aws

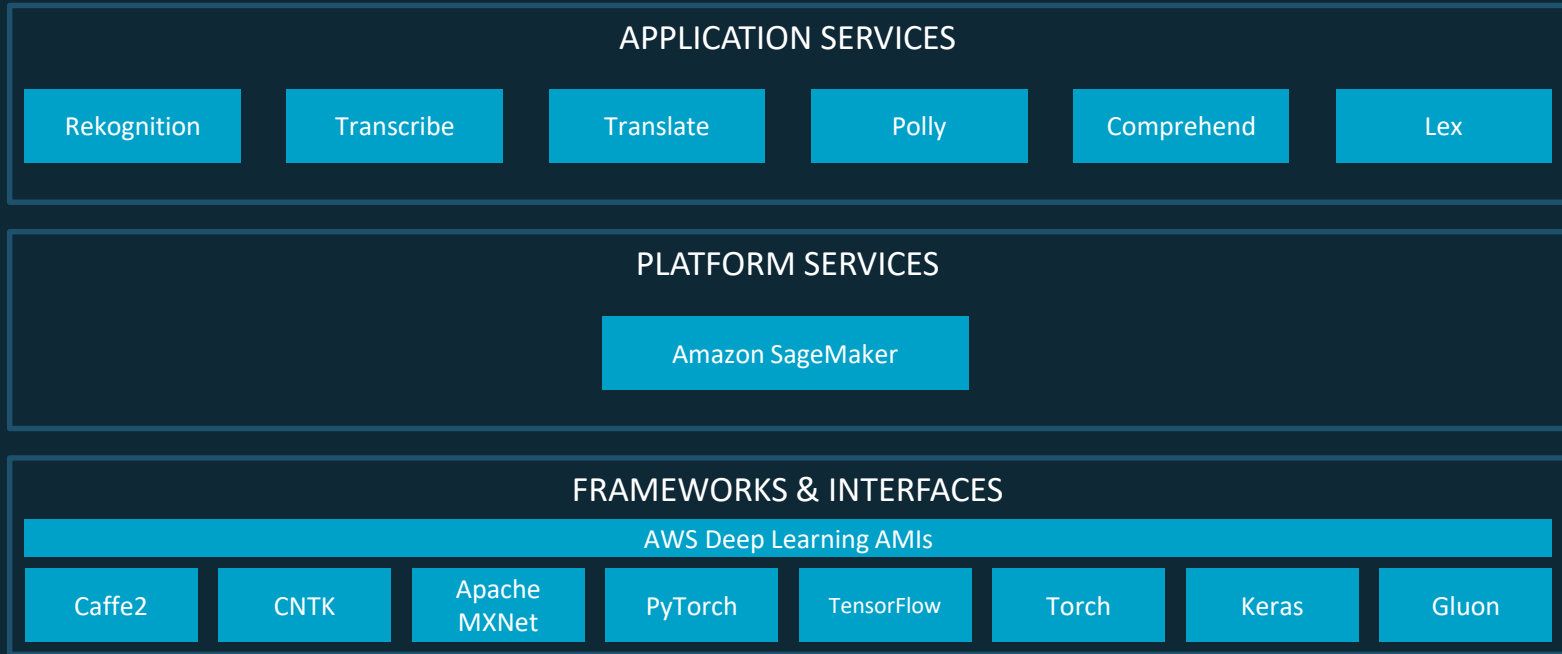# Automate for Efficiency with Amazon Transcribe and Amazon Translate

Niranjan Hira – AWS Solutions Architect

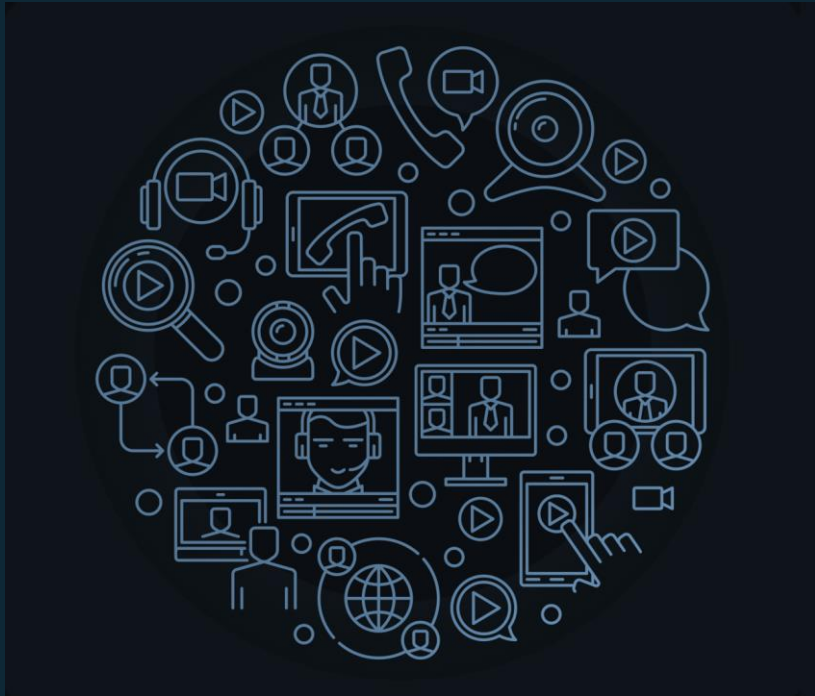April-2018

What's this about?

- About the Services

- Typical Usage

- Workflows

  - Generating video subtitles

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The Amazon machine learning stack

APPLICATION SERVICES

| Rekognition | Transcribe | Translate | Polly | Comprehend | Lex |

PLATFORM SERVICES

Amazon SageMaker

FRAMEWORKS & INTERFACES

AWS Deep Learning AMIs

| Caffe2 | CNTK | Apache MXNet | PyTorch | TensorFlow | Torch | Keras | Gluon |

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Unprecedented rate of audio & video data generation
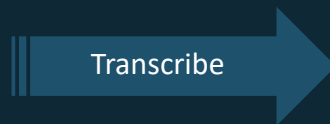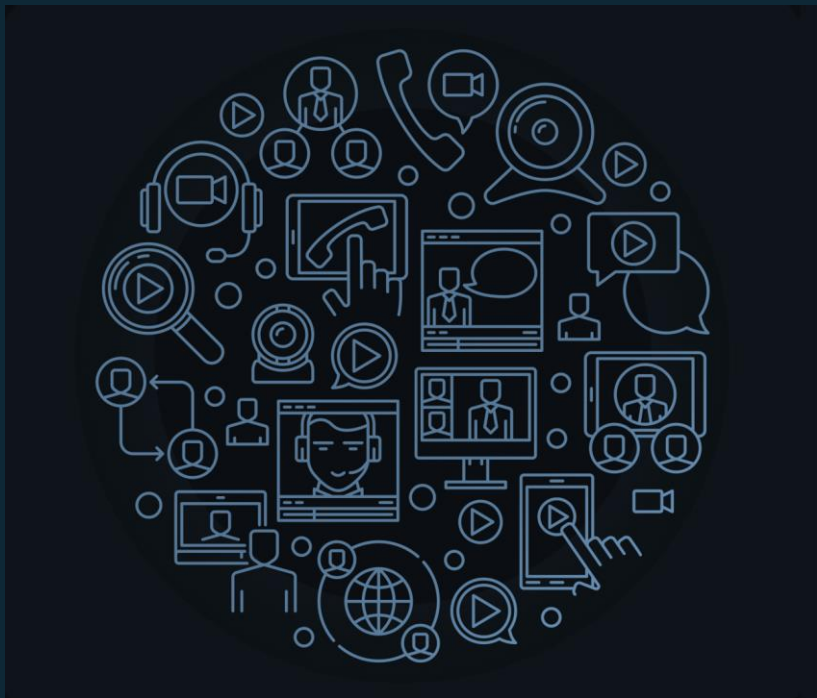

Audio
- Contact centers
- Meetings

Video
- Broadcast TV
- On-demand video
- Social media

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Amazon Transcribe

A fully managed and continuously trained automatic speech recognition (ASR) service that generates accurate transcripts for audio and video files

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Amazon Transcribe

Transcribe

Customer insights

Greater access

Global reach

Targeted advertising

Search archives

aws

Amazon Transcribe

Automatic speech recognition

Multiple languages

Intelligent punctuation and formatting

Timestamp generation

Support for telephony audio

Recognize multiple speakers

Custom vocabulary

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Amazon Transcribe – Console walk-through

Amazon Transcribe – Command line

```
aws transcribe start-transcription-job --cli-input-json '
{
    "TranscriptionJobName": "demo-job-97",
    "LanguageCode": "en-US",
    "MediaFormat": "mp4",
    "Media": {
        "MediaFileUri": "s3://mast-mast-3/mypath/myfile.mp4"
    }
}'
```

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Amazon Translate

Amazon Translate delivers fast, high-quality, and affordable language translation

Currently supported: English to Arabic, Chinese (Simplified), French, German, Portuguese, and Spanish

Coming soon: Japanese, Russian, Italian, Traditional Chinese, Turkish, and Czech

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Amazon Translate

Natural and fluent language translation (based on neural networks)

Real-time translation

Batch analysis

Automatic language recognition

Low cost

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Use for High-Volume and Time-Sensitive Content

Machine translation

- User-authored content (reviews, forums, etc.)
- Interpersonal communications (e.g., gaming chat, customer service)
- Insight extraction (e.g., sentiment, document classification)
- Content discovery
- Subtitles / live captioning

Post-edited machine translation

- UI
- Marketing materials
- Regulatory filings
- Product documentation

Share of worldwide digital content

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Amazon Translate – Console walk-through

Amazon Translate – Command line

```
aws translate translate-text --cli-input-json '
{
    "Text": "La crisis venezolana y el ataque a Siria, los
             temas que dominaron la Cumbre de las Américas",
    "SourceLanguageCode": "es",
    "TargetLanguageCode": "en"
}'
```

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Common Use Cases for Language Services

Voice of Customer Applications

Knowledge Management

Education

Customer Service/ Call Centers

Semantic Search

Accessibility

Enterprise Digital Assistant

Captioning Workflows

Information Bots

Personalization

Localization

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Typical pipeline

Media Input

Amazon S3

AWS Lambda

Amazon Transcribe

Amazon Translate

Amazon Comprehend

Amazon Athena

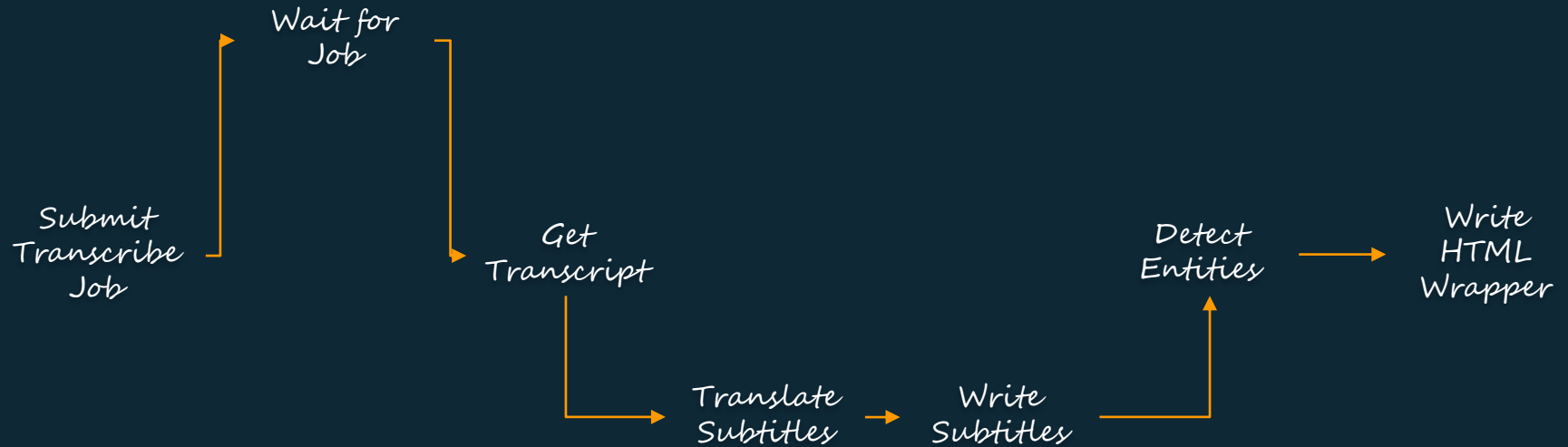Amazon QuickSight

aws
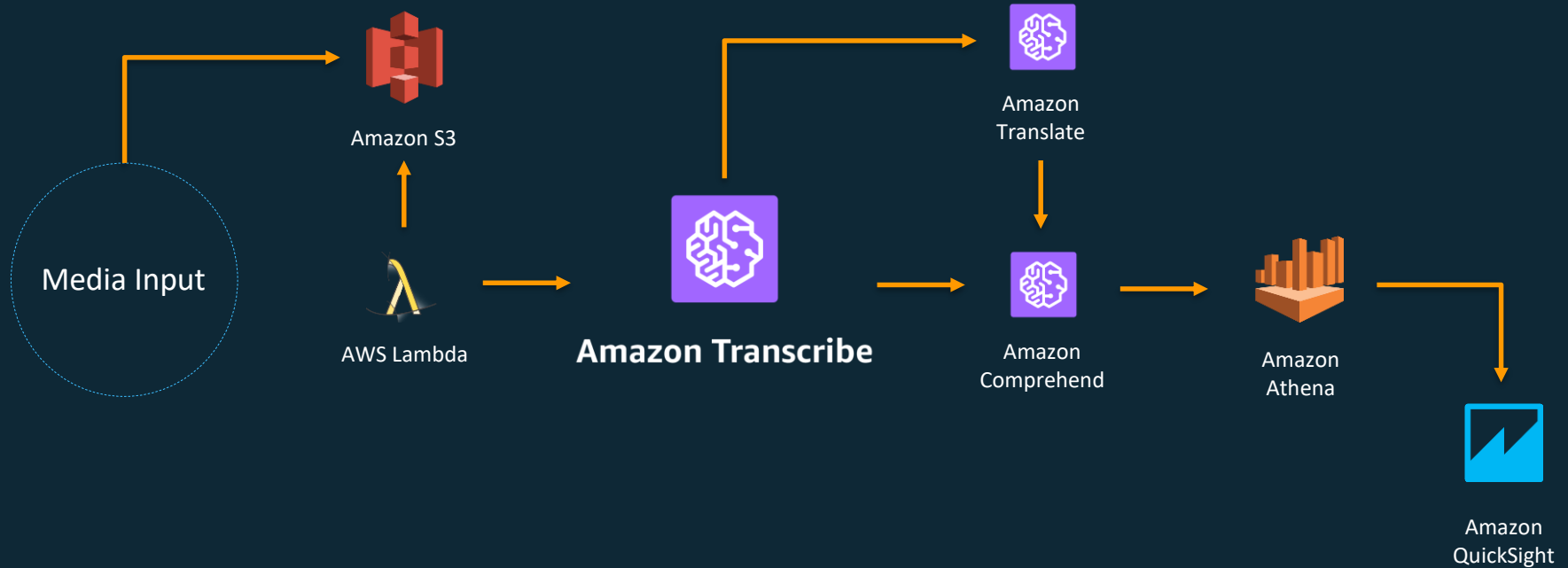
Amazon Translate

```
Translate.translateText({
    "Text": 'Hello world',
    "SourceLanguageCode": 'en',
    "TargetLanguageCode": 'es'
    }, function(err, data) { ... });
```

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Demo – Video subtitles

Submit Transcribe Job → Wait for Job → Get Transcript → Translate Subtitles → Write Subtitles → Detect Entities → Write HTML Wrapper

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Estas son las noticias de la BBC y estos otros titulares. Los políticos de los Estados Unidos en

[00:00:05,410]	This is the BBC news and these other headlines. Politicians in the
[00:00:08,490]	United States in Europe are summoning executives from
[00:00:11,590]	facebook to answer questions about whether personal data
[00:00:14,710]	was misused to manipulate it. The recent elections,
[00:00:18,150]	facebookers said it was deceived by a British company, cambridge
[00:00:21,350]	analytica, that worked for president. Trump's election campaign,
[00:00:24,450]	among others. Emergency services in texas, a and
[00:00:27,610]	essentially device that went off in the city of austin, was not
[00:00:30,810]	related to a series of explosions this month. However,
[00:00:33,870]	the FBI has confirmed that two packages found it separates
[00:00:37,070]	a fedex delivery. Officers in the area on Tuesday
[00:00:40,140]	are connected to the earlier attacks.
[00:00:43,450]	A BBC investigation has found that girls from the and mars
[00:00:46,500]	arranger muslim minority who fled violence in their home
[00:00:49,680]	country on being trafficked into prostitution in
[00:00:52,700]	Bangladesh, hundreds of thousands of revenge and now live in huge
[00:00:55,890]	refugee camps where they're vulnerable to sexual exploitation.

Entity	Type	Max Confidence	Count	
Tuesday	DATE	1	1	
this month	DATE	0.97	1	
Bangladesh	LOCATION	1	1	
British	LOCATION	0.58	1	
Europe	LOCATION	1	1	
United States	LOCATION	0.99	1	
austin	LOCATION	0.95	1	
texas	LOCATION	0.99	1	
BBC	ORGANIZATION	0.97	2	
FBI	ORGANIZATION	1	1	
cambridge analytica	ORGANIZATION	0.69	1	
facebook	ORGANIZATION	0.99	1	
fedex	ORGANIZATION	0.75	1	
muslim	ORGANIZATION	0.59	1	
Trump	PERSON	1	1	

Index	Avg. Confidence	Terms	Unsure
00:00:05,410	0.88	17	2
00:00:10,440	0.91	25	2

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What does the HTML look like?

```
<video controls id="vplayr">
        <source src="....mp4" type="video/mp4">
        <track kind ="subtitles" label="English" srclang="en-us" src="..._en.vtt">
        <track kind ="subtitles" label="Spanish" srclang="es" src="..._es.vtt">
        This browser does not seem to support the video element.
</video>
```

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What is WebVTT?

Web Video Text Tracks format
 https://www.w3.org/TR/webvtt1/
"Borrows" from SRT (SubRip Subtitles)

2
00:00:08.490 --> 00:00:11.000
 Europa están convocando a ejecutivos de
 facebook

3
00:00:11.590 --> 00:00:14.000
 para responder preguntas sobre si los
 datos

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Beyond subtitles

- Automatically translate survey input text files as they are added to Amazon S3
- For status updates to a database, add a translated-status attribute

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Now what?

- Use Amazon Transcribe and Amazon Translate for media and big data workflows

  Consider services like AWS Glue, Amazon CloudWatch Events, and AWS Lambda for scalability

- Watch for new patterns on the AWS ML Blog

  https://aws.amazon.com/blogs/machine-learning/

- Tell us how we can improve these new services

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Thank you!

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