AWS
re:Invent

AIM363

How to use NLP for domain-specific data

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Agenda

Amazon Comprehend custom features

Live demo of custom classification and entities

Live demo of a solution built on custom Amazon Comprehend

Live demo of Gallup's dashboard built on Amazon Comprehend

Customers are inundated with natural language data

Support

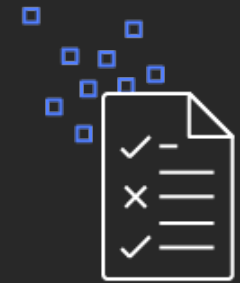Email, chat, social, and phone calls

Reviews

Websites and text forms

News

Product, industry, and macro news

Contracts
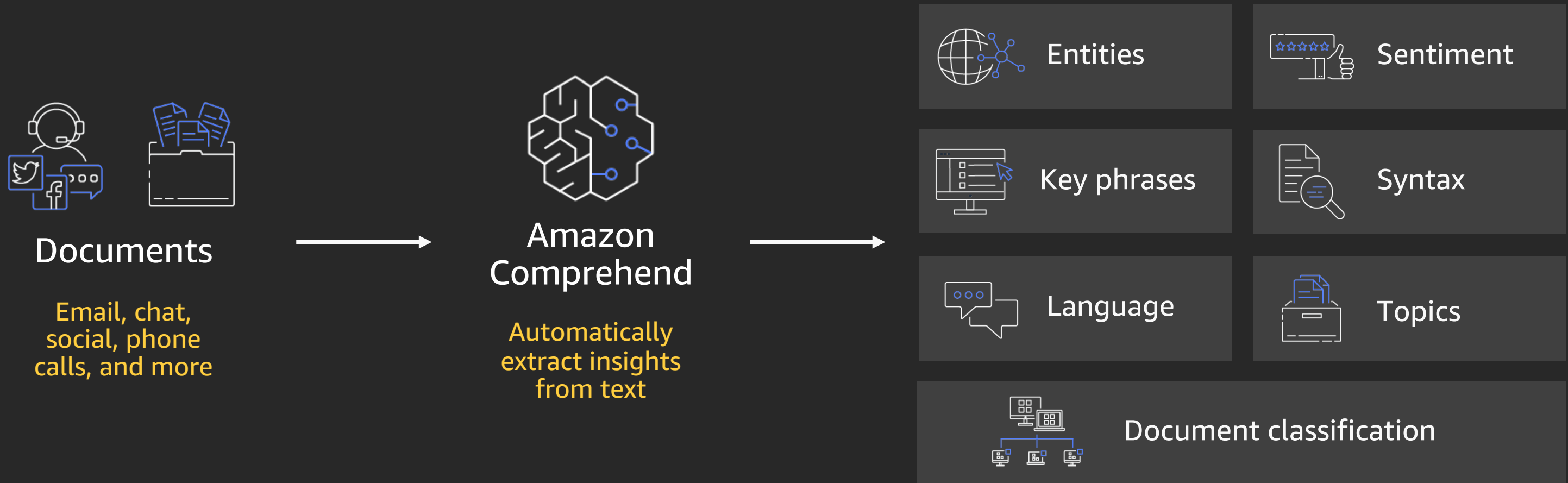
Legal and financial documents

Surveys

Freeform text responses

Amazon Comprehend
Discover insights and relationships in text

Fully managed NLP, no machine learning (ML) experience required

Documents

Email, chat, social, phone calls, and more

Amazon Comprehend

Automatically extract insights from text

Entities

Sentiment

Key phrases

Syntax

Language

Topics

Document classification

Analyze text with Amazon Comprehend

Amazon.com, Inc., is located in Seattle, WA, and was founded July 5, 1994, by Jeff Bezos. Our customers love buying everything from books to blenders at great prices.

Analyze text with Amazon Comprehend

Amazon.com, Inc., is located in Seattle, WA, and was founded July 5, 1994, by Jeff Bezos. Our customers love buying everything from books to blenders at great prices.

Named entities
- Amazon.com: Organization
- Seattle, WA: Location
- July 5, 1994: Date
- Jeff Bezos: Person

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Key phrases
- Our customers
- Books
- Blenders
- Great prices

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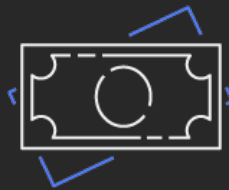
Sentiment
- Positive

Language
- English

Custom Amazon Comprehend
NLP for domain-specific data

Custom entities

"I never received the shipment for part number XT1764PY98"

Trading of ETFs was halted today
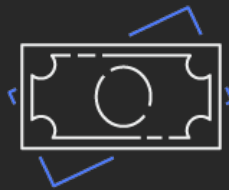
"I liked the shawarma but loved the hummus"

Custom entities

"I never received the shipment for part number **XT1764PY98**" ————— **XT1764PY98: PART_NUMBER**

Trading of **ETF**s was halted today ————— **ETF: INVESTMENT_VEHICLE**

"I liked the **shawarma** but loved the **hummus**" ————— **shawarma, hummus: MENU_ITEMS**

Using a custom entity recognizer

Entity value	Entity type
XT1764PY98	PART_NUMBER
ETF	INVESTMENT_VEHICLE
Shawarma	MENU_ITEM
Hummus	MENU_ITEM

① **Examples & docs**

Prepare examples of terms and phrases

Documents containing the terms and phrases

② **Train**

Auto annotation

Auto algo selection

Auto tuning and testing

SDK or console

③ **Analyze**

Identify entities specific to your domain

Custom classification
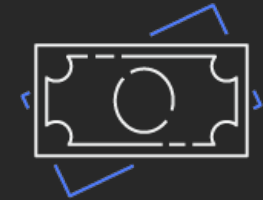
Triage support tickets

Organize customer feedback

Moderate forums

Classify internal documents

Loyalty program

Payments

Technical support

Using a custom classifier

Text	Label
"The service is too expensive"	PRICING
"I need to cancel my account"	CANCEL_ACCOUNT
"My points are not being applied correctly"	LOYALTY_PROGRAM

① Label

CSV file with training data

② Train

Auto algo selection

Auto tuning and testing

SDK or console

③ Classify

Asynchronous or real time

Build applications on top

Demo
Custom Amazon Comprehend console

Demo
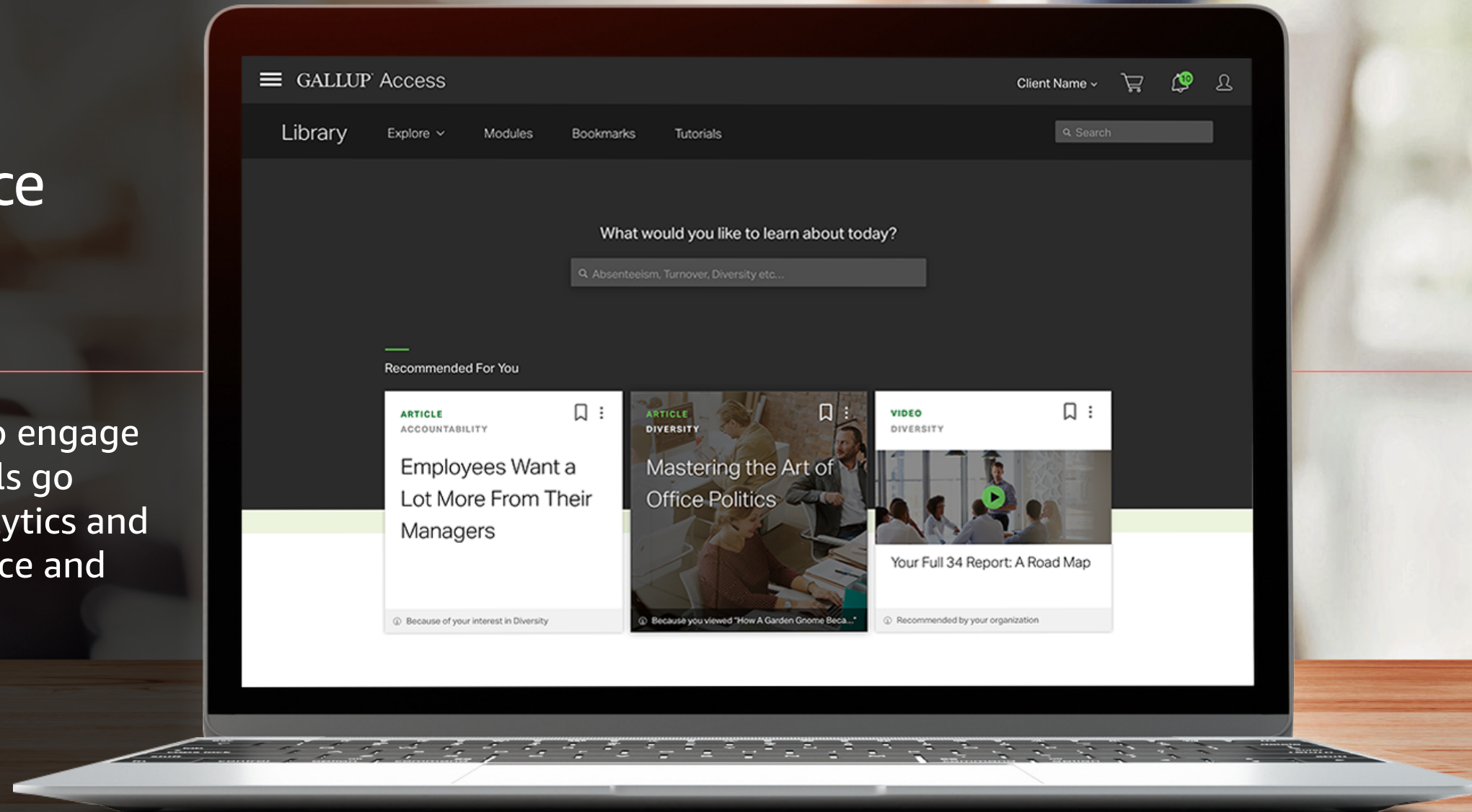## Build an application using custom Amazon Comprehend

Gallup

aws

Gallup Access platform

Analytics and tools to transform your workplace

Gallup Access empowers managers to engage and develop your workforce. Our tools go beyond measurement, providing analytics and advice that help you drive performance and create an exceptional culture.

Gallup Access

- ## Survey engine

  - Survey admins can ask open-ended survey questions

- ## Current reporting (NLP)

  - Bulk process for a specific survey/question

  - Topic Modeling—3 levels of hierarchical topics (N thresholds)

  - Sentiment/Language detection/translation/key phrases/entity detection

  - Stop listing/scrubbing

  - Custom integration of NLP metrics with proprietary metrics

- ## Future NLP functionality—Classification

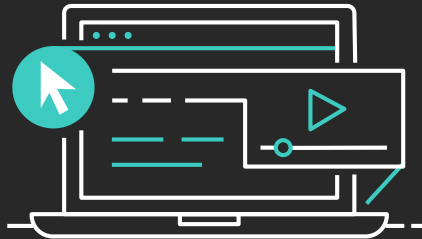 - Top 3 buckets to classify a response in order of importance

Demo
Gallup Access

aws

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