Agenda

- Digital Transformation
- What are Bots?
- Different Types of Bots

Digital Transformation

"Digital Transformation is the methodology in which organizations transform, create new business models and culture with digital technologies."

Ray Wang, Constellation Research

1990s: **Internet**

- Search
- User "visits" websites

The future: **Conversations**

- Natural language between people and technology
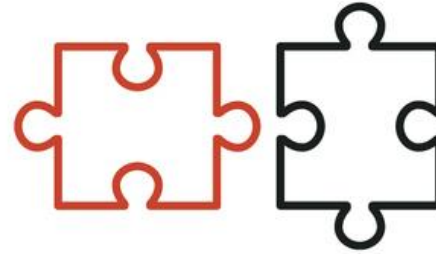- Conversational canvas
- Bots and agents

1980s: **PC**

- Desktop

2000s: **Mobile**

- Social
- User download apps from App Stores

Digital Transformation - IT Enablement

Area of focus

Data Center

Fixed Costs

Fixed Infrastructure

Build for Peak
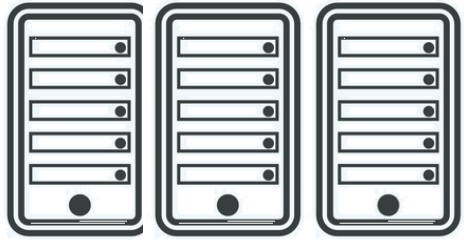
Zero Data Centre

Metered

Elastic

Automation

Leveraging Platforms

Time

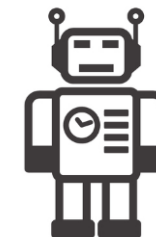Speed

Value

Automating Insight

AI Artificial Intelligence

Machine Learning

Bots

Bots

Reduce barriers and empower users through conversational apps.
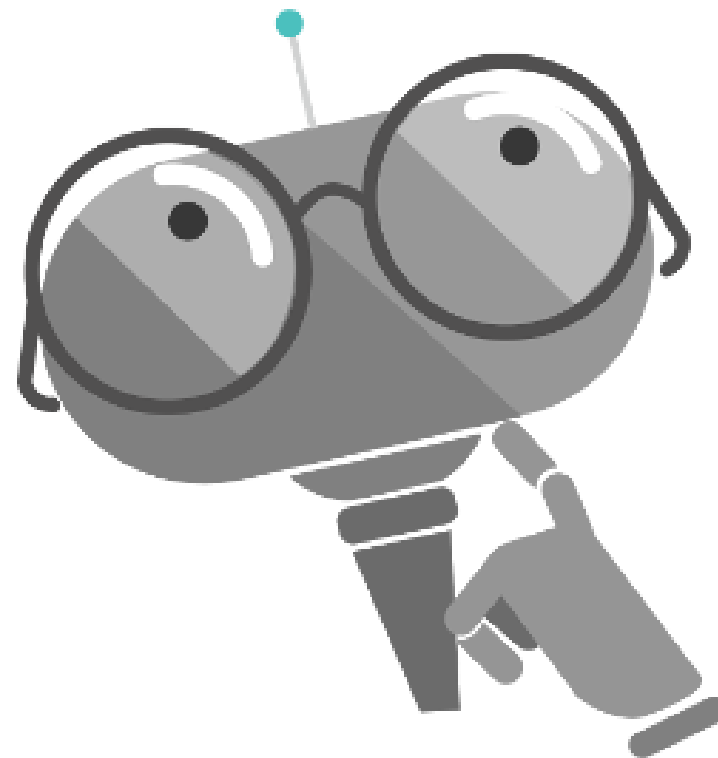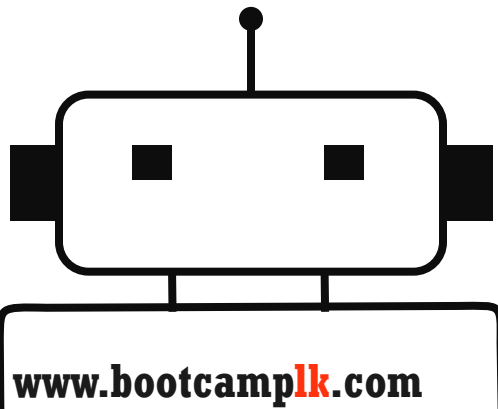
Rise of the Cognitive Assistant

Assistants are being embedded everywhere; are increasing ability to solve problems.

As computing advances, so will Virtual Assistant ability to help in task completion.

Virtual Assistants ability to be "smart", and to understand intent, tone, and context.

Market demand for meaningful, stateful and goal oriented conversations.

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What is a Bot ?

channels

Your Bot – A web app

Humans

Cognitive APIs

Any APIs

MS Bot Connector - Routes Messages, Manages State, Storage etc.

	Facebook Messenger
	Skype
	Web Chat
	Direct Line
	Email
	GroupMe
kik·	Kik
	Slack
	Telegram
	Twilio (SMS)

Your bot code goes here

Bot web service

Bot Builder SDK

Your bot code

Bot Builder SDK

API, SDK calls

Other services, APIs, Databases, Azure Machine Learning, Azure Search, etc...

Bot Connector Service

Message input <> output State Management

+ Microsoft Cognitive Services

| Natural Language | Translation | Vision/Face | Emotion |
| Speech | Entity Extraction | Search | Knowledge API |

Conversation Canvas/Channels

Web Chat
Email
Facebook
GroupMe
Kik
Skype
Slack
Telegram
Twilio (SMS)
Direct Line...

Connectors and Benefits

- Connector to Platform Channels

    One Bot : Many Channels and endpoints

- Why restrict yourself to one platform?

    Hit them all

- Half the battle is getting users to download your app.

    They already have these installed

Channels
- Email
- GroupMe
- Skype
- Slack
- SMS
- Telegram
- Web (chat control)
- additional channels

Your Bot
(C# or Node.js)

Bot Framework

- Supports NodeJS and C# .NET
- Lead users through conversation – Prompts, Choices, Media, Rich Cards (Displays)
- Bot Emulator provided for local development/testing
- Easy to incorporate Natural Language Processing (Cognitive Services)
- Easily deploy to Azure Cloud Services

Bot Framework - Engage with your users

A natural language interface across all conversation channels

Insights
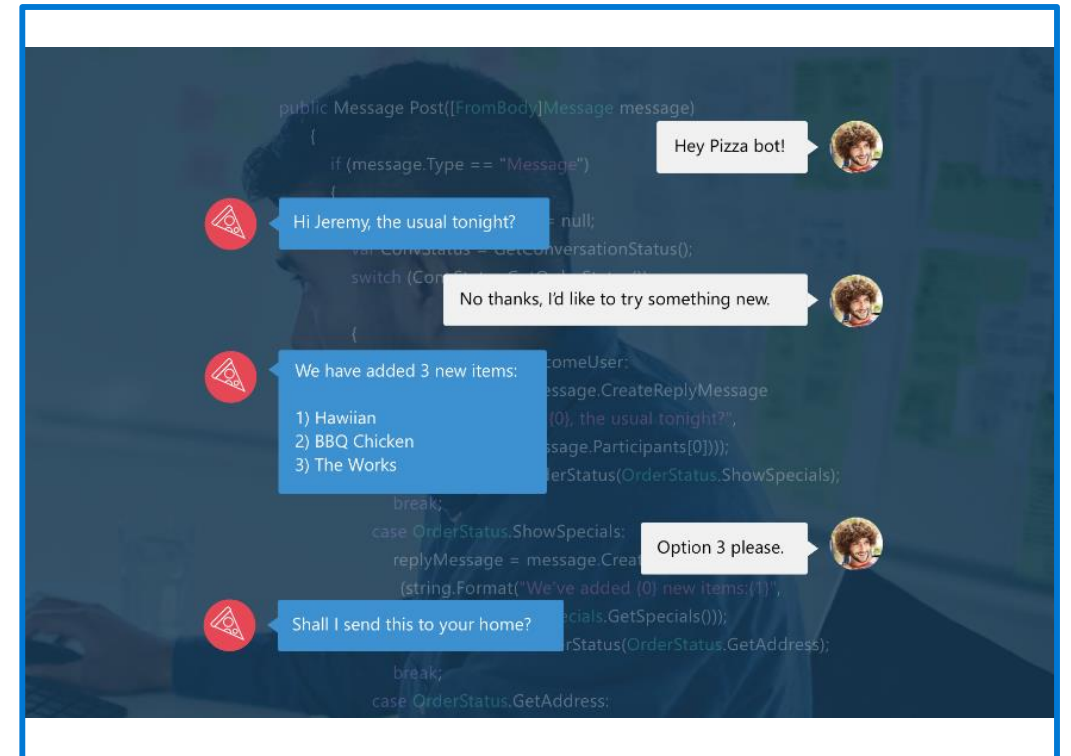

Provide information

Perform tasks

**Make recommendations**

Capture information

Operationalization

LUIS.ai

- Language Understanding Intelligence Service (LUIS)

- Natural Language Processing (NLP)
  - Using artificial intelligence to process natural language
    - Extract Intents (meaning of the utterance)
    - Extract Entities (items in the utterance that are of value) ■

- This is a huge problem developers working with AI or human speech encounter
  - Cognitive Services: LUIS abstracts this into a training model

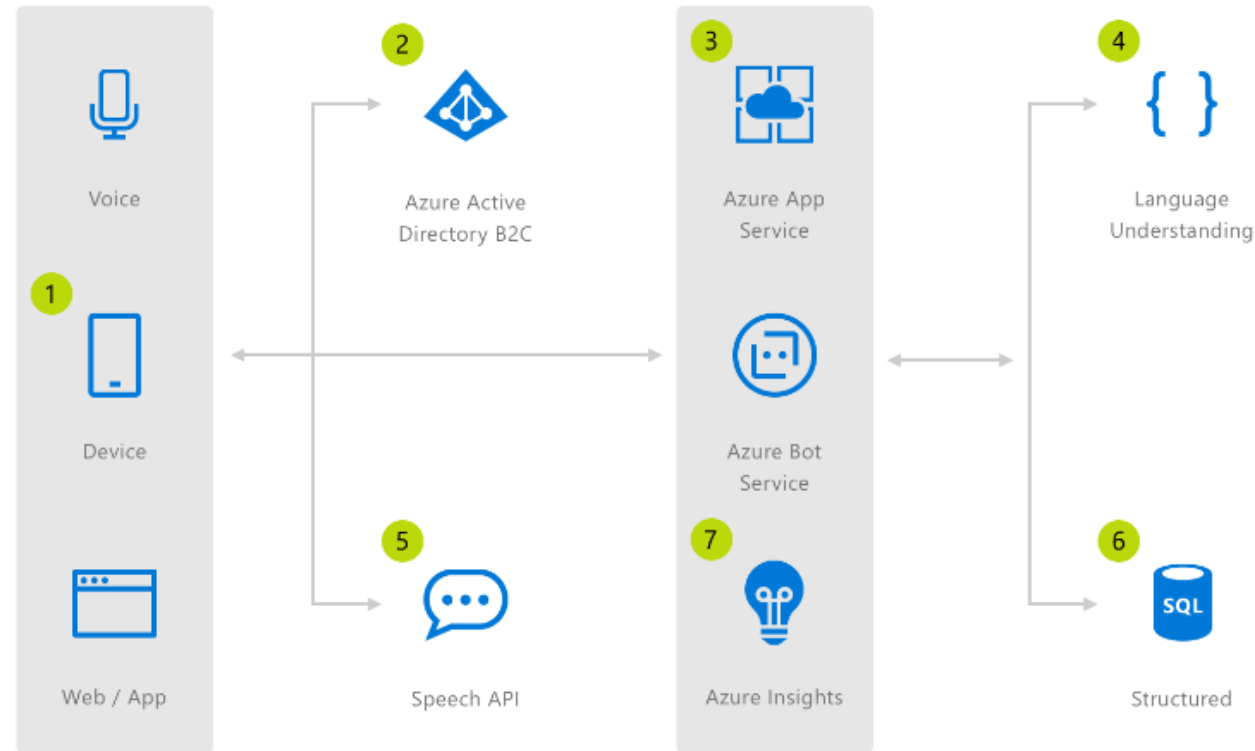# Language Understanding Intelligent Service (LUIS)
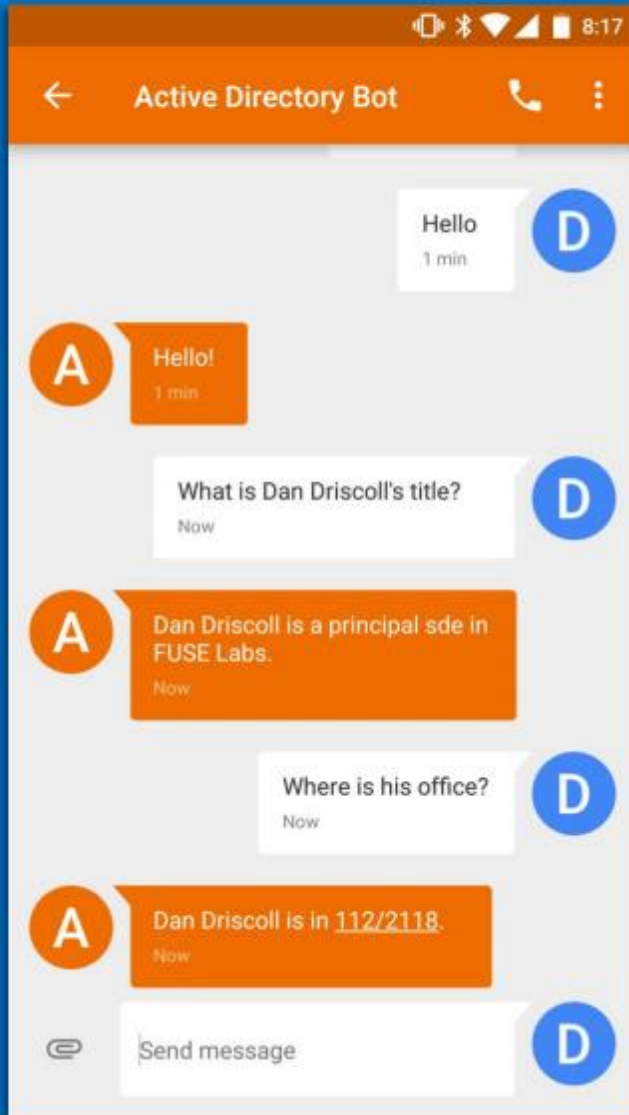
Who is _John_?

Where does _Sue_ work?

What is _Erika's_ phone number?

Examples of **intent detection**

Examples of **entity extraction**

Commerce Chatbot

Voice

Device ①

Web / App

② **Azure Active Directory B2C**

⑤ **Speech API**

③ **Azure App Service**

Azure Bot Service

⑦ **Azure Insights**

④ **Language Understanding**

⑥ **SQL Structured**

① Customer uses your mobile app

② Using Azure AD B2C, the user authenticates

③ Using the custom Application Bot, user requests information

④ Cognitive Services helps process the natural language request

⑤ Response is reviewed by customer who can refine the question using natural conversation

⑥ Once the user is happy with the results, the Application Bot updates the customer's reservations

⑦ Application insights gathers runtime telemetry to help development with Bot performance and usage
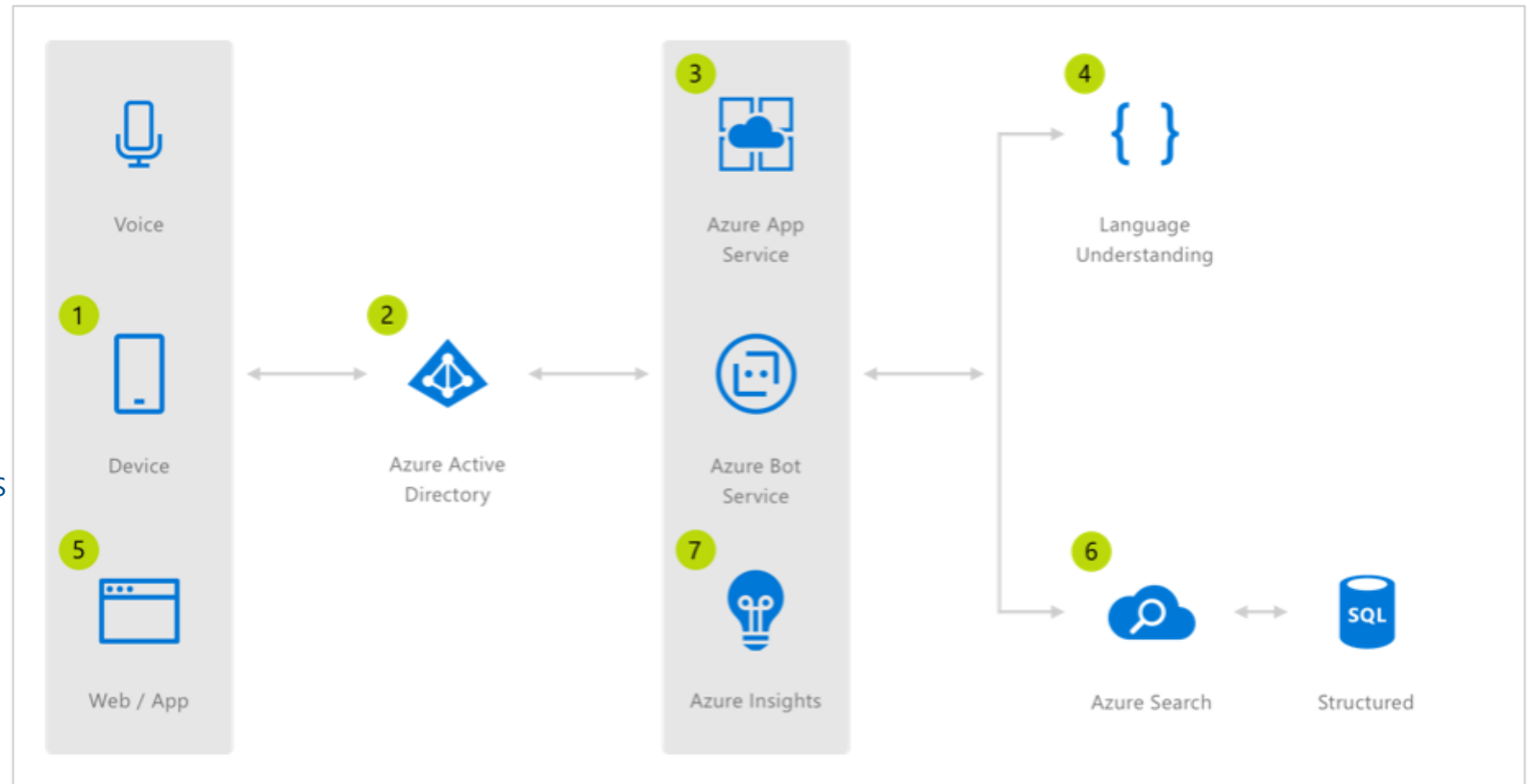
Informational Chatbot

This Informational Bot can answer questions defined in a knowledge set or FAQ using Cognitive Services QnA Maker and answer more open-ended questions using Azure Search.

"Conversation as a platform is the future, so it's great that we're already offering it to our customers using the Bot Framework and Azure."

Katie Duffy, Application Architect at UPS

Voice

1 Device

2 Azure Active Directory

5 Web / App

3 Azure App Service

Azure Bot Service

7 Azure Insights

4 Language Understanding

6 Azure Search

SQL

Structured

1 Employee starts the Application Bot

2 Azure Active Directory validates the employee's identity

3 The employee can ask the bot what type of queries are supported

4 Cognitive Services returns a FAQ built with the QnA Maker

5 The employee defines a valid query

6 The bot submits the query to Azure Search which returns information about the application data

7 Application insights gathers runtime telemetry to help development with bot performance and usage

Enterprise Chatbot

" Azure Bot Service can be easily combined with Language Understanding to build powerful enterprise productivity bots, allowing organizations to streamline common work activities by integrating external systems, such as Office 365 calendar, customer cases stored in Dynamics CRM and much more. "
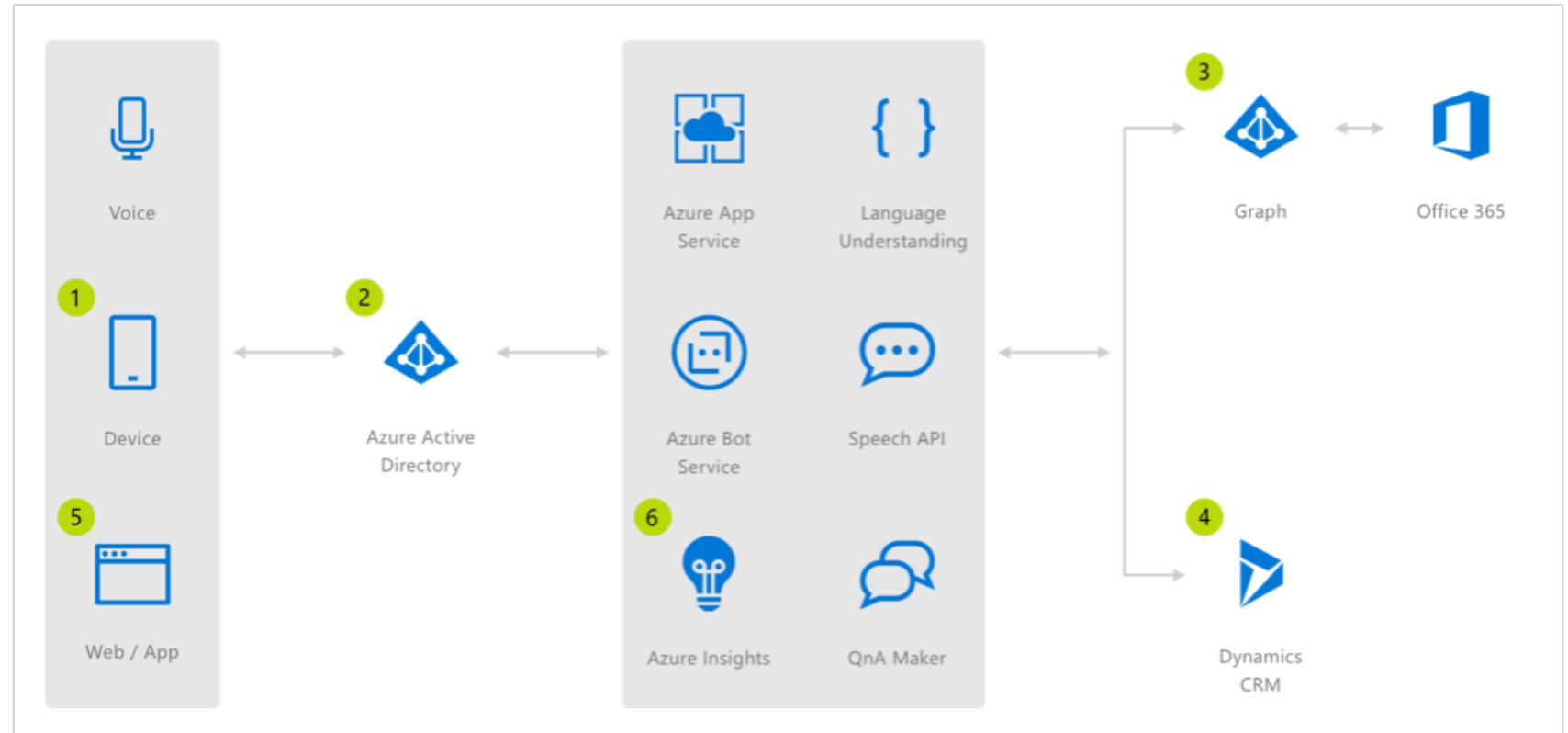
1	Employee accesses Enterprise Productivity Bot	
2	Azure Active Directory validates the employee's identity	
3	The bot is able to query the employee's Office 365 calendar via the Azure Graph	
4	Using data gathered from the calendar, the bot accesses case information in Dynamics CRM	
5	Information is returned to the employee who can filter down the data without leaving the bot	
6	Application insights gathers runtime telemetry to help the development with bot performance and usage	

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Building Intelligent Bots

Check out our [comprehensive conversational AI framework](#) for the development life cycle of your bot to create a simple bot and add sophisticated capabilities, such as speech, language understanding, QnA and more.

Language Understanding

Add conversational intelligence with Language Understanding Service

LEARN MORE

Bing Spell Check

Detect and correct spelling mistakes in your app

LEARN MORE

QnA Maker

Go from FAQ to Bot in minutes with no coding required

LEARN MORE

Bing Speech API

Convert speech to text and back again to understand user intent

LEARN MORE

Text Analytics API

Easily evaluate sentiment and topics to understand what users want

LEARN MORE

Bing Web Search API

Get enhanced search details from billions of web documents

LEARN MORE

Summary

- Digital Transformation does not occur in a silo
  - Become a change agent within your organization
  - Regardless of your persona!
- Leverage cost-effective Microsoft platform services to drive innovation
  - On a consumption basis
  - If it doesn't work, throw it away
- The future is not as far away as you think
  - Look for where the puck is headed, not where it currently is

Microsoft

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