Amazon Comprehend

Commercial and Legal (Mis)Alignment of Product/Feature

By: Deborah Cheng (MBD)

Use Cases

Medical Clinics that Provides Traditional Services as Well as Online Chat Therapies

Identify Key Features, Locations, Opinions in Reviews

"Conveniently located in the heart of it all."

Reviewed June 22, 2013

First trip to Asia, first visit to company's Hong Kong offices and the Four Seasons HK provided a great base for all of it. Rooms are spacious and luxuriously appointed (L'occitane toiletries always a plus). Bed was comfortable (perhaps not as good as some St. Regis' but clearly better and more luxurious than the Westins heavenly stateside. In-hotel food options were solid and not as overpriced/marked up as I would have expected. The gym facility was excellent, lots of new modern equipment in good working order, provided beverages were great with a unique Asian flair. Service was attentive and gracious, appointments were luxurious, location was convenient to cab and train and all my appointments and recreation while there. What more could you ask?

flyer07
Boston, MA

Senior Contributor
- 23 reviews
- 20 hotel reviews
- Reviews in 20 cities
- 32 helpful votes

Source: https://www.researchgate.net/publication/273285927_Recommender_systems_based_on_user_reviews_the_state_of_the_art/figures?lo=1

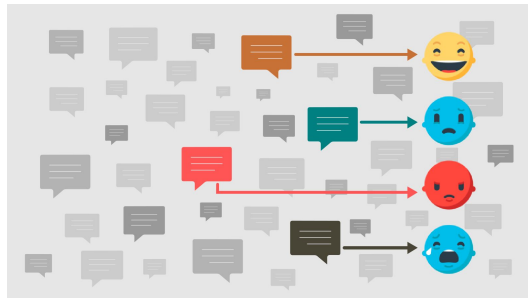### Classify & Route Support Tickets to Proper Dept

Overall Neutral Sentiment

Customer Feedback

I feel it works well, but it's a little expensive for our usage level. Other than that the dashboard is intuitive, easy to get started and very handy for troubleshooting issues.

dhvani.p@example.co
21 Jun 2019 / 4:22 P
NP

UI/UX   SETUP   PRICE   +

Overall Negative Sentiment

Multilanguage Feedback

Necesitan mejorar su soporte al cliente, el empleado con el que hablé fue una pérdida de tiempo.

They need to improve their customer support, the employee I spoke with was a waste of time.

jessica@example.co
24 Jun 2019 / 12:46 F
NP

CUSTOMER_SERVICE   +

Overall Neutral Sentiment

Employee Feedback

I like my team and the insurance is good. I just wish management would make up their minds. We spent days on project that got scrapped for no reason.

dhvani.p@example.co
31 Mar 2019 / 6:45 P
ESA

COWORKERS   BENEFITS   MANAGEMENT   PRODUCTIVITY   +

Source: https://www.wootric.com/text-sentiment-analysis-for-customer-feedback/

Detect Sentiments from Chat Dialogues

Source: https://medium.com/neuronio/from-sentiment-analysis-to-emotion-recognition-a-nlp-story-bcc9d6ff61ae

Identify Key Health Info, Condition and Medications from Doctor Notes and Reports

Named Entities

aws comprehend-medical detect-entities --region us-east-1 --text "<Insert Text Here>"

Mr. Smith is a 63-year-old gentleman with coronary artery disease and hypertension. CURRENT MEDICATIONS: taking a dose of LIPITOR 20 mg once daily
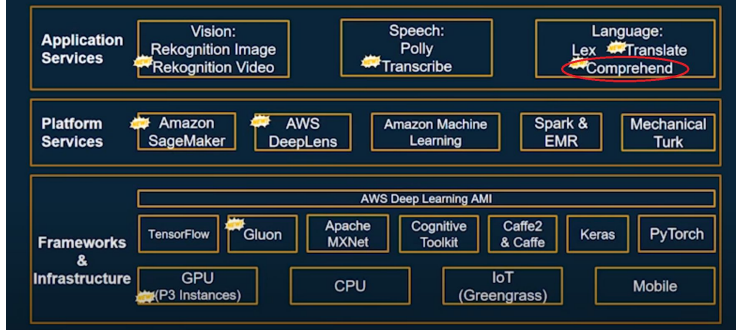
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Protected Health Information (PHI)

Mr. Smith: **Name**

63: **Age**

Anatomy

Coronary artery: **System Organ Site**

Medical Condition

Coronary artery disease: **Dx Name**

Hypertension: **Dx Name**

Medication

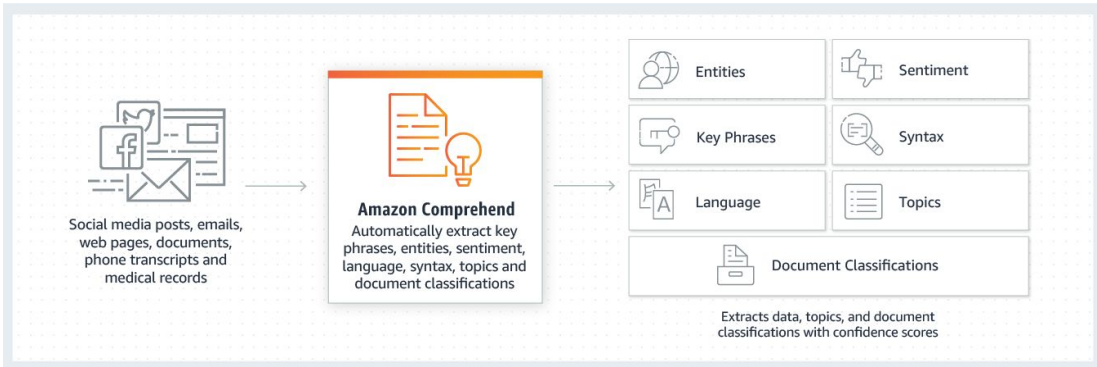Lipitor: **Brand Name**

20 mg: **Dosage**

Once Daily: **Frequency**

aws

Source https://vimeo.com/333817612
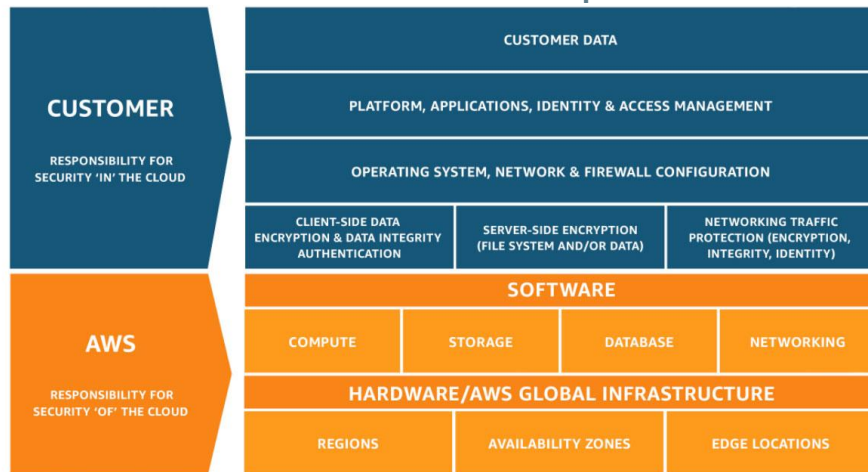
Product Description

Amazon Comprehend
- part of the Amazon Web Services Machine Learning stack
- gain better insights in natural texts, such as customer reviews and emails
- identifies the language, key information, sentiments and topics of large number of text files for better classification and identification of trends
- aids business decision making and more efficient handling of customer feedback

Amazon Comprehend Medical
- feature within Amazon Comprehend that specializes in processing and extracting medical information from medical reports, logs and notes

Associated Legal Notices

AWS and Customer Shared Responsibilities

Source: https://aws.amazon.com/compliance/shared-responsibility-model/

- [Customer Agreement](#) (specifically s.3 & 4)

- [AWS Service Terms](#) (specifically s.50)

- [AWS Acceptable Use Policy](#)

- [Amazon Machine Learning Language Service Level Agreement](#)

- [AWS GDPR Data Processing Addendum](#)

- [Shared Responsibility Model](#) (non-legal notice explanation)

Limitations of Use

- content must not violate any applicable law (AWS Customer Agreement s4.2)
  - may not be able to Amazon Comprehend to analyze texts that contains words or contents for goals that are illegal in certain countries
  - ex. analyze chats and/or medical reports to identify potential transexual clients for gender transition or related therapies in countries where it is illegal
- non-medical data of EU residents requires opt-in consent to be processed on Amazon Comprehend as data may be stored outside of EU (AWS Service Terms s50.3)
  - does not apply to data used in Amazon Comprehend Medical as they will be stored in EU (AWS Service Terms s50.3)
  - ex. online therapy chat dialogues (live or chatbot) may not be processed on Amazon Comprehend if the client does not explicitly opt-in, as the dialogues may contain PII or other non-medical personal data
- cannot train models with own unlabeled medical datasets using solely AWS (AWS Service Terms s60.4)
  - Amazon Comprehend allows businesses to train models with their own data by using Amazon SageMaker and its various components to label, build, train and deploy ML models
  - data labeling utilizes Amazon SageMaker Ground Truth (part of the AWS ML stack) and Amazon Mechanical Turk. Protected health information, PII and other personal data are not allowed on these features and data may be moved to non-EU regions
  - ie. should the company wishes to use their own training data for Amazon Comprehend Medical, labeling must be done outside of AWS and local to the client prior to storing and processing on AWS