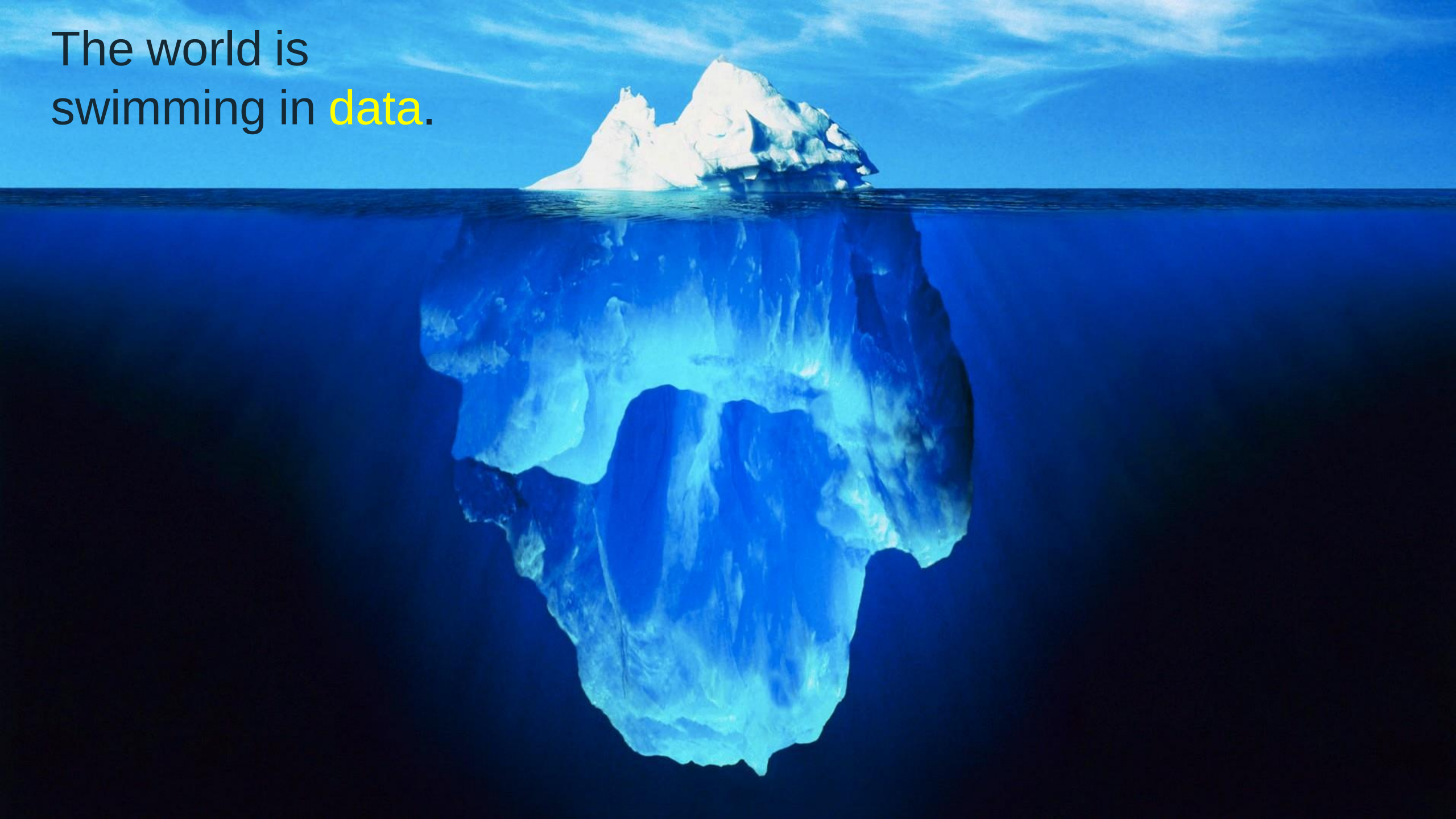
#ibmdevconnect

Watson Discovery – Actionable insights

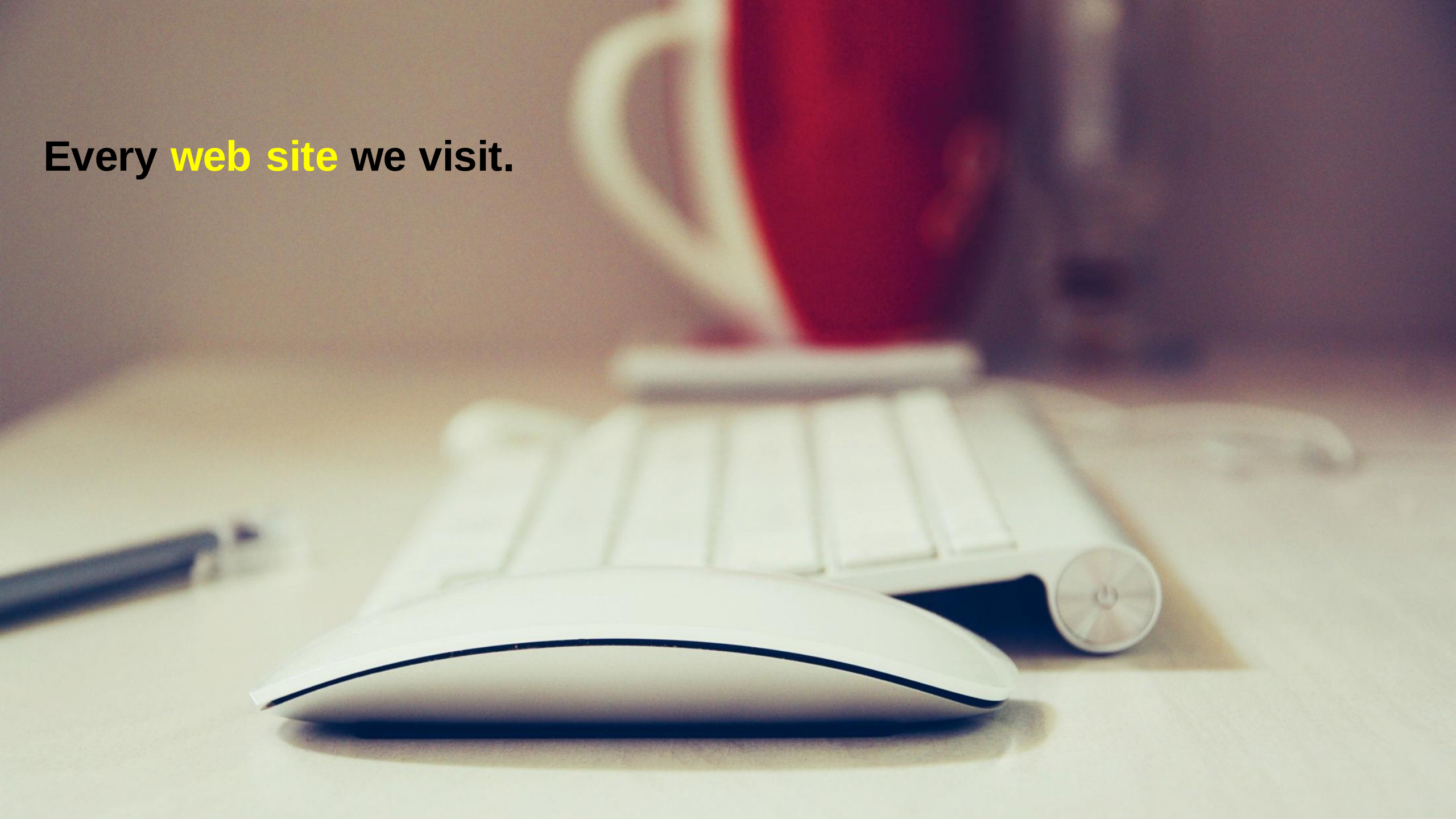
Agenda

- Introduction
- Watson Discovery – Why, When?
- How? - Walkthrough – Exploring Discovery - Bluemix Console – Discovery Tool and API
- Where? Possible uses
- Summary

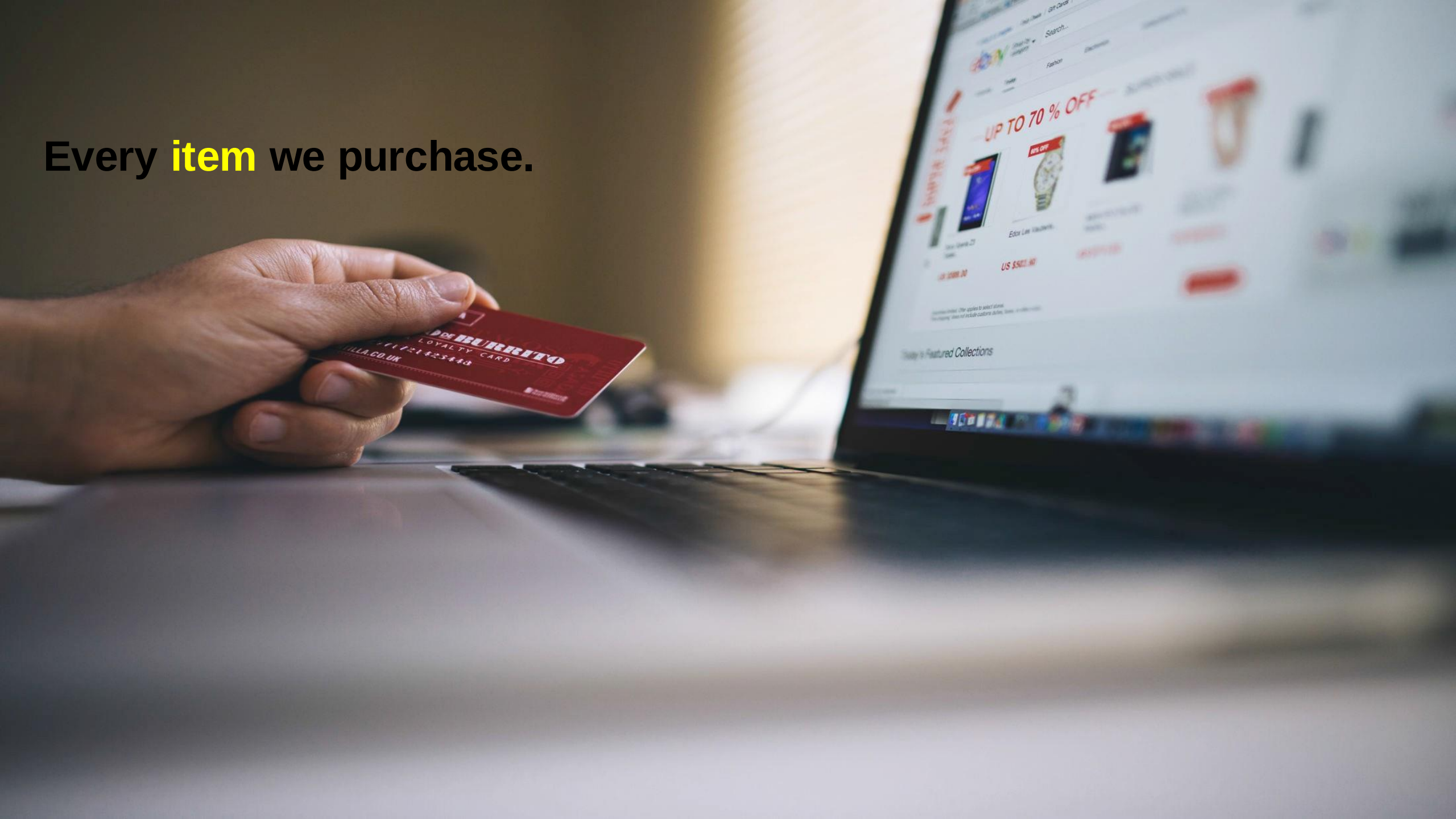
The world is swimming in data.



Nearly everything we do generates or consumes data.


Every web site we visit.

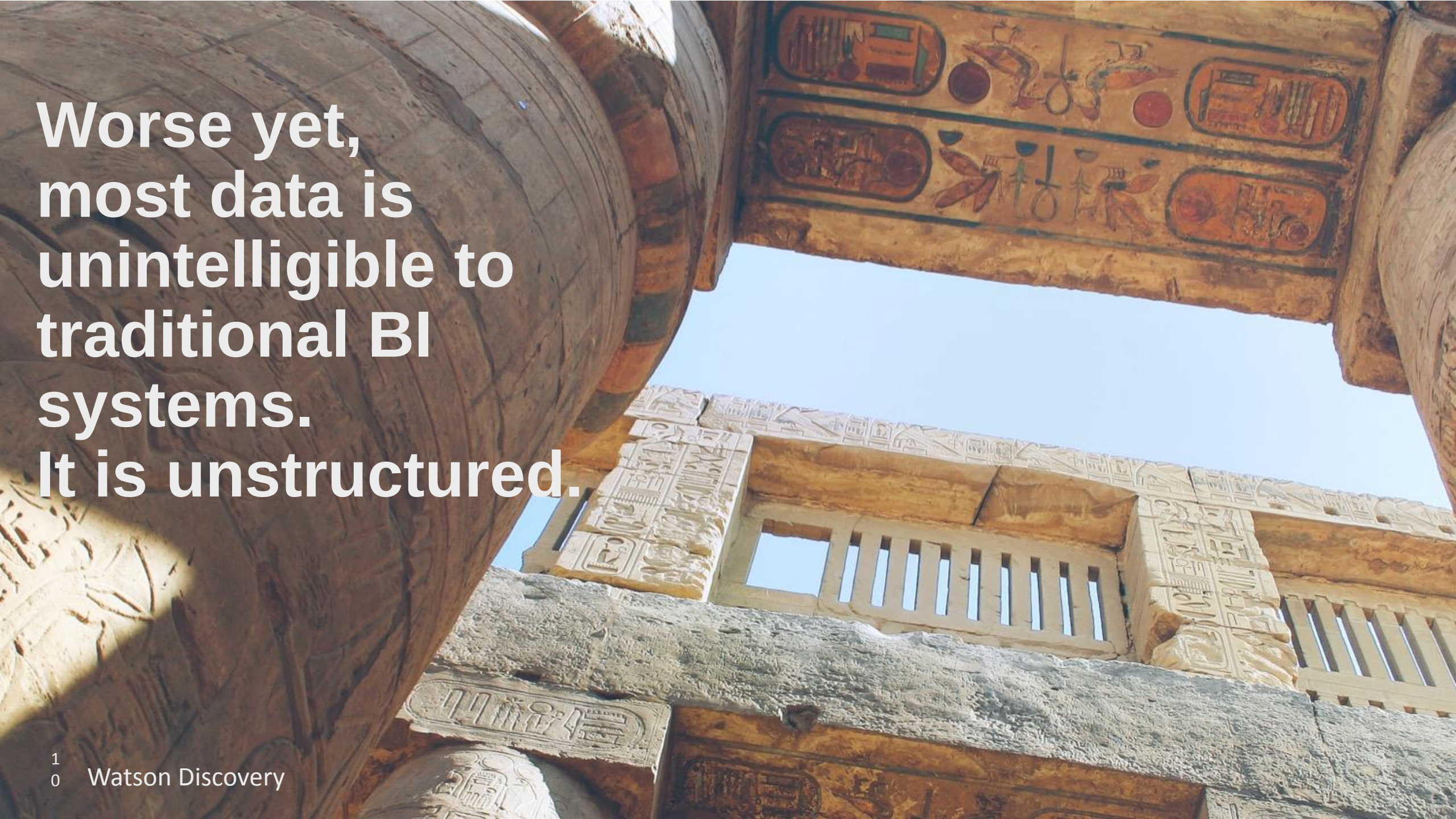
Every item we purchase.



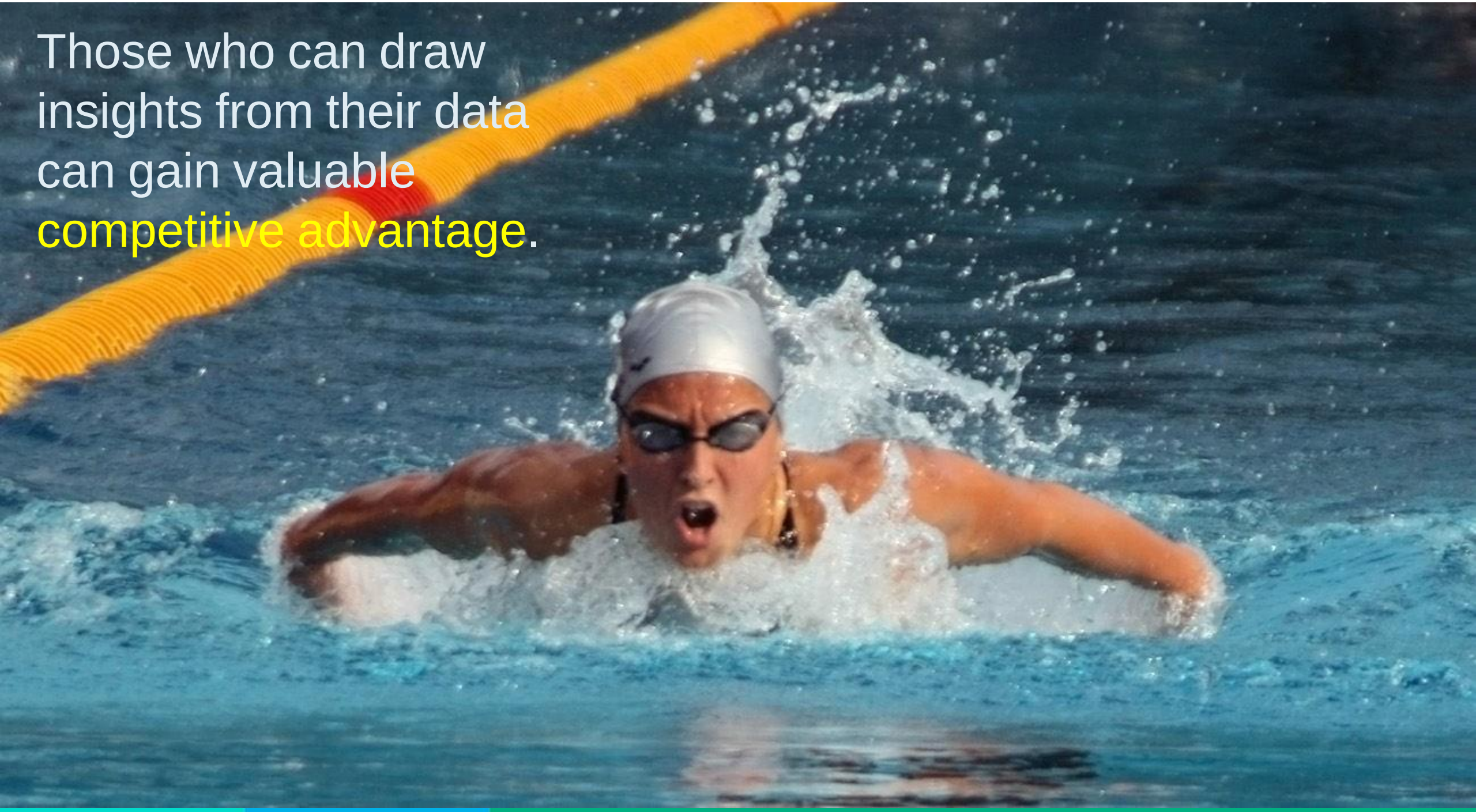
Every navigation route
we take.

We're accumulating more data than ever before

Yet the vast majority of data is locked away in silos.


Worse yet,
most data is
unintelligible to
traditional BI
systems.
It is unstructured.

Watson sifts through
massive amounts of data.


Those who can draw
insights from their data
can gain valuable
competitive advantage.


Cognitive technologies unlock insights in your data.
IBM Watson

Discovery – Why and When?

Have large volumes of unstructured data with valuable insights locked away?

Need instant access to pre-enriched data sources?

Need a solution that matches your cloud based business strategy?

Need cognitive insights like sentiment analysis integrated to company's applications?

Want to free up your data analysts from tedious curation work?

Want to add deep insight answers to your chatbots?

Introducing Watson Discovery Service.

Watson Discovery Service

A powerful set of APIs built to help developers find value in your data, fast.

Many data scientists spend as much as 80 percent* of their time on so-called “data janitor” work – **collecting, cleaning and organizing** data sets.

Developers face numerous barriers that slow them down when building applications to leverage unstructured data:

Massive amounts of diverse and dispersed unstructured content

NLP APIs are **difficult** to integrate

Analysis requires **complex queries** and manual filtering.

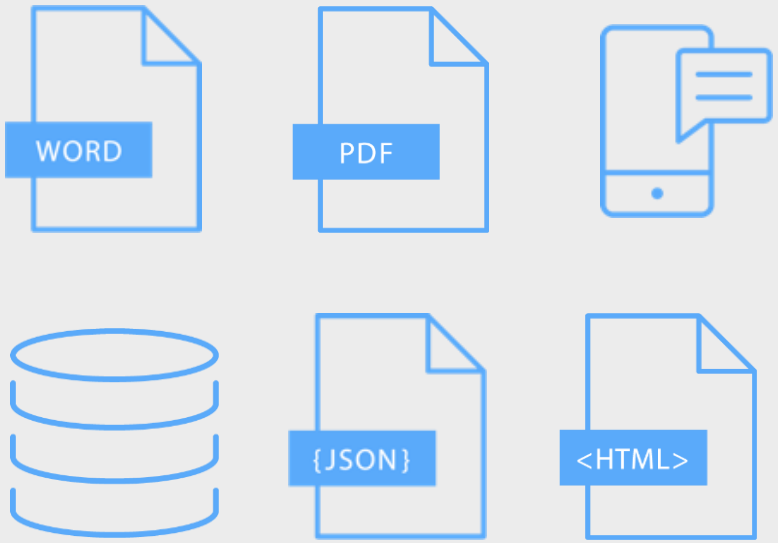
Watson Discovery packages cognitive technologies together in an easy-to-use end-to-end system to focus on specific business problems.

It simplifies the infrastructure, scale and algorithm challenges associated with enriching and analyzing large data sets.

*https://www.nytimes.com/2014/08/18/technology/for-big-data-scientists-hurdle-to-insights-is-janitor-work.html?_r=0

With Watson Discovery, go from data to insights rapidly and with less effort

Documents/Data



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Data Sources

– Your private data
– Internet sources
– 3rd party sources

Questions

“What are the top terms mentioned by customers in support interactions”

“How do I setup a new connection for a customer with a locked accounts”

“How many times was my campaign mentioned over the last 30 days”

Apply cognitive enrichments to your data and extract insights using a powerful and flexible query language in real time

Automated Data Ingestion

Automate ingestion using the APIs, web upload, or data crawler, and feed through Document Conversion to deal with multiple files types.

Integrated Enrichment

Rapidly setup advanced Natural Language Processing steps and custom models to extract entities, relations, keywords, sentiment, etc.

Diverse Content Sources

Create one-of-a-kind applications that leverage data from the pre-enriched news sources and private content from across the enterprise.

Simplified Query Language

Perform multiple query types including Boolean, filter, and aggregation queries to discover patterns, trends, and answers.

The Automated Data Pipeline

Data

Private data

Ingestion

Convert and enrich by leveraging Watson APIs to add NLP meta data to your content, making it easier to explore and discover insights

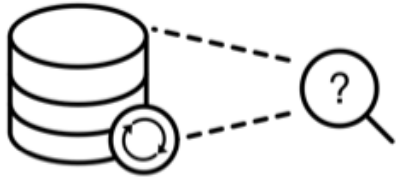
Clean and normalize through an automated processing of NLP results, improving data quality

Storage

Normalized data is **indexed into a collection** as part of your **environment** in the cloud

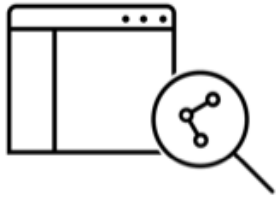
Query

Understand data faster, create better hypothesis and deliver better outcomes



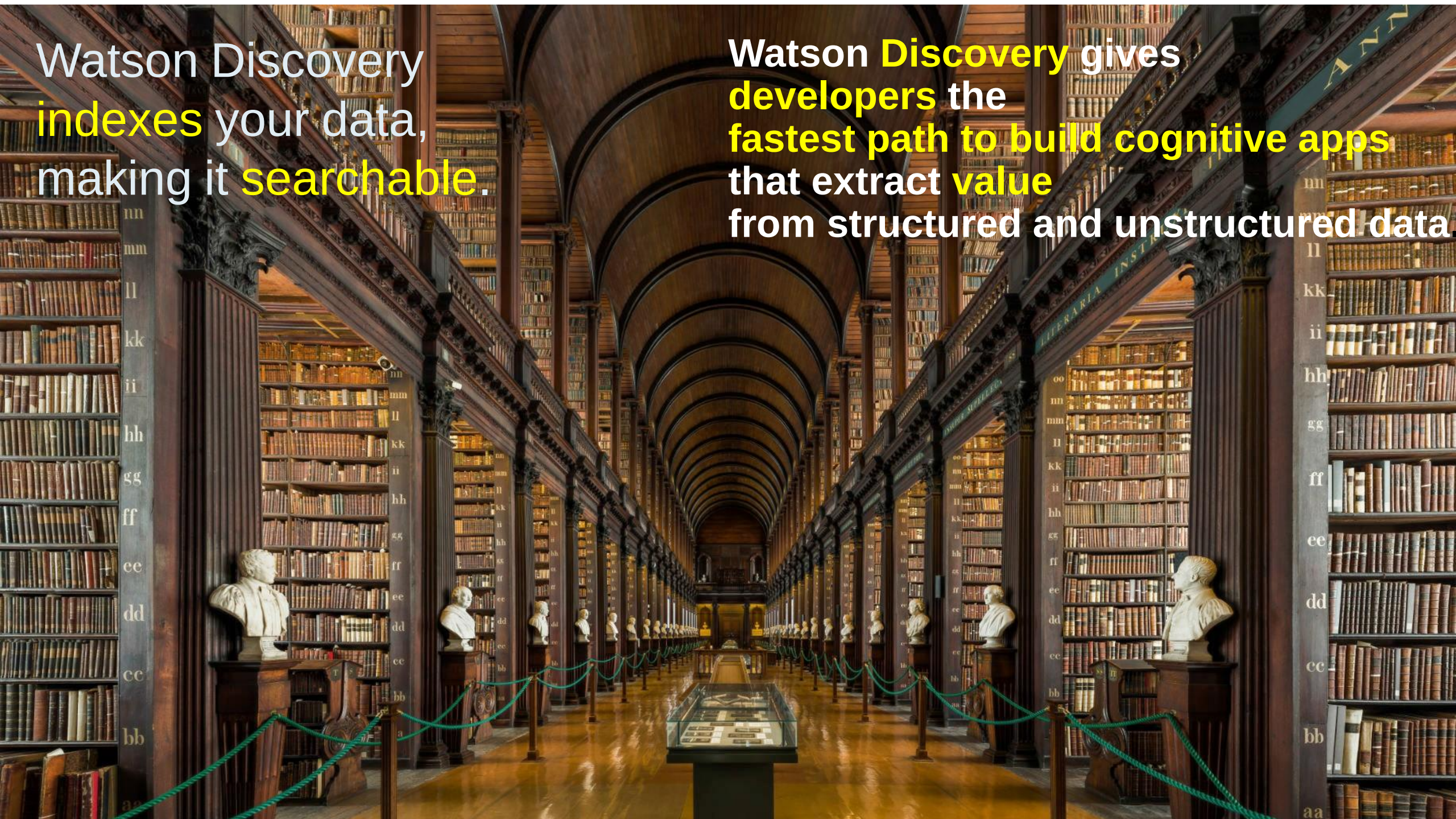
Output

Actionable insights into your app



Discovery Service lets you build an automated data pipeline once, and then add it to existing solutions


Watson Discovery enriches your documents with natural language understanding.


Watson Discovery indexes your data, making it searchable.
Watson Discovery gives developers the fastest path to build cognitive apps that extract value from structured and unstructured data.

A new lens for understanding your data assets.

We are at the beginning of the Cognitive Era.

Watson Discovery Service is available via the Watson Developer Cloud.

Try it today!

Simple

Exploration

& Discovery

Examples

Problem

When you're discovering a new domain - like "Machine Learning"-can be difficult to find the right resources.

More particularly, reference textbooks are tricky to identify because you have to find one that is reliable, but that also corresponds to your level of understand and that would help you grow and learn.

Also, the format of the book itself can be mismatching your specific learning style.

Solution

Using **comments** left online on **textbooks**, how could you identify the right textbook for you?
Also, how could you let someone different than you identify its best textbook?
What if we could mine those comments to **extract features** of these textbooks, but also what people have felt using them,
how **positive** they are about these features?

Data: Provide a collection of 321 amazon reviews on 35 different textbooks.
These reviews are only a very small extract from the Amazon Reviews dataset .

Steps

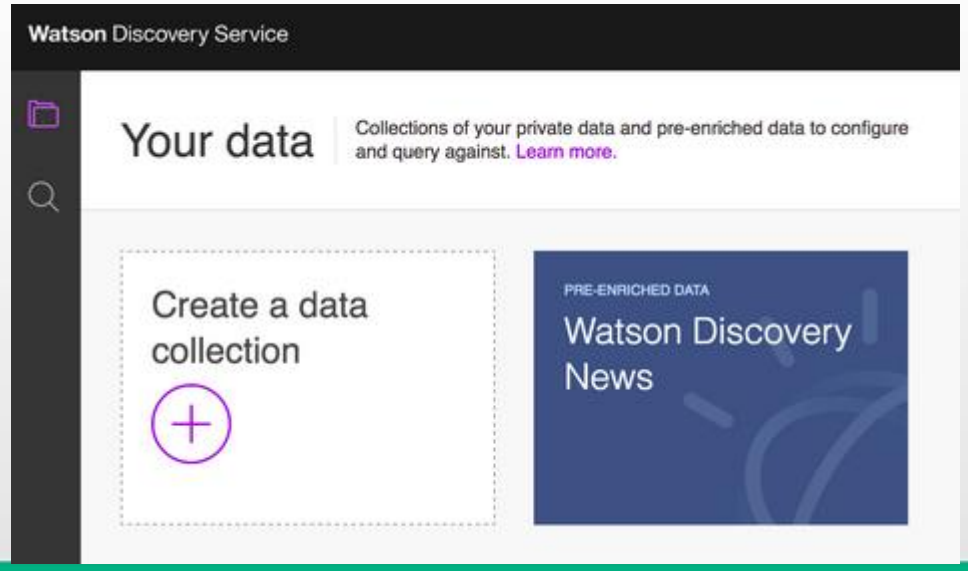
1. Introduction to Bluemix
2. Create an instance of Discovery
3. Create, configure and upload a collection of documents
4. Write your first queries using Discovery

Create collection

Upload documents to collection. Each document is a JSON format.

```
{
    "asin": "0070428077",
    "price": 50.27,
    "title": "Machine Learning",
    "reviewText": "There is no real formatting in this book, just one big slob of text. It is very unreadable and boring"
}
```

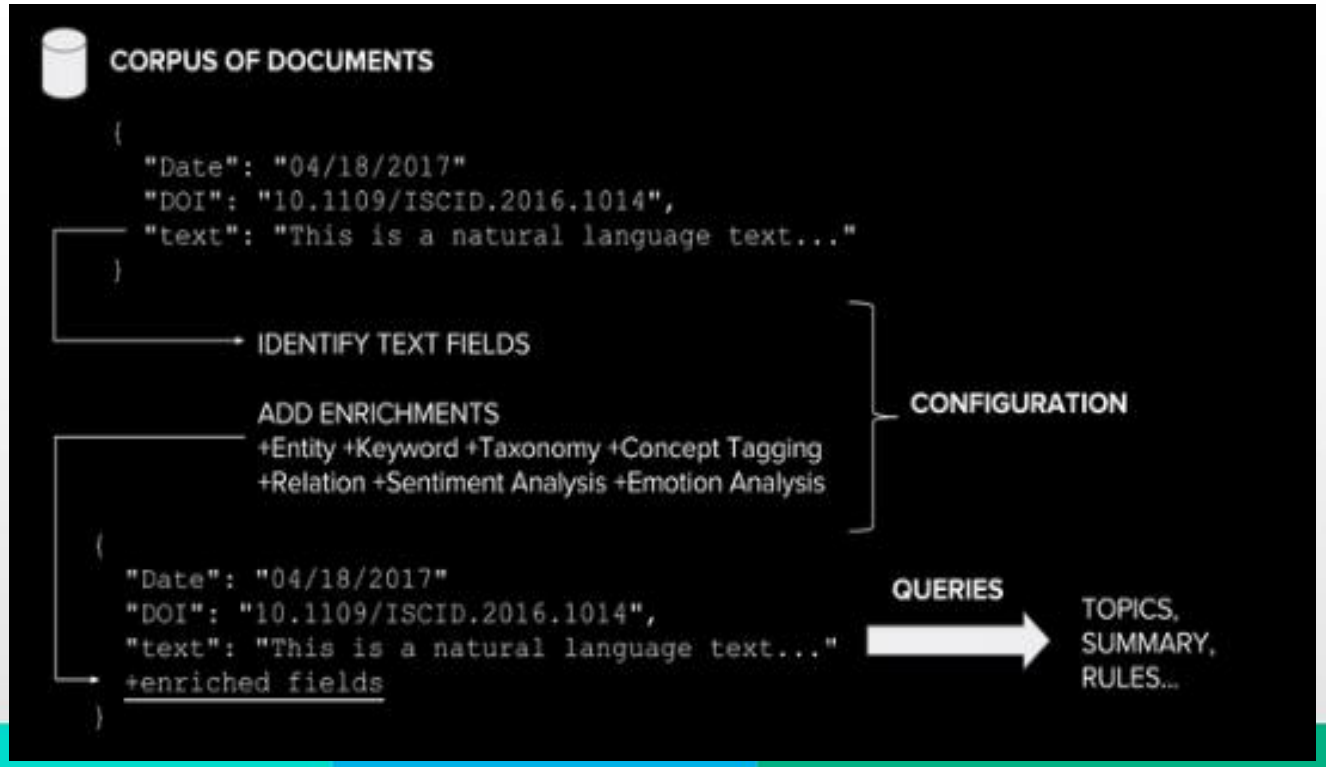
These are set of collection of Amazon reviews of different textbook.

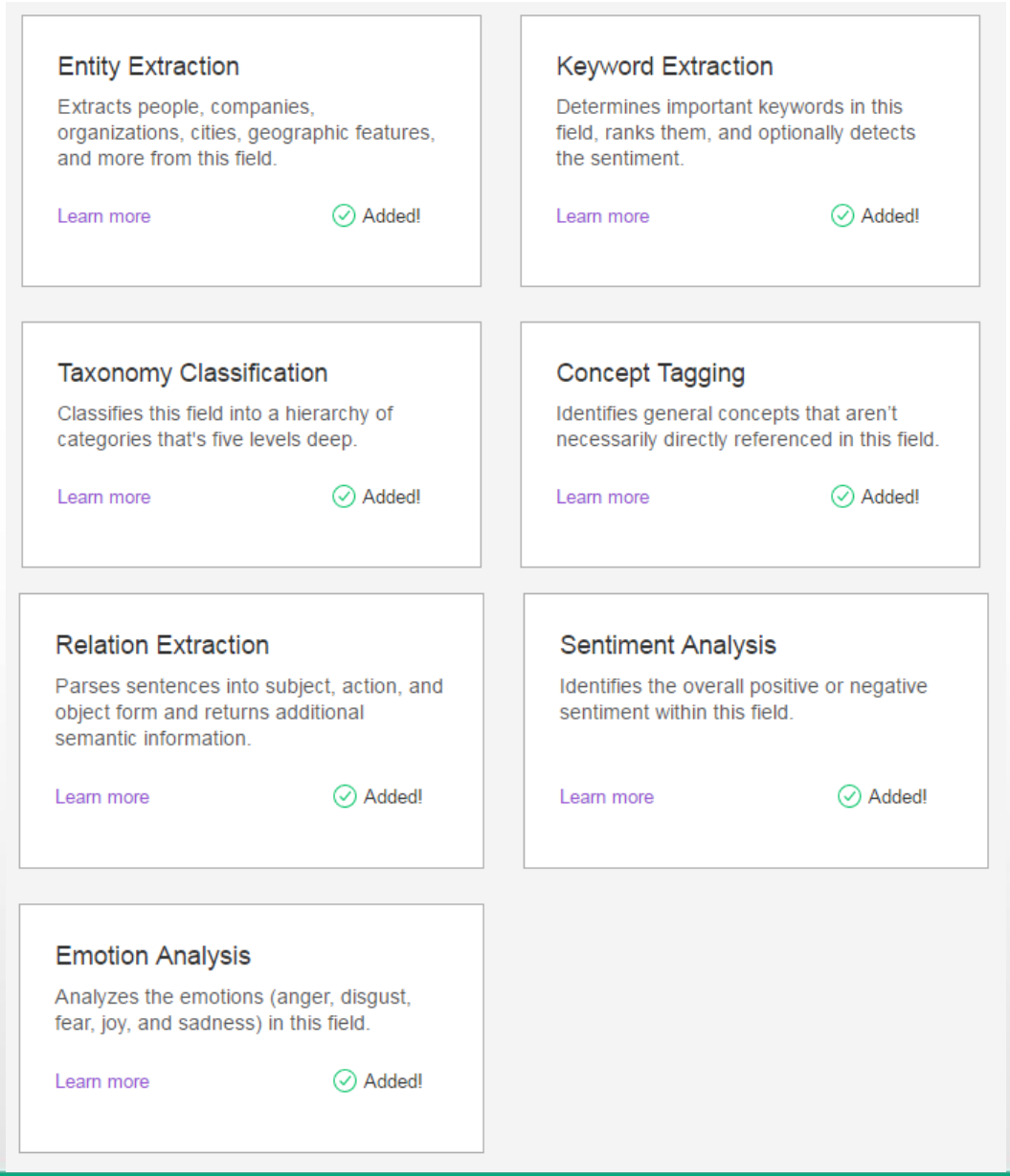


Create new configuration

The three steps of customizing a configuration file are: **Convert**, **Enrich**, and **Normalize**.

1. Converting sample documents
2. Adding enrichments
3. Normalizing data





Upload Documents in collection

From the original documents formatted in JSON,
Discovery has enriched each review by 7 fields:
concepts, entities, relations, taxonomy, keywords, docSentiment, docEmotion.

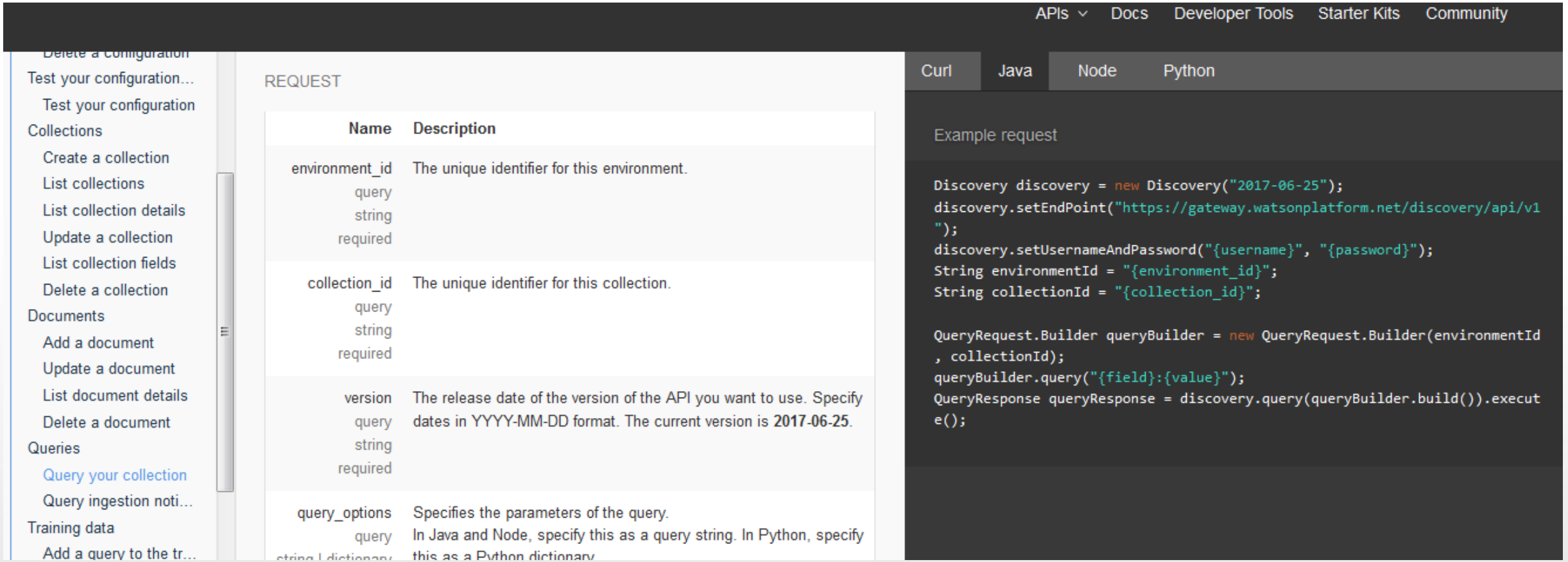
Queries

Time to query the collection of documents/reviews processed by Discovery.

INPUT	TEXT
query	...
count	...
filter	...
aggregations	...
return	...

INPUT	TEXT
query	`machine learning`
count	...
filter	`enriched_text.docSentiment.type:positive`
aggregations	`term(title)`
return	`title`

Using API's to access



Watson Discovery Service – Where Possible uses

Customer Service

Add an app to your support workflow that finds and delivers answers to complex customer questions, in context

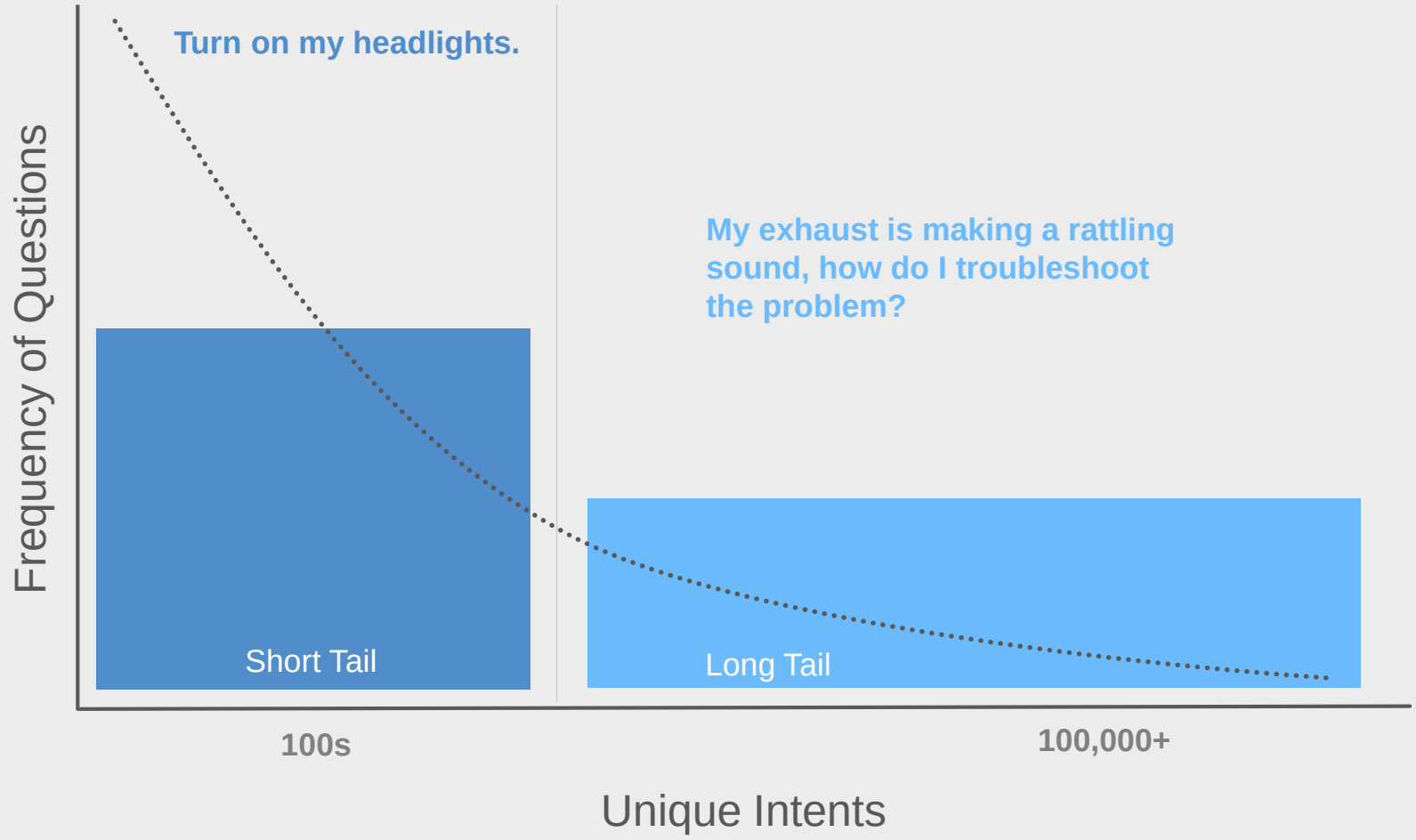
Social Media and News Channels

Add an app to get real-time visibility to perceptions about products, services and brands, and then correlate today's results with historical results

Research Insights

Add an app to extract consolidated industry and domain-specific insights from vast numbers of research and other documents

Combine Watson Discovery with Watson Conversation for question distribution



Watson Conversation

Here Watson uses reasoning strategies that focus on the language and context of the **question**.

Watson Discovery Service

Here Watson uses reasoning strategies that focus on identifying the most appropriate answer.

Summary - Watson Discovery Service

- (Unstructured Data) - Explore and **discover insightful information** hidden in **unstructured data**.
- (Data Sources) - Data can come from public, third party or your own proprietary sources
- (Cloud) - WDS is a cloud service available on IBM Bluemix.
- (Applications) Leverage Watson SDKs, web-based tooling and the WDS APIs to bring cognitive insights to your custom applications.
- (Enrich) Let WDS crawl, convert, enrich and normalize data- spend your time exploring.

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