



1

instantly connect  
**people everywhere**  
to what's most meaningful to them

2

<http://twitpic.com/135xa> -  
There's a plane in the Hudson. I'm on a ferry going to pick up the people. Crazy.  
15 Jan 09  
Janis Krums @jkrums



3

<b>Magnitude</b>	9.0
<b>Date-Time</b>	Friday, March 11, 2011 at 05:46:24 UTC Friday, March 11, 2011 at 02:46:24 PM at epicenter <a href="#">Time of Earthquake in other Time Zones</a>
<b>Location</b>	38.297°N, 142.372°E
<b>Depth</b>	30 km (18.6 miles) set by location program
<b>Region</b>	NEAR THE EAST COAST OF HONSHU, JAPAN
<b>Distances</b>	129 km (80 miles) E of Sendai, Honshu, Japan 177 km (109 miles) E of Yamagata, Honshu, Japan 177 km (109 miles) ENE of Fukushima, Honshu, Japan 373 km (231 miles) NE of TOKYO, Japan
<b>Location Uncertainty</b>	horizontal +/- 13.5 km (8.4 miles); depth fixed by location program
<b>Parameters</b>	NST=350, Nph=351, Dmin=416.3 km, Rmss=0.1 sec, Gp= 29°, M-type=centroid moment magnitude (Mw), Version=A
<b>Source</b>	USGS NEIC (WDCS-D)
<b>Event ID</b>	usc0001xgp

4

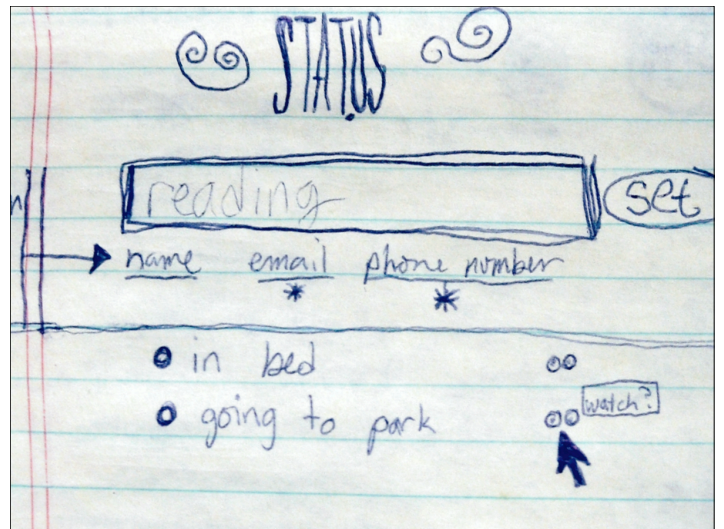
**Barack Obama** [@BarackObama](#) Following

Four more years.  
[pic.twitter.com/bAJE6Vom](http://pic.twitter.com/bAJE6Vom)

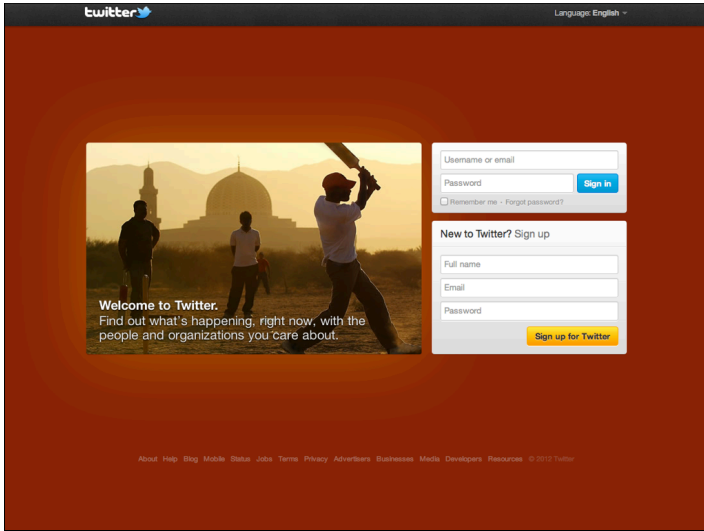
811,575 RETWEETS    302,583 FAVORITES

8:16 PM - 6 Nov 12    [Flag media](#)

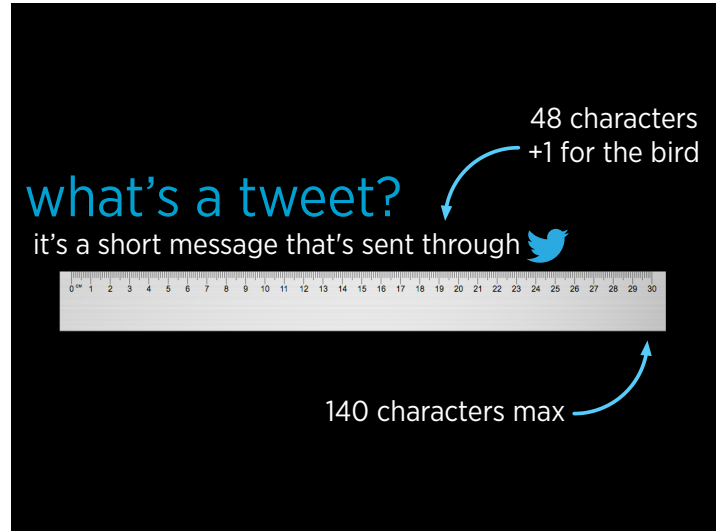
5



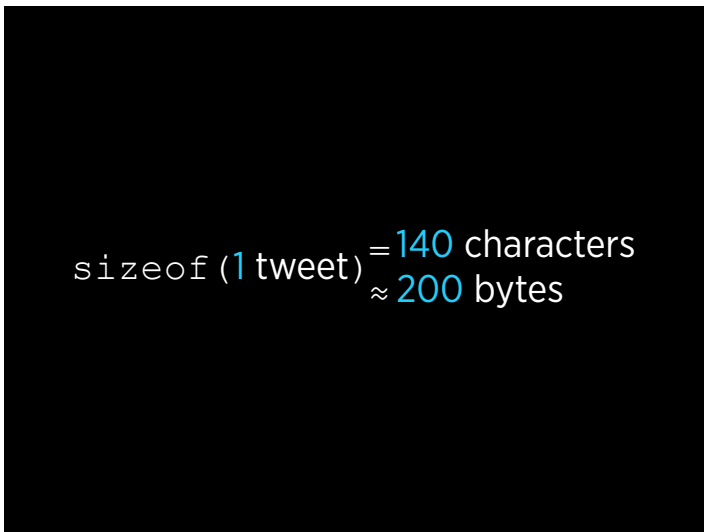
6



7



8



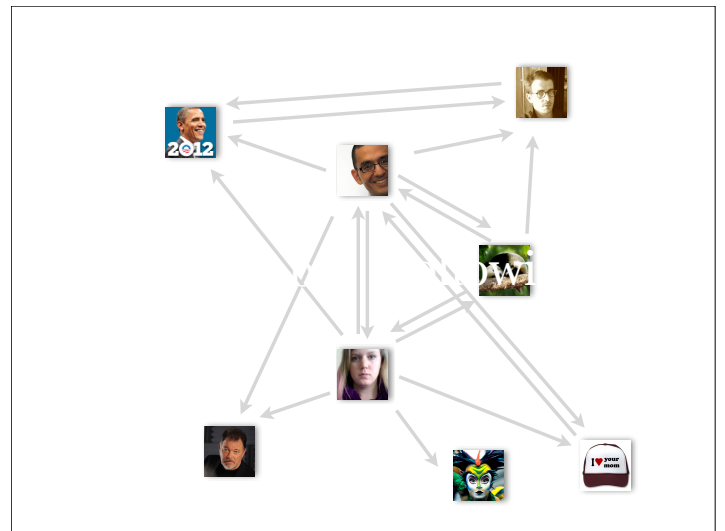
9



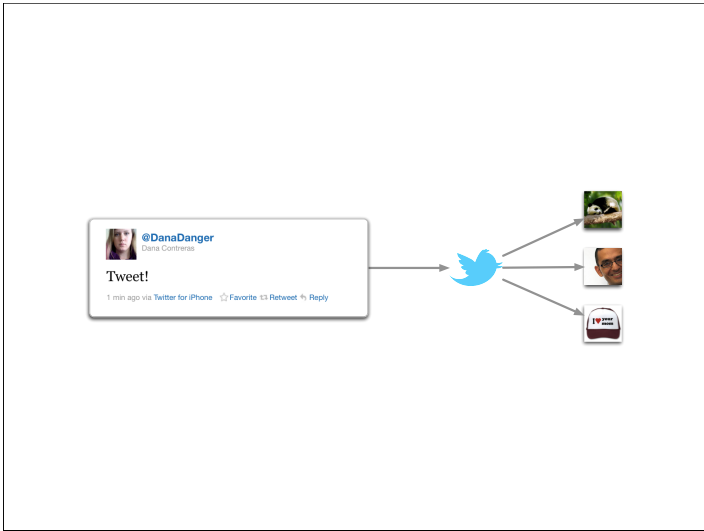
10



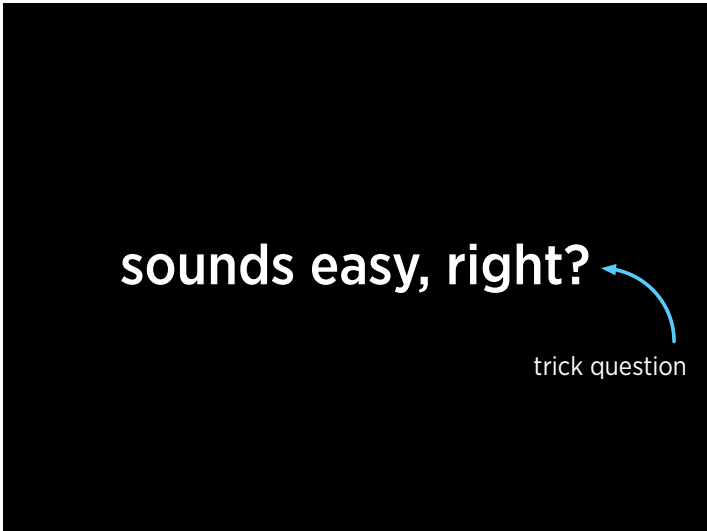
11



12



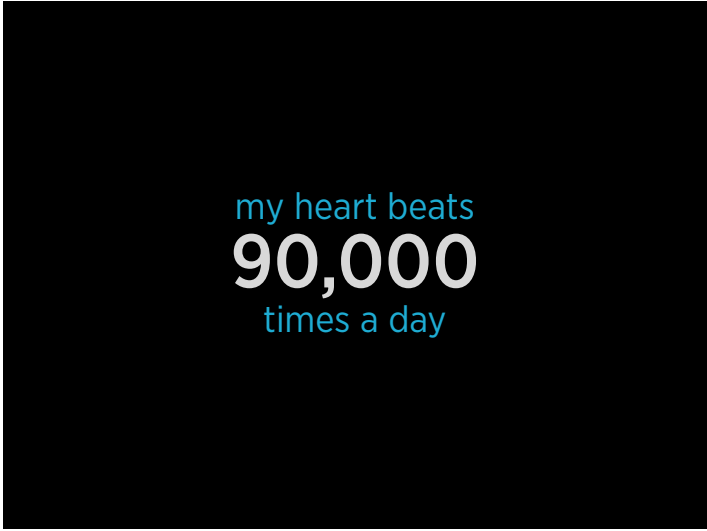
13



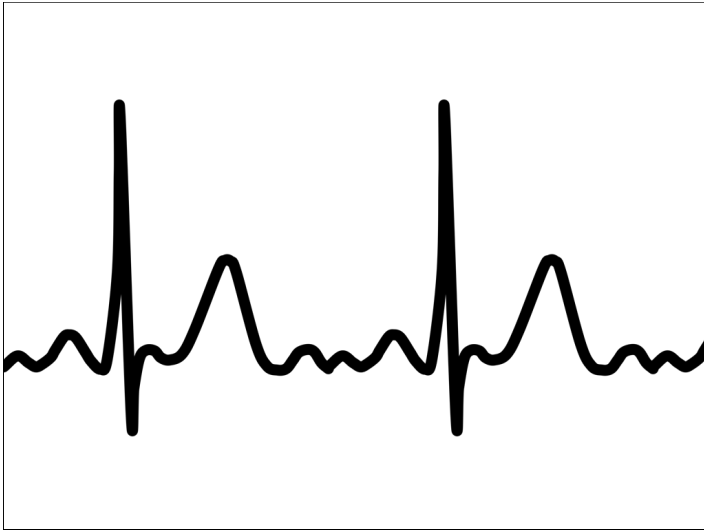
14



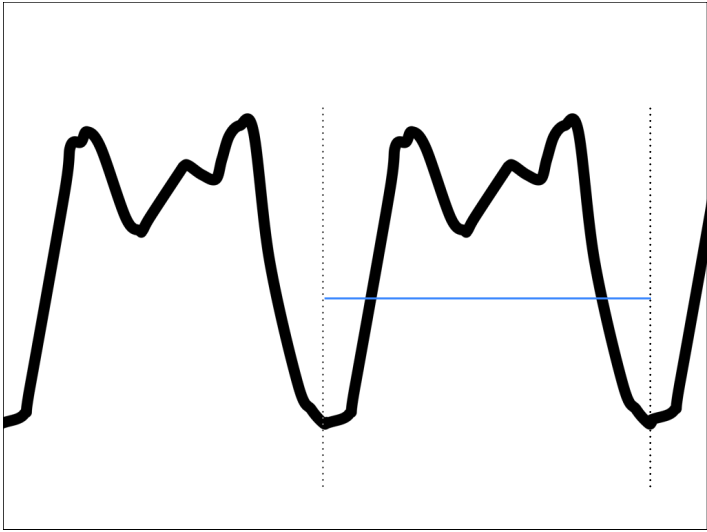
15



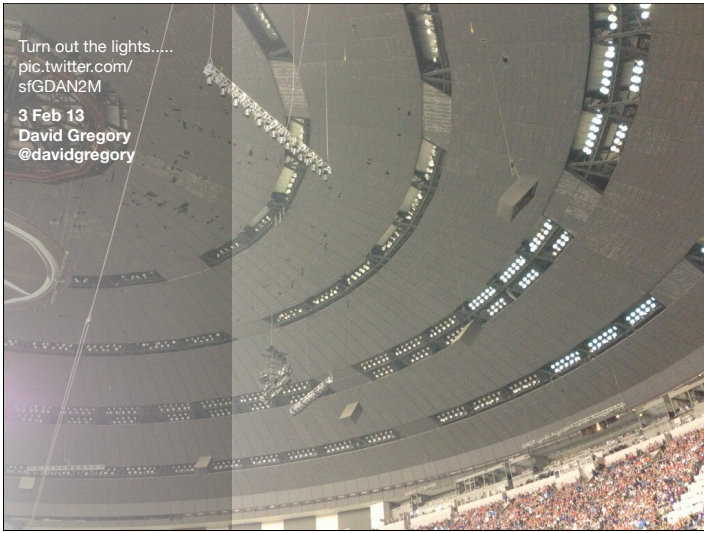
16



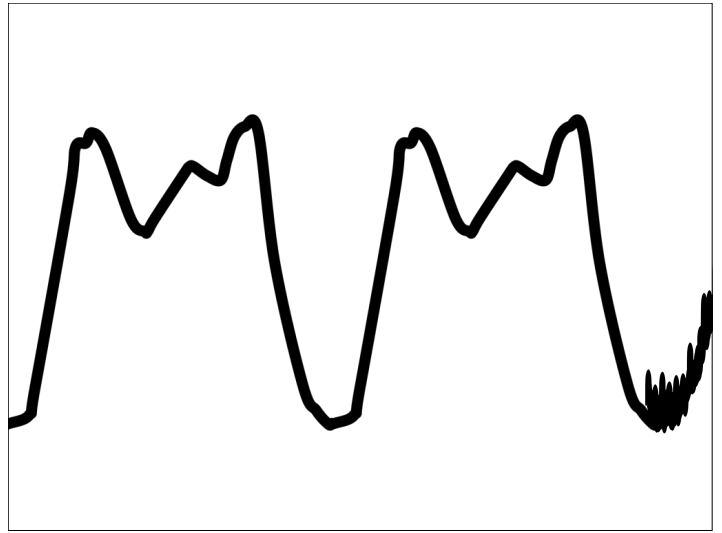
17



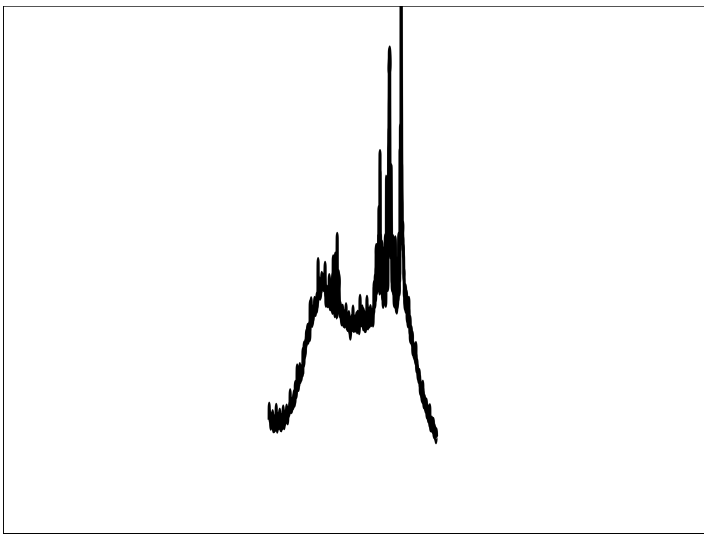
18



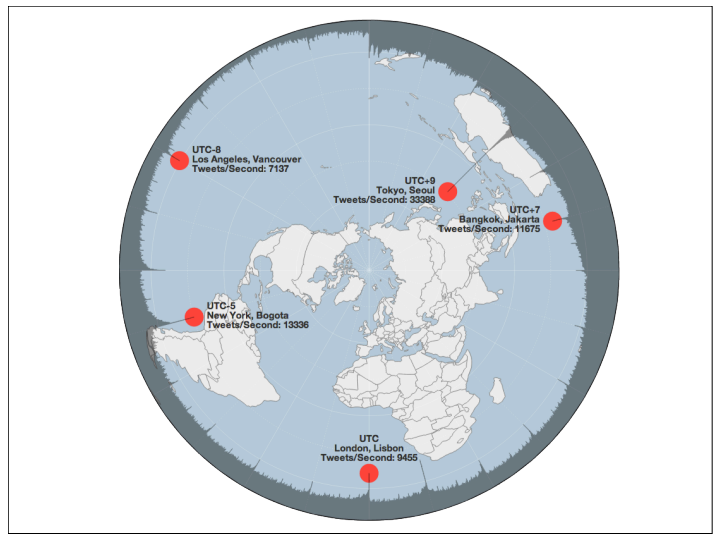
19



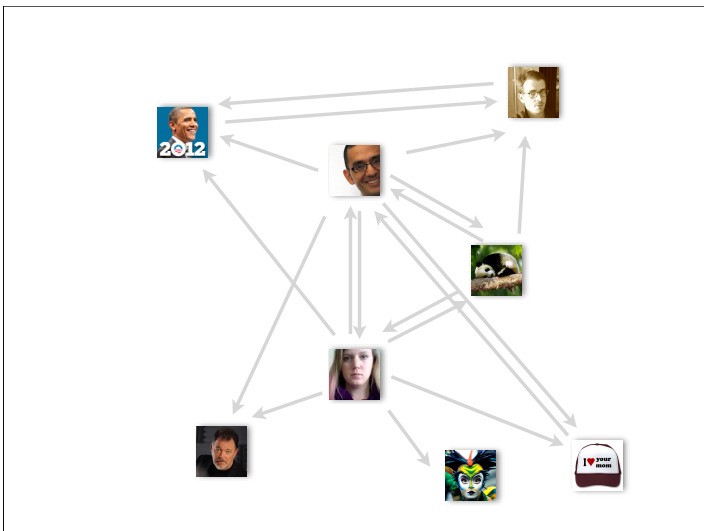
20



21



22







23

**What's the max vertex degree?**

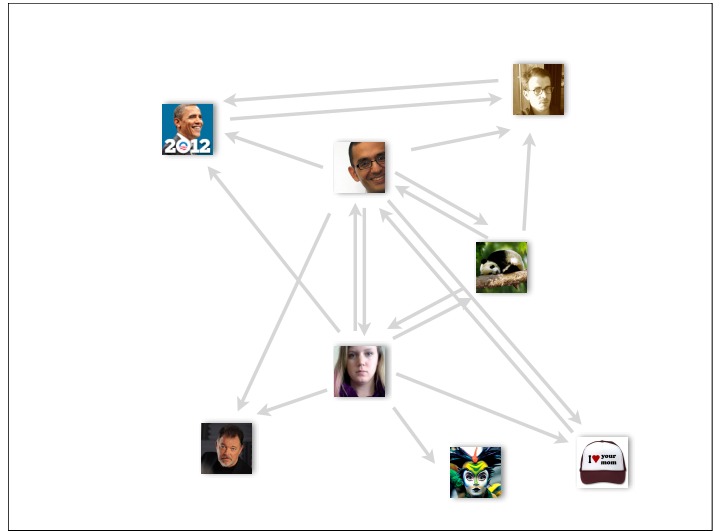
A. 0  
 B. 10  
 C. 1 million  
 D. There is no max

24

A list of four social media profiles on a black background. Each profile includes a small square profile picture, a handle in blue text, and a follower count in white text.

-  **@justinbieber**  
36 million followers
-  **@ladygaga**  
35 million followers
-  **@BarackObama**  
28 million followers
-  **@rlotun**  
0.000002 million followers

25




26

about  
**BILLIONS**  
of deliveries a day

27

We have a lot of data



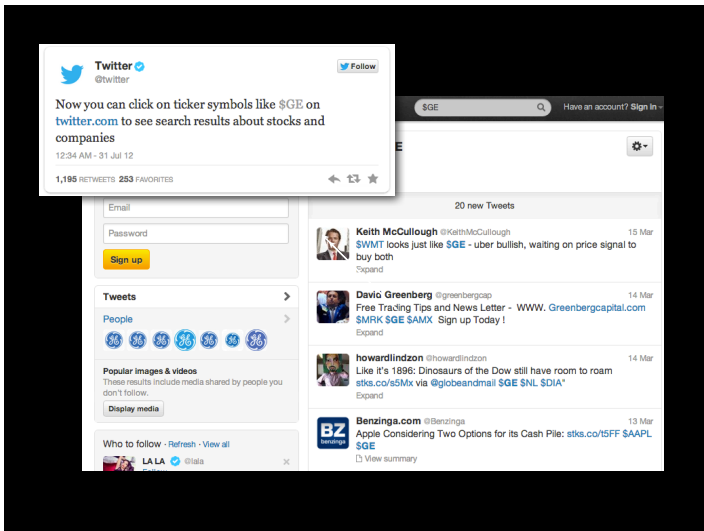
28

<b>User generated</b>	Tweets, DMs, follows, favorites
<hr/>	
<b>System generated</b>	User behavior, activity, system-level metrics, logs

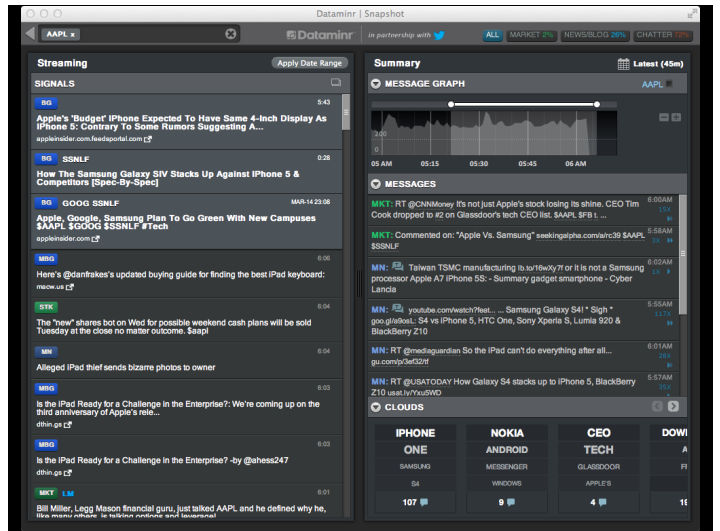
29

**What are the questions we want to answer?**

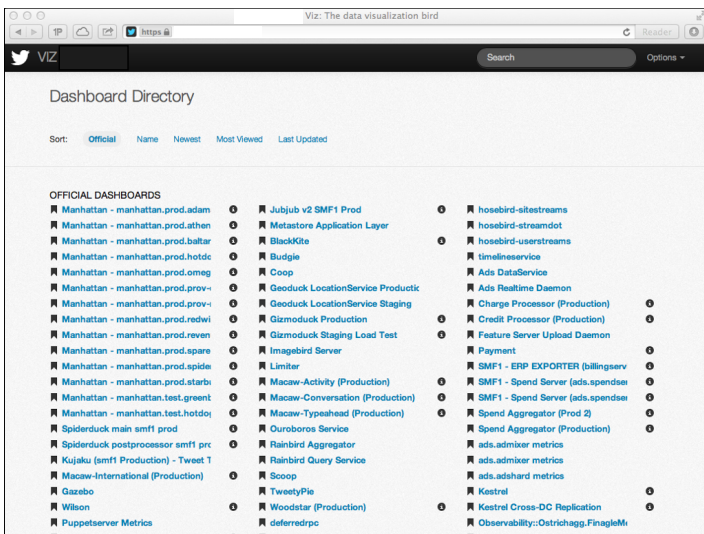
30



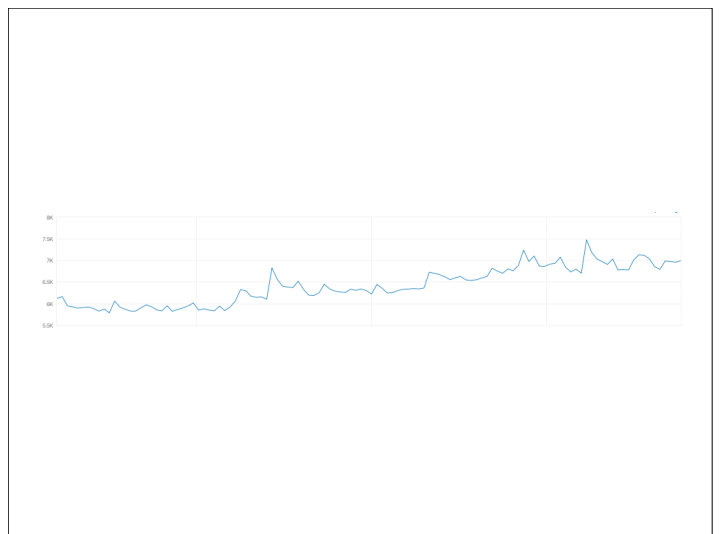
31



32



33



34

## Batch vs Real-time

**Batch:** "A quantity or number taken together"

- think search engine: building the search index
- 'solved problem': Google's MapReduce

**Real-time:** "Now. This instant"

- knowing what to look for in advance
- Twitter is a specific implementation of a "real-time" system

35

what happens in the  
**world**  
happens on

36

Thank you!

Questions?

[@rlotun](#)