# CUSTOMER SERVICE: MOBILE NETWORK OPERATORS

**CLASSIFYING TWEETS** 

#### BACKGROUND

#### **MOBILE OPERATORS**



Four Mobile Operators with Network Infrastructure



Nine "Virtual" Mobile Network Operators

#### **CUSTOMER SATISFACTION**

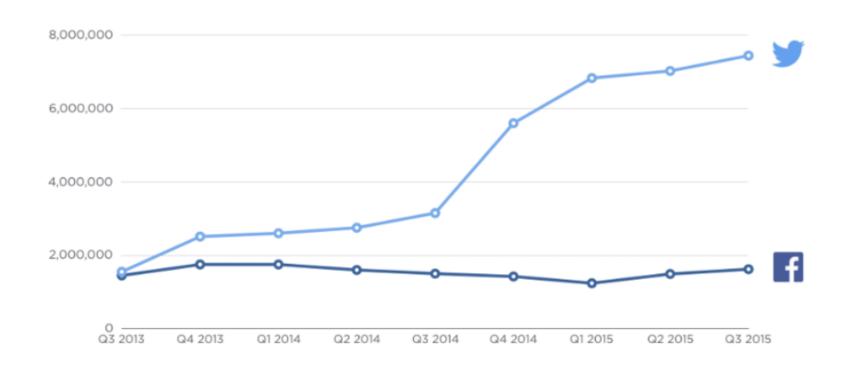


In industry rankings...

Vodafone, EE, O2 and Three perform poorly relative to their "virtual" competitors

#### TWITTER: A PLATFORM FOR CUSTOMER SERVICE

#### CUSTOMER SERVICE QUERIES BY PLATFORM



## OBJECTIVE & BUSINESS CASE

- Create a tool to categorise tweets by:
  - Subject (e.g. network, device, customer service etc.)
  - Sentiment (e.g. positive, negative, neutral)

#### **OBJECTIVE**

#### **BUSINESS CASE**

- Efficiently handle pre-categorized tweets
- On-the-pulse measure of customer satisfaction
- Identify key areas for service improvement

#### DATA

#### DATA

All tweets to Vodafone, EE, O2 and Three over 7 day period

#### Tweets were categorised by:

**S**ubject

(e.g. Network, Device, Customer Service, Promotion etc.)

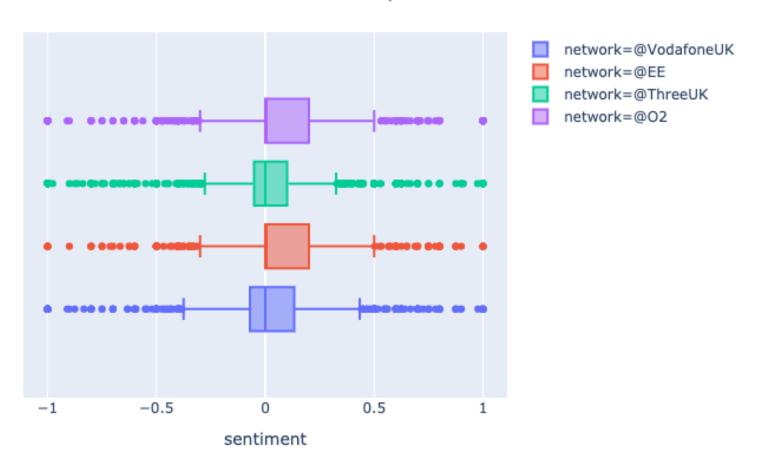
Sentiment

(e.g. Positive, Negative, Neutral)

## WHAT DID THE DATA SHOW?

#### **SENTIMENT**

#### Distribution of Sentiment by Network



#### **SUBJECT**

#### Proportion of Tweets by Subject & Network





#### MOST COMMON WORD PAIR

## HOW DID THE MODEL PERFORM?

Tweet	Actual Category		Predicted Sentiment
O2 customers be warned!! I was charged £35.65 for turning airplane mode off for appox 4mins whilst visiting the US last week!! •• @O2 This is an absolute disgrace - how can you justify these charges and expect to retain loyal customers? #o2 #overcharged	contract	customer service	0.18
@O2 ordered a new phone yesterday received an email confirming the order to say it's in full swing with an order number i paid for next day delivery and still have heard nothing can you check this for me? I've tried to call customer services and attempt live chat nothing works!	device	device	0.16
@virginmedia messing around yet again. No wifi. TV box lit up like a Xmas tree. Fml. Thank god for @ThreeUK 4G	network	network	0
@EE Yes, I've moved to Voxi.	other	other	0
Would @VodafoneUK treat customers the same? https://t.co/2xlaJudZbu	other	customer service	0
@O2 hey, I'm struggling with your signal. I continuously have 4G yet never can get on apps, download or send messages. Have to connect to WiFi to work.	network	network	0
@DannyStradomsky @EE Ahh ok dan!! Thought so 🔙	other	other	0.78
@VodafoneUK Vodafone has appalling customer service. Am trying to unlock my phone with code U sent me which ISN'T WORKING. I have tried all routes to make direct contact and it is impossible! Your rip off rates and 'can't do' approach delivers the worst/most frustrating customer experience.	customer service	customer service	-0.37
@William31567 @EE @netflix @actionfrauduk @CumbrianRambler @glocky9 @ChrisJCoates @Catstycam @theJeremyVine @PaulKingstonITV @WalksBritain @walkingbookscom @BBC_Cumbria @Mounta1n_Mike I googled the number at the bottom of the email there are some slimy so-and-so's https://t.co/4mKr2ibhMh	other	other	0
@EE Sorted now. It was 16 hours ago I messaged u	customer service	customer service	0

#### RECOMMENDATIONS

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Use the model to:

- I. Precategorize tweets
- 2. Measure % tweets relating to each subject category
- 3. On-the-pulse measure of customer satisfaction

#### FUTURE WORK

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Labelling

Tweets & Replies

Sentiment Analysis

## THANK YOU FOR LISTENING