

## How Fintechs are Leveraging AI/ML



# Speakers



**Kathryn Van Nuys**

Global Head,  
FinTech Business Development,  
Startups and Venture Capital  
(Amazon Web Services)



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(Quantiphi)



**Priyanka Singh**

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(Quantiphi)



**Akshat Jain**

FSI - GTM Lead, AWS Practice  
(Quantiphi)



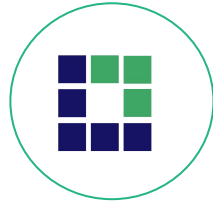
**Eric Jensen**

Founder and CTO  
(Causality Link)

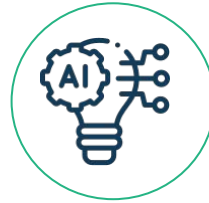
# Agenda



Fintechs on AWS



Introduction to  
Quantiphi



Key Challenges in Fintech  
Industry & Quantiphi  
Solution offerings



Transforming Mortgage  
Originations across  
Customer's journey



Seamless Mortgage  
Processing  
Demo



How Quantiphi helps  
Fintech startups succeed  
in using ML with AWS



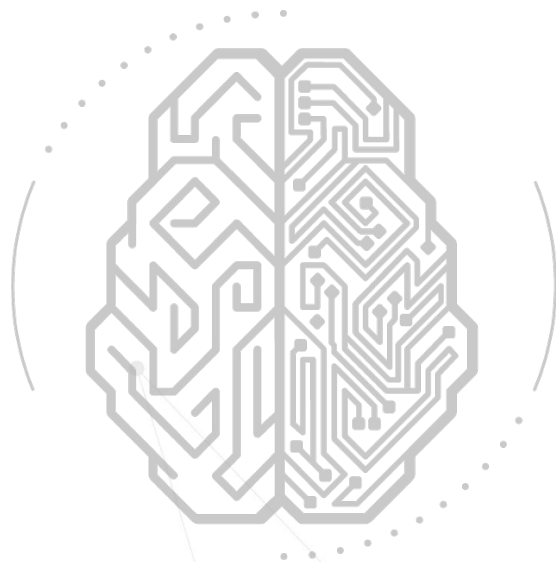
Fintech ML Success  
Stories



## Kathryn Van Nuys

Global Head,  
FinTech Business Development,  
Startups and Venture Capital  
(Amazon Web Services)

# Fintechs on AWS



# Fintech startups have found a home on AWS

“ Banks aren't being disrupted by FinTech technology, they're being disrupted by customer expectations.

— McKinsey & Company ”

100%

of the 2019  
Forbes Fintech 50  
build on AWS

coinbase

Launched its exchange on AWS, including real-time analytics processed by Amazon Kinesis

Betterment

Built a secure big data storage and analytics system on AWS

Robinhood 

Launched a scalable trading app, transacting over \$1B

stripe

Relies on the security best practices and auditability of AWS to run its PCI-compliant payment platform

 TransferWise

Adopted AWS for the service quality and the resilience it required, at a variable cost

affirm

Uses AWS managed services to process data at scale while reducing operating costs

# Why Fintechs build on AWS



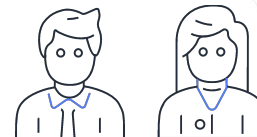
**Strengthen security and compliance** with 15+ security services and a newly launched, available in the AWS console in preview, [AWS Security Hub](#) to view all alerts and findings



**Go global** in minutes while staying compliant with AWS' global infrastructure that spans 77 Availability Zones and 24 geographic regions and supports performance, scaling and high availability



**Make data-driven decisions fast and provide outstanding customer service** with +70 AWS' state-of-the-art analytics, artificial intelligence and machine learning services available to any technical teams through the AWS console



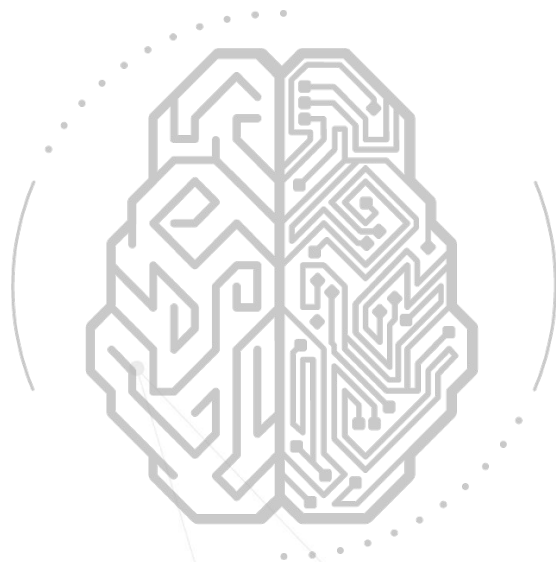
AWS has **deep financial services expertise** built through years of partnering with financial services organizations of all sizes, [including Goldman Sachs, Finra, Stripe, Betterment, and more.](#)



**Vikas Sachdeva**

FSI Advisory Lead  
(Quantiphi)

# Introduction to Quantiphi



# About Quantphi - Advanced AWS Consulting Partner

## Highlights

1400+

QUANTPHI  
PROFESSIONALS

2.5x

YoY GROWTH

2013

YEAR OF  
INCEPTION

800+

CLOUD CERTIFIED  
PROFESSIONALS

## Key Regions

■ Boston

■ Chicago

■ Princeton

■ San Jose



■ Toronto

■ London

■ Mumbai

■ Bangalore

■ Trivandrum

## Industries

■ Banking

■ Financial Services

■ Media

■ Life Sciences

■ Education

■ Healthcare

■ Insurance

■ CPG

■ Retail

■ Automotive

■ Oil and Gas

■ Manufacturing

## Quantphi Capabilities

### Focussed Solutions



### Data & Analytics

**Migrate** from on-prem to AWS platform

**Modernize** data warehouses

**Analyze** with data analytics and BI reports



### Applied AI

**Deep Learning** - building state of the art CV, NLP, speech recognition and conversational models

**Statistical ML** - building recommendation engines, forecasting models, predictive analytics

### Solution Accelerators



Doc Processing



Contact Center Insights



Video Analytics



Data Migration



MLOps

40-70%

Reduction in  
Development Time

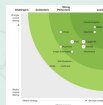
### Recognition

Top 5

AWS AI/ML partners  
worldwide



InsureTech  
100



LEADER -  
Forrester New Wave  
(Computer Vision)

### AWS Credentials

#### COMPETENCY

Machine Learning

Financial Services

Data & Analytics

DevOps

Migration

#### PROGRAMS

Well Architected

SageMaker Migration

Embedded Analytics

#### CATALYST PROGRAMS

Amazon Textract

Amazon Forecast

Amazon Personalize

AWS Cloudformation

400+

AWS Certified  
Professionals



AWS PARTNER NETWORK

#### LAUNCH PARTNERS

AWS CCI  
AWS Panorama  
Amazon Lookout  
for Metrics  
RDS Delivery

#### SERVICE DELIVERY

Amazon Quicksight

Amazon EMR

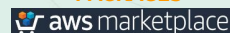
Amazon Redshift

AWS Lambda

Amazon Aurora

AWS CloudFormation

#### SOLUTION PACKAGES



AWS  
Quick Start



# Quantiphi - FSI Overview



400+ dedicated people



Including 50+ FSI SMEs



10+ large data transformation programs



60+ AI/ML use cases implemented & counting...

## OUR KEY DIFFERENTIATORS



INDUSTRY FOCUSED SOLUTION OFFERINGS



CAPABILITIES ACROSS ALMOST ALL LOBs

■ Insurance

■ Banking

■ Wealth Management

■ Capital Markets

PRE-BUILT ACCELERATORS CUSTOMIZED TO FSI



ACROSS DIGITAL TRANSFORMATION JOURNEY



PARTNERED WITH 50+ FSI CUSTOMERS GLOBALLY..



FINANCIAL SERVICES COMPETENCY WITH CLOUD PARTNERS

## SUCCESS STORIES

**Fortune 500 supplemental insurance carrier**  
(Cloud Modernization)

Foundational Pillar to drive AI/ML applications by creating a single view of the customer

**Fortune 100 P&C Insurance carrier**  
(Global Data Program)

**70%**  
Reduction in time to market

**Leading Voice Trading Provider**  
(Conversational AI)

**~90%**  
Model accuracy for specialty voice recognition

**One of the Largest Wholesale Mortgage Lender**  
(Doc AI)

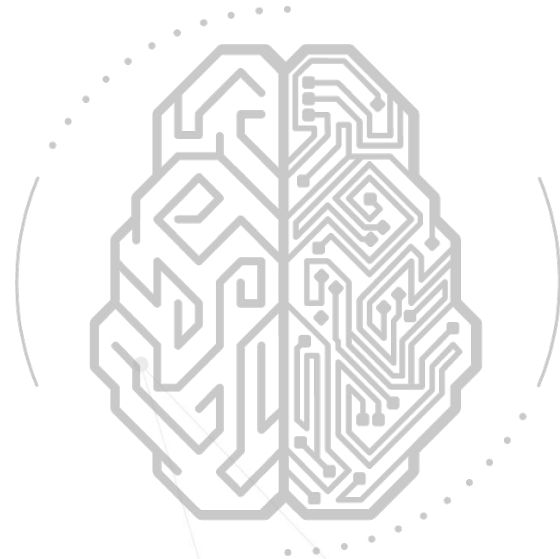
**89%**  
Cost savings compared to legacy process



**Priyanka Singh**

FSI - Client Solutions Partner  
(Quantiphi)

## Key Challenges in Fintech Industry & Quantiphi Solution offerings



# Key Challenges in Fintech Industry & Quantiphi Solution offerings

1.



## Libor Transition

- Challenges in Regulatory Compliance
- Huge amounts of physical documents
- Huge cost or operational expenses

2.



## Collection Management

- Lack of automation of account receivables
- Lack of timely alerts
- Lack of understanding of at-risk customers

3.



## Customer Retention

- Lack of visibility into customer concerns
- Low operational transparency
- Lack of customer insights
- Lack of customer 360 data view

4.



## Underwriting Process

- Manual Processing of Applications
- Limited Data Availability
- Manual entry of data

## AI Enabled Libor Transition Solution

- Document Digitization
- Document Categorization
- Attribute extraction for Insight Generation
- UI for Review and Amendment of the clause

## Connect to Cash

- Automated collection process
- Alerting System
- Segmentation of different customer profiles
- Risk Assessment of Payments

## One Customer - Persistency Solution

- Real time sentiment Analysis
- Dynamic Churn Propensity
- Dynamic Customer Lifetime Value
- Cross-Sell Upsell Recommendation

## Seamless Mortgage Processing

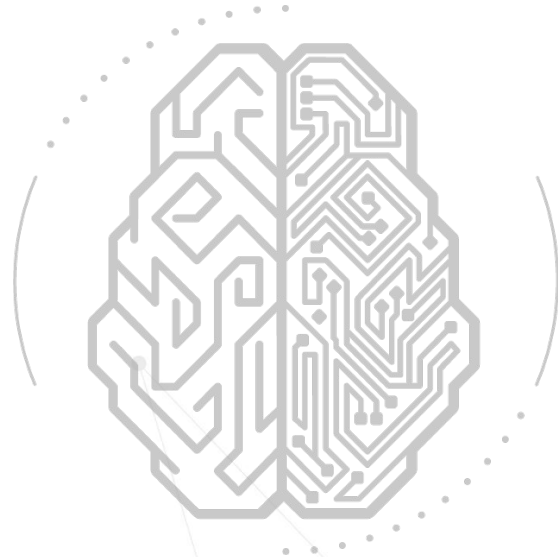
- Document Processing
- Risk Analysis
- Asset/ Collateral valuation
- Conversational Chatbot
- Reporting & Analytics



## Akshat Jain

FSI - GTM Lead,  
AWS Practice  
(Quantiphi)

# Transforming Mortgage Originations across Customer's journey



# Customer Journey - Mortgage Processing



Buy a House



Refinance Loan

Assess buying and refinancing options

Starts with the **pre-qualification** process to obtain the initial quote

After house selection - visits the mortgage firm to complete an official mortgage application for the **pre-approval**

The firm asks for more information and documents to verify creditworthiness

Submits the **loan application**.

The **information** in the application is **verified** by a Loan Processor who then forwards it to the Underwriter

**Underwriter assesses the application** and based on the provided information **calculates risk** and either accepts the application or marks it in suspense

Approved

Sign contracts & acknowledgement forms

Missing Information

Furnish new/additional information

Rejected

Look for Another Lender or Start on Credit Repair

Journey Stages

AI/ ML Super Powers



Assess Options and Pre-Qualification

Conversational Interface



Amazon EC2



Amazon Lex



Amazon Polly

- Call Centre AI
- Lead Scoring
- Personalized Recommendation Engine



Mortgage Shopping & Pre-Approval

Document Understanding & Search Engine



Amazon Textract



Amazon Comprehend



Amazon Kendra



Amazon ElasticSearch

- AI KYC Compliance
- AI Document Understanding
- Auto Review & Flagging



Loan Underwriting and Mortgage Processing

Risk Scoring and Fraud Analysis



Amazon EC2



Amazon SageMaker



AWS Lambda

- Asset Valuation with Image and Video Analytics
- Data Enrichment
- Customer 360 Data Lake



Closing Disclosures and Loan Approval

Notifications and IVR



Amazon SES



Amazon Connect

- CCAI and Status Tracking
- Persistency Platform
- Reporting & Analytics

# Seamless Mortgage Processing Demo

The screenshot displays the Quantiphi Insurance Bot dashboard, which is a web application for managing mortgage processing. The dashboard is divided into three main sections: Chat Interpretation, Virtual Agent Conversation, and Soft-Phone.

**Chat Interpretation:** This section on the left provides a detailed summary of the chat conversation. It includes fields for C: Last Payment Made, C: Pay Status, C: Payment Received, C: Inquiry Type, C: Requested on, P: /31/2020- 7/16/2020, P: Deductions, P: Earnings, P: Net Pay, P: YTD, P: Amount, P: Hours, B: Short-term borrowings, B: Deposits, B: Loans and leases, B: Long-term debt, B: Total revenue, net of interest expense, and a final amount of 87,352.

**Virtual Agent Conversation:** The central section shows a conversation with John Doe. It includes a "Talk to Live Agent" button, a message from the virtual agent stating "We have assigned you an application number for future reference - your application number is 1782. Please stay online while I transfer your call to the Live agent.", and a "Hello" message from the user. A large play button icon is overlaid on the agent's message, indicating a video or audio recording. The conversation is marked as "Virtual Agent Conversation's End".

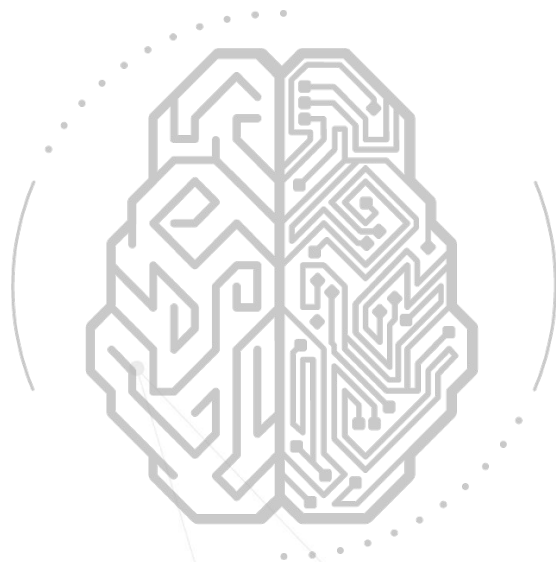
**Soft-Phone:** The right section features a "Soft-Phone" interface with a "Change status" dropdown, a "Dial number" input field, and a numeric keypad. A "Copied to Clipboard" notification is visible at the top of this section. The interface is powered by AWS.



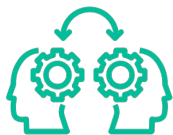
**Akshat Jain**

FSI - GTM Lead,  
AWS Practice  
(Quantiphi)

## How Quantiphi helps Fintech startups succeed in using ML with AWS



# Our Proven Engagement Journey



## Hack It

Brainstorm and synthesize ideas to address unsolved problems for an industry

**48 hrs - 2 weeks**

Duration

Understand key aspirations/afflictions, KPIs.  
Creating high level solution framework



## Prove It

Develop & deploy a Minimum viable Model using various ML & AI techniques to address a specific use-cases

**4-8 weeks**

Duration

Prove capability of Ai for consumer insights with limited data sources (MVM) & assess possible business impact



## Nail It

Productionalize the deployed models to create an end to end solution for problem in scope

**12-24 weeks**

Duration

Develop a MVP, covering standard data sources for Brand & consumer insights, meeting KPIs, Dashboards...



## Scale It

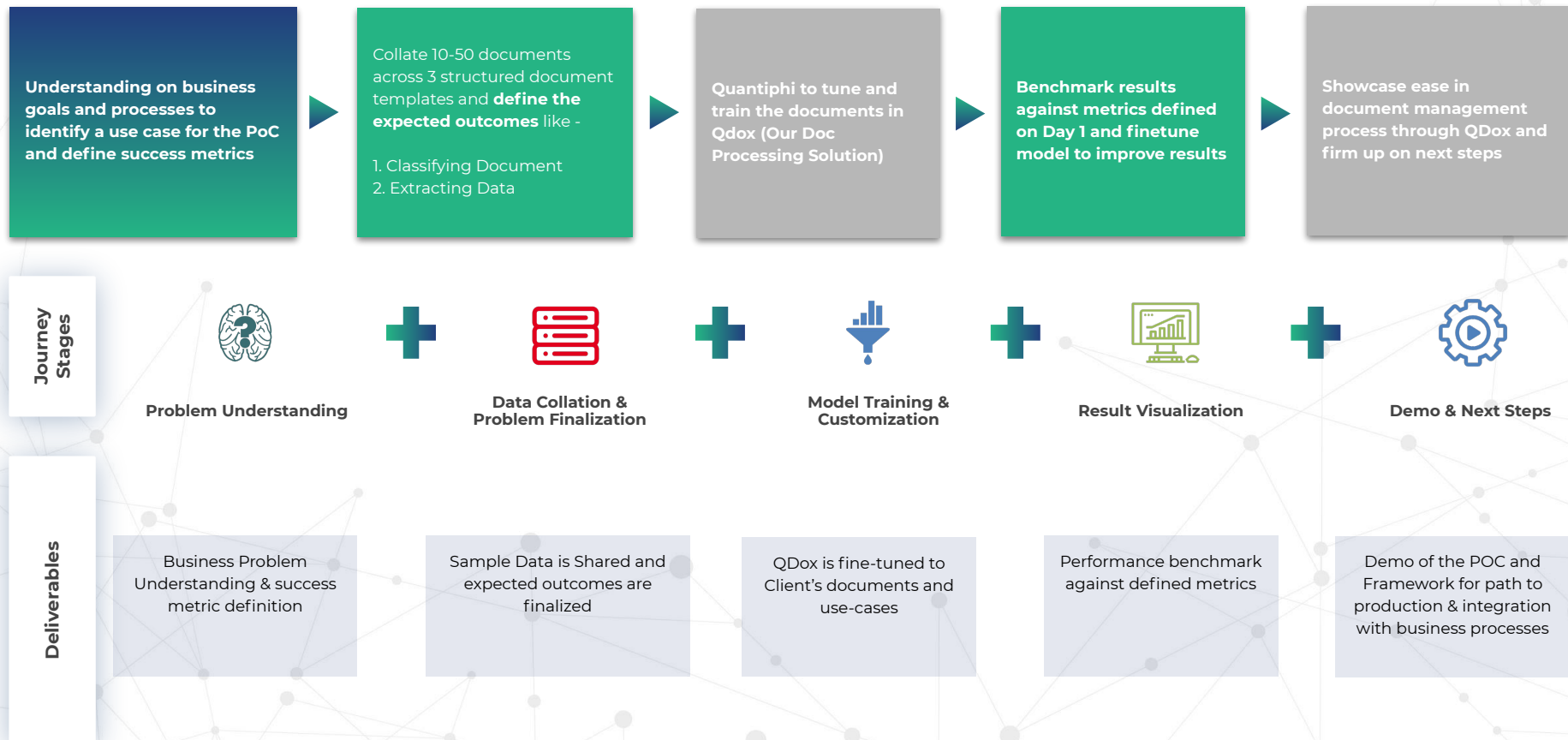
Build a universal platform for scalability between and within conglomerates

**2 week iterations**

Scale up functionalities towards a platform, iterations on development of new use cases, extension to other areas/functions for organizational impact



# One Week PoC Offer



# Fintech ML Success Stories



# Speakers



**Eric Jensen**

Founder and CTO  
(Causality Link)

# Causality Link

Amazon Web Services

How Fintechs are Leveraging AI/ML

# Balancing Human and Machine Intelligence

Our AI-powered research platform extracts the knowledge contained within millions of documents to provide investors and analysts with a unique perspective on companies, industries and macroeconomics.

**“Causality Link’s focus on causal links or “the why” is clearly the next huge step forward in the use of AI systems for the investment research process.”**

*Michael Mayhew Integrity Research 10/15/2020*



**Founded  
in Utah  
2016**

**2016: \$3M Seed**

**Partnership w/ Toulouse School of Economics**

Board Member Jean Tirole, Nobel Prize in  
Economics

**2020:  
\$5M  
Series A**

# AI Researcher Assistant



World  
News



Broker  
Research



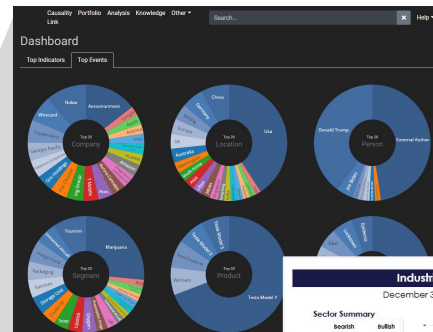
Earnings  
Call  
Transcripts



Filings



In-House  
Research



SaaS

Dashboards

DaaS



```

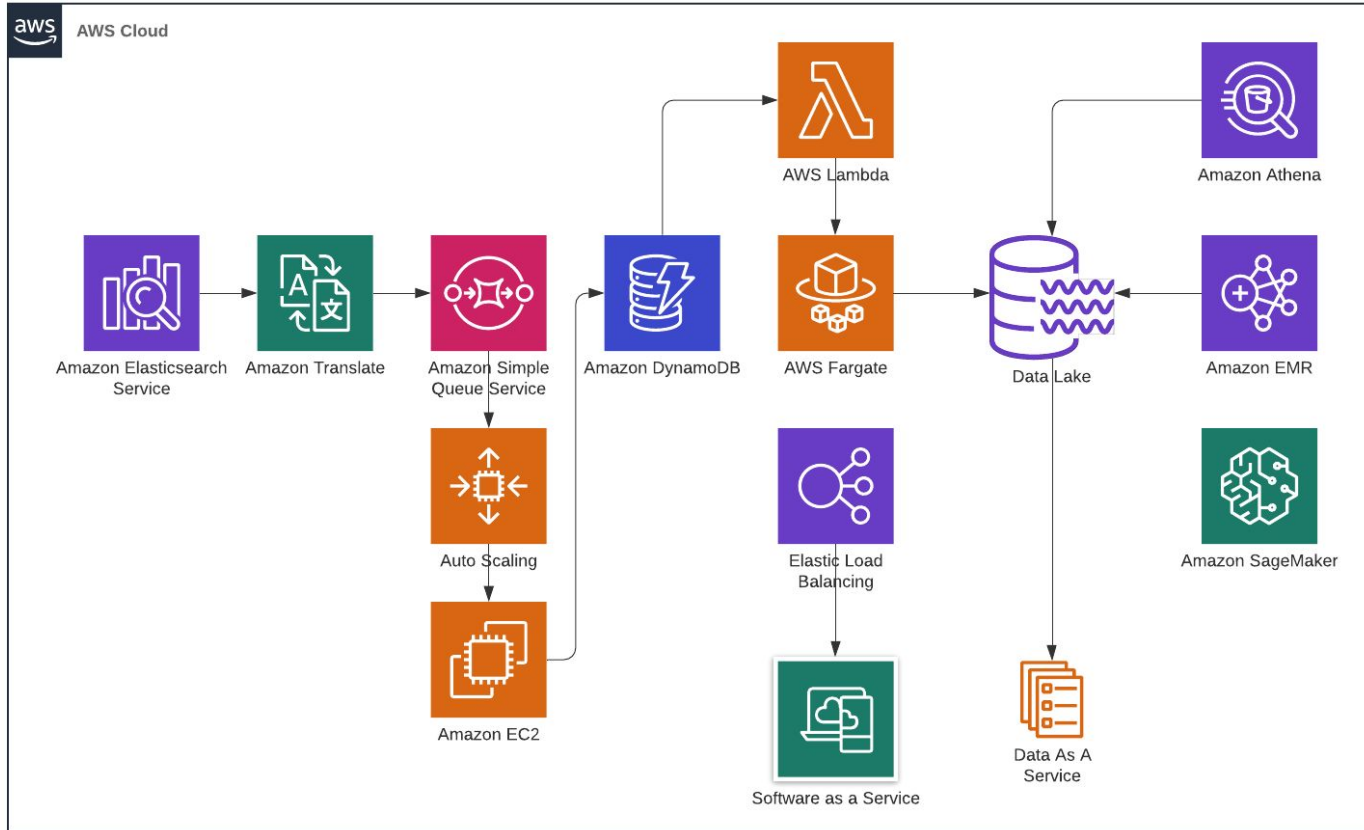
In [120]: query = """
SELECT array_join(array_agg(word), " ") sent
FROM protosense_corpus_words
GROUP BY publisher, id, location, paragraph, timestamp
HAVING array_join(array_agg(word), " ") like "yield curve control"
"""

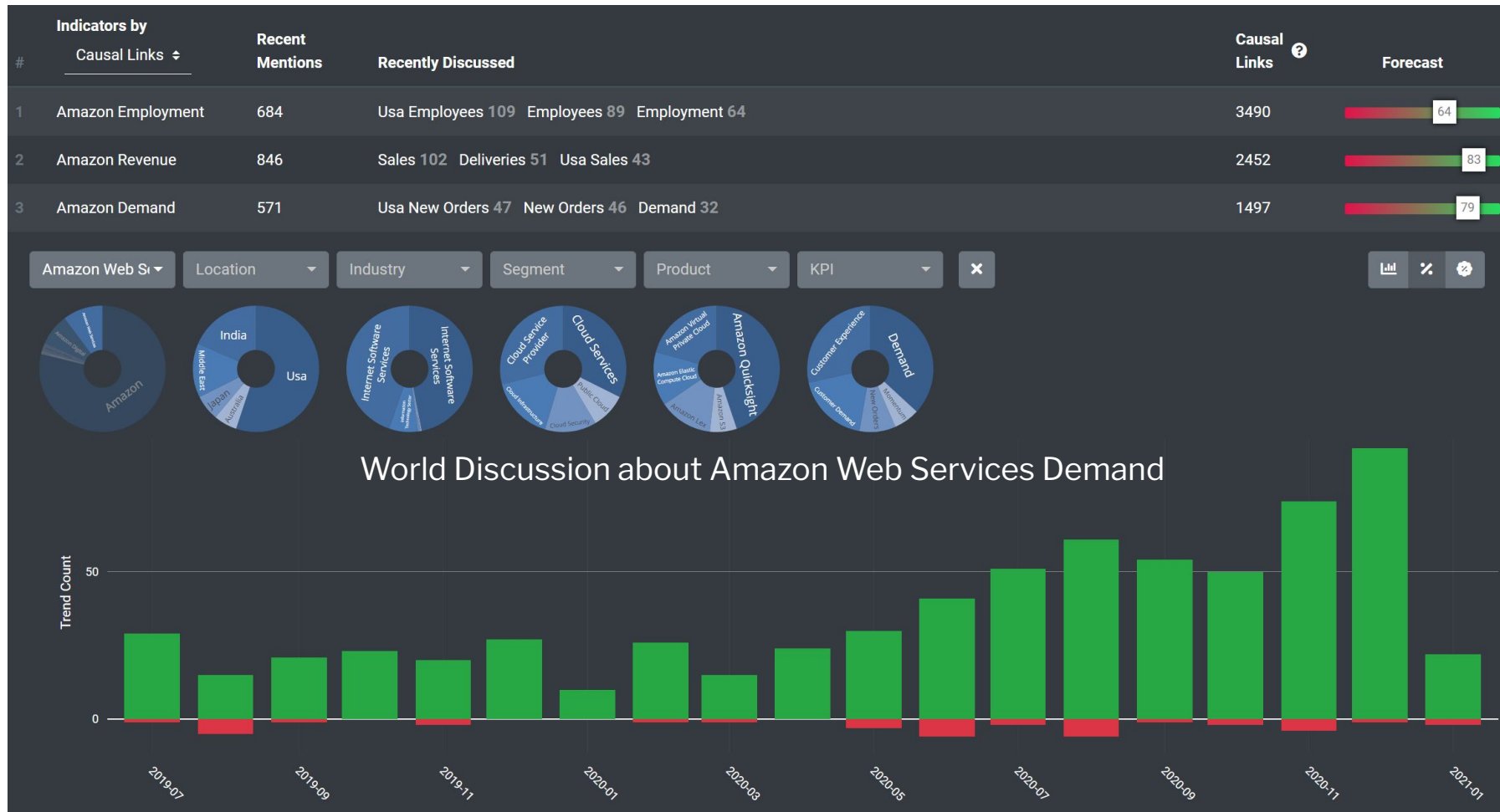
result = pd.read_sql(query, conn)
result.head()

Out[120]:
sent
0      ... 1. The bank of Japan has already passed the baton.
1      ... 1. The bank of Japan has already passed the baton.
2      ... 1. The bank of Japan has already passed the baton.
3      ... 1. The bank of Japan has already passed the baton.
4      ... 1. The bank of Japan has already passed the baton.
    
```



# Collecting, Extracting, and Aggregating Knowledge







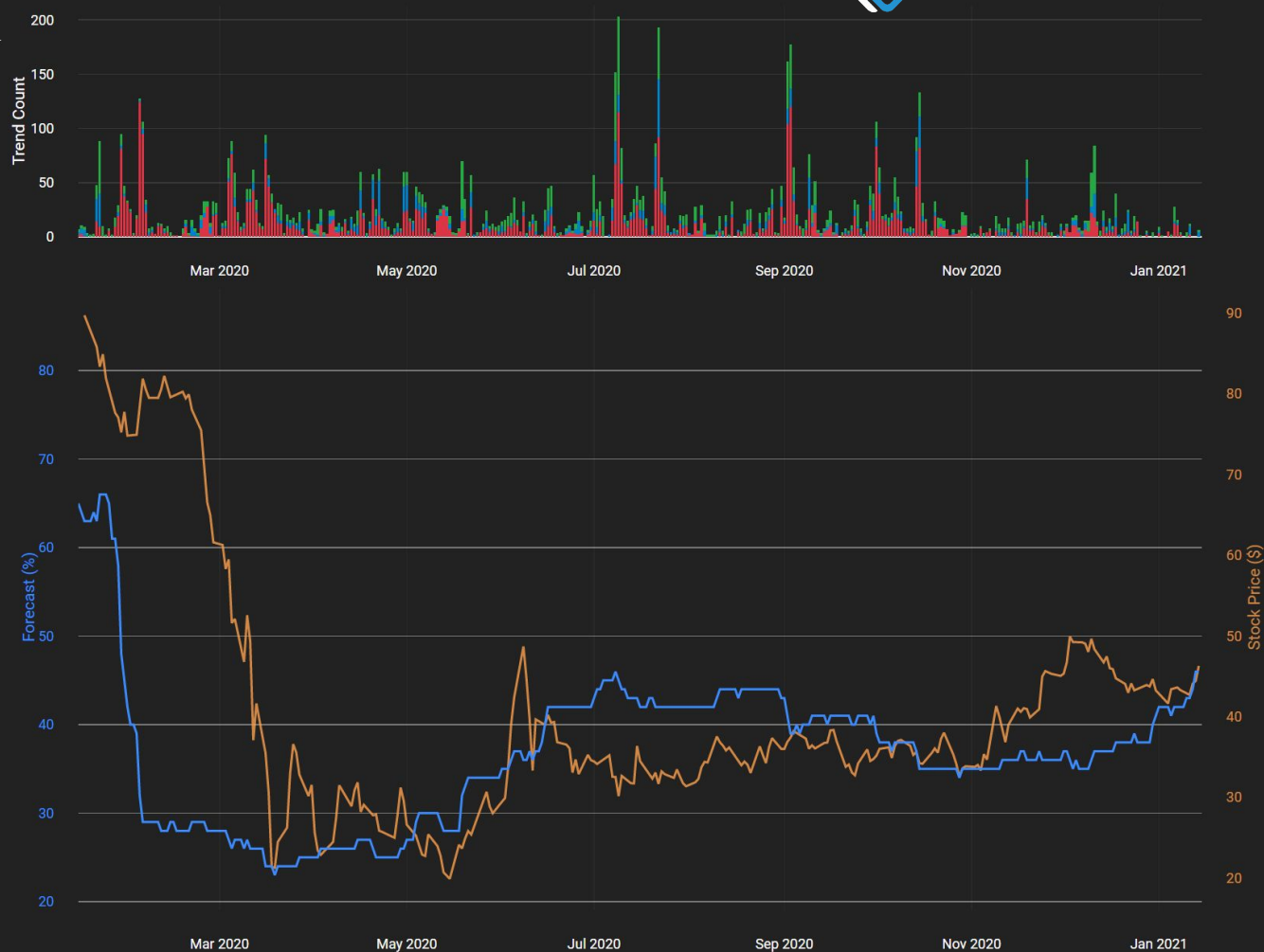
# Signal for: United Airlines

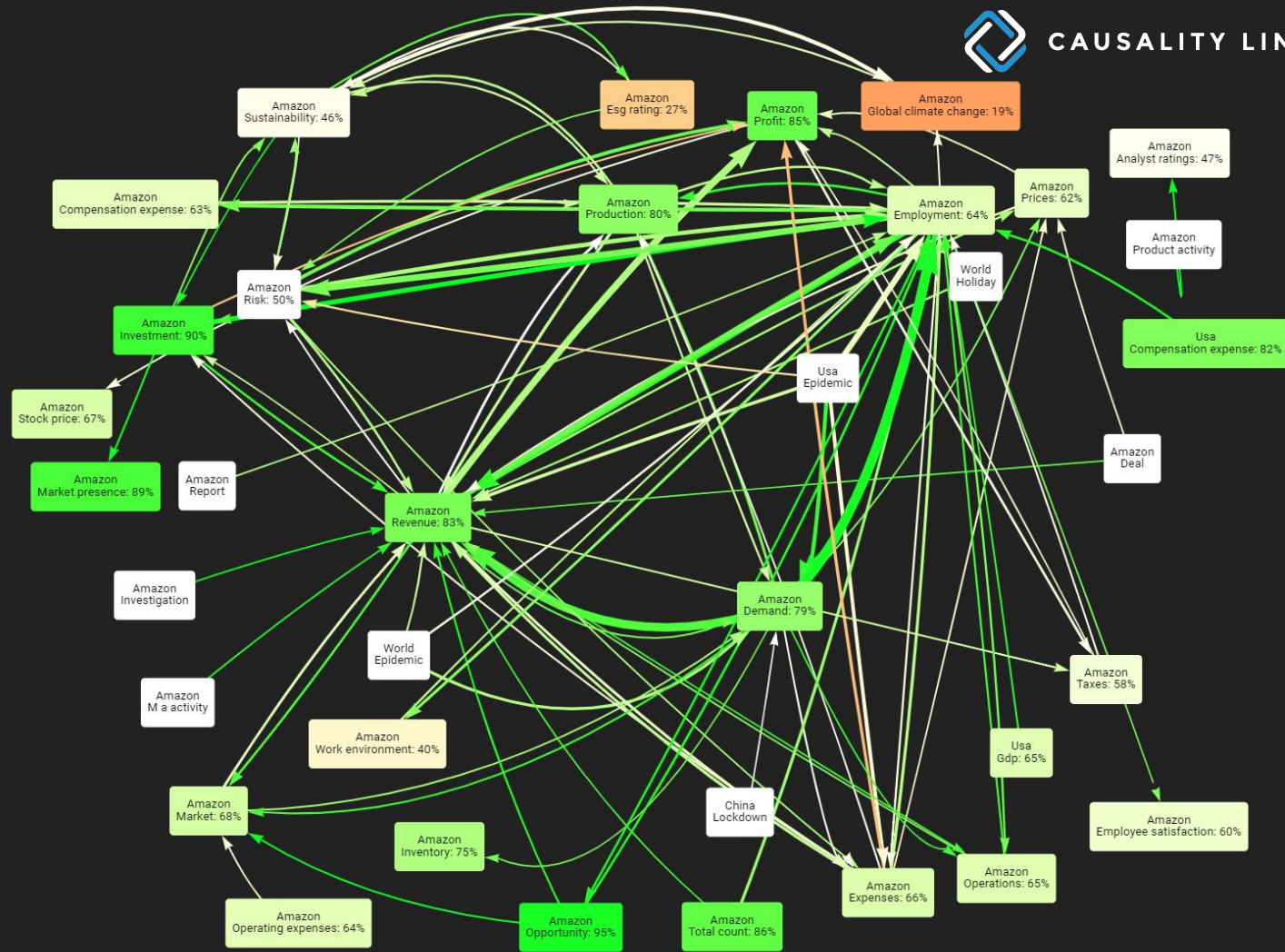


CAUSALITY LINK

Trends Events General

Demand	1389	▼
Employment	1313	▼
Revenue	926	▼
Stock Price	702	▼
Profit	446	▼
Total Count	393	▼
Risk	304	▼
Expenses	223	▼
Prices	220	▼
Compensation Expense	138	▼
Opportunity	135	▼
Cash Burn	121	▼
Global Climate Change	115	▼
Cash Flow	113	▼
Operations	112	▼
Investment	107	▼
Liabilities	98	▼
Market	91	▼
Assets	86	▼
Analyst Ratings	81	▼





The background of the slide is a light gray abstract network diagram. It consists of numerous small circular nodes connected by thin, light gray lines, creating a complex web-like structure that fills the entire frame.

# THANK YOU

