



Build Smart Solutions Leveraging the Artificial
Intelligence Services in Microsoft Azure

Global Organizers



Martin Abbott



Glenn Colpaert



Steef-Jan Wiggers



Tomasso Groenendijk



Eldert Grootenboer



Sven Van den brande



Gijs in 't Veld



Rob Fox

Nice to meet you



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Azure Technology
Consultant
Codit Netherlands



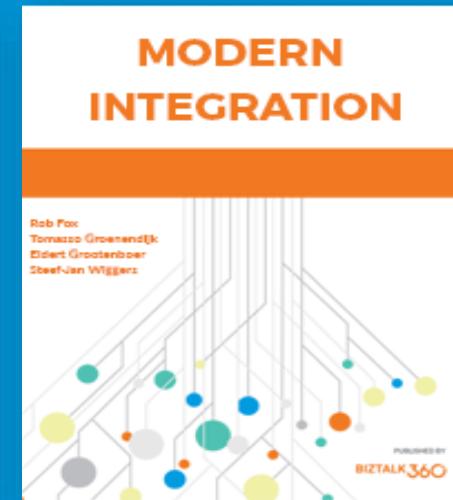
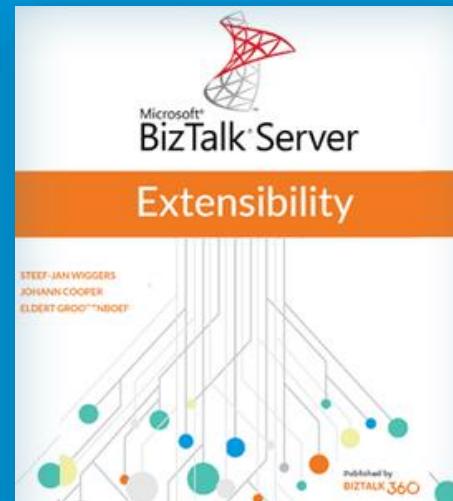
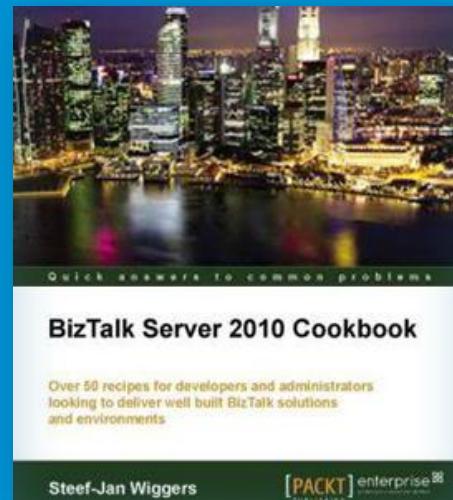
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+31 653 12 29 57
@SteefJan
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8th year - Azure MVP



codit|

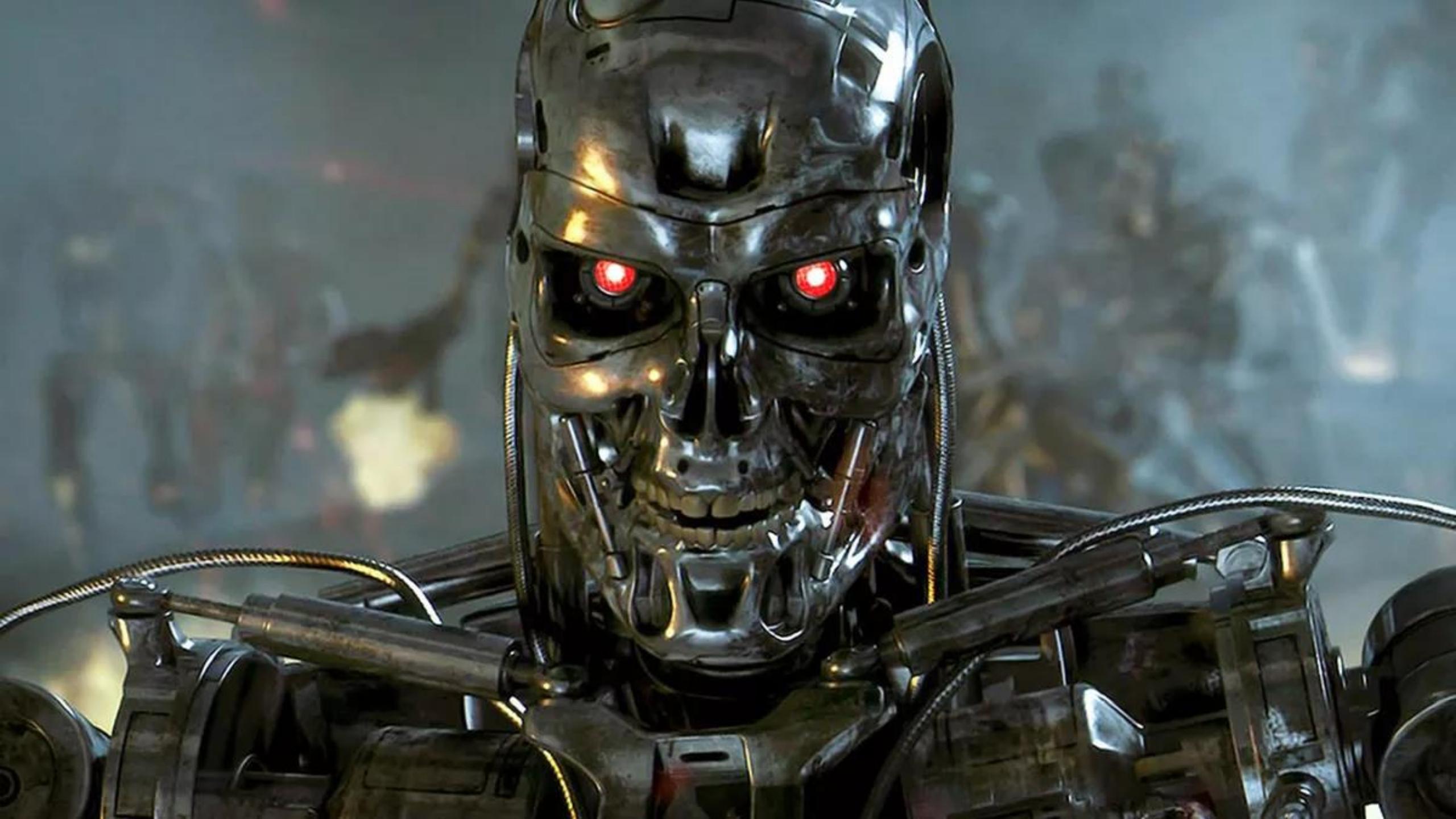


Marathon Man

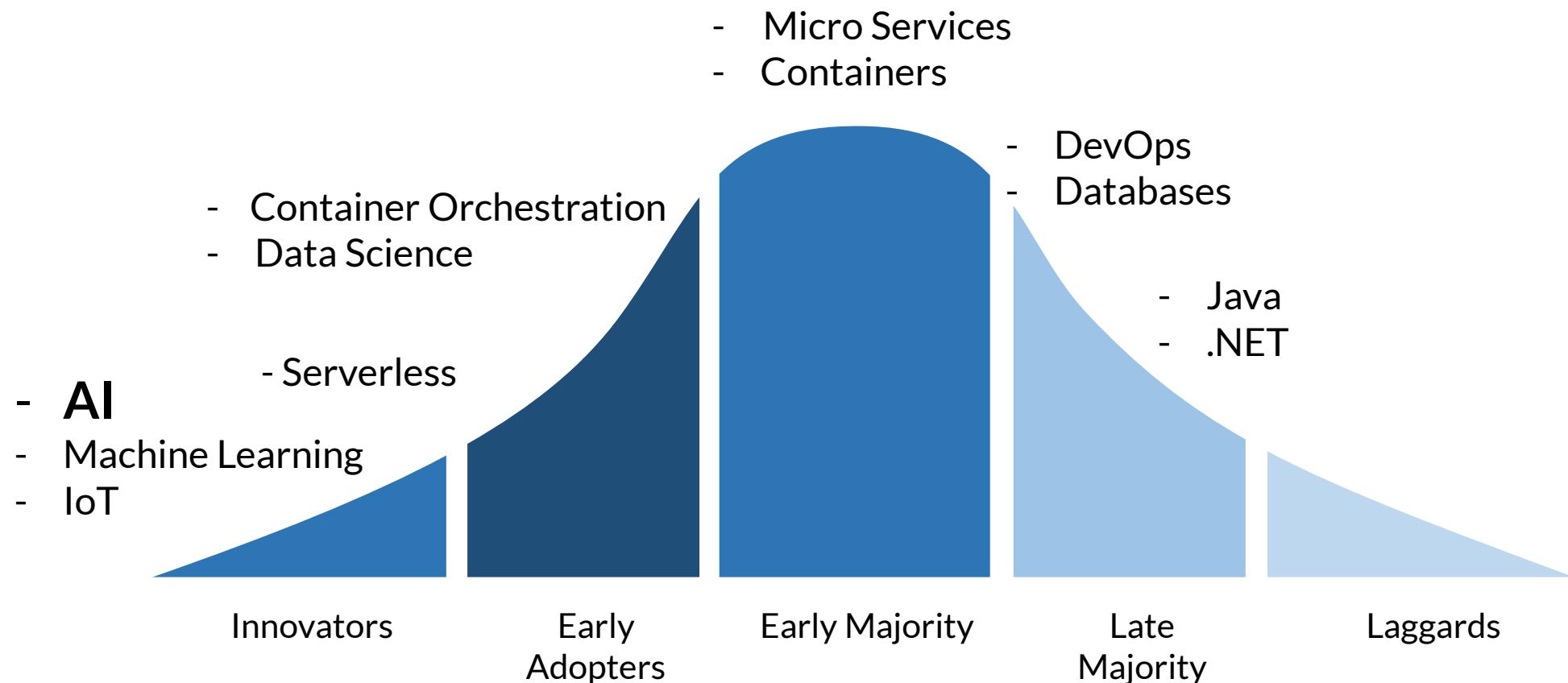


What can you expect in this session

- Artificial Intelligence
- Trends
- Use Cases
- Scenarios
- Demos
- Considerations, lessons learned



Technology Lifecycle



Security & Management

- Security Center
- Portal
- Azure Active Directory
- Azure AD B2C
- Multi-Factor Authentication
- Automation
- Scheduler
- Key Vault
- Store/ Marketplace
- VM Image Gallery & VM Depot

Platform Services

Media & CDN



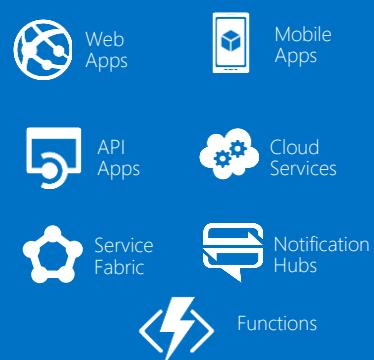
Integration



Compute Services



Application Platform



Data



Intelligence



Analytics & IoT



Hybrid Cloud

- Azure AD Health Monitoring
- AD Privileged Identity Management
- Domain Services
- Backup
- Operational Analytics
- Import/Export
- Azure Site Recovery
- StorSimple

Infrastructure Services

Compute



Storage



Networking



Datacenter Infrastructure (42 Regions Announced, 36 Online)

AI Platforms

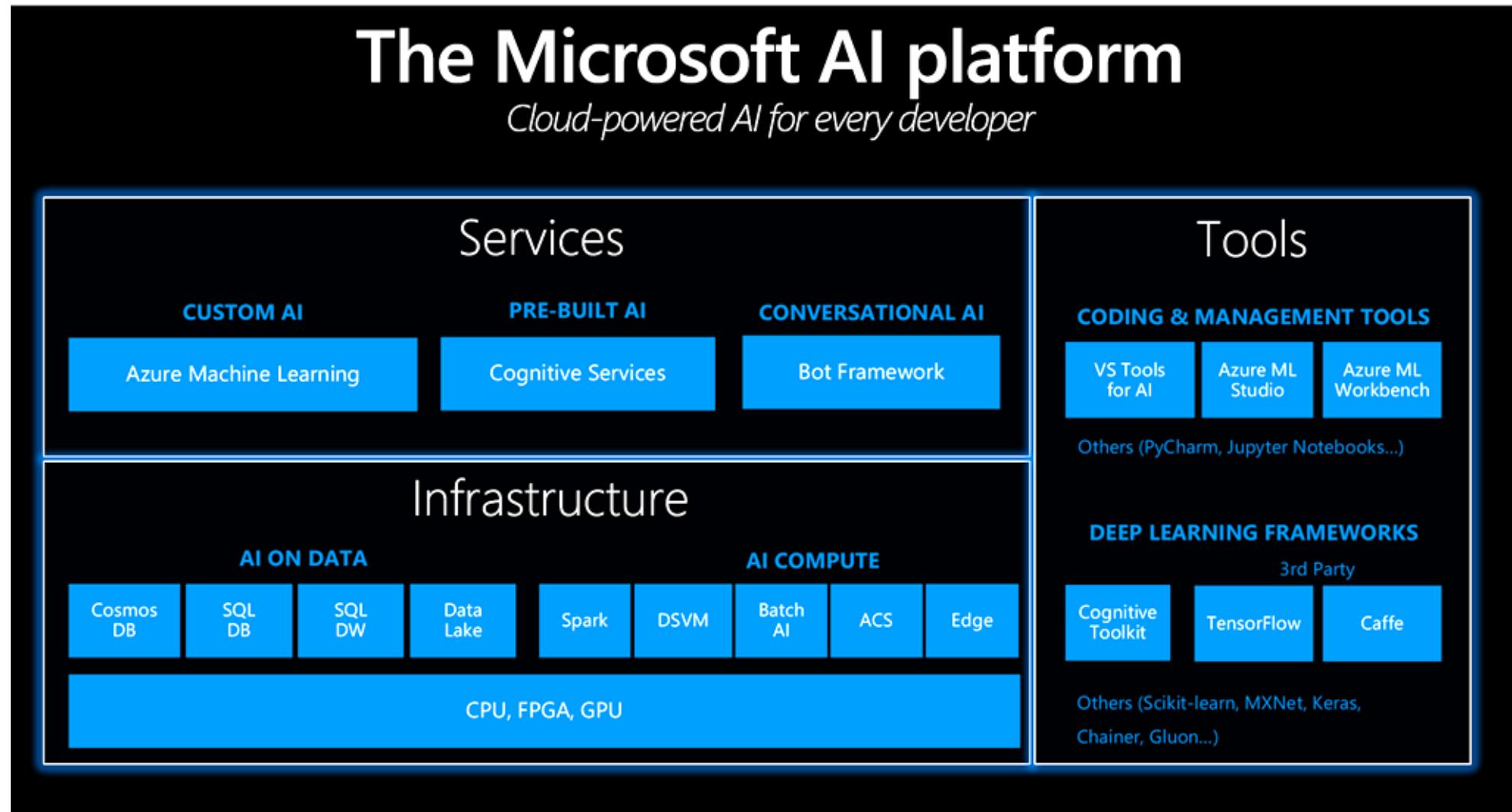


Google

IBM®



Microsoft AI Platform



Cognitive Services – History

Aka Bing Services aka Project Oxford

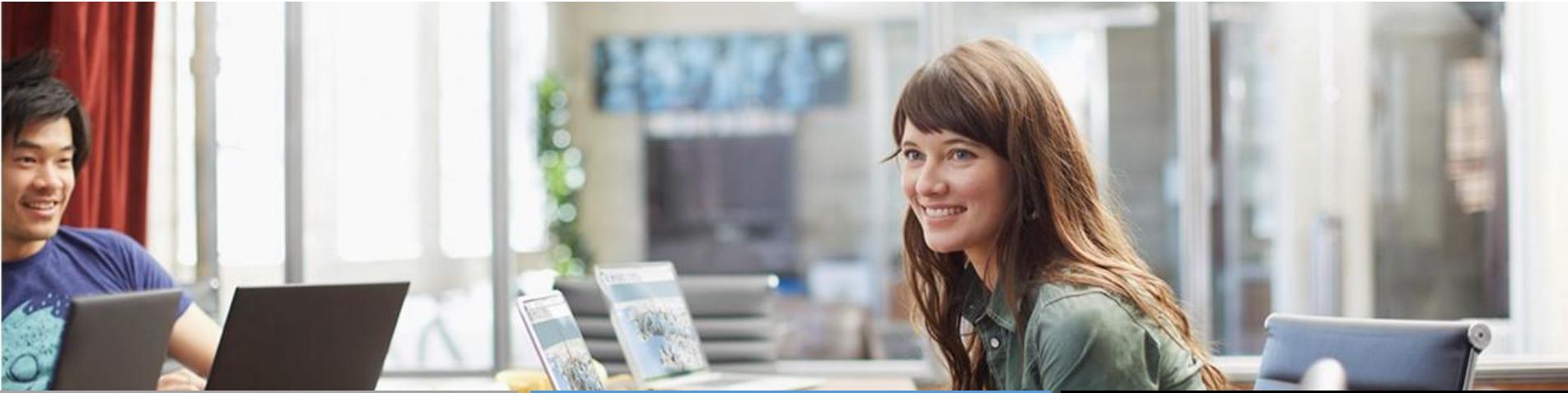
- First presentation at BUILD 2016
- REST-Services running in Azure ([Regions](#))
- Vision, Speech, Language, Knowledge, Search
- Pay-per-use, free monthly requests available

Cognitive Services

microsoft.com/cognitive

Vision	Speech	Language	Knowledge	Search
Computer Vision	Custom Recognition	Bing Spell Check	Academic Knowledge	Bing Web Search
Emotion	Speaker Recognition	Linguistic Analysis	Entity Linking	Bing Image Search
Face	Speech	Language Understanding	Knowledge Exploration	Bing Video Search
Video	Translator	Text Analytics	Recommendations	Bing News Search
		WebLM		Bing Autosuggest

Why Cognitive Services?



Easy

Roll your own with REST APIs
Simple to add: just a few lines of code required



Flexible

Integrate into the language and platform of your choice
Breadth of offerings helps you find the right API for your app
Bring your own data for your custom experience



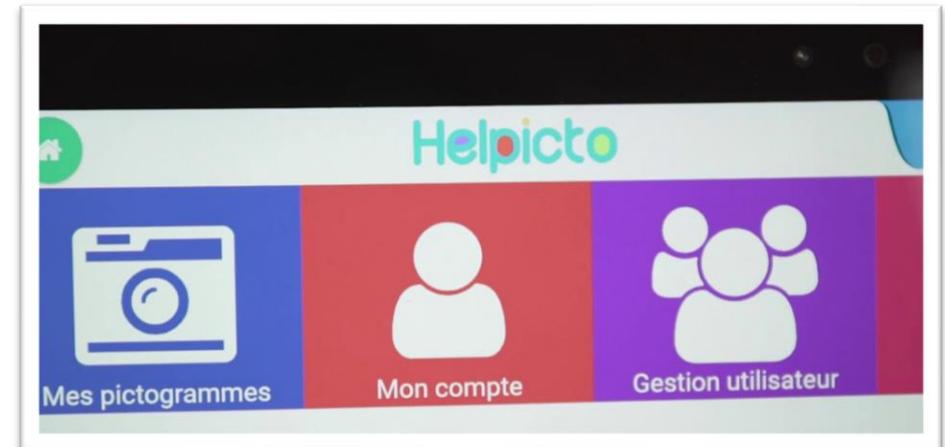
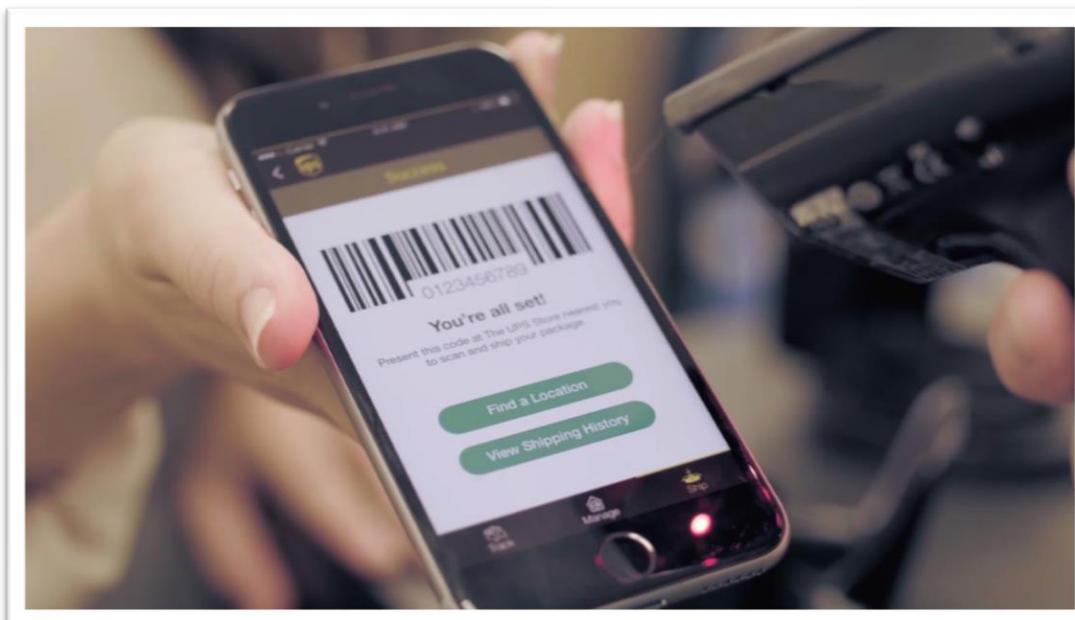
Tested

Built by experts in their field from Microsoft Research, Bing, and Azure Machine Learning
Quality documentation, sample code, and community support



Business Case - AI

- [Helptico](#), Autism Spectrum disorder
- [UPS](#), text-based and voice-based conversation
- Washington County [Law Enforcement](#)



Vision



Computer Vision API

Distill actionable information from images



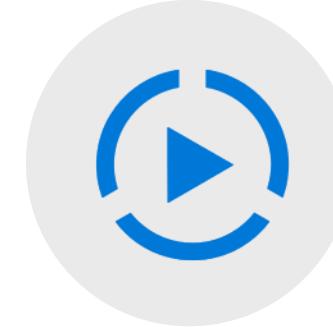
Face API

Detect, identify, analyze, organize, and tag faces in photos



Emotion API

Personalize experiences with emotion recognition



Video API

Analyze, edit, and process videos within your app



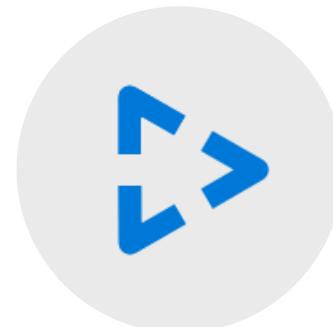
Content Moderator

Machine-assisted moderation of text and images, augmented with human review tools



Custom Vision Service

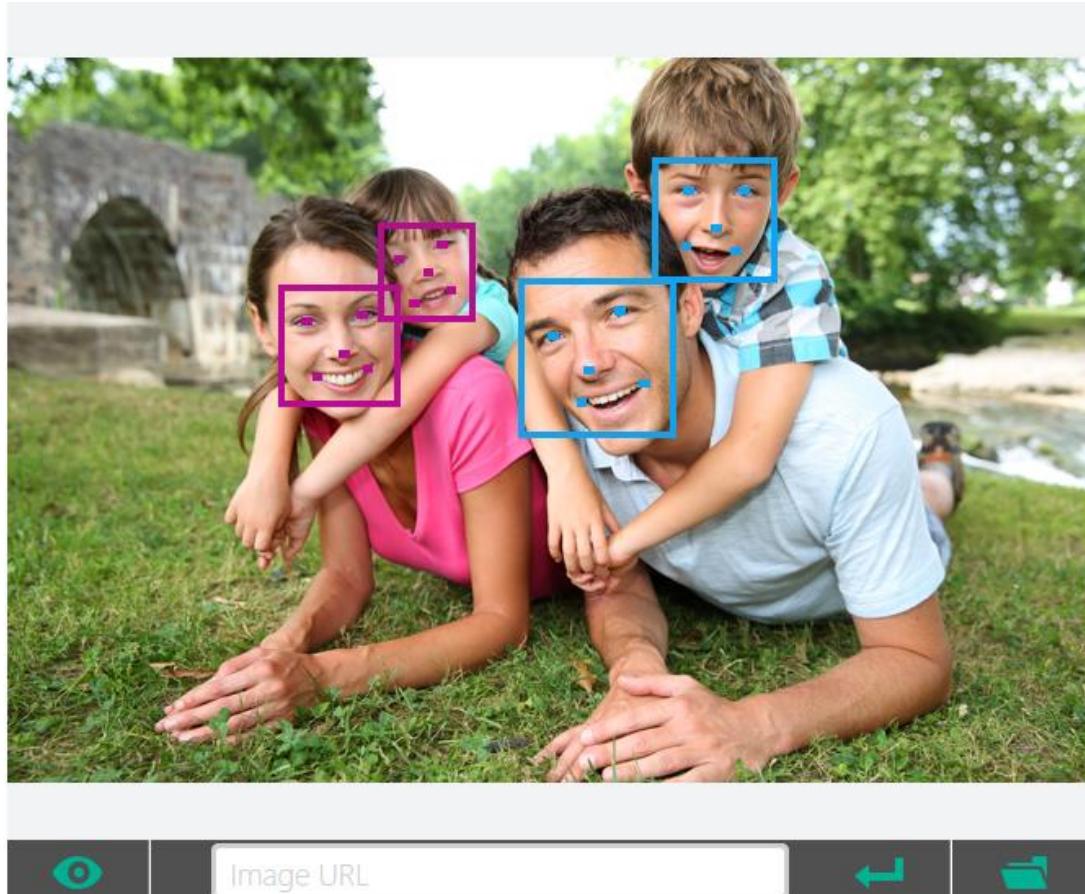
Customizable web service that learns to recognize specific content in imagery



Video Indexer

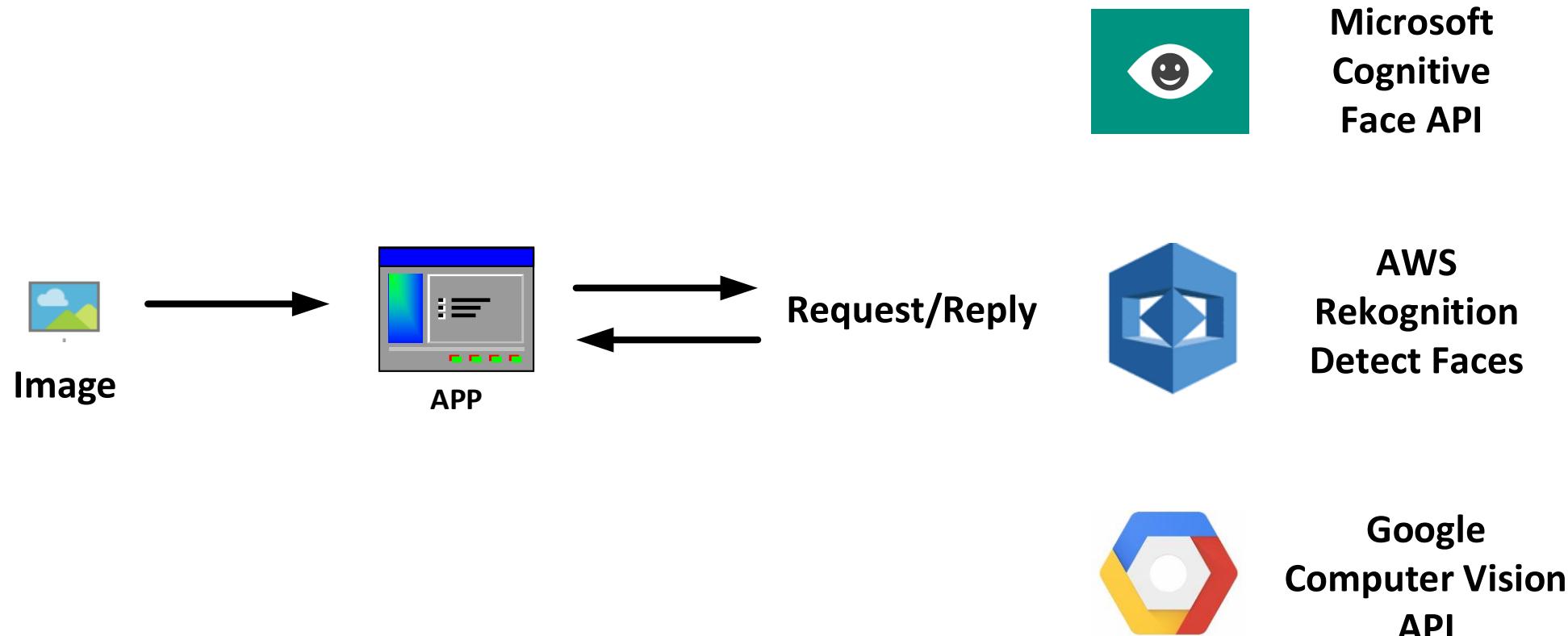
Process and extract smart insights from videos

Face



```
},
"faceAttributes": {
  "age": 31.1,
  "gender": "male",
  "headPose": {
    "roll": -19.5,
    "yaw": -17.1,
    "pitch": 0
  },
  "smile": 1,
  "facialHair": {
    "moustache": 0.2,
    "beard": 0.1,
    "sideburns": 0.2
  },
  "glasses": "NoGlasses",
  "emotion": {
    "anger": 0,
    "contempt": 0,
    "disgust": 0,
    "fear": 0,
    "happiness": 1,
    "neutral": 0,
    "sadness": 0
  }
}
```

Face Recognition Solution Demo

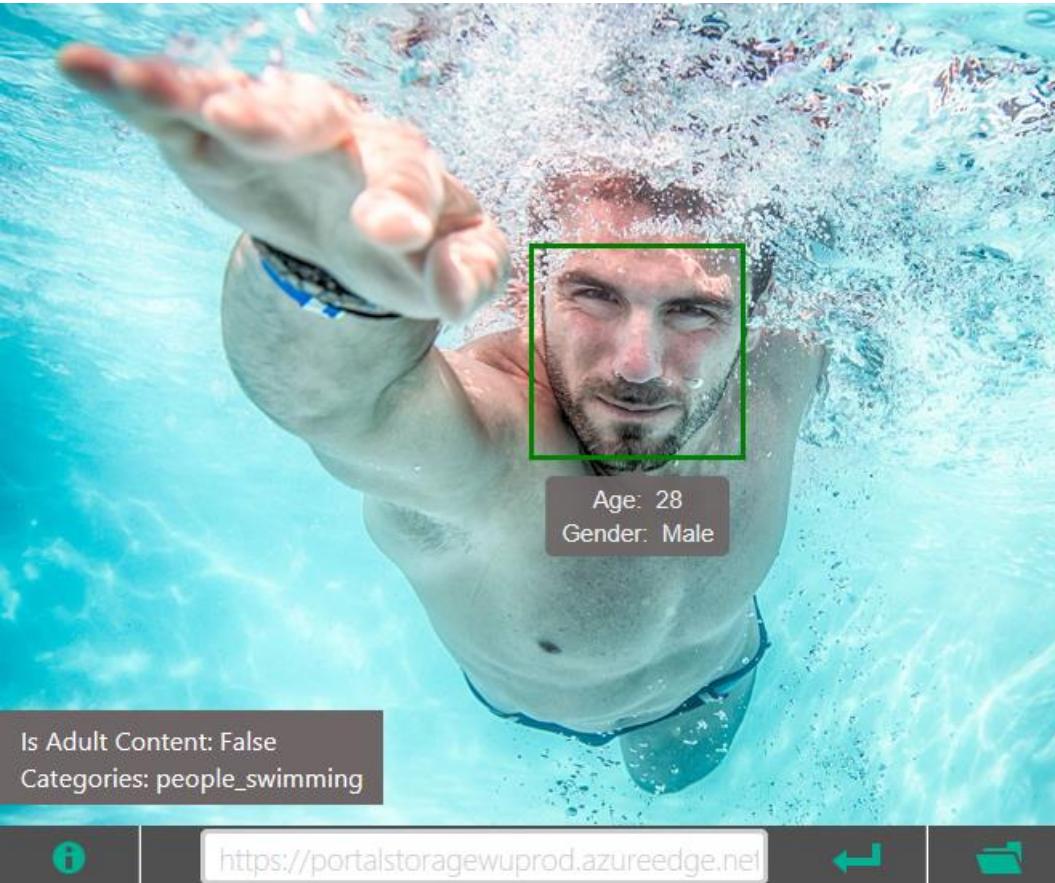


Computer Vision



Features:	
Feature Name	Value
Description	{ "type": 0, "captions": [{ "text": "a black and white photo of a large city", "confidence": 0.5984385403560294 }] }
Tags	[{ "name": "sky", "confidence": 0.9995020627975464 }, { "name": "outdoor", "confidence": 0.9976274371147156 }, { "name": "city", "confidence": 0.9237649440765381 }, { "name": "white", "confidence": 0.7209966778755188 }, { "name": "skyscraper", "confidence": 0.17128275334835052 }]
Image Format	Jpeg
Image Dimensions	1500 x 1155
Clip Art Type	0 Non-clipart
Line Drawing Type	0 Non-LineDrawing
Black & White Image	True

Computer Vision



Is Adult Content	False
Adult Score	0.14916780591011047
Is Racy Content	False
Racy Score	0.12426207214593887
Categories	[{ "name": "people_swimming", "score": 0.98046875 }]
Faces	[{ "age": 28, "gender": "Male", "faceRectangle": { "left": 744, "top": 338, "width": 305, "height": 305 } }]
Dominant Color Background	<input type="checkbox"/>
Dominant Color Foreground	<input checked="" type="checkbox"/>
Dominant Colors	<input type="checkbox"/>
Accent Color	<input type="checkbox"/> #19A4B2

Computer Vision



IF WE DID
ALL
THE THINGS
WE ARE
CAPABLE
OF DOING,
WE WOULD
LITERALLY
ASTOUND
OURSELVES.

Text JSON

IF WE DID
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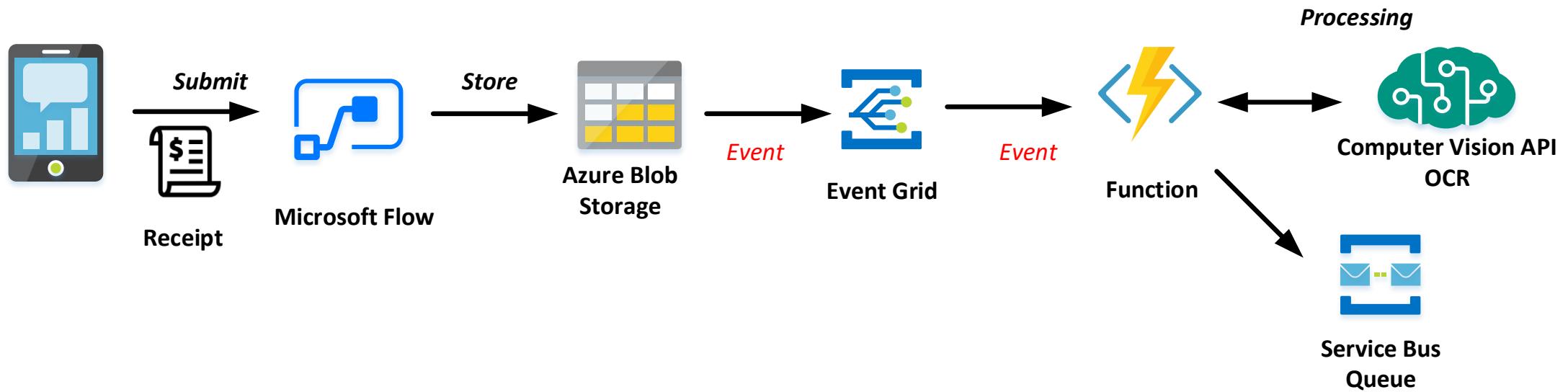
AutoDetect



<https://portalstoragewuprod2.azurewebsites.net>



OCR Solution Demo



Speech



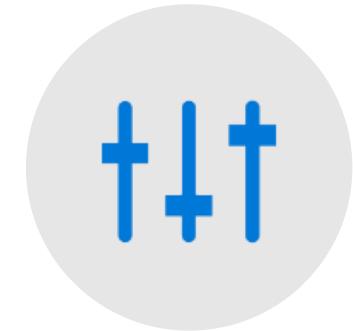
Bing Speech API

Convert speech to text and back again, and understand its intent



Speaker Recognition API

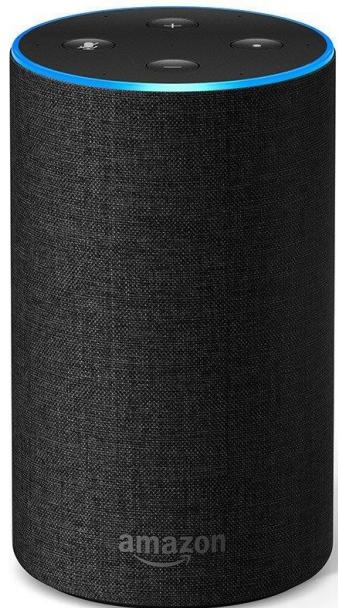
Give your app the ability to know who's talking



Custom Speech Service

Fine-tune speech recognition for anyone, anywhere

Cortana, Alexa, Siri, what's the time?

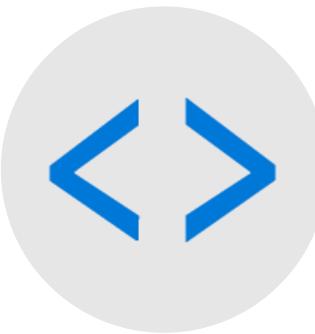


Language



Bing Spell Check API

Detect and correct spelling mistakes within your app



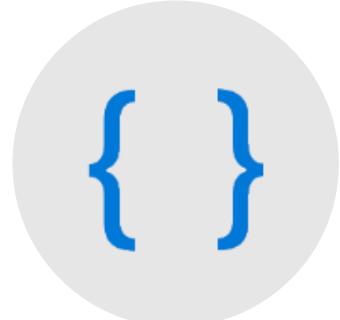
Web Language Model API

Leverage the power of language models trained on web-scale data



Linguistic Analysis API

Easily parse complex text with language analysis



Language Understanding Intelligent Service

Teach your apps to understand commands from your users



Text Analytics API

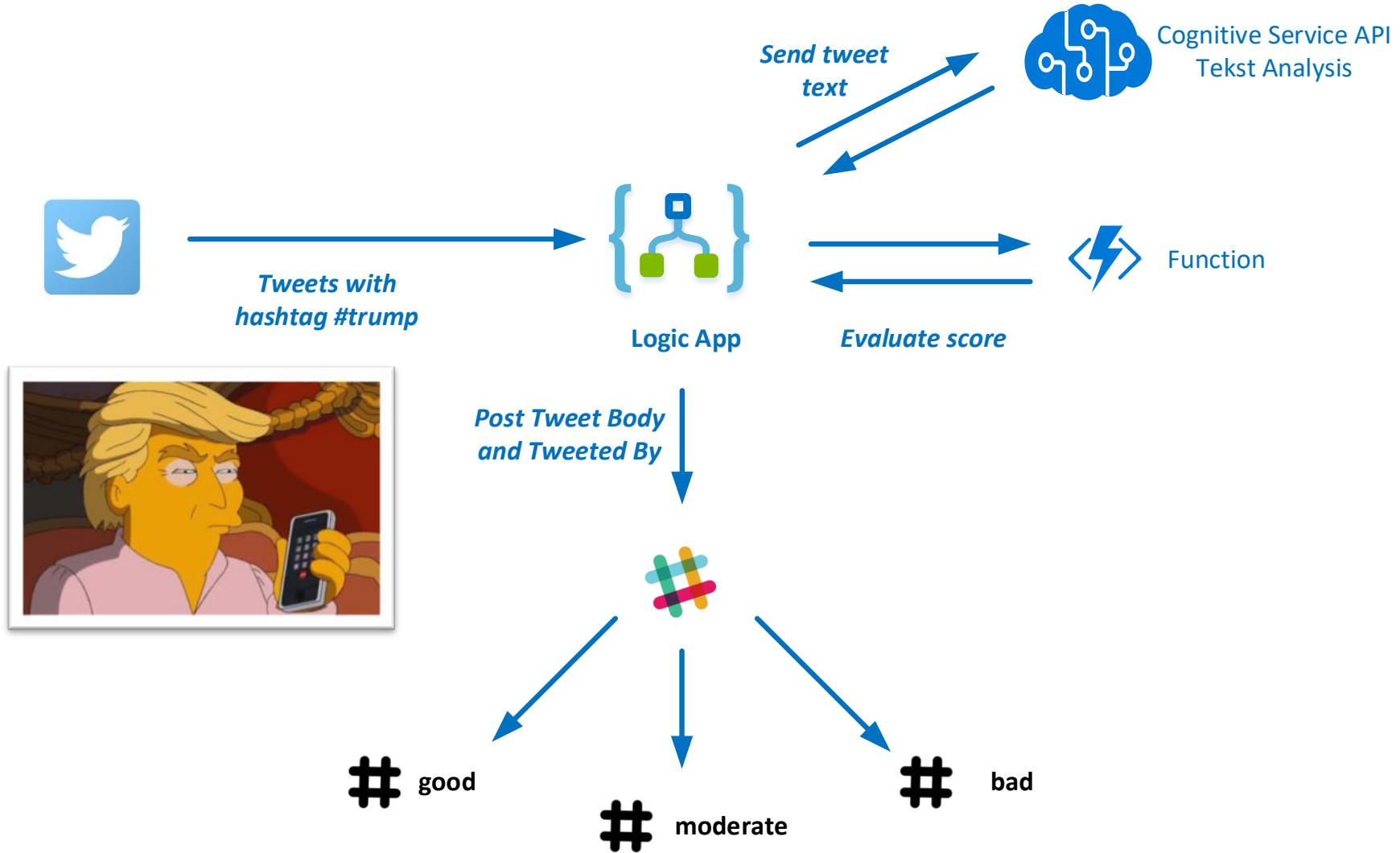
Detect sentiment, key phrases, topics, and language from your text



Translator

Easily perform speech and text translation

Sentiment Analysis



Sentiment analysis – PowerBI Template

Get started with Brand and Campaign Management for Twitter

Welcome to the brand and campaign management solution template.

To set up this solution template you will need:

- Azure Subscription
- Power BI Desktop (latest version)
- Power BI Pro (to share the template with your organization)
- Twitter Account



Features of this architecture:

- Full cloud solution with minimum set up and maintenance considerations
- Real time data pulled from Twitter & enriched using machine learning
- Connect to Azure SQL and import data into Power BI

Sentiment Analysis - DEMO

Verify and run solution

Please verify that the information provided below is correct. If you are ready click Run to begin building the solution template. This will also download the pbix file which you can begin exploring as soon as the setup finishes.

Subscription:

Azure Free Trial

Resource Group:

SolutionTemplate-xzlf5uz

Target Server:

globalintegrationbootcamp2018.database.windows.net

Target Database:

twitterDB

Target Username:

gib2018admin

Search Query:

#GIB2018

Knowledge



Academic Knowledge API

Explore relationships among academic papers, journals, and authors



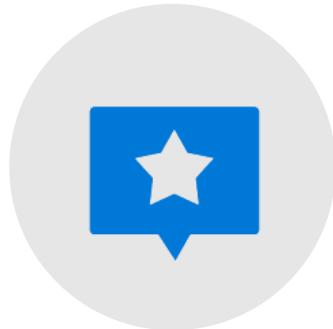
Knowledge Exploration Service

Add interactive search over structured data to your project



Entity Linking Service

Contextually extend knowledge of people, locations, and events



Recommendations API

Provide personalized product recommendations for your customers



Custom Decision Service

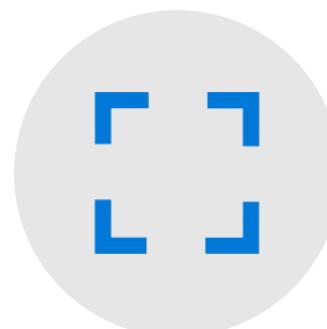
Create custom experiences with adaptive, contextual decision-making

Search



Bing Web Search API

Connect powerful search to your apps



Bing Image Search API

Bring advanced image and metadata search to your app



Bing Video Search API

Trending videos, detailed metadata, and rich results



Bing News Search API

Link your users to robust and timely news searches



Bing Autosuggest API

Give your app intelligent autosuggest options for searches



Bing Custom Search

Create a highly-customized web search experience

Costs

The screenshot shows the Microsoft Azure pricing details page for the Emotion API. At the top, there's a navigation bar with links for Why Azure, Solutions, Products, Documentation, Pricing, Training, Partners, Blog, Resources, and Support. A "FREE ACCOUNT" button is also present. Below the navigation, there are dropdown menus for "Select API" (set to Emotion API), "Region" (set to West US), and "Currency" (set to Euro (€)). The main section is titled "Pricing details" and contains a note: "The below pricing reflects a preview discount." A "Select columns" dropdown is available at the top right of the table. The table lists three tiers: Emotion API – Free, Emotion API – Basic, and Emotion API – Standard, along with their respective features, unit, and price.

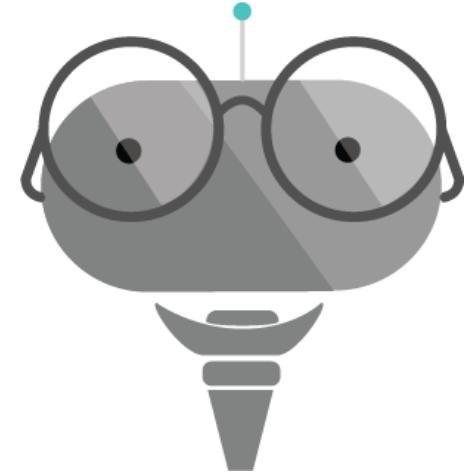
TIER	FEATURES	UNIT	PRICE
Emotion API – Free	30,000 image transactions free per month 300 video uploads (limited to 1 per min) 3,000 status queries per month (limited to 5 per min)	Transactions	Free
Emotion API – Basic	10 image transactions per second (face must be pre-specified)	Transactions	€0.085 per 1,000 transactions
Emotion API – Standard	10 image transactions per second 3,000 video uploads (limited to 2 per min) 30,000 status queries per month (limited to 10 per min)	Transactions	€0.211 per 1,000 transactions

<https://azure.microsoft.com/en-us/pricing/details/cognitive-services/>

What are bots?

What bots are not:

- Artificial Intelligence only
- Text interfaces only
- Natural Language Processing only



What bots are:

- Apps with a new interface
- Faster access
- Available across more platforms
- Less friction to build and deploy
- More natural interactions

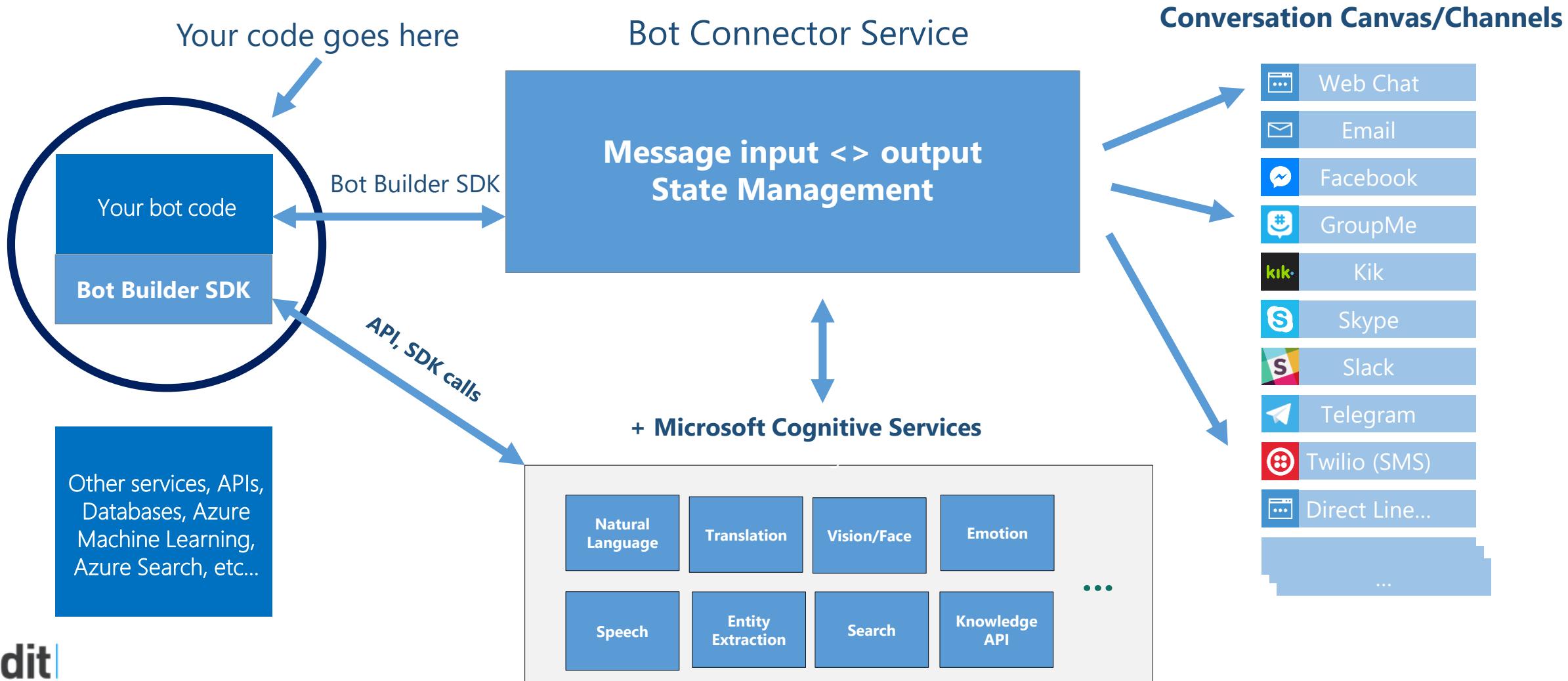
Build a bot with a clear purpose

Only choose technologies and APIs that clearly serve that purpose. Focus every design decision into driving that goal.

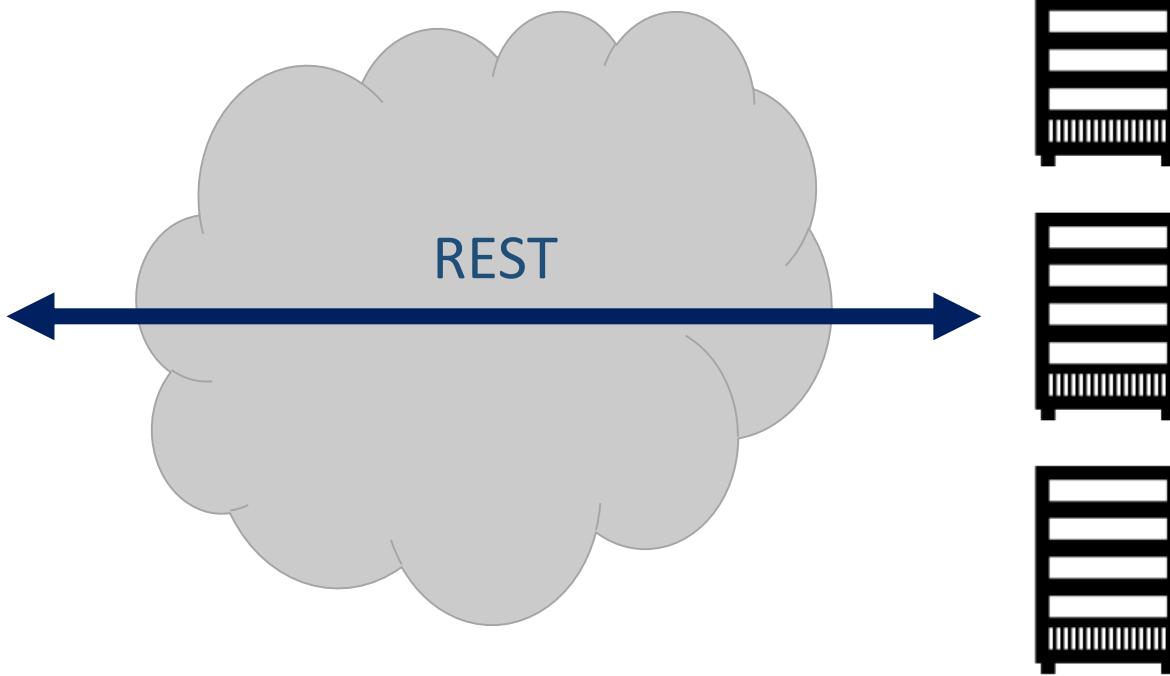
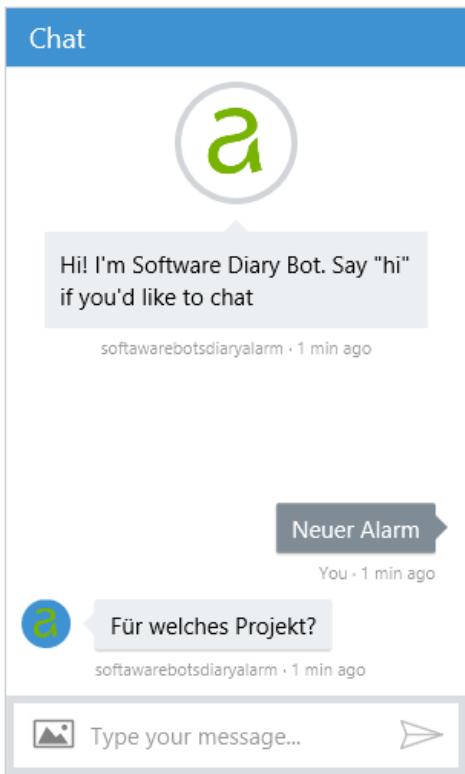
Bot Builder SDK

- Open Source (GitHub)
<https://github.com/Microsoft/BotBuilder/>
- Available for Node.js and C#
- Features
 - Standard [dialogs](#) for yes/no, Strings, Numbers, Enumerations etc.
 - [FormFlow](#): Generate a bot from a C# class
 - Rich [Cards](#)

An x-ray of a typical bot

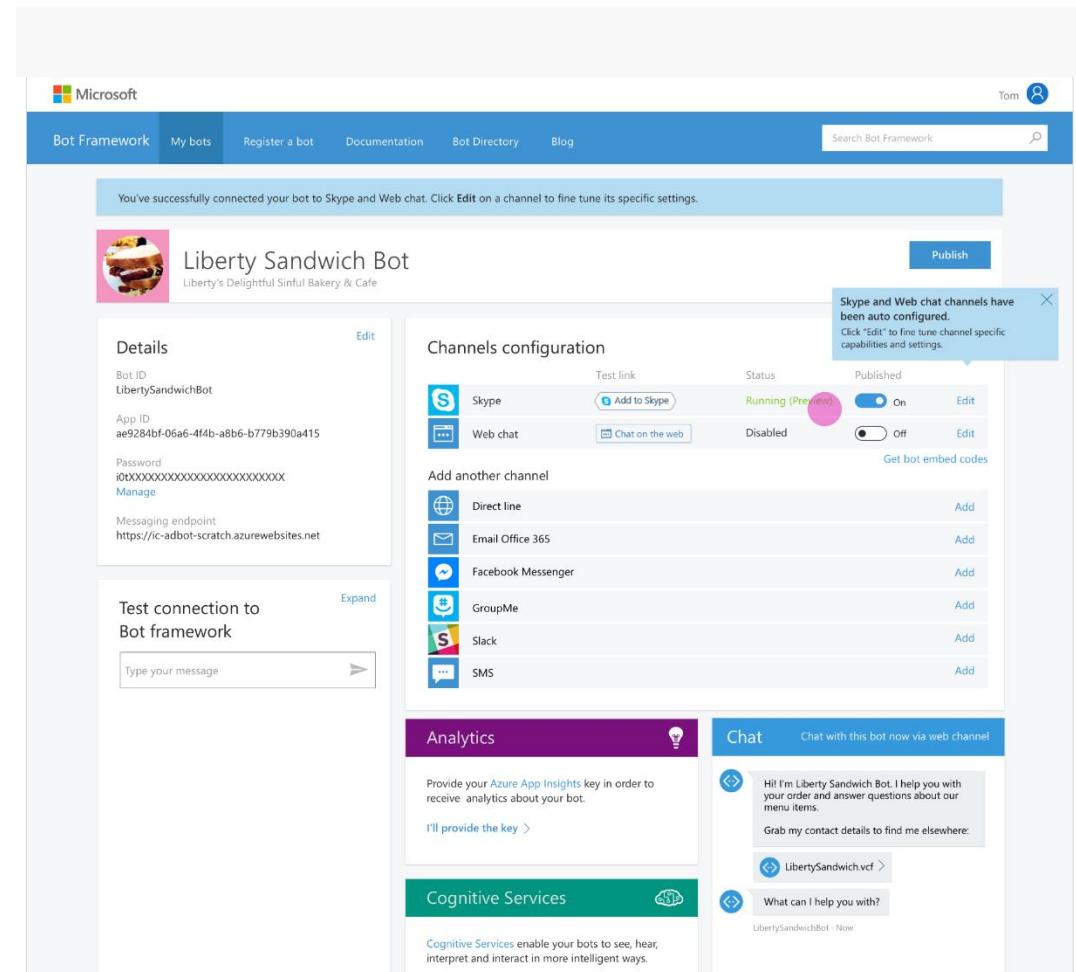


Communication



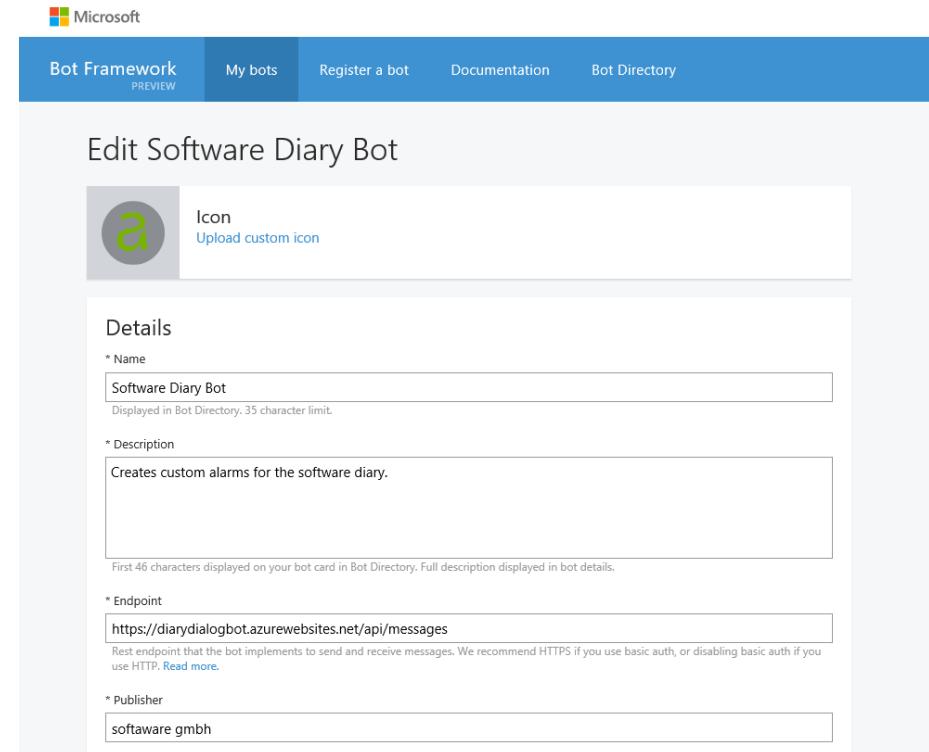
Developer Portal

- Register your bot
- Connect to channels
- Test
- Publish
- Manage
- Measure

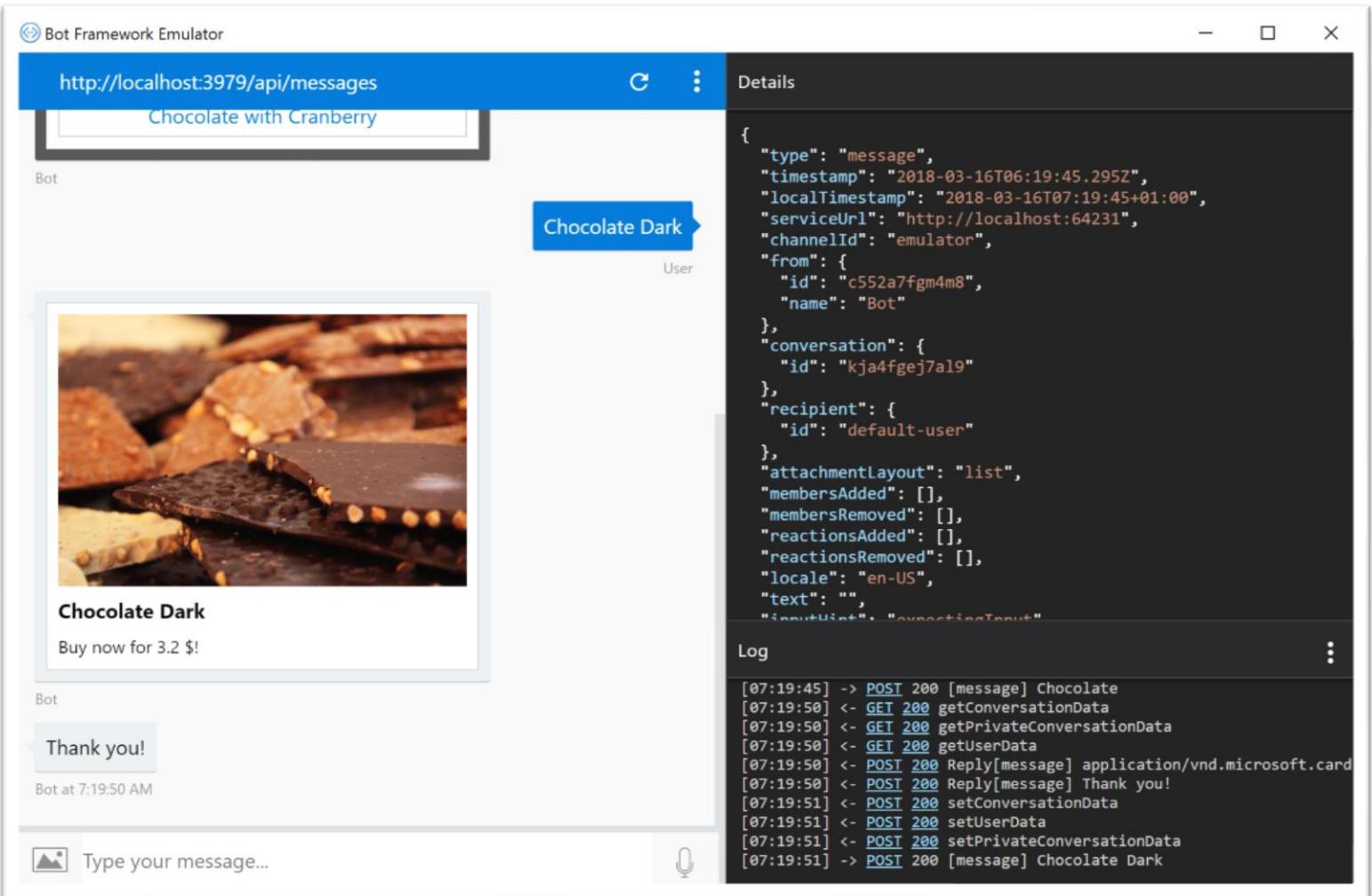


Bot Directory

- Register at
<http://dev.botframework.com>
- Endpoint address
- Possibility to publish bot in Bot Directory



Chatbot Solution Demo



Lessons Learned

- Workloads
- Costs
- GDPR (Privacy)
- Security
- Big Data



Wrap up

- AI is beyond the hype
- Change our lives
- Huge market potential
- Cloud Providers Battleground



Resources

- [InfoQ Articles](#)
- [Azure AI Platform](#)
- [Middleware Fridays](#)
- [Integration Mondays](#)
- [edX courses](#)
- [Pluralsight](#)





The Future Computed

Artificial Intelligence and its role in society

By Microsoft



Just released!

Labs

- Lab - Building a Smart solution with Azure Storage, Event Grid, Functions, Logic Apps and the Computer Vision API
- Lab - Microsoft Bot Framework Hands-On Lab: Mars Challenge
- Lab - Recognizing people with Cognitive Services Face API



Labs



<https://github.com/GlobalIntegrationBootcamp/GlobalIntegrationBootcamp/tree/master/2018/Labs>

BizTalk Server Open Source Community



<https://github.com/BizTalkCommunity>

All GIB Speakers, Speaker (MVPs) & Attendees get

...

BIZTALK360

1 month free BizTalk360 Platinum tier license worth **\$1000** for attendees

2 months free BizTalk360 Platinum tier license worth **\$2000** for speakers

OFFER DETAILS

<https://www.biztalk360.com/global-integration-bootcamp-offer/>

SERVICEBUS360

2 months free ServiceBus360 (Gold plan) worth **\$100** for attendees

Completely free for speaker MVPs as long as their MVP status is active; worth **\$600/year**

6 months free ServiceBus360 (Gold plan) worth **\$300** for speakers

OFFER DETAILS

<https://www.servicebus360.com/global-integration-bootcamp-offer/>

ATOMIC SCOPE

1 month free Atomic Scope Gold Plan license worth **\$1000** for attendees

2 months free Atomic Scope Gold Plan license worth **\$2000** for speakers

OFFER DETAILS

<https://www.atomicscope.com/global-integration-bootcamp-offer/>

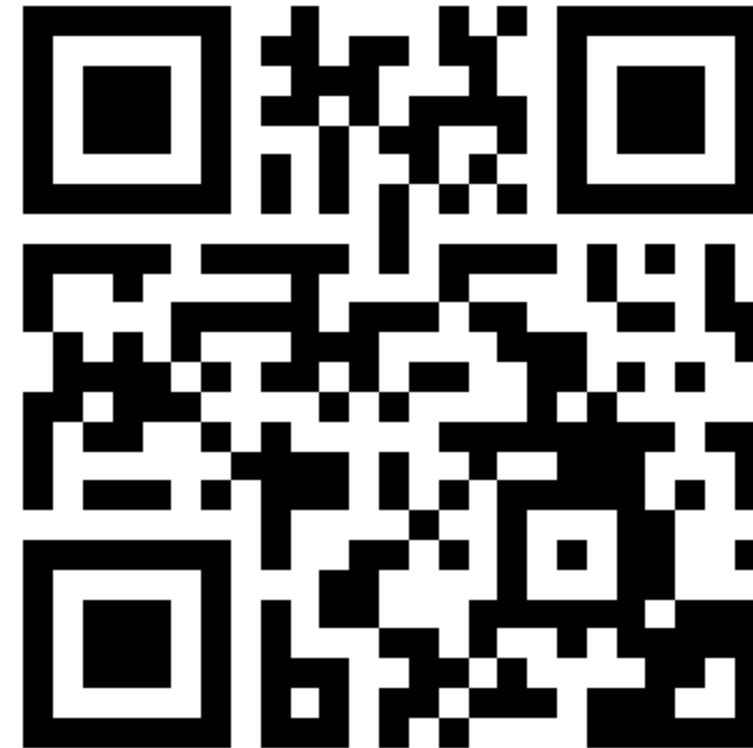
INTEGRATE 2018 – June 4–6, 2018, London



Registrations Open – <https://www.biztalk360.com/integrate-2018/>

Early bird offer on tickets closes on March 31st (7 days to go!)

Please fill out the survey!



<http://bit.ly/2ptjRdL>

Thank you!

Keep in touch.

Call or mail us. Ask us. Happy to help.

