

# Improving Brand and Risk Decisions Using Social Media Analytics

CAGNY Fall Meeting – December 4<sup>th</sup>, 2015



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# Section I of II: Landscape

- State of the art (inside/outside P&C)
- Data availability and relevance
- Potential benefits of analyzing data



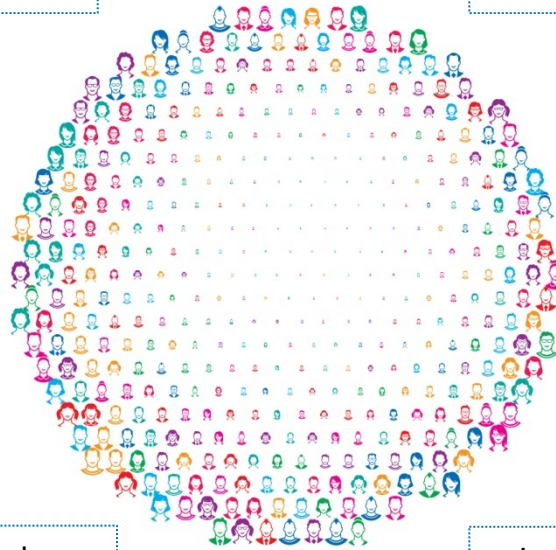
# Recent uses of social media data

“Social media, data analytics enable real-time **flu tracking**.”

– iHealthBeat, November 2015

“Social media activity might affect your **credit score**.”

– Chicago Tribune, Nov. 2015



“Twitter is being used by USGS to detect **earthquakes**.”

– NBC News, October 2015

“Bank of England built a Twitter tool to predict **bank runs**.”

– Business Insider, August 2015

“Friendships, social media activity aid in forecasting **crime**.”

– New York Times, Sept. 2015

“Insurance cos. may cull FB, Twitter to **price policies**.”

– Financial Times, February 2015

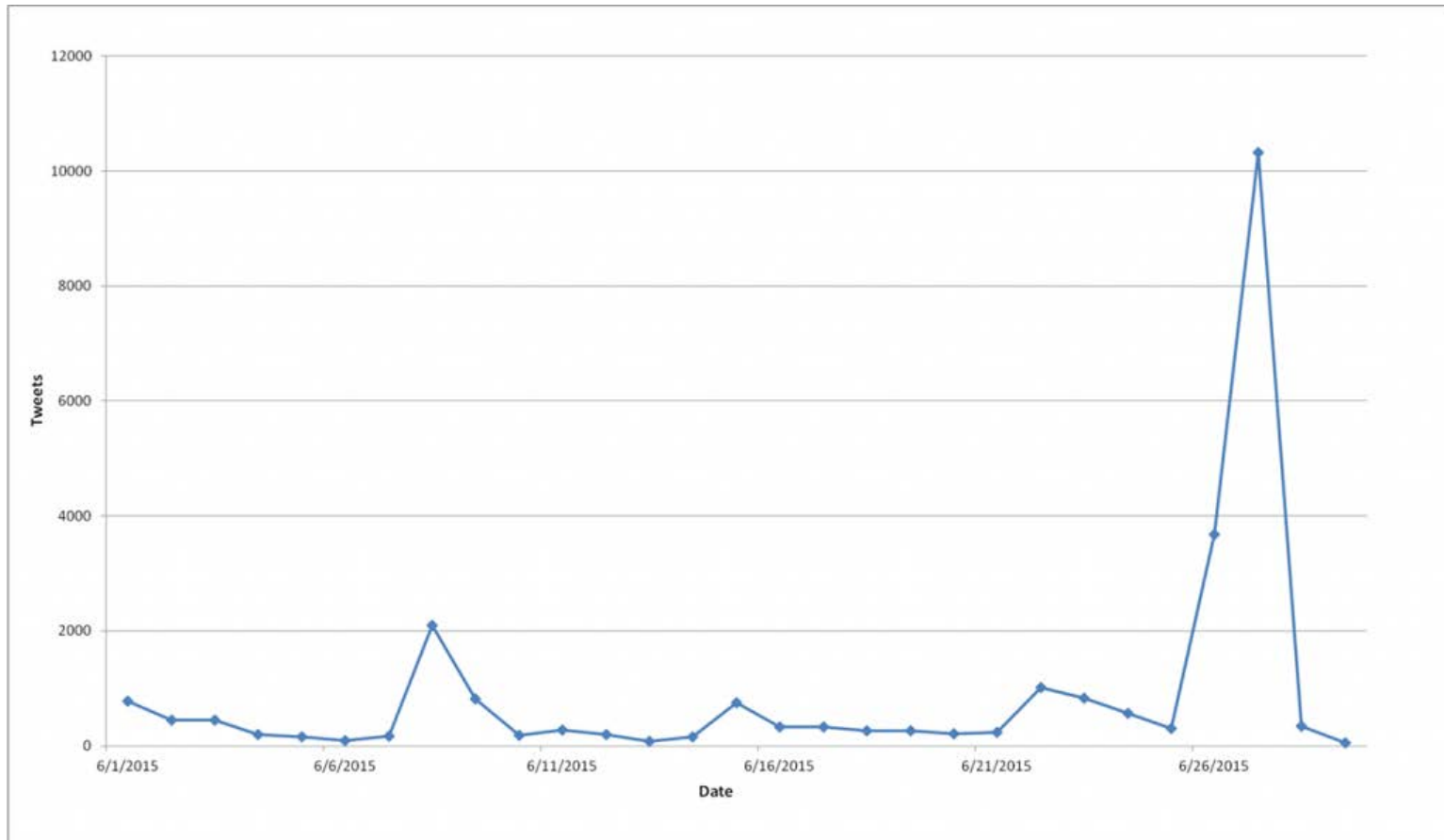


# P&C case study #1: The general contractor who's active on social media





# P&C case study #2: Using social media to become part of the national convo



For more information visit: <http://www.verisk.com/blog/analytics/how-one-insurance-company-used-social-media-to-become-part-of-the-national-conversation/>



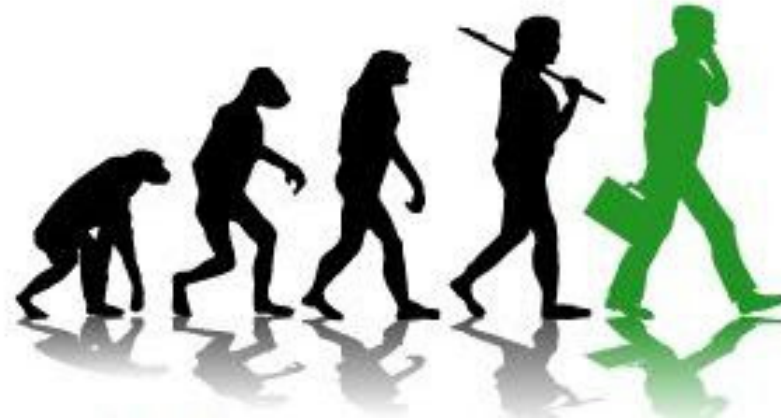
# Socially informed P&C decision-making

Are they telling me the truth?

What are they saying about me?

What does it all mean?

Where do customers socialize?



Who is my ideal customer?

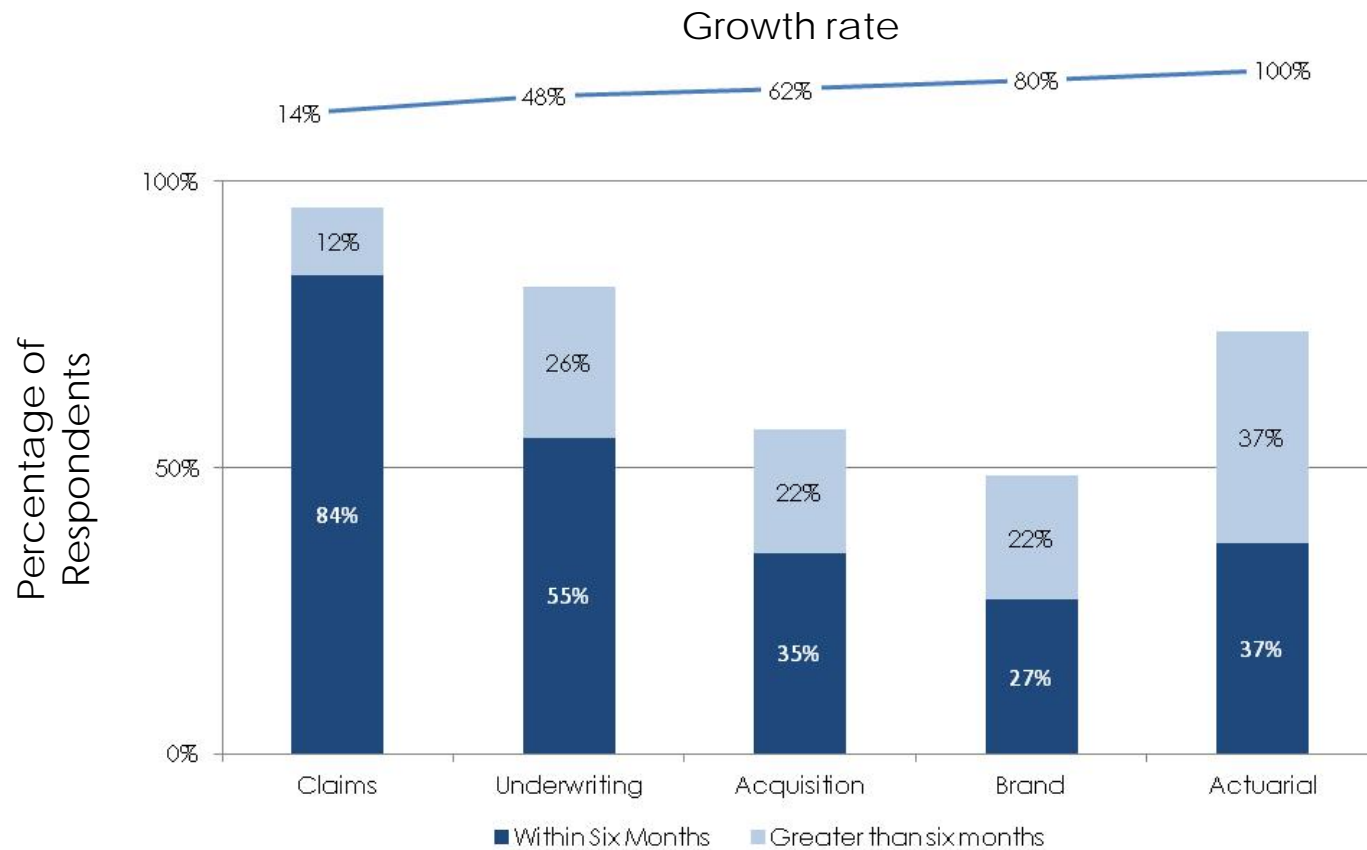
How can I make more money?

How do I connect with him or her?



# Potential P&C uses of social media data

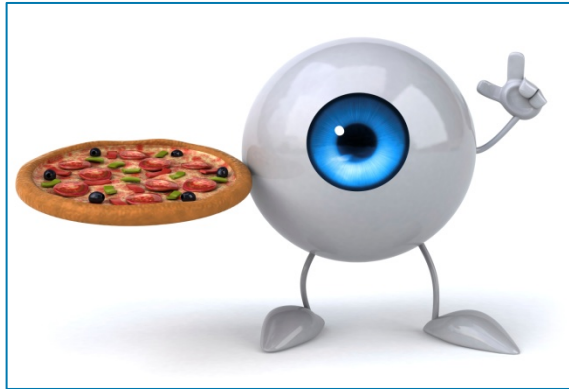
How soon will micro-blog be useful for each of the following areas?



Source: August 2014 ISO Survey, n = 44



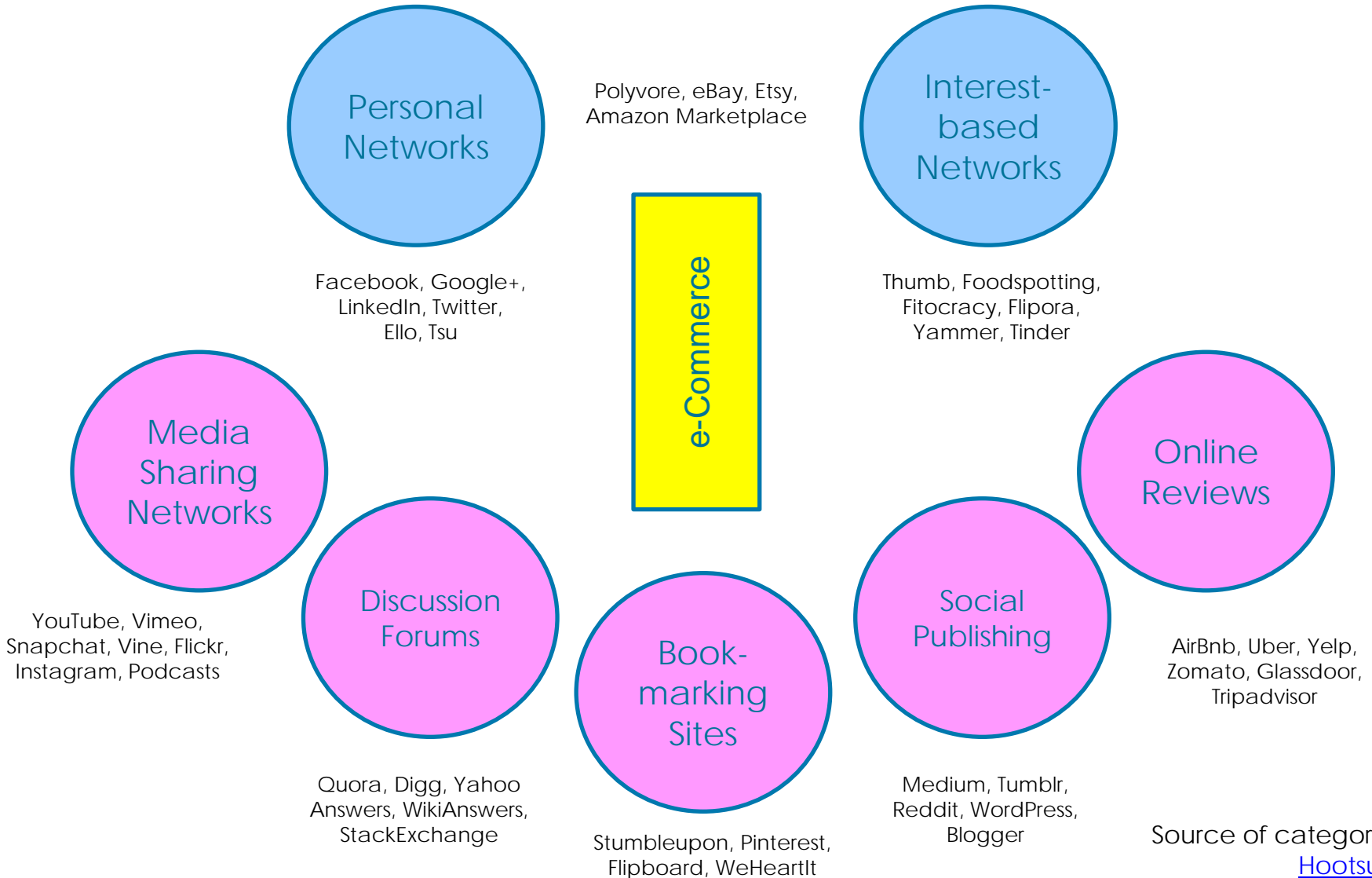
# Recent algorithmic attempts to understand personality and behavior







# Your personality in the cloud



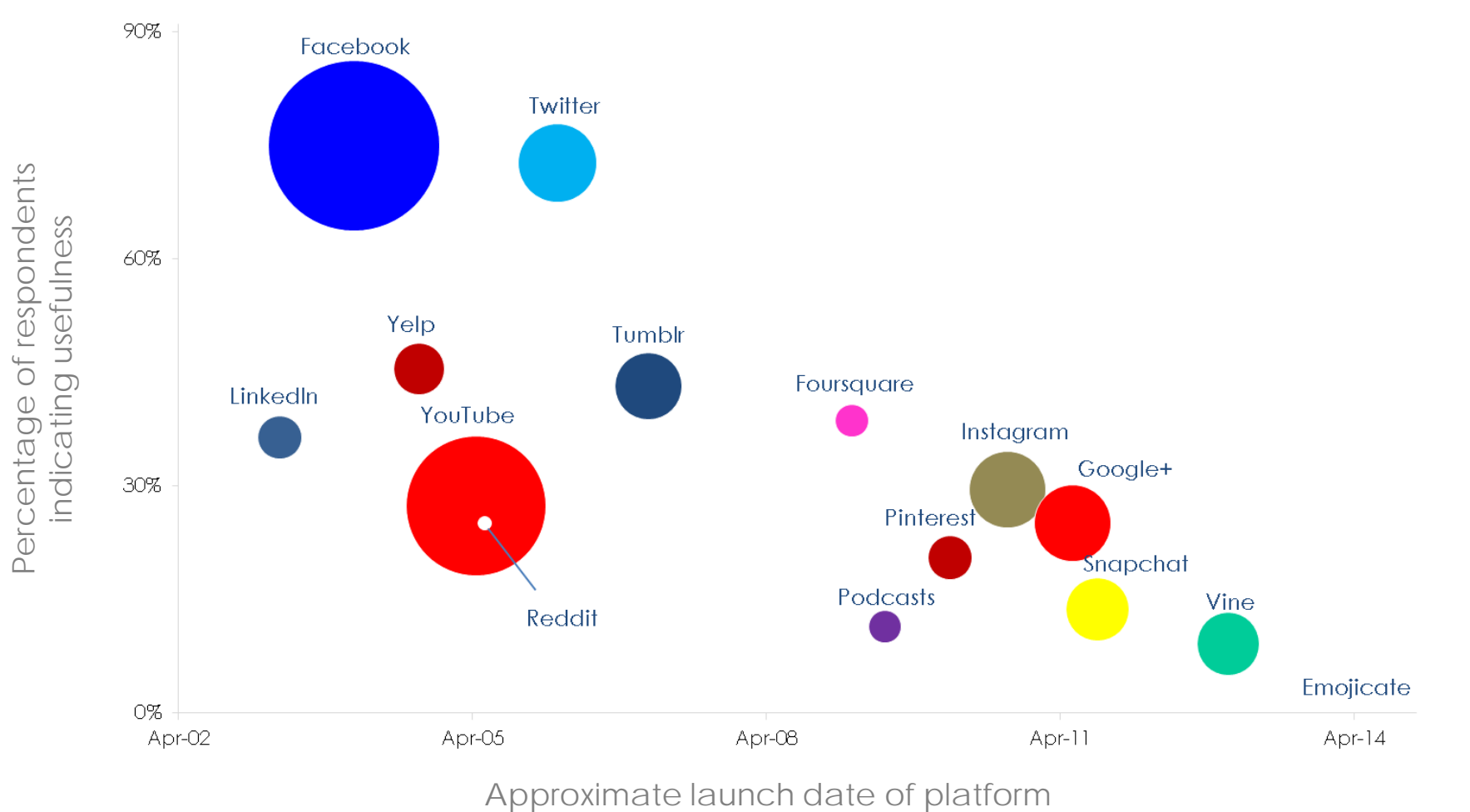
Source of categories:

[Hootsuite](http://Hootsuite)



# Utility based on quantity, quality

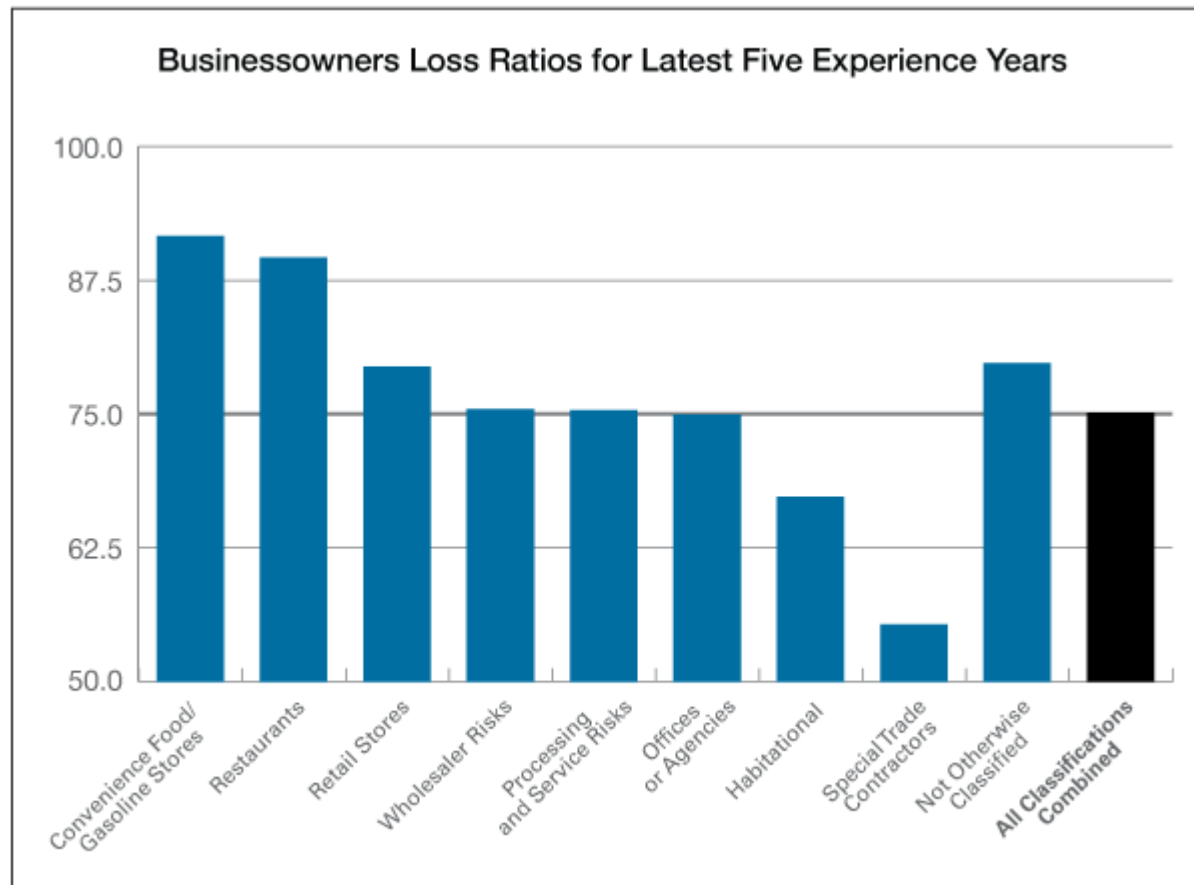
Which of the following platforms would be useful for P&C risk assessment?



Source: August 2014 ISO Survey, n = 44



# Restaurants and small retail indicate above average loss ratios



Source: ISO Experience Profiler



# Some businesses around Jim's office

"... there must have been **mishandling of food** by the kitchen staff or **unsanitary conditions**. Either way, we wanted some good food and didn't mind paying for it, and we are truly paying for it now."  
-- mike968, 3/28/2011 (TripAdvisor)

"...Two days later, my friends and I **all got food poisoning**, which must've been from the ceviche. We all experienced **fever, vomiting**, etc...  
-- Susan L., 3/27/2015 (Yelp)



"Service very slow. Dinner ended with a **mouse running past our table**. Yuck!"  
-- Tracy E., 10/21/2014 (Yelp)

"A **bunch of charges were added to her card** that she didn't make. Based on this experience, I'm pretty reluctant to go back. I think this place just needs better management."  
-- Leslie H., 2/28/2015 (Yelp)



# Potential benefits of using social media data in P&C risk assessment

- Considers unique dimensions of risk
  - Life events and achievements
  - Connections and social activities
  - Sentiment and reviews
- Economical and timely
  - Accessible via open APIs
  - Constantly refreshing
- Originates with policyholders
  - Curated content
  - Publicly available data
- Improves access for underserved
  - Potential discounts for traditional “no hits”
  - Growing use in lending space

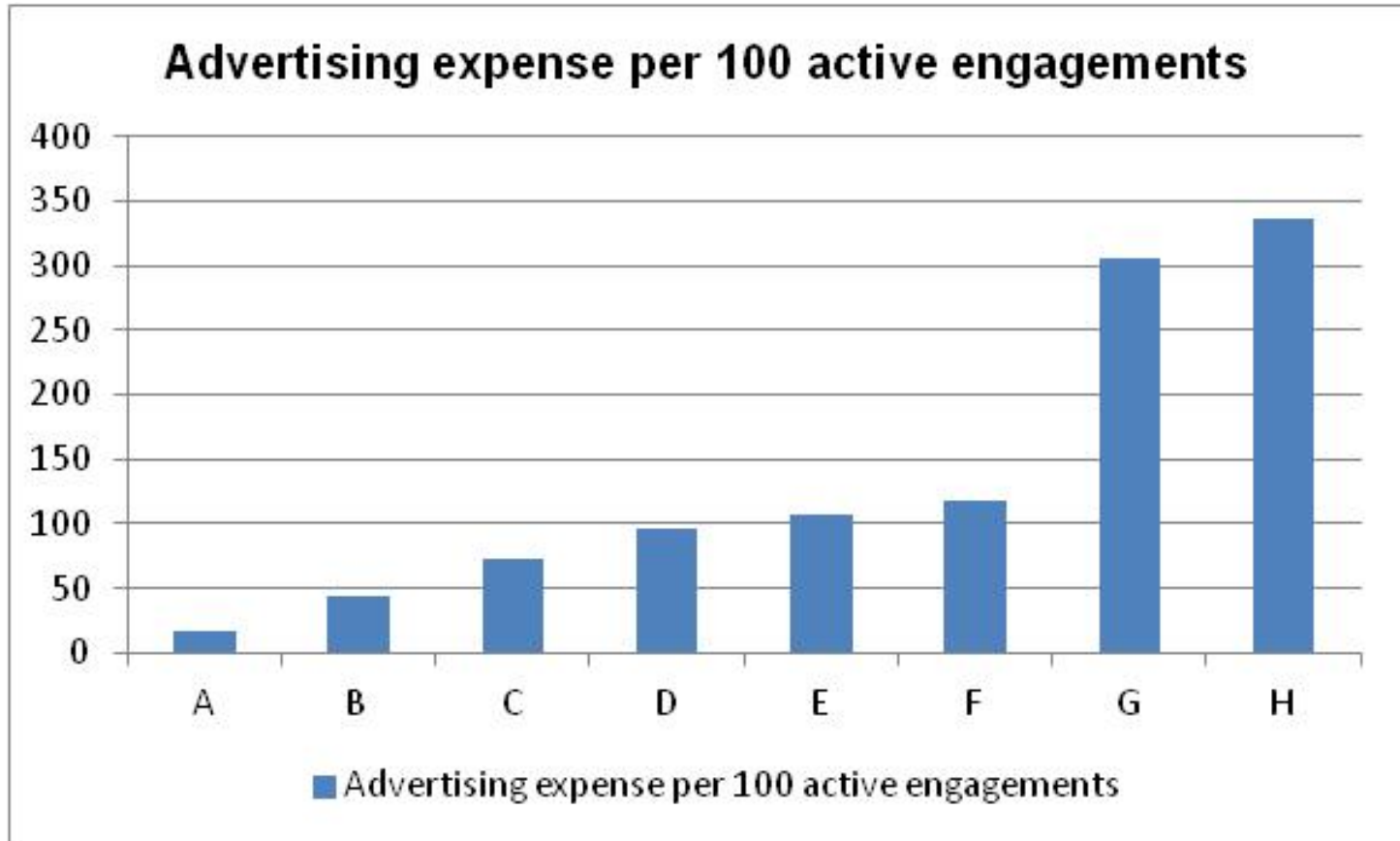


# Section II of II: Portrait

- Data properties
- Relevant techniques and examples
  - Senti-scoring
  - Topic modeling
  - Decision tree
- The need for speed



# Engagement metrics with a twist of P&C



Source of extracted social media data: Unmetric



# What did they say to get on this list?

*Insurer DWP for most-engaged P&C  
Super Bowl tweets*

- 50+B
- 50+B
- **<5M Regional**
- 25+B
- **<5M Regional**
- 50+B
- 25+B



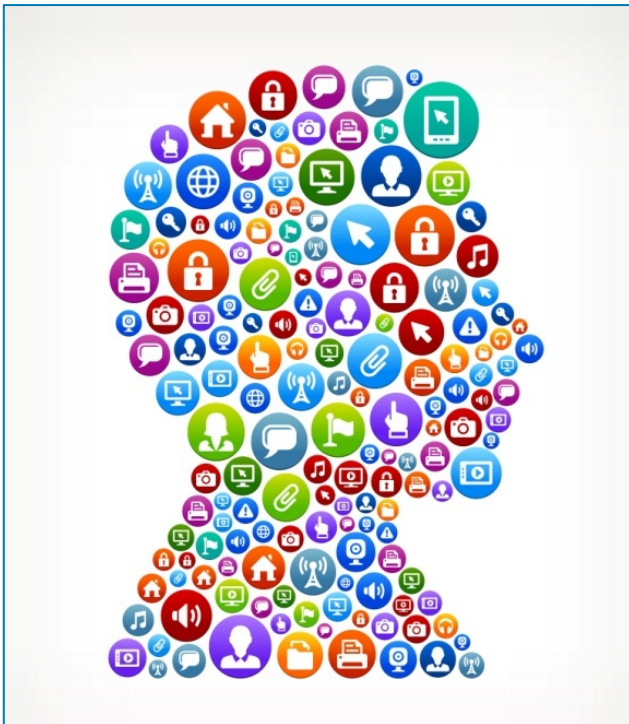
Source: Unmetric event pulse (<https://unmetric.com/eventpulse/>)





# Social media data challenges

Average user's view



Machine's (partial) view

```

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# Simple senti-scoring examples: UBI tweets

wild – ridiculous – darn – epic x fail = **-2**

According to [Insurer] [Telematics Product], I am an A driver in my Jeep, and a C driver in my car. **Ridiculous.** Sent the [**darn**] things back. #**epicfail**  
-**wild**annie1969

How does this work @[Insurer] I pressed breaks early to avoid running a yellow light BUT your #[Telematics Product] beeped at me. Should I have ran it?  
-\_ylimE

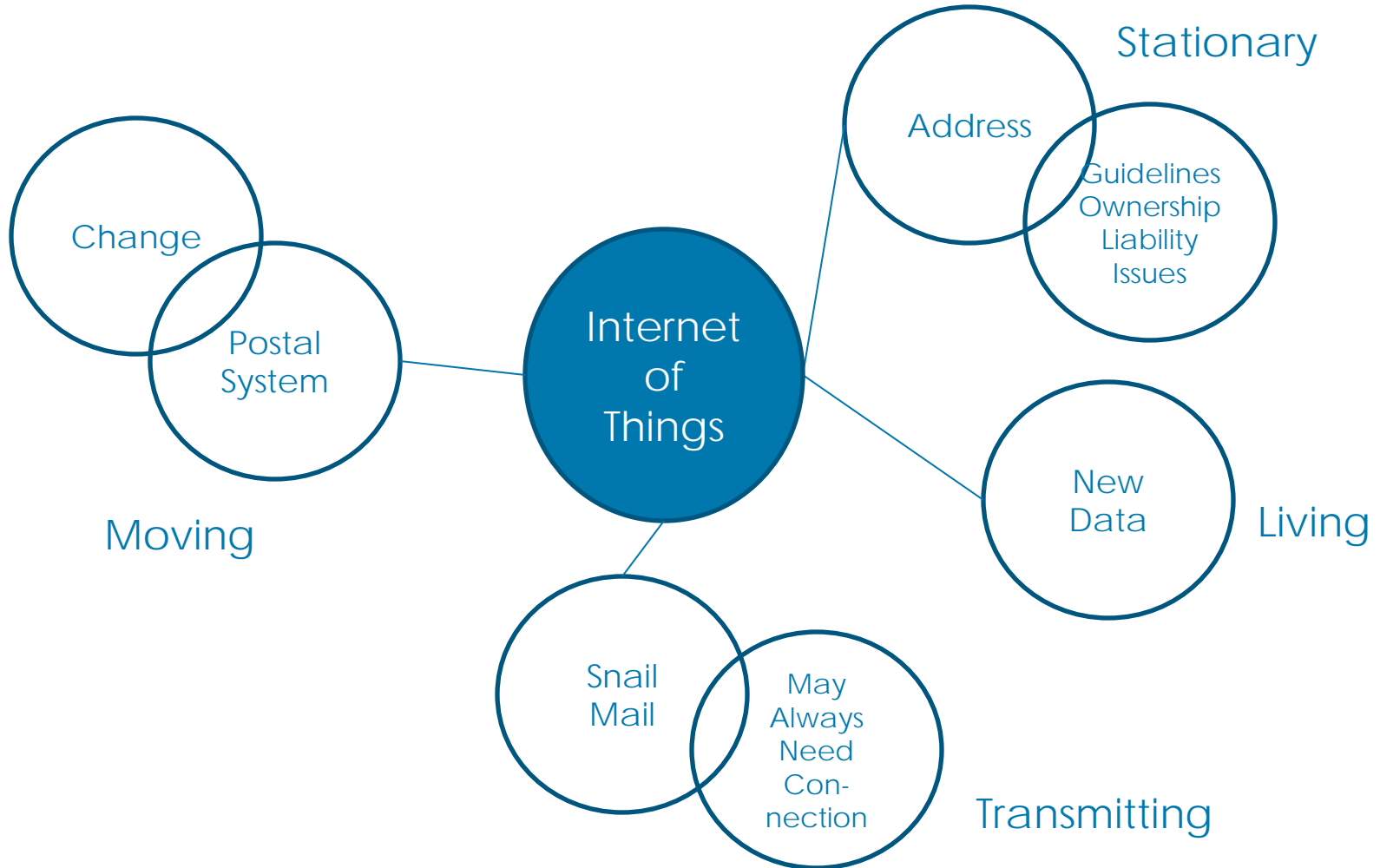
@[Insurer] [Telematics Product] is one of the **worst** devices **ever** invented. **False** hard brakes CONSTANTLY in icy weather while accelerating. Constantly -  
TimothyJohnWI

@[Insurer] I've used #[Telematics Product] for 6 mts. Evrytime I applied my brakes, or drv in traffic I was dinged. Its not calibrated for metro.  
-BuyfromKMJ

- worst x ever – false = **-3**

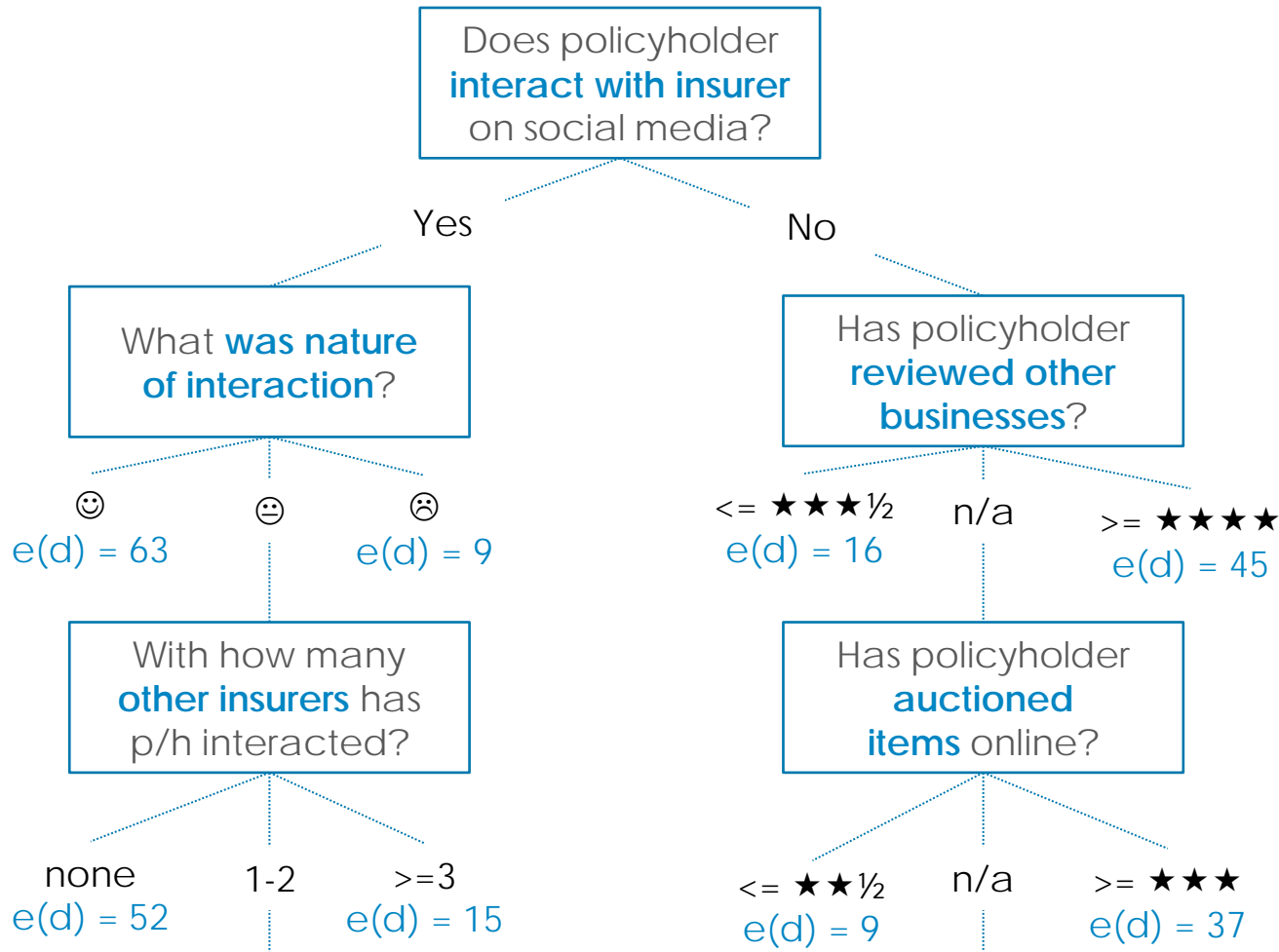


# Dendrogram example: 'IoT' tweets



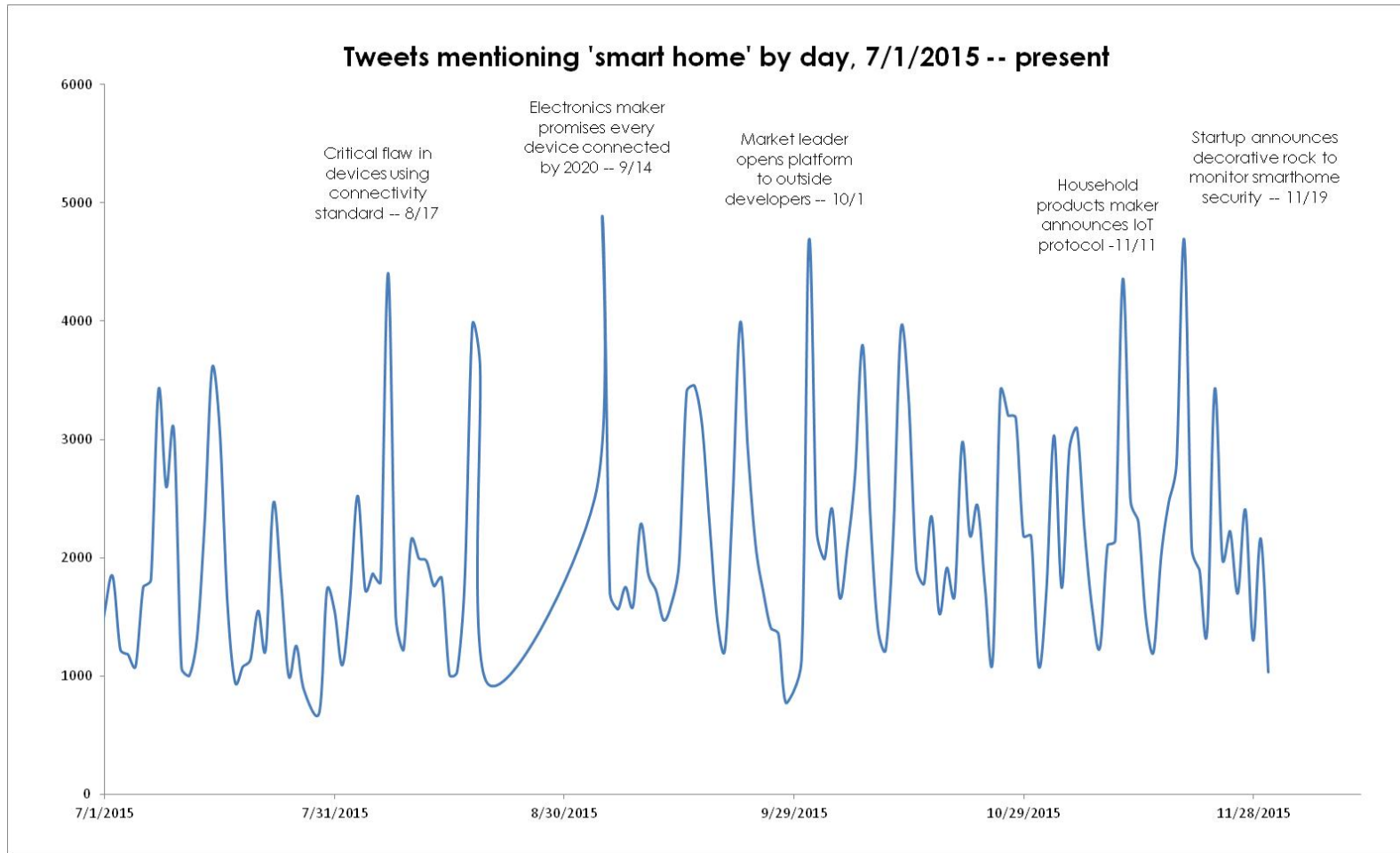


# Hypothetical decision tree using social media data to predict policy duration





# Which actuarial exam was/is this on?





# Social media after the storm

- Geo-location features
- Hot spots and scattering
- Cluster analysis
- Field crew mobilization
  - Impassible roads
  - Power failures
  - Other issues affecting service



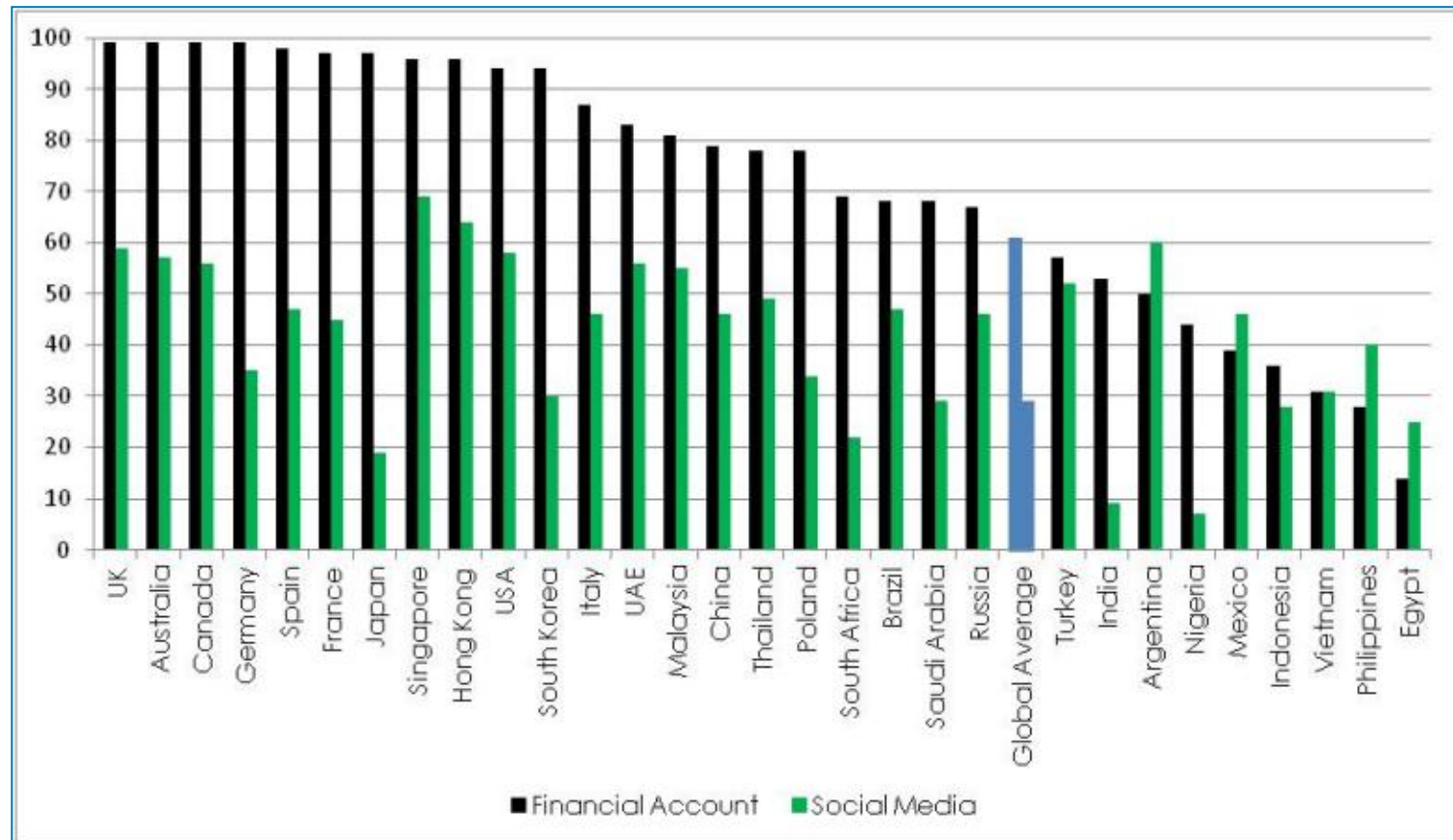
Source: "Grabbing Hurricane Irene by the tail: Insurers around the world use interactive mapping and modeling to understand impacts of hurricanes and other disasters."

<http://www.esri.com/news/arcwatch/1111/feature.html>



# New data abound in growth markets globally...

% of adult population with social media vs. financial account



Sources: [World Bank](#) (2014) and [We Are Social](#) (1/2015).



# First movers get first predictions

- Industry not leveraging full potential of social media data
- Lifetime value and advanced brand analytics appear next on horizon
- Industry specification necessary for tools to result in optimal decisions
- Potential first mover advantage for insurers who can build fastest pipelines to data



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