

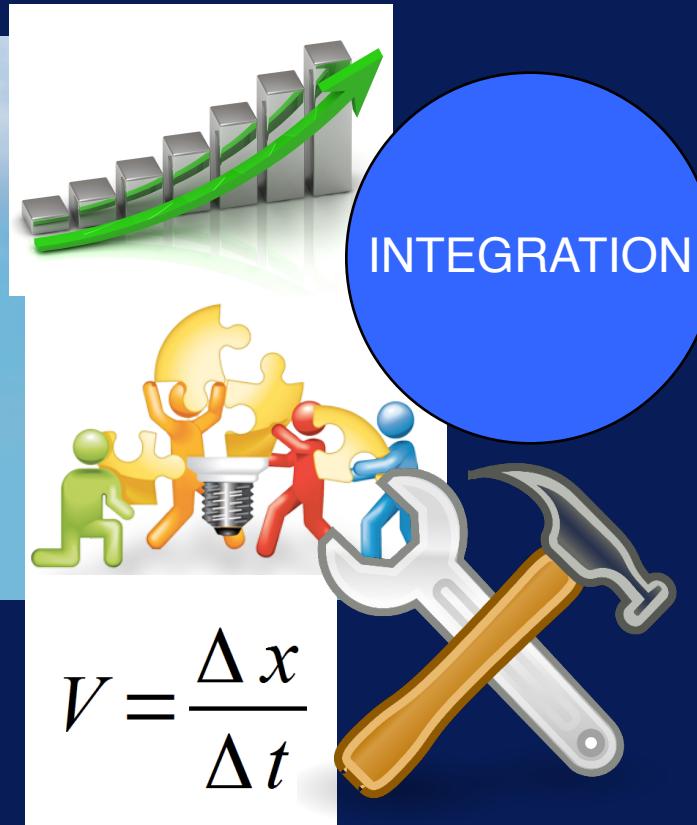
**Big Data generated by  
People:**

**How is it being used?**

# After this video you will be able to..

- List the main advantages of Hadoop, Storm, Spark, and NoSQL to tackle the challenges of unstructured data
- State what a traditional warehouse does and why Big Data pushes for change
- Summarize examples of turning human generated data into value

# Every challenge is an opportunity!









APACHE  
**STORM**™

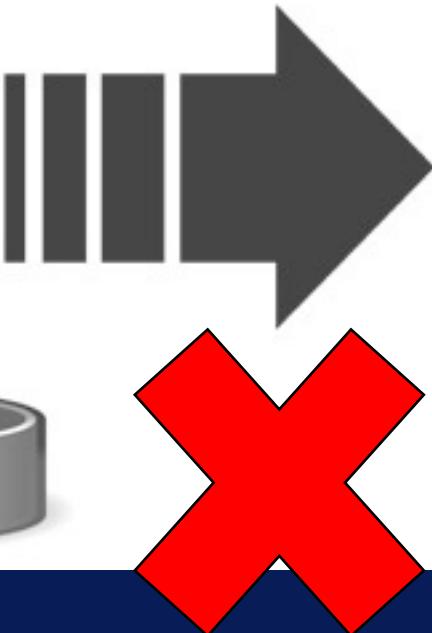
Distributed • Resilient • Real-time



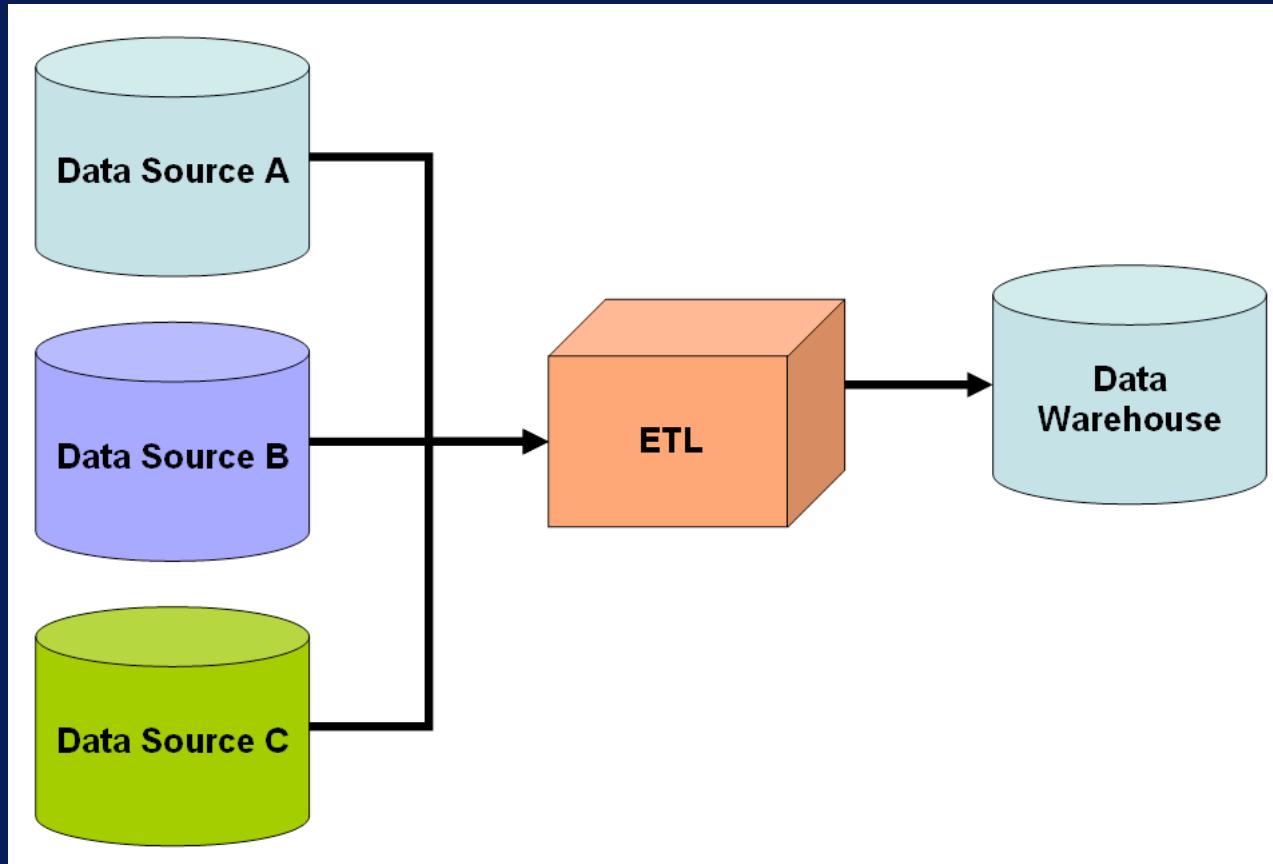
Spark

$$V = \frac{\Delta x}{\Delta t}$$

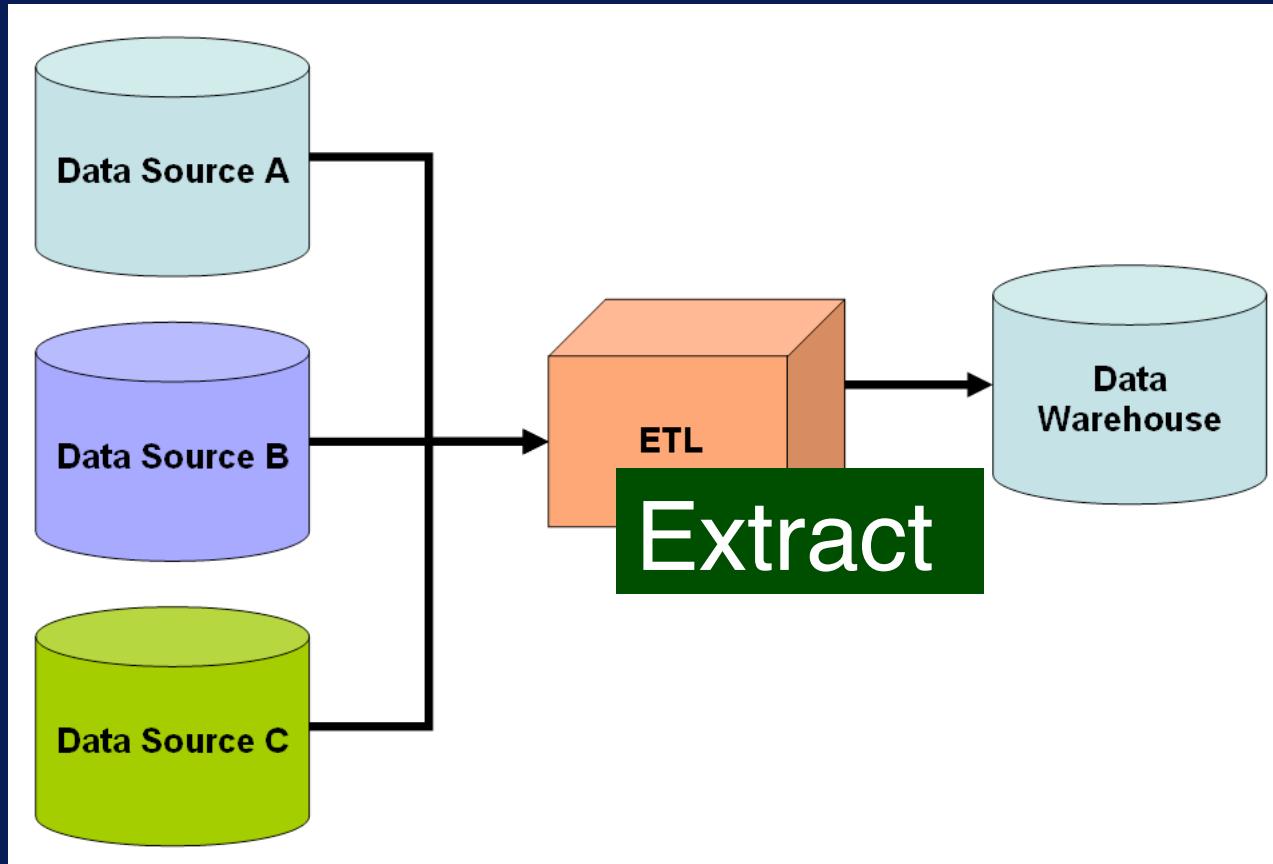




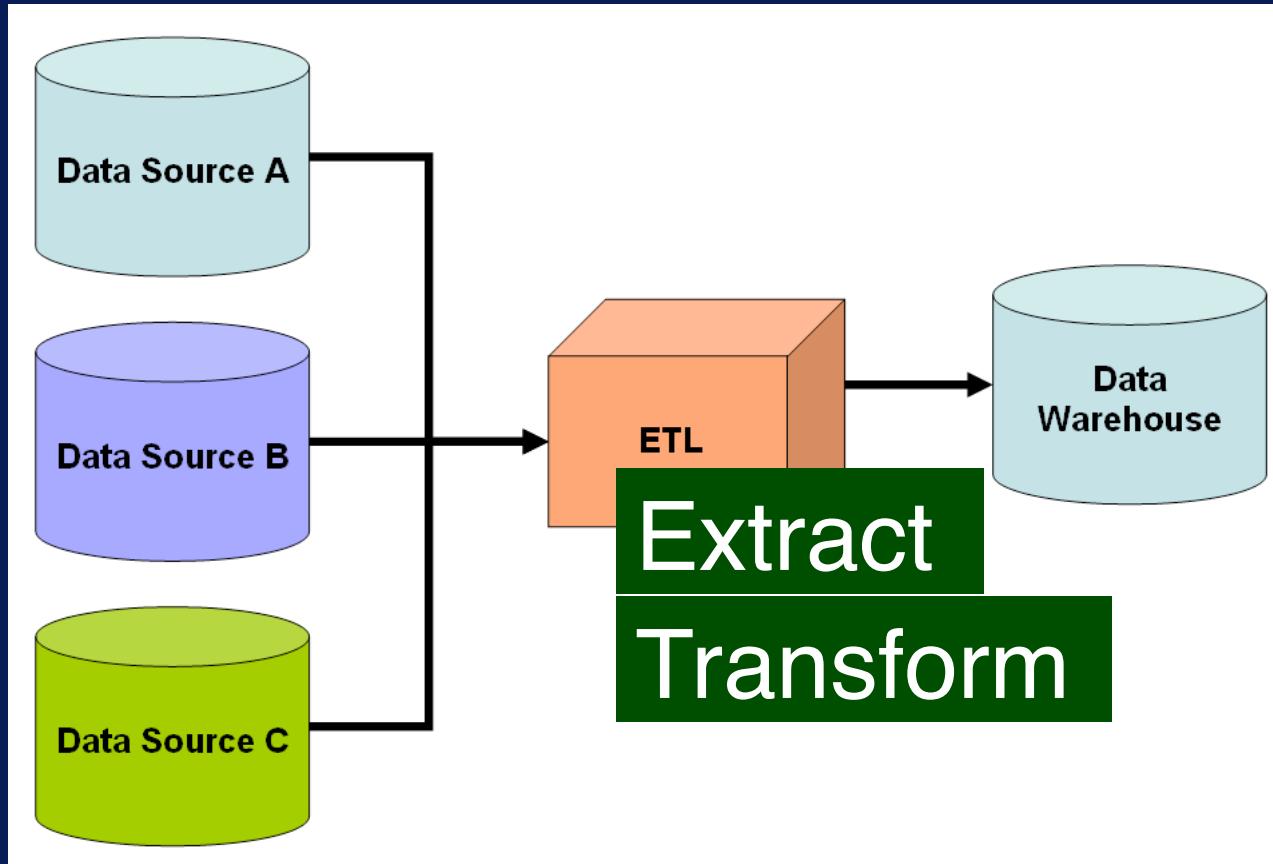
# Traditional Data Warehouse



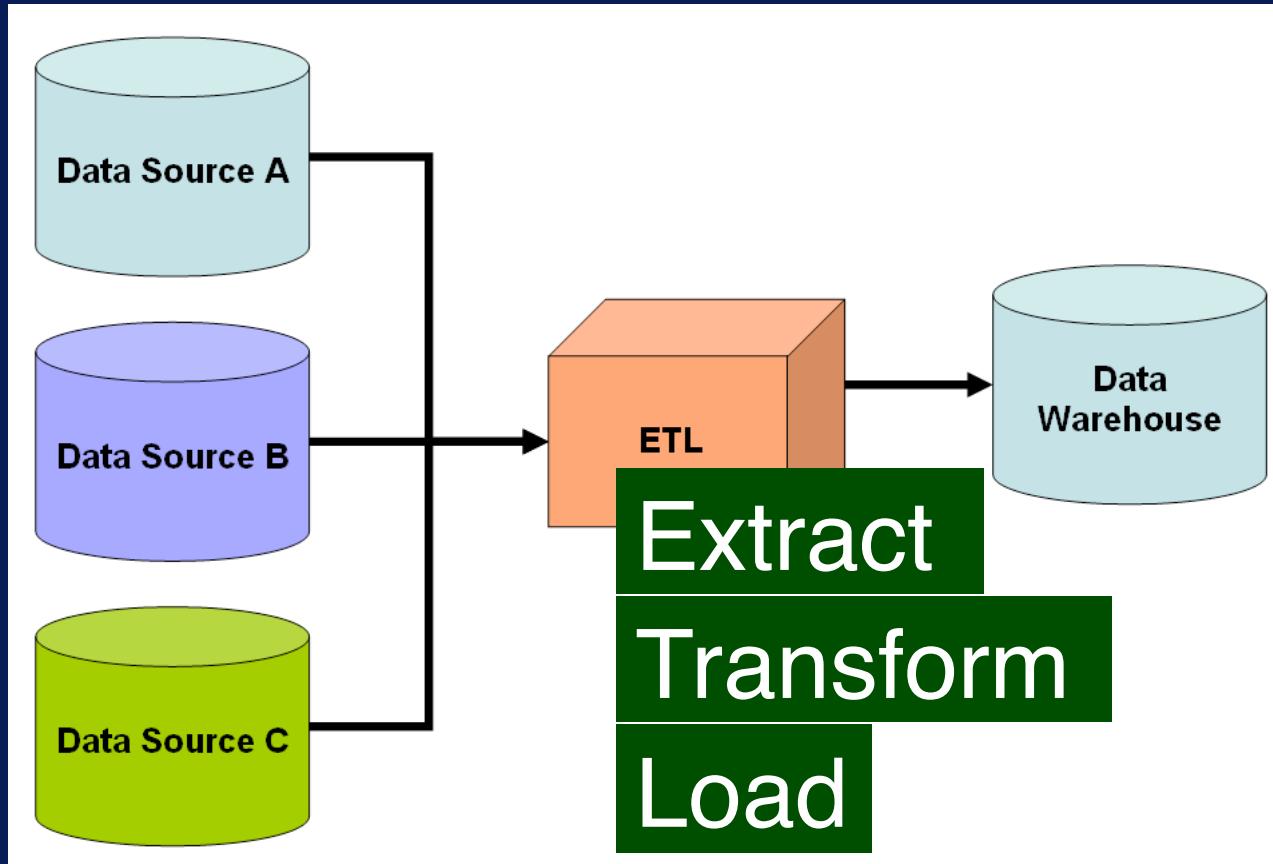
# Traditional Data Warehouse



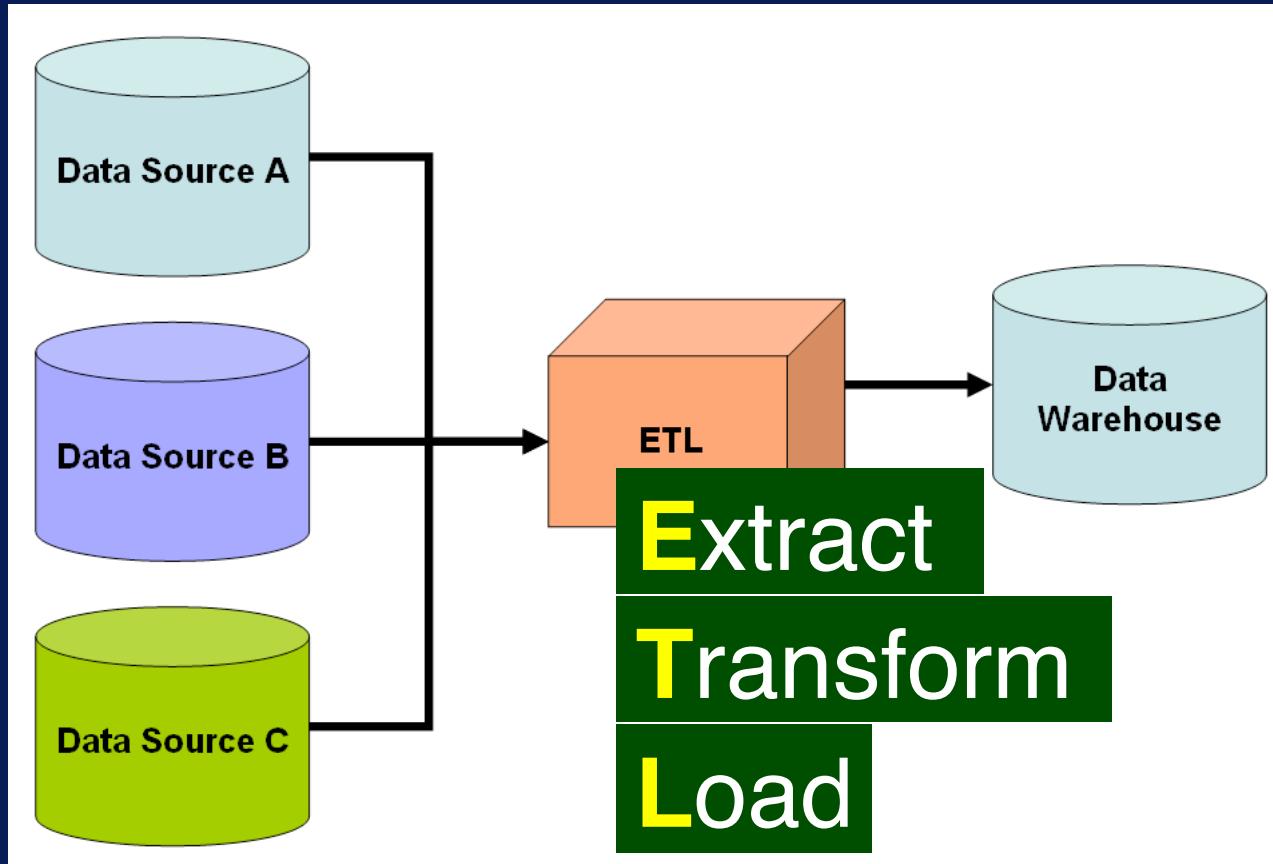
# Traditional Data Warehouse



# Traditional Data Warehouse



# Traditional Data Warehouse



# NoSQL Data Storage in the Cloud

Beyond relational databases!

Organize data to  
suit the problem  
and objectives!

# Connections between data



# Connections between data



## Key-Value pairs



# MULTIPLE DATA SOURCES



VALUE

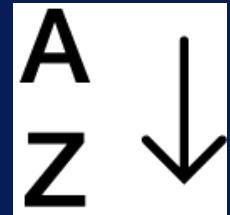
# MULTIPLE DATA SOURCES



Retrieval and Storage



Pre-Processing



Analysis

VALUE

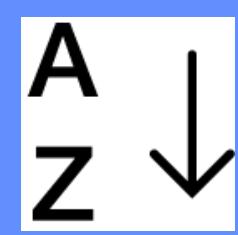
# MULTIPLE DATA SOURCES



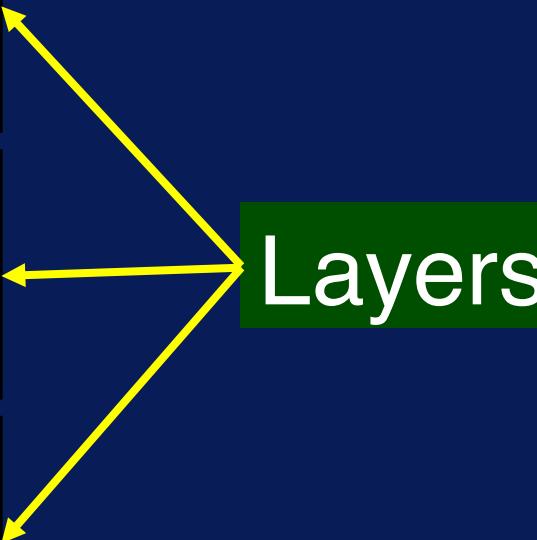
Retrieval and Storage



Pre-Processing



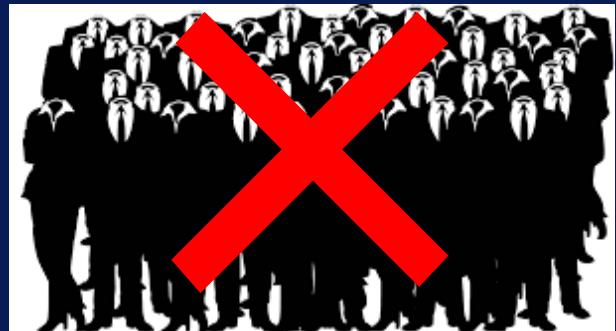
Analysis



VALUE

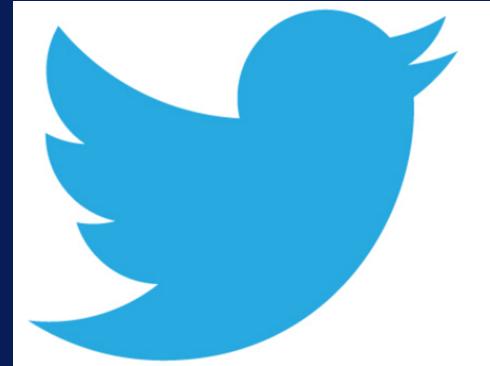
# Value in Action

# Sentiment Analysis

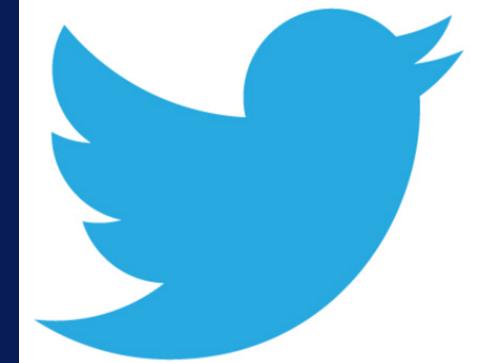


I like green plates!

**Guess, how much Twitter data  
companies analyze everyday to  
measure “sentiment” around  
their products?**



**Guess, how much Twitter data companies analyze everyday to measure “sentiment” around their products?**



**Answer: 12 Terabytes/Day**

You would need to listen continuously for ~ 2 years to finish 1 TB of music !



## Personalized Recommendations

Other Movies You Might Enjoy

Eiken has been added to your Queue at position 2.  
This movie is available now.  
[Move To Top Of My Queue](#)

[Continue Browsing](#) [Visit your Queue >](#)

Movie Title	Rating	Action Buttons
Amelie	★★★★★	Add, Not Interested
Y Tu Mama También	★★★★★	Add, Not Interested
Guys and Dolls	★★★★★	Add, Not Interested
Mostly Martha	★★★★★	Add, Not Interested
Only Human	★★★★★	Add, Not Interested
Russian Dolls	★★★★★	Add, Not Interested

[Close](#)

# Predict Customer Behavior



Personalized  
Recommendations

Other Movies You Might Enjoy

Amelie

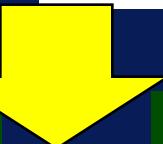
Y Tu Mama Tambien

Eiken

Close

< Continue Browsing      Visit your Queue >

Happy Customer



# Predict Customer Behavior

More Profit



# Collective Disaster Response



Nepal Earthquake

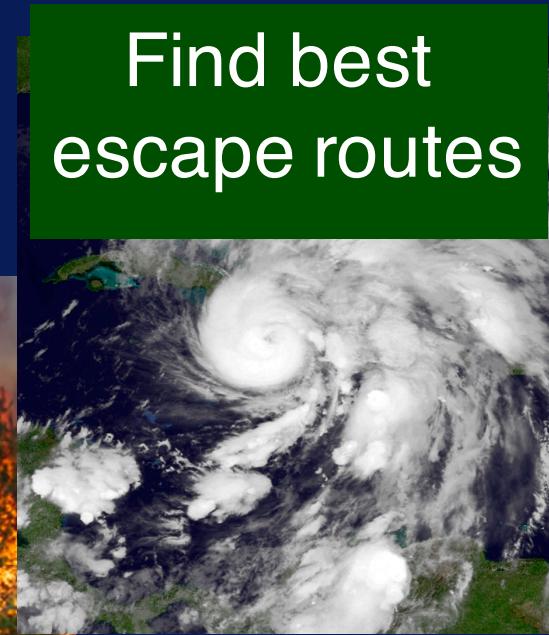
Find best  
escape routes

Super-storm  
Sandy

Predict and  
Evacuate



Wildfire





**CRiS!S**  
mappers

[crismappers.net](http://crismappers.net)



Aerial &  
Satellite  
Imagery

Participatory  
Maps

Crowdsourced  
Event Data

Live  
Twitter  
Updates

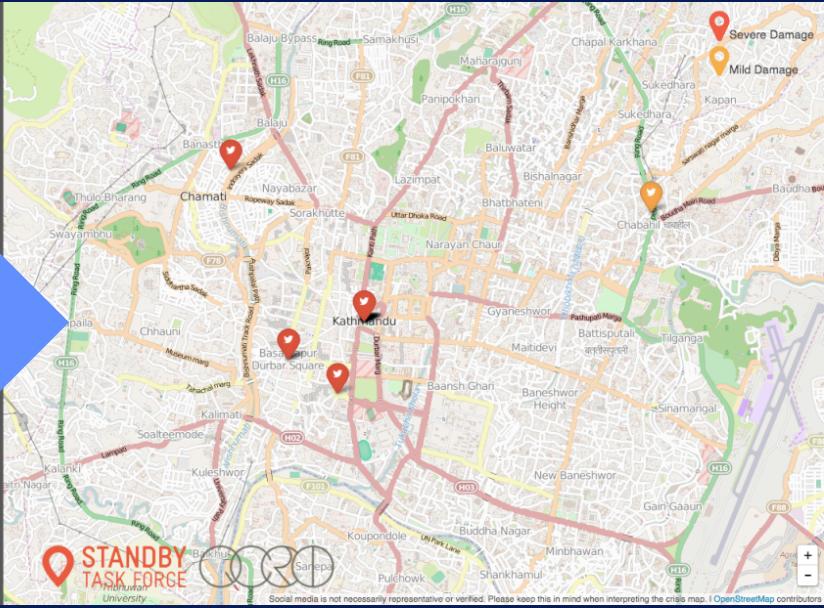
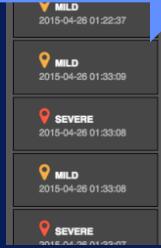
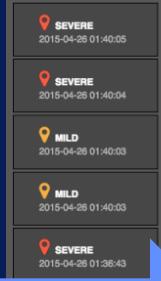
Mobile and Web  
Applications

Geospatial  
Platforms

Statistical  
Models

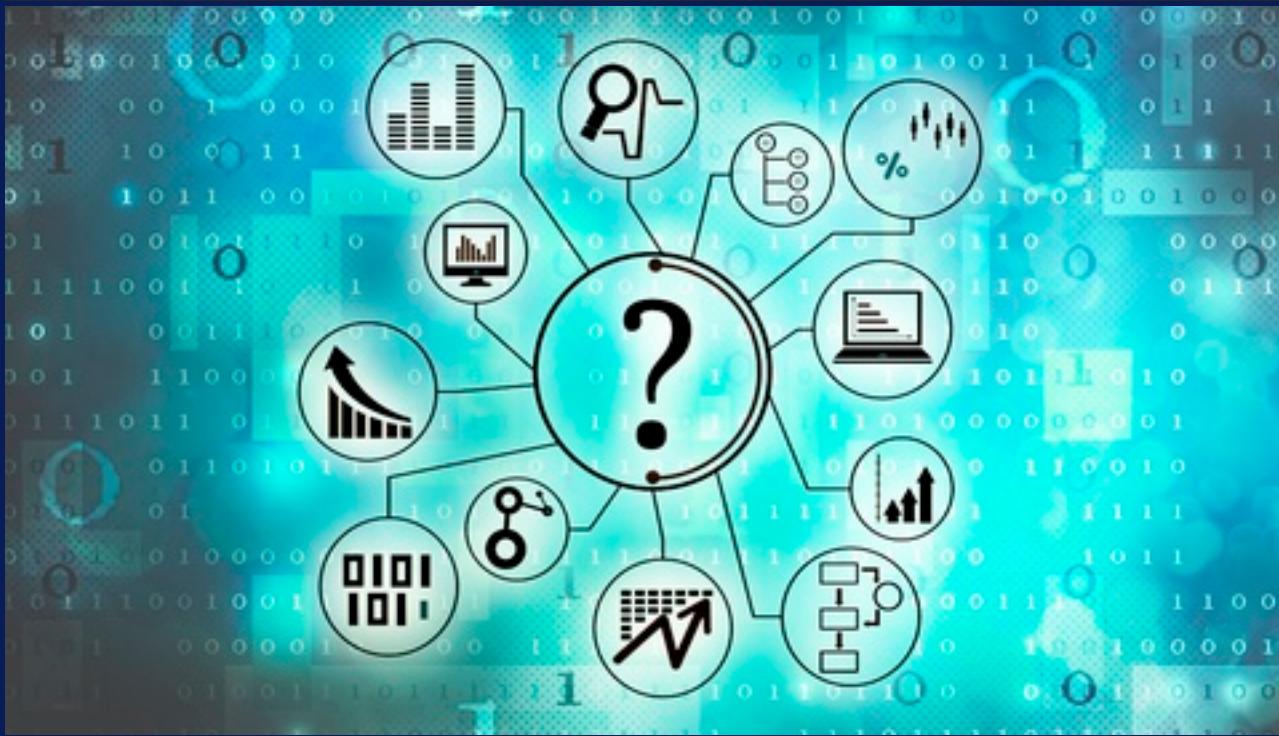
Live  
Simulation

Advanced  
Visualization



# Nepal Earthquake 2015

# Can you list 3 things you can do from Big Data analysis



Unstructured People  
Generated Data



Emerging Big Data  
Tools and Approaches



Better decisions,  
Increased productivity, profits  
and societal impact

