

IBM **Watson**

IBM Watson

June 2016

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IBM



The Watson Portfolio

The Watson Portfolio

| | Explore & Analyze | | Engage | Discover | Develop | |
|---------------|--|--|---------------------------------------|---|--|--|
| Solution | Watson Explorer | Watson Content Analytics | Watson Knowledge Studio | Watson Engagement Advisor | Watson Discovery Advisor | Watson Developer Cloud (Bluemix) |
| Description | Enterprise Search, Exploration & 360° | Text & Content Analytics | Annotator Training | Natural Language Information Retrieval | Relationship Discovery for Specific Industries | Cognitive Services “out-of-the-box” for developers |
| Delivery | Software | Software | Cloud | Cloud | Cloud | Cloud |
| NLP component | Lexical Analysis, Custom annotation, Concept tagging | Lexical Analysis, Custom annotations, document similarity, NER ... | Human annotation, classifier training | Dialog system, speech to text, text to speech, QA | Co-occurrence analyses, lexical analysis, ... | Try it! |

Watson Knowledge Studio

Watson Knowledge Studio

- From Annotation Planning to Classifier Training
 - Entity and relation extraction
 - Set up projects
 - Create annotation tasks
 - Define type system
 - Pre-annotate documents (dictionary-based)
 - User-friendly annotation & adjudication tool
 - Out-of-the-box classifier training (SIRE)
 - Automatic evaluation & inter-annotator agreement

Watson Knowledge Studio - Capabilities

Entity Types 52

Mention Attributes

Relation Types 2177

+ Add Entity Type

↓ Import

↑ Export

🔍 Enter text to filter entries

| <input type="checkbox"/> | Entity Type Name | Roles | Subtypes | | Action |
|--------------------------|-------------------|---|---|--|------------------------|
| <input type="checkbox"/> | EVENT_MEETING | EVENT_MEETING | | | Delete |
| <input type="checkbox"/> | EVENT_VIOLENCE | EVENT_VIOLENCE | | | Delete |
| <input type="checkbox"/> | EVENT_SPORTS | EVENT_SPORTS | | | Delete |
| <input type="checkbox"/> | EVENT_LEGAL | EVENT_LEGAL | | | Delete |
| <input type="checkbox"/> | EVENT_PERFORMANCE | EVENT_PERFORMANCE | | | Delete |
| <input type="checkbox"/> | GPE | GPE LOCATION ORGANIZATION PEOPLE | OTHER UNSPECIFIED AREA COUNTRY | | Delete |

First 1 2 3 4 5 ... Last

WKS - Annotation Tool

HOME / Tutorial / Human Annotation

- Tasks
- Ground Truth Editor Settings
- IAA Settings
- Annotation Guidelines

[Go Back to Task List](#)

Annotations added to document sets are not considered ground truth until the document sets are submitted and approved. When a document set is approved, documents that are annotated in only one document set immediately become ground truth. Documents that are annotated in two or more document sets become overlapping documents that will become ground truth after conflicts are resolved.

Test

Deadline: 05/27/2016

- + Add Document Sets
- Refresh
- ☑ Calculate IAA
- 👁 Check Overlapping Documents for Conflicts
- 🔄 Apply Type System Updates

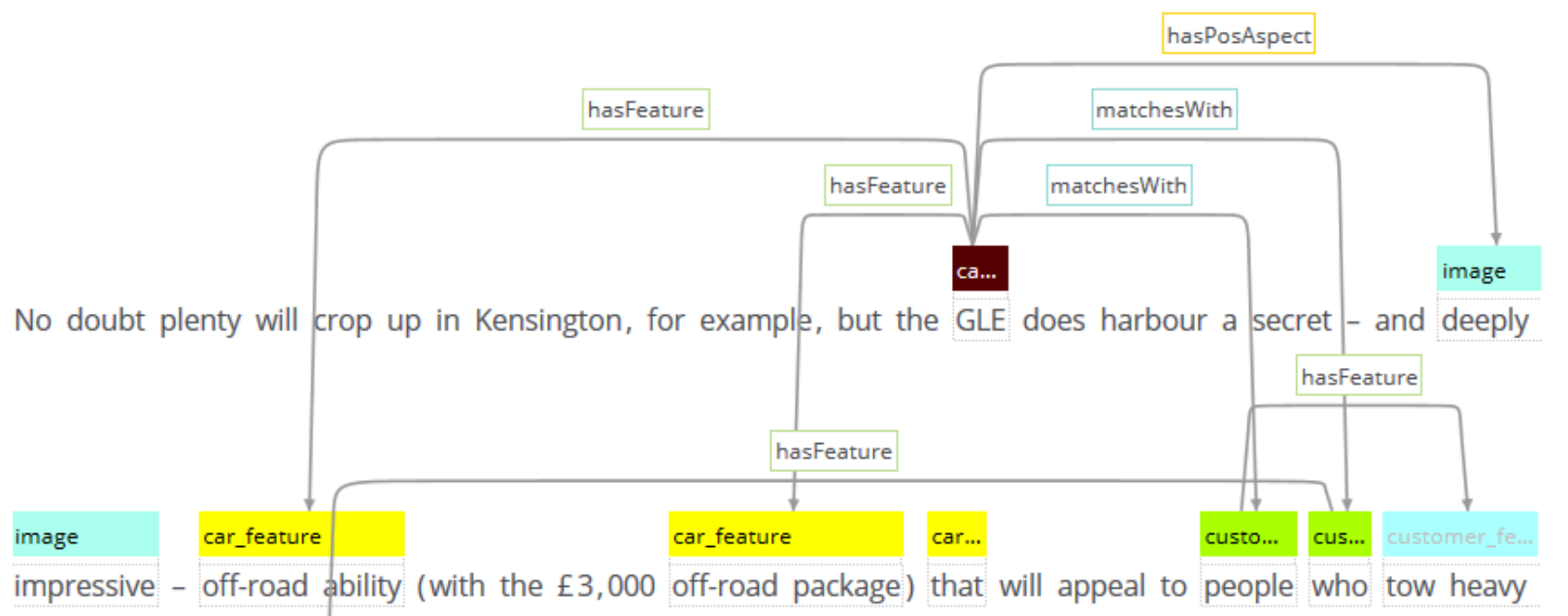
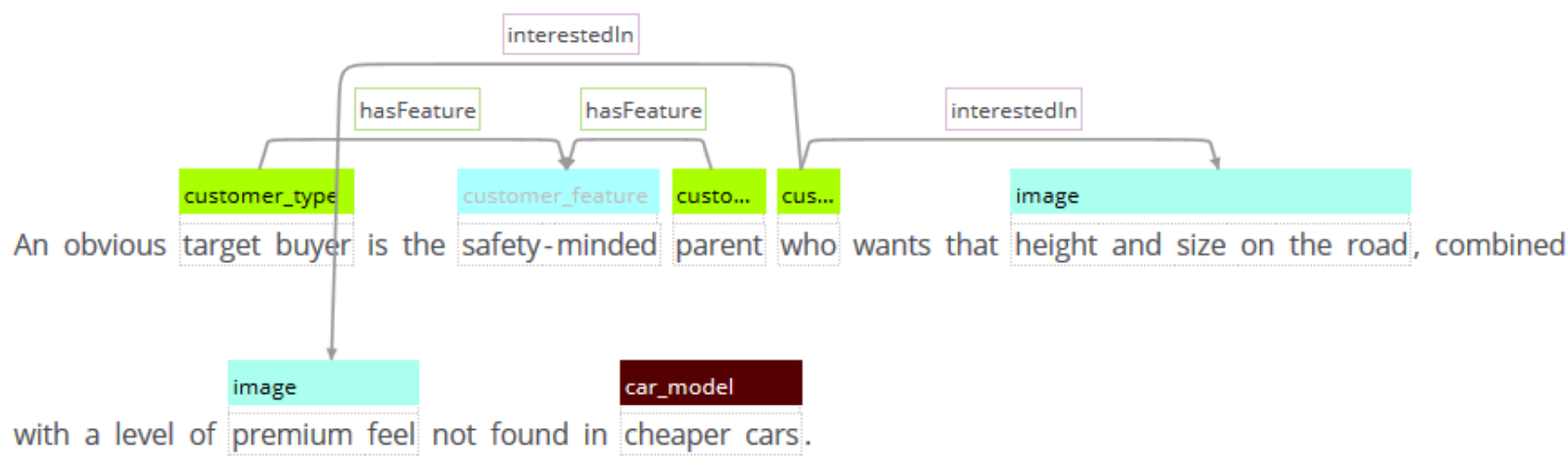
| Document Set Name | Annotator Name | Status | |
|-------------------|----------------|-------------|----------------------|
| Kay Set | | IN PROGRESS | View |

List prices are rarely left unmolested on models like this, so prepare to budget for add-ons.

A
Mention

Relation

Coref



Watson Knowledge Studio

English
German
Japanese

Available

French
Italian
Spanish
Portuguese
Arabic

2016

Key Differentiators:

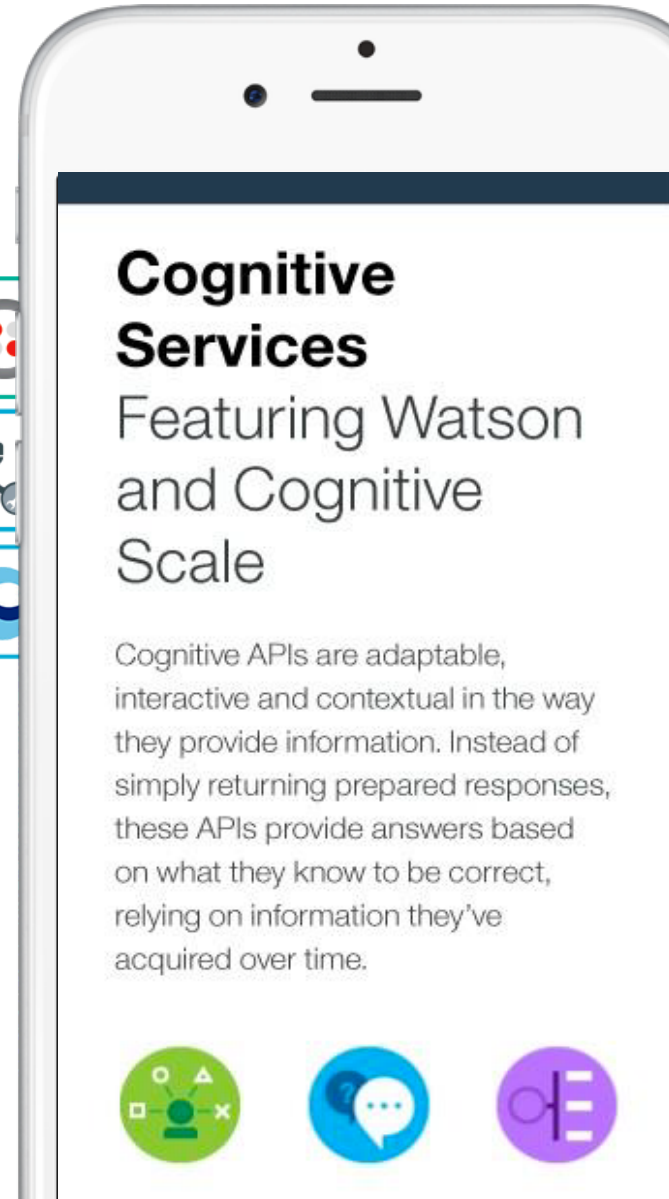
- A tool for non-experts: annotation can be conducted by subject matter experts
- Machine learning component: out-of-the-box classifier training
- Integration with other Watson products

Content Analytics – Use Cases

- Watson Knowledge Studio:
 - **Automotive industry**
 - Analyzing customer feedback about different car models (DE, RU)
 - Finding *weak word expressions* in contract drafts (DE)
- Watson Content Analytics:
 - **Public sector**
 - Analyzing documents from confiscated hard disks (DE, FR, IT)
- Outlook:
 - Integration of lesser-resourced languages (e.g. Romansh)
 - Support for multilingual documents

Watson Developer Cloud

Bluemix is an open-standards, cloud-based platform for building, running, and managing applications.



Build Cognitive Applications with IBM Watson

Watson is creating a new partnership between people and computers that **enhances**, **scales** and **accelerates** human expertise.

Build with Watson



IBM Watson services available on Bluemix are building blocks for developers to create the next generation of cognitive applications to transform the way businesses engage with their customers, discover, innovate and make decisions.



Concept Expansion



Message Resonance



Personality Insights



Concept Insights



Machine Translation



Relationship Extraction



Speech to Text



Visual Recognition



Question and Answer



Visualization Rendering



Text to speech



Tradeoff Analytics



AlchemyAPI

AlchemyAPI's text analytics and computer vision capabilities now part of Watson Developer Cloud and available on Bluemix

Watson as Bluemix Services

Watson

Build cognitive apps that help enhance, scale, and accelerate human expertise



AlchemyAPI
IBM



Concept Insights
IBM



Dialog
IBM



Document Conversion
IBM



Language Translation
IBM



Natural Language Classifier
IBM



Personality Insights
IBM



Relationship Extraction
IBM BETA



Retrieve and Rank
IBM



Speech To Text
IBM



Text to Speech
IBM



Tone Analyzer
IBM



Tradeoff Analytics
IBM



Visual Recognition
IBM



Cognitive Commerce™
Third Party



Cognitive Graph
Third Party



Cognitive Insights™
Third Party

Example Watson Application

← Cloud Foundry Applications

conversational-agent-application-start... Status: ● Your app is running

View App

Getting Started Overview Runtime Connections Logs Monitoring

Runtime



BUILDPACK
SDK for Node.js™



INSTANCES
All instances are running
Health is 100%



MBS PER INSTANCE



TOTAL MB ALLOCATION
1280 MBs still available

Activity Log

No activity available

Connections (2)

classifier-service

dialog-service

Continuous Delivery

GIT URL
<https://hub.jazz.net/git/norahollenstein/conversational-agent...>

Runtime Cost


\$ 0.82
Current Charges for Billing Period



conversational-agent-application-starter-...

GIT URL: <https://hub.jazz.net>

Routes: [conversational-agent-application-starter-...](#)




SDK FOR NODE.JS™


| | | | |
|-------------------|----------------------|--------------------------|--------------|
| INSTANCES: | MEMORY QUOTA: | AVAILABLE MEMORY: | SAVE |
| 1 | 512 | 1.250 GB | RESET |

(MB per Instance)


+ **ADD A SERVICE OR API**


+ **BIND A SERVICE OR API**




Natural Language Classifier 


classifier-service
standard

Show Credentials  [Docs](#)



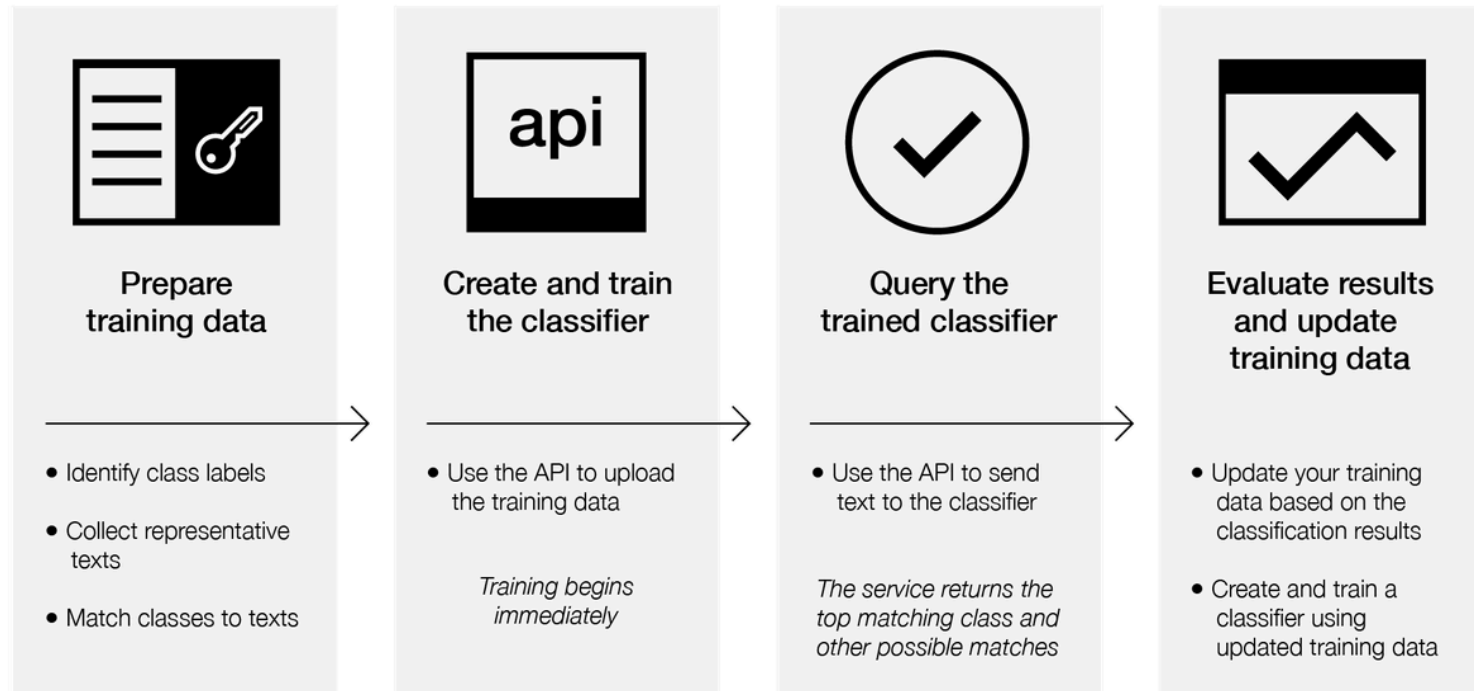
Dialog 

dialog-service
standard

Show Credentials  [Docs](#)

Natural Language Classifier

Using the Natural Language Classifier Service



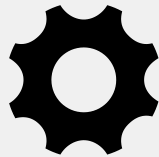
Dialog Service

Using the Dialog Service



Prepare data

- Gather representative questions
- Understand case
- Understand business processes



Design

- Review potential for Watson services (NLC, STT, TTS, etc.)



- Monitor conversations and review activity



Optimize content

- Learn from real interactions
- Adjust existing content to suit user needs
- Add new content based on user activity

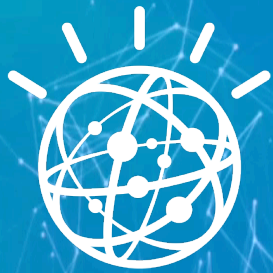
Japanese, Spanish, Portuguese, Arabic, French, Italian ... and German

Watson & Bluemix – Use Cases

- Sentiment Analysis, Personality Insights
 - Social Media Analytics (FR, DE)
- Retrieve & Rank, Machine Translation
 - **Pharmaceutical industry**
 - Return most accurate response document template for medical questions
- Outlook: Call center support for Swiss clients
 - Challenge: speech synthesis and speech recognition for Swiss German dialects and Swiss Standard German

Watson on Bluemix: Summary

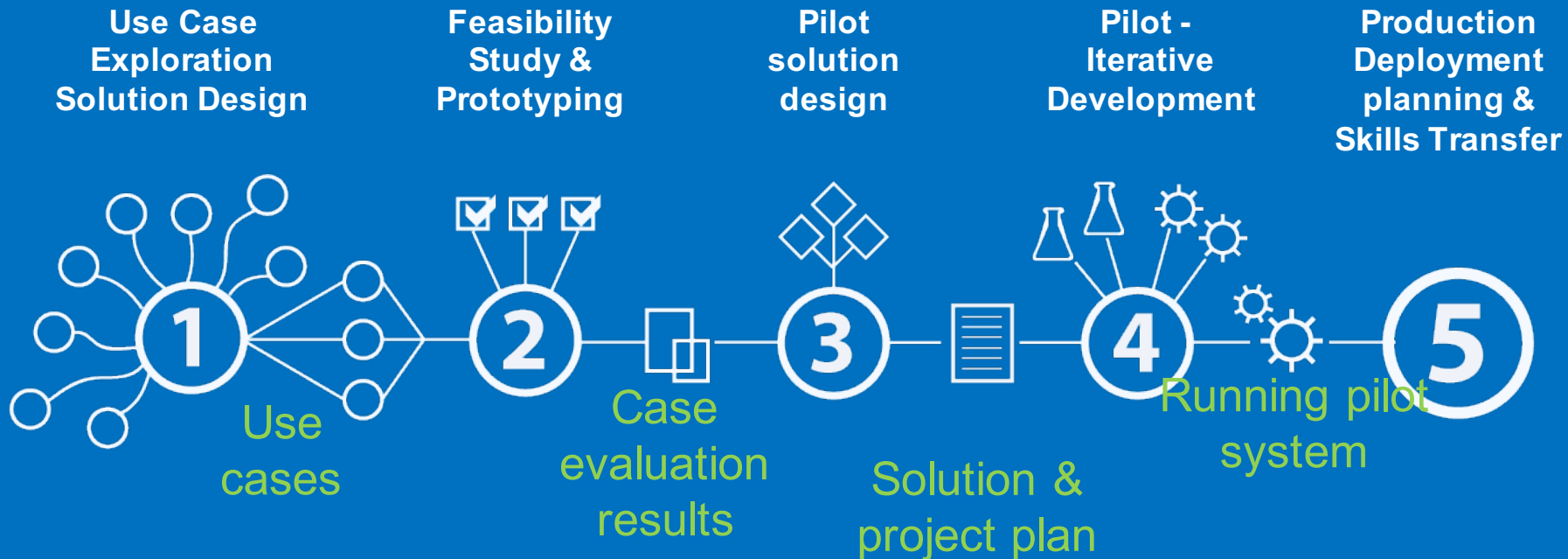
- Watson Services available for the most common languages... and new languages are added continuously
- Interest in integrating NLP components for lesser-resourced languages
- Try it yourself: www.bluemix.com



What will you do with Watson?

Backup Slides

How to approach a Watson Project



- **Cognitive projects are not classical IT projects with defined outcomes in static systems**
 - Uses cases in Cognitive computing projects can vary greatly depending on the use-case
 - Different technologies and solutions, ranging from research projects to industry proven product solutions are available to address different use cases
 - Results base on training and linguistic development and depend greatly on the source data
 - A dynamic, iterative implementation approach is required