

**IBM Watson**

# **Building Conversational Solutions**

## **With Watson Assistant**

**Aco Vidović, Alexander Gavrin**



- Designing a conversational solution
- Introduction to Watson Assistant service
- Understand Assistant concepts
- Work with Assistant service
- Understand architecture and application deployment
- Combine Watson services for even better experiences

10:00 – 10:30	Welcome & Introduction + Demo
10:30 – 11:30	Designing conversational Solutions + Lab
11:30 – 11.45	<i>Break</i>
11:45 – 12:00	Writing for conversational interaction
12:00 – 12:30	Building a conversation
12:30 – 13.30	<i>Lunch</i>
13:30 – 14:00	Building a conversation lab
14:00 – 14:45	Building a dialog
14:45 – 15:45	Building a dialog Lab part1
15:45 – 16.00	<i>Break</i>
16:00 – 17:00	Building a dialog Lab part 2

10:00 – 10:30	Improving a conversation
10:30 – 11:00	Improving a conversation Lab
11:00 – 11.15	<i>Break</i>
11:15 – 11:45	Integrating a conversation presentation
11:45 – 12:15	Integrating a conversation Lab (part 1)
12:15 – 13.15	<i>Lunch</i>
13:15 – 14:00	Integrating a conversation Lab (part 2)
14:00 – 15:00	Implementing a conversation
15:00 – 15.15	<i>Break</i>
15:15 – 16:15	Implementing a conversation Lab
16:15 – 17:00	Wrap up

<http://ibm.biz/wa-workshop-112018>



IBM Watson

# Building Conversational Solutions

## Overview

Aco Vidović



Digital businesses are disrupting virtually every industry and profession.

**“By 2020, 80% of the buying process is expected to occur without any direct human to human interaction.”**

**“By 2020, smart agents will facilitate 40% of mobile interactions, and the post-app era will begin to dominate.”**

Source: <http://www.gartner.com/newsroom/id/3143718>



54%  
of CxOs  
expect more  
competitors  
from outside  
their industry

# 70%

of consumers will choose messaging over calling if given the choice

<https://www.liveperson.com/taxonomy/term/329>

# 64%

of consumers expect real-time responses at any time

Call Center Research. Salesforce:

<https://www.salesforce.com/blog/2017/07/customers-expectations-in-age-of-the-customer.html>

July 2017



Chatbots will save businesses more than

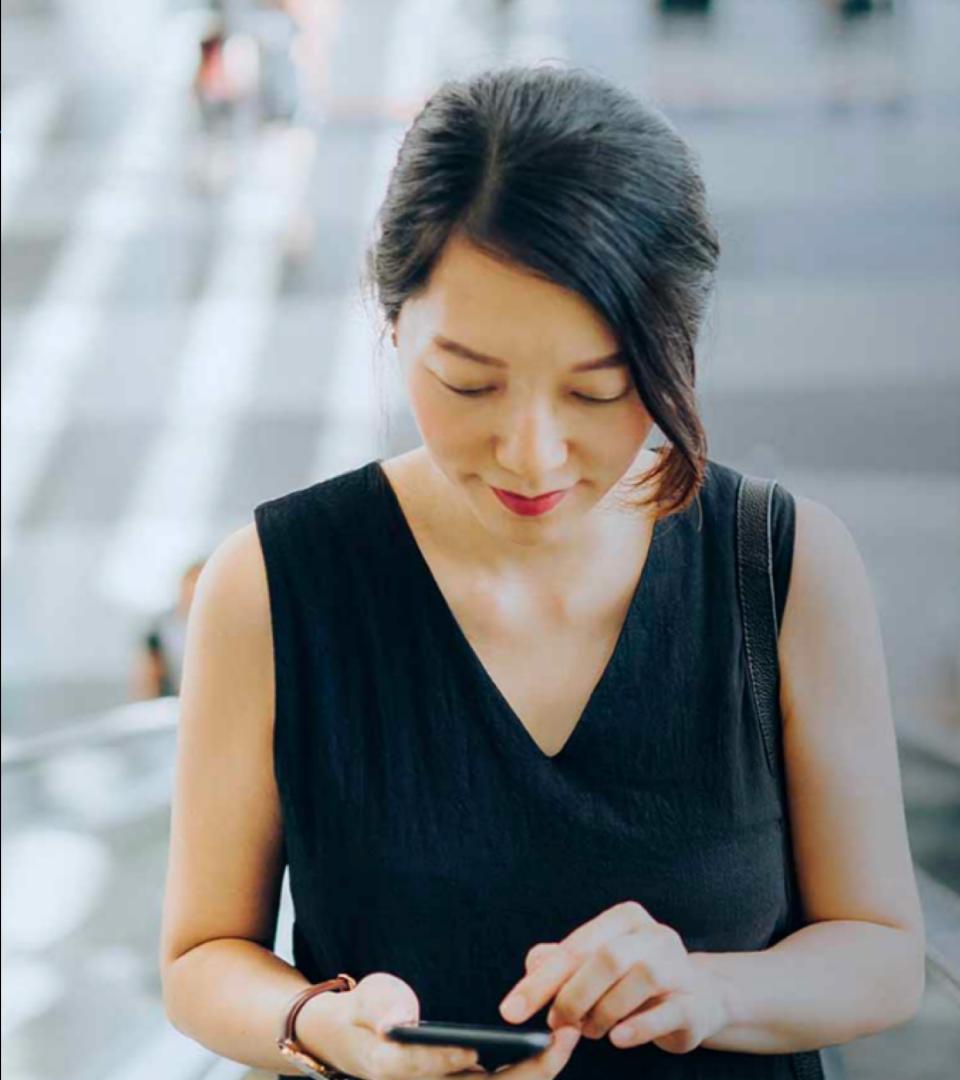
**\$8b** per year by 2022

<https://www.juniperresearch.com/press/press-releases/chatbots-a-game-changer-for-banking-healthcare>

**#1 choice**

for consumers communication with brands is  
messaging

Survey of 3001 US-based consumers, aged 18-65,  
conducted by Survata Research, August 2016



The typical **Millennial** exchanges an average of

# 67

text messages per day.

BUSINESS INSIDER

Americans now spend around

# 5X

**longer** in messaging apps each day than on voice calls.

nielsen  
.....

WhatsApp and Facebook Messenger alone carry

# 22

trillion messages per year.

facebook.

Survey of 3001 US-based consumers, aged 18-65, conducted by Survata Research, August 2016

## What is a Virtual Assistant?

Virtual assistants use a **Conversational interface** to allow users to **engage** with an organization

Additional terms for Virtual assistant:

chatbot – virtual agent – digital assistant – conversational agent - intelligent assistant

# Channels for Conversational Agents



## Customer Service

Add a chatbot to your website that automatically responds to your customers' most frequently asked question



## Mobile Apps

Allow your customers to control your mobile app using natural language virtual agents



## Messaging Channels

Build Twitter, Slack, Facebook Messenger, and other messaging platform chatbots that interact instantly with channel users



## Internet-of-Things



Power connected devices to understand language and respond to your users' commands



## Robot

Power your robots with natural language understanding and conversational capabilities



## Gaming

Power your games with natural language understanding and conversational capabilities

# Sample Use Cases

## Oil Company

Consumers accessing web interface to ask questions on the company website, e.g., Can I replace “Brand X” oil with Your Oil.

## Media Company

Digital Media

## Wireless Telco Provider

Personal Assistant for customer service questions (e.g., how can I pay my bill? how much do I owe on my bill? Am I eligible for an upgrade? how late are the stores open?).

## HR Organization

Personal Assistant for employee questions and support

## Retail Banking

Enable customer service in retail banking.

## Auto Manufacturer

Mobile app that will assist with user questions leveraging a combination of Conversation and R&R (user manual).

## Cable Provider

Personal Assistant for customer service questions (e.g., how can I pay my bill? how much do I owe on my bill How can I view new service offerings?)

## Hospitality Provider

Personal Assistant for customer service questions and recommendations

## Hotel Application

Watson is able to identify and transfer over customer questions to different departments within the hotel.

## Utility Provider

Personal Assistant for customer service questions (e.g., how can I view / edit my account info? pay my bill?)

## Mid-Market Retail Provider

Personal Assistant for sales support questions (e.g., transactions on my account? new product recommendations?)

## Primary Use Cases



### Customer Care

Provide customers with a fast, simple approach to resolve support related questions and problems.



### Conversational Commerce

Provide guided buying experience for prospective customers to purchase goods and services through the mobile or messaging channel of their choice



### Employee Productivity

Simplify access to common questions and tasks through enterprise channels

# Watson Assistant as the Center of Customer Engagement

Flexible, cost-effective solutions for building chat bots and virtual agents

Build once, deploy across multiple platforms



Create natural language interactions with your end-users, that leverage Advanced Machine Learning capabilities



Get started quickly with prebuilt content



Create an omni-channel experience for better user engagement



Walk customers through business processes like application forms or resetting a password



Easy-to-use tooling to enable collaboration between developers and business users



## Watson Assistant Offer

- Greater client control over how data is used – ability to keep proprietary data private
- Cloud delivery for continuous development cycle for ongoing feature enhancements so customers are always on the latest version
- Fast time-to-value; start for free
- Enterprise ready, Premium Plans that offer single tenancy, data isolation, PII support, SLAs, end-to-end encryption
- Multi-lingual capabilities
- Analytics across multiple areas - trend analysis, engagement levels, improving system performance, activity in production systems

# Watson Assistant Plans

## Lite (free)

- For small developers, trials, and education
- Multi-tenant architecture
- Functionality may be limited

## Plan Details

- Up to 10,000 API Calls per month
- Up to 5 workspaces
- Up to 100 intents per workspace
- Up to 25 entities per workspace
- Chat logs are stored for 7 days

## Standard (\$.0025/API call)

- SMBs, development environment for larger projects
- Multi-tenant architecture
- Plan Details
  - Unlimited /message API Calls
  - Up to 20 workspaces
  - Up to 2,000 intents per workspace
  - Up to 1,000 entities per workspace
  - Chat logs are stored for 30 days

## Premium (contact us)

- For enterprises with high security and consistent performance needs
- Isolated containers running on Public hardware
- Plan Details
  - 30 instances per deployment
  - Availability SLA
  - Watson Recommendations
  - Chat logs are stored for 90 days

## IBM Cloud Private (contact us)

- For enterprises who wants to run software on its own infrastructure
- Plan Details
  - Bundled with IBM Cloud Private
  - Will have feature parity with Premium

## Extended reach through our business partners

SoftBank



accenture



Deloitte.



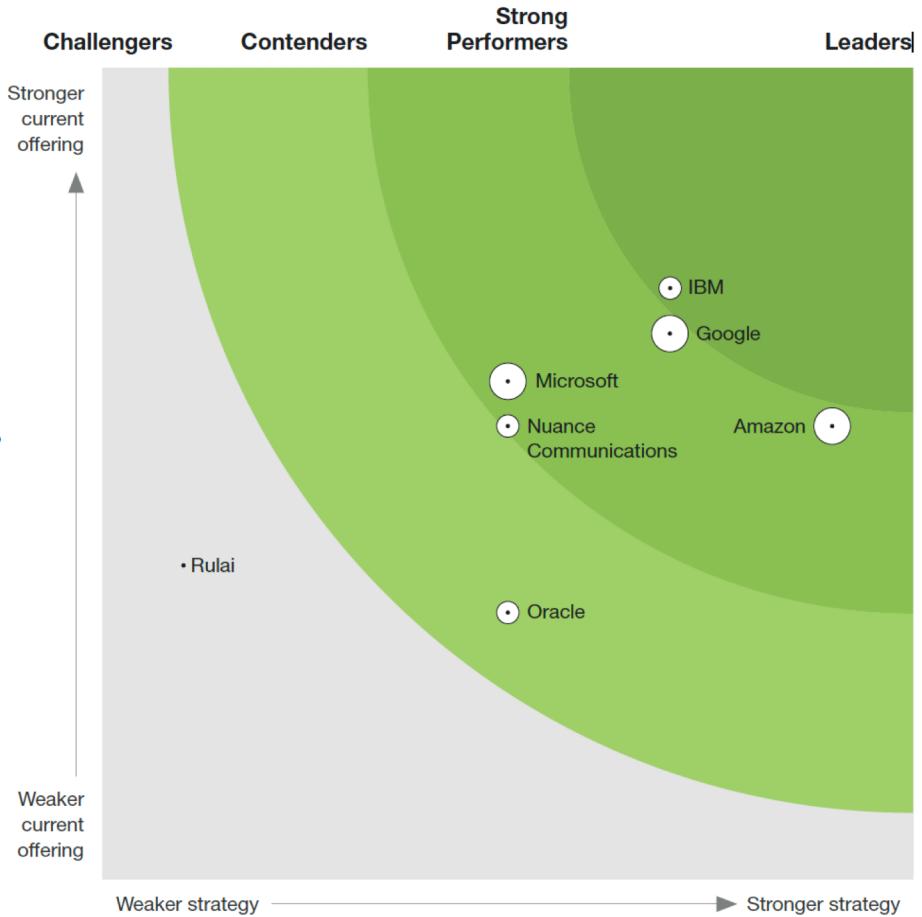
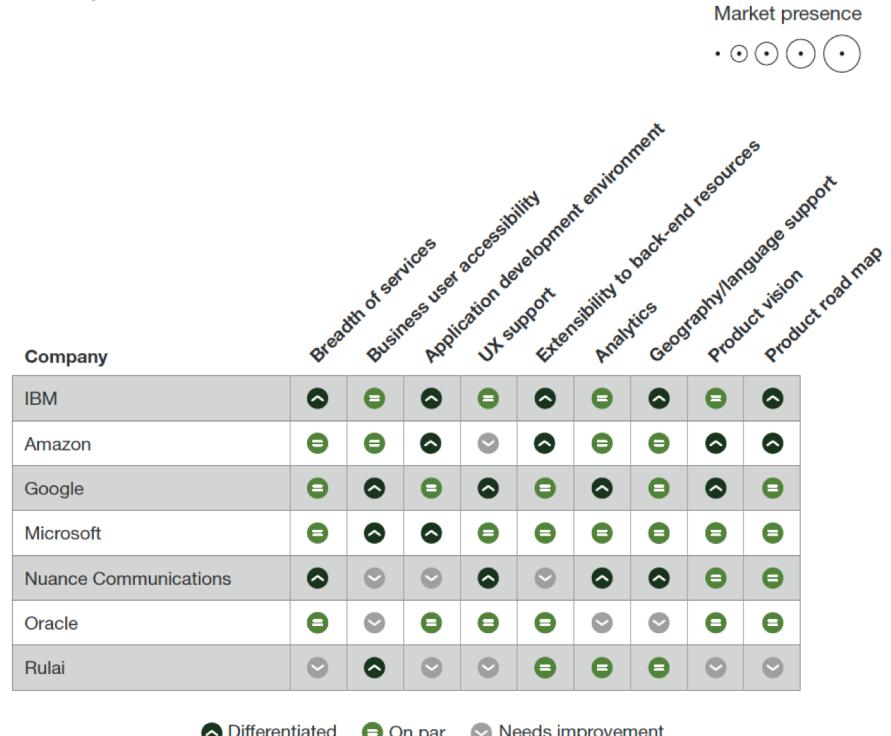
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PubNub®

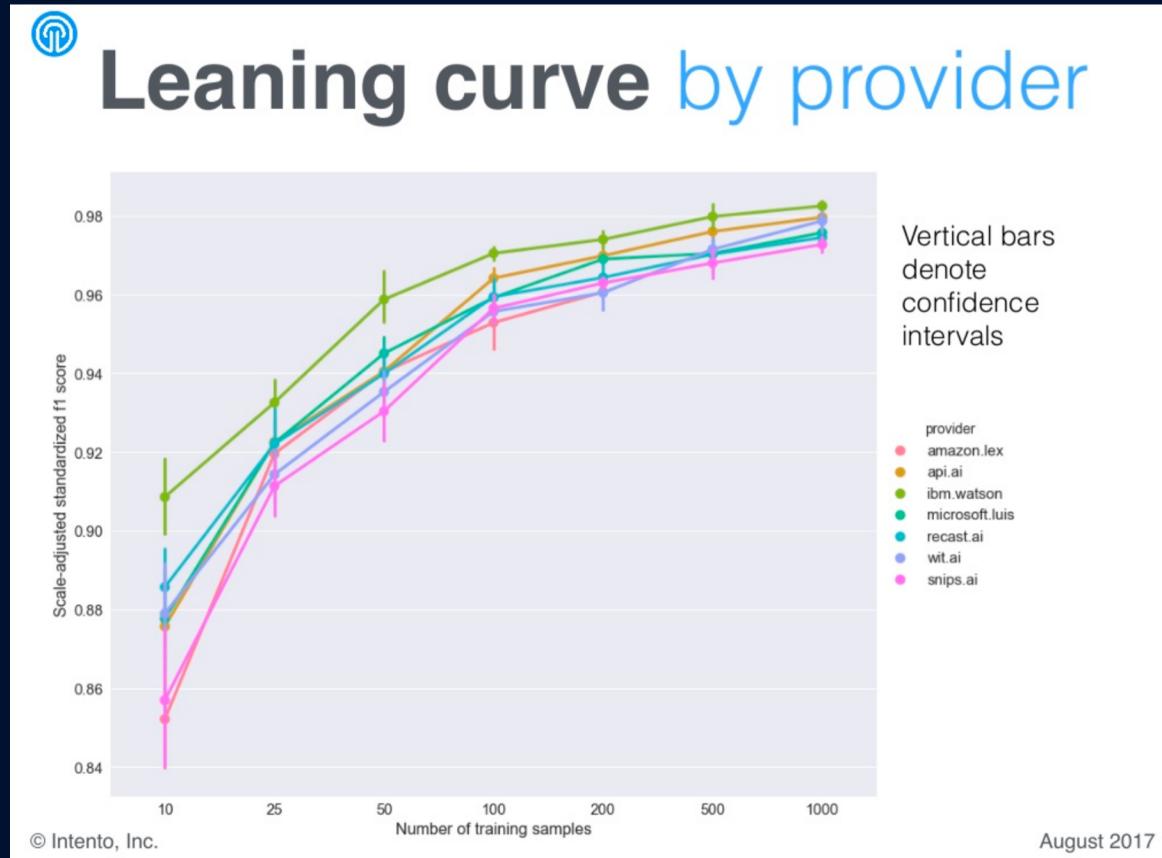
# THE FORRESTER NEW WAVE™

## Conversational Computing Platforms

Q2 2018



# Watson learns quicker than others



Source: NLU / Intent Detection Benchmark by Intento:, August 2017

# Watson Assistant: Roadmap

## Q1 2018

### Prebuilt Content

- Leverage Customer Care prebuilt content to kick-start a bot

### Search

- Enable user's to search for intents, entities and dialog components

### Response Types

- Inclusion of buttons, images, videos, web views etc.

### Digressions

- Dynamically answer questions in the midst of a business process

### Folders

- Organize your dialog nodes into folders

## Q2 2018

### Hosted Application

- Support for state management, cloud function integration & hosted channel integrations

### Contextual Entities (English)

- Leverage a statistical approach to extract entities where there is no defined list (e.g. Names)

### Expand Recommendations

- Leverage unsupervised learning approaches to recommend changes to improve the conversational model

### Git Integration

- Enable integration to Git to manage and version workspaces

### Disambiguation

- Allow the system to disambiguate the user's utterance (Did you mean...?)

## 2H 2018

### Speech Integration

- Enable speech out of the box within Confluence

### Multi-Language

- Enable a single bot that can handle multiple languages

### Multi-Skills

- Allow organizations to link multiple skills for both WA and Discovery to a single Agent

### Human Agent Learning

- Leverage agent actions (responses, handoffs, etc...) to improve the system behind the scenes

### Discovery Connector

- Integration of WA and WA skills

## What are IBM doing in this space?



IBM Watson powered  
personal shopper  
Gwyn



IBM Watson powered  
Advisor  
TOBi



IBM Watson powered  
Advisor  
Cora  
LivePerson Integration



IBM Watson powered  
Concierge  
Mildred



Conversational Expert Shopper decreased  
cart abandonment by 43 percent  
and customers viewed twice as many products



**99%**

improvement in customer response times for Autodesk by implementing Watson

For more than 34 years, software giant Autodesk sold its popular 3D design, engineering and entertainment software under perpetual desktop licensing agreements. However, the way customers wanted to buy and access products changed.

Recognizing that shifting to a subscription business model requires real-time customer service and support. Autodesk developed a **virtual agent interact with customers and improve their experiences**

**5-10 min**

to resolve cases as opposed to a day and a half. And the only reason it takes five to 10 is because that's how long a customer needs to type in or find a specific information, such as matching a serial number to an entitlement or contract

**100,000 conversations**

supported per month, easing the burden on call center staff

**14 M**

total sentences analyzed for keywords, entities, phrases, clusters, and other speech and language patterns

**60 cases**

recognized distinct use cases to quickly resolve easy requests so that agents can focus on helping customers with complex issues

**5.4 mins**

of resolution time for most inquiries, drastically down from 1.5 days

**+10 pt**

increase in customer satisfaction levels because customers don't have to wait as long to have their questions answered

## Connect

With IBM and Salesforce, you'll have the capability to seamlessly connect real-time insights found in unstructured data to discovery within customer data.



Bradesco

283k+  
questions

are answered by Watson in Portuguese every month

95%

Watson is answering questions at a 95% accuracy rate, with only 5% requiring calls for further assistance

62  
products

Watson has been trained on 62 different Bradesco products

5200  
branches

use Watson to better serve Bradesco's 65 million customers

Bradesco is one of the biggest and fastest growing banking and financial services companies in Brazil. The bank recognized that international expansion could provide some growth opportunities but saw the need to improve service to existing customers as a top priority.

Working with Watson, Bradesco, created a virtual customer service solution to provide support for **call center agents**. The agents, who answered branch agent queries, now have an AI system that recognizes, understands and answers these questions with a high level of accuracy.



# Cora

has reduced the length of agent/customer conversations by 20%

In an age when elegant technology interactions have become key factors in many consumer decisions, financial institutions must strive to digitally differentiate themselves from the competition.

RBS recognized that although its customer service representatives were crucial to a customer's journey, they **spent too much time handling problems that are easily resolved, increasing wait times and negatively affecting satisfaction ratings.** RBS used the IBM Watson Conversation Service to build a conversational solution called Cora. The chatbot weaves automated assistance seamlessly with human intervention, creating a hybrid solution that serves as a virtual assistant.

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**200+**

Cora's knowledge base has more than doubled since launch and now contains 200+ question topics per brand

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**50%**

of customer questions Cora can answer after just a few months

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**85%**

of customer inquiries are managed by Cora

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**2X**

The average contact center agent can now spend up to twice as much time on the more complex problems and questions that matter most to customers



UBank, the Australian digital only bank, is aiming to disrupt the banking industry to deliver a simpler, better, smarter customer experience.

In striving to do more, RoboChat was born—the first chatbot in Australia to help customers with their online home applications. “Essentially, RoboChat is set up as an additional staff member providing a specific set of skills within our current live chat capability,” says Jeremy Hubbard, Head of Digital and Technology for UBank.

**6 weeks**

in a six week long process, a 12-person team from Ubank and IBM trained the AI in three key areas:

- Product details
- Risk and compliance
- Off topic, “chit chat” questions, which the bot is frequently asked

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**40 topics**

for core home loan use natural language to respond to customers, along with hundreds of associated questions

## Orange Bank & Watson Conversation Service

<https://ibm.biz/BdZzTJ>

The image consists of two main parts. On the left, there is a photograph of a woman with blonde hair, smiling and wearing a teal long-sleeved top. On the right, there is a screenshot of a digital conversation interface titled "Conversation". The interface shows a message from "Djingo" (in orange) stating: "Bonjour, je suis votre conseiller virtuel, disponible 24/7 pour vous aider. J'apprends de nouvelles choses chaque jour donc n'hésitez pas à me solliciter régulièrement". The timestamp "11:08" is visible at the bottom of the message. The overall background of the slide is black.

- Watson Assistant Marketing Page : <https://www.ibm.com/watson/ai-assistant>
- Watson Assistant Landing Page on WDC :  
<https://www.ibm.com/watson/services/conversation/>
- Watson Assistant Demo : <https://conversation-demo.mybluemix.net/>
- Community Support: <https://developer.ibm.com/watson/>
- Overview of the Watson Conversation service documentation :  
<https://www.ibm.com/watson/developercloud/doc/conversation/index.html>
- How Watson Conversation Service Works : <https://youtu.be/CV8nNIIQh1c>
- A short video : <https://www.youtube.com/watch?v=ccLKDBg8Ht8>
- Blog: <https://www.ibm.com/blogs/watson/category/conversational-services/>

## Watson SDKs

Android

Java

Node.js

Python

.NET

Salesforce APEX

Swift

Unity

## Education and code recipes

Watson Assistant Sample Apps (with code): <https://ibm.biz/BdZ4kPIBM>

Code Patterns: <https://developer.ibm.com/code/patterns/>

IBM Code Bot Exchange: <https://developer.ibm.com/code/exchanges/bots/>

IBM Code How-Tos: <https://github.ibm.com/IBMCODE/howtos>

CognitiveClass.ai course: <https://cognitiveclass.ai/courses/how-to-build-a-chatbot/>

Coursera course: <https://www.coursera.org/learn/how-to-build-your-own-chatbot-without-coding>

Cloud Foundry: <https://www.cloudfoundry.org/the-foundry/ibm-watson-conversation/>

DeveloperWorks community: <https://www.ibm.com/developerworks/>

IBM Watson Blog: <https://medium.com/ibm-watson>

WordPress plugin: <https://wordpress.org/plugins/conversation-watson/>

..and much more.