

**Analytics** is the discovery and communication of meaningful patterns in data.

## **Today's Agenda:**

1. Some context on big data & analytics
2. What is the goal of your app?
3. Event data
4. Common analytics methods
5. Analyze some data

# **First: some context on big data and analytics**

---

Wednesday, April 17, 13

**Every company is becoming a software company.  
Every software company is becoming a data company.**

---

Wednesday, April 17, 13

We are now able to record more data than ever before.  
Storage is cheap.  
We now have the ability to record not only our users, but our users actions over time.  
Companies who figure out how to use data will be at a significant advantage!!

# “Big Data” and “Analytics” are kind of a thing right now.

THE WALL STREET JOURNAL.  
Sunday, April 29, 2012 As of 9:44 AM EDT

U.S. EDITION Home World U.S. New York Business Tech Markets Market Data Opinion

TOP STORIES IN Technology Apple, Samsung Back in Court Kodak Gets Bid of More Than \$500 Million for Patent

April 29, 2012, 9:44 a.m. ET

## Big Data's Big Problem: Little Talent

Article Video Stock Quotes Comments (46)

Email Print Save [f](#) [t](#) [g+](#) [in](#) A A

It seems that the markets are as much in love with "Big Data"—the ability to acquire, process and sort vast quantities of data in real time—as the technology industry.



Hilary Mason, chief scientist for the URL shortening service Bitly, outlines the key skills that data scientists must have.

The first Big Data initial public offering hit the market last week to roaring approval. [Splunk Inc., SPLK +0.31%](#) which helps businesses organize and make sense of all the information they gather, soared 109% on its first day of trading. Big Data, big price.

And this week, in cities in the U.S. and the U.K., Big Data Week events are being held to proselytize the unbelievers.

Big Data refers to the idea that an organization can mine all the data it collects right

Harvard Business Review

THE MAGAZINE BLOGS AUDIO & VIDEO BOOKS WEBINARS COURSES

Guest | limited access Register today and save 20%\* off your first order! [Details](#)

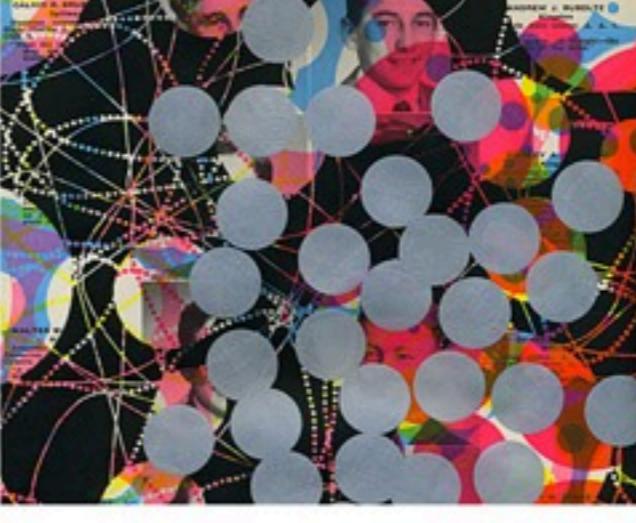
THE MAGAZINE October 2012

ARTICLE PREVIEW To read the full article: [Sign In](#) or [Register](#) for free. HBR Subscribers activate your free archive access »

## Data Scientist: The Sexiest Job of the 21st Century

by Thomas H. Davenport and D.J. Patil

Comments (8) [Email](#) [Print](#) [Save](#) [f](#) [t](#) [g+](#) [in](#)



RELATED Executive Summary  
ALSO AVAILABLE Buy PDF

Artwork: Tamar Cohen, *Andrew J. Buboltz*, 2011, silk screen on a page from a high school yearbook, 8.5" x 12"

When Jonathan Goldman arrived for work in June 2006 at LinkedIn, the business networking site, the place still felt like a start-up. The company had just under 8 million accounts, and the number was growing quickly as existing members invited their friends and colleagues to join. But users weren't seeking out connections with the people who were already on the site at the rate executives

Wednesday, April 17, 13

<http://online.wsj.com/article/SB1000142405270230472304577365700368073674.html>  
<http://hbr.org/2012/10/data-scientist-the-sexiest-job-of-the-21st-century/>



POSSIBLE @POSSIBLE

We have a Sr. Analytics & Optimization Manager opportunity in  
#Seattle office [ow.ly/fSQcP](http://ow.ly/fSQcP) #analytics #jobs

[Expand](#)

1h



iMedia Jobs @imediajobs

#Jobs #imedia Business Analyst - Web Analytics - TechnoSphere, Inc  
- Atlanta, GA: Deep understa... [bit.ly/120EoDF](http://bit.ly/120EoDF) #web #analytics

[Expand](#)

4h



nyttjobb.tw @nyttjobb\_tw

Web Analyst for LBI! [wp.me/p2jx2J-9e](http://wp.me/p2jx2J-9e) via @NuCreatives  
#webanalyst #jobs #LBI #Nucreatives #analytics [dlvr.it/2bMzc3](http://dlvr.it/2bMzc3)

[View media](#)

7h



Terry @TerryJobs

Use Google #Analytics to Improve Your #SocialMedia Strategy ...  
#Recruiter #Jobs #SocialRecruiting [lnkd.in/Si-C6h](http://lnkd.in/Si-C6h)

[Expand](#)

5 Dec



Anametrix @anametrix

Join the #Digital #Analytics Revolution! @anametrix is hiring! Lots of  
positions available. --> [bit.ly/VjwZ1O](http://bit.ly/VjwZ1O) #jobs

[Expand](#)

5 Dec



Zillion Jobs @ZillionJobs

Business Analytics Manager Job (Olathe, KS) [zillionjobs.com/Job-6665643.htm](http://zillionjobs.com/Job-6665643.htm)... #Analytics #Manager #job #jobs #Olathe

[Expand](#)

5 Dec



RosettaCareers @RosettaCareers

We are looking for an Analytics Director in Cleveland w/8+ yrs  
#measure exp, apply here [lnkd.in/uzBE-M](http://lnkd.in/uzBE-M) or DM me #jobs  
#analytics

[Expand](#)

4 Dec



Social Media Club @SMCSTL

Know a good fit for this role? > Senior Manager, Digital Bear  
Marketing #STL #Jobs #SMCSTL  
[careers.buildabear.com/Careers.aspx](http://careers.buildabear.com/Careers.aspx) #Analytics #SocialMedia

[Expand](#)

3 Dec



Michael Young @michaelyoungMBN

"@mbnrecruitment: #Jobs Senior Analytics & Optimization Manager -  
£50000 - £60000 pa [bit.ly/VgoB3L](http://bit.ly/VgoB3L)" #bigdata #sql #SAS #Analytics

[from Glasgow City, Glasgow City](#)

2 Dec

job security.

Wednesday, April 17, 13

Many companies are now hiring for positions like “data scientist”, “analytics manager”

# Cool data stories

Wednesday, April 17, 13

There are entire professions and really amazing work happening in different areas of analytics.

I have some stories to illustrate work in each of these realms.

Data modeling - Brahe & Kepler

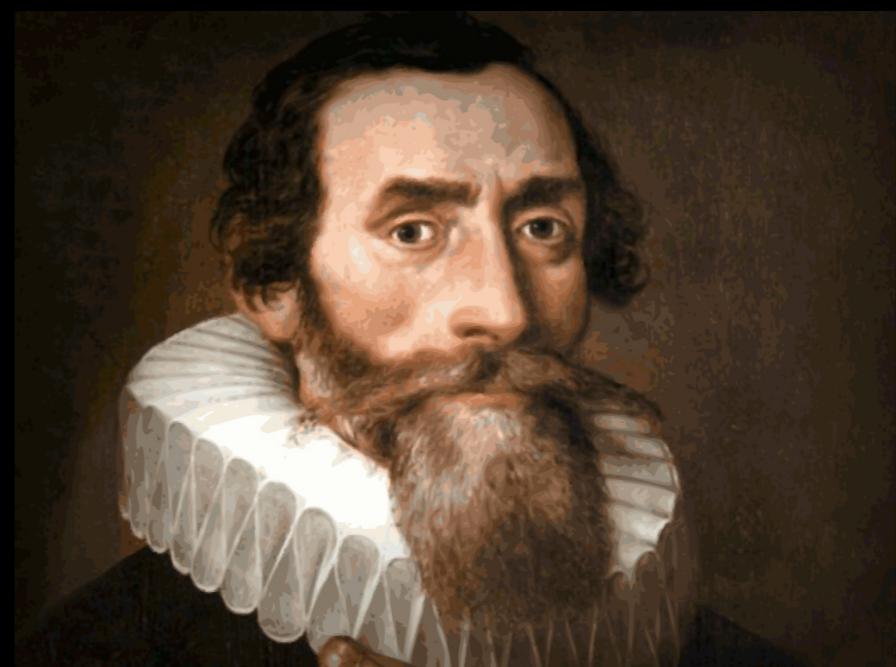
Data mining/analysis/algorithms/predictive - Linked In

Data viz - Infosthetics

Communication - Broad Street Pump



Tycho Brahe



Johannes Kepler

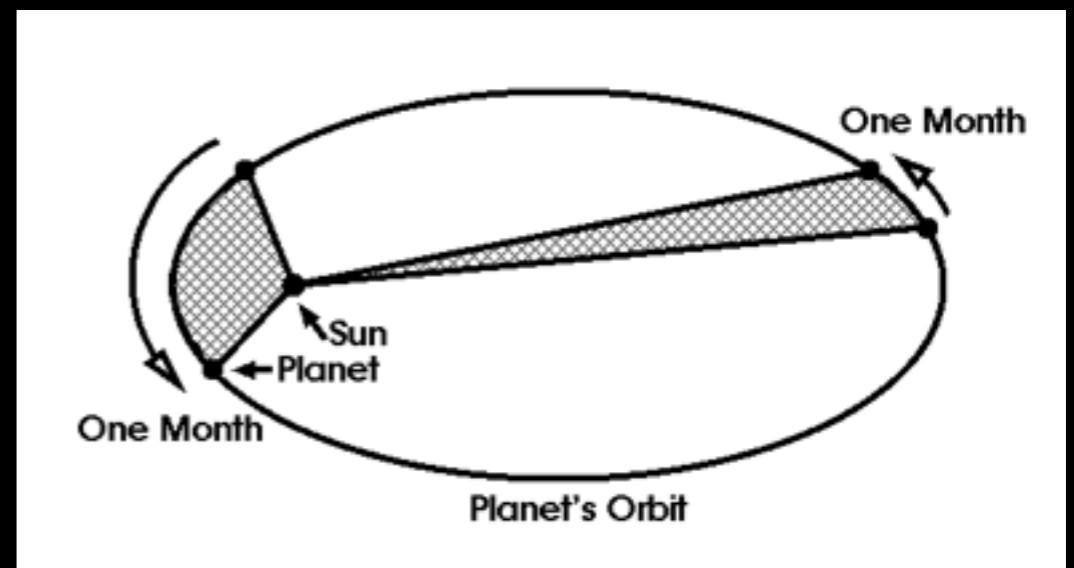
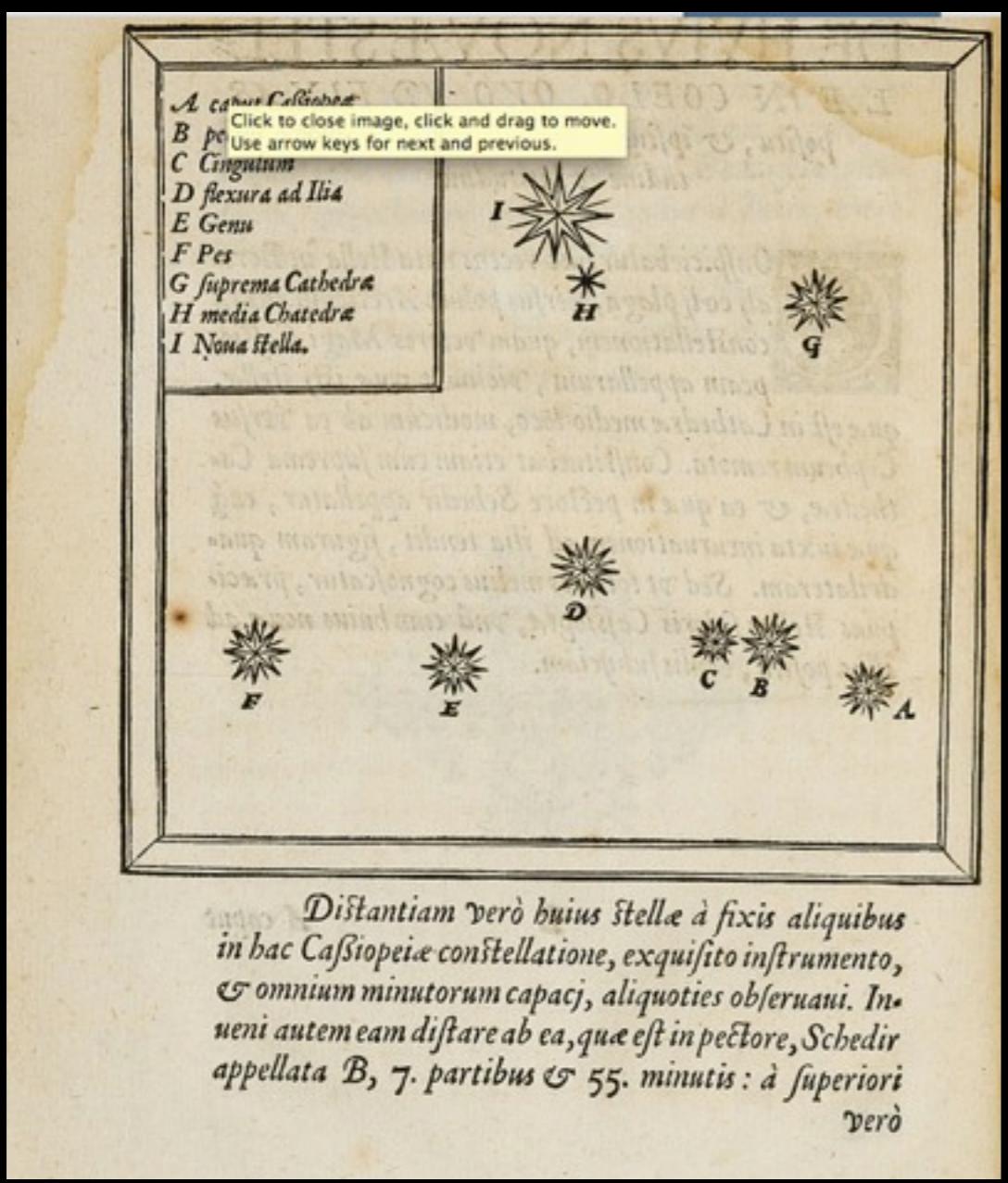
Wednesday, April 17, 13

*Story 1: Data Modeling* - what data should we record and how should we record it?

Tycho Brahe – collected an astounding amount of astronomical data. Every night, he would write down the location of every star and every planet in the sky. After 30 years of doing this... he died.

Johannes Kepler – took Brahe's data and single-handedly discovered the laws of planetary motion.

The point: recording stuff is important!



Tycho Brahe

Johannes Kepler

Wednesday, April 17, 13

Second point: sometimes you don't know how the data you are collecting will be used.

Other cool data collection: quantified self movement, 23andme, sensor data on vehicles,

The screenshot shows the LinkedIn homepage. At the top, there's a navigation bar with links for Home, Profile, Contacts, Groups, Jobs, Inbox, Companies, News, More, People, and a search bar. A red circle highlights the 'PEOPLE YOU MAY KNOW' section on the right side of the page. This section lists three recommended connections with their names, titles, and company names. Below this is an 'ADS BY LINKEDIN MEMBERS' section with a single visible ad.

Wednesday, April 17, 13

### *Story 2: Data Analysis - what can we learn from data? what tools and algorithms can we use to unlock new meaning?*

- Goldman, a PhD in physics from Stanford, was intrigued by the linking activity he saw happening on LinkedIn. He began exploring people's connections, forming theories, testing hunches, and finding patterns that allowed him to predict whose networks a given profile would land in.
- He could imagine that new features capitalizing on the heuristics he was developing might provide value to users. But LinkedIn's engineering team, caught up in the challenges of scaling up the site, seemed uninterested. Some colleagues were openly dismissive of Goldman's ideas. Why would users need LinkedIn to figure out their networks for them? The site already had an address book importer that could pull in all a member's connections.
- LinkedIn's cofounder and CEO at the time had faith in the power of analytics because of his experiences at PayPal, and he had granted Goldman a high degree of autonomy. For one thing, he had given Goldman a way to circumvent the traditional product release cycle by publishing small modules in the form of ads on the site's most popular pages.
- Goldman started to test what would happen if you presented users with names of people they hadn't yet connected with but seemed likely to know—for example, people who had shared their tenures at schools and workplaces. He did this by ginning up a custom ad that displayed the three best new matches for each user based on the background entered in his or her LinkedIn profile. Within days it was obvious that something remarkable was taking place.
- The click-through rate on those ads was the highest ever seen. Goldman continued to refine how the suggestions were generated, incorporating networking ideas such as "triangle closing"—the notion that if you know Larry and Sue, there's a good chance that Larry and Sue know each other. Goldman and his team also got the action required to respond to a suggestion down to one click.
- It didn't take long for LinkedIn's top managers to recognize a good idea and make it a standard feature. That's when things really took off. "People You May Know" ads achieved a click-through rate 30% higher than the rate obtained by other prompts to visit more pages on the site. They generated millions of new page views. Thanks to this one feature, LinkedIn's growth trajectory shifted significantly upward.

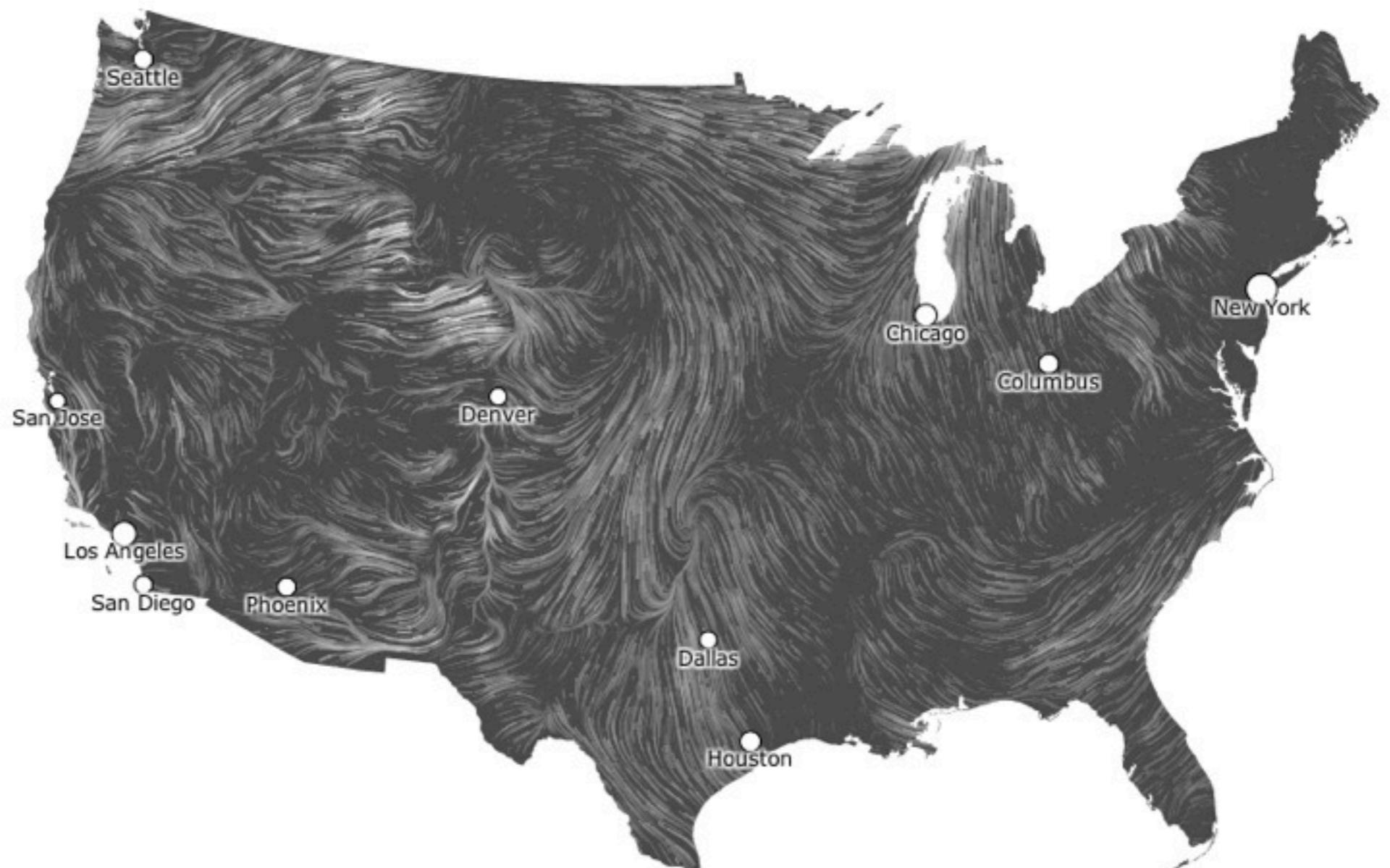
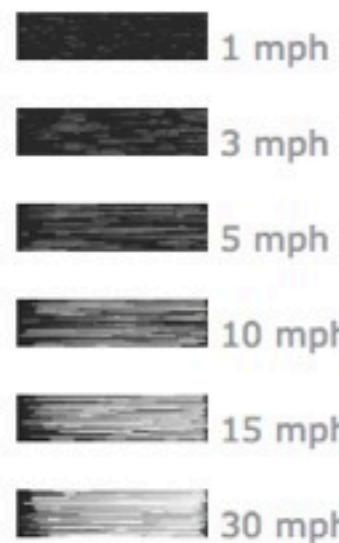
The point: Analytics can be used to unlock value. It can also be used to prove value. Companies that recognize this and devote some effort to it can potentially reap huge benefits.

**Dec. 6, 2012**

5:59 pm EST

(time of forecast download)

top speed: **30.2 mph**  
average: **6.2 mph**



<http://hint.fm/wind/>

<http://infosthetics.com/>

Wednesday, April 17, 13

*<click link for animation>*

*Story 3: Data Visualization - how can we use visuals to discover trends?*

Sometimes visuals can tell us things we can't see from raw data.

There are some amazing projects out there (see infosthetics)

<http://hint.fm/wind/>

<http://infosthetics.com/>

Wednesday, April 17, 13

*Story 4: Data Communication* - How do we share what we have learned with others? What does the data tell us (and what does it leave out)? One critical skill required of a data analyst is how to communicate what the results mean and what we should do next. The following is the story of how data sampling and visualization were used to communicate something very important.

Cholera hit london in 1854. Waste management systems were really bad and consisted of vats in people's basements. In 3 days, 127 people near Broad Street Died. The mortality rate was 12.8 percent in some parts of the city. By the end of the outbreak, 616 people had died.

[http://en.wikipedia.org/wiki/1854\\_Broad\\_Street\\_cholera\\_outbreak](http://en.wikipedia.org/wiki/1854_Broad_Street_cholera_outbreak)

# Le Petit Journal

ADMINISTRATION  
61, RUE LAFAYETTE, 61  
Les manuscrits ne sont pas rendus  
On s'abonne sans frais  
Dans tous les bureaux de poste

5 CENT. SUPPLÉMENT ILLUSTRÉ 5 CENT.  
23<sup>e</sup> Année ————— Numéro 1.150  
DIMANCHE 1<sup>er</sup> DÉCEMBRE 1912

ABONNEMENTS  
PARIS ET SEINE-ET-OISE... 2 fr. 3 fr. 80  
DÉPARTEMENTS..... 2 fr. 4 fr. 80  
ÉTRANGER..... 2.50 8 fr. 80



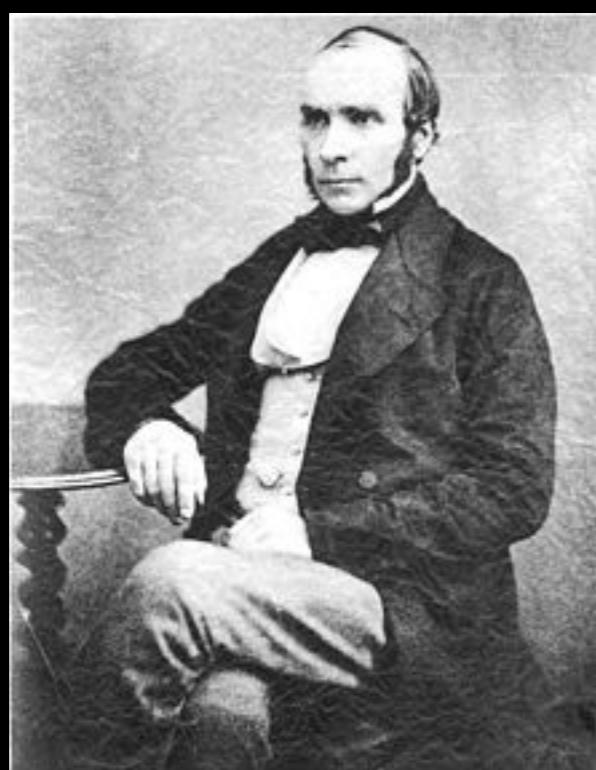
LE CHOLÉRA

Wednesday, April 17, 13

*Story 4: Data Communication* - How do we share what we have learned with others? What does the data tell us (and what does it leave out)? One critical skill required of a data analyst is how to communicate what the results mean and what we should do next. The following is the story of how data sampling and visualization were used to communicate something very important.

Cholera hit London in 1854. Waste management systems were really bad and consisted of vats in people's basements. In 3 days, 127 people near Broad Street Died. The mortality rate was 12.8 percent in some parts of the city. By the end of the outbreak, 616 people had died.

[http://en.wikipedia.org/wiki/1854\\_Broad\\_Street\\_cholera\\_outbreak](http://en.wikipedia.org/wiki/1854_Broad_Street_cholera_outbreak)



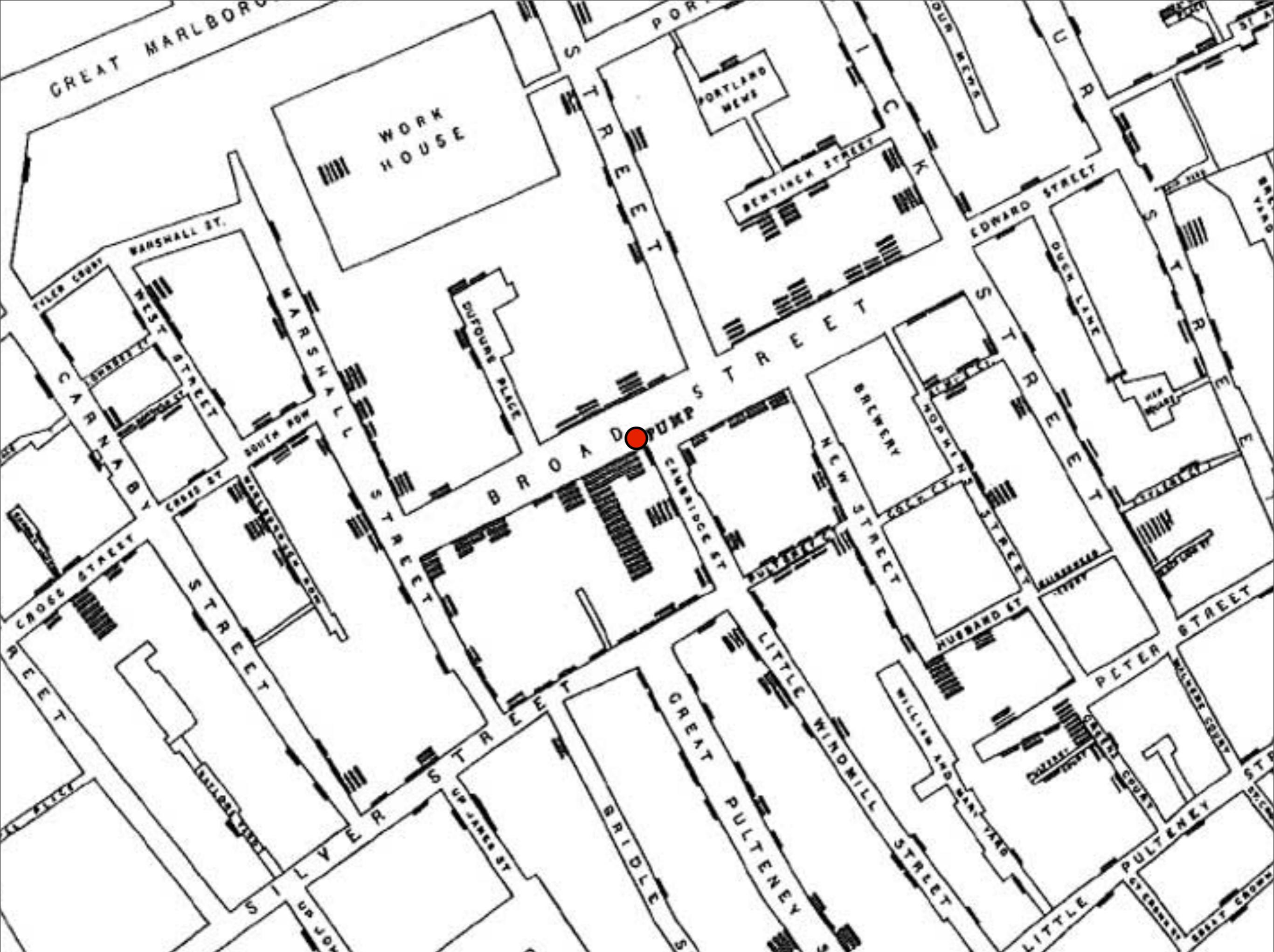
Figured out Cholera  
spreads through water.

No one believed him :(

## John Snow

Wednesday, April 17, 13

John Snow hypothesized that Cholera was being spread through the water supply, but no one believed him.



Wednesday, April 17, 13

Until he created this awesome image.

He counted deaths in each building and used this data visualization to prove his theory.

Little black bars are deaths.

The broad street pump was shut down and deaths stopped.

## **Next:** applying analytics to your project

---

Wednesday, April 17, 13

Use analytics to measure progress toward a goal.  
Use analytics to test new hypotheses.  
Use analytics to explore.

---

Wednesday, April 17, 13

Avoid using analytics just to be using  
analytics.

## **Exercise! - 1 minute**

**What is the goal of your app?**

**Write down at least one goal for an app.  
Be prepared to share it with the class.**

---

Wednesday, April 17, 13

Example goal for Vine: reach 1M user-generated videos.

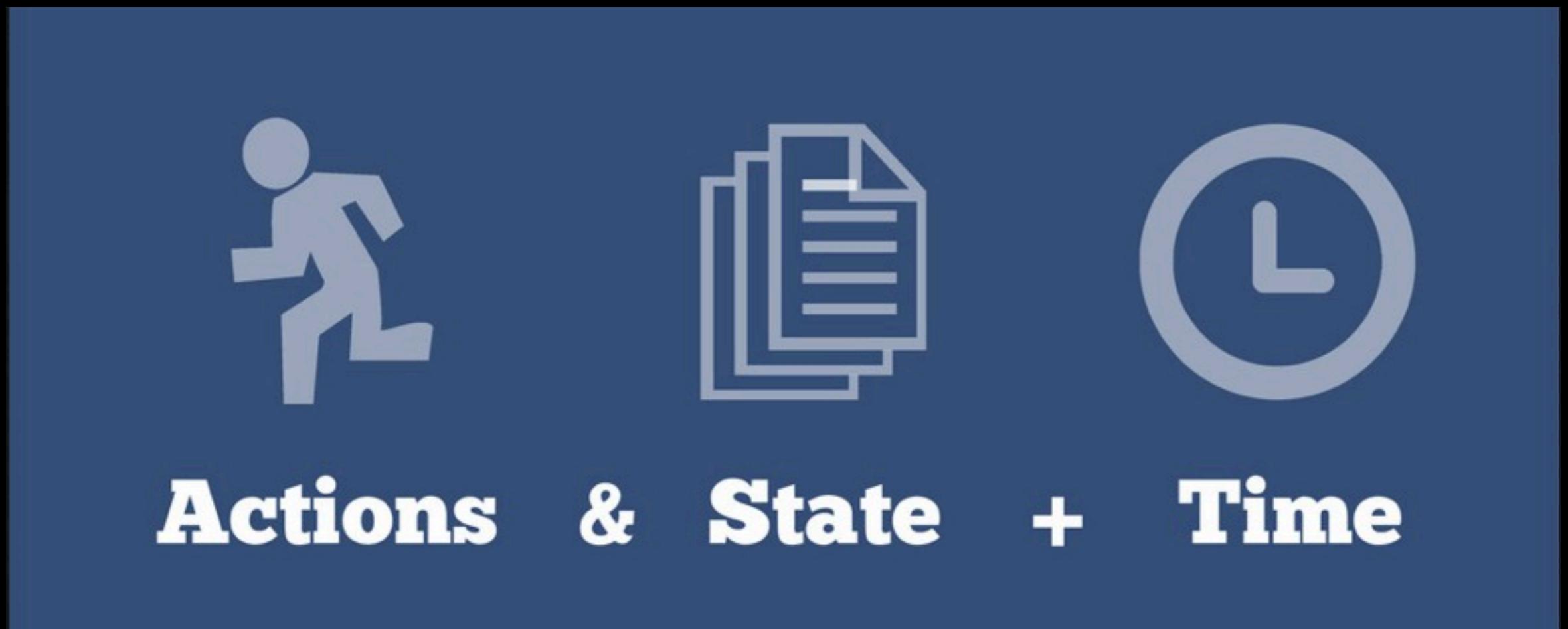
Example goal for Spotify: increase subscription revenue

Example goal of an enterprise contacts app: make it easier for colleagues to contact each other.

# A common goal: engagement

- Purchases
- Downloads
- App Launches
- Account creations
- Views
- Posts
- Shares/Tweets/Likes

# Introducing Event Data



Wednesday, April 17, 13

All of the actions on the previous page would be considered event type data.

Event data isn't new. You've probably used it before in the form of logs or massive, frequently archived tables.

Event data is different than state data, because events happen A LOT, and they don't easily fit into your schema'd database.

Events are actions that happen all the time, like an app launch, share, post, view, or delete.

Certain types of databases and a lot of new, modern analytics tools allow you do to powerful analysis with event data.

Ref: <https://speakerdeck.com/benbjohnson/behavioral-databases>

```
purchase = {  
    timestamp: 2012-06-06T19:10:39.205000,  
    item: "sophisticated orange turtleneck with deer on it",  
    cost: 469.5,  
    payment_method: "Bank Simple VISA",  
    customer: {  
        name: "Francis Woodbury",  
        age: 28,  
        personality: "sullen",  
    },  
    store: {  
        name: "Yupster Things",  
        city: "San Francisco",  
        state: "California"  
        address: : "467 West Portal Ave",  
    }  
};
```

---

Wednesday, April 17, 13

provide rich contextual information with every event.

now you can count the number of purchases by people under the age of 21. In a single query.

you can calculate the average purchase amount for businesses within 10miles of SF.

you can graph the number purchases per house for a given store or state.

note:

event data is hierarchical

schema can be dynamic

## Action (verb)

```
purchase = {  
    timestamp: 2012-06-06T19:10:39.205000,  
    item: "sophisticated orange turtleneck with deer on it",  
    cost: 469.5,  
    payment_method: "Bank Simple VISA",  
    customer: {  
        name: "Francis Woodbury",  
        age: 28,  
        personality: "sullen",  
    },  
    store: {  
        name: "Yupster Things",  
        city: "San Francisco",  
        state: "California"  
        address: : "467 West Portal Ave",  
    }  
};
```

Time

State  
(nouns)

Wednesday, April 17, 13

provide rich contextual information with every event.

now you can count the number of purchases by people under the age of 21. In a single query.

you can calculate the average purchase amount for businesses within 10miles of SF.

you can graph the number purchases per house for a given store or state.

note:

event data is hierarchical  
schema can be dynamic

# Example Data Model

- App: Vine
- Events: Start Recording, Complete Recording, Upload, Tag, Share, Favorite, Comment, Delete
- Nouns: User, Session, App, Device/Platform, Video, Comment, Tag

# More Examples

**Verbs:** Signup, Login, Upgrade, Submit, Scroll, Send, Share, Search, Check-In, Vote, Update, Purchase, Level Up, Fail, Favorite, Vote, Crash, Rate, Start, Modify, Check, View, Capture

**Nouns:** User, Company, Organization, Team, Platform, Device, App, Level, Garden, Favorites, Interests, Inventory, Cart, Video, Location, Item, Record, Product, Account, Form, Picture, Story

# Rules of thumb for event data

- Describe your app to a stranger and listen to the words you use.
- Verbs are the actions you should record.
- Nouns are the important contextual information you should include in your data model.
- Most apps can be very robustly described by 5-10 key events and 5-10 key nouns.

Wednesday, April 17, 13

Sometimes it seems like EVERYTHING could be recorded. How do you know what to record?

## **Exercise! - 2 minutes**

Recall your goal from the previous exercise.

What events & properties should you record to measure your progress toward your goal?

---

Wednesday, April 17, 13

Example goal for Vine: reach 1M user-generated videos. Track the number of videos being generated.

Example goal for Spotify: increase subscription revenue. Track the revenue from subscriptions.

Example goal of an enterprise contacts app: make it easier for colleagues to contact each other. Track app launches, contact searches, calls.

## **Exercise! - 10 minutes**

Pair with the person next to you.

Pick 1 event in each of your apps and create a data model for it. What nouns and properties can you record for this event?

Prepare to share your results with the class.

# **Next: Common Analytics Techniques**

---

Wednesday, April 17, 13

# Segmentation / Filtering

- Sorting data into buckets. Commonly used to sort users into groups.
- Examples: Gender, Age, Location, Department, Referrer, Version, Device
- Any property you record with an event can be used in filtering.

| Country / Territory | Visits | % Visits |
|---------------------|--------|----------|
| 1. United States    | 33,399 | 59.17%   |
| 2. Canada           | 3,578  | 6.34%    |
| 3. United Kingdom   | 3,244  | 5.75%    |
| 4. Australia        | 1,588  | 2.81%    |
| 5. India            | 1,384  | 2.45%    |
| 6. Germany          | 1,183  | 2.10%    |
| 7. (not set)        | 1,153  | 2.04%    |
| 8. France           | 838    | 1.48%    |

Wednesday, April 17, 13

Segmentation example: Say you are graphing revenue over time. Segment by product category to see which categories have the biggest sales.

Filtering example: Use filtering to exclude events with certain properties. E.g. only look at events above a certain price, or users in a certain category.

## **Exercise! - 2 minutes**

Recall the event you modeled in the previous exercise.

Think of at least one property you would like to use for filtering or segmentation. Be prepared to share it with the class.

---

Wednesday, April 17, 13

In the Peeps app, segment the number of records contacted by department to find out which departments are contacted most.

Segment the searches by searcher's department to see which department has the most active users.

In the peeps app segment the number of “contacts” by type (e.g. text, mail, phone call)

# A/B Testing aka Split Testing

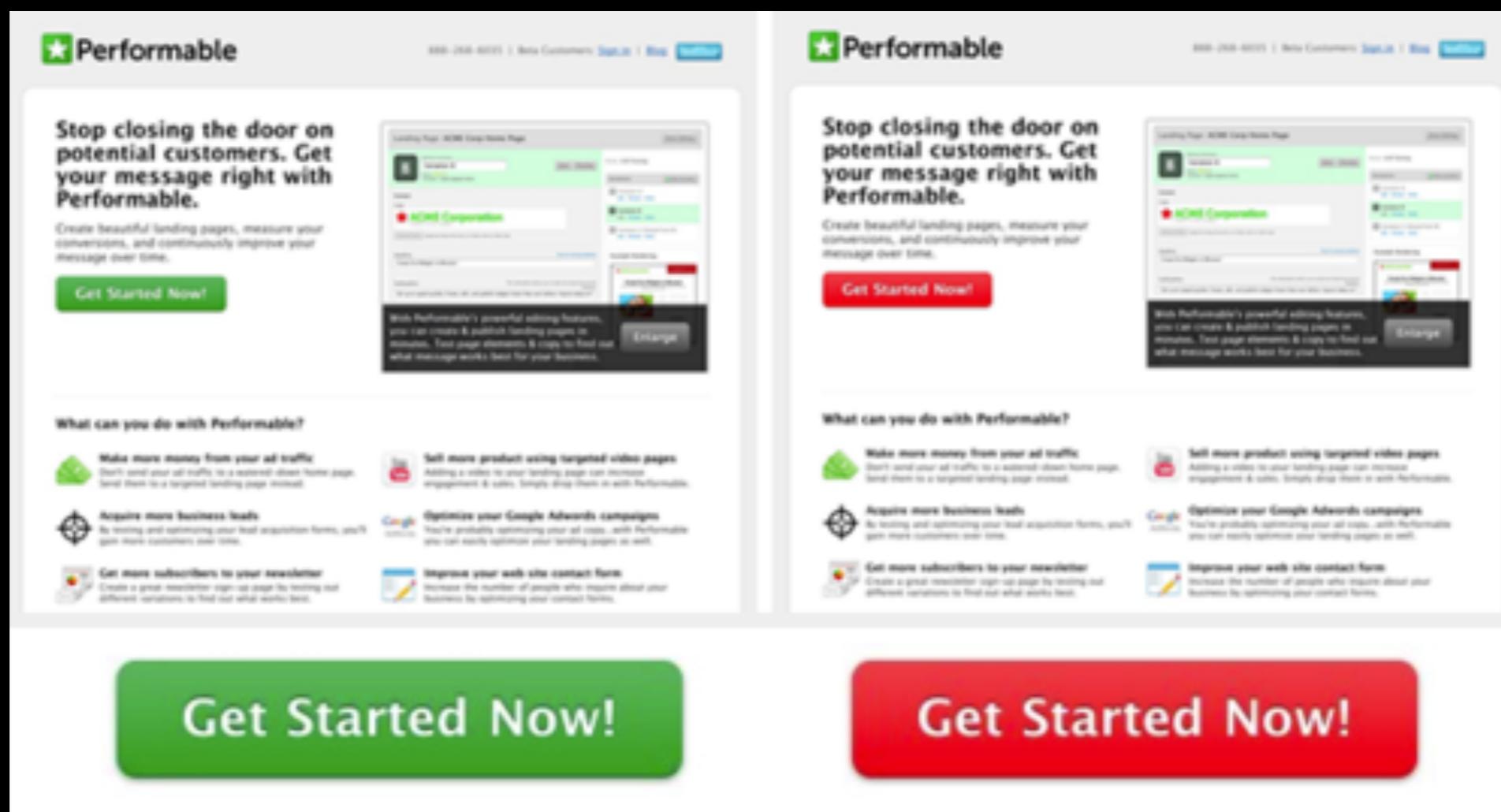
The image shows two side-by-side versions of a landing page from the company Performable. Both pages have a white header with the Performable logo and a green 'Get Started Now!' button. The left version has a green background for its main content area, while the right version has a white background. Both pages feature a large, bold headline: 'Stop closing the door on potential customers. Get your message right with Performable.' Below the headline is a sub-headline: 'Create beautiful landing pages, measure your conversions, and continuously improve your message over time.' A small screenshot of a landing page interface is shown, followed by a 'Get Started Now!' button. The right section of each page contains a list of six items under the heading 'What can you do with Performable?'. The items are: 'Make more money from your ad traffic', 'Sell more product using targeted video pages', 'Acquire more business leads', 'Optimize your Google Adwords campaigns', 'Get more subscribers to your newsletter', and 'Improve your web site contact form'. Each item includes a small icon and a brief description. At the bottom of each page is a large, prominent call-to-action button labeled 'Get Started Now!'. The right button is red, while the left one is green.

Wednesday, April 17, 13

[http://en.wikipedia.org/wiki/A/B\\_testing](http://en.wikipedia.org/wiki/A/B_testing)

- can be applied to even the smallest things (e.g. button color)
- used extensively in advertising & marketing
- used to get “the last 20%” in app optimization
- tells you which option is better, but won’t tell you if both of them suck!
- some tools now automate this and will automatically serve the most popular version of site

# A/B Testing aka Split Testing



21% more people clicked on the red button than on the green button!

Wednesday, April 17, 13

[http://en.wikipedia.org/wiki/A/B\\_testing](http://en.wikipedia.org/wiki/A/B_testing)

- can be applied to even the smallest things (e.g. button color)
- used extensively in advertising & marketing
- used to get “the last 20%” in app optimization
- tells you which option is better, but won’t tell you if both of them suck!
- some tools now automate this and will automatically serve the most popular version of site

## Example of split testing data

| user.name.first | user.name.last | form.version | form.fields  |
|-----------------|----------------|--------------|--|
| zach            | morris         | A            | [first name, middle name, last name, organization] |
| kelly           | kapowski       | B            | [email, password]                                  |
| screech         | powers         | A            | [first name, middle name, last name, organization] |
| lisa            | turtle         | A            | [first name, middle name, last name, organization] |
| ac              | slater         | B            | [email, password]                                  |
| jessie          | spano          | B            | [email, password]                                  |
| mr.             | belding        | B            | [email, password]                                  |
| mrs.            | culpepper      | B            | [email, password]                                  |
| stacey          | carosi         | A            | [first name, middle name, last name, organization] |
| allison         | fox            | B            | [email, password]                                  |
| tori            | scott          | B            | [email, password]                                  |
| mr.             | dewey          | B            | [email, password]                                  |
| ollie           | creeky         | B            | [email, password]                                  |
| violet          | bickerstaff    | B            | [email, password]                                  |
| rhonda          | robistelli     | B            | [email, password]                                  |

Which version of the form was more effective?

## **Exercise! - 1 minute**

Think of something in your app you would like to A/B test.

Be prepared to share it with the class.

---

Wednesday, April 17, 13

Example goal for Vine: reach 1M user-generated videos. Track the number of videos being generated.

Example goal for Spotify: increase subscription revenue. Track the revenue from subscriptions.

Example goal of an enterprise contacts app: make it easier for colleagues to contact each other. Track app launches, contact searches, calls.

# Funnels

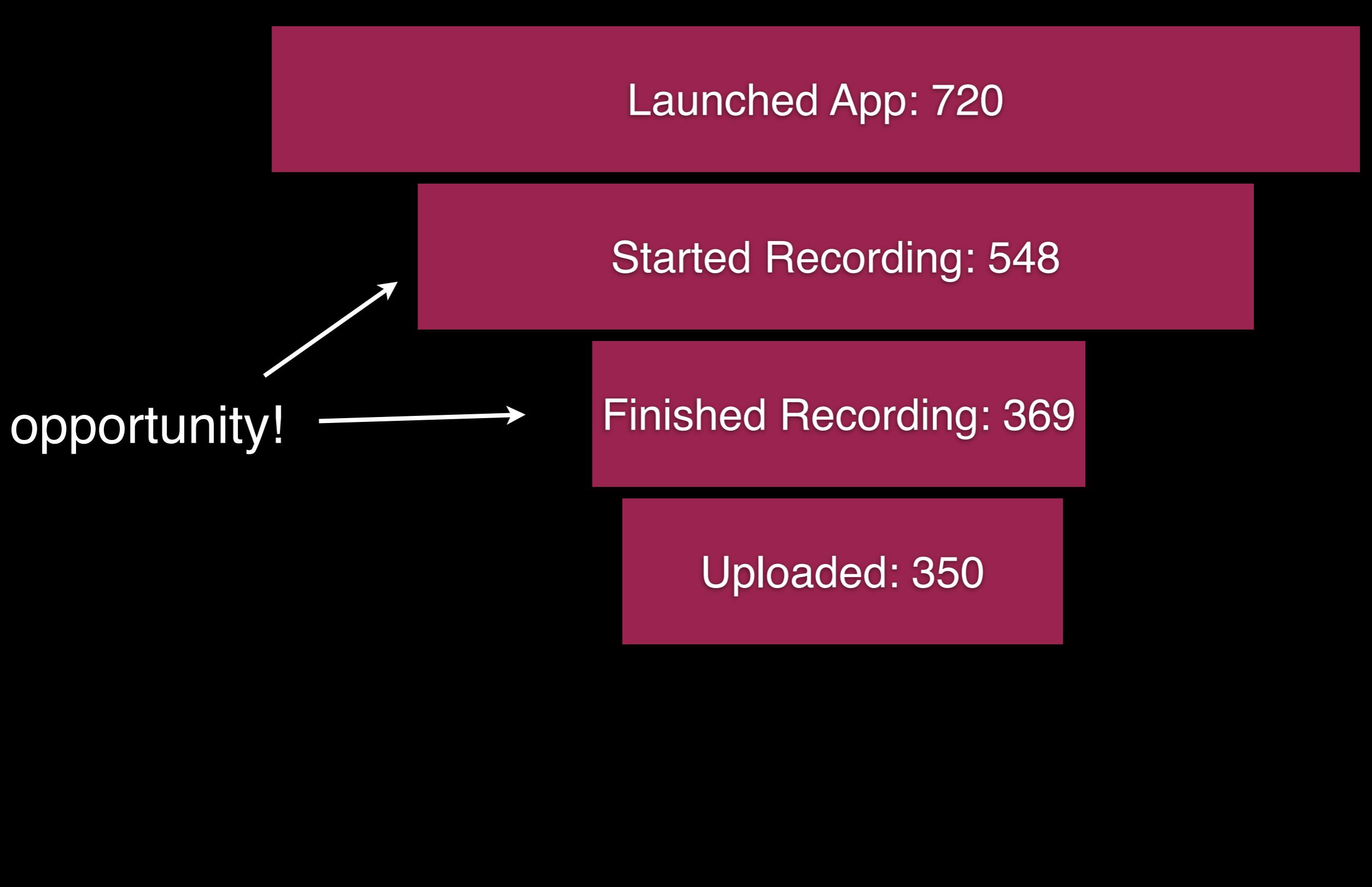
Launched App: 720

Started Recording: 548

Finished Recording: 369

Uploaded: 350

# Funnels



Wednesday, April 17, 13

# Frequently used terms

**Conversion**

**Retention**

**Churn**

**DAU/MAU - Daily Active Users**

**CAC - Custom Acquisition Cost**

**CLV - Customer Lifetime Value**

Wednesday, April 17, 13

**Conversion** - process of getting users to reach some goal. Usually reported as a percentage.

**Retention** - term for recurring users. It's great that you got 10,000 people to use your app last year, but what's your retention like?

**DAU** - Daily active users. Generally, your total number of user accounts isn't relevant. People want to know how many people actually use the app in a given day.

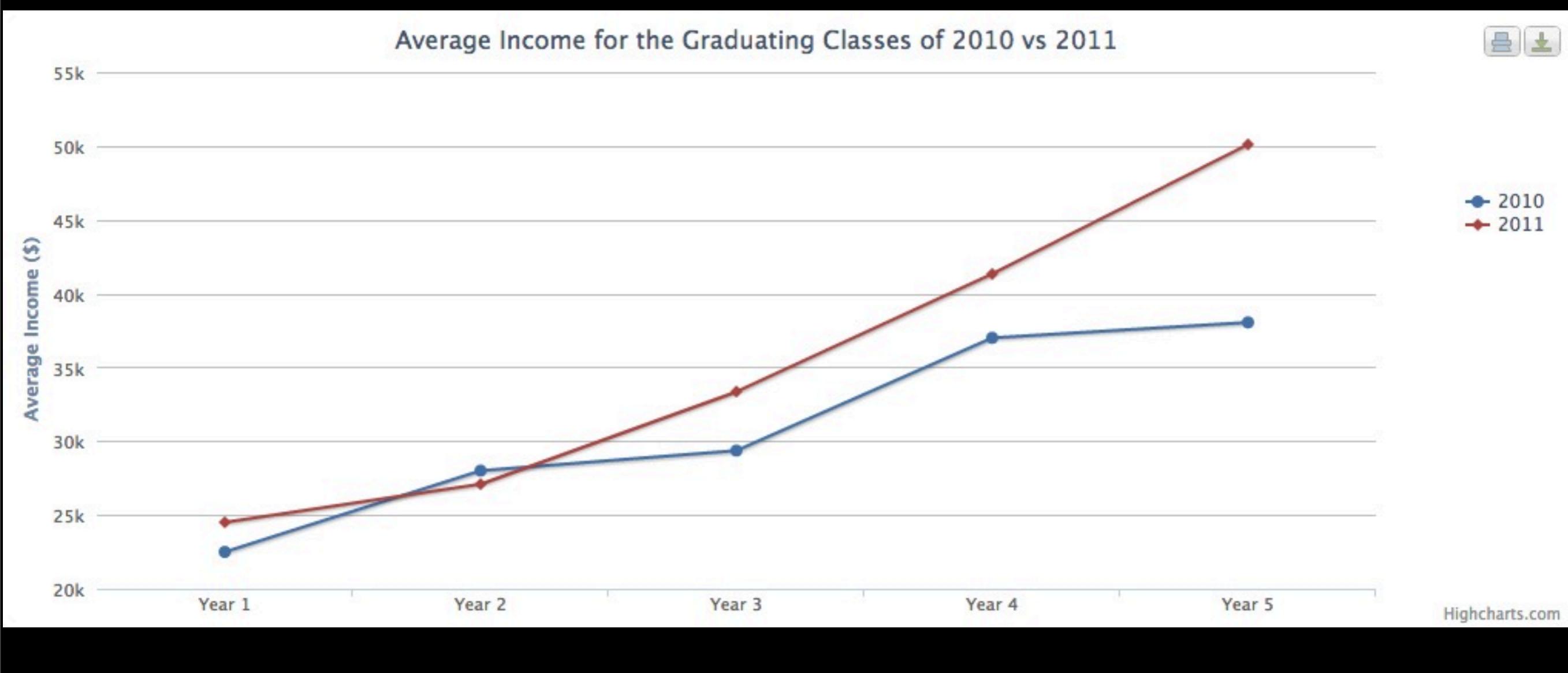
**MAU** - Monthly active users (e.g. Facebook 1B MAU)

**CAC** - Cost acquisition cost --- how much will it cost to acquire the next user (divide marketing/ad spend by # of customers)

**Lifetime Value** - Monthly revenue from a user x number of months they are expected to stay

# Cohort Analysis

A cohort is a group of people who share a common characteristic over a certain period of time.



Wednesday, April 17, 13

<http://www.cohortanalysis.com/>

# Cohort Analysis

**Engagement over time**

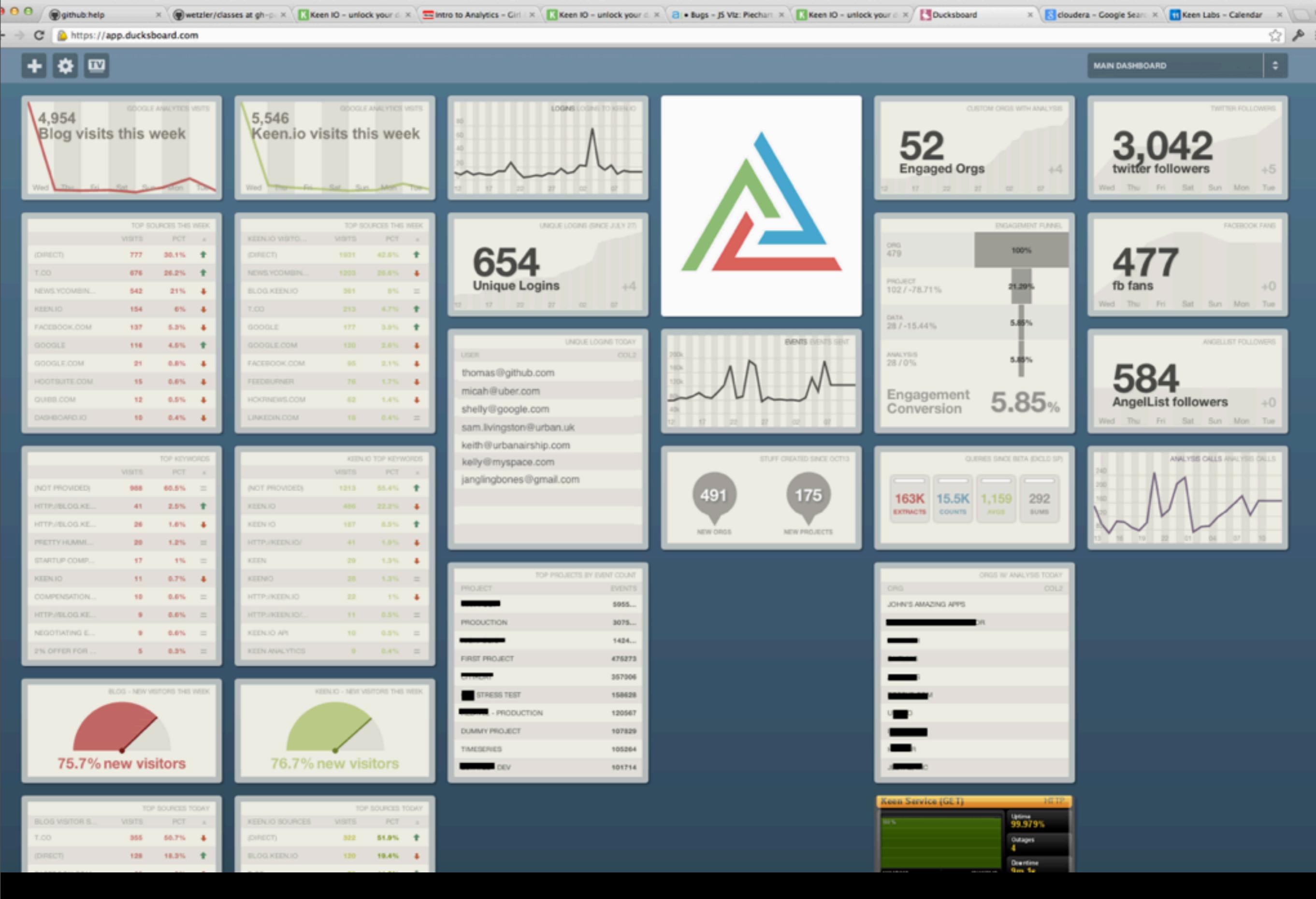
|                     | Month 1 | Month 2 | Month 3 | Month 4 | Month 5 | Month 6 | Month 7 | Month 8 | Month 9 | Month 10 | Month 11 | Month 12 |
|---------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|----------|----------|----------|
| (Joined in) January | 100%    | 20%     | 19%     | 13%     | 13%     | 10%     | 12%     | 11%     | 7%      | 7%       | 7%       | ?        |
| February            | 100%    | 21%     | 16%     | 13%     | 11%     | 9%      | 9%      | 7%      | 7%      | 7%       | ?        |          |
| March               | 100%    | 24%     | 20%     | 17%     | 15%     | 13%     | 11%     | 10%     | 10%     | ?        |          |          |
| April               | 100%    | 31%     | 27%     | 24%     | 19%     | 15%     | 12%     | 12%     | ?       |          |          |          |
| May                 | 100%    | 31%     | 27%     | 25%     | 21%     | 18%     | 16%     | ?       |         |          |          |          |
| June                | 100%    | 39%     | 28%     | 24%     | 20%     | 19%     | ?       |         |         |          |          |          |
| July                | 100%    | 40%     | 33%     | 27%     | 23%     | ?       |         |         |         |          |          |          |
| August              | 100%    | 47%     | 41%     | 32%     | ?       |         |         |         |         |          |          |          |
| September           | 100%    | 52%     | 43%     | ?       |         |         |         |         |         |          |          |          |
| October             | 100%    | 53%     | ?       |         |         |         |         |         |         |          |          |          |
| November            | 100%    | ?       |         |         |         |         |         |         |         |          |          |          |
| December            | ?       |         |         |         |         |         |         |         |         |          |          |          |

In this case engagement is improving nicely.  
Of the January cohort, only 20% were engaged in month 2.  
Of the October cohort, 53% were engaged in month 2.

<http://redeye.firstround.com/2008/01/after-the-tehc.html>

Wednesday, April 17, 13

<http://jonathonbalogh.com/2012/03/24/introduction-to-cohort-analysis-for-startups/>  
<http://52weeksofux.com/post/646711369/cohort-analysis-measuring-engagement-over-time>

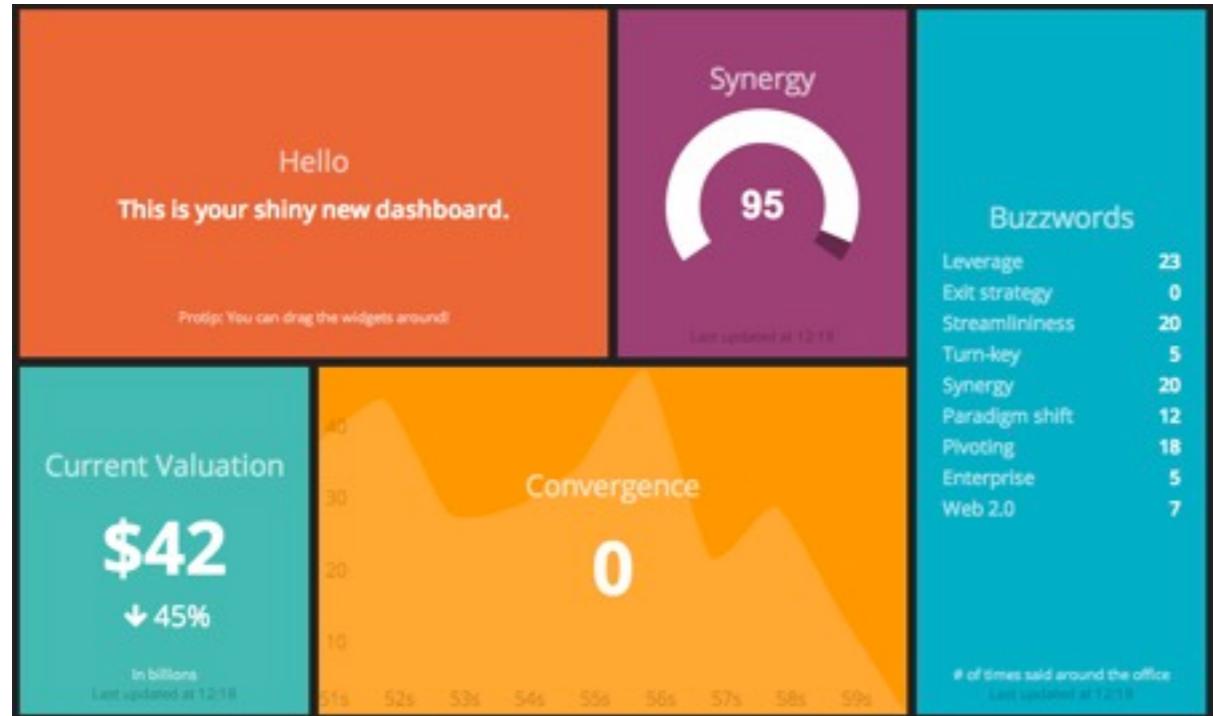


Wednesday, April 17, 13

Use a dashboard to share analytics and motivate your team

# Cool Viz Stuff for Devs

dashing



## Chart.js

Easy, object oriented client side graphs for designers and developers

[Documentation](#)

[Download](#)



6 Chart types



HTML5 Based



Simple and flexible

Chart.js is dependency free, lightweight (4.5k when minified and gzipped) and offers loads of customisation options.

Perfectum



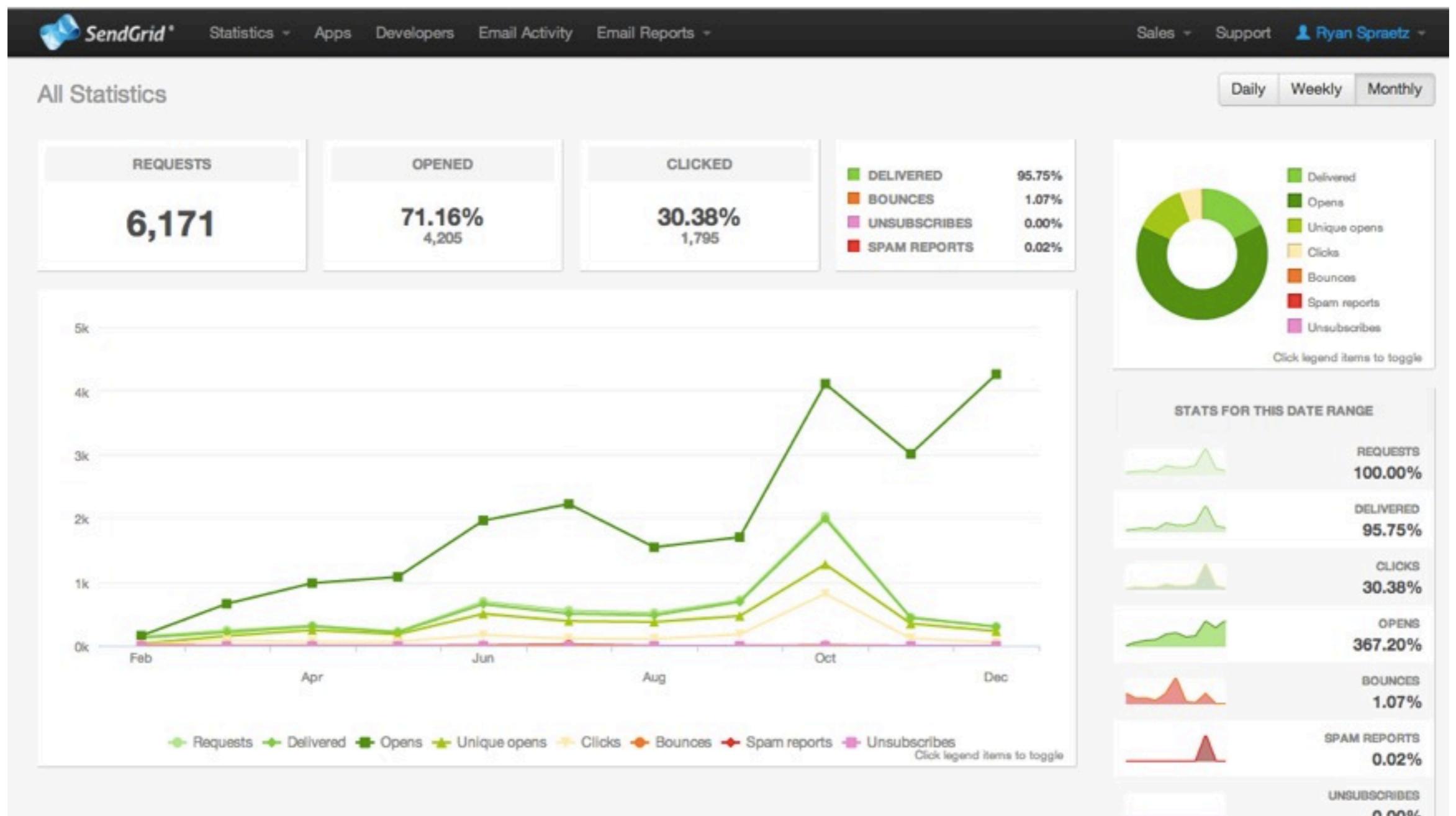
Wednesday, April 17, 13

<http://dashingdemo.herokuapp.com/sample>

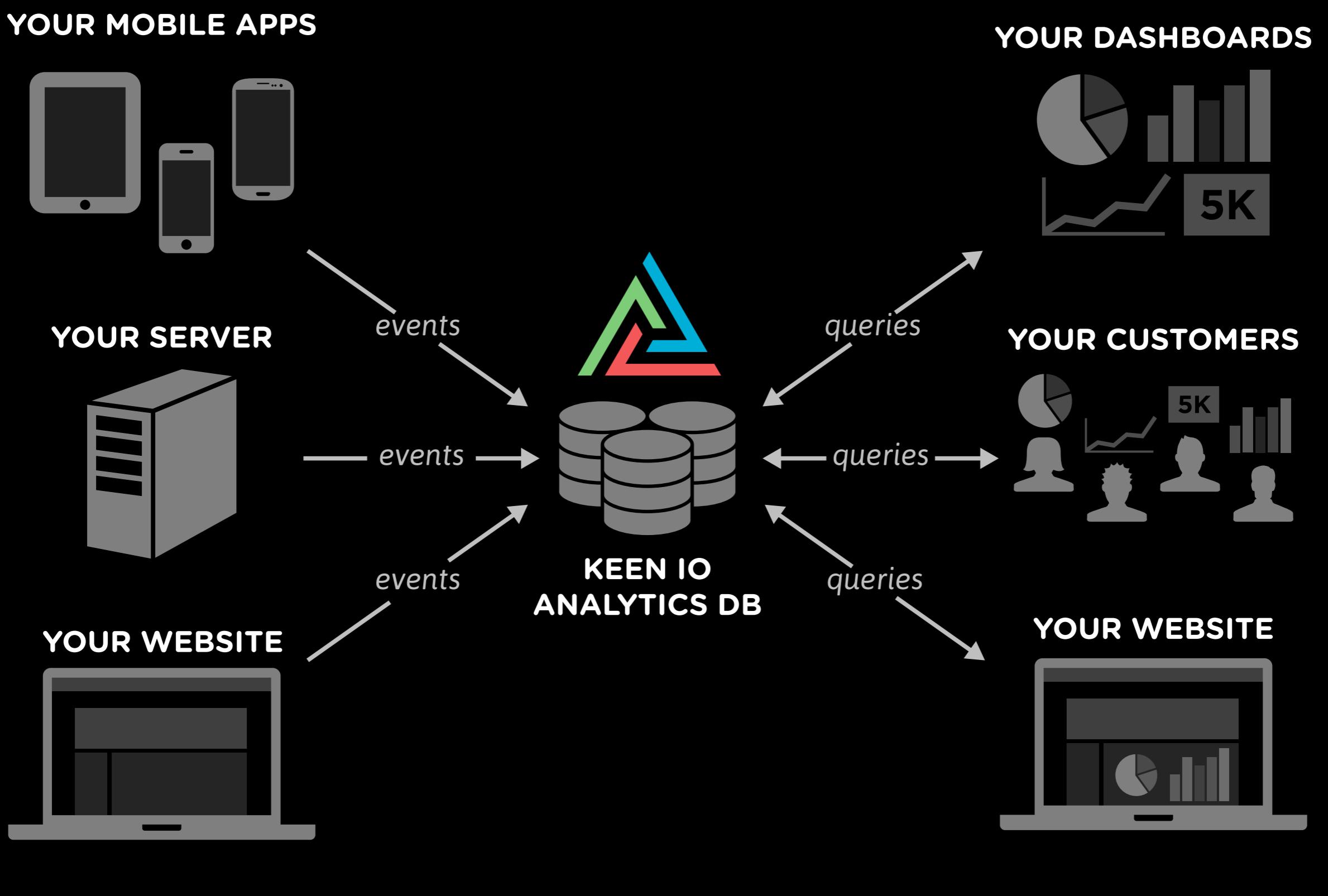
chart.js

<http://wrapbootstrap.com/preview/WBOPHMG9K>

# Email Analytics



Wednesday, April 17, 13



Wednesday, April 17, 13