Microsoft

Bots + LUIS

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Transforming engagement

Enhance productivity through task automation and through automated workflows

Reach customers anywhere, on any platform or device

Engage with customers and users in a natural way, conversationally and in context

Expose your products and services via messaging platforms, where users are already highly engaged

Improve customer experience and reduce the need for human assistance

Intelligence Experiences

Personal: Integrate data and use it to personalize all the interaction points.

Proactive: Use artificial intelligence to anticipate and enhance service customer needs.

Productive: Enhance productivity through task automation and automated workflows and reduce the need for human assistance.

Natural: Engage with customers and users in a natural way, conversationally and in real-time context.

Dynamic: Continuously measure and evolve experiences for continuous improvement.

Azure Bot Service

Bot Builder SDK

Bot Framework Tools

Bot Framework Service

Channels

Create a bot that can naturally interact with users by easily integrating Cognitive Services.

Use open-source SDK and tools to build, test and publish your bot to Azure.

Deploy your bot to popular channels, wherever your customers interact.

Azure Bot Service

Bot Builder SDK

Bot Framework Tools

Bot Framework Service

Channels

C#

JavaScript

Java (preview)

Python (preview)

Azure Bot Service

Bot Builder SDK

Bot Framework Tools

Bot Framework Service

Channels

Bot Framework Emulator

Azure Bot Service

Bot Builder SDK

Bot Framework Tools

Bot Framework Service

Channels

Azure Bot Service

Bot Builder SDK

Bot Framework Tools
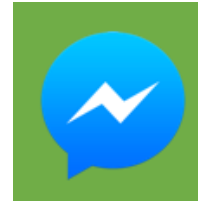
Bot Framework Service

Channels

Web Chat	Twilio	Facebook	Slack	Email
Cortana	GroupMe	Kik	Direct Line	Telegram
SFB	Skype	Bing	Teams	

Project Lifecycle

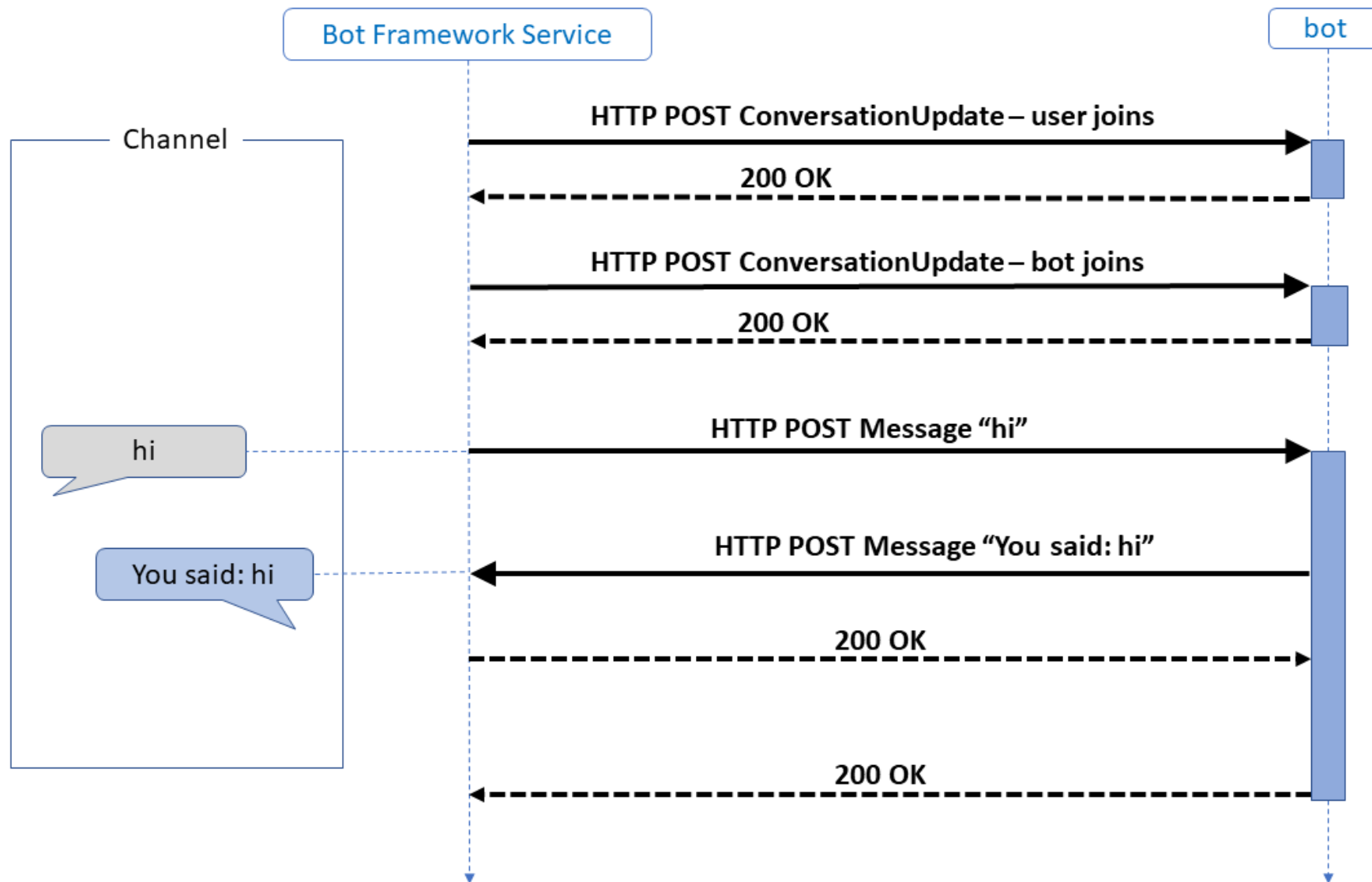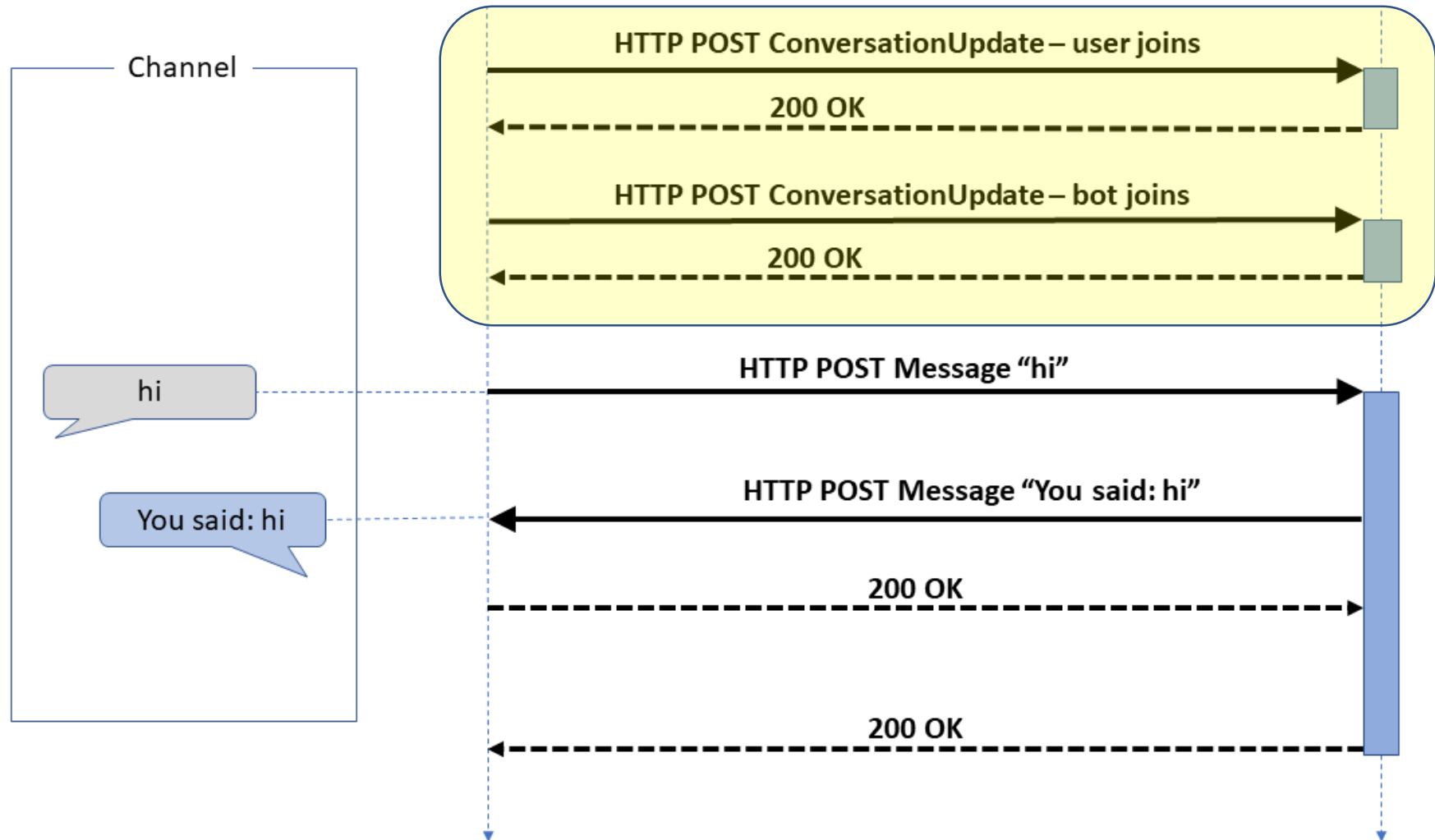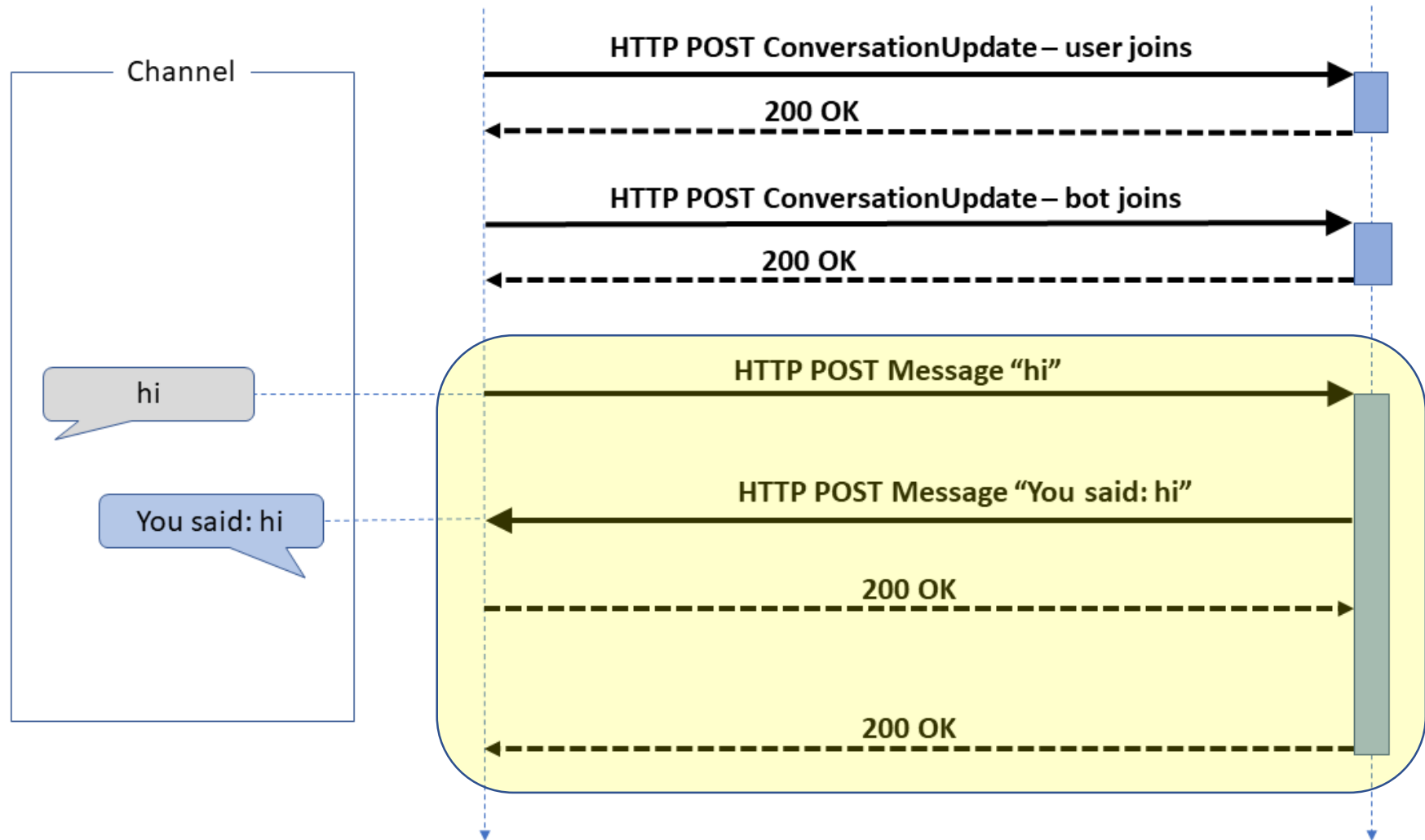| Plan	Build	Test	Publish	Connect	Evaluate
Author Dialogs	Bot Builder SDK	Emulator	DevOps Tools	WebChat	Application Insights
Design Cards	Cognitive Services	Application Insights	Azure	Cortana	
Visualize	Getting Started Templates	Conversation Transcripts	BYO Web Host	Skype, FB	LUIS Suggestions
				+	
				Custom (DirectLine)	
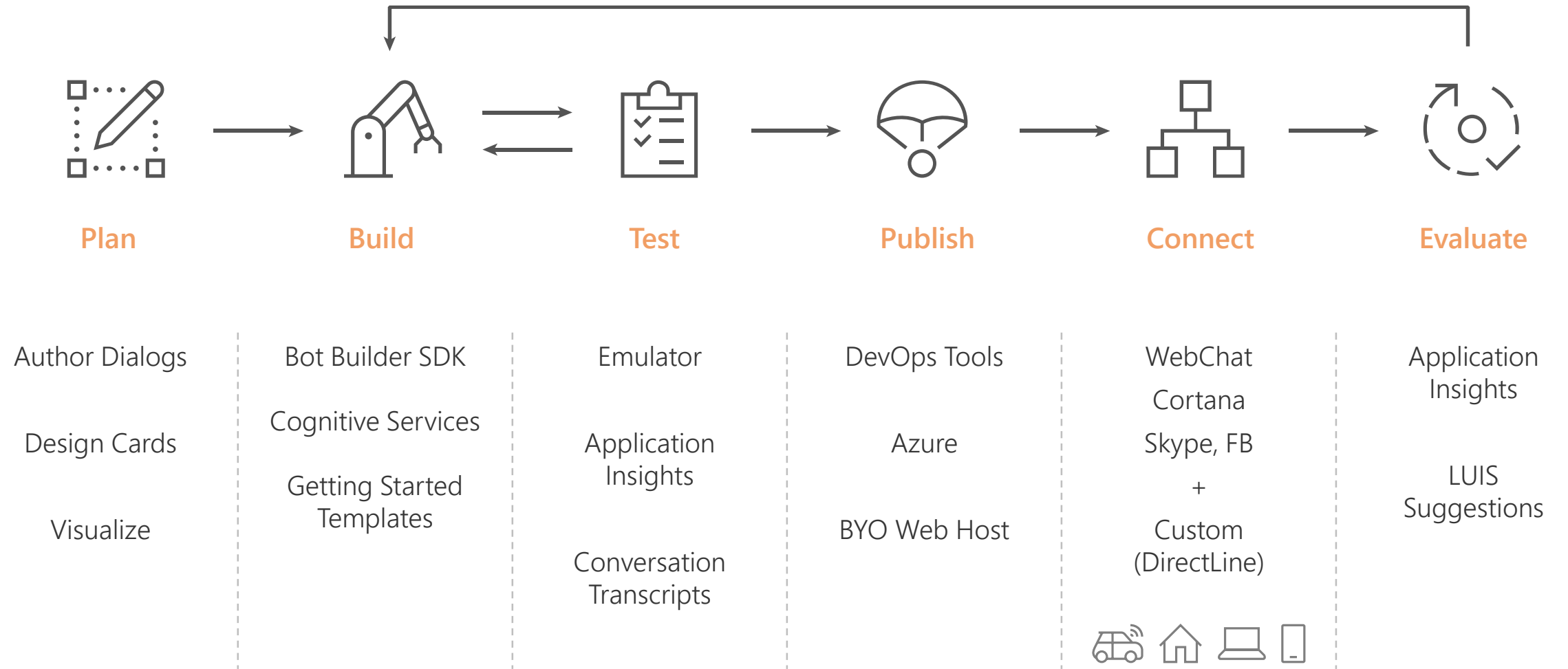
Activities

Activities: Conversation Update

Activities: Message

Turn

Bot adapter

Activity handlers (base handler: turn handler)

Middleware

State

Dialogs

Echo bot project

appsettings.json

Bot logic
      EchoBot.cs (EchoBot: ActivityHandler)

Bot controller
      BotController.cs

Event	Handler	Description
Any activity type received	OnTurnAsync	Calls one of the other handlers, based on the type of activity received.
Message activity received	OnMessageActivityAsync	Override this to handle a Message activity.
Conversation update activity received	OnConversationUpdateActivityAsync	On a ConversationUpdate activity, calls a handler if members other than the bot joined or left the conversation.
Non-bot members joined the conversation	OnMembersAddedAsync	Override this to handle members joining a conversation.
Non-bot members left the conversation	OnMembersRemovedAsync	Override this to handle members leaving a conversation.
Event activity received	OnEventActivityAsync	On an Event activity, calls a handler specific to the event type.
Token-response event activity received	OnTokenResponseEventAsync	Override this to handle token response events.
Non-token-response event activity received	OnEventAsync	Override this to handle other types of events.
Other activity type received	OnUnrecognizedActivityTypeAsync	Override this to handle any activity type otherwise unhandled.

Microsoft Cognitive Services

Give your solutions a human side

Vision
Computer Vision | Custom Vision | Face | Emotion | Video | Video Indexer | Content Moderator

Speech
Bing Speech | Custom Speech | Speaker Recognition

Language
Bing Spell Check | Translator (Speech) | Translator (Text) | LUIS | Text Analytics | Linguistic Analysis | Web Language Model

Knowledge
Academic Knowledge | Entity Linking | Custom Decision | Knowledge Exploration | QnA Maker | Recommendations*

Search
Bing Auto Suggest | Bing Image Search | Bing News Search | Bing Video Search | Bing Web Search | Bing Custom Search

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LUIS

Utterance	Intent	Entity	Data
Buy **3** tickets to **New York**	Book Flight	Number	3
		Location	New York
Buy a ticket from **New York** to **London** on **March 5**	Book Flight	Location	London
		Location	New York
		Datetime	March 5, 2018

LUIS

Utterance	Intent	Entity	Data
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LUIS

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LUIS

Utterance	Intent	Entity	Data
Buy **3** tickets to **New York**	Book Flight	Number	3
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Buy a ticket from **New York** to **London** on **March 5**	Book Flight	Location	London
		Location	New York
		Datetime	March 5, 2018

LUIS

Utterance	Intent	Entity	Data
Buy **3** tickets to **New York**	Book Flight	Number	3
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Buy a ticket from **London** to **New York** on **March 5**	Book Flight	Location	London
		Location	New York
		Datetime	March 5, 2018

LUIS

Utterance	Intent	Entity	Role	Data
Buy **3** tickets to **New York**	Book Flight	Number		3
		Location	Destination	New York
Buy a ticket from **London** to **New York** on **March 5**	Book Flight	Location	Origin	London
		Location	Destination	New York
		Datetime		March 5, 2018

Entity types

Prebuilt	Number, ordinal, temperature, dimension, money, age, percentage, email, URL, phone number, geography, person name, key phrase
Simple	Simple concepts (e.g. City)
Hierarchical	Represent a category or a type that has subtypes (e.g. TravelClass entity consisting of First, Business, and Economy child entities)
Composite	Made up of part entities that form the whole (e.g. TicketsOrder entity consisting of order Number, PassengerCategory and TravelClass child entities)

Entity types

Regex	Regular expression (e.g. kb[0-9]{6,})
List	Fixed list of values, where each value is itself a list of synonyms or other forms the value may take (e.g. entity PacificStates including values Washington/WA, Oregon/OR, California/CAL)
Pattern.any	Variable-length placeholder used only in a pattern's template utterance to mark where the entity begins and ends

LUIS

Buy 3 tickets to New York →

```
{
  "query": "buy 3 tickets to new york",
  "topScoringIntent": {
    "intent": "BookFlight",
    "score": 0.914446533
  },
  "intents": [
    {
      "intent": "BookFlight",
      "score": 0.914446533
    },
    {
      "intent": "None",
      "score": 0.06879972
    },
    {
      "intent": "BookAppointment",
      "score": 0.006237495
    }
  ],
```

LUIS

Buy 3 tickets to New York

→

```
"entities": [
  {
    "entity": "new york",
    "type": "builtin.geographyV2.city",
    "startIndex": 17,
    "endIndex": 24
  },
  {
    "entity": "3",
    "type": "builtin.number",
    "startIndex": 4,
    "endIndex": 4,
    "resolution": {
      "subtype": "integer",
      "value": "3"
    }
  }
]
}
```

Bot design

How smart the bot is

How much language understanding the bot supports

Voice

Bot design

Solve user's problem with minimum steps

Solve the user's problem faster / easier than the alternatives

Runs on user devices

Intuitive for the user

Conversation

Starting the conversation

Conversation

Starting the conversation

Prepare for interruptions

Conversation

the stubborn bot

Starting the conversation

Prepare for interruptions

Navigation

Bot: What city are you travelling to?

User: cancel

Bot: I'm sorry, I didn't understand that. What city are you travelling to?

User: help

Bot: I'm sorry, I didn't understand that. What city are you travelling to?

User: STOP

Bot: I'm sorry, I didn't understand that. What city are you travelling to?

User: Please stop, cancel, help, abort, do anything!

Conversation

the clueless bot

Starting the conversation

Prepare for interruptions

Navigation

Conversation

the misterious bot

Starting the conversation

How can I help you today?

Which movies are showing this week?

Prepare for interruptions

Hello?

Which movies are showing this week?

Navigation

Hey bot, are you there?

Conversation

the obvious bot

Starting the conversation

Prepare for interruptions

Navigation

You just spent $10 on your credit card!

Yup, I know...

It looks like you are driving to work!

Really...

It looks like you arrived at work! Have a nice day!

Jeez, get a life, bot...

Conversation

the bot that can't forget

Starting the conversation

Prepare for interruptions

Navigation

I want to travel to Italy

Please confirm: Are you ok with me charging $200 for your trip to Las Vegas?

Which Trip to Las Vegas???

Your trip to Las Vegas you wanted me to book for June the 5th
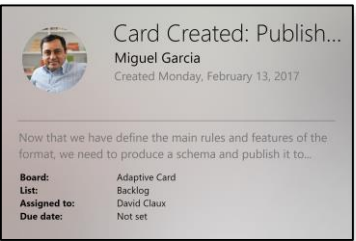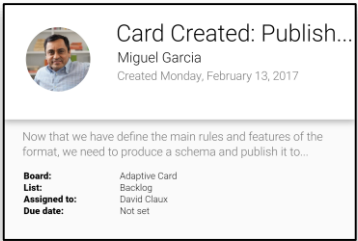
OMG that was 3 months ago, bot…
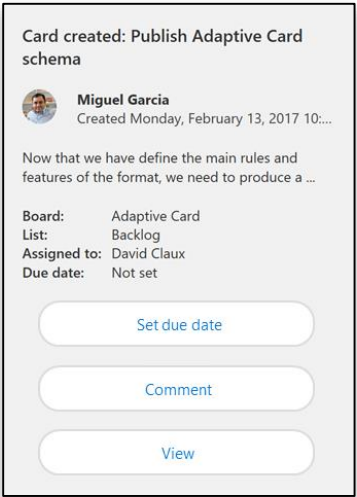
UI

AdaptativeCard

Cards
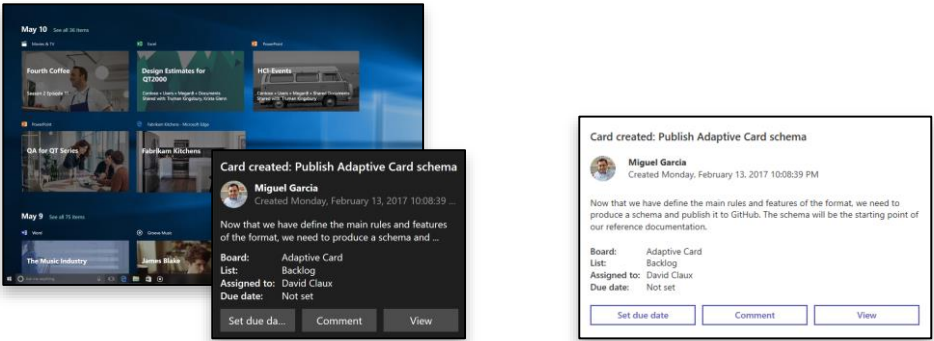
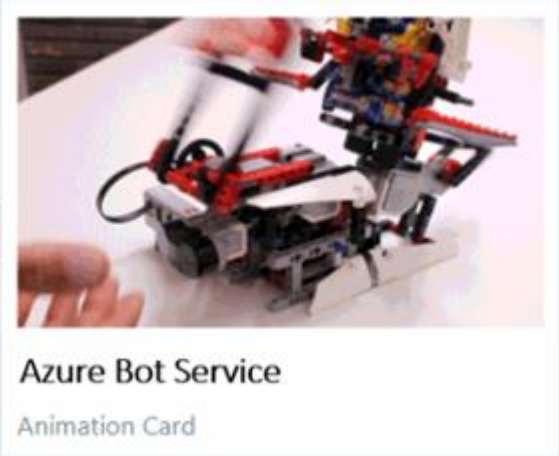Windows notification   Microsoft Teams

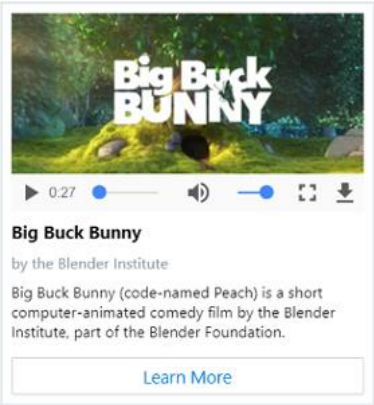Skype   Android   iOS

UI

Cards

AnimationCard

Azure Bot Service

Animation Card

VideoCard

▶ 0:27 ●────── ◀)) ──●── ⌜⌟ ⬇

Big Buck Bunny

by the Blender Institute

Big Buck Bunny (code-named Peach) is a short computer-animated comedy film by the Blender Institute, part of the Blender Foundation.

Learn More

AudioCard

▶ 0:00 / 0:30 ●──── ◀)) ──●── ⬇

I am your father

Star Wars: Episode V - The Empire Strikes Back

The Empire Strikes Back (also known as Star Wars: Episode V – The Empire Strikes Back) is a 1980 American epic space opera film directed by Irvin Kershner. Leigh Brackett and Lawrence Kasdan wrote the screenplay, with George Lucas writing the film's story and serving as executive producer.

Read more

UI

Cards

HeroCard

Music / Tame Impala (Recommended)
7:40 pm Sep 4th AT Memorial Stadium

Purchase Tickets

ThumbnailCard

Bot Services Thumbnail

Your bots — wherever your users are talking

Build and connect intelligent bots to interact with your users naturally wherever they are, from text/sms to Skype, Slack, Office 365 mail and other popular services.

Get Started

ReceiptCard

John Doe

Order Number	1234
Payment Method	VISA 555...
Data Transfer	$38.25
App Service	$45.20
Tax	$7.50
Total	**$90.95**

More Information

SignInCard

Bot Services Sign-in Card

Sign-in

UI

CardCarousel

Cards

Good afternoon! Please take a look at the great scuba schools nearby.

Fabrikam	Margie's Trav
4.1 stars	4.4 stars
13 miles away	**42 miles away**
217 W Pine St.	1602 E Avenue Rd.
Seattle, WA 98126	Gig Harbor, WA 98335
This one	This one

SuggestedActions

Hello stranger, what airline would you like to fly with?

Today

Iberia   Delta   Air Europa

UI

Cards

Text and language

When requesting a flight, please specify the origin, destination and date. Try again.

Today

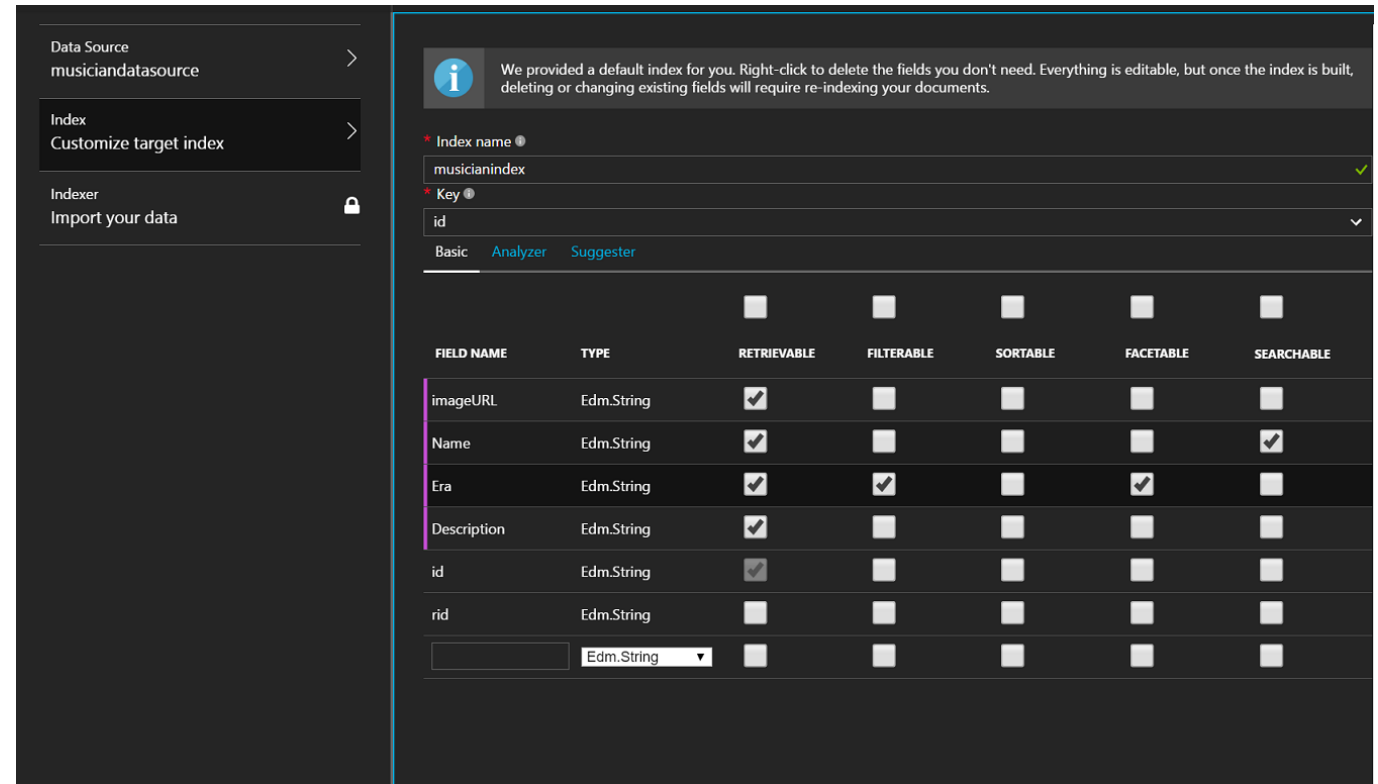i would like to book a flight for tomorrow from madrid to paris
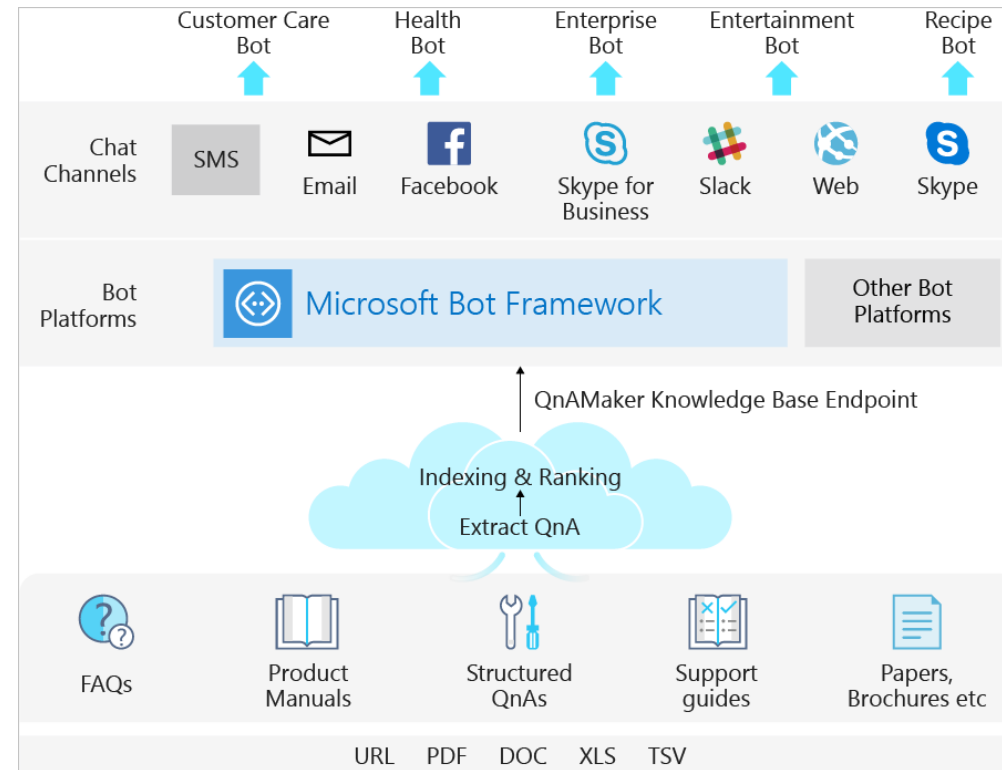
Today

UI

Cards

Text and language

Speech

Scenarios

Knowledge Base

Scenarios

Knowledge Base

Scenarios

Knowledge Base

Triage

Handoff to human

Escalation

Supervision

Scenarios

Knowledge Base

Handoff to human

Bots in apps

Native mobile app

Web-based mobile app

IoT app

Scenarios

Knowledge Base

Handoff to human

Bots in apps

Bots in websites

Skype web control

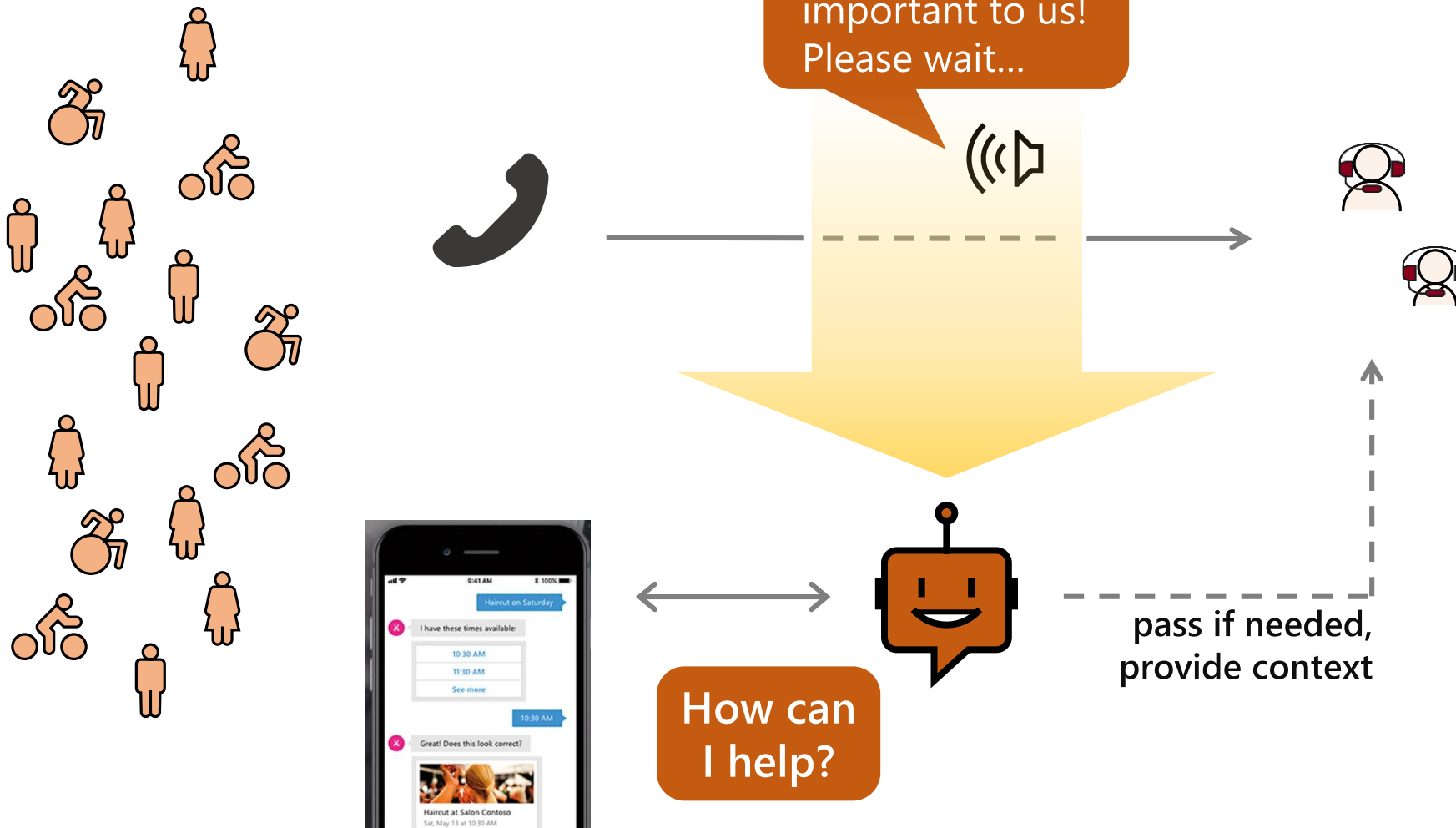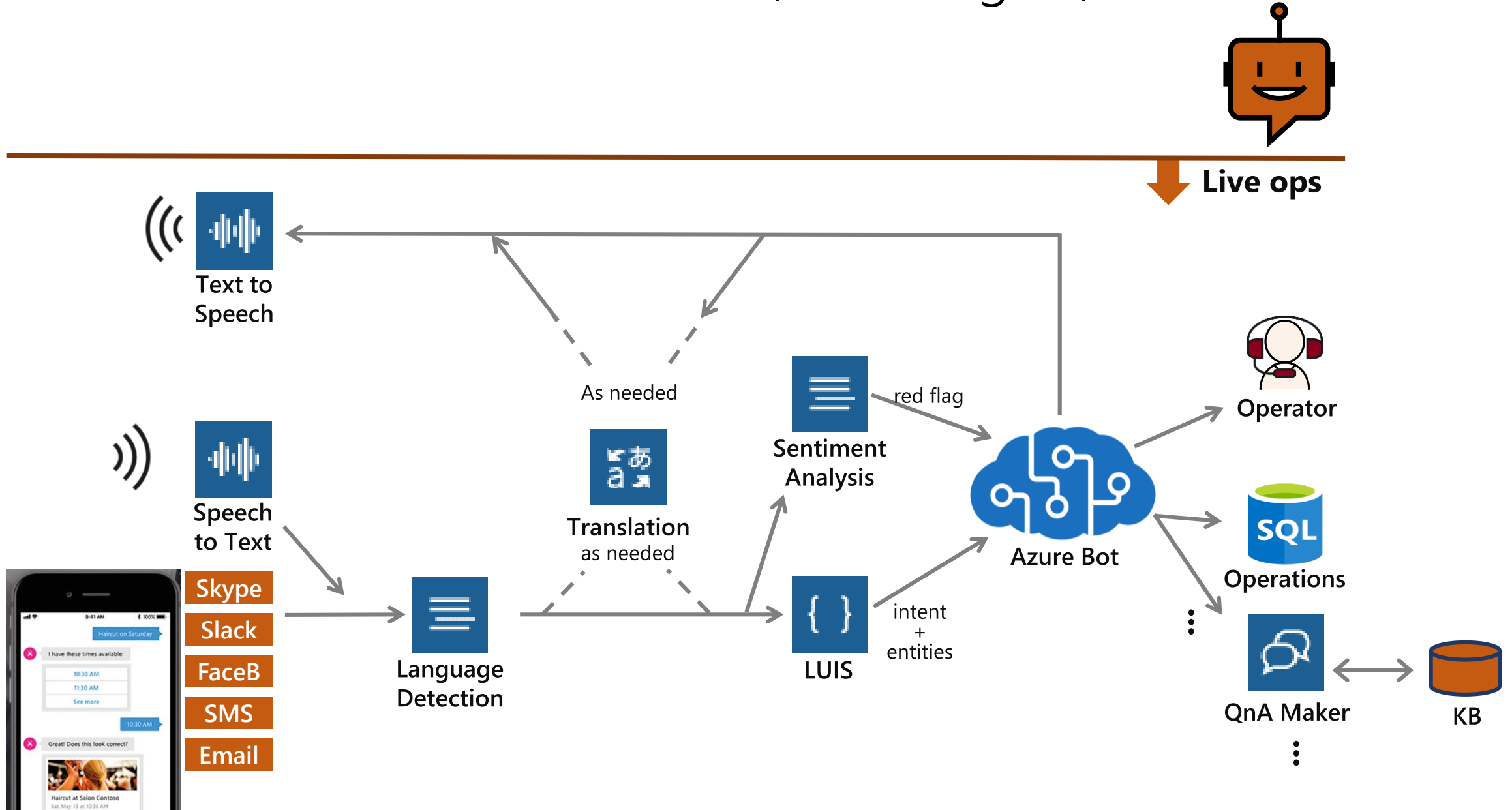Open source web control

Customer care: voice and text, multilingual, sentiment-aware

Customer understanding

Key phrase extraction

Sentiment Analysis

Social Media Reviews Voice of Customer
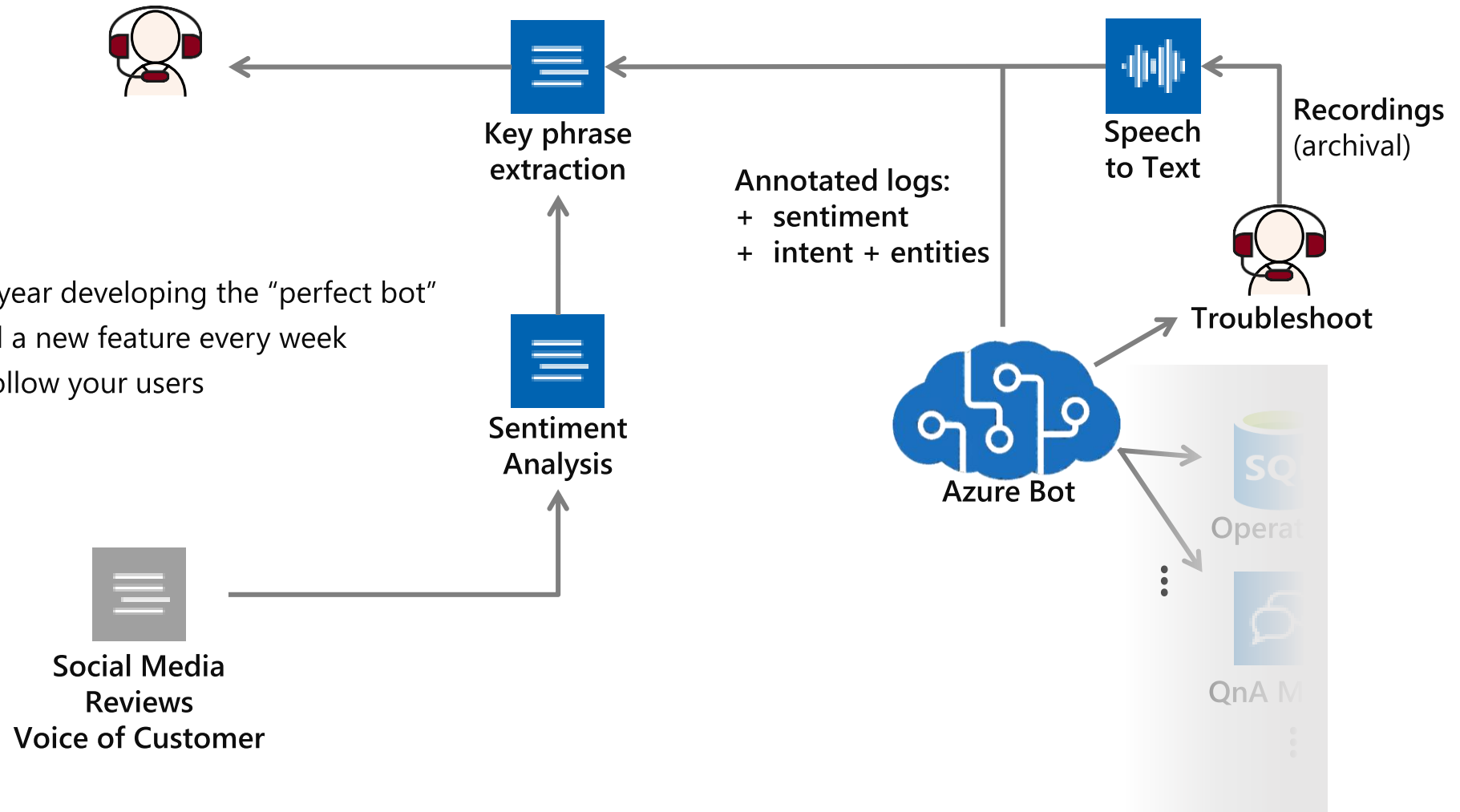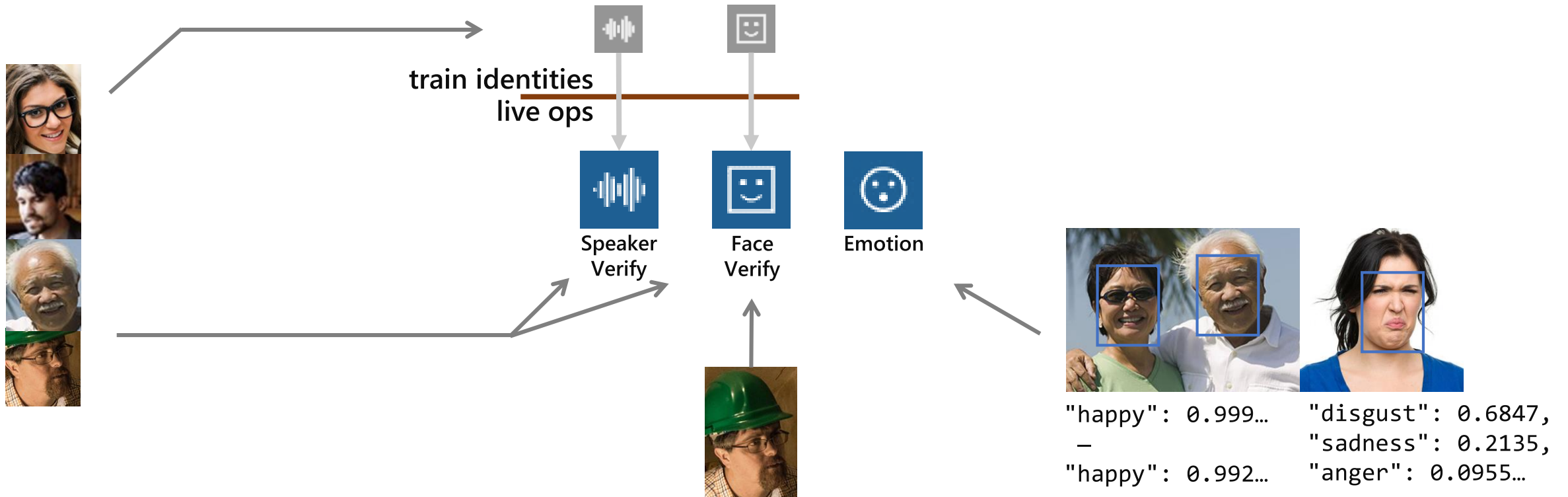
Evolve:
- Don't spend one year developing the "perfect bot"
- Launch small, add a new feature every week
- Which feature? Follow your users

Annotated logs:
+ sentiment
+ intent + entities

Speech to Text

Recordings (archival)

Troubleshoot

Azure Bot

SQ
Operat
QnA M

Identify customers and staff

train identities

live ops

Speaker Verify

Face Verify

Emotion

"happy": 0.999…
—
"happy": 0.992…

"disgust": 0.6847,
"sadness": 0.2135,
"anger": 0.0955…

Practical when:

· Passwords cumbersome

· Customer fingerprints not available

· Staff using gloves, carrying tools etc.

Extra security:

· Nonintrusive extra verification before sensitive operations

Assess and react:

· Emotion at point-of-help & checkout

· Reinforce happiness with rewards, or instant direct to customer care

Resources

- Bot design guides
https://docs.microsoft.com/en-us/azure/bot-service/bot-service-design-principles?view=azure-bot-service-4.0

- Emulator:
https://docs.microsoft.com/en-us/azure/bot-service/bot-service-debug-emulator?view=azure-bot-service-3.0
https://github.com/Microsoft/BotFramework-Emulator

- Bot analytics:
https://docs.microsoft.com/en-us/azure/bot-service/bot-service-manage-analytics?view=azure-bot-service-3.0

- Bot channels:
https://docs.microsoft.com/en-us/azure/bot-service/bot-service-manage-channels?view=azure-bot-service-3.0

- Bot builder simples:
https://github.com/Microsoft/botbuilder-samples

- Bot Builder SDK v4 walkthrough:
https://blog.botframework.com/2018/05/07/build-a-microsoft-bot-framework-bot-with-the-bot-builder-sdk-v4/

Resources

- Bot Builder API
https://docs.microsoft.com/en-us/dotnet/api/microsoft.bot.builder?view=botbuilder-dotnet-stable

- Bot main concepts
https://docs.microsoft.com/en-us/azure/bot-service/bot-builder-basics?view=azure-bot-service-4.0&tabs=csharp

- Middleware
https://docs.microsoft.com/en-us/azure/bot-service/bot-builder-concept-middleware?view=azure-bot-service-4.0

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- Middleware
https://docs.microsoft.com/en-us/azure/bot-service/bot-builder-concept-middleware?view=azure-bot-service-4.0

Demo time

Dankie　Faleminderit　**Shukran**　Chnorakaloutioun　Hvala　Blagodaria

Děkuji　**Tak**　Dank u　Tänan　Kiitos　**Merci**　Danke　Ευχαριστώ　A dank

Mahalo　תודה.　**Dhanyavād**　Köszönöm　Takk　Terima kasih　**Grazie**　Grazzi

Thank you!

✉ jmoreiro@microsoft.com

🐦 @julietsvq

in julietmoreiro

감사합니다　Paldies　Choukrane　Gracias　Ačiū　**Благодарам**　ありがとうございました

谢谢　Баярлалаа　**Dziękuję**　Obrigado　Mulţumesc　**Спасибо**　Ngiyabonga

Ďakujem　Tack　Nandri　Kop khun　**Teşekkür ederim**　Дякую　Хвала　Diolch