## INTELLIGENCE-DRIVEN USER COMMUNICATIONS AT SCALE

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## Uber

## Team



Gaurav Agarwal Engineer, Uber Prior: Microsoft



Mani Parkhe Engineer, Databricks Prior: Uber, LinkedIn, CAD



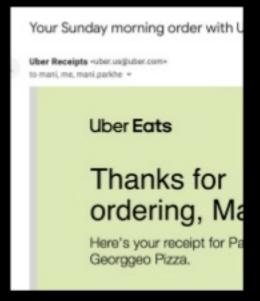
Manisha Mundhe Engineering Manager, Uber Prior: eBay, PayPal

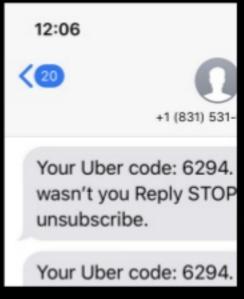
- Mission
- Communication Terminology
- Vision for Intelligent Communications
- Architecture
- Scale
- Use Cases
- Q&A

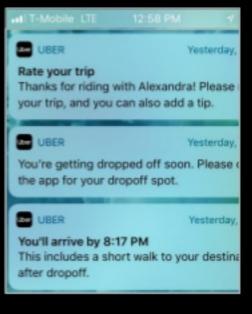
#### WHY | MISSION

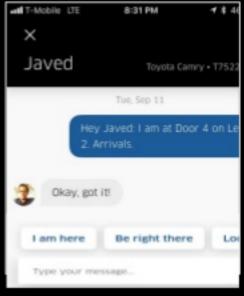
Drive billions of individual interactions intelligently and efficiently, across all communication channels that customers use, and adapt in real time to their behaviors.

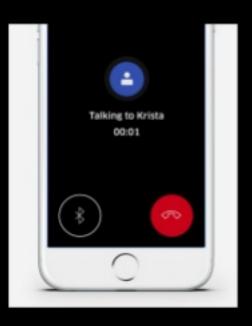
### Channels











Email

SMS

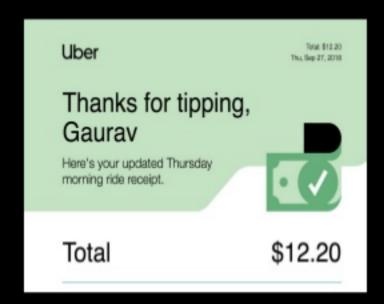
Push Notification In-App Message Voice/VoIP

Marketing

Marketing

Transactional Transactional Transactional Transactional Transactional Transactional

## Tools





Users at Node CURRENTLY PAST DAY LAST 30 DAYS 60 0 60 **Delivery Metrics** Suppressed Delivered **Engagement Metrics** Previously Opted Out Last 30 days of data shown

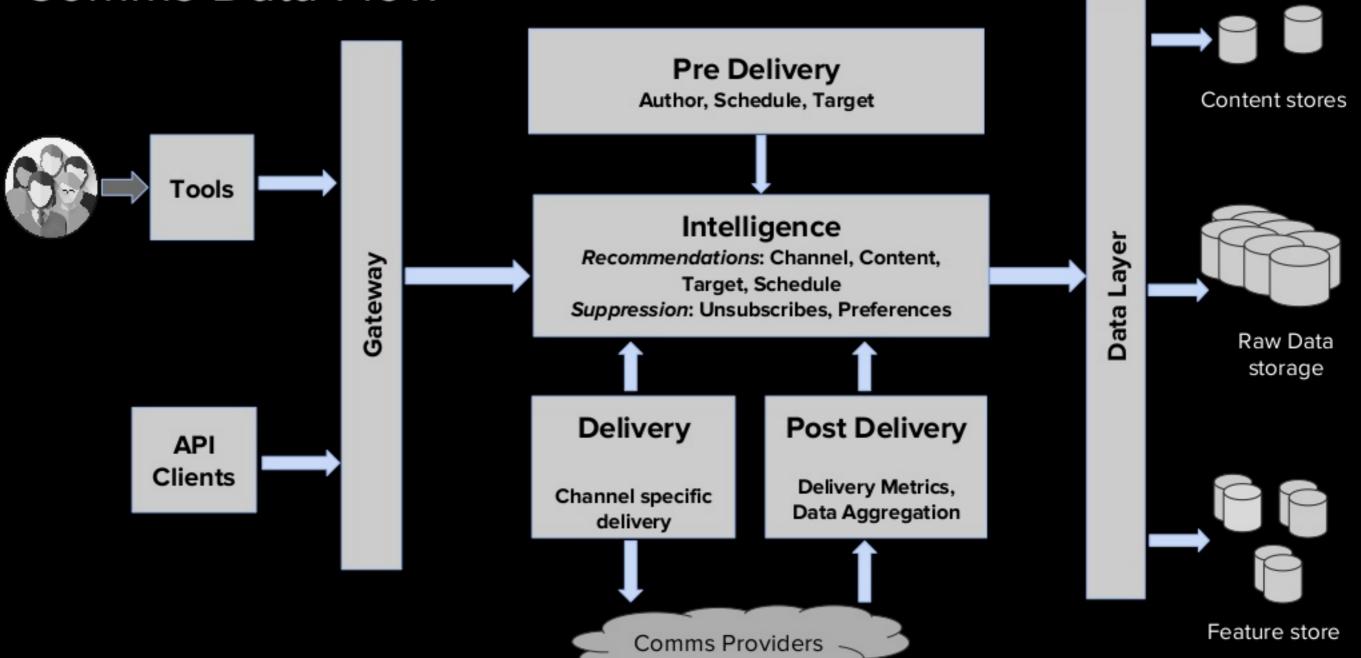
Authorization and Personalization of Content Create IFTTT campaigns Delivery and Engagement stats

## Automating campaigns

## Vision: Al-driven Marketing and CRM campaigns

#### High level objective: Campaign planning: In-flight rerouting: (human) Previous campaigns Channel Affinity Type of campaign Engagements Real-time feedback Objective function Experimentation Marketplaces Target audience Schedules Budget Suggested channels: Personalization: Channels/Medium Based on metadata Formatting Engagement metrics Cost ROI

## Comms Data Flow



### Scale

500M

Messages Sent Daily

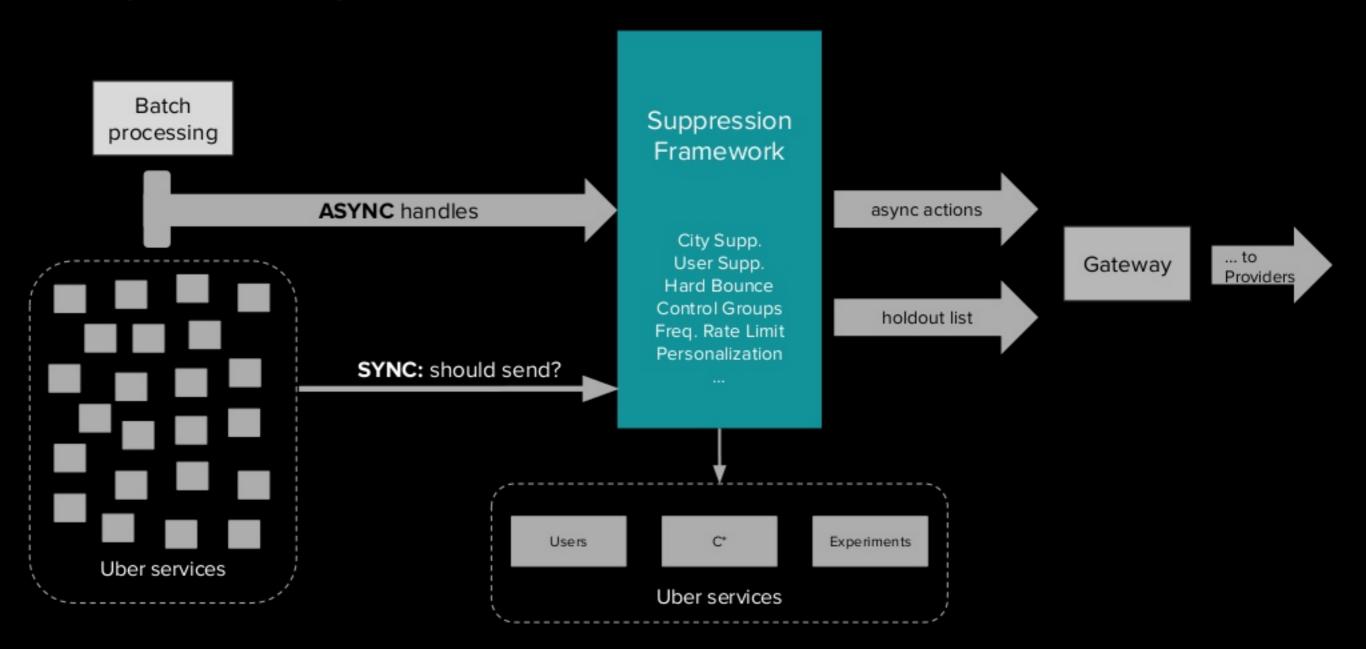
3.5B

**Events Processed Daily** 

- 500M messages sent and 3.5B message related events processed through the system
- Transactional vs. Marketing SLAs
- Global: Supports 168 locales

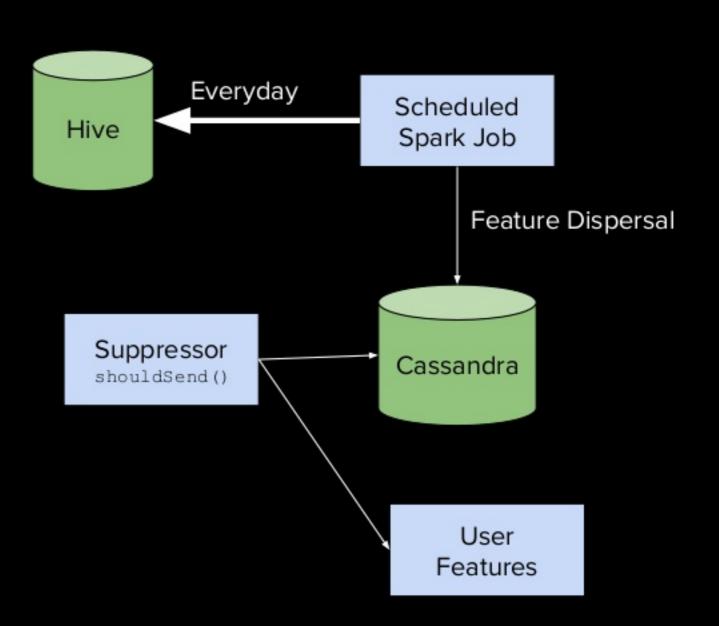
## Filters: Suppression Framework

Blocking communications in-flight ...



## Example: City-based message suppression

- Estimate most likely city for a user
- Disperse features to Cassandra via Spark app periodically
- Suppressor framework stops marketing messages in real-time



## Thank you!

# doer

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