



## Making Sense of Big Data



**BENTLEY**  
UNIVERSITY



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*President*

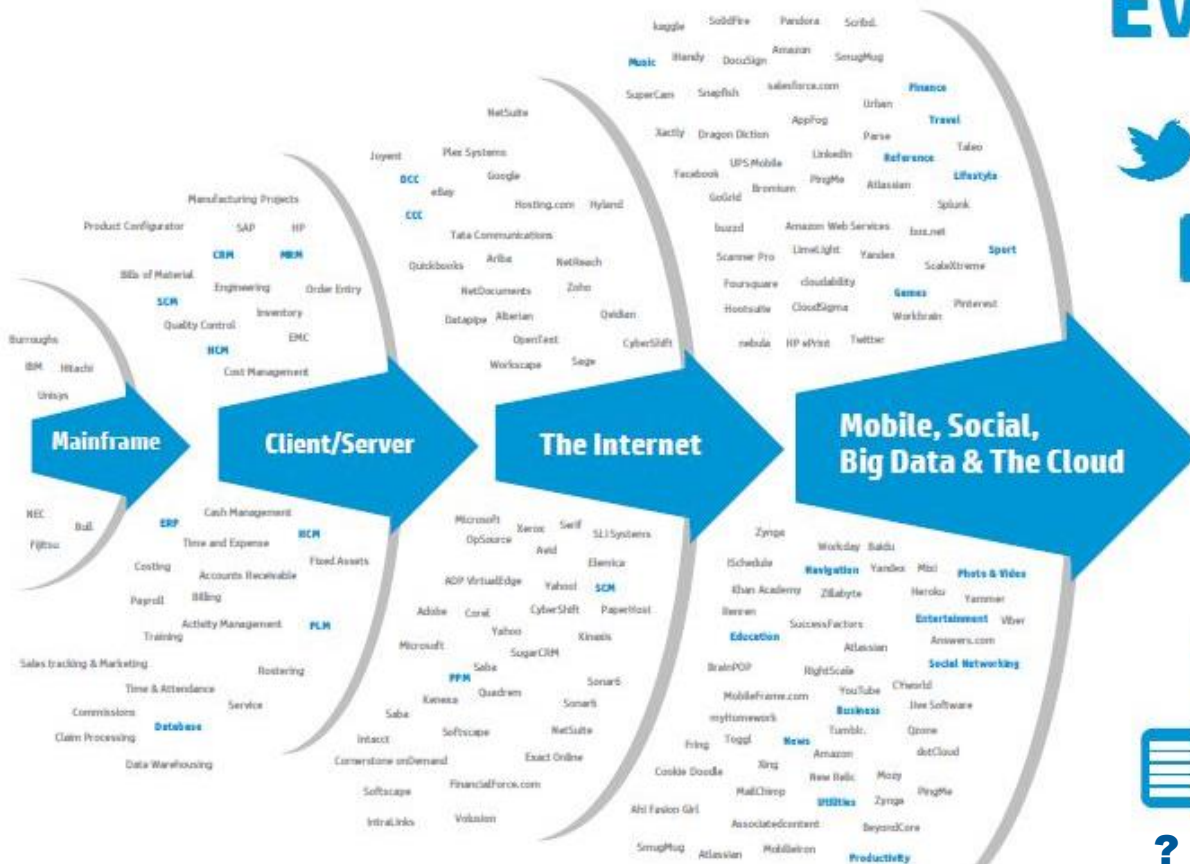
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**October 23, 2013**

# The Data Trend is Bigger, Faster and More Complex



## Every 60 seconds



**98,000+** tweets



**695,000** status updates



**11 million** instant messages



**698,445** Google searches



**168 million+** emails sent



**1,820TB** of data created



**643** new smartphone users\*

**? Sensor data**

[practicalanalytics.wordpress.com](http://practicalanalytics.wordpress.com)

\*KPCB 2013 report



# Big Data Analytics induced the birth of the world's largest ad company

The New York Times

July 29, 2013



Bertrand Langlois/Agence France-Presse - Getty Images

Maurice Lévy of Publicis, left, and John Wren of Omnicom at a news conference on Sunday in Paris to announce a merger deal.

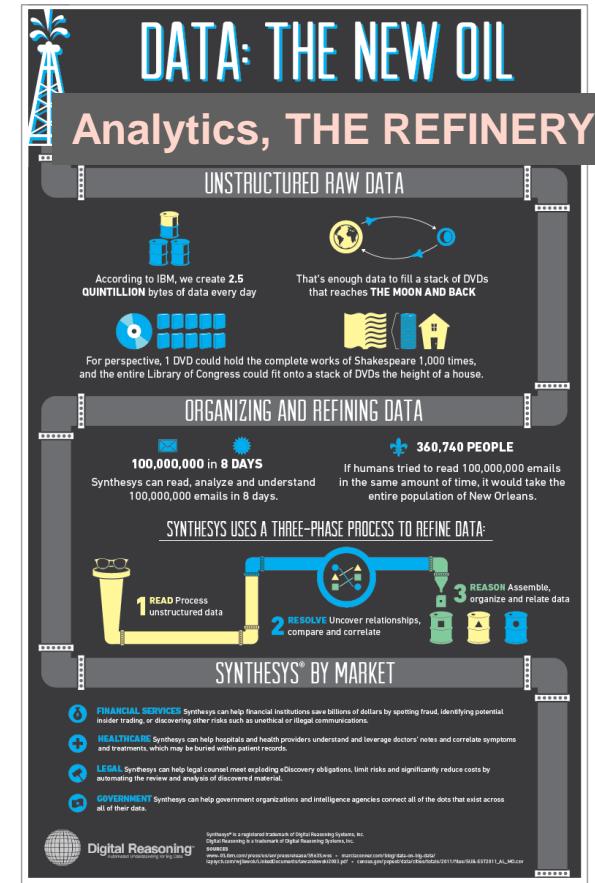
# “Data is the new oil.”



**dunnhumby**  
essential customer genius

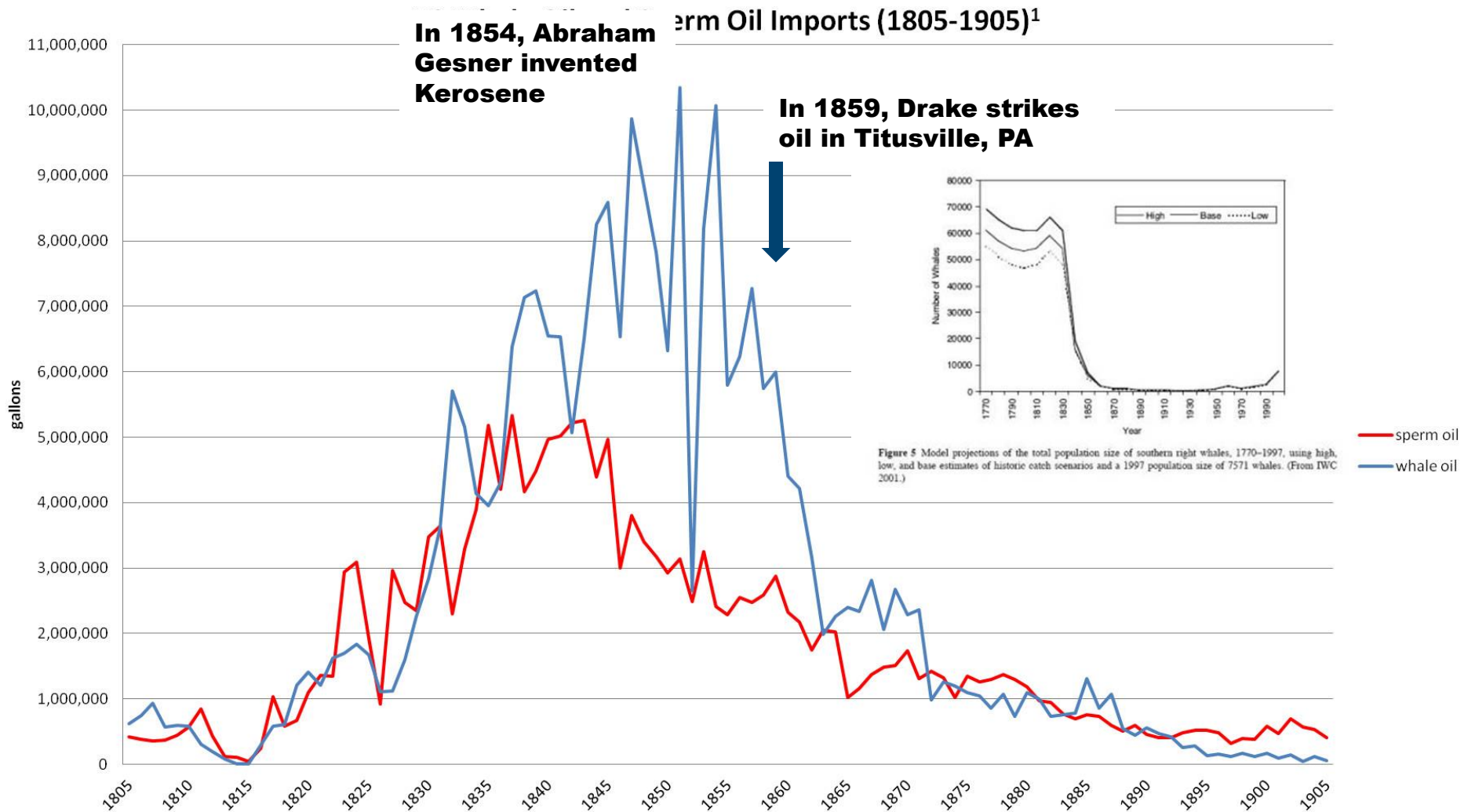


Oil Lamp, 1000BC



Quoted from Clive Humby, author and founder of Dunnhumby, which uses big data to personalize customer experience of brands.

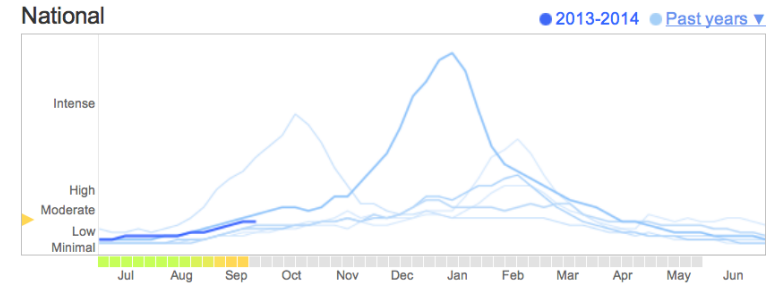
# Gasoline Saved the Whales?



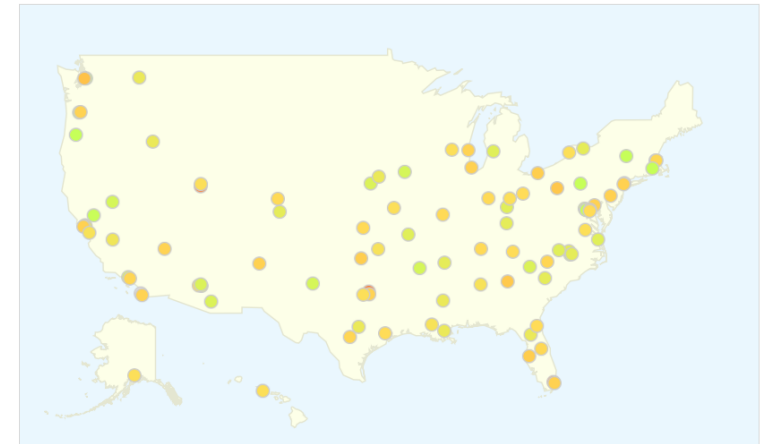
<sup>1</sup>Walter S. Tower (1907). *A History of the American Whale Fishery*. Table III, pg 126

# Google Flu Trends

- Google was able to predict flu trends based on search terms
- Placed results on the web for the public's review by cities & regions



[States](#) | [Cities \(Experimental\)](#) - Click on a city below to chart the flu trend above.



CDC - Seasonal Influenza (Flu) - Flu Activity & Surveillance

www.cdc.gov/flu/weekly/fluactivitysurv.htm

CDC Home  
**CDC** Centers for Disease Control and Prevention  
CDC 24/7: Saving Lives. Protecting People.™

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Due to the lapse in government funding, only web sites supporting excepted functions will be updated unless otherwise funded. As a result, the information on this website may not be up to date, the transactions submitted via the website may not be processed, and the agency may not be able to respond to inquiries until appropriations are enacted.

Updates regarding government operating status and resumption of normal operations can be found at <http://www.usa.gov>.

## Seasonal Influenza (Flu)

**Seasonal Influenza (Flu)**

2013-2014 Flu Season  
Influenza - Flu Basics  
Prevention - Flu Vaccine  
Treatment - Antiviral Drugs  
Specific Groups  
Health Professionals  
Information For Partners

**Flu Activity & Surveillance**

Situation Update:  
Summary of Weekly

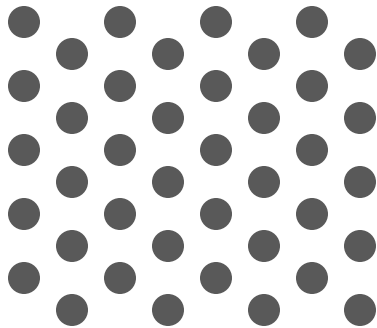
Flu Activity & Surveillance

Reports & Surveillance Methods in the United States

# What is Big Data?

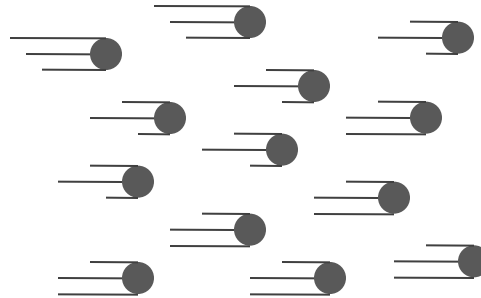
## Volume



**Large Data Set**



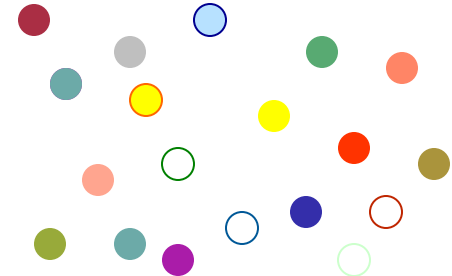
## Velocity



**Real Time Data**

- Spotify
- YouTube
- Waze
- Google Now
- Real time online or mobile leads...

## Variety

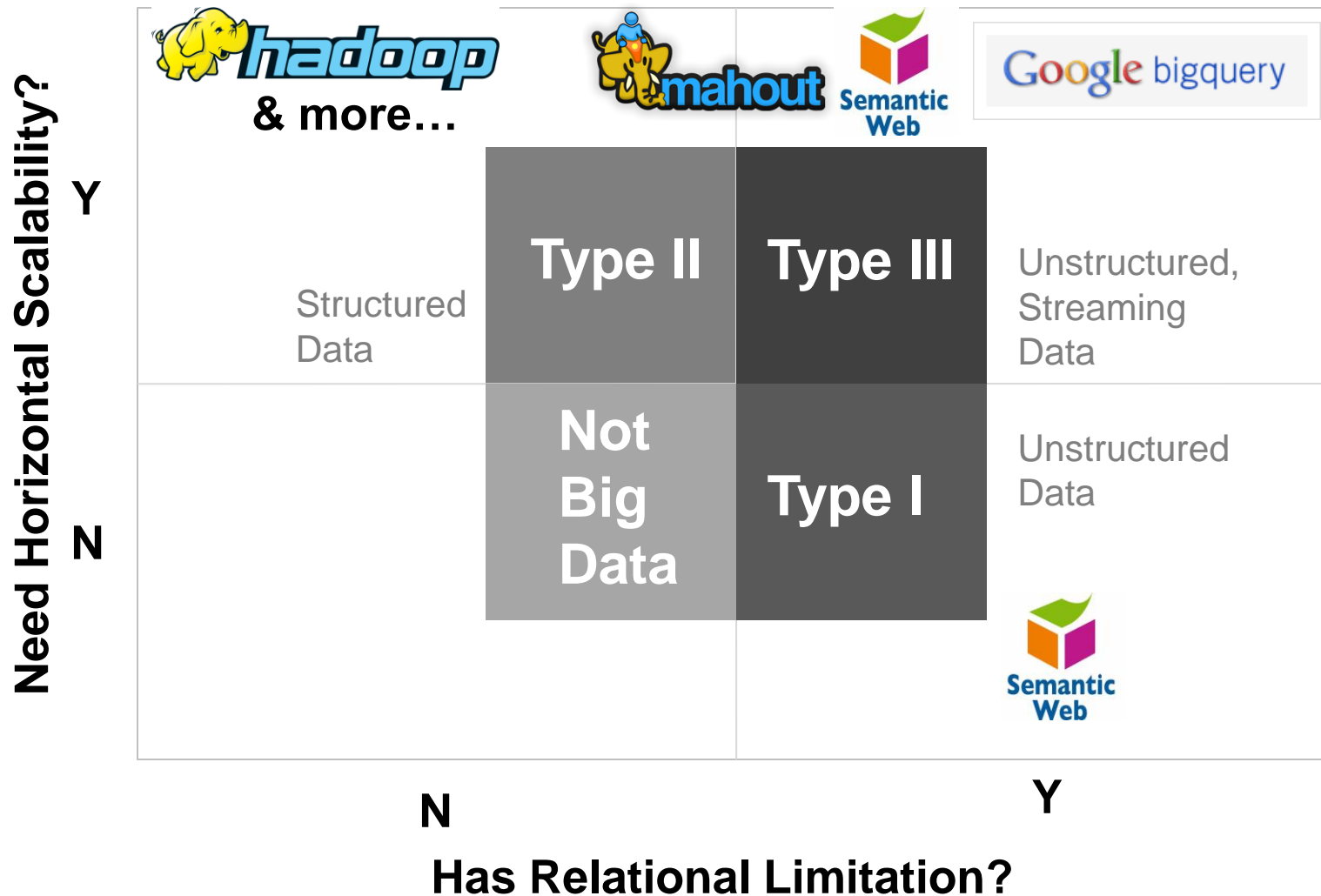


**Data in Many Forms**

- Tweets
- Blog
- Comments
- Websites
- Audio
- Visual
- Online & Offline Document
- Quantified Self & other sensor data

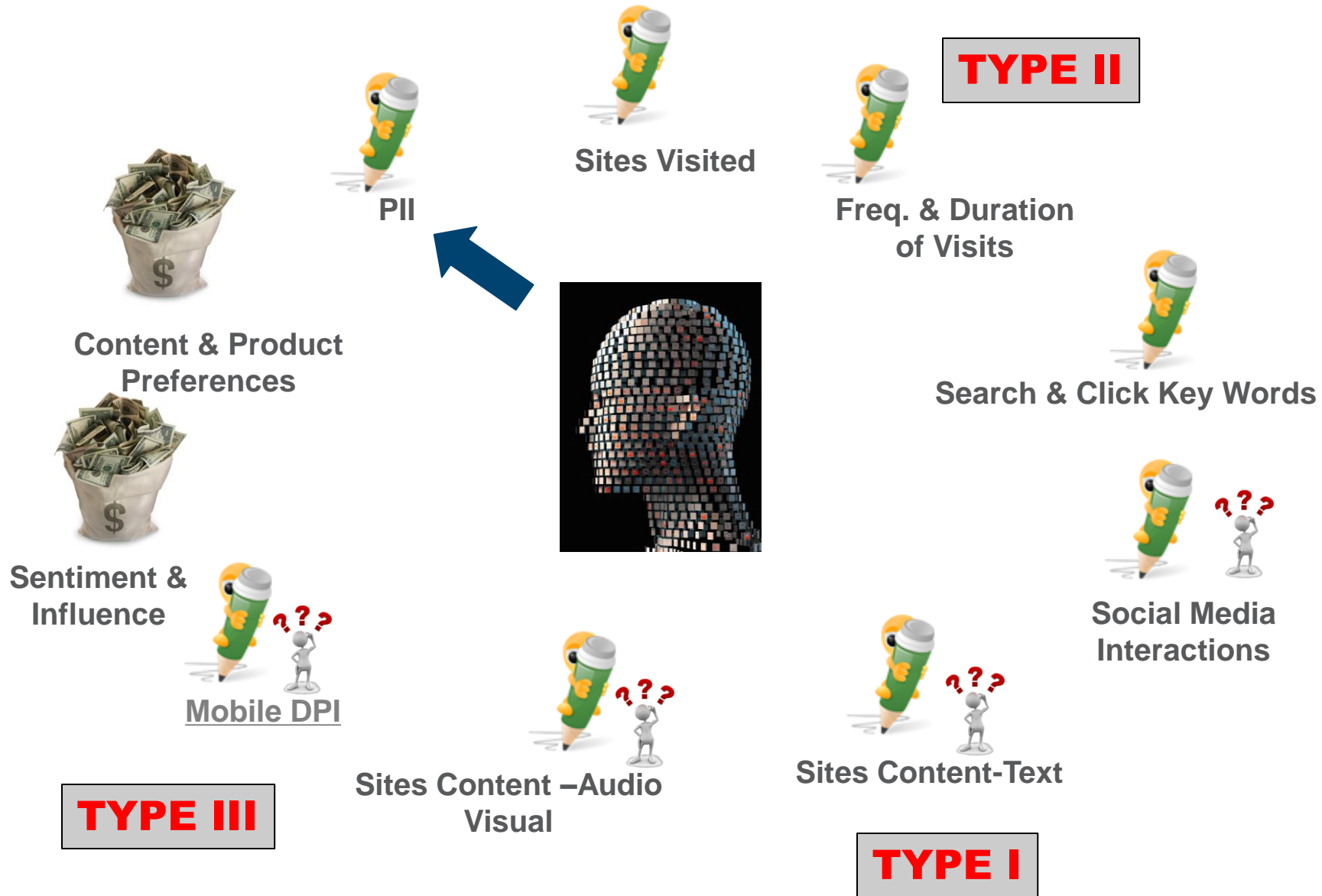
# Turning Big Data into Big Opportunities

## Hadoop offers partial solutions





# Consumer Data Defies Computerhension





# THANK YOU!



## Questions?



**Feel free to contact me**



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