Watson Work Launch Series
Developing for Watson Workspace

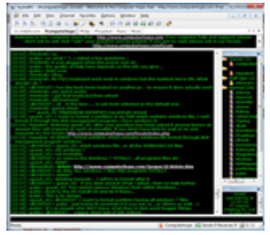
Miguel Estrada
STSM Watson Work Services Development

Marc Pagnier
Offering Manager, Cognitive Collaboration

Rafael Osorio
Worlwide Watson Work Technical Sales Leader

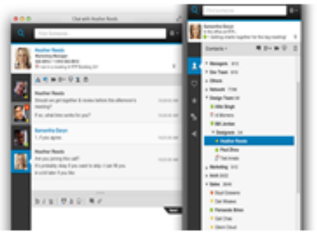
IBM Watson Work:: 2017 IBM Corporation

Chat Tools Evolution



Allows users to chat with groups in real-time.

Chat Room



Security, Single Sign-On, Scalability for Enterprise Market.

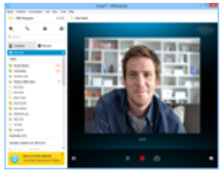
Enterprise IM

Tools which allowed users to chat one-on-one or in groups, exchanges files.

IM Platforms

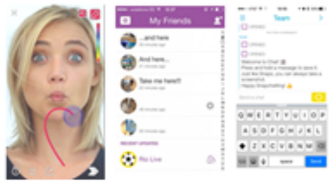
Allow users to message friends on the social network.

Social Chat



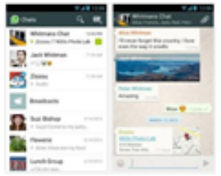
Tools that integrate chat, voice/audio, web & video conferencing.

UC Platforms



Tools where pictures and videos are taken, shared, then discarded.

Ephemeral Chat

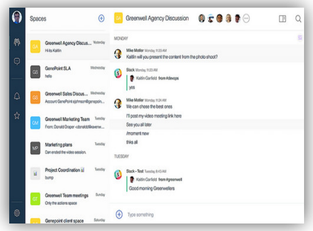


Allow users to send texts, pictures, video/audio – all for free, appealing to consumers who are tired of paying for Text/SMS.

Mobile Chat

Enterprise collaboration sofware allows teams to communicate easily and efficiently with a Group Persistent Chat.

Enterprise Persistent Chat



This solution allows users to extract intelligence from conversations using cognitive platforms.

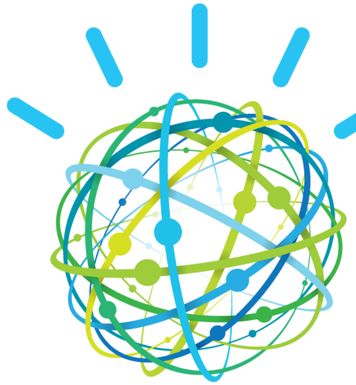
Cognitive Conversation Platform

What is Watson’s role in Workspace ?

Watson adds intelligence to your conversations

Manage the information overload

Take action in context



Workspace is a cognitive messaging app. that turns the spotlight on the most relevant conversations

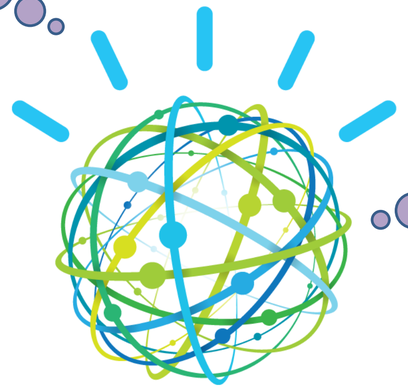
Workspace automatically highlights key insights to minimize loss of time and focus

What is Watson’s role in Workspace ?

Watson adds intelligence to your conversations

Interact with smarter apps & bots

Workspace builds up a cognitive & semantic rich graph so developers can create apps that augment your conversations



Use cognitive in the apps that you use every day

Workspace API’s allow developers to inject cognitive capabilities into other business apps

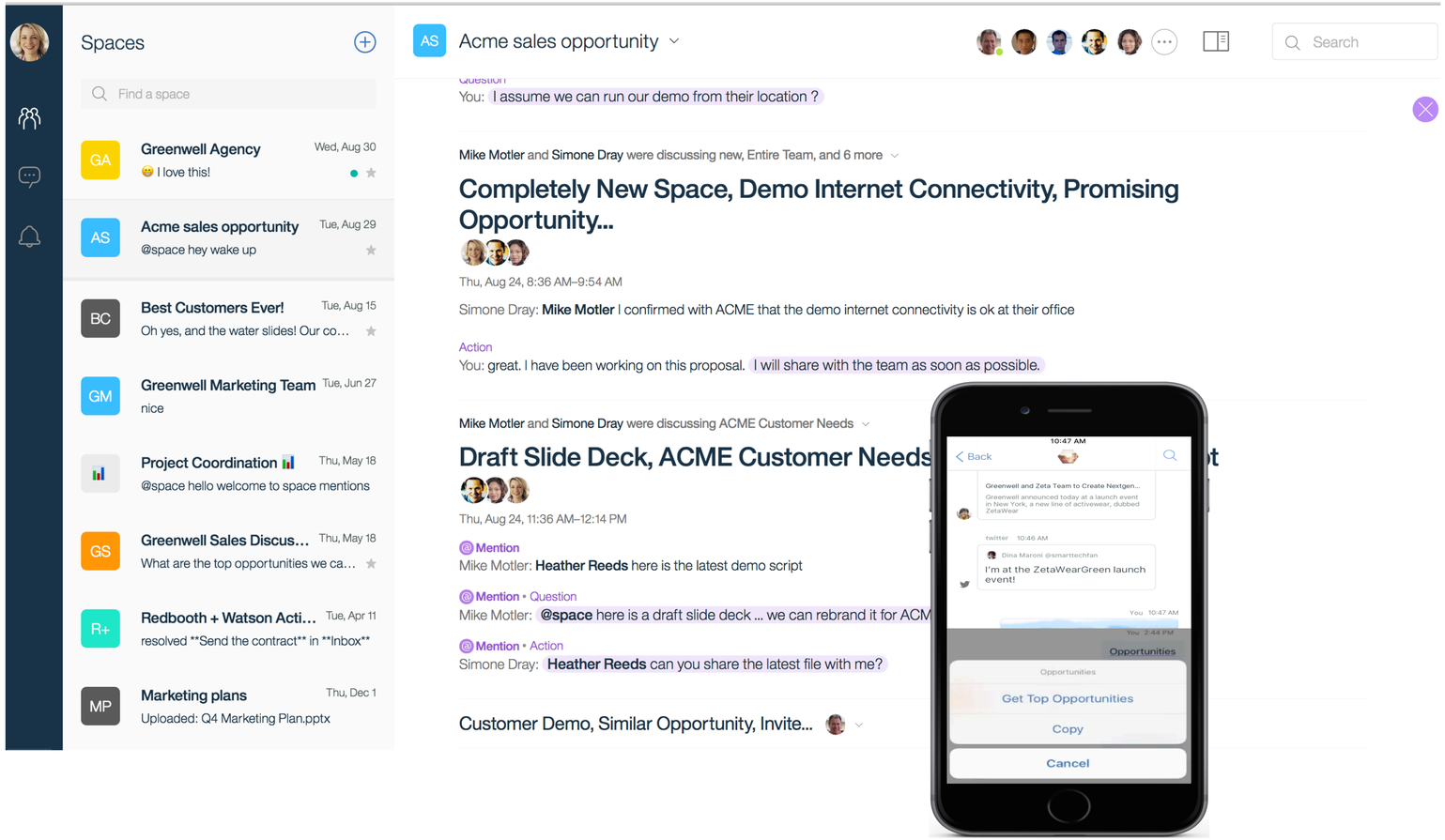
Understand your business conversations

Workspace can be be trained to understand your business vernacular via the integration of **Watson Conversation**

A messaging app. with built-in cognitive capabilities

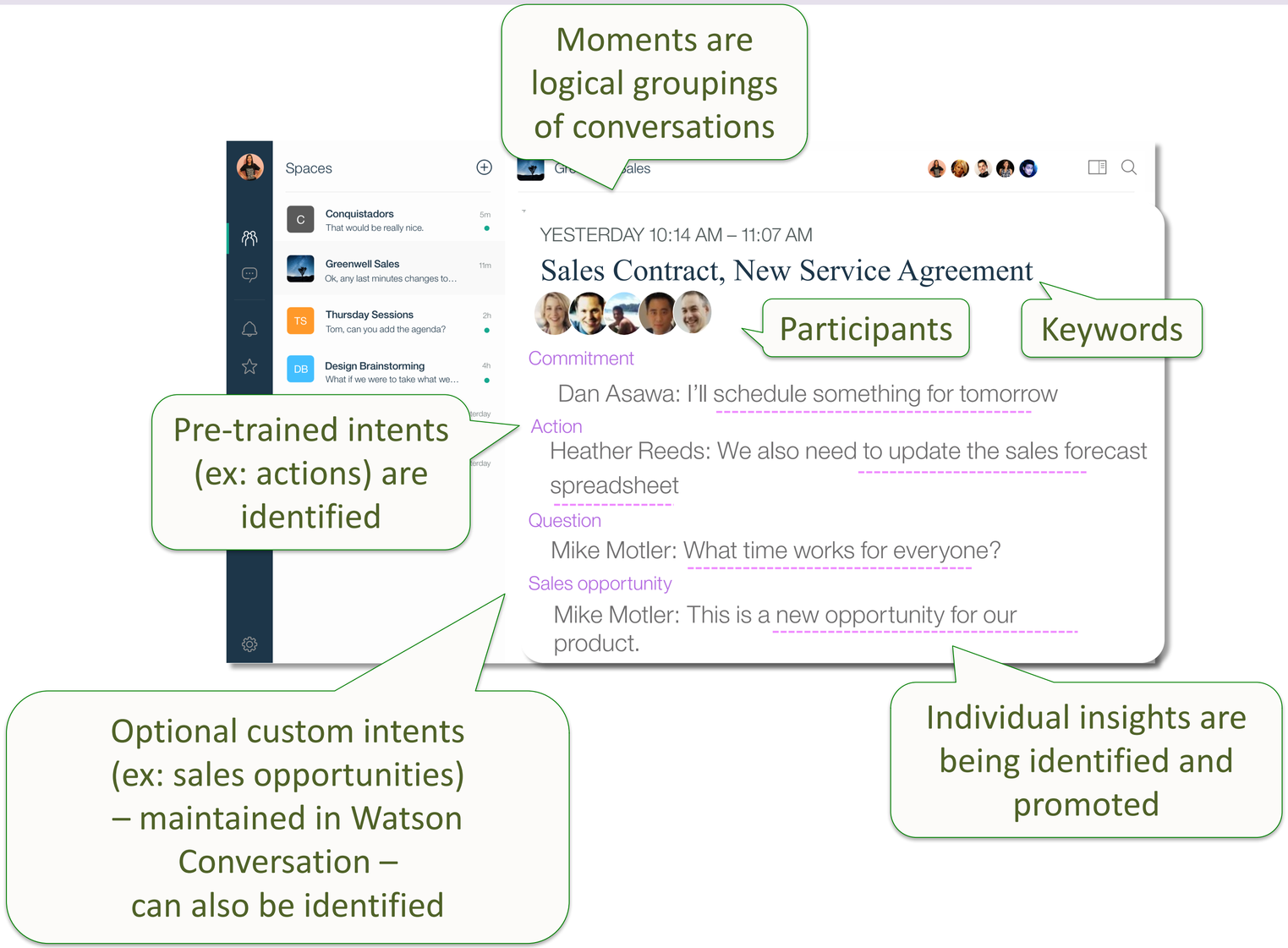
Are you faced with information overload and pressured to be “on” all the time?

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



IBM’s statements regarding its plans, directions, and intent are subject to change or withdrawal without notice at IBM’s sole discretion.

Turn the spotlight on what matters with “moments”

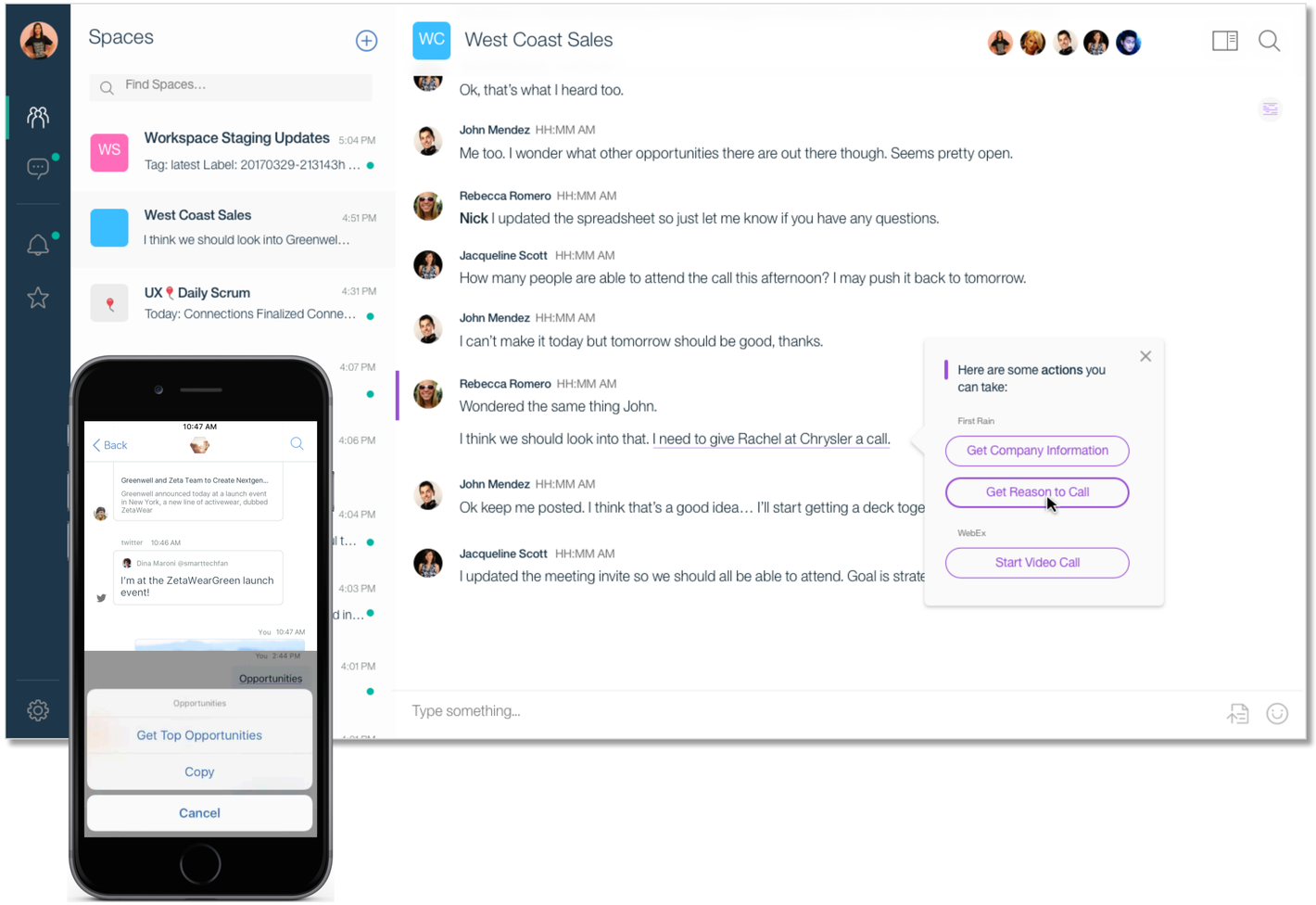


IBM’s statements regarding its plans, directions, and intent are subject to change or withdrawal without notice at IBM’s sole discretion.

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



IBM's statements regarding its plans, directions, and intent are subject to change or withdrawal without notice at IBM's sole discretion.

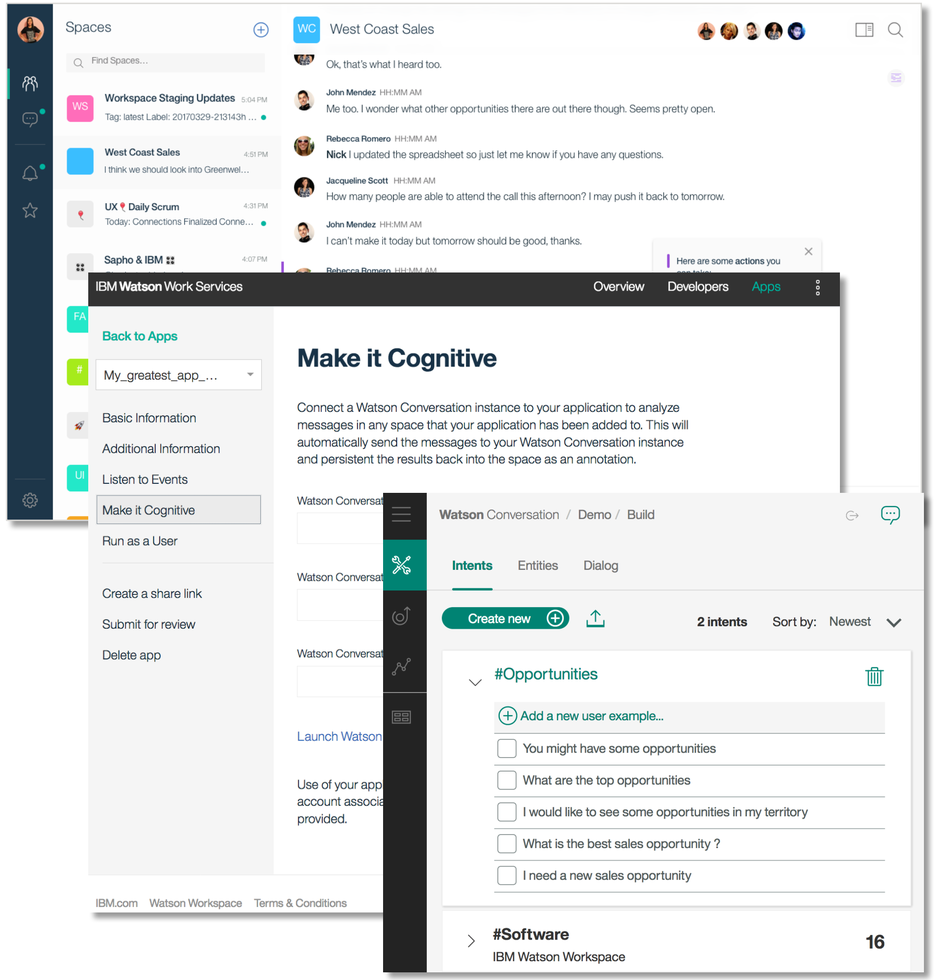
Create engaging and cognitive apps

Create an app. (bot)

- Personalized user interactions and dialogs

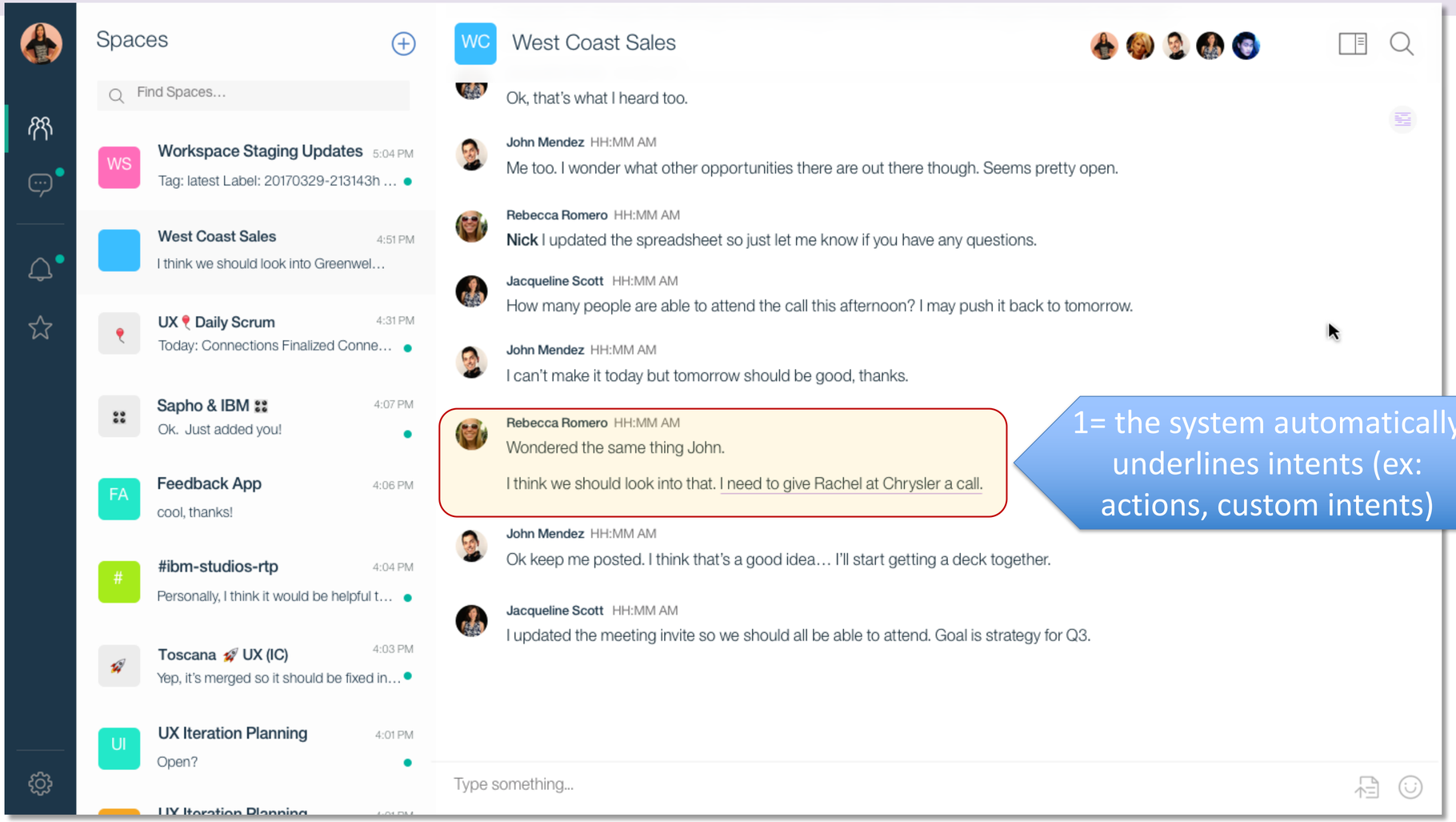
Make it cognitive

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



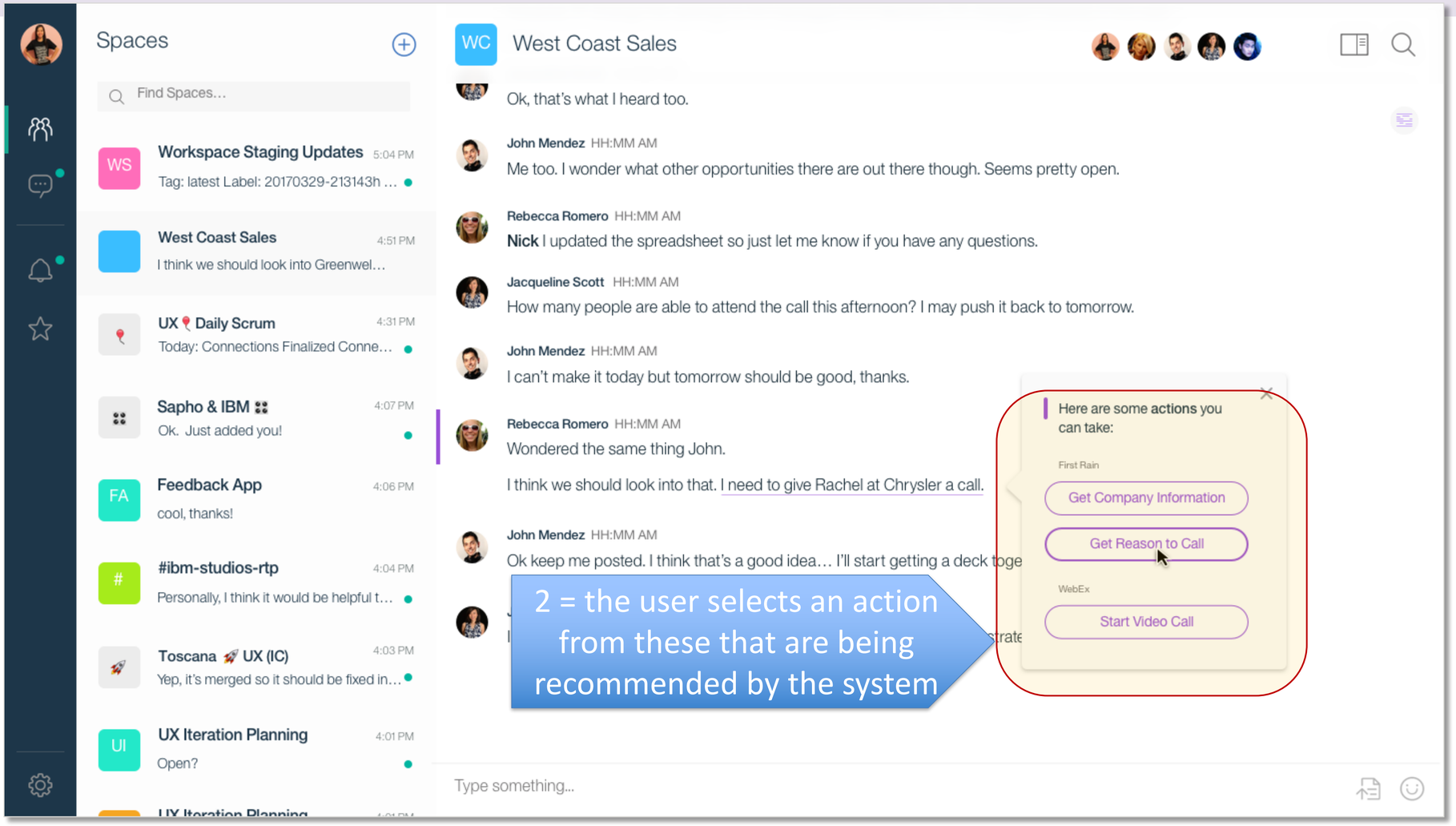
IBM's statements regarding its plans, directions, and intent are subject to change or withdrawal without notice at IBM's sole discretion.

Identifying & taking actions (1/4)



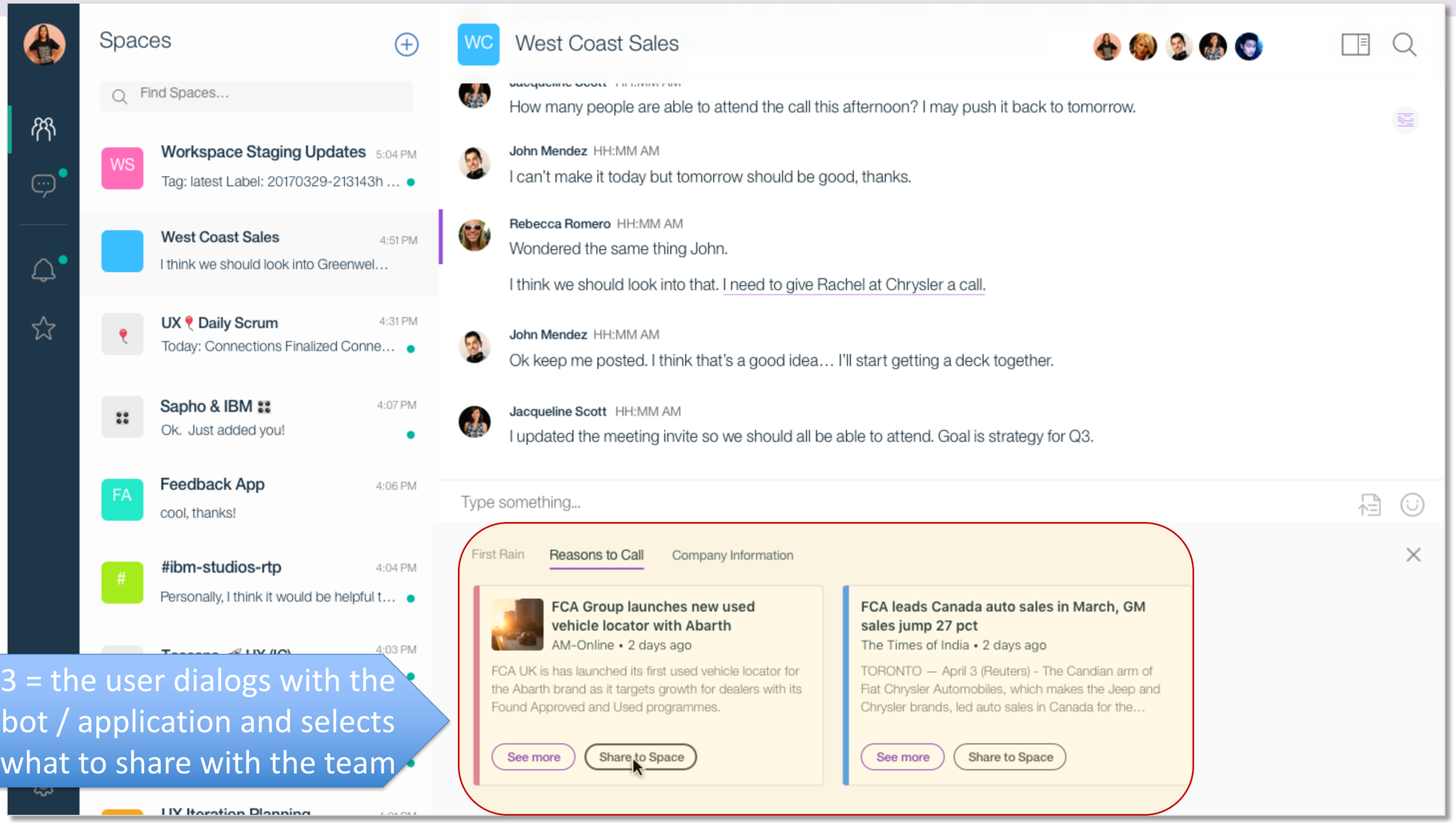
IBM's statements regarding its plans, directions, and intent are subject to change or withdrawal without notice at IBM's sole discretion.

Identifying & taking actions (2/4)



IBM's statements regarding its plans, directions, and intent are subject to change or withdrawal without notice at IBM's sole discretion.

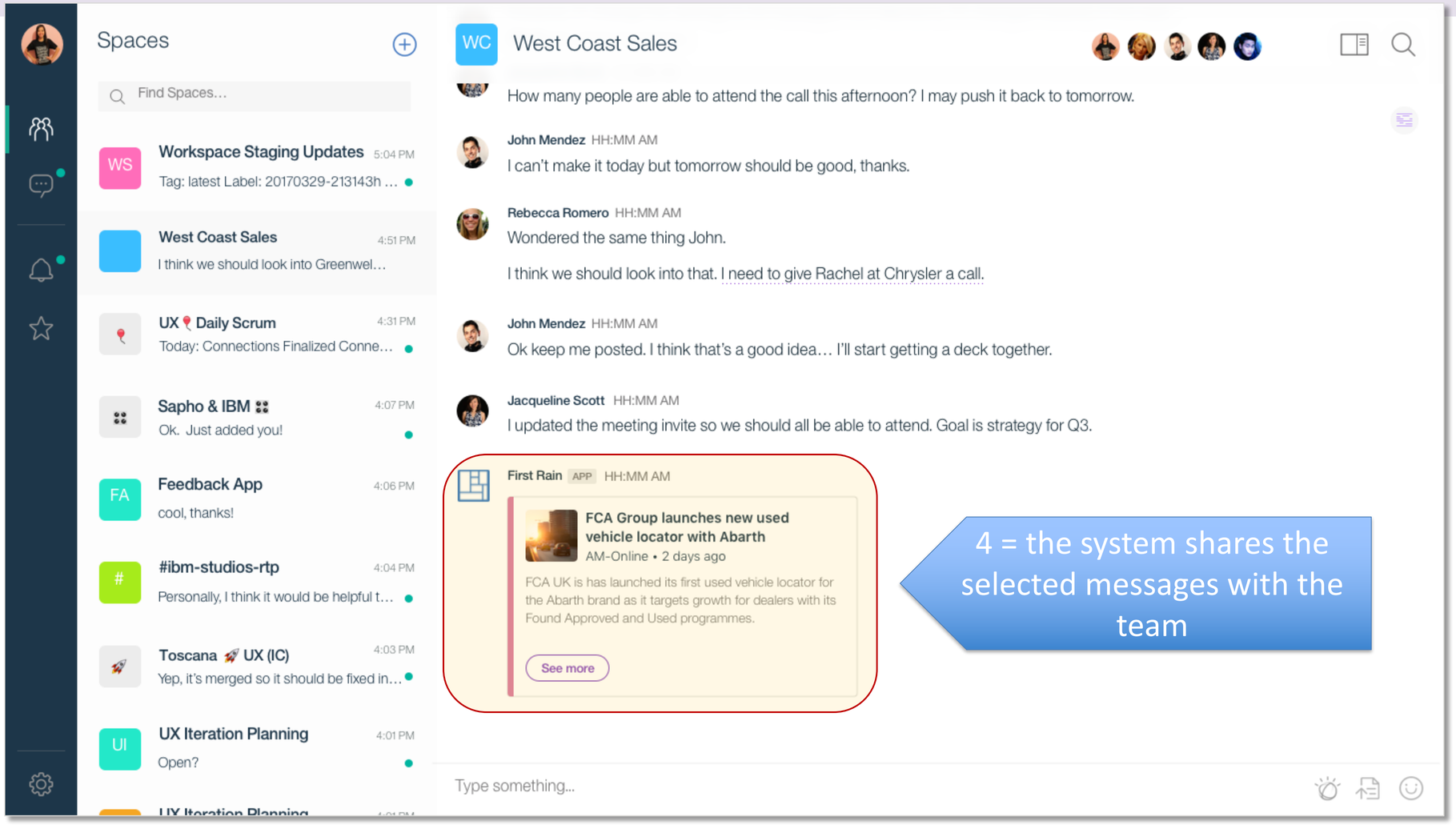
Identifying & taking actions (3/4)



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

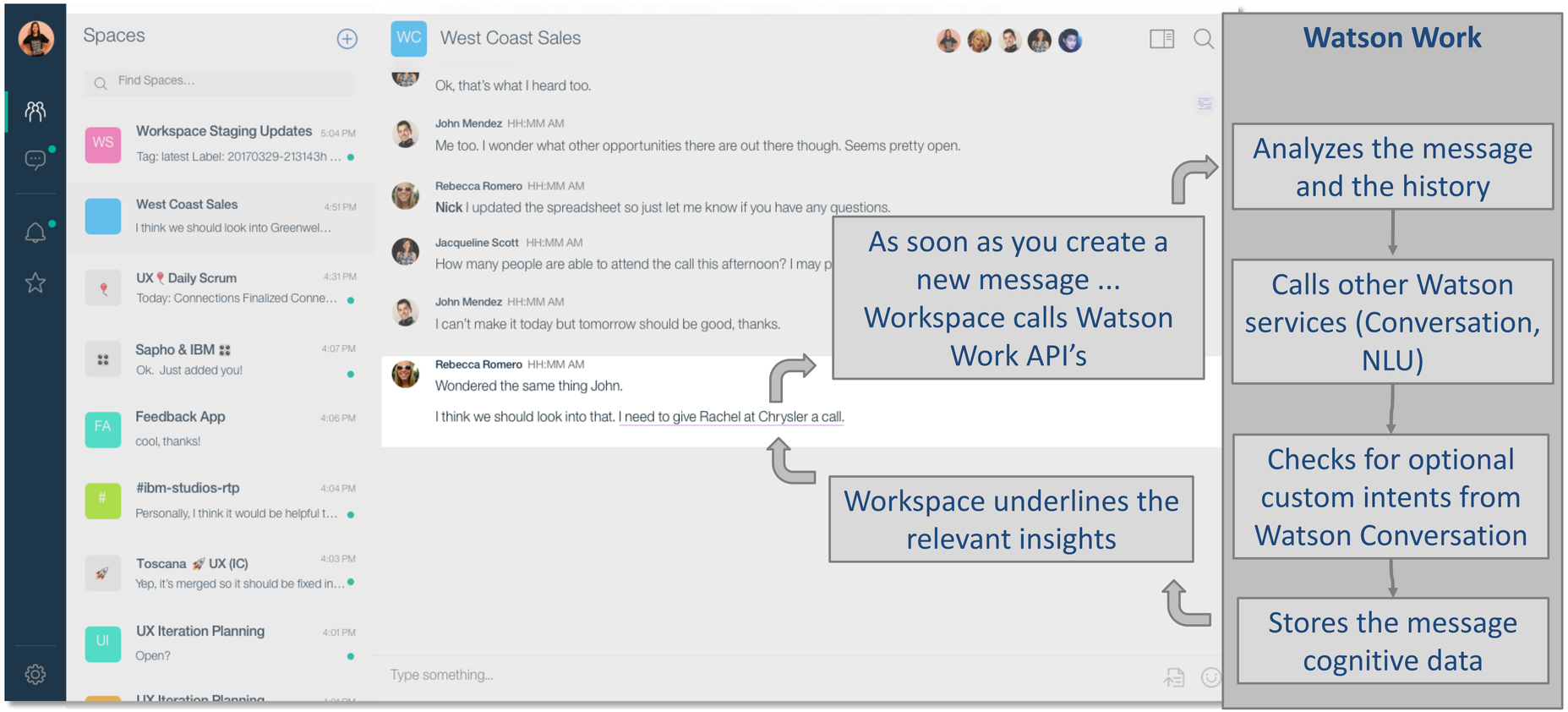
IBM's statements regarding its plans, directions, and intent are subject to change or withdrawal without notice at IBM's sole discretion.

Identifying & taking actions (4/4)



IBM's statements regarding its plans, directions, and intent are subject to change or withdrawal without notice at IBM's sole discretion.

Identifying intents… how does this work ?

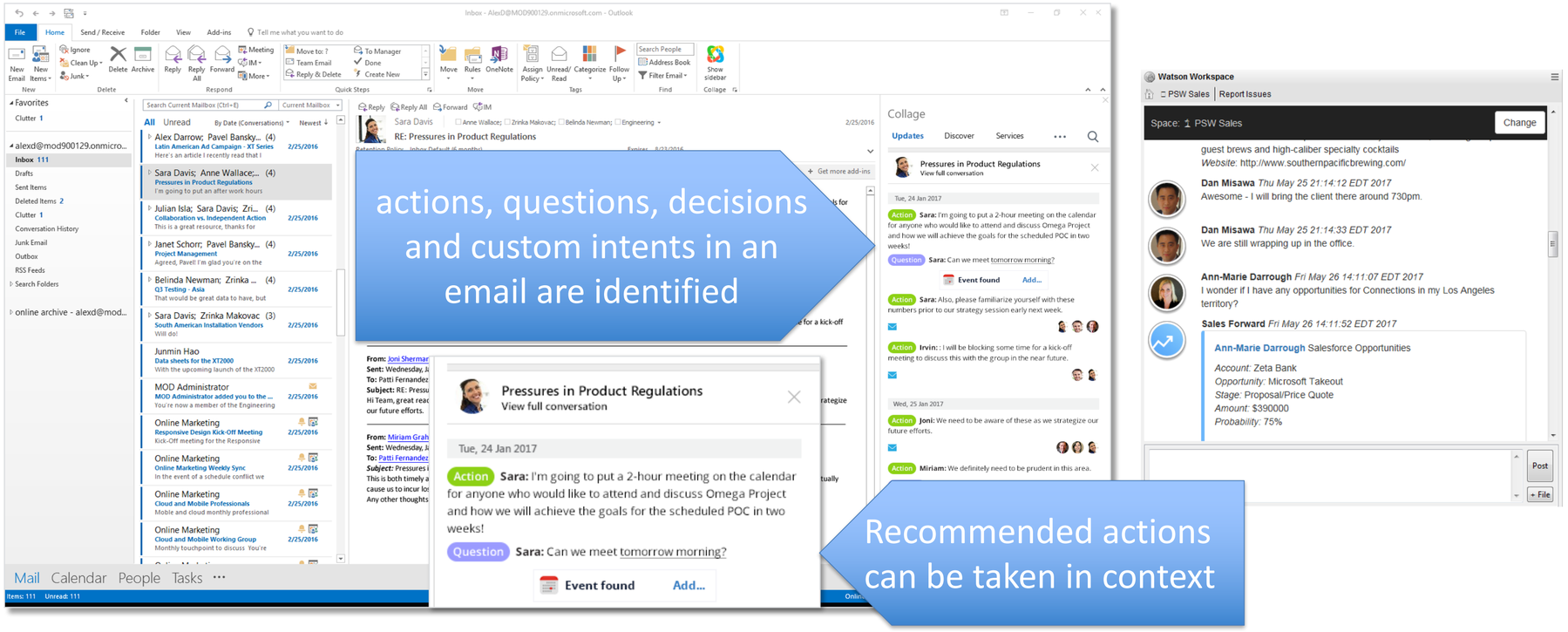


IBM's statements regarding its plans, directions, and intent are subject to change or withdrawal without notice at IBM's sole discretion.

API’s to add cognitive collaboration outside of Workspace

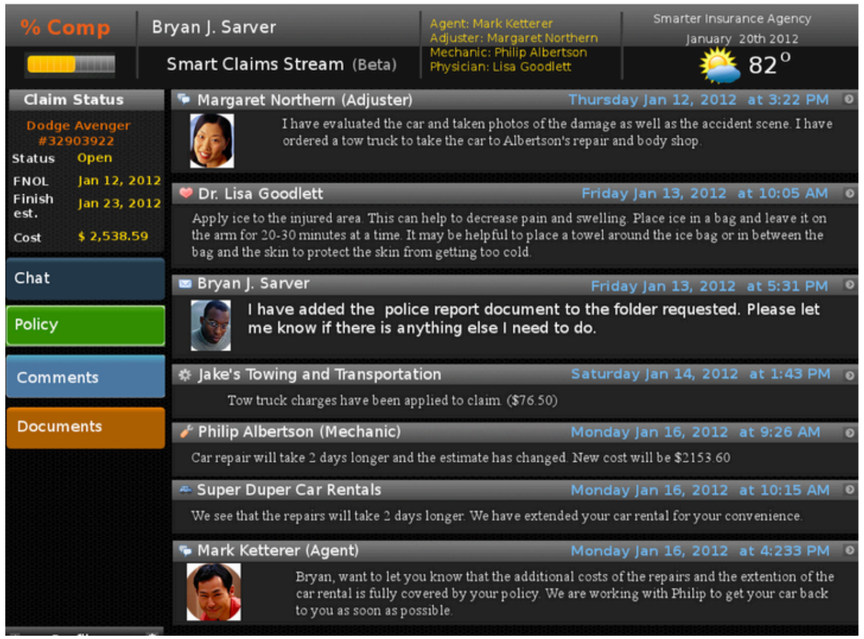
Headless services can be implemented natively or as plug-ins

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



IBM’s statements regarding its plans, directions, and intent are subject to change or withdrawal without notice at IBM’s sole discretion.

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**

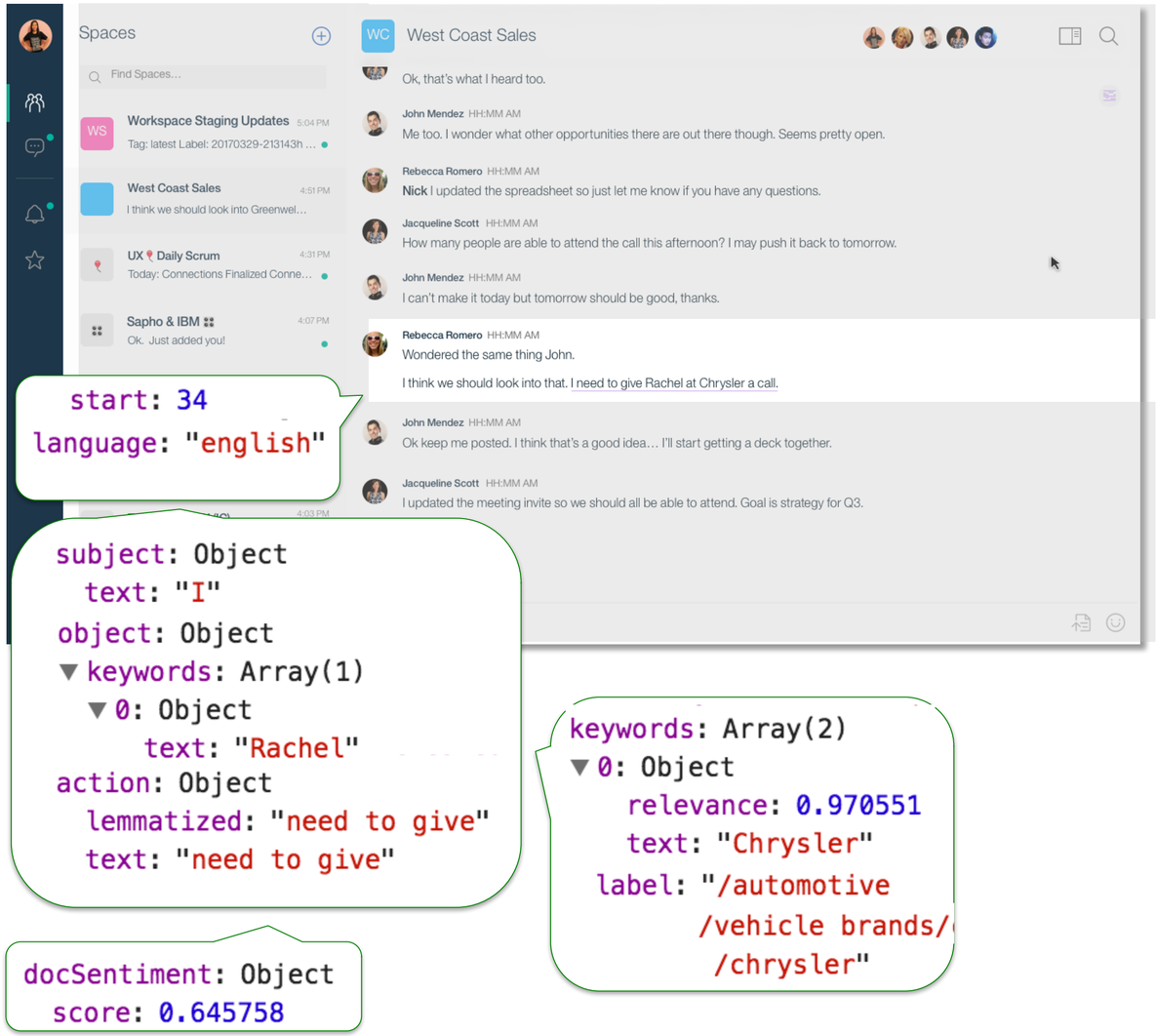
  Automated actions and responses in emails helps customer service expedite requests

IBM's statements regarding its plans, directions, and intent are subject to change or withdrawal without notice at IBM's sole discretion.

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 ?



IBM's statements regarding its plans, directions, and intent are subject to change or withdrawal without notice at IBM's sole discretion.

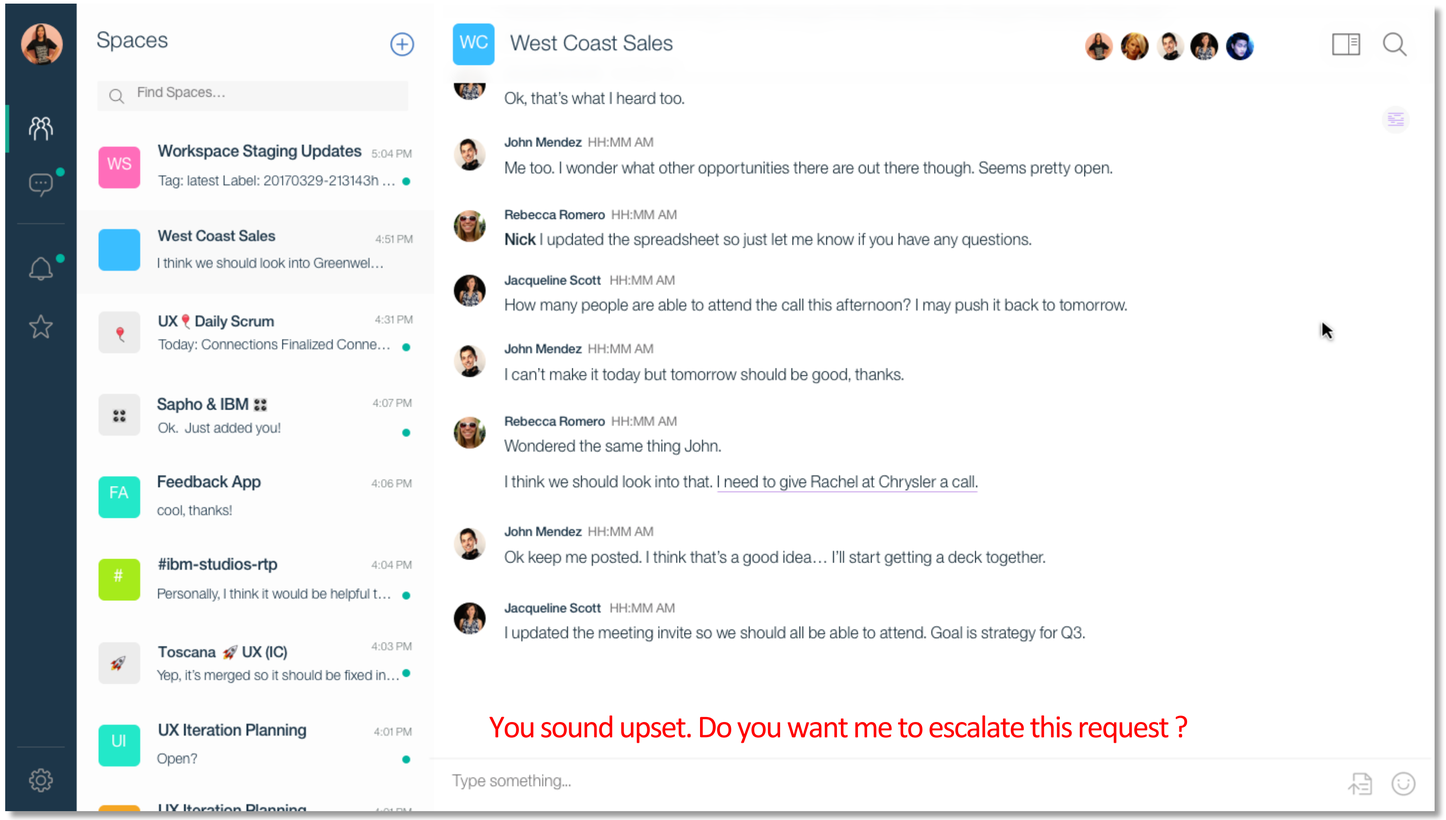
A few ideas for your apps

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



IBM's statements regarding its plans, directions, and intent are subject to change or withdrawal without notice at IBM's sole discretion.

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

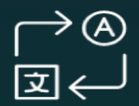
Enable cognitive computing features in your app using IBM Watson's Language, Vision, Speech and Data API's

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**.

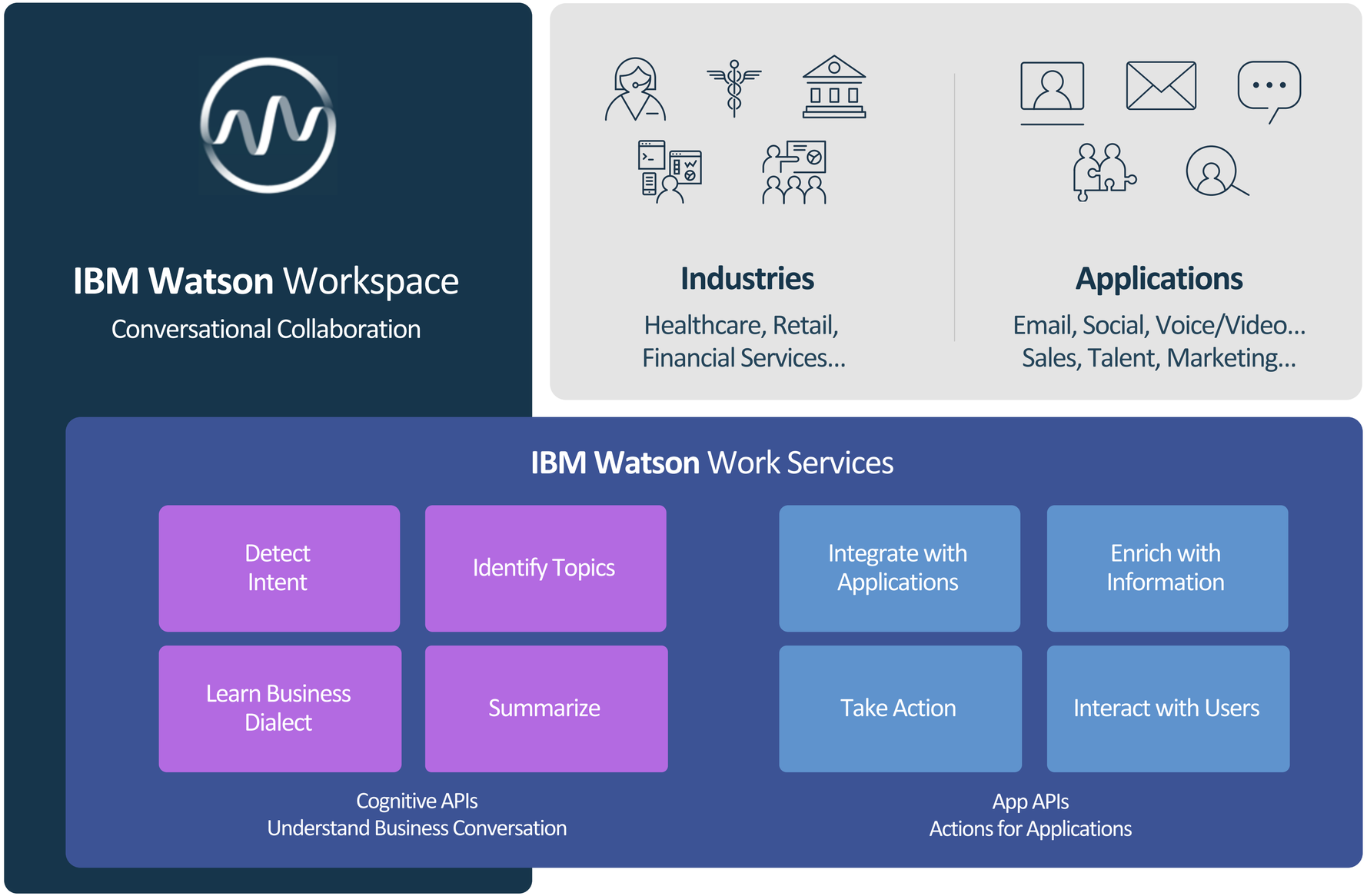
Learn

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

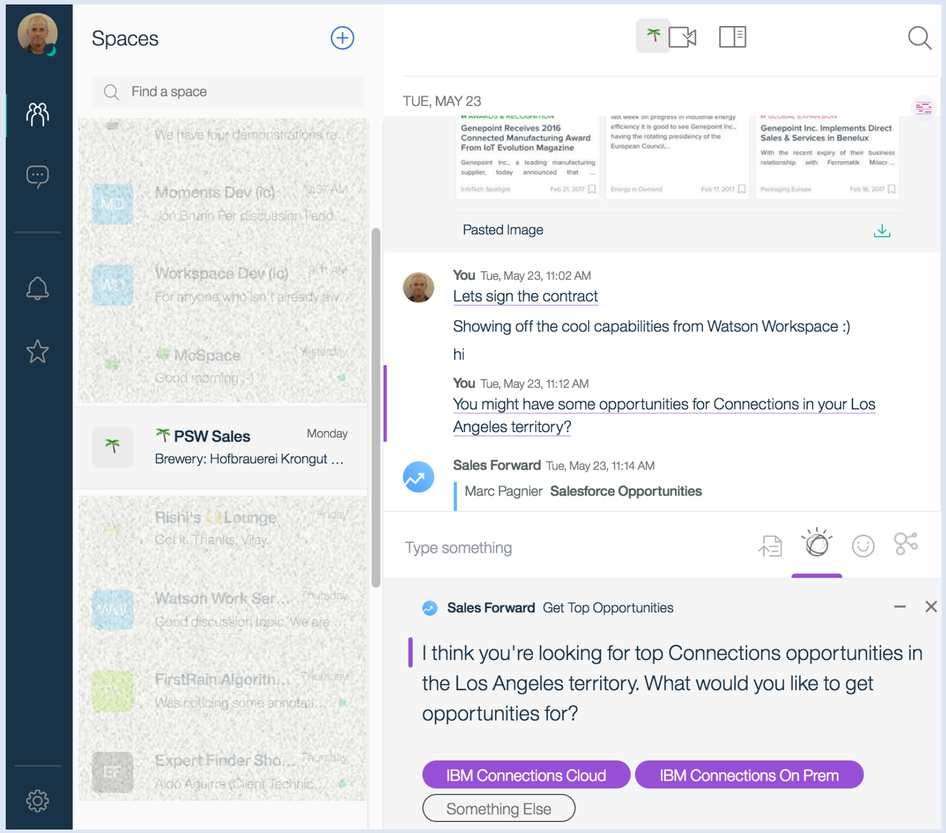
Interact

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

Watson Work Platform Vision

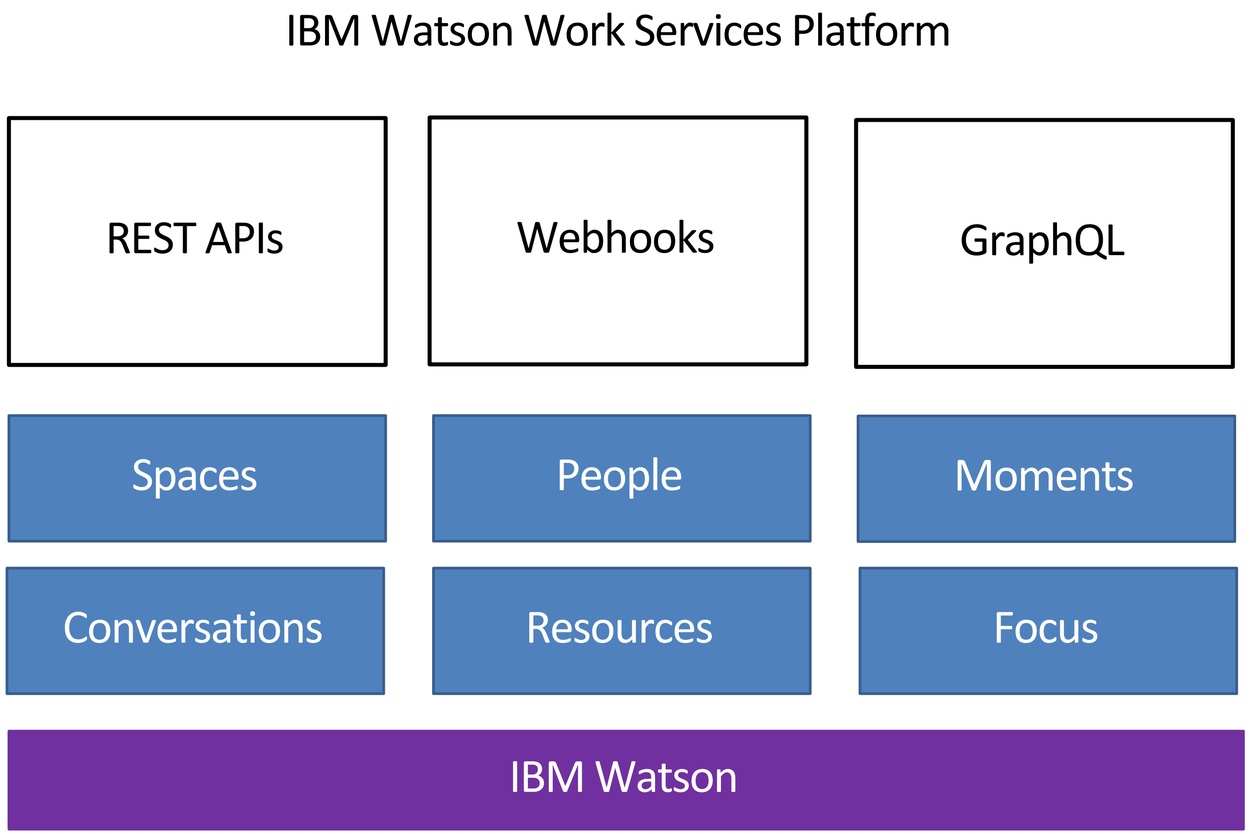


How to use the platform : two options

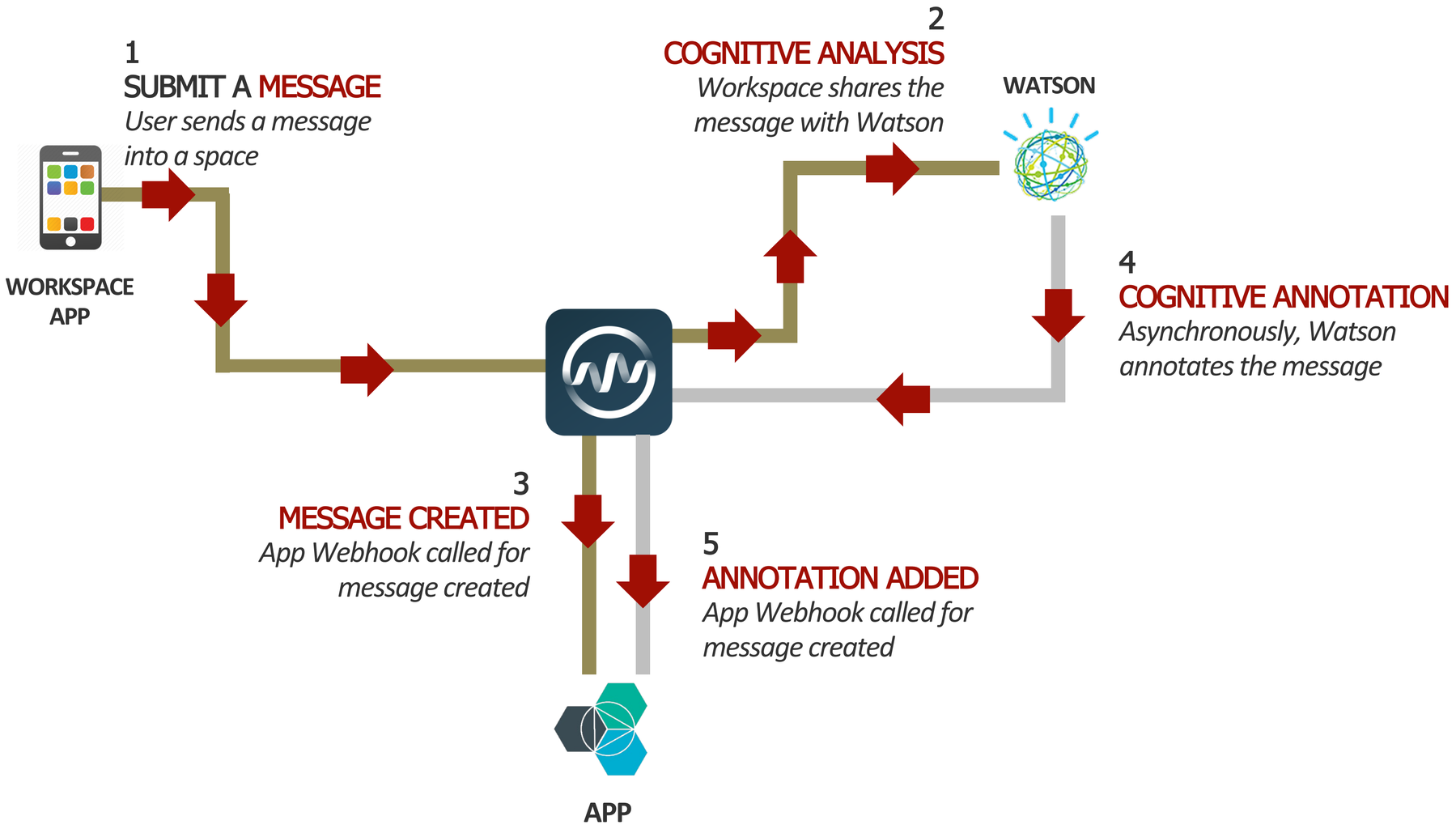
OPTION	Creating Apps to extend Watson Workspace	Services to add cognitive and collaboration to your own apps
EXAMPLE		
OFFERINGS	WATSON WORKSPACE ESSENTIALS (9/26) – per user per month	WATSON WORKSPACE ESSENTIALS (9/26) – per user per month WATSON WORK SERVICES (future) – other usage metrics

What are Watson Work Services?

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



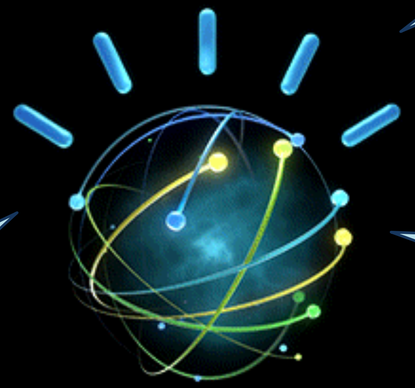
How does Workspace work?



Watson Annotations

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

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



"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

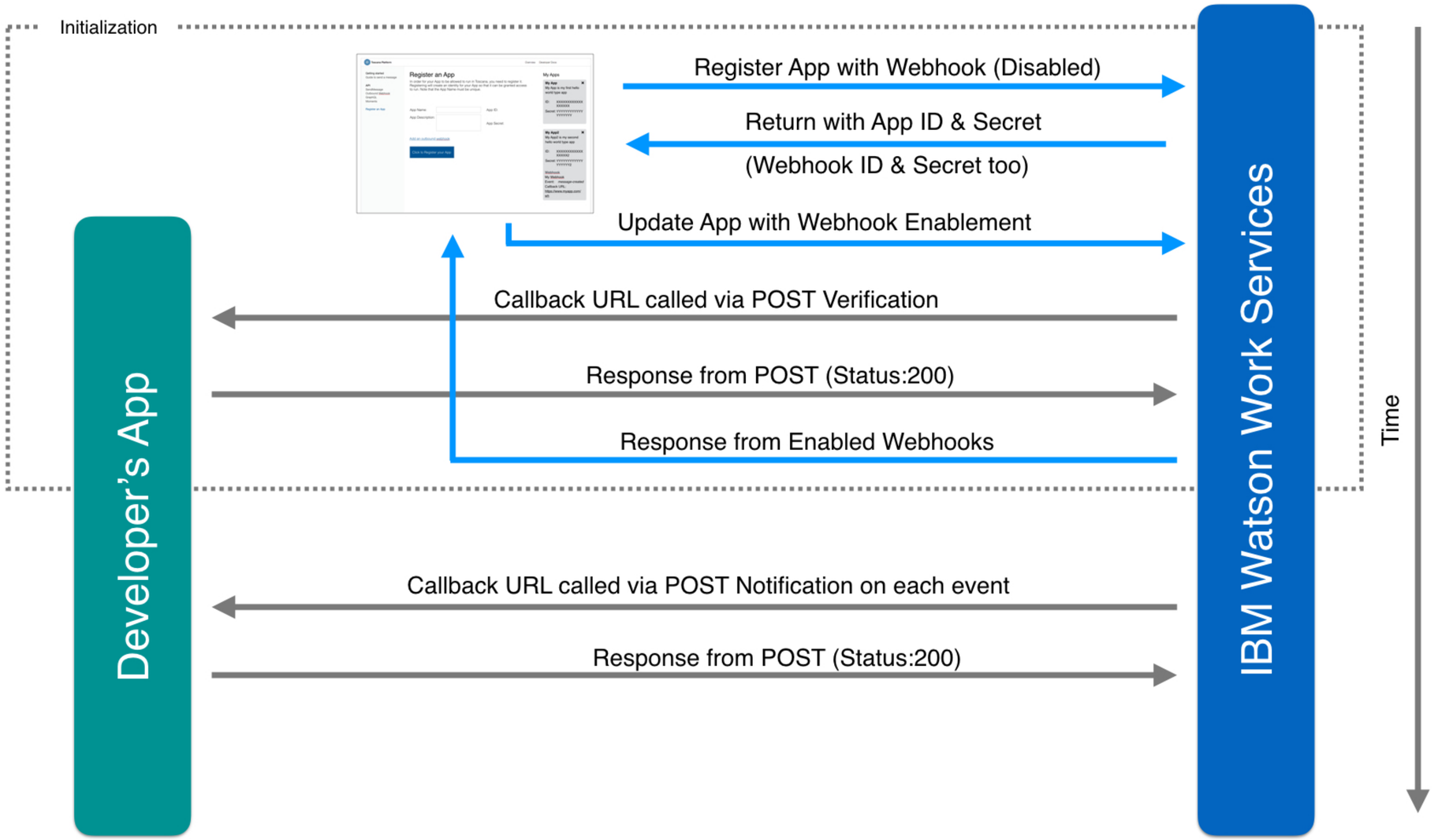
1.via GraphQL mutations

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(spaceId: 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]

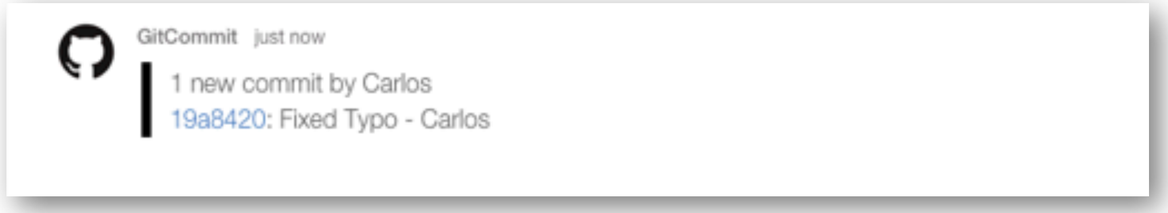
space: Space

createdBy: Person

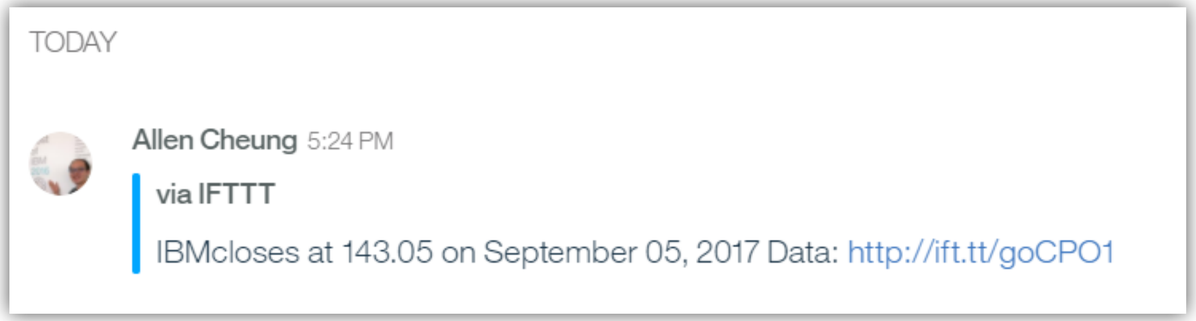
updatedBy: Person

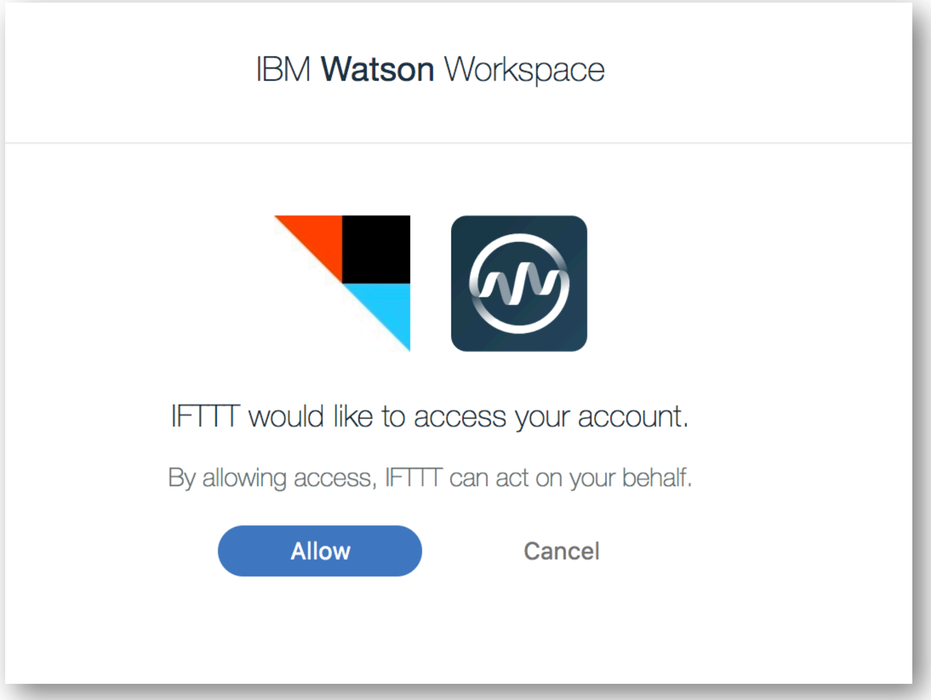
App Identity

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

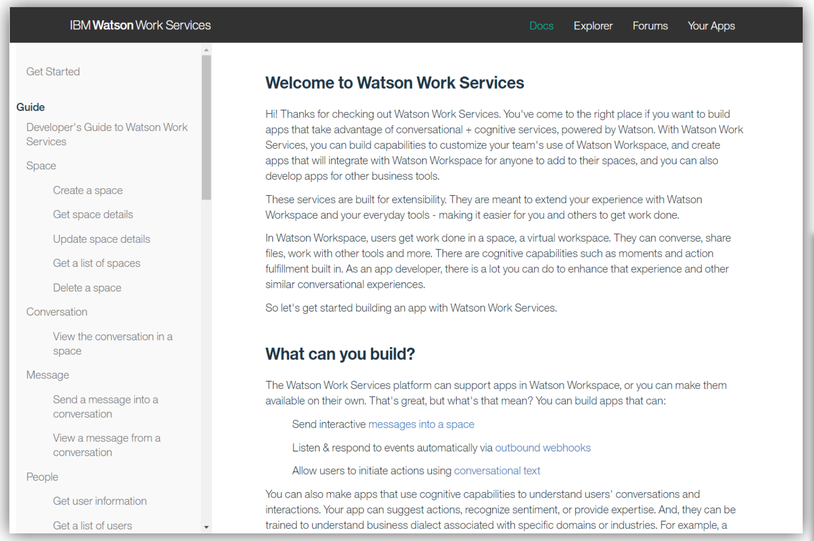


- Create Apps that leverage OAuth2 to authorize as a user.



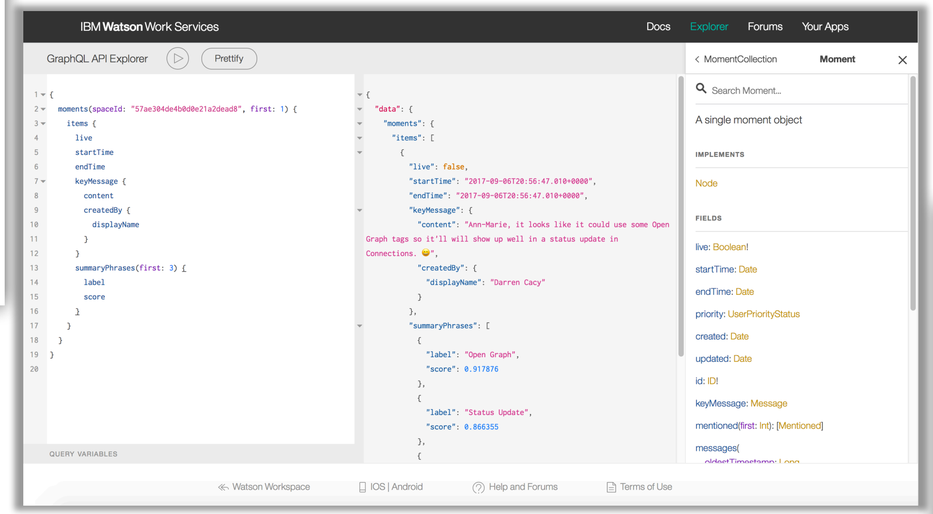


Learning the Programming Model



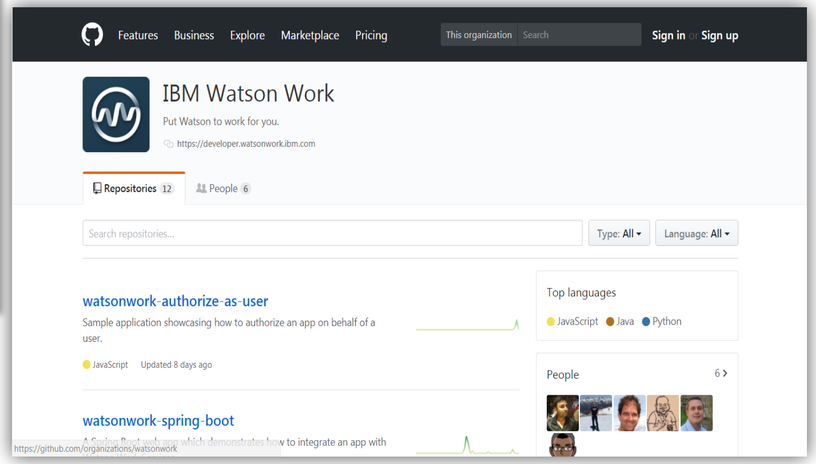
Docs

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



API Explorer

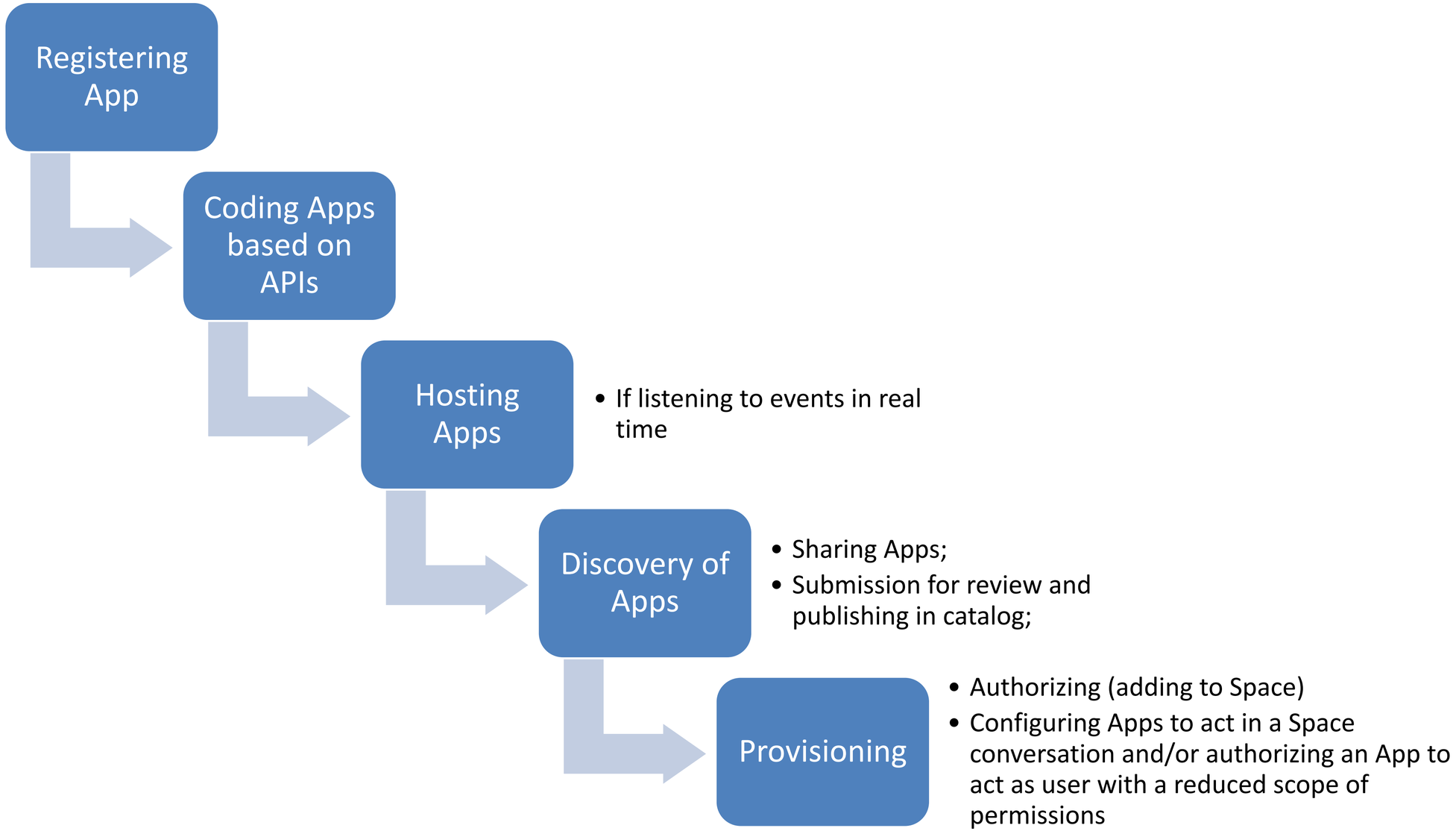
https://developer.watsonwork.ibm.com/tools/graphql



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