

# Policing Engagement via Social Media

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- Policing organisations use social media to spread the word on crime, severe weather, missing people, ...
- Many forces have staff dedicated to this purpose and to improve the spreading of key messages to wider social media communities
- Research shows that exchanges between police and citizens are infrequent

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## Goal

[Redacted Profile Name] [Follow](#)

Man sought following theft of venetian blind from Dunelm Mill, Northampton  
[northants.police.uk/#!/News/28925](http://northants.police.uk/#!/News/28925)



RETWEETS 11,190 LIKES 12,700

5:47 PM - 18 Oct 2016

506 11K 13K

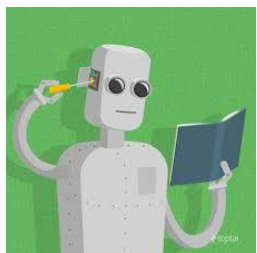
- **Understand what attracts citizen's to social media policing content**
  - What are the characteristics of the content that generate higher attention levels
    - Writing style
    - Time of posting
    - Topics
  - Help police forces to identify actions and recommendations to increase public engagement

## Approach (I)

- Data Collection
  - 154,679 posts from 48 corporate Twitter accounts
  - 5,426,750 posts from 2,450 non-corporate Twitter accounts
- Engagement Indicators
  - Retweets
    - % of tweets retweeted
    - Average number of retweets per tweet
  - Favourites (likes)
    - % of tweets favourited (liked)
    - Average number of likes per tweet
  - Replies
    - At the time of analysis Twitter API does not allow to collect replies per tweet

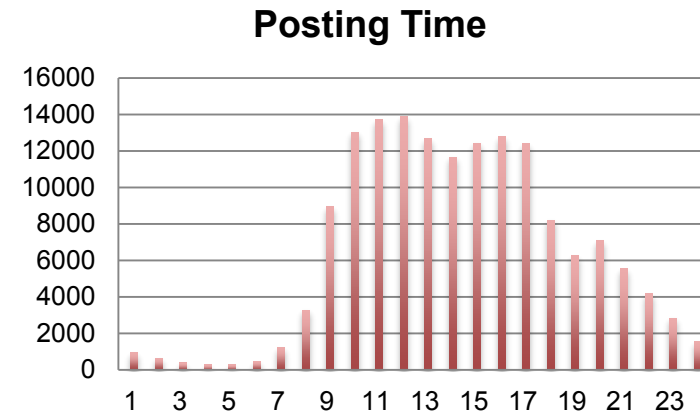
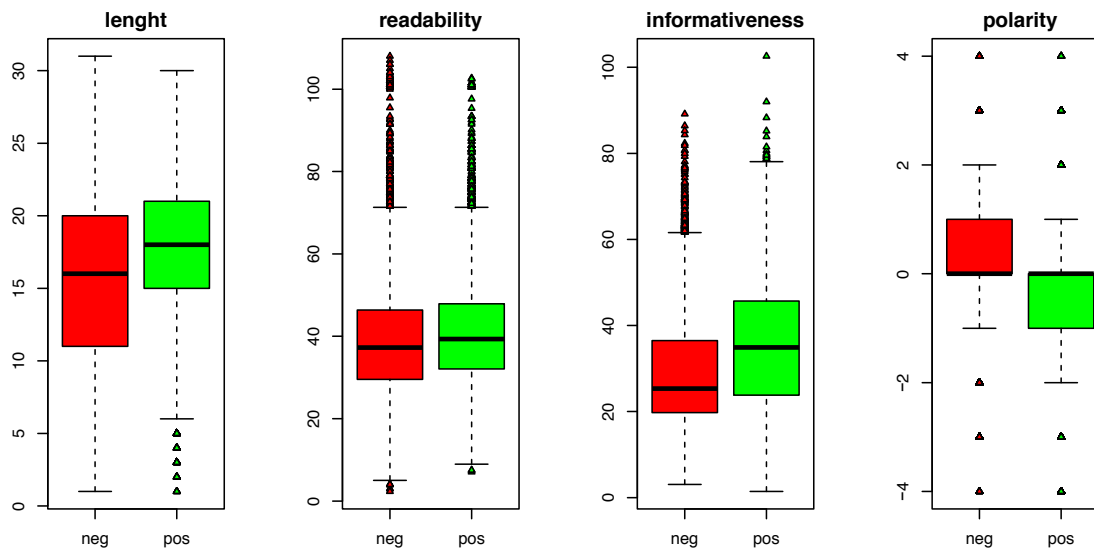
## Approach (II)

- Feature Extractors
  - Describe tweets in terms of their characteristics
  - Content Features
    - Length / Readability / Informativeness / Complexity / Sentiment
    - Media / mentions / hastagsh / URLs
    - Time in the day
  - User Features
    - Network: In-degree / out-degree
    - Activity: Post count / post rate / age in the system
  - Semantic Features
    - Use knowledge bases to extracts entities and concepts
      - Persons / Organisations / Locations
- Use Machine Learning techniques to determine the characteristics “patterns” of those tweets receiving higher engagement levels



# Results (I)

- Tweets receiving higher engagement are:
  - **Longer, easier to read, more informative**, tend to **mention other users**, include **media** items (images, videos), are slightly **more negative** than positive.
  - In terms of user features they tend to be posted by organisations with a **high number of followers**.

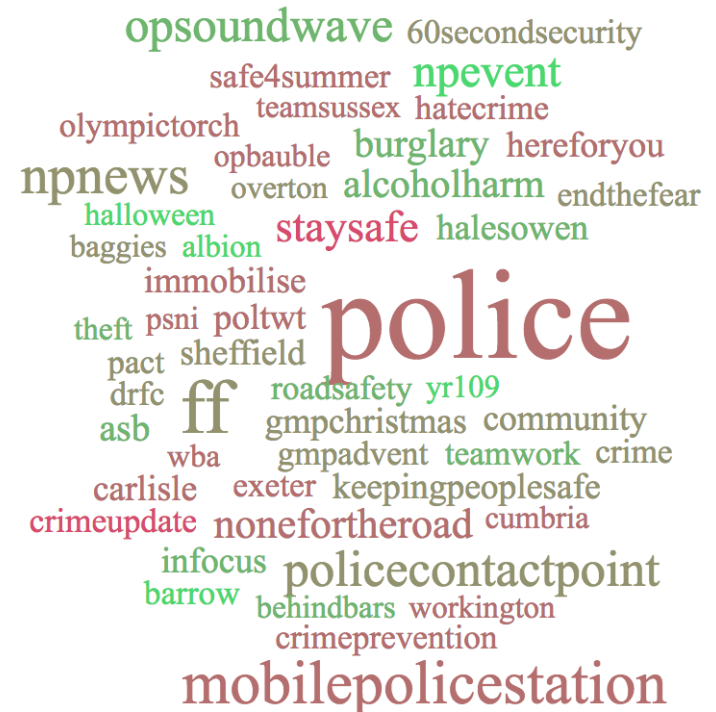


Posting time didn't have a major impact but you are vigilant even at night!



## Results (II)

- Tweets receiving higher engagement talk about
  - Weather / roads and infrastructures / events / missing persons
  - Tend to mention locations
- Tweets receiving lower engagement talk about
  - Crime updates: such as burglary, assault or driving under the influence of alcohol
  - Following requests (#ff)
  - Advices to stay safe





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Just for some fun! 😊 How am I doing?



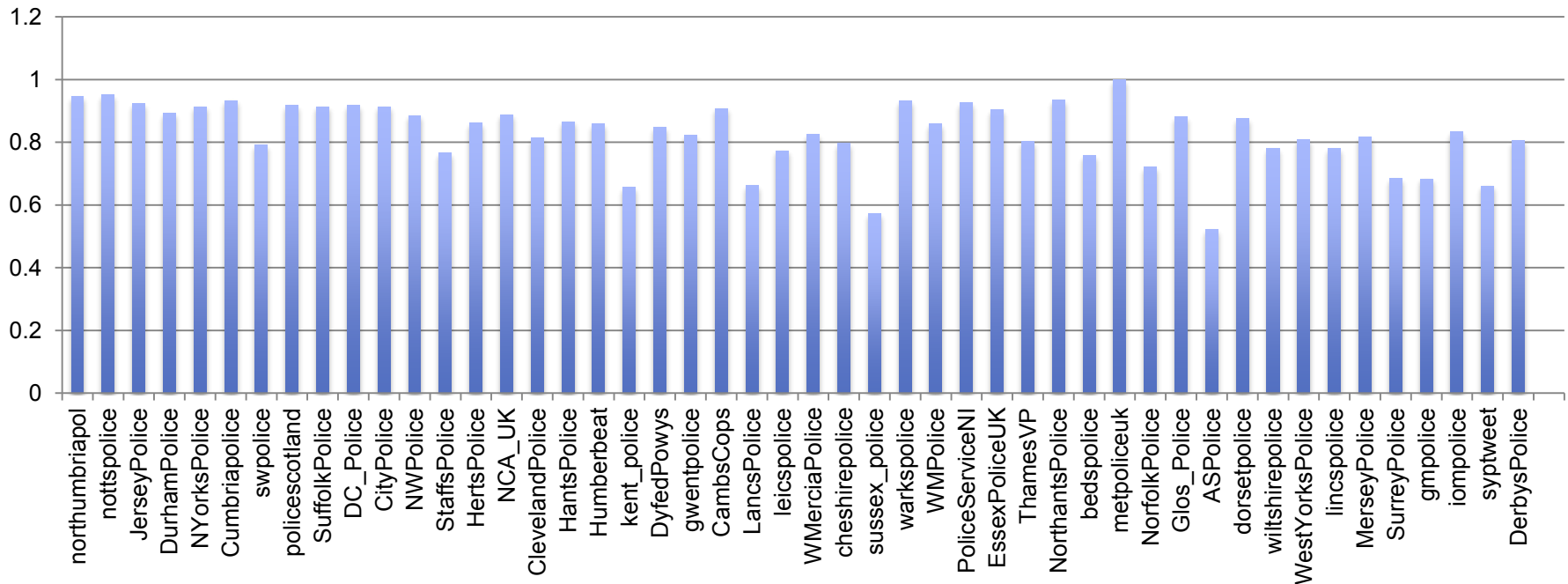


# Engagement Indicators (I)

- Most accounts have more than 60% of tweets retweeted
- Top 5: MET, Nottinghamshire, Northumbria, Northamptonshire, Cumbria



**% tweets retweeted**



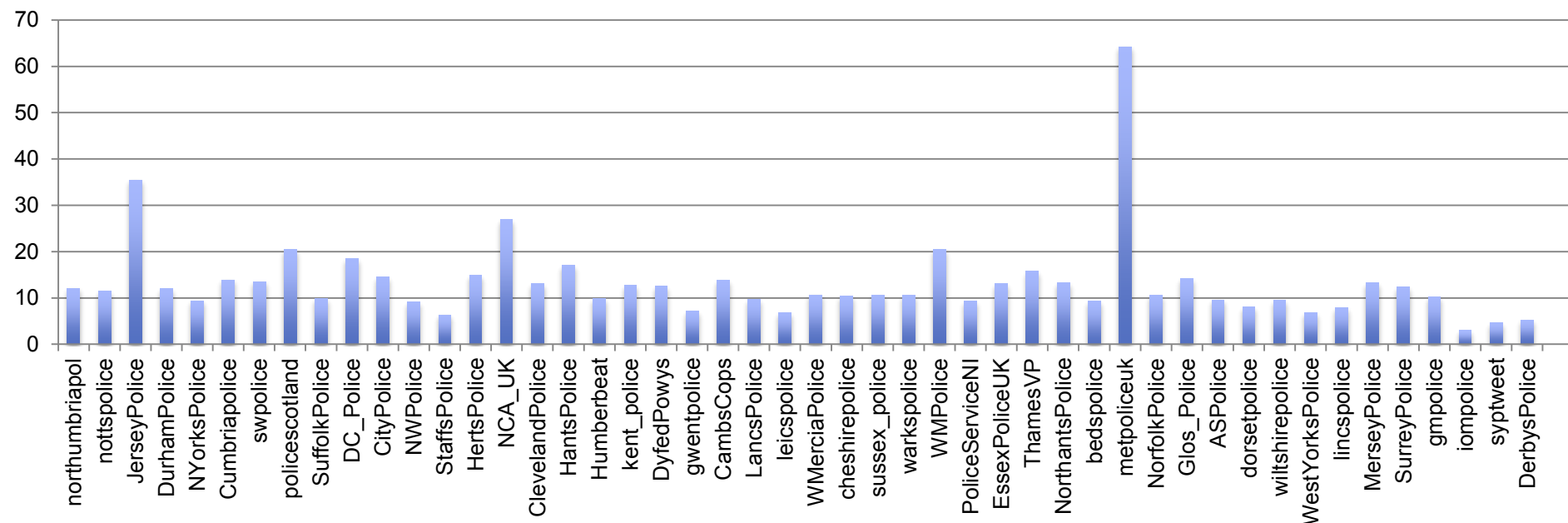
## Engagement Indicators (II)



Most accounts receive in average 10 retweets per tweet

– Top 5: MET, Jersey, National Crime Agency, West Midlands, Scotland

### Average Number of Retweets

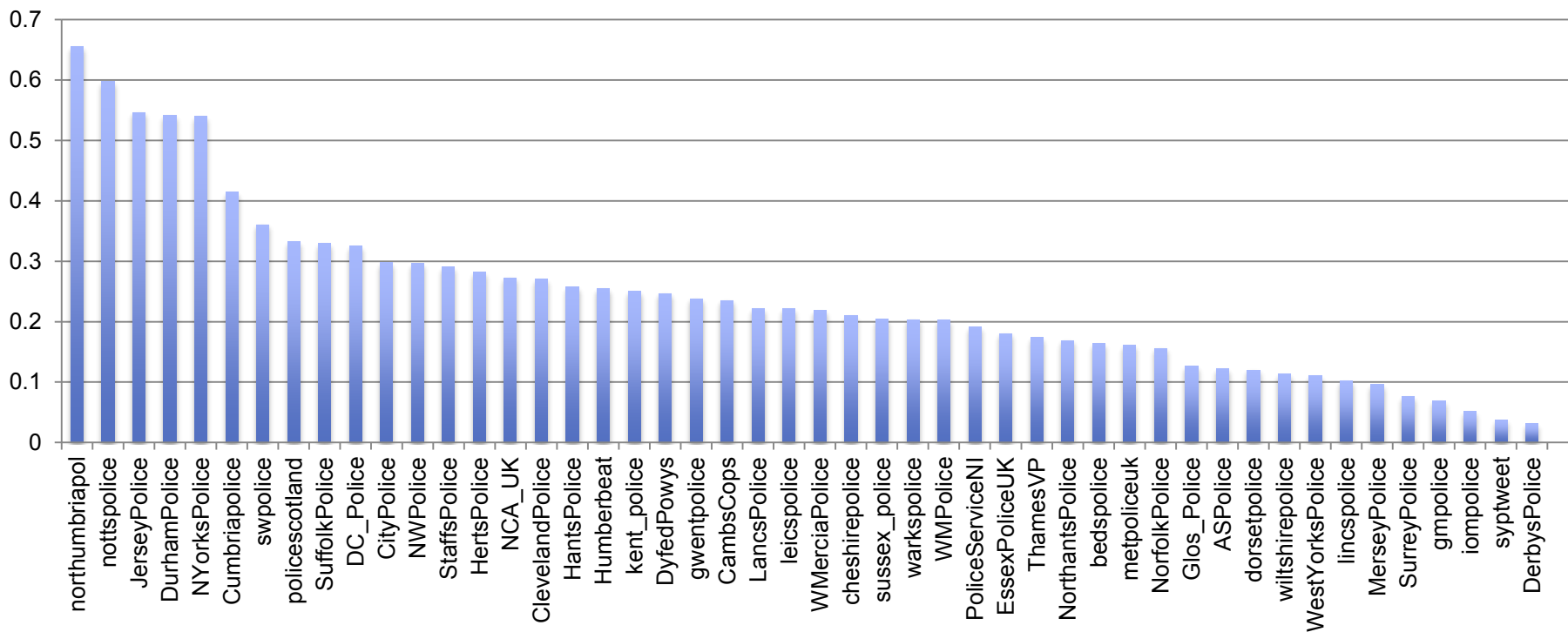


## Engagement Indicators (III)



- Some organisations retweet from others rather than originating discussions
  - Northumbria, Nottinghamshire, Jersey, Durham, North Yorkshire

### Ratio non-original tweets



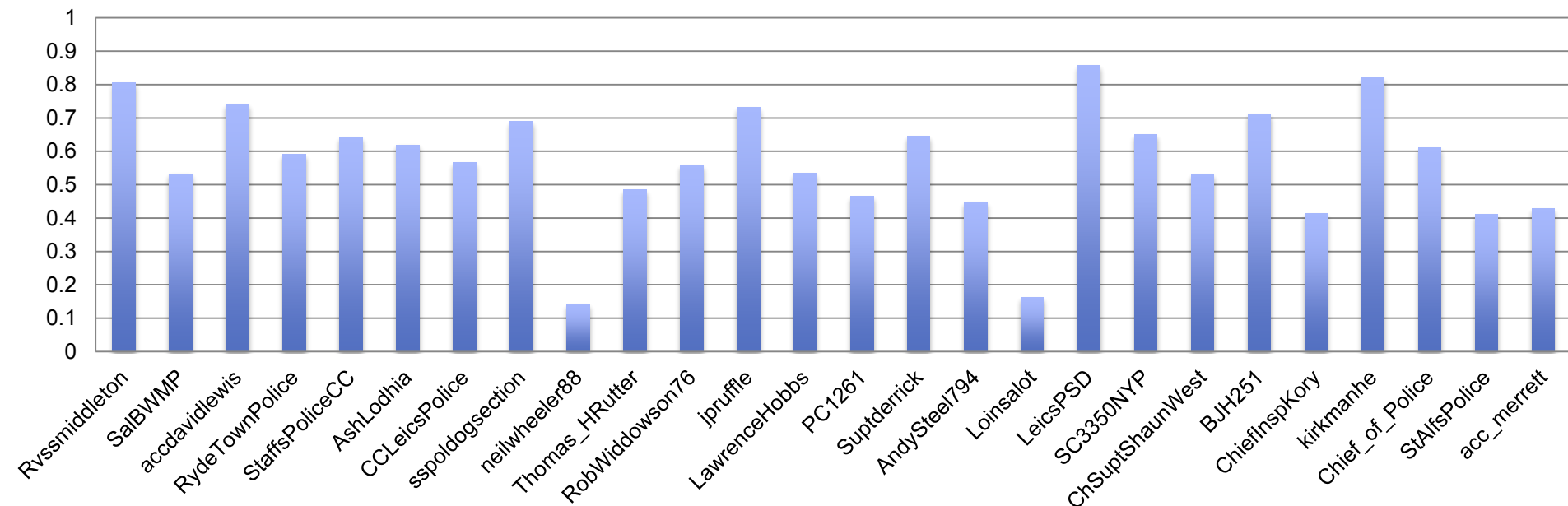
# Who is Northumbria retweeting?



## Non-Corporate accounts (I)

- 50% of the accounts have more than 60% of tweets retweeted
- Top 47 accounts have a higher ratio of retweets than corporate organisations (around 80%)

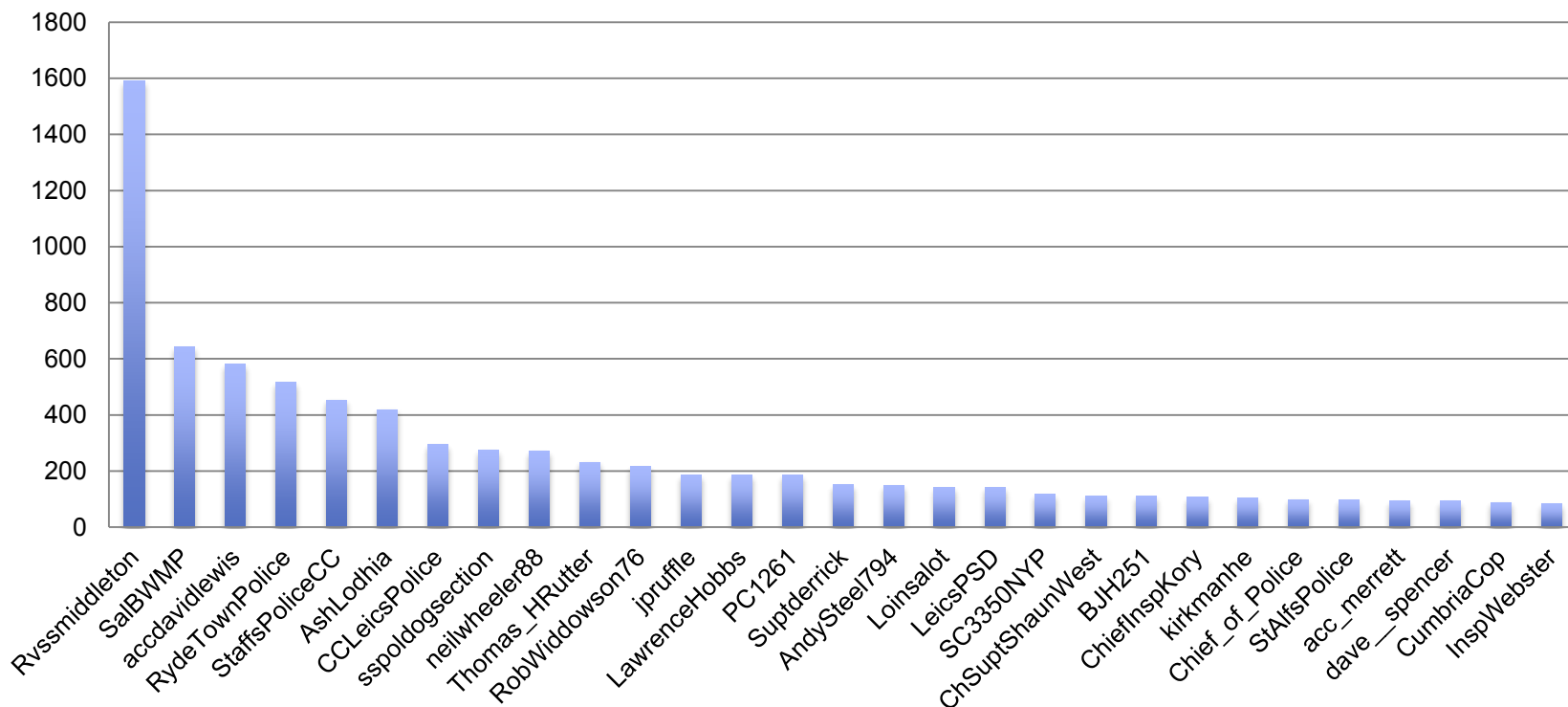
**% of tweets retweeted**



## Non-Corporate accounts (II)

- And a much higher average number of retweets
  - more than 150, and some of them more than 500

**Average number of retweets**



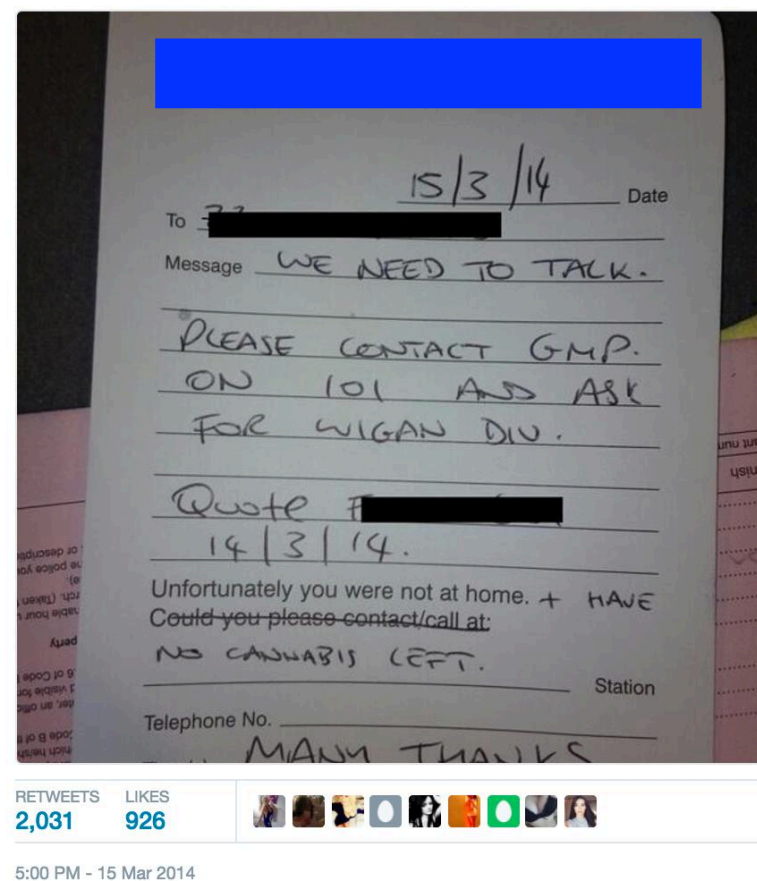
## Non-Corporate accounts (III)

- Three additional ingredients
  - They retweet messages about relevant events and popular users
  - They engage closer with the communities (direct messages and mentions to citizens)
  - They are fun!



We've kicked in a door in Worsley, got 72 cannabis plants, nobody home. Left a note.

GMP, keeping you in the loop.





## Demo Time! 😊

- Unless you have some questions first?

