

IBM Watson Discovery Lab

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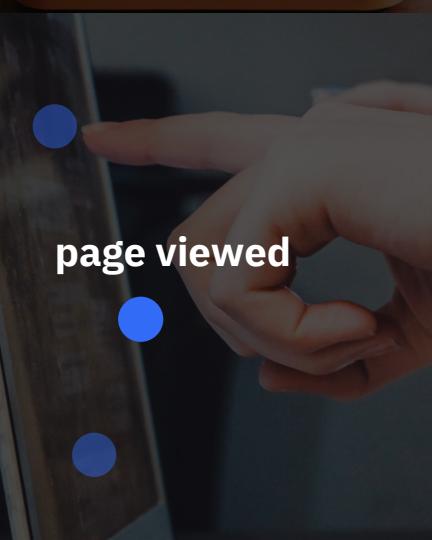
Part One - Watson Discovery Overview

Part Two – Watson Discovery Hands On Lab

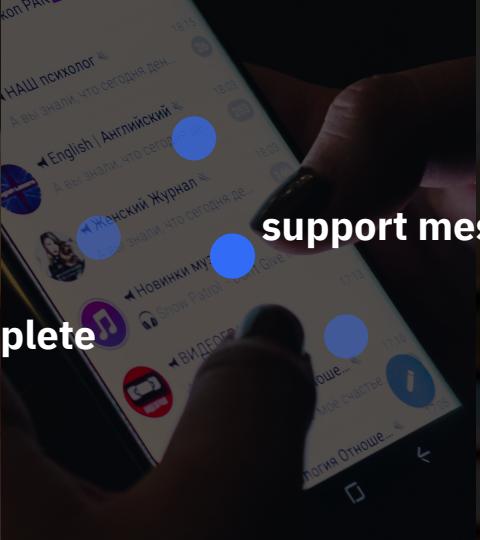
Part Three – Watson Discovery & other NLP services



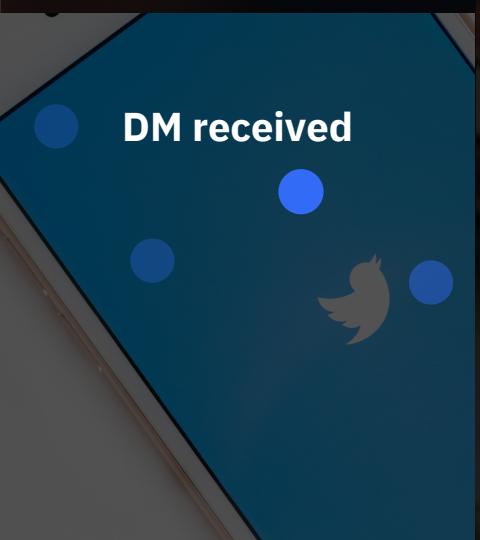
claim processed



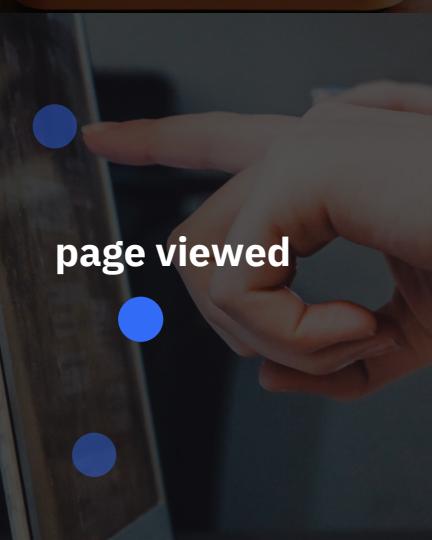
page viewed



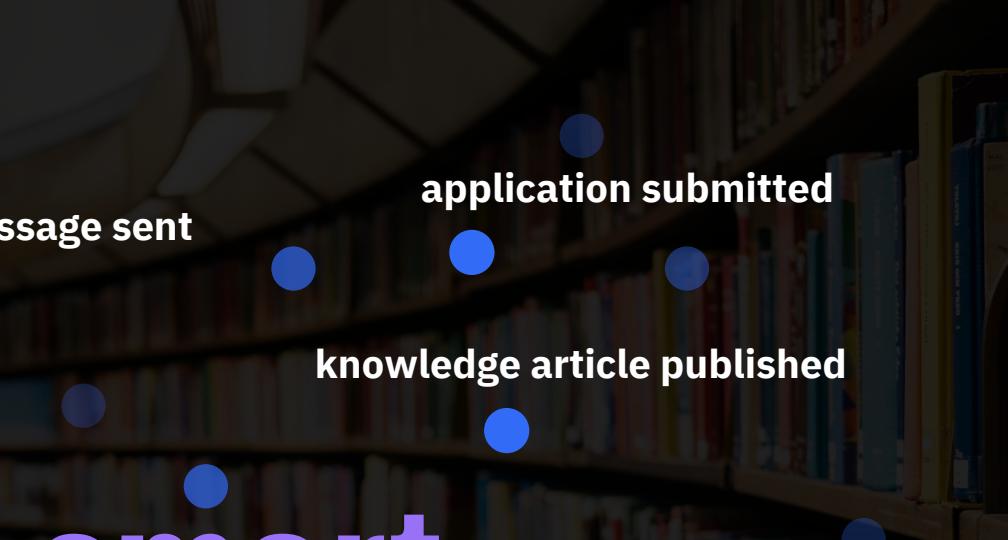
sales call complete



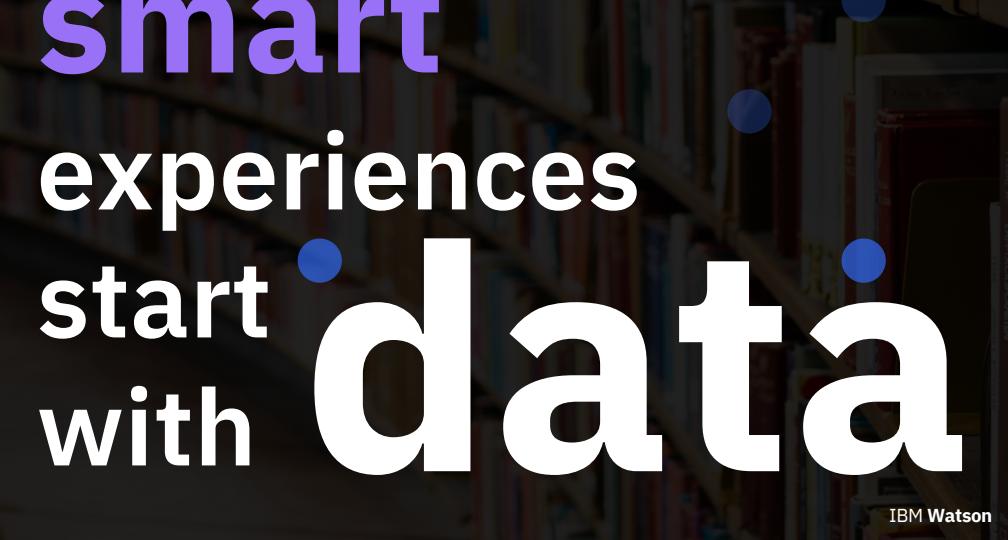
DM received



support message sent



application submitted



knowledge article published

smart
experiences
start
with data



You already have the data you need to influence a **smart** experience.

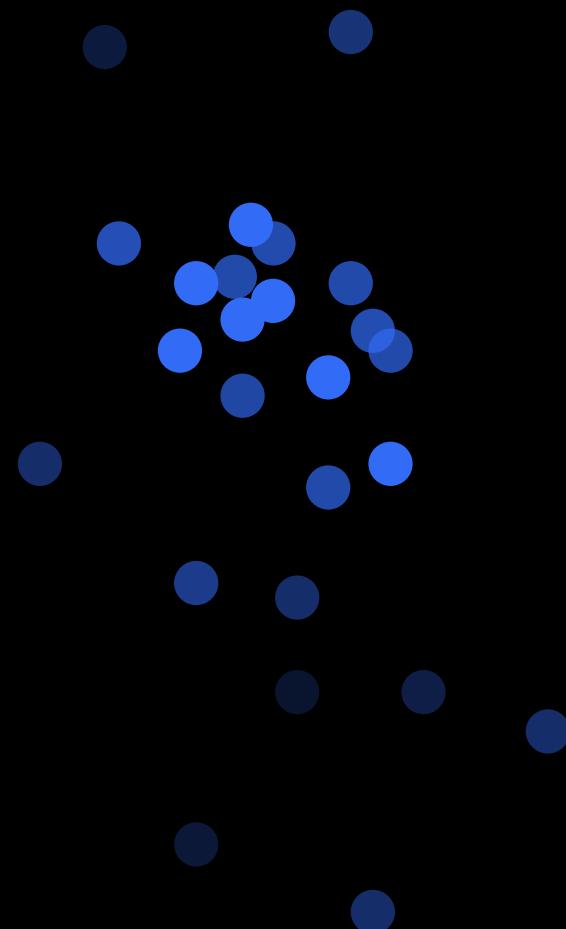


But you need **AI** to make sense of it all.

What is AI?

Artificial Intelligence | *noun*

An area of computer science that emphasizes the creation of intelligent machines that work and react like humans.



What led to the prominence of AI?

Data explosion

Computing power

Deep learning algorithms

How can Watson power smart experiences?

Today
smart banking

all digital bank supported by
virtual assistants



Future

intelligent and proactive
financial advisor

smart communication

Over 20,000 support chats per
day deflected from agents



Sprint



smart cars

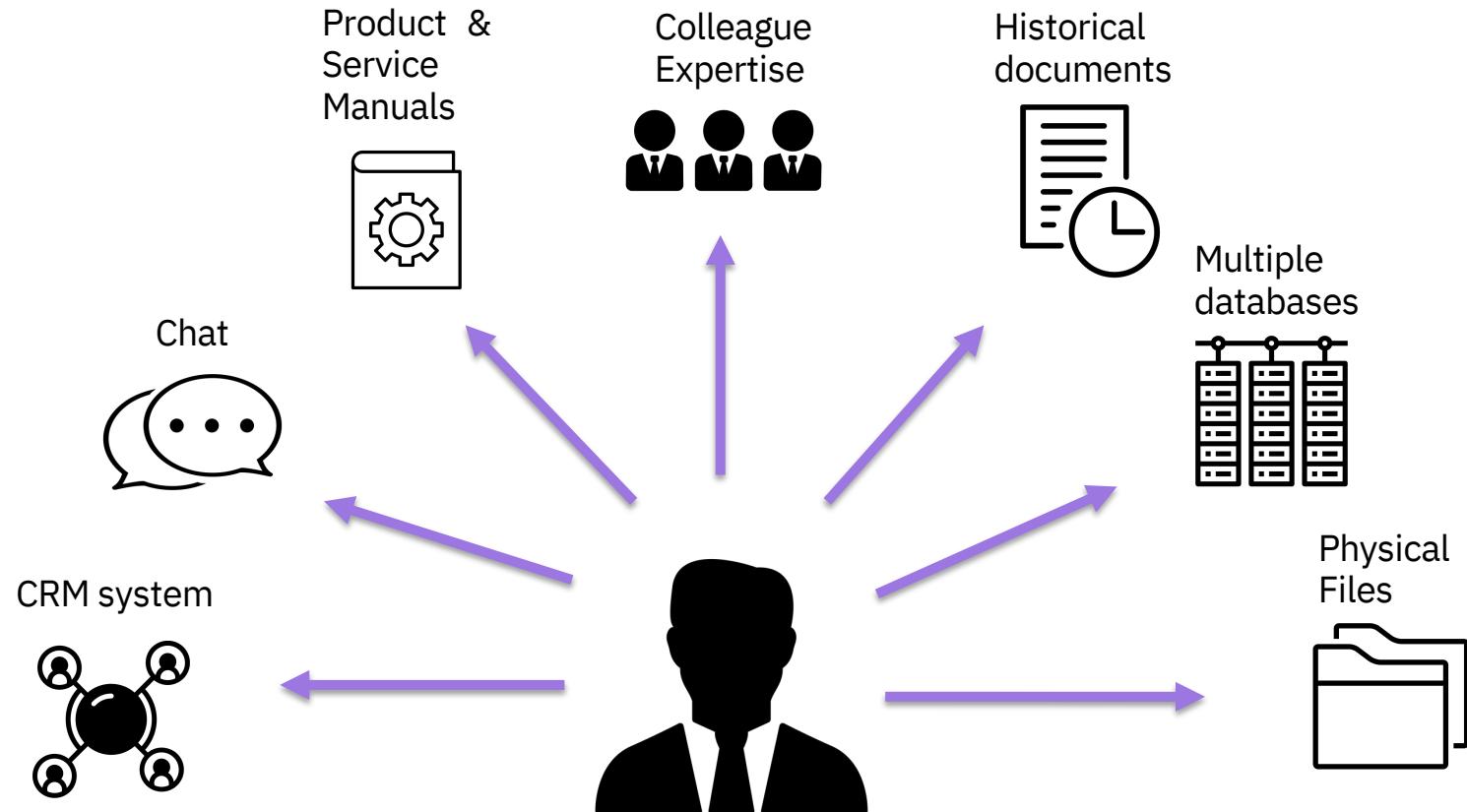
car manual support with
dashboard image recognition



VW

connected in-car assistant that's
reachable via phone or message

Your experts work with enough tools and resources on a daily basis.



Enterprise Challenges

Data availability and complexity

- Complex documents
- Variety of formats
- Less data
- Not labeled or costly to label
- Multi-lingual

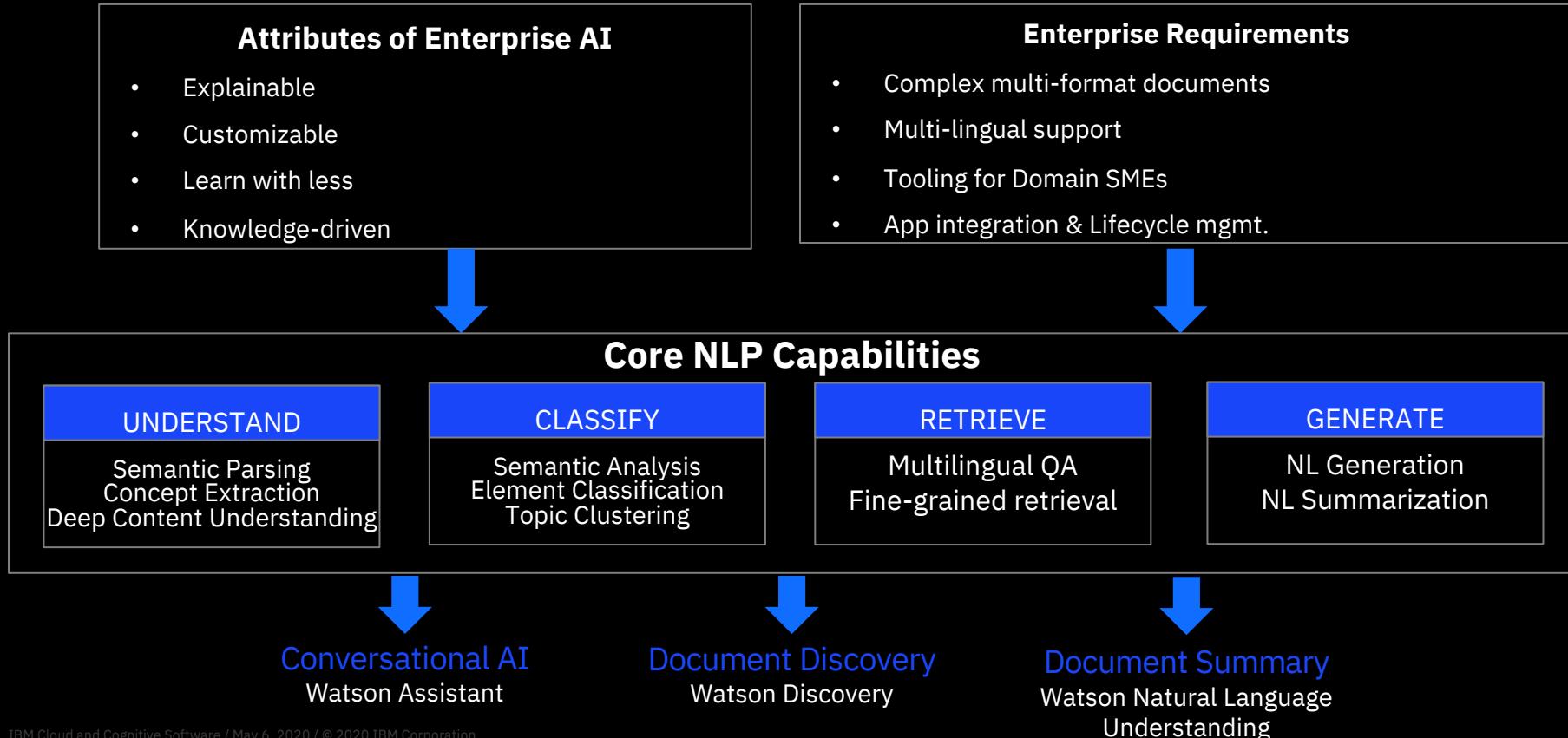
Need for customization

- Domain specific vocabulary & terminology
- Leverage knowledge from enterprise resources
- Domain SMEs who are not programmers

System requirements

- Scale across use cases with minimal re-training
- Integrate into enterprise workflows & processes
- Lifecycle management

Research Innovations Power Watson NLP Offerings



Example: Smart Document Understanding in Watson Discovery

Smart Document Understanding leverages advanced machine learning to parse and understand the structure of complex enterprise documents while supporting an easy-to-use intuitive interface for customization for domain experts

Attributes of Enterprise AI

- Explainable
- Customizable
- Learn with less
- Knowledge-driven

Enterprise Requirements

- Complex multi-format documents
- Multi-lingual support
- Tooling for Domain SMEs
- App integration & Lifecycle mgmt.



Core NLP Capabilities

UNDERSTAND

- Semantic Parsing
- Concept Extraction
- Deep Content Understanding

CLASSIFY

- Semantic Analysis
- Element Classification
- Topic Clustering

RETRIEVE

- Multilingual QA
- Fine-grained retrieval

GENERATE

- NL Generation
- NL Summarization

Key Use Cases

Expert Assist

Through the Watson Discovery, IBM delivers answers to complex questions by unifying enterprise datasets to empower experts for their next action or decision.

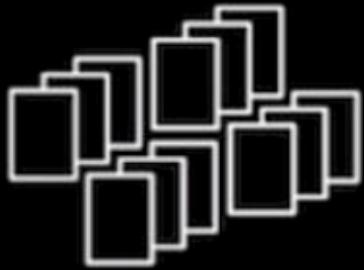
Agent Assist

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

Employee Self-Service

Simplify access to common questions and tasks through enterprise channels – often HR related.

“Big Four” accounting firm uses Watson NLP to decode tax laws and get millions back for their clients



PROBLEM

- Tax professionals spend 1,000 hours+ manually reviewing materials
- Missing a detail could mean missing millions of \$\$

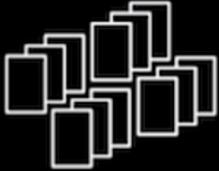
SOLUTION

- Tax professionals and engineers in R&D use Watson to find tax relief for clients

CONTENT INTELLIGENCE W/ CONTRACT ENRICHMENTS

- 5 models
- 10K documents for training
- Domain-specific vocab
- 75% success rate w/ correct recommendations

Using Watson to enhance customer satisfaction



LOOKING TO SOLVE A CUSTOMER PROBLEM

The application form was sometimes overwhelming to people

SOLUTION

Working with IBM Watson, a major Australian bank set out to build an assistant, which gives customers support at any time with the home loan app, and it also frees up their advisors to help customers with more complex questions during business hours.

USE OF CUSTOMER CARE SELF-SERVICE AND AGENT-ASSIST

- 3 Assistants
- 15% increase in conversion through the online application forms
- 33% cutting down manual search time

Example: Customer Care: self-service and agent-assist

Watson Assistant and Watson Discovery enables the full spectrum of customer self-service and agent-assist solution. Customers can find instant answers to their simple questions using Watson Assistant freeing up agents for more complex queries. Agents perform complex queries and find relevant answers quickly.

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Core NLP Capabilities

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Semantic Parsing
Concept Extraction
Deep Content Understanding

CLASSIFY

Semantic Analysis
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Topic Clustering

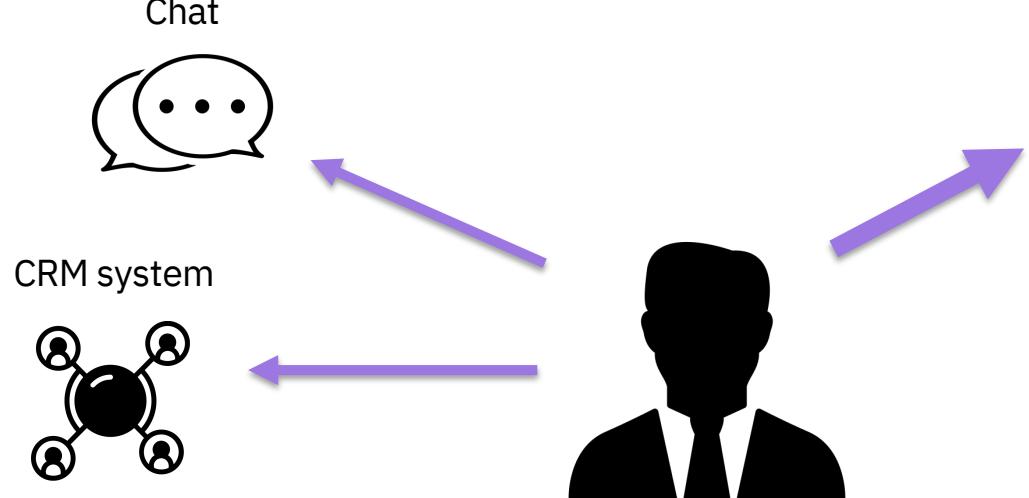
RETRIEVE

Multilingual QA
Fine-grained retrieval

GENERATE

NL Generation
NL Summarization

Combining multiple tools and resources gives your experts easier access to the information they need to perform their jobs with higher efficiency and success.



Watson Discovery for Expert Assist

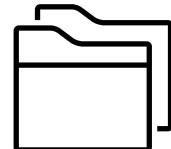
Historical documents



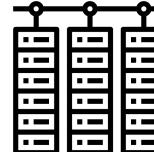
Colleague Expertise



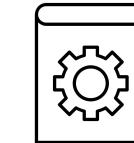
Physical Files



Multiple databases



Product & Service Manuals



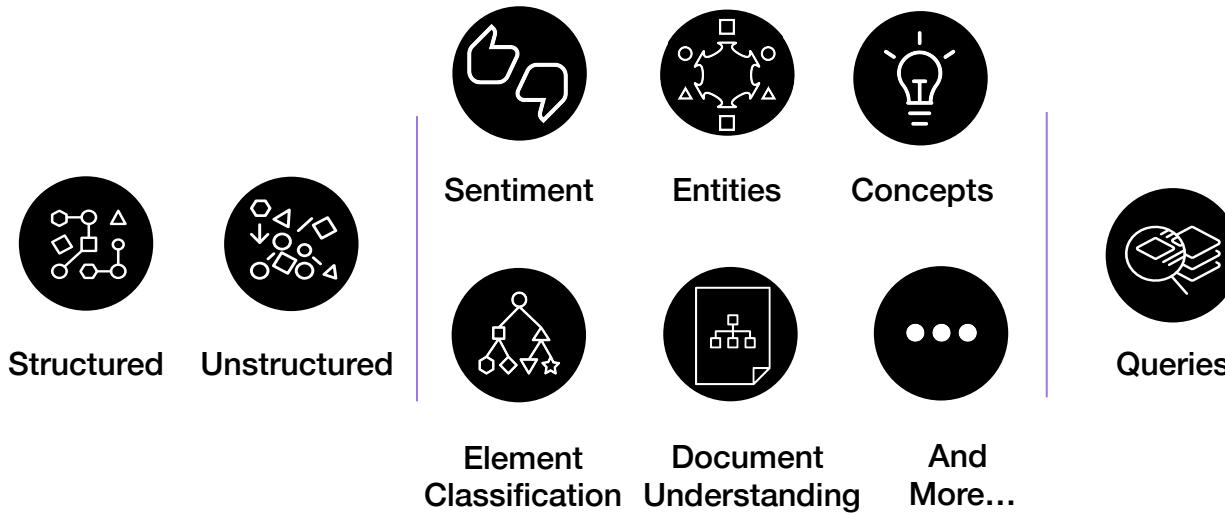
IBM Watson Discovery

An AI-powered insight engine that delivers answers to complex questions by unifying enterprise datasets to empower individuals for their next action or decision.

An AI powered search tool that:

- An AI-powered insight engine that finds answers in both structured and unstructured data, unified from multiple data silos in the enterprise
- The capability to easily integrate with on-premises and self-managed virtual assistants (built with IBM Watson Assistant) to help ensure no question is left unanswered
- Learns from interactions with your knowledge workers to continually improve and surface the information they need to do their jobs

Watson Discovery



Ingest



Enrich



Query



Example: Smart Document Understanding

Smart Document Understanding leverages advanced ML learning to parse and understand the structure of complex enterprise documents while supporting an easy-to-use intuitive interface for customization by domain experts

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Enterprise Requirements

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↳ Hands on Watson Discovery Lab



NLP Services on IBM Cloud



Watson Assistant

IBM • AI

Watson Assistant lets you build conversational interfaces into any application, device, or channel.

Lite • Free • IAM-enabled



Natural Language Understanding

IBM • AI

Analyze text to extract meta-data from content such as concepts, entities, emotion, relations, sentiment and more.

Lite • Free • IAM-enabled



Speech to Text

IBM • AI

Low-latency, streaming transcription

Lite • Free • IAM-enabled



Text to Speech

IBM • AI

Synthesizes natural-sounding speech from text.

Lite • Free • IAM-enabled



Language Translator

IBM • AI

Translate text, documents, and websites from one language to another. Create industry or region-specific translations via...

Lite • Free • IAM-enabled



Knowledge Studio

IBM • AI

Teach Watson the language of your domain.

Lite • Free • IAM-enabled

Learning path: Getting started with Watson Discovery

From Watson Discovery basics to creating your own apps

By [Richard Hagarty](#)

Published July 1, 2019



Level	Topic	Type
100	Introduction to Watson Discovery	Article
101	Create a cognitive news search app	Code pattern
201	Create an app to perform intelligent searches on data	Code pattern
301	Get customer sentiment insights from product reviews	Code pattern
401a	Enhance customer helpdesks with Smart Document Understanding using webhooks in Watson Assistant	Code pattern
401b	Enhance customer helpdesks with Smart Document Understanding using the Watson Assistant search skill	Code pattern

This learning path is designed for developers interested in quickly coming up to speed on what Watson Discovery offers and how to use it. It consists of step-by-step tutorials, deep-dive videos, and complete examples of working code. As you proceed through the learning path, you'll work with more complex features as well as different use cases for applying the service.

Technologies (4) ^

- Artificial intelligence
- Deep learning
- Machine learning
- Natural language processing

Deployment Models (1) ^

Products & Services (1) ^

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Resources ^



Artificial intelligence

Build and train models, and create apps, with a trusted AI-infused platform.

Get started with Artificial intelligence

Articles

Courses

Datasets

Models

Code Patterns

Podcasts

Open Project

Series

Tutorials

Videos

Community

Blog Posts

Announcements

Digital Conferences

Events

Related topics

Conversation

Data science



Featured | Series

Learning path: Getting started with Watson OpenScale

Featured | Tutorial

Get started with the Data Asset eXchange

Get started with Artificial intelligence



Upcoming Events

[VIRTUAL] Predict The Future With IBM Watson AutoAI

April 30, 2020

[Virtual] Big Data Developer Meetup London - IBM Masterclass & Hackathon: AI Explainability

London

May 1, 2020

more →

IBM Cloud Pak for Data

Fully-integrated data and AI platform



Cloud Pak for Data...

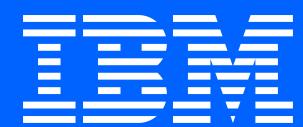
- Runs on Red Hat OpenShift and is a fully-integrated data and AI platform
- Supports multi-cloud environments such as AWS, Azure, Google Cloud, IBM Cloud, and private clouds
- Allows you to build, deploy, and manage ML models that scale throughout the organization and automates the AI lifecycle
- Enables integrations to popular open source and cloud native tools, as well as IBM application middleware and development services

Developer benefits...

- Full control over your data and its privacy
- Seamless integration of developer tools -- streamlines work by creating a pipeline for collecting, organizing, analyzing, and consuming data
- Single platform for data management and analysis, allowing developers to easily manage data connections and access to analysis tools
- Core operational services provided, including logging, monitoring, and security

Get started today by visiting: <https://ibm.biz/cpd-experiences>

Thank you.



Watson Discovery Plans

	Multi-tenant	Single-tenant	On-Prem
Lite For small developers, hobbyist and trials. Does not include all features found in Standard and Premium.	Standard Smaller businesses and development environments for larger projects. Does not include all features found in Premium.	Premium For businesses with high security who need data isolation and high SLA uptime.	IBM Cloud Private For businesses who needs to run on-prem or other clouds.



Woodside harnesses the power of Watson Discovery to extract meaningful insights from 30 years of dense and complex engineering data. IBM® Watson® technology puts decades of knowledge at the fingertips of employees across the company, helping answer tough questions faster to enable fact-driven decision making on complex projects. Companies such as Woodside often rely on the institutional knowledge of experienced engineers, which they hope is passed on to the next generation. Woodside can now tap into years' worth of data and personnel experience to uncover its tribal knowledge while processing new information as the company adds to its knowledge corpus.

Accelerates expertise

by giving staff unlimited access to 30 years of tribal knowledge

10M savings in employee costs

because of faster access to and more intuitive analysis of engineering records



75% reduction in time spent

by the geoscience team reading and searching through data sources

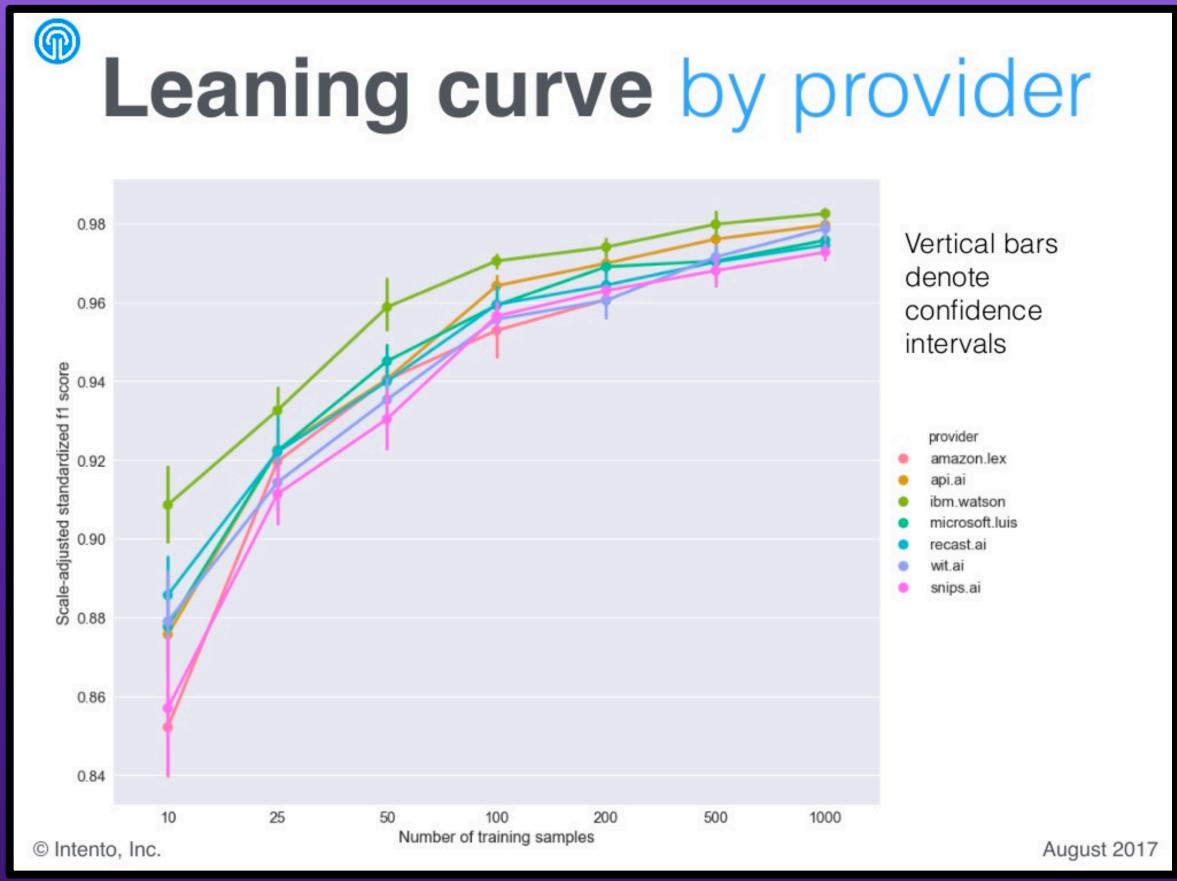
“It became very evident to me that we spend a lot of time building big things, but each time we build one we have to go back and recall what we did last time. We have to find the people who were around last time.”



Learn more
[Read the full case study](#)

Contact Us
<https://www.ibm.com/watson/partnerships/>

Watson learns quicker than others



Watson Discovery

Key Benefits

Improve Employee Satisfaction & Productivity

Provide employees with the information they need to do their jobs efficiently to make informed business decisions.

Lower Operating Costs

Through Watson Discovery, IBM can decrease employee costs through faster access to and more intuitive analysis of information.

Scale Expertise

Ensure that the knowledge acquired over years of work isn't lost and continues to be accessible to new generations of workers.

Watson Discovery

Key Differentiators

Continuous Improvement

Train on actual usage data instead of artificially constructed training sets for more representative models. Automatically update training as data and usage changes without needing to manually create new training data.

End to End Functionality

From data ingestion to enrichment to query there's no need to chain together multiple APIs

Data Control

Clients maintain control and ownership of their data. IBM will not share unique insights derived from clients data without client's agreement.

Increase time to value with point and click connectivity

Choose data sources to analyze within Discovery tooling UI with a simple point-and-click functionality. Consolidate data from multiple siloed sources.

Differentiating features

IBM Watson Discovery has features that our competitors do not, like a pre-enriched new database, natural language query, relevancy training, anomaly detection, and more.

Embedded NLP

Watson Discovery ships with natural language processing built-in. By simply ticking a few options we're able to extract sentiment, entities, concepts, semantic roles, and more.