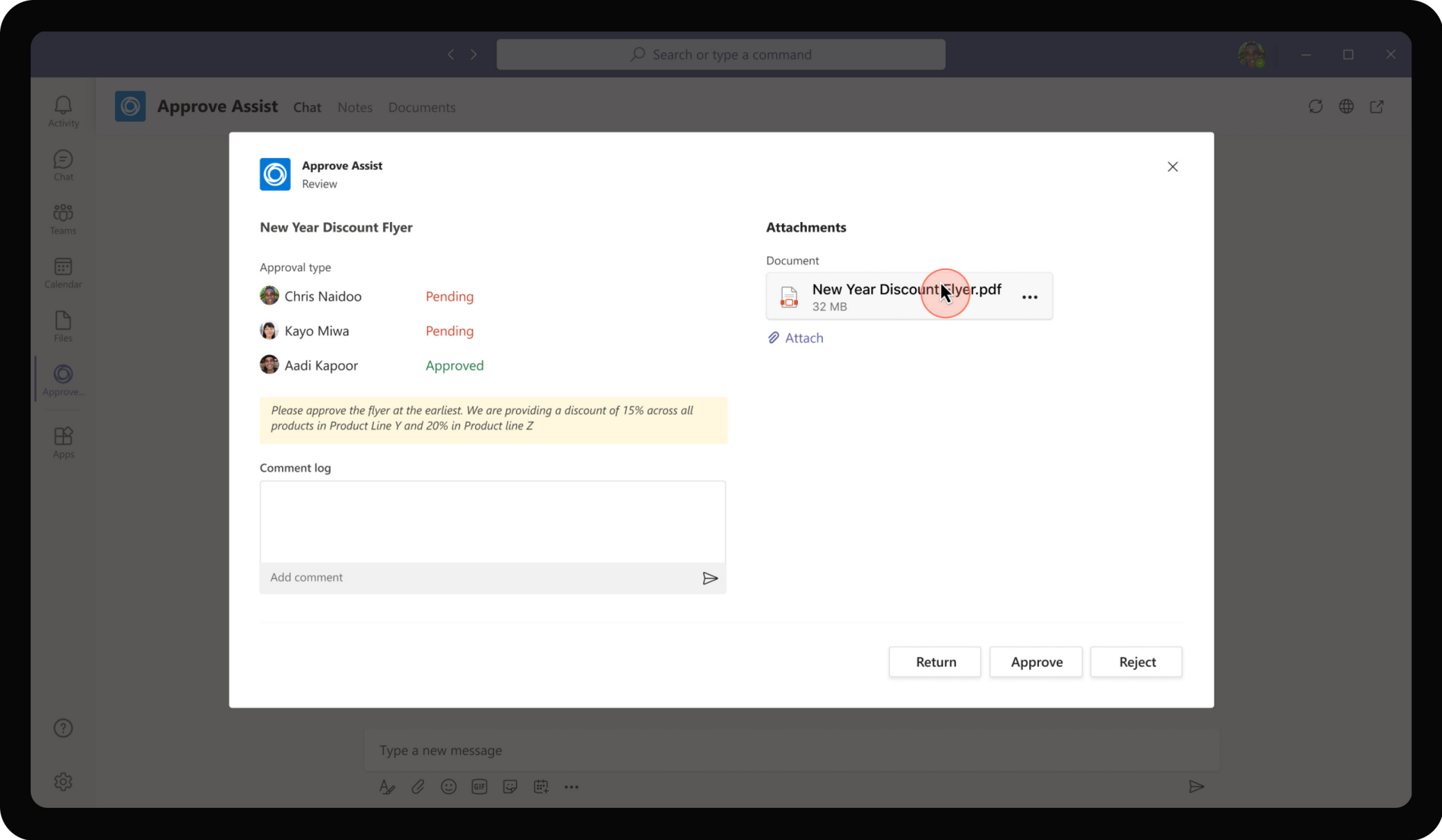


Daniela is also presented with an audit log of approvals comment activities that occurred in the app organized by date of activity. This provides a good view of progress especially on multiple approvals. Daniela may also choose to send a reminder for pending approvers

Chris, one of the approvers gets Daniela's approval request. He reviews the request and provides a few comments on the flyer



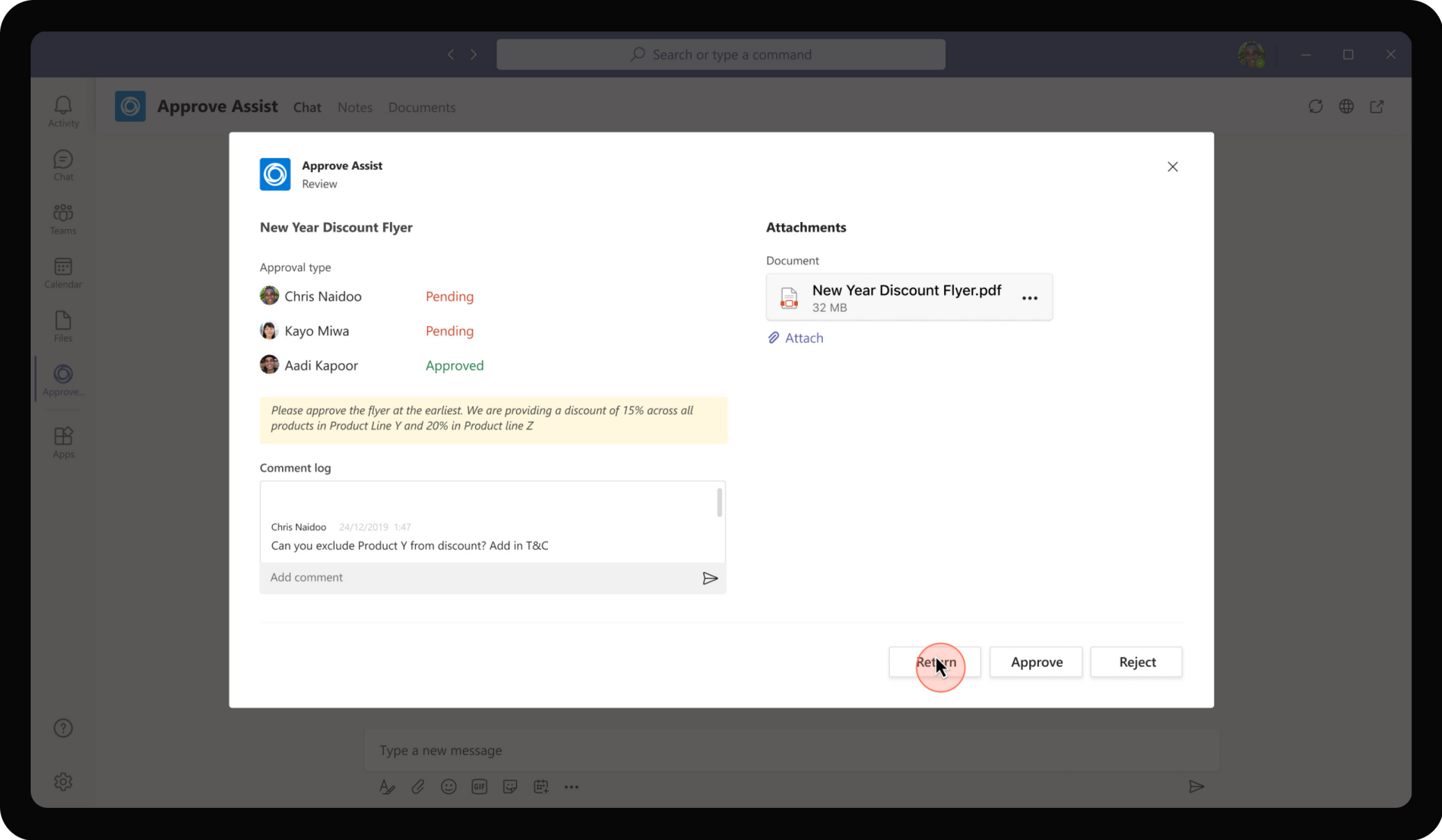
Chris checks the incoming approval request and clicks on Review button to check the details.



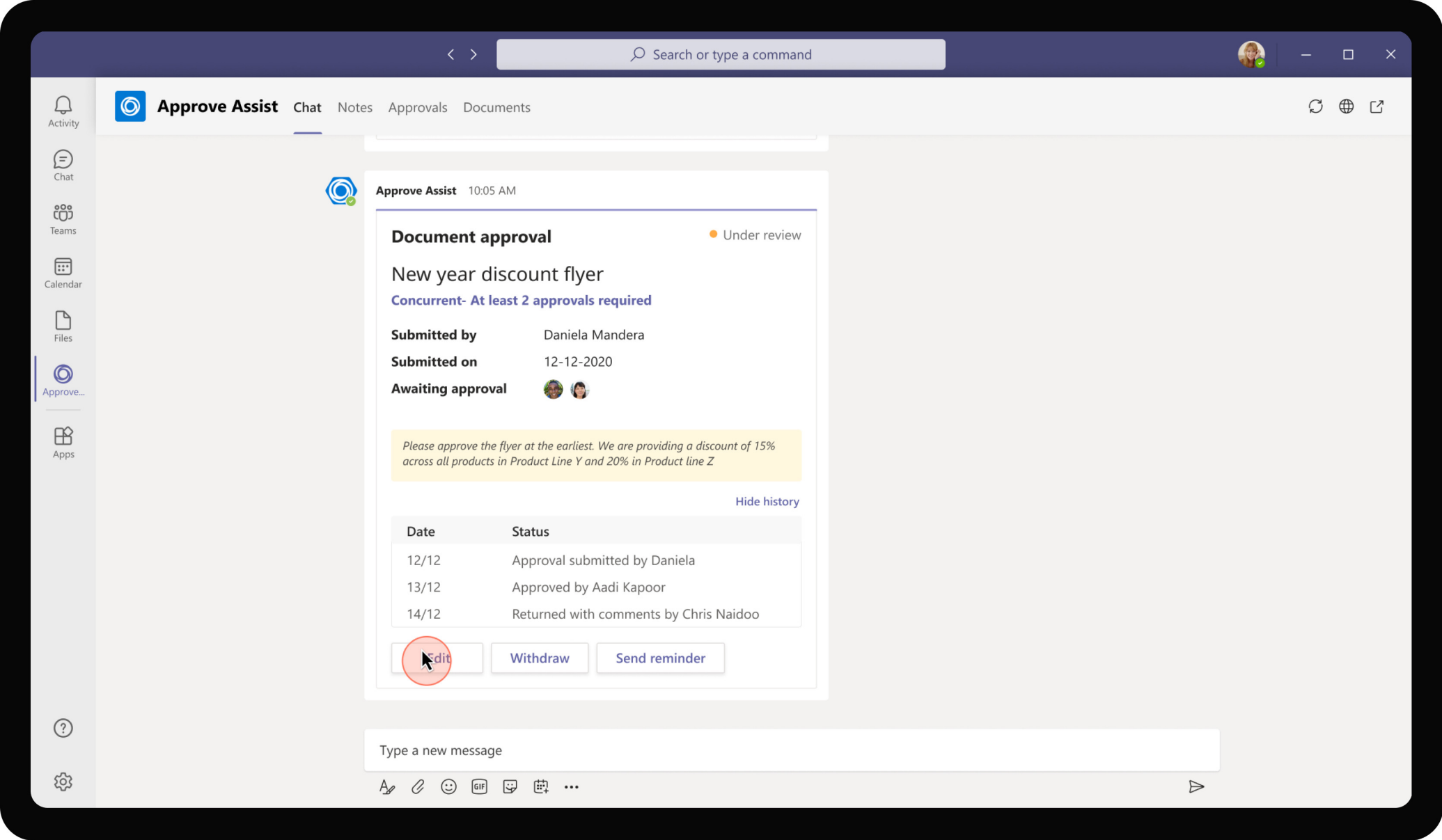
Chris sees the status of approvals with other approvers and note from Danie highlighted separately for approvers. He then proceeds to view the attached document to review the content.



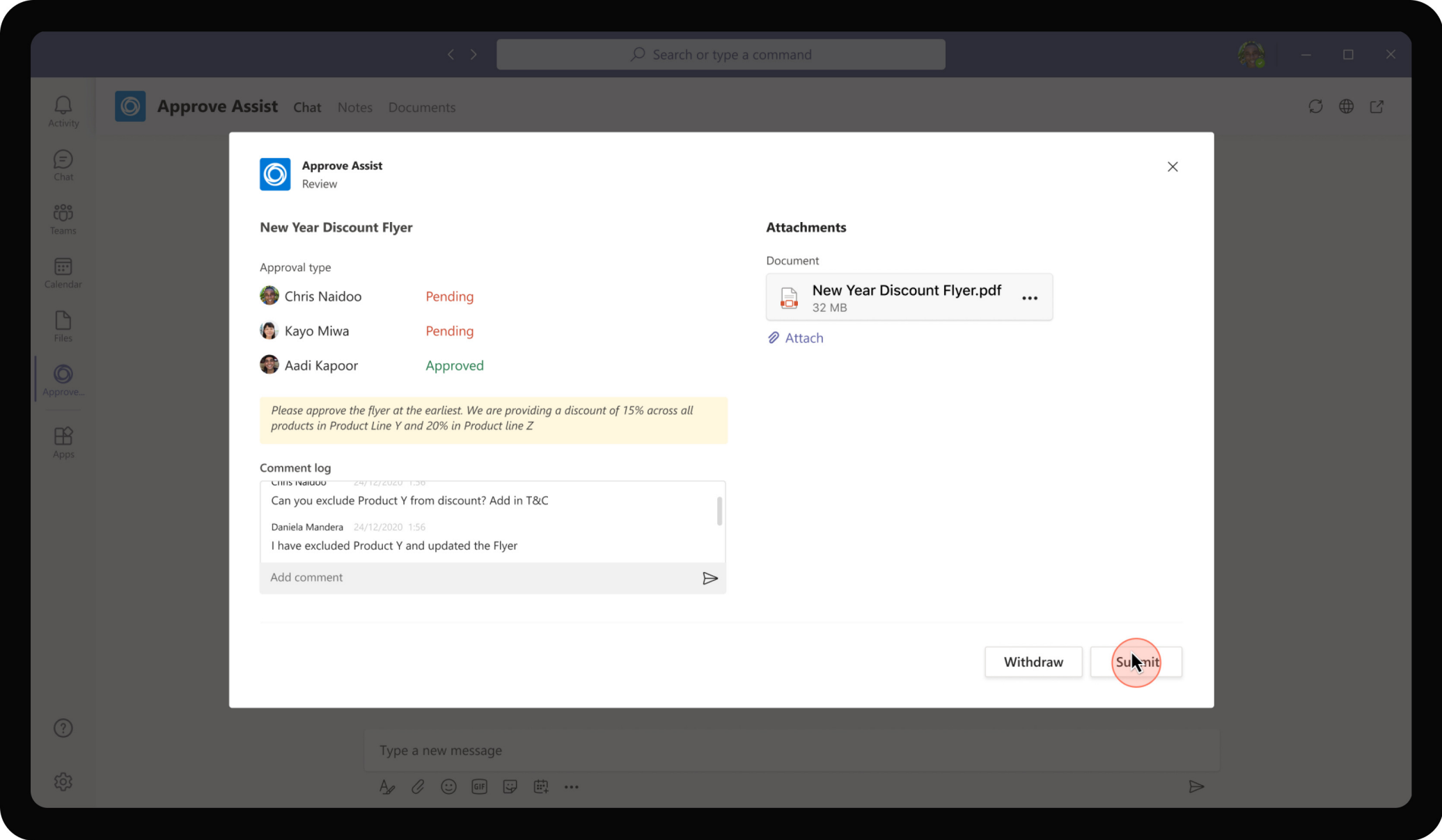
The attached pdf opens within Teams surface and Chris skims through the document. After reviewing he closes the document and gets back to review screen



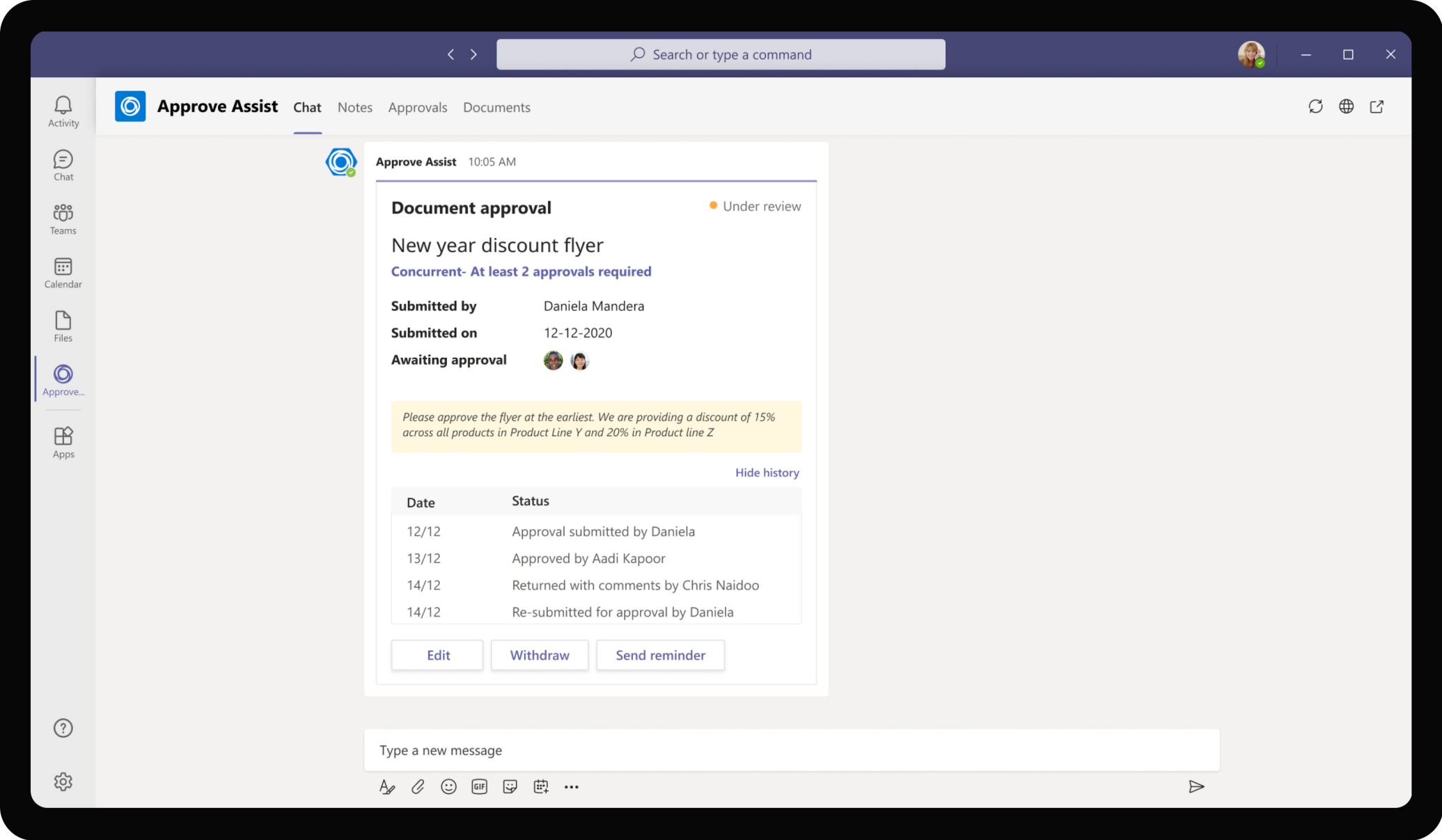
He proceeds to write a comment to remove Product Y from the list of product offers in the comment log. This comment log is visible across all approvers who will open the review screen to approve. Chris returns the item for Daniela to work on the modification



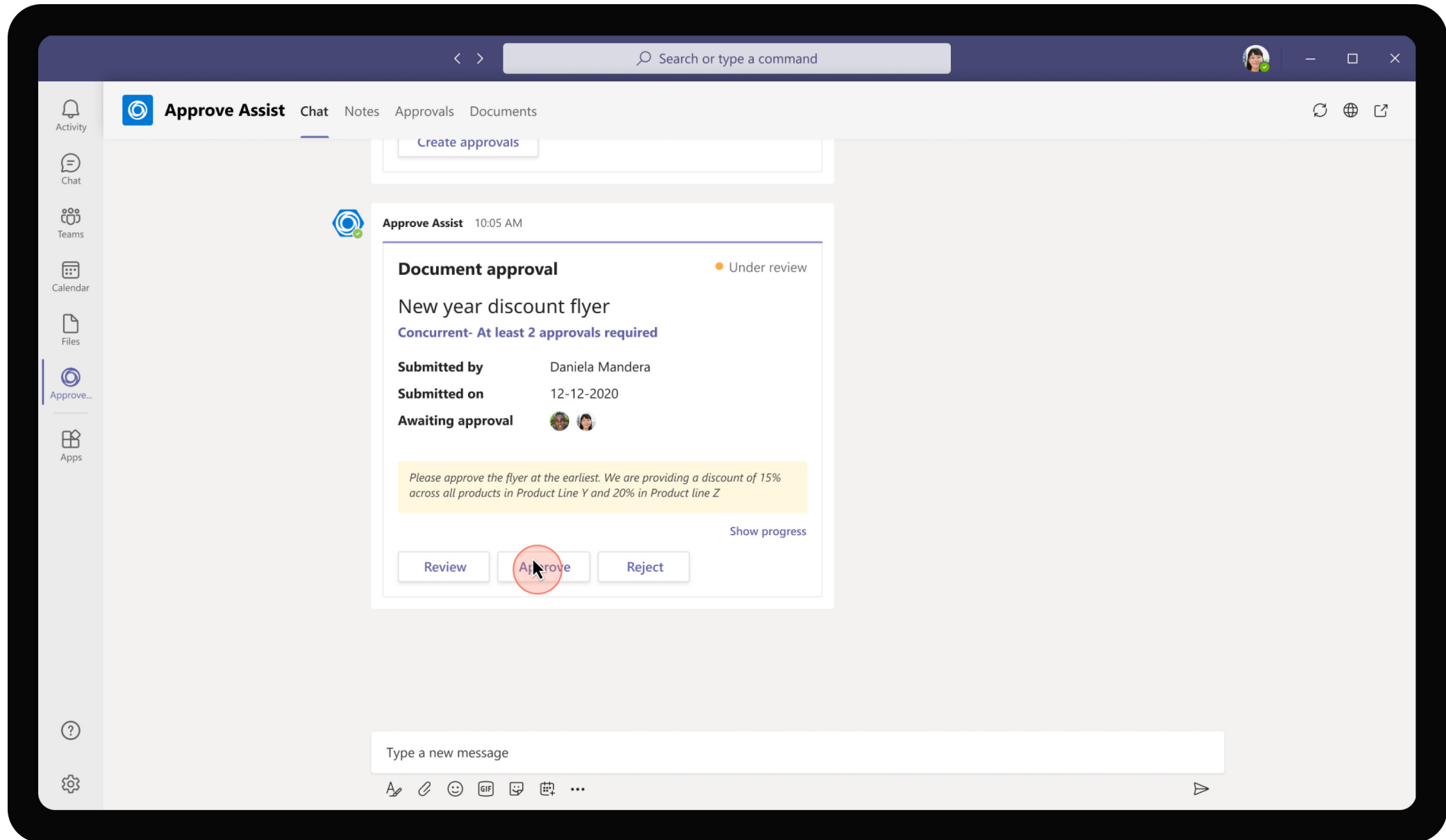
Daniela sees that the document has been returned with comments from Chris. She clicks on Edit to view the comments.



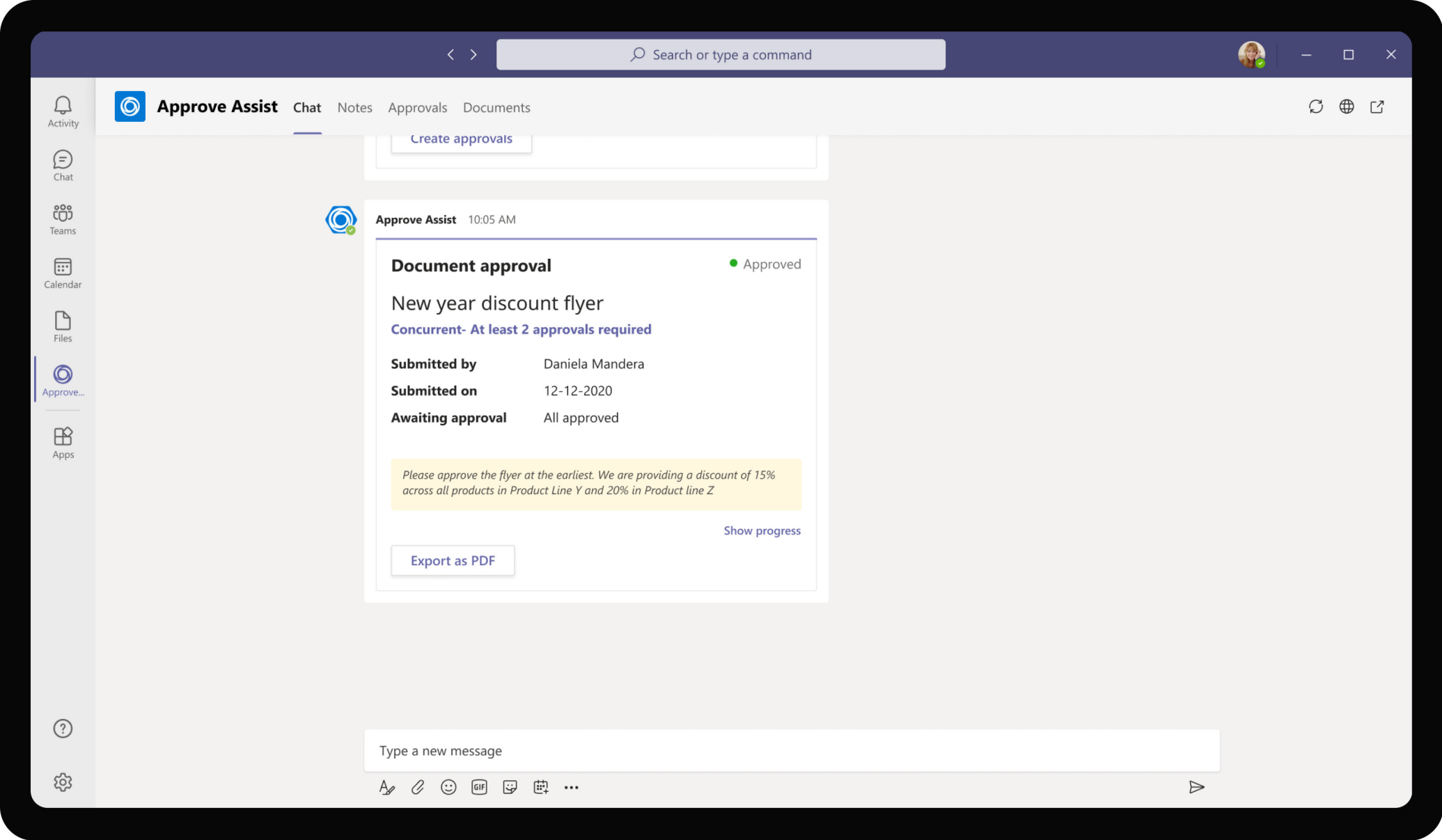
She proceeds to modify the document as per the comments and re-attaches the document. Daniela also mentions in the comment log of the change she had made so that Chris and other approvers are aware of the modifications. She then submits for approval again.



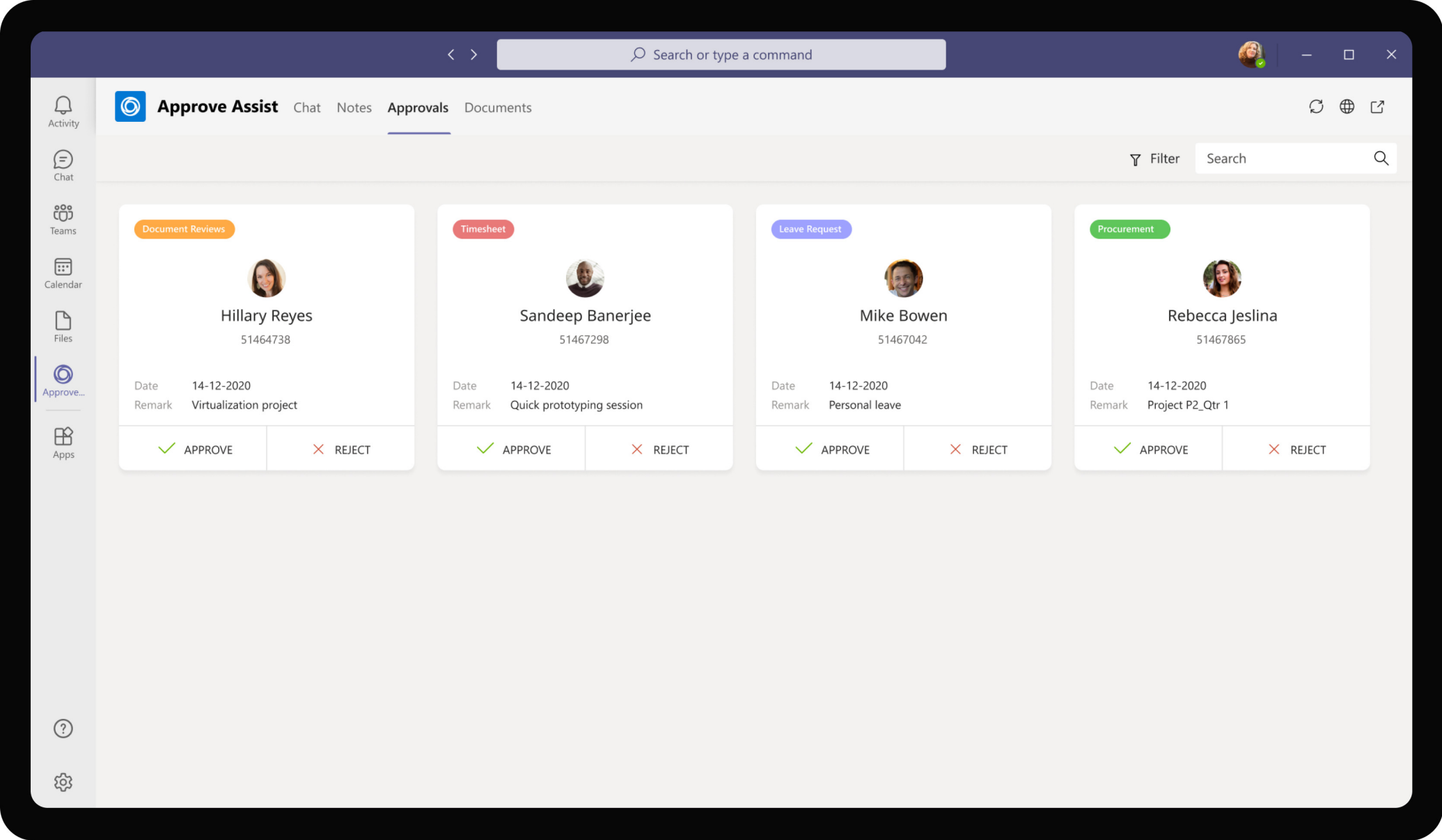
The audit log updates to show that the document has been submitted again for approval by Daniela.



After reviewing thoroughly, approver decides to approve the item submitted by Daniela.



After at least 2 approvers approved the flyer Daniela gets notified that the document has been approved. The card also allows to export the approved document with the note as a PDF for bookkeeping purposes



For Approvers the app provides a card view of all approvals with highlights around category of approval. The approvers can also review the items directly from the tab view, by clicking on each approval card.

Solution Highlights – Best Practices

Key Solution Design Considerations

Platform Extension Points

- **Personal Scoped App:** The app is designed to be a personal scoped app (with personal tab and personal bot) because the document submitted for approval might of sensitive nature. Except for interaction between approver and requestor, there is little scope for collaboration.
- **Task Modules** are used for the review screen owing to the high degree of UI flexibility required to show a comment log with a chat option. In addition, it also has a file attachment section which necessitates a task module / tab view.

The UI also provides user to choose between approval types which reflects in adding approvers as well. This flexibility is easier built in a web page embedded as an iframe.

User Experience

- **Proactive Messages** are sent for welcoming users and to send updates about approvals, reminders to relevant stakeholders.
- **Group Chat:** The app uses a comment log to keep track of comments and let approvers and requestors talk among each other. This is used to be less intrusive in terms of messages from each other. If intrusiveness is not an issue, instead of comments log, there could be a deeplink to start a group chat with all parties in the approval list.
- **Card refreshes** are used to minimize the number of cards sent to the end user and reduce overload on user's chat window by reducing the number of cards sent for the same content to be reviewed. This is crucial as one Approval adaptive card keeps getting updated to show progress using audit log.

Graph API

- The app uses [Files](#) Graph API to upload and update files in SharePoint library.

Solution Architecture

