



Watson Work Launch Series

Developing for Watson Workspace

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STSM Watson Work Services Development

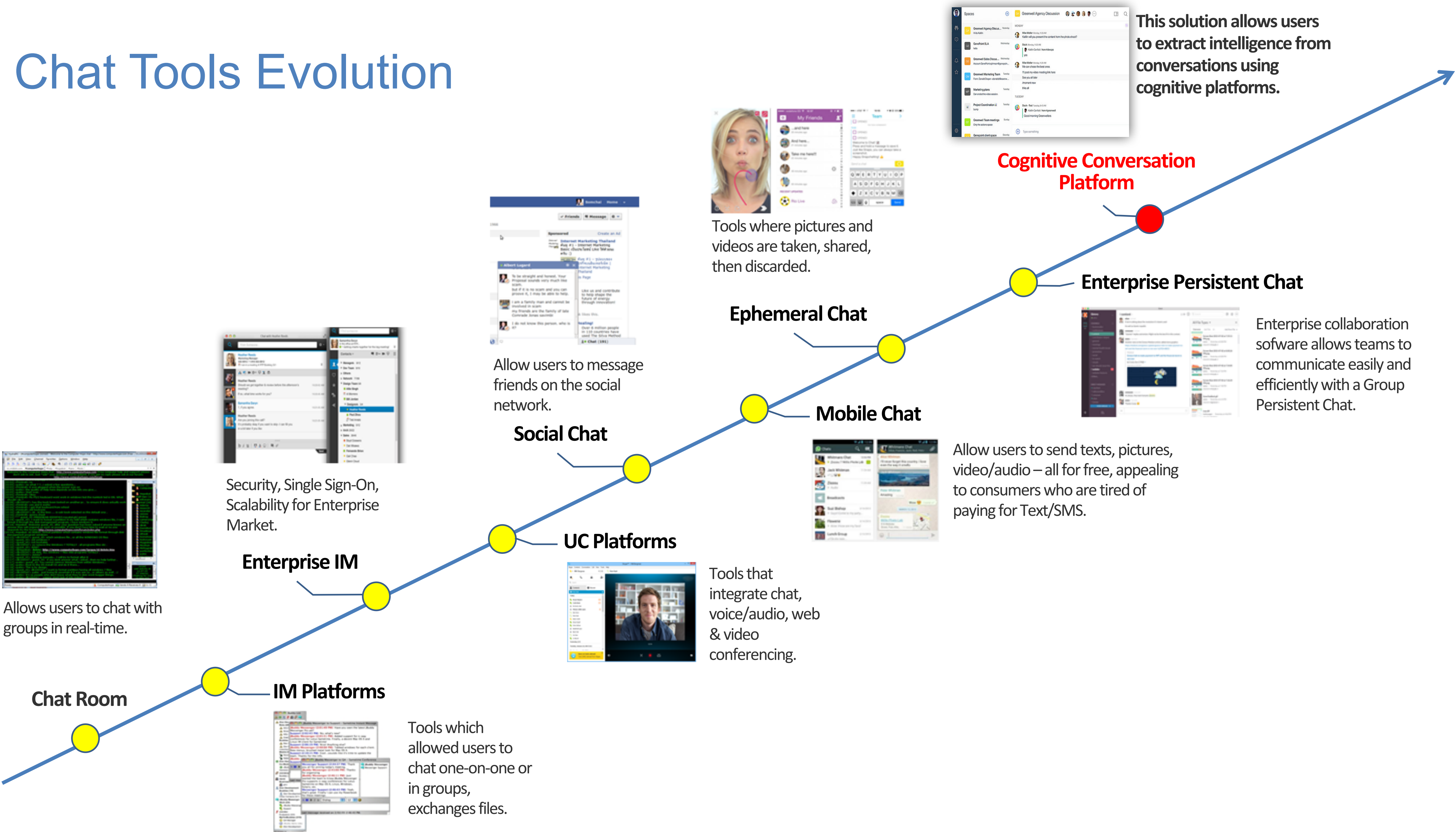
Marc Pagnier

Offering Manager, Cognitive Collaboration

Rafael Osorio

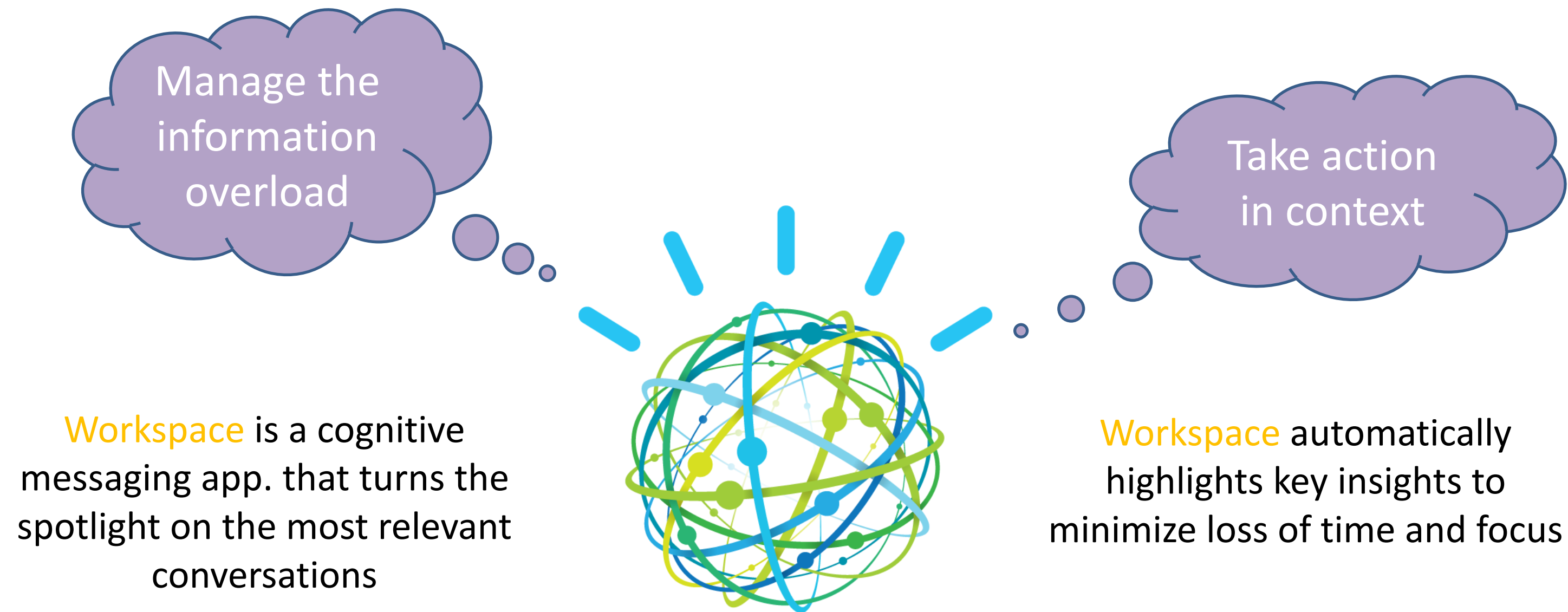
Worldwide Watson Work Technical Sales Leader

Chat Tools Evolution



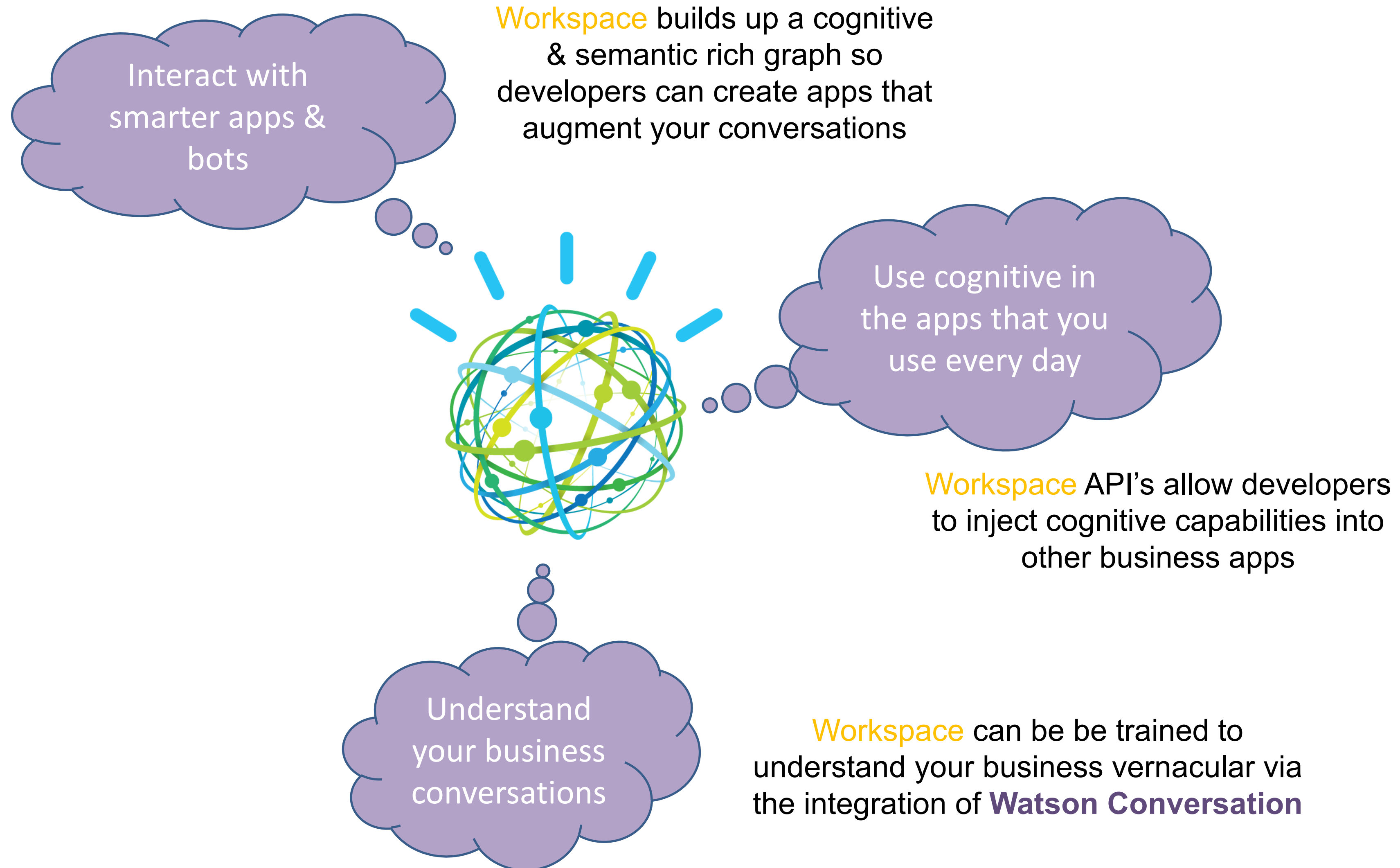
What is Watson's role in Workspace ?

Watson adds intelligence to your conversations



What is Watson's role in Workspace ?

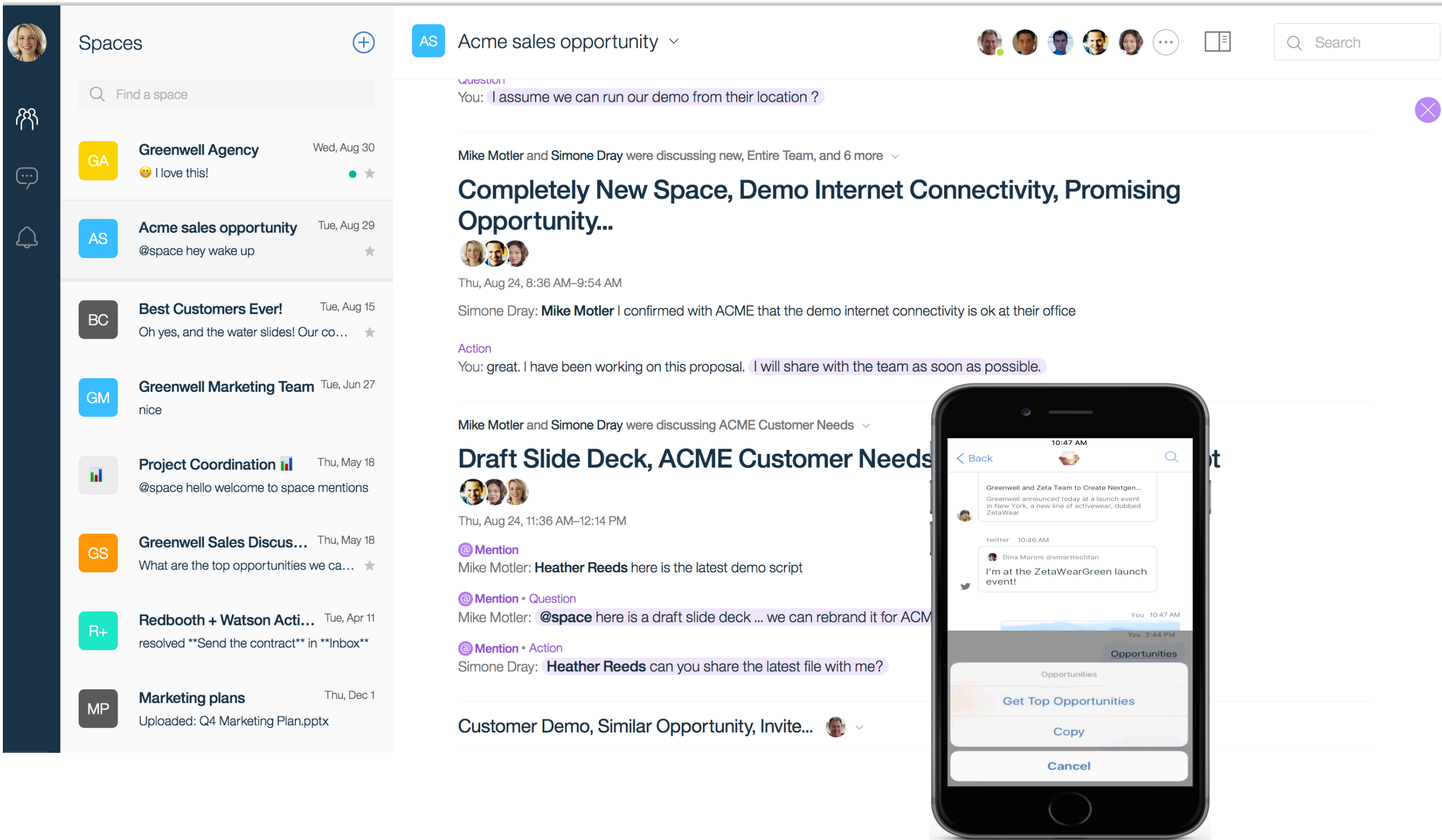
Watson adds intelligence to your conversations



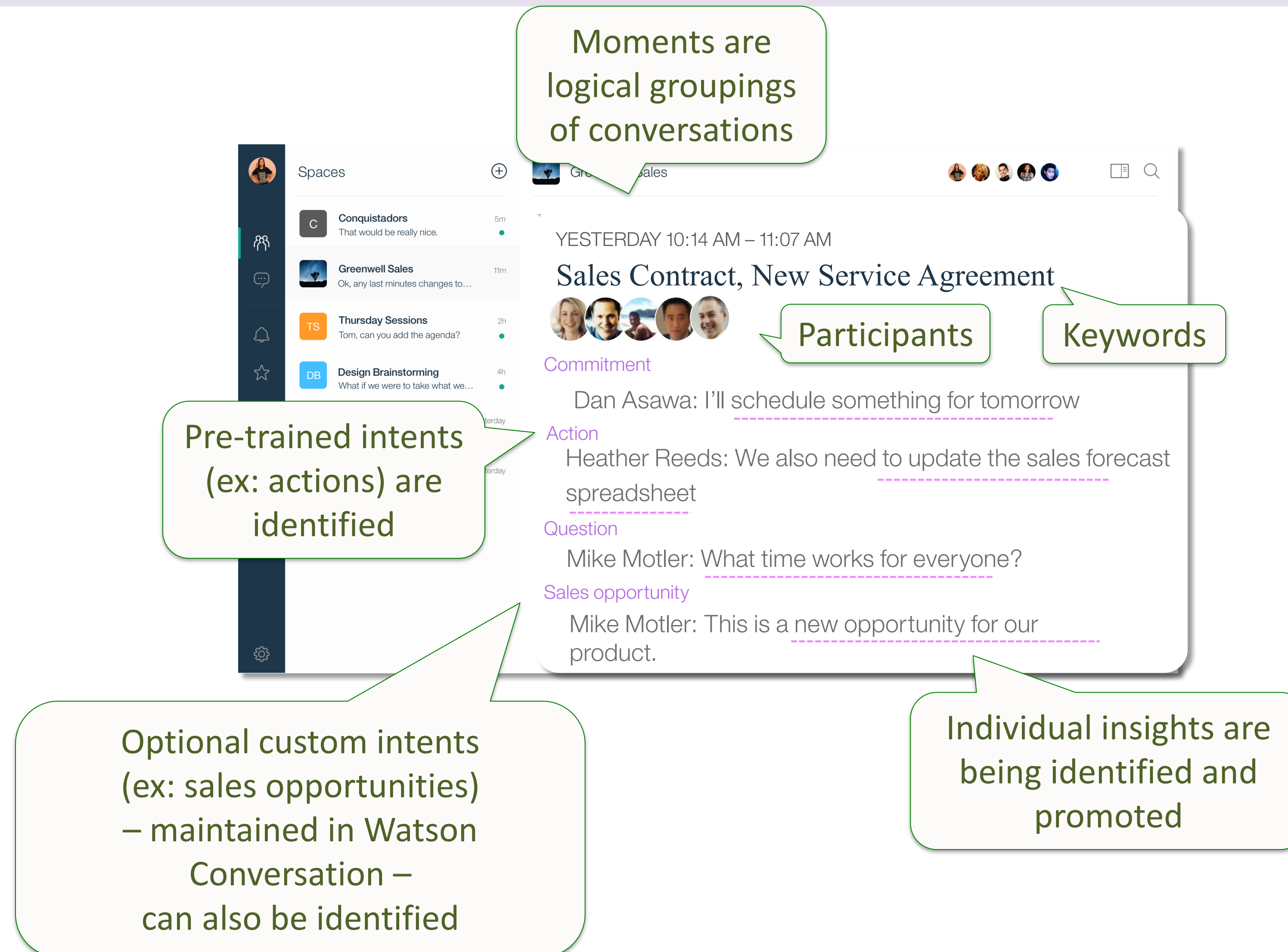
A messaging app. with built-in cognitive capabilities

Are you faced with information overload and pressured to be “on” all the time?

Workspace turns on **spotlights** across your conversations and surfaces the most relevant information so you can stay current



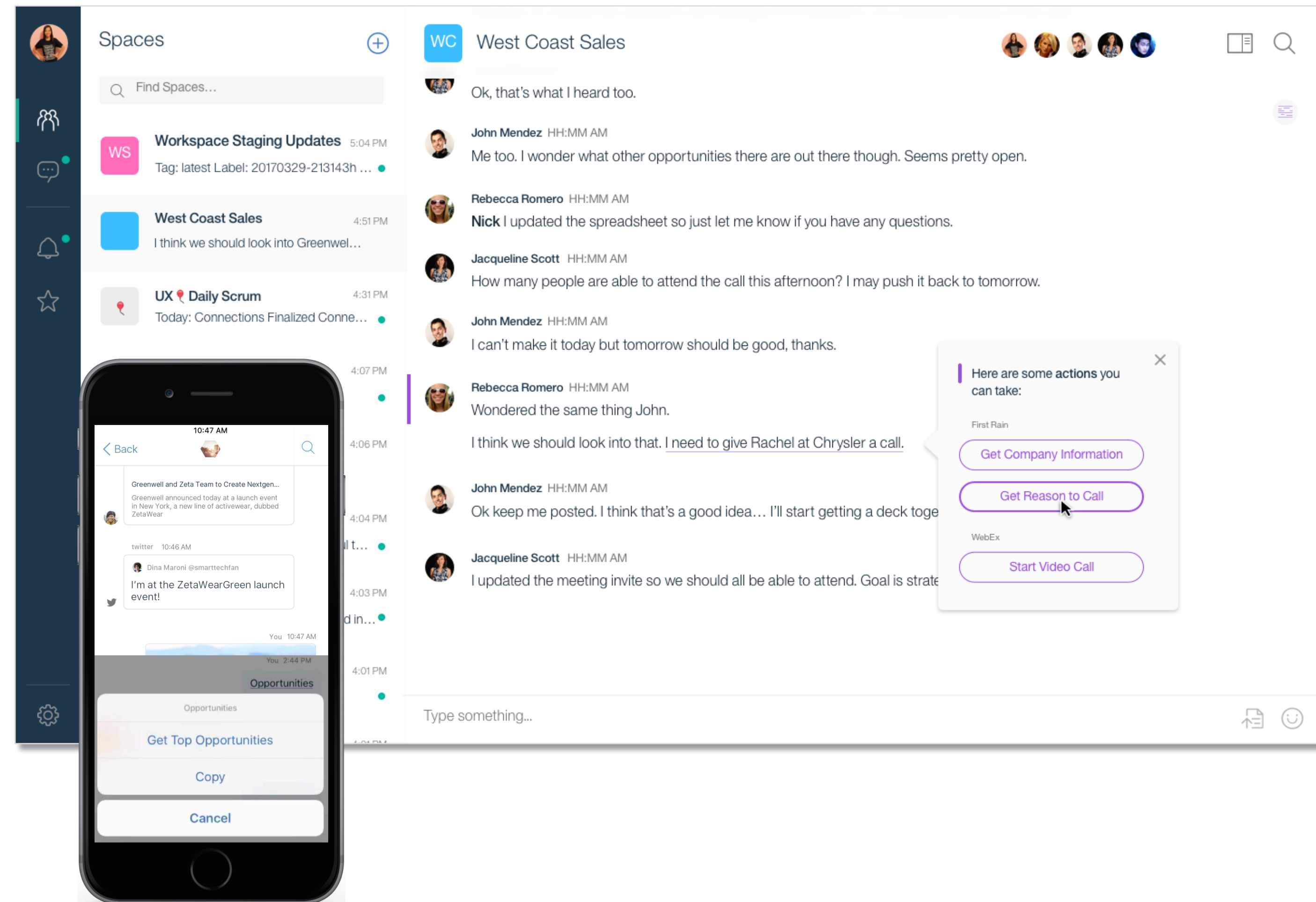
Turn the spotlight on what matters with “moments”



A cognitive messaging platform to run your interactive apps

Do you find yourself being often interrupted in your work flow ?

Workspace automatically highlights key insights and allows users to take action in context to minimize loss of time and focus



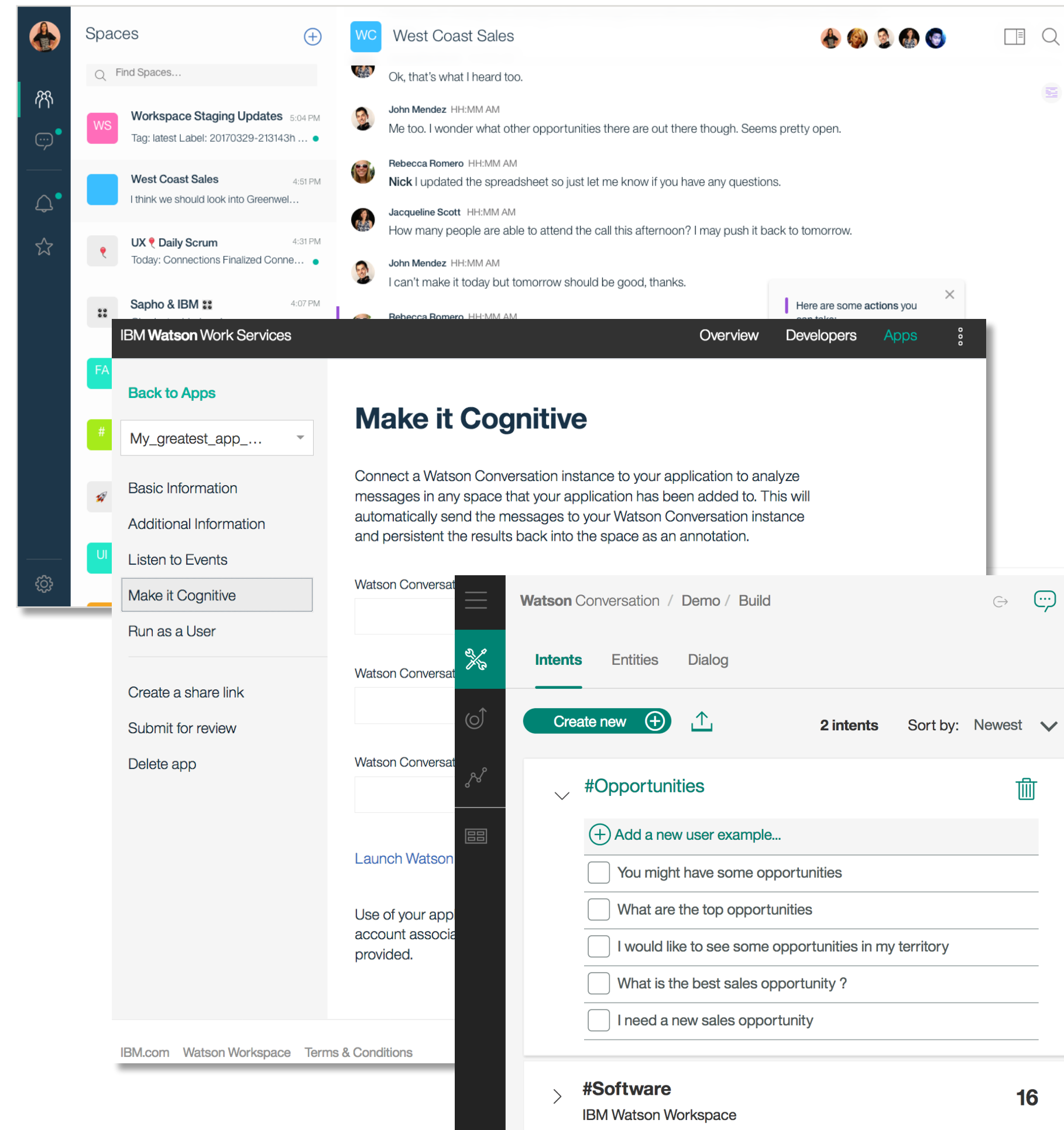
Create engaging and cognitive apps

Create an app. (bot)

- Personalized user interactions and dialogs

Make it cognitive

- Bring your own training model from **Watson Conversation** to identify custom intents (optional)



Identifying & taking actions (1/4)

The screenshot displays a Slack workspace interface. On the left, a sidebar shows a list of spaces, including 'Workspace Staging Updates', 'West Coast Sales', 'UX Daily Scrum', 'Sapho & IBM', 'Feedback App', '#ibm-studios-rtp', 'Toscana UX (IC)', and 'UX Iteration Planning'. The main area shows a chat conversation in the 'West Coast Sales' space. A message from Rebecca Romero is highlighted with a red border, and a blue callout box points to it with the text '1= the system automatically underlines intents (ex: actions, custom intents)'.

Spaces

- Find Spaces...
- WS** Workspace Staging Updates 5:04 PM
Tag: latest Label: 20170329-213143h ...
- WC** West Coast Sales 4:51 PM
I think we should look into Greenwel...
- UX** UX Daily Scrum 4:31 PM
Today: Connections Finalized Conne...
- S** Sapho & IBM 4:07 PM
Ok. Just added you!
- FA** Feedback App 4:06 PM
cool, thanks!
- #** #ibm-studios-rtp 4:04 PM
Personally, I think it would be helpful t...
- T** Toscana UX (IC) 4:03 PM
Yep, it's merged so it should be fixed in...
- UI** UX Iteration Planning 4:01 PM
Open?

West Coast Sales

Ok, that's what I heard too.

John Mendez HH:MM AM
Me too. I wonder what other opportunities there are out there though. Seems pretty open.

Rebecca Romero HH:MM AM
Nick I updated the spreadsheet so just let me know if you have any questions.

Jacqueline Scott HH:MM AM
How many people are able to attend the call this afternoon? I may push it back to tomorrow.

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I can't make it today but tomorrow should be good, thanks.

Rebecca Romero HH:MM AM
Wondered the same thing John.
I think we should look into that. I need to give Rachel at Chrysler a call.

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Ok keep me posted. I think that's a good idea... I'll start getting a deck together.

Jacqueline Scott HH:MM AM
I updated the meeting invite so we should all be able to attend. Goal is strategy for Q3.

Type something...

1= the system automatically underlines intents (ex: actions, custom intents)

Identifying & taking actions (2/4)

The screenshot displays a Slack workspace interface. On the left, a sidebar shows a list of 'Spaces' including 'Workspace Staging Updates', 'West Coast Sales', 'UX Daily Scrum', 'Sapho & IBM', 'Feedback App', '#ibm-studios-rtp', 'Toscana UX (IC)', and 'UX Iteration Planning'. The main area shows a chat conversation in the 'West Coast Sales' space. A message from Rebecca Romero mentions 'I need to give Rachel at Chrysler a call.' A yellow action menu is overlaid on this message, titled 'Here are some actions you can take:', and contains three buttons: 'Get Company Information', 'Get Reason to Call', and 'Start Video Call'. A blue callout box with the text '2 = the user selects an action from these that are being recommended by the system' points to the 'Get Reason to Call' button.

Spaces

Find Spaces...

Workspace Staging Updates 5:04 PM
Tag: latest Label: 20170329-213143h ...

West Coast Sales 4:51 PM
I think we should look into Greenwel...

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John Mendez HH:MM AM
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Here are some actions you can take:

First Rain

Get Company Information

Get Reason to Call

WebEx

Start Video Call

2 = the user selects an action from these that are being recommended by the system

Type something...

Identifying & taking actions (3/4)

The screenshot shows a Slack workspace interface. On the left, a sidebar lists several spaces: 'Workspace Staging Updates', 'West Coast Sales', 'UX Daily Scrum', 'Sapho & IBM', 'Feedback App', and '#ibm-studios-rtp'. The 'West Coast Sales' space is highlighted. On the right, the chat conversation for 'West Coast Sales' is visible, showing messages from Jacqueline Scott, John Mendez, and Rebecca Romero. At the bottom of the chat, a modal window displays two news articles. The first article is titled 'FCA Group launches new used vehicle locator with Abarth' and the second is 'FCA leads Canada auto sales in March, GM sales jump 27 pct'. Both articles have 'See more' and 'Share to Space' buttons. A blue callout box points to the 'West Coast Sales' space in the sidebar, stating '3 = the user dialogs with the bot / application and selects what to share with the team'.

3 = the user dialogs with the bot / application and selects what to share with the team

Identifying & taking actions (4/4)

The screenshot displays a Slack workspace interface. On the left, a sidebar shows a list of spaces, including 'Workspace Staging Updates', 'West Coast Sales', 'UX Daily Scrum', 'Sapho & IBM', 'Feedback App', '#ibm-studios-rtp', 'Toscana UX (IC)', and 'UX Iteration Planning'. The main area on the right shows the chat window for 'West Coast Sales'. The chat history includes messages from John Mendez, Rebecca Romero, and Jacqueline Scott. A message from 'First Rain' is highlighted with a red box, containing a link to a news article about a new vehicle locator. A blue arrow points to this message with the text '4 = the system shares the selected messages with the team'.

Spaces

- Find Spaces...
- Workspace Staging Updates** 5:04 PM
Tag: latest Label: 20170329-213143h ...
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West Coast Sales

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I think we should look into that. [I need to give Rachel at Chrysler a call.](#)

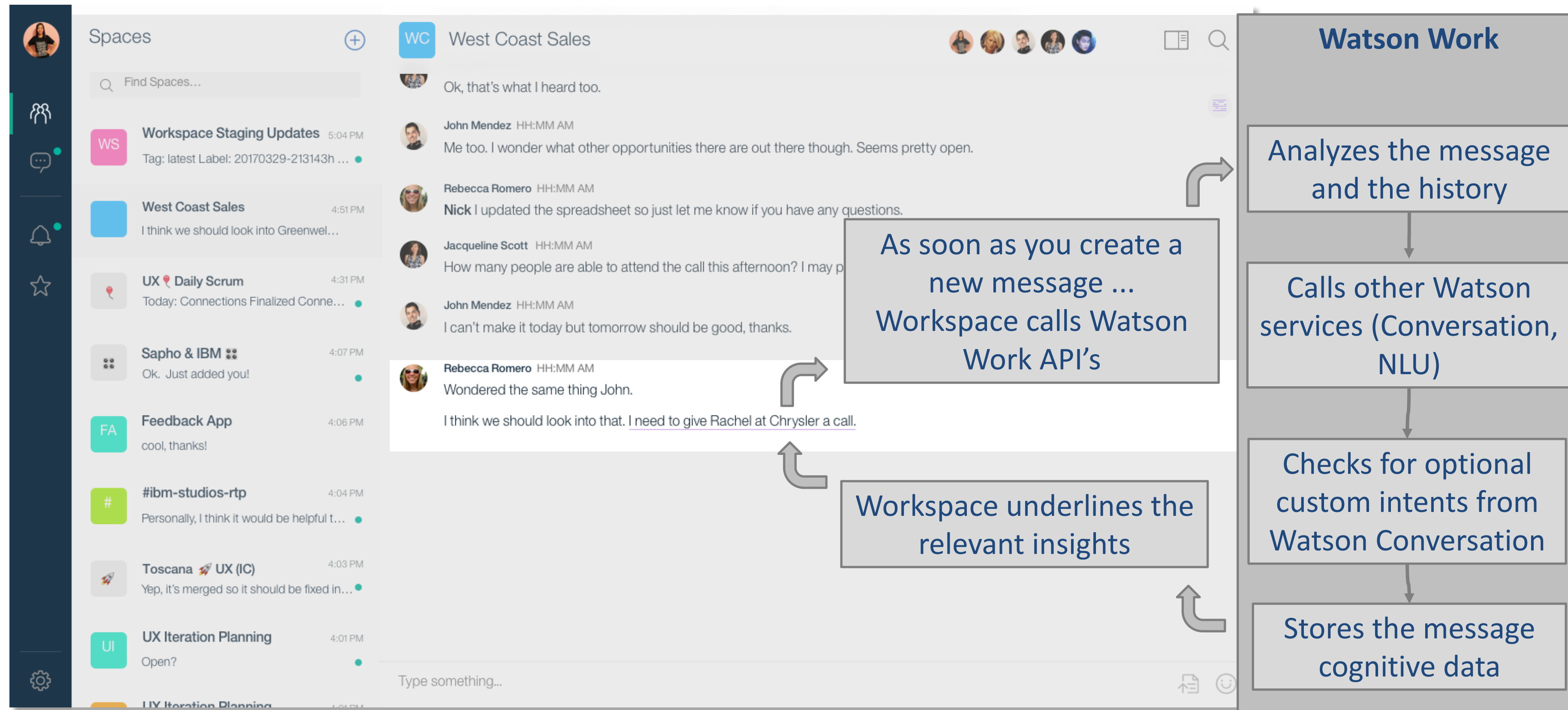
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First Rain APP HH:MM AM
FCA Group launches new used vehicle locator with Abarth
AM-Online • 2 days ago
FCA UK is has launched its first used vehicle locator for the Abarth brand as it targets growth for dealers with its Found Approved and Used programmes.
[See more](#)

4 = the system shares the selected messages with the team

Identifying intents... how does this work ?



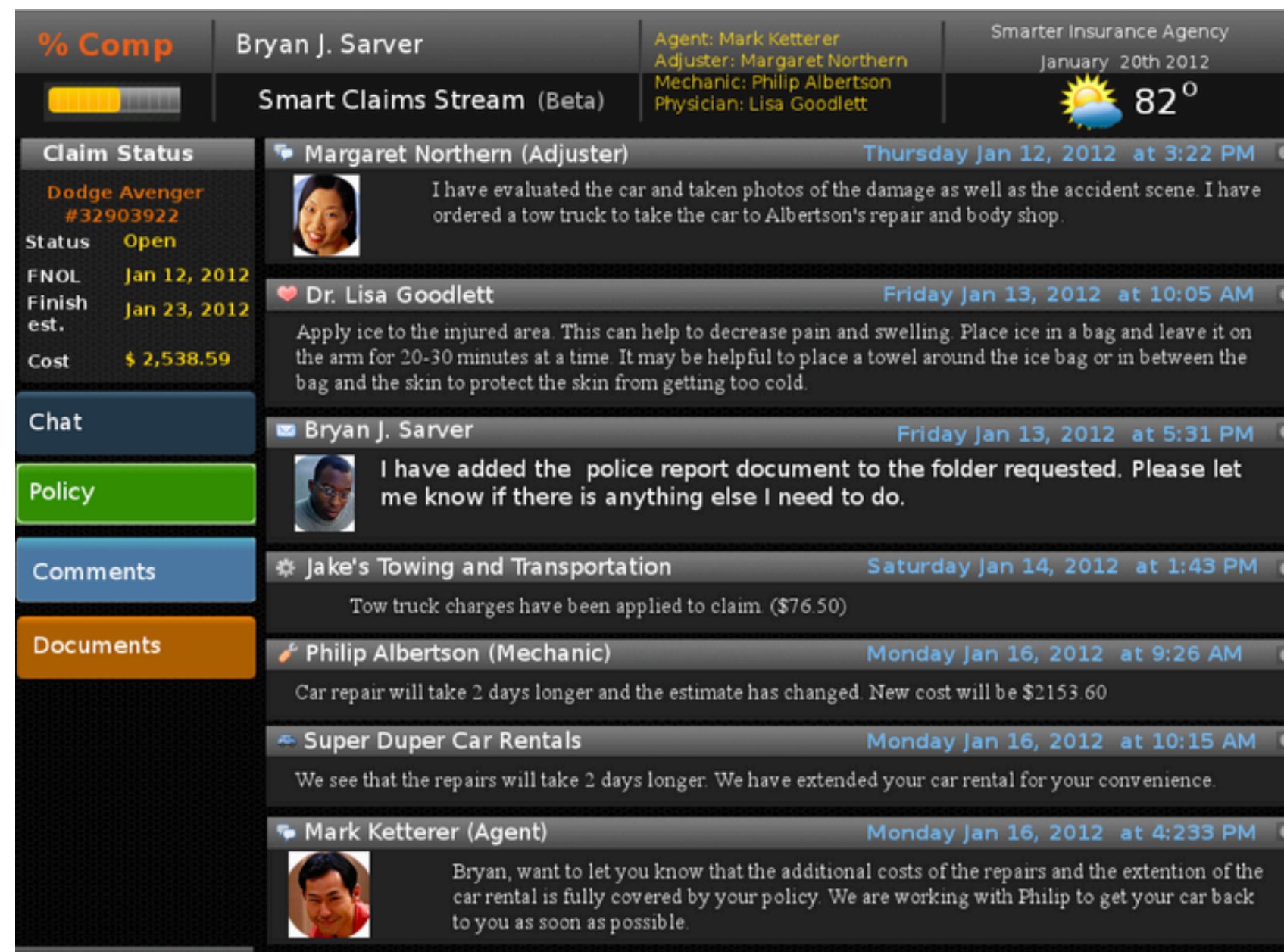
API's to add cognitive collaboration outside of Workspace

Headless services can be implemented natively or as plug-ins

Examples in productivity tools: Microsoft Outlook plug-in, Eclipse plug-ins, etc.

The image shows a screenshot of the Microsoft Outlook interface. On the left is the 'Favorites' sidebar with folders like 'Clutter', 'Inbox', 'Drafts', etc. The main pane displays an email thread titled 'RE: Pressures in Product Regulations'. A blue arrow points to the email content with the text: 'actions, questions, decisions and custom intents in an email are identified'. On the right, a 'Collage' sidebar is visible, showing a list of 'Updates' and 'Discover' items. A blue arrow points to this sidebar with the text: 'Recommended actions can be taken in context'. Below the email thread, a 'Pressures in Product Regulations' window is open, showing a conversation with 'Sara Davis' and 'Miriam Grah'. It includes an 'Action' item: 'Sara: I'm going to put a 2-hour meeting on the calendar for anyone who would like to attend and discuss Omega Project and how we will achieve the goals for the scheduled POC in two weeks!' and a 'Question' item: 'Sara: Can we meet tomorrow morning?'. At the bottom right, a 'Watson Workspace' window is open, showing a 'PSW Sales' space with a list of sales opportunities, including one for 'Ann-Marie Darrough' with a 'Probability: 75%'.

A few ideas for using Workspace API's in your business apps



actions, questions,
and custom intents
are identified

Recommended
actions can be
taken in context

- **Insurance claim**

Data entry triggers action identification.
Summaries are used by new participants

- **Health services**

A tele-health application summarizes
conversations to avoid unnecessary ER
admissions for diabetes patients

- **Customer support**

Automated actions and responses in emails
helps customer service expedite requests

An open cognitive graph to enrich your apps

Every message in Workspace can be automatically tagged with cognitive data:

- What language is this ?
- What sentiment has been detected ?
- Are there recognized entities (ex: company, location) ?
- Who is the subject in this sentence ?

The image shows a screenshot of a Slack workspace named "West Coast Sales". The interface includes a sidebar with "Spaces" and a main chat area with messages from John Mendez, Rebecca Romero, and Jacqueline Scott. Overlaid on the chat are four callout boxes containing cognitive data extracted from a message: "I think we should look into that. I need to give Rachel at Chrysler a call." The data includes language detection, subject identification, and keyword extraction with relevance scores.

```
start: 34
language: "english"

subject: Object
  text: "I"
object: Object
  keywords: Array(1)
    0: Object
      text: "Rachel"
  action: Object
    lemmatized: "need to give"
    text: "need to give"

docSentiment: Object
  score: 0.645758

keywords: Array(2)
  0: Object
    relevance: 0.970551
    text: "Chrysler"
    label: "/automotive
/vehicle brands/
/chrysler"
```

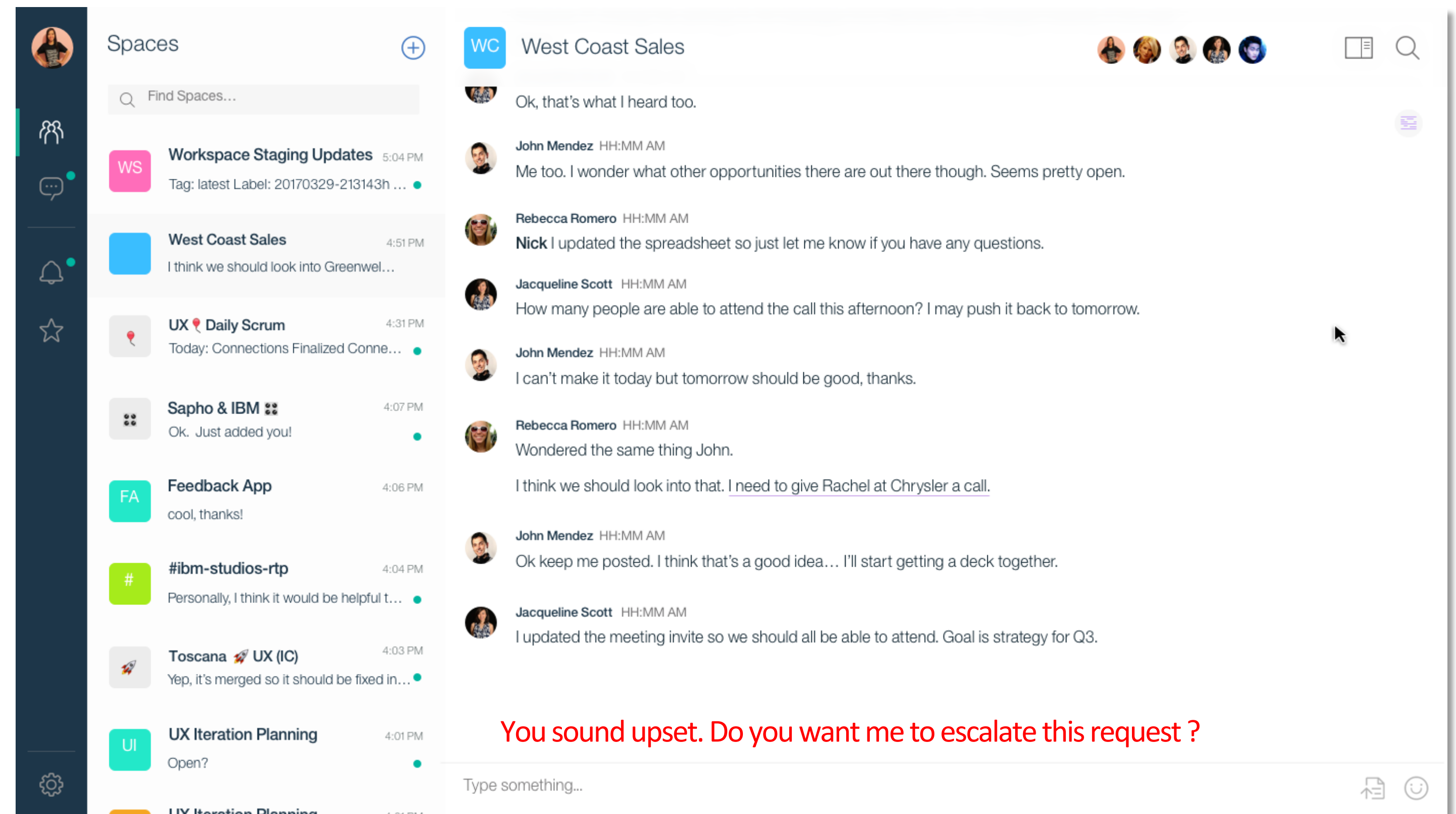

A few ideas for your apps

Cognitive annotations can help:

- Developers create smarter apps more quickly
- Organizations better understand their business (ex: trend analysis)

A few ideas:

- Track sentiment in a conversation to highlight changes in the tone
- Translate messages in real-time
- Monitor specific topics (ex: company names) to trigger automated actions



Workspace positioning in the Watson portfolio

IBM Watson is a set of cognitive technologies

Watson Workspace

- Built-in cognitive services (ex: actions, summaries) optimized and trained for collaboration work streams
- Built-in conversation interface (and 3rd party plug-ins)
- Built-in repository for trend analysis & personalization
- Enabled for customization via other Watson technologies

Build with Watson

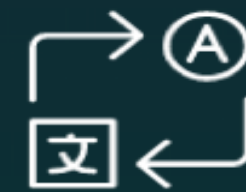
Enable cognitive computing features in your app using IBM Watson's Language, Vision, Speech and Data API's

Products

Watson products and apps can help illuminate insights and bring the power of cognitive computing to your organization

Built with Watson

Stories of how cognitive computing is transforming our world



Understand

imagery, language, and other unstructured data **like people**

Reason

by forming hypotheses to **infer and extract ideas.**



Learn

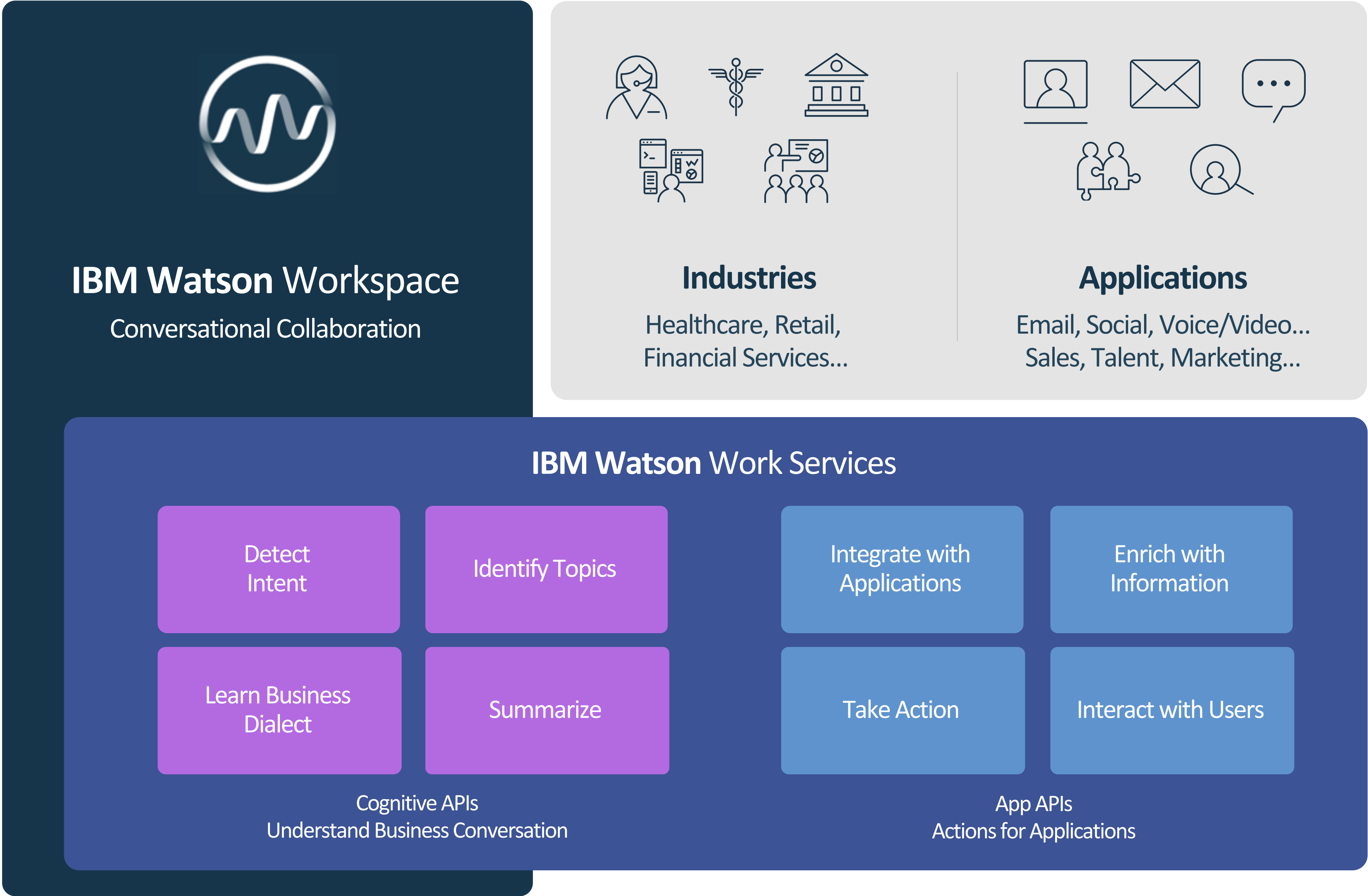
with each interaction to **continuously develop and sharpen expertise**

Interact

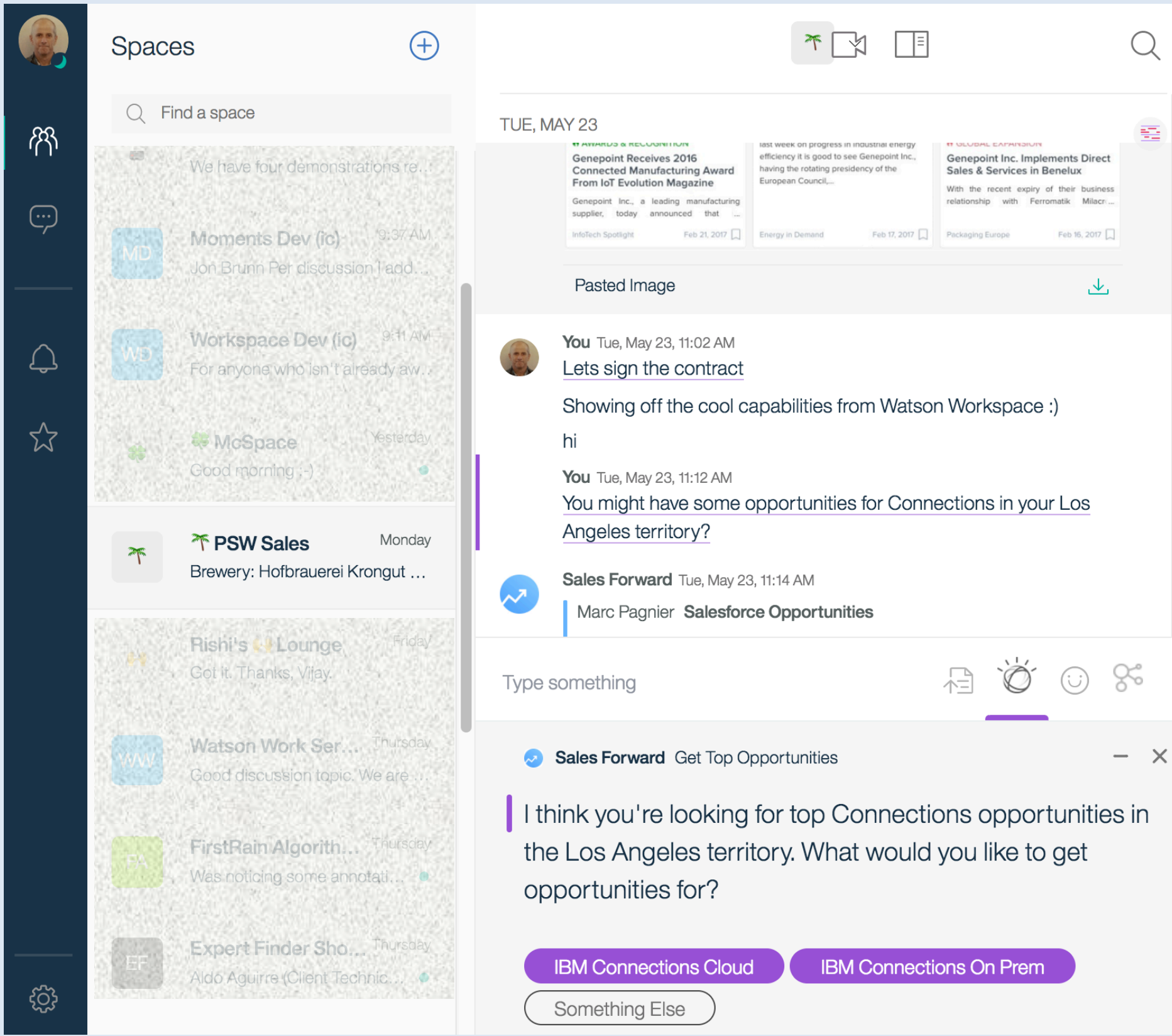
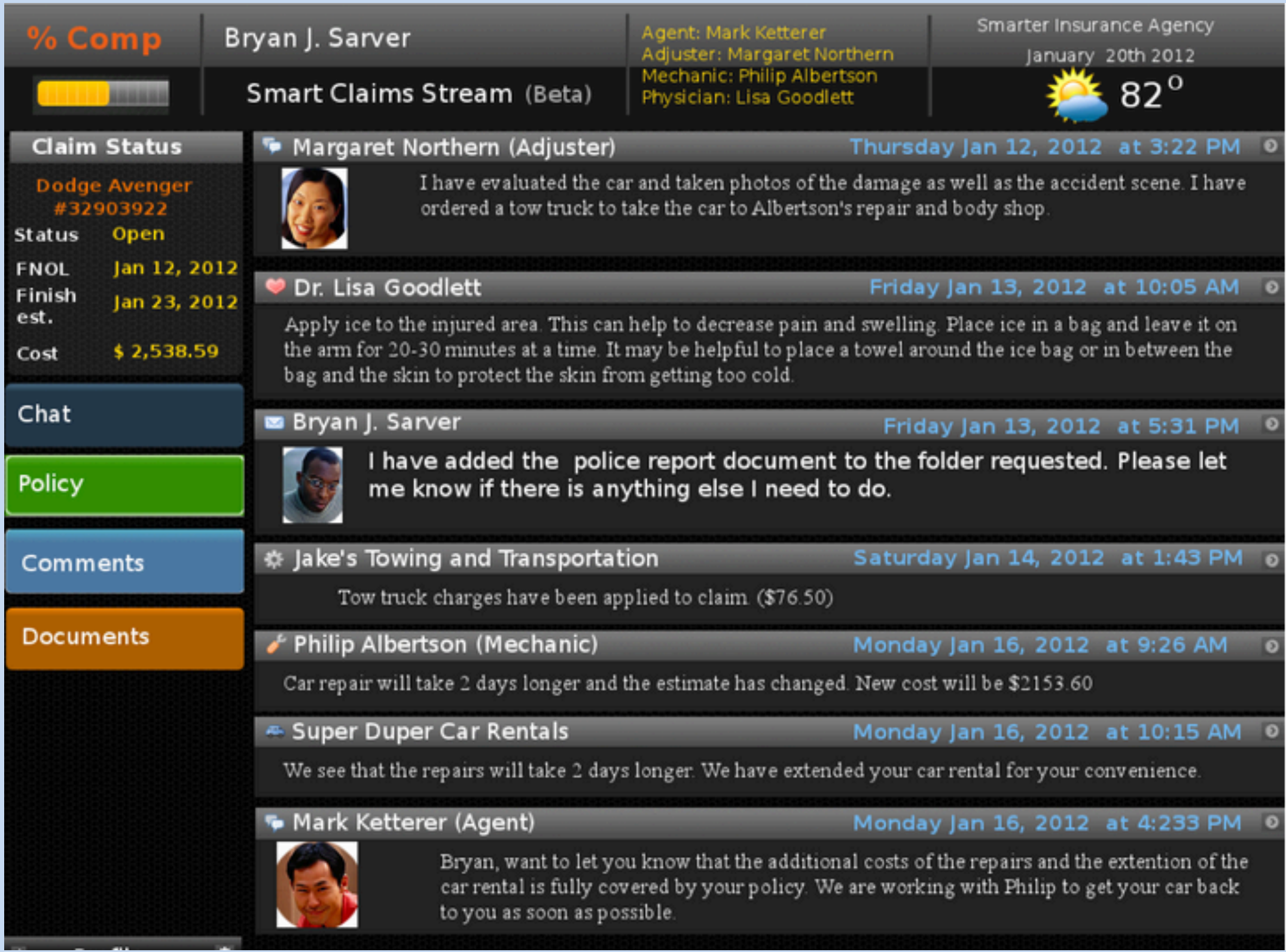
with people: see, talk and hear with **humans in a relatable way**



Watson Work Platform Vision



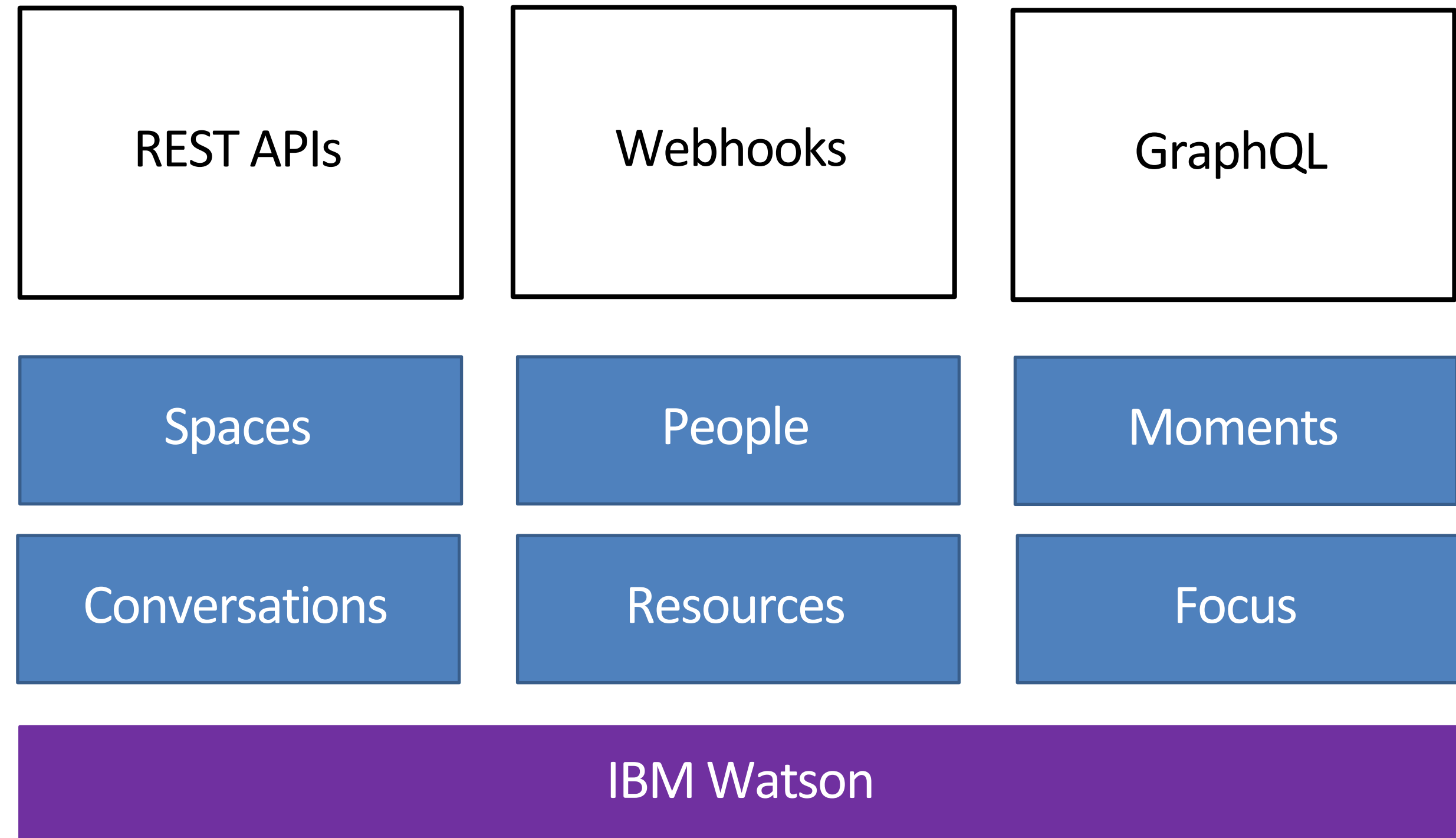
How to use the platform : two options

OPTION	Creating Apps to extend Watson Workspace	Services to add cognitive and collaboration to your own apps
EXAMPLE		
OFFERINGS	WATSON WORKSPACE ESSENTIALS (9/26) – per user per month	WATSON WORKSPACE ESSENTIALS (9/26) – per user per month WATSON WORK SERVICES (future) – other usage metrics

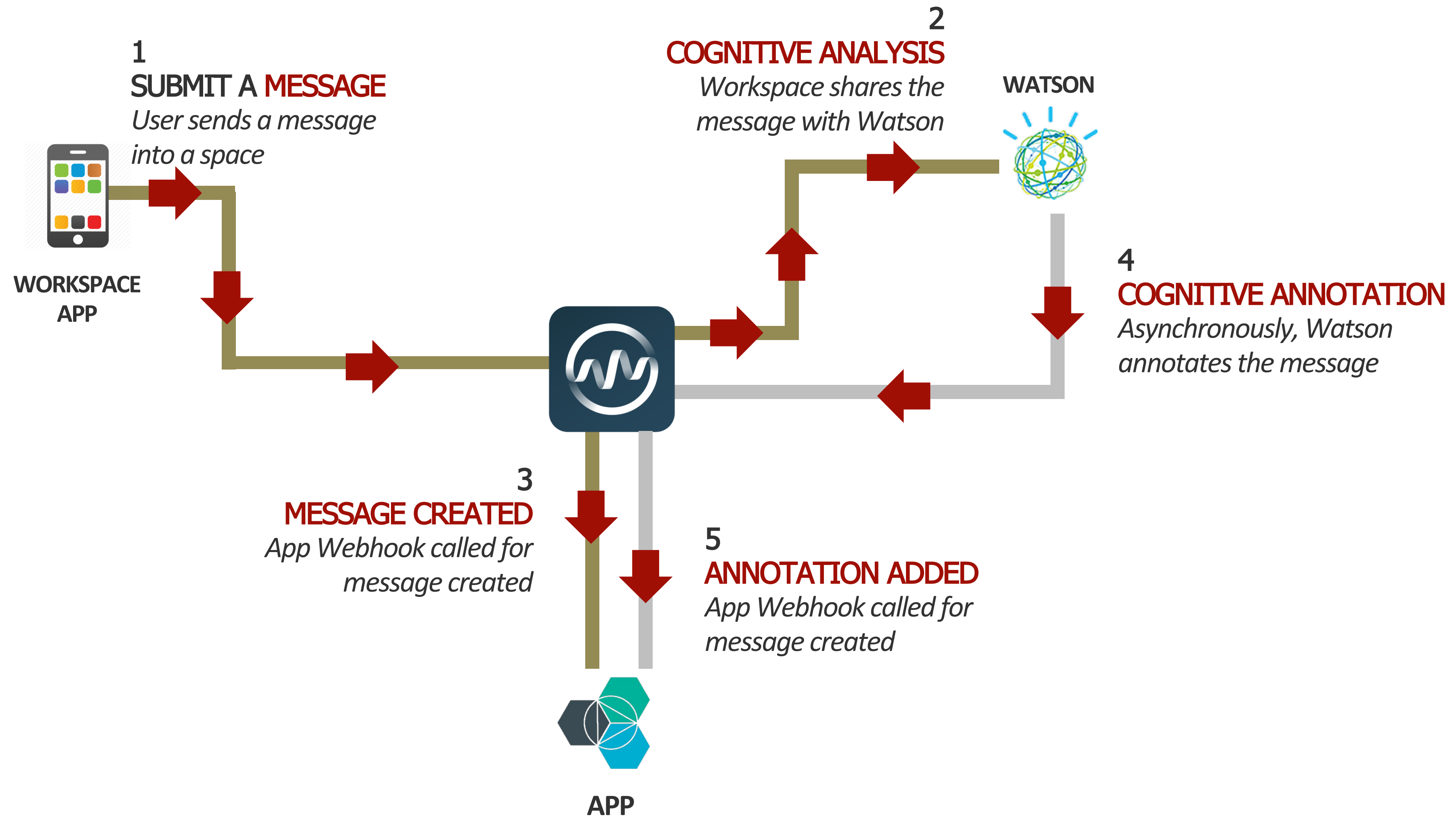
What are Watson Work Services?

A set of **cognitive services** that **understand conversations** and **context**, surfaced through a rich set of APIs.

IBM Watson Work Services Platform



How does Workspace work?



Watson Annotations

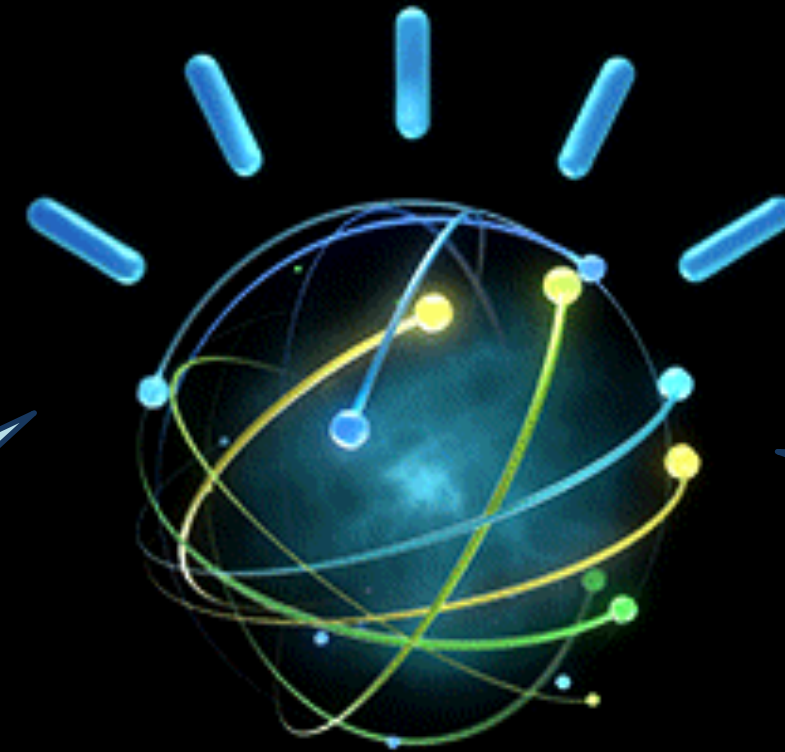
“This messages looks negative
with a score of 0.898547”
(sentiment)

“There is a new moment starting here by
John about - Site Vulnerability - with
keywords: malicious, code, injection”
(moment)

“This messages is a question:
Where can I download the file?”
(focus - question)

“This messages is an action: Let’s
talk about it offline” (focus –
action)

“It appears the user is talking about sales
opportunity, maybe he wants CRM Sales
information (action fulfillment)”



IBM Watson Work Services

Programming Model

The programming model today is based on the concept of "**Apps**" as participants in a specific contextual conversation to integrate the conversation into other services and other services into the conversation.

Use cases to focus

- **Awareness.** Reflecting in a conversation incidents, events, etc taking place:
 - a sale is closed
 - a trouble ticket is opened
- **Efficiency.** Taking action in external systems from within a conversation helps maintain focus:
 - query sales opportunities
 - open a trouble ticket
- **Intelligence.** Detecting possible actions and making suggestions:
 - A customer support conversation might require escalation based on tone, how many open questions are detected, etc.

What can Apps do in IBM Watson Workspace?

- 1. Contribute content to conversations:** Messages, files, and annotations on messages based on events taking place outside a conversation: A sale is closed
- 2. Listen to conversations in real time and act based on their content using Watson Natural Language Conversation and classification capabilities.** Acting includes initiating flows to fulfill intended actions inferred from conversations or explicitly being called by users via slash commands

Detect and query report on information from outside the conversation: opportunities for a client

- 3. Read conversation cognitive analysis such as summarizations**
- 4. Read space attributes such as title, membership changes, dates**

Ensure the right participants are engaged conversation

Contribute content to conversations

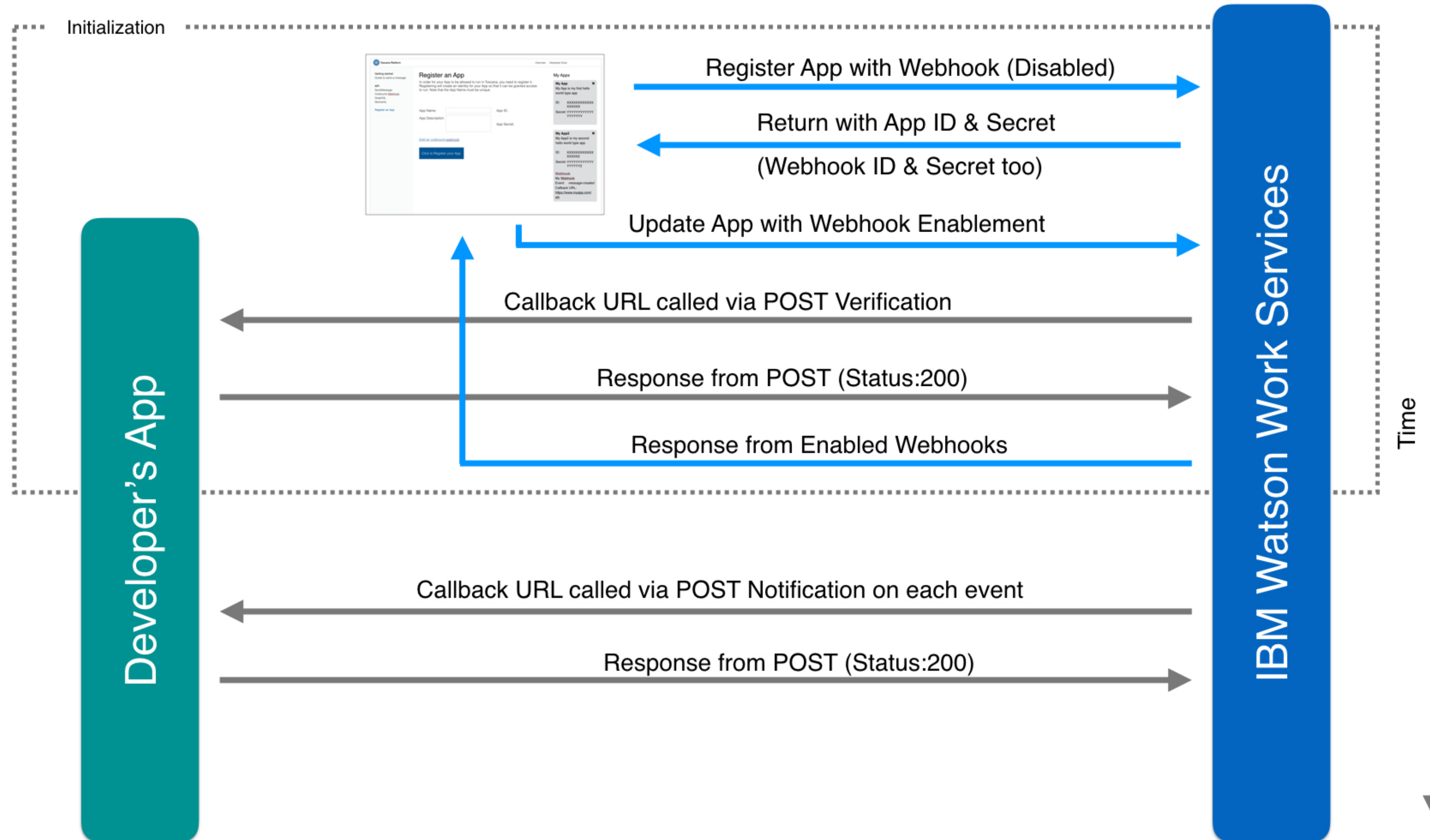
1.via GraphQL mutations

1. createSpace
2. addSpaceMembers / removeSpaceMembers
3. createMessage (beta)
4. createTargetedMessage (beta)
5. addMessageFocus (beta)

2.via REST APIs

1. POST /v1/spaces/{spaceId}/messages (prefer new CreateMessage)
2. POST /v1/spaces/{spaceId}/files

Listen to conversations in real time



Listen to conversations in real time: Scenarios

1. Take action in external system
2. Analyze and annotate ongoing conversation with detected intents and actions
3. Converse privately with end user and contribute outcome back into to the main conversation:
 1. Via user executing suggested actions on a message
 2. Via an explicit /command
4. Take action inside IBM Watson Workspace
 1. Contribute content to current or other conversations
 2. Make participant changes (i.e. invite others)

Action Fulfillment Flow

1. Identify intents and associated possible actions to take on messages
2. User initiates/triggers flow either via clicking on message or via /command if an explicit action independent of specific message is requested
3. Client provides Action Fulfillment UI area
4. App responds to flow via messages targeted exclusively to this user containing text, Cards and buttons
5. User can respond back to App via clicks on buttons (more ways to respond are planned...)
6. App and/or user can still contribute to main conversation
7. User ends flow by closing Action Fulfillment UI area

- Tutorial: <https://developer.watsonwork.ibm.com/docs#action-fulfillment>

Read Conversation Cognitive Analysis

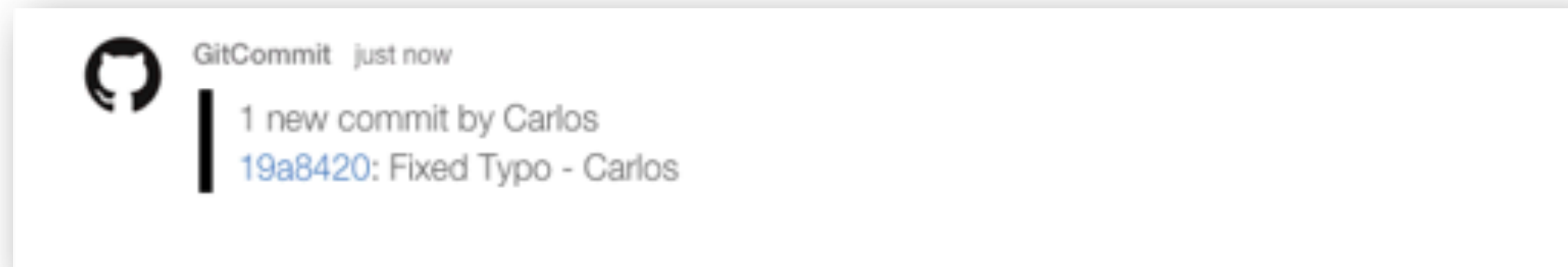
1. Moment (beta)

```
moments(spaceld: String!, predicted: Boolean,
oldestTimestamp: Long,
mostRecentTimestamp: Long, before: String,
after: String, first: Int, last: Int):
MomentCollection
```

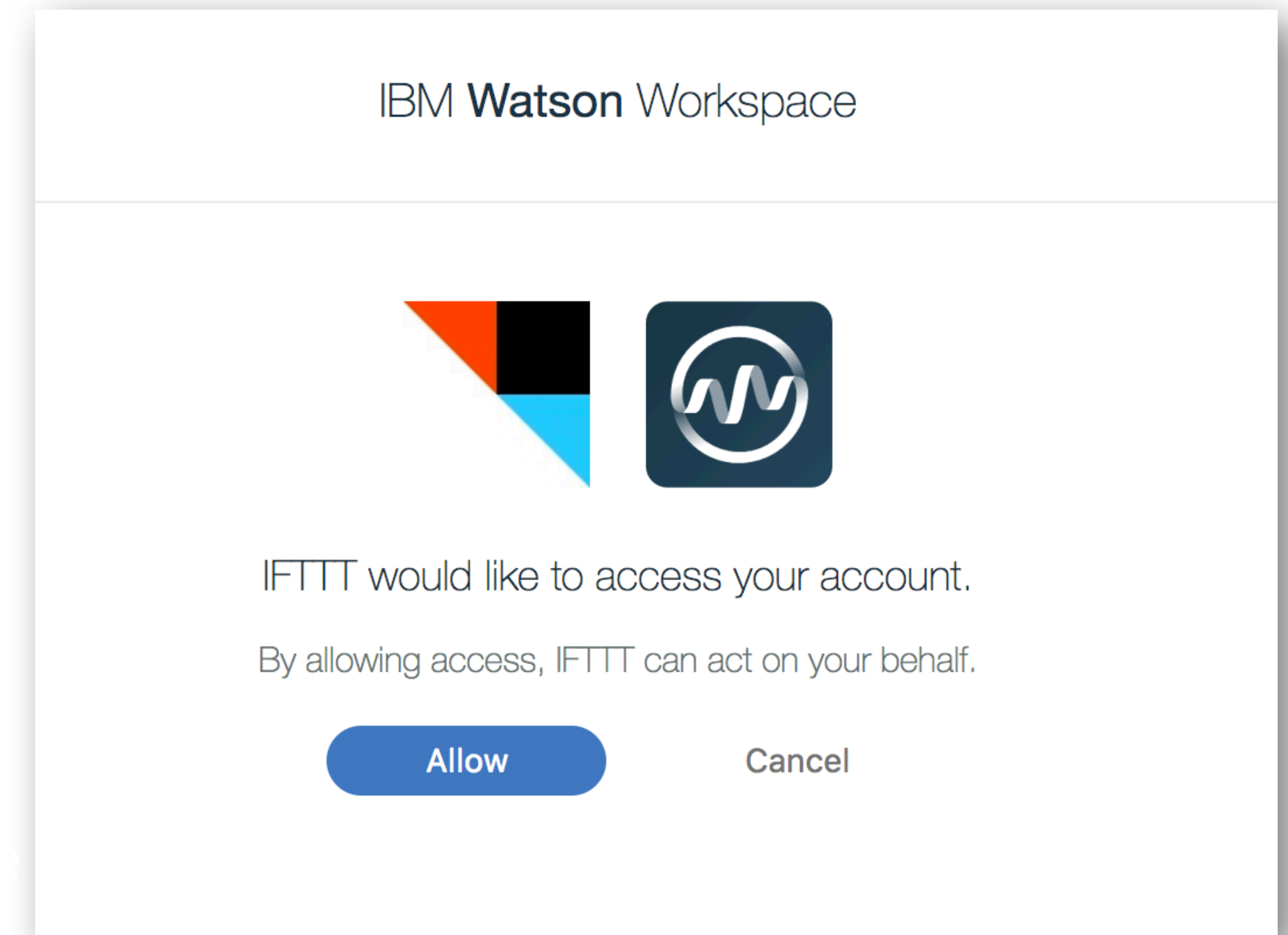
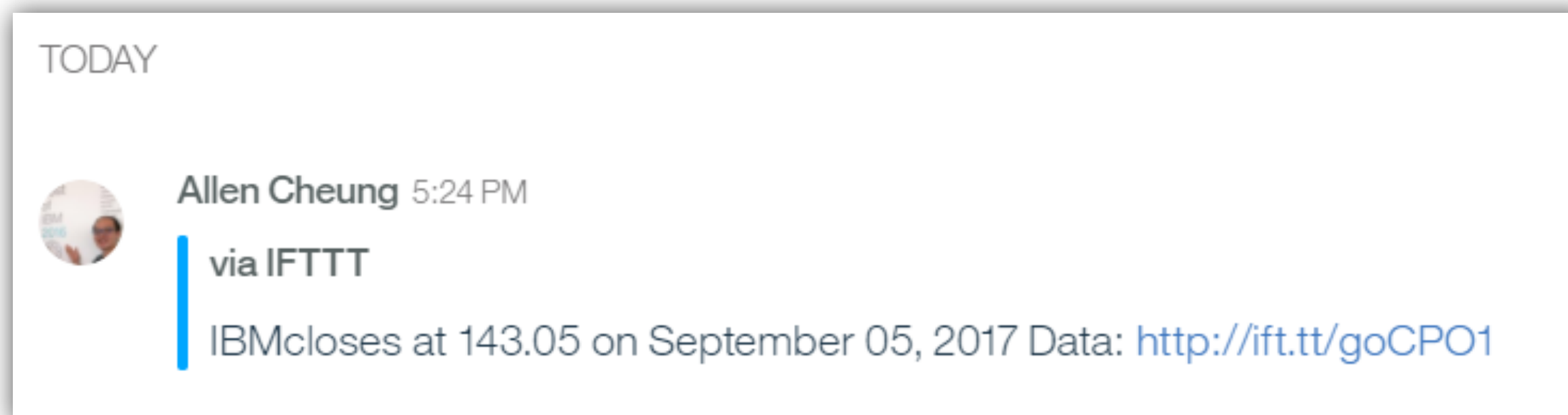
FIELDS	
live:	Boolean!
startTime:	Date
endTime:	Date
priority:	UserPriorityStatus
created:	Date
updated:	Date
id:	ID!
keyMessage:	Message
mentioned(first: Int):	[Mentioned]
messages(oldestTimestamp: Long, mostRecentTimestamp: Long, annotationType: String, before: String, after: String, first: Int, last: Int):	MessageCollection
summaryPhrases(first: Int):	[SummaryPhrase]
participants(first: Int):	[MomentParticipant]
space:	Space
createdBy:	Person
updatedBy:	Person

App Identity

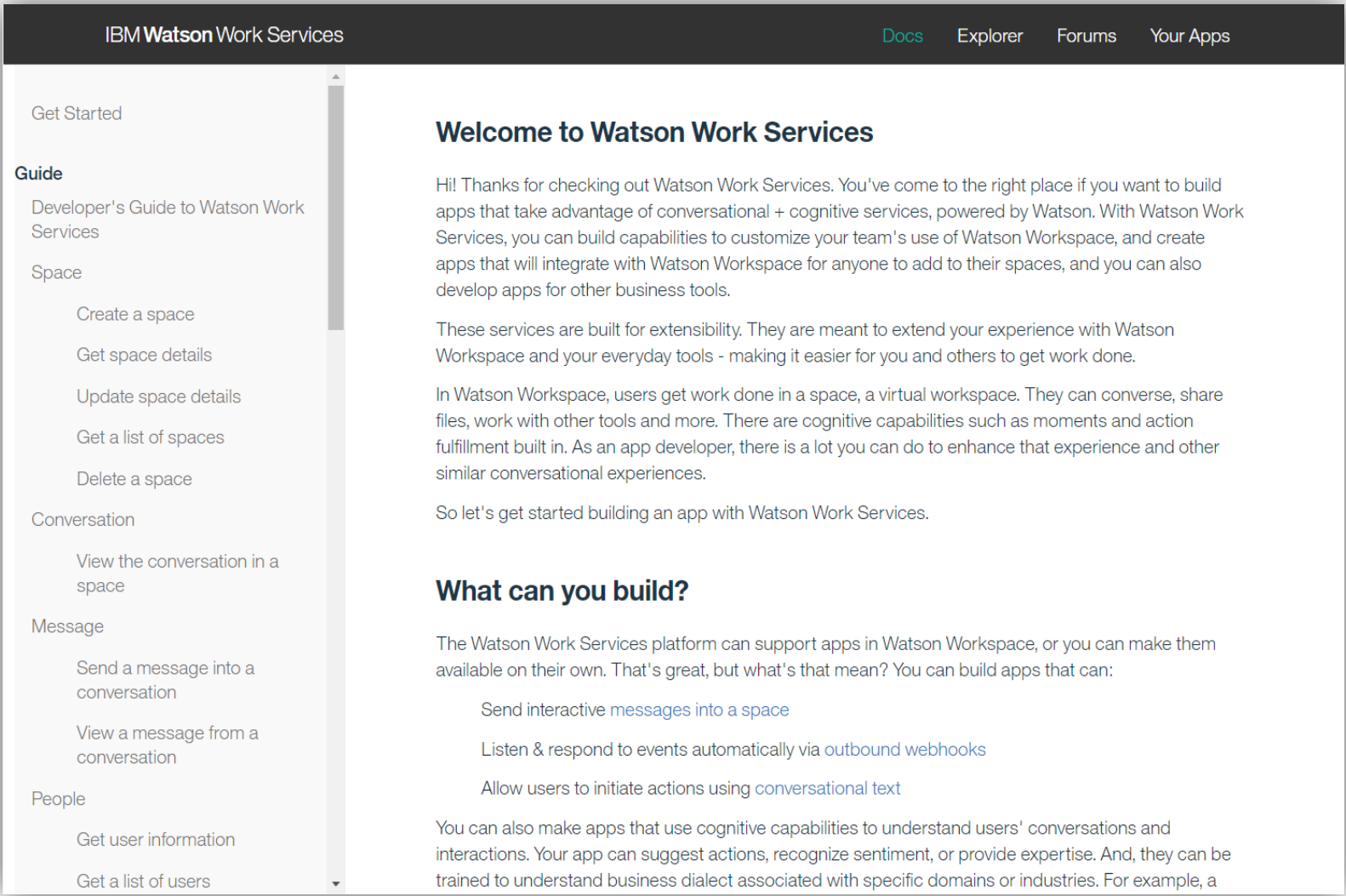
- Create Apps that listen and contribute messages with their **own identity**.



- Create Apps that leverage **OAuth2 to authorize as a user**.

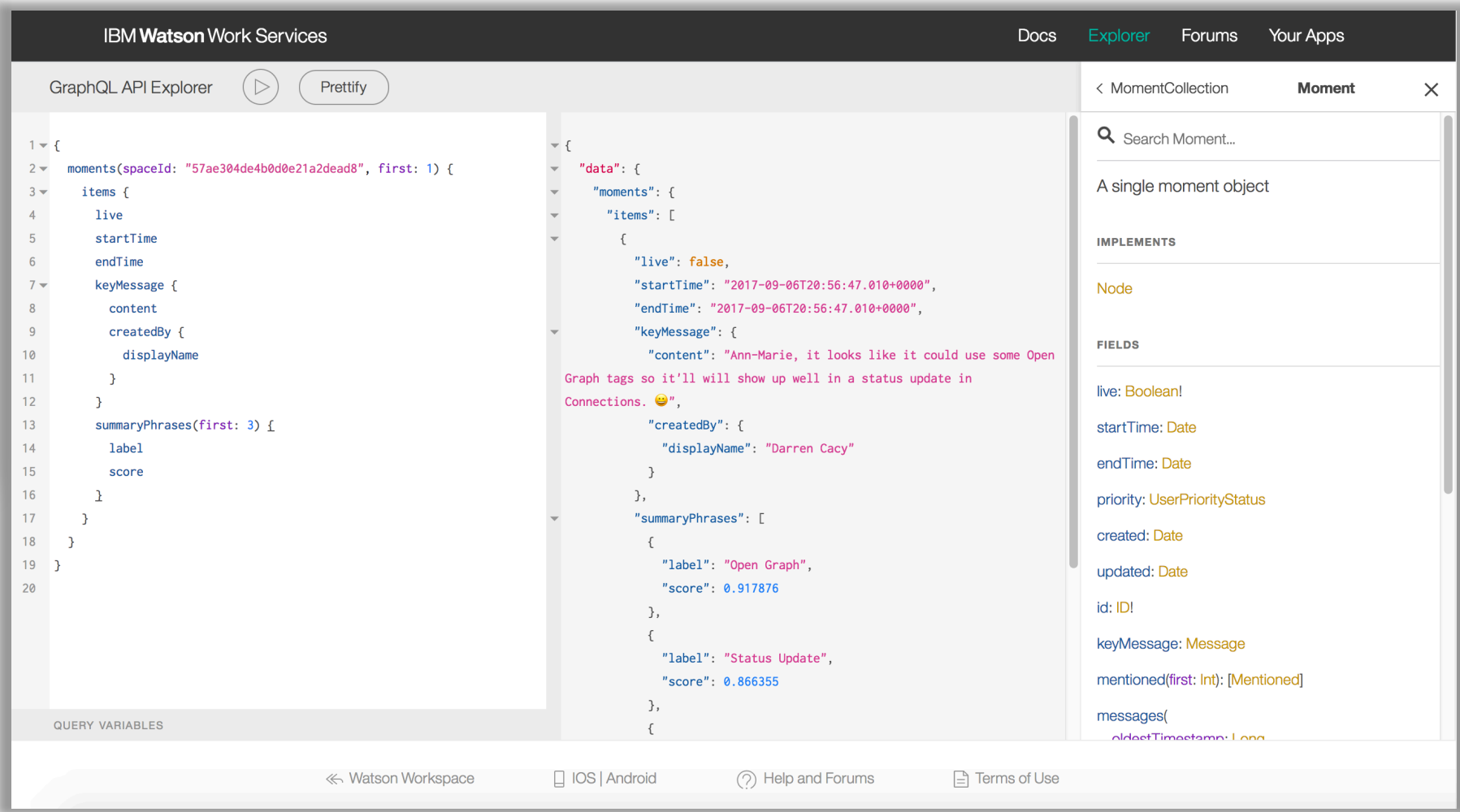


Learning the Programming Model



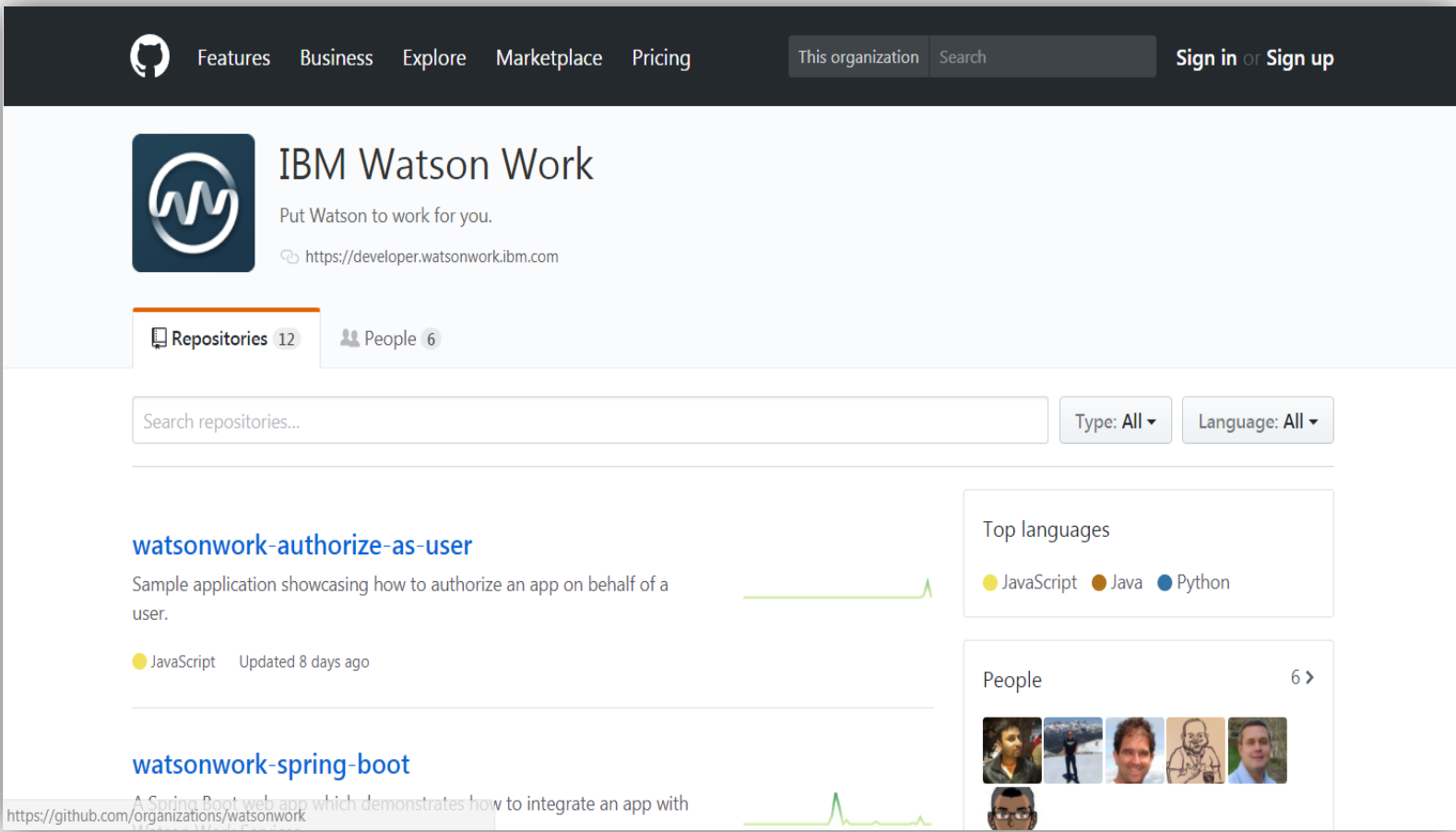
Docs

<https://developer.watsonwork.ibm.com/>



API Explorer

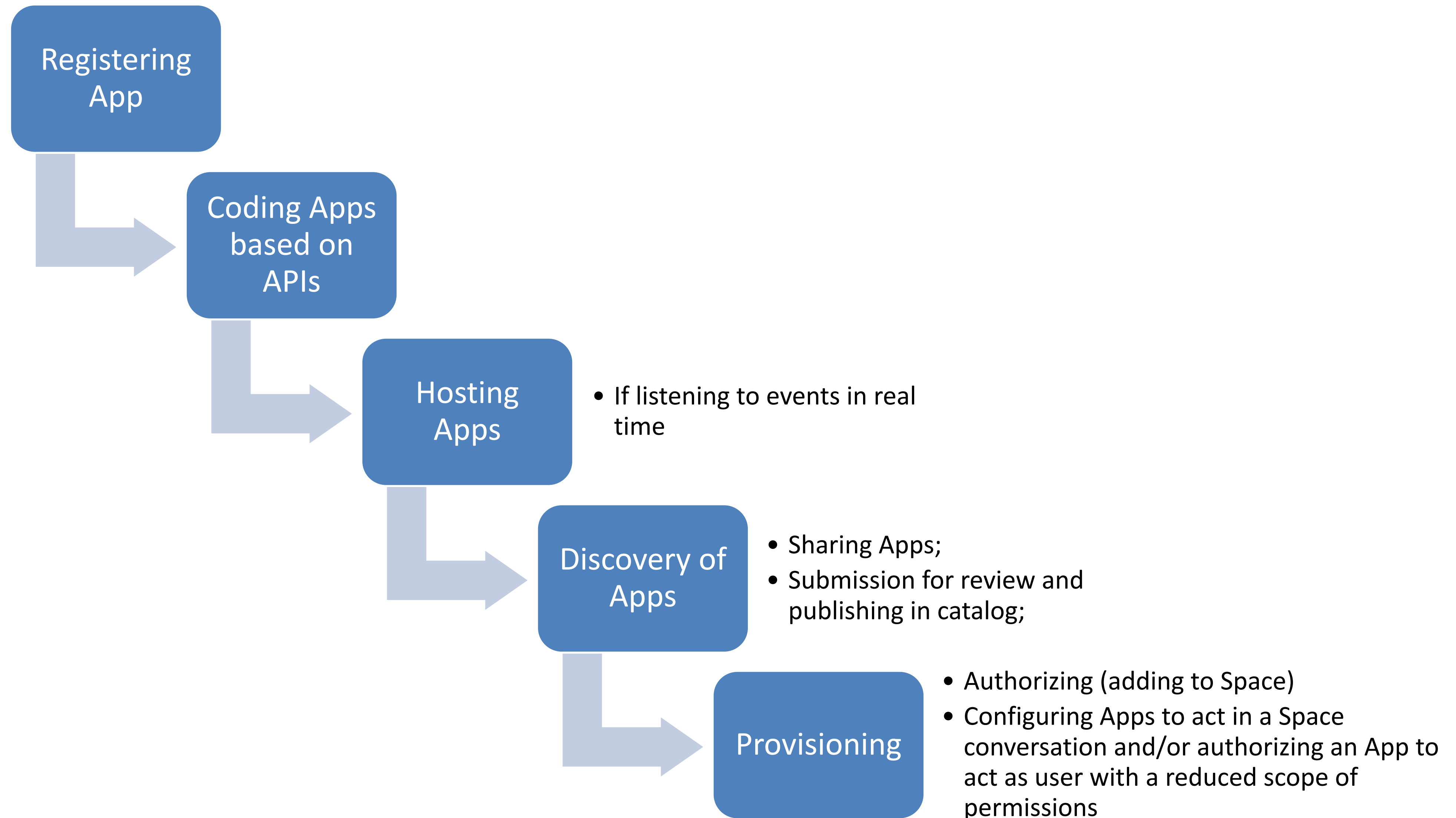
<https://developer.watsonwork.ibm.com/tools/graphql>



Open Source

<https://github.com/watsonwork>

Implementing the Programming Model



Five Key Points

- Focus on workspace.ibm.com extensibility via Apps now
- Apps can use and benefit from IBM Cognitive services for Summarization, Natural Language Processing and Natural Language Classification
- Apps add value to a conversation via content contributions and message analysis via focus annotations optionally utilizing individual Action Fulfillment work flows with its users
- Apps derive value from a conversations and spaces via web-hooks
- Apps do not extend IBM Watson Workspace UI, rather UI is coded to react to Apps contributions and to user gestures