

# Social Media Analytics



# Social Media and its impact

- Social networking, blogging, and online forums have turned the Web into a vast repository of comments on many topics, generating a potential source of information for:
  - social science research
  - market and politics forecasts
  - syndromic surveillance
  - information warfare
  - new opportunities for media communication

# Social media revolution

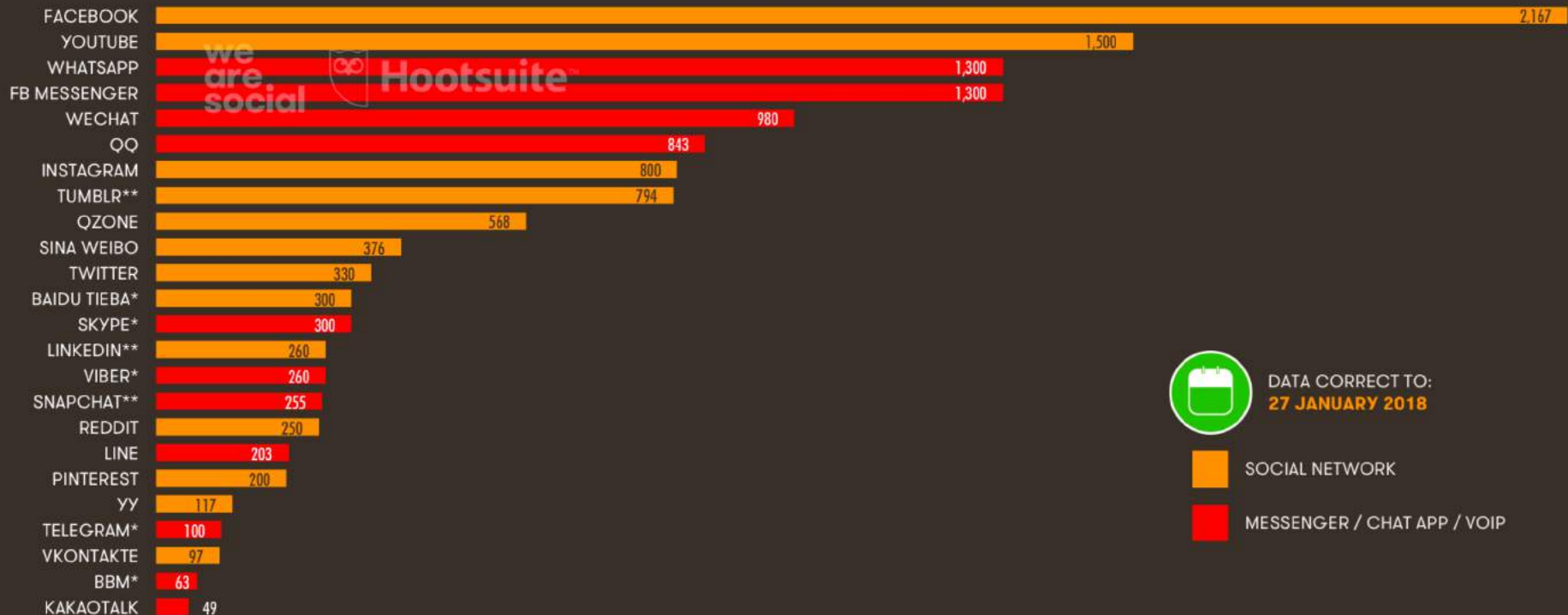
- Changing the way individuals and organizations engage, interact and collaborate
- New opportunities for real time analysis and predictive analytics creating insight from more and more data
- Appealing for business, public bodies and scientists (both ICT and social scientists)

# How big is “social media”?

JAN  
2018

## ACTIVE USERS OF KEY GLOBAL SOCIAL PLATFORMS

BASED ON THE MOST RECENTLY PUBLISHED MONTHLY ACTIVE USER ACCOUNTS FOR EACH PLATFORM, IN MILLIONS



DATA CORRECT TO:  
27 JANUARY 2018

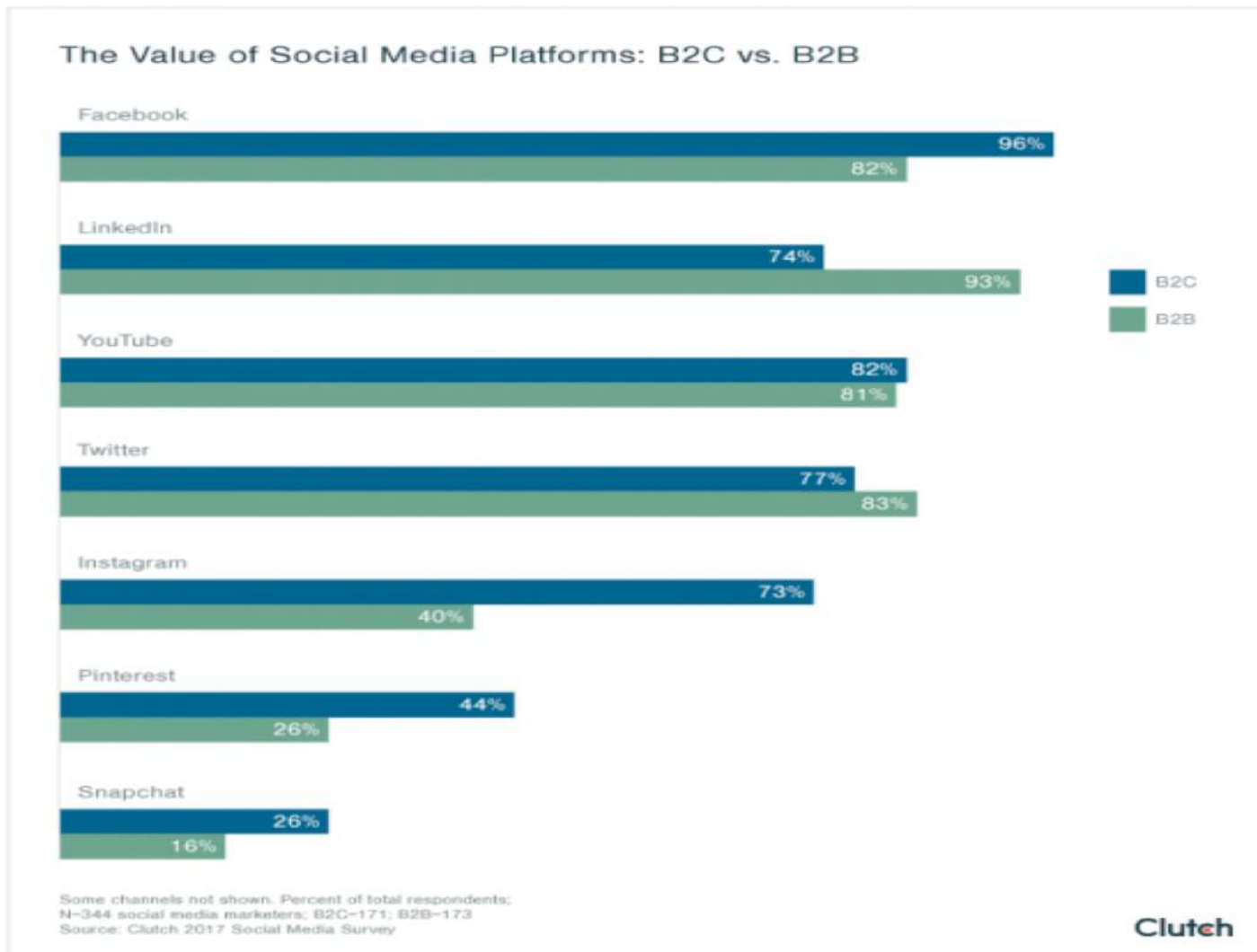


SOCIAL NETWORK

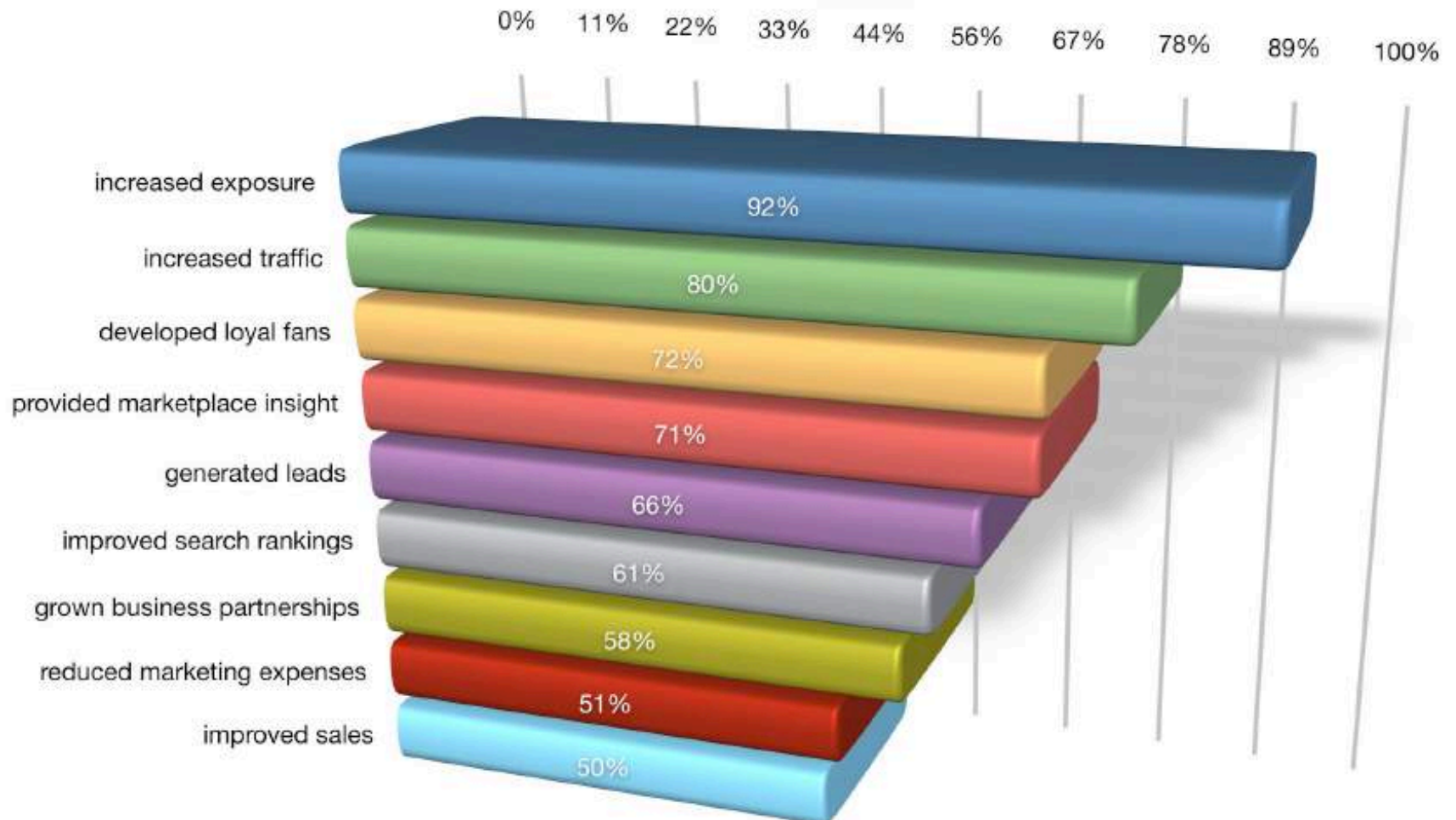


MESSENGER / CHAT APP / VOIP

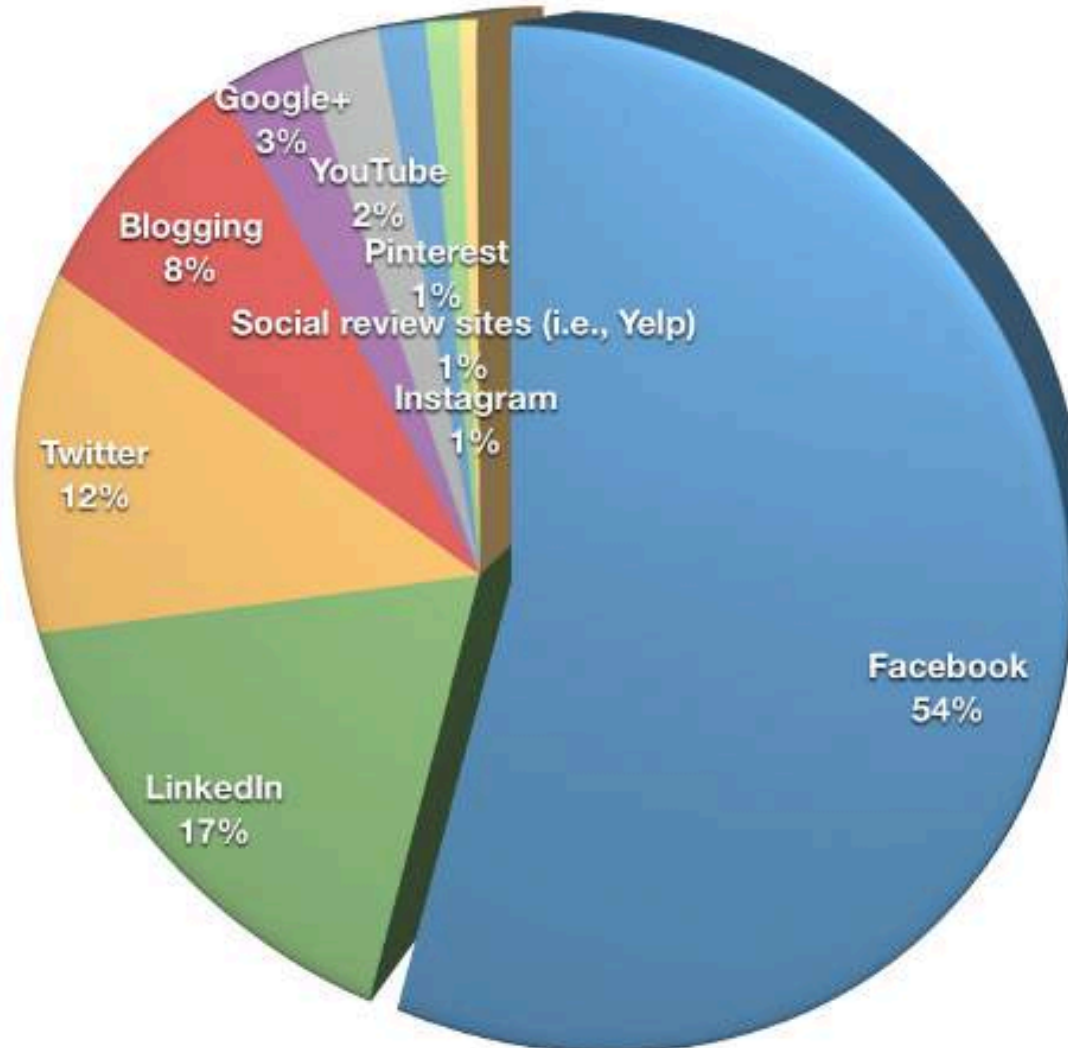
# Marketers (B2C and B2B) use social media more than 6 hours weekly



# Benefits of social marketing



# The most important platform for marketers is..



# Impact on common users

- **“Only 14% of people trust advertisers yet 78% of consumers trust peer recommendations.”**

Erik Qualman’s book “Socialnomics”, 2009



# Impact of Social Media



# Impact of Social media

- Why are social networks and social analytics important for **media**, **business** and **public bodies**?
- **“If you wish to persuade me, you must think my thoughts, feel my feelings, and speak my words.” (Tullius Marcus Cicero)**
- Social media are the new data source to better engage **audience**/ **customers** /**citizens**

# Impact of Social Media on Products

- General Motors cancels '*Hideous*' Buick SUV after "*Would-Be Customers*" on Twitter!
- ONE week after announcing a new Buick SUV Christopher Barger, GM's spokesman for social media said: "*The decision was based on customers' input - face-to-face, blogs and tweets. No matter how they expressed it "they just didn't like it."*"

# Impact of Social Media on Products



- Del Monte created a new “hot-selling” dog food snack in 6 weeks
- Used a social community to *source for creative ideas (crowdsourcing)* and create a new product
- Demonstrates the potential power of social media marketing to influence product sales

[http://www.youtube.com/watch?v=yP\\_3bpCPZaQ](http://www.youtube.com/watch?v=yP_3bpCPZaQ)

# Impact of Social Media on Organisations

## **Nestlé vs Greenpeace Palm Oil from Destroyed Rainforest**

- Nestlé, maker of Kit Kat, uses palm oil from companies that are trashing Indonesian rainforests, threatening the livelihoods of local people and pushing orang-utans towards extinction.
- Nestlé persuaded YouTube to remove Greenpeace's video
- Storm ensued on Nestlé Facebook page
- TWO months later, Nestlé announced a “zero deforestation” policy in partnership with The Forest Trust (TFT)

*“Social media: as you can see we're learning as we go.  
Thanks for the comments.”*

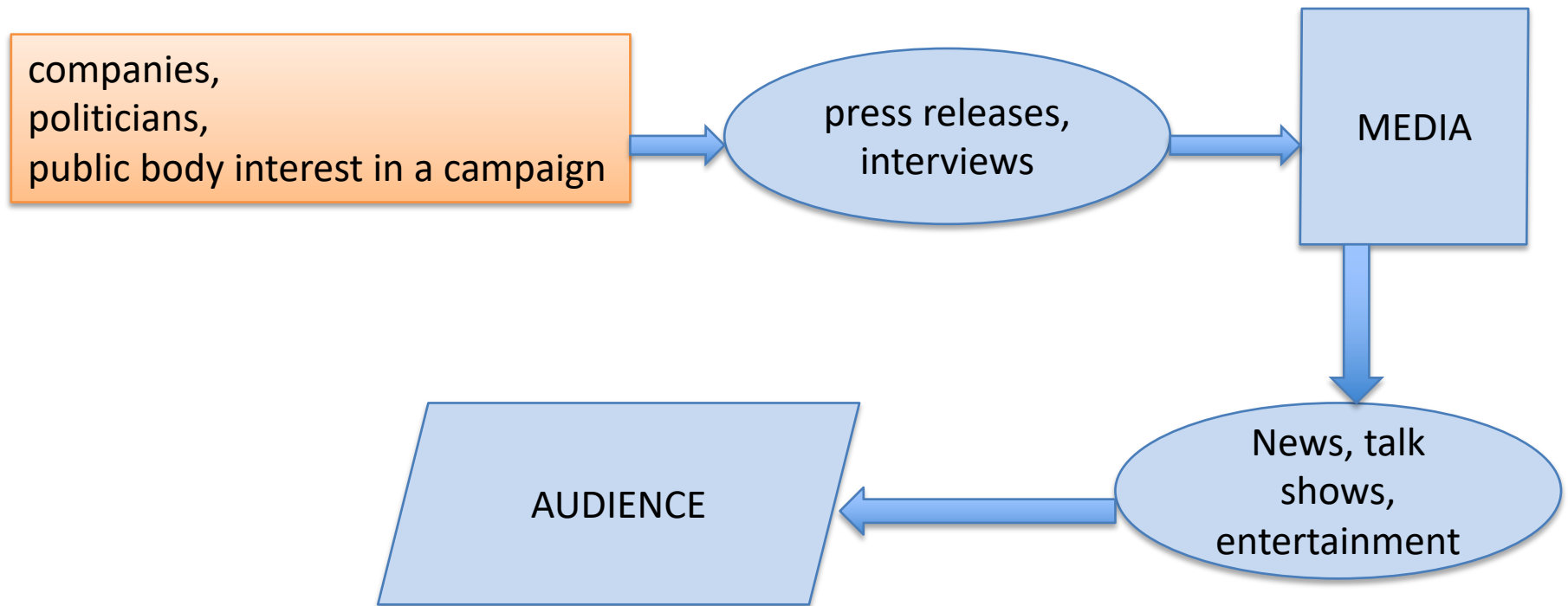
# Impact of Social Media on Government

**25th Jan 2011 Egypt Blocked Twitter and Facebook!**



*Egyptian protesters have openly thanked social media's role in the revolution against the country's ruling government.*

# Social Networks also impact on **media** **and communication**



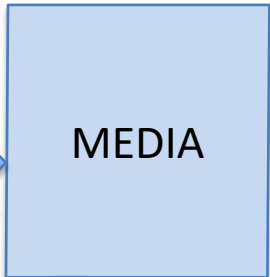
**Traditional method to reach audience**

# The social media revolution



**Oscar Giannino xFARE** @gianninoxFARE  
Nuntio vobis magnum gaudium: Stasera habemus @oGiannino a  
[#ballarò](#)

companies,  
politicians,  
public body interest in a campaign



MEDIA



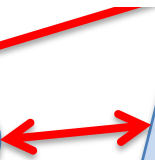
News, talk  
shows,  
entertainment



**panorao** @PanOrao 11m  
Ma [#Ballarò](#) va in onda per due settimane sia martedì che domenica?  
...ci vuole proprio sterminare [#Floris](#).



twitter, social  
media, web  
sites



**AUDIENCE**



**Ufficio Stampa Rai** @stampaurai 2h  
Questa sera a [#Ballarò](#) Roberto Maroni, Luigi De Magistris, Oscar Giannino e un'intervista a Silvio Berlusconi [ufficiostampa.rai.it/comunicati\\_tv/...](#)

2h



# The ICT revolution and new media

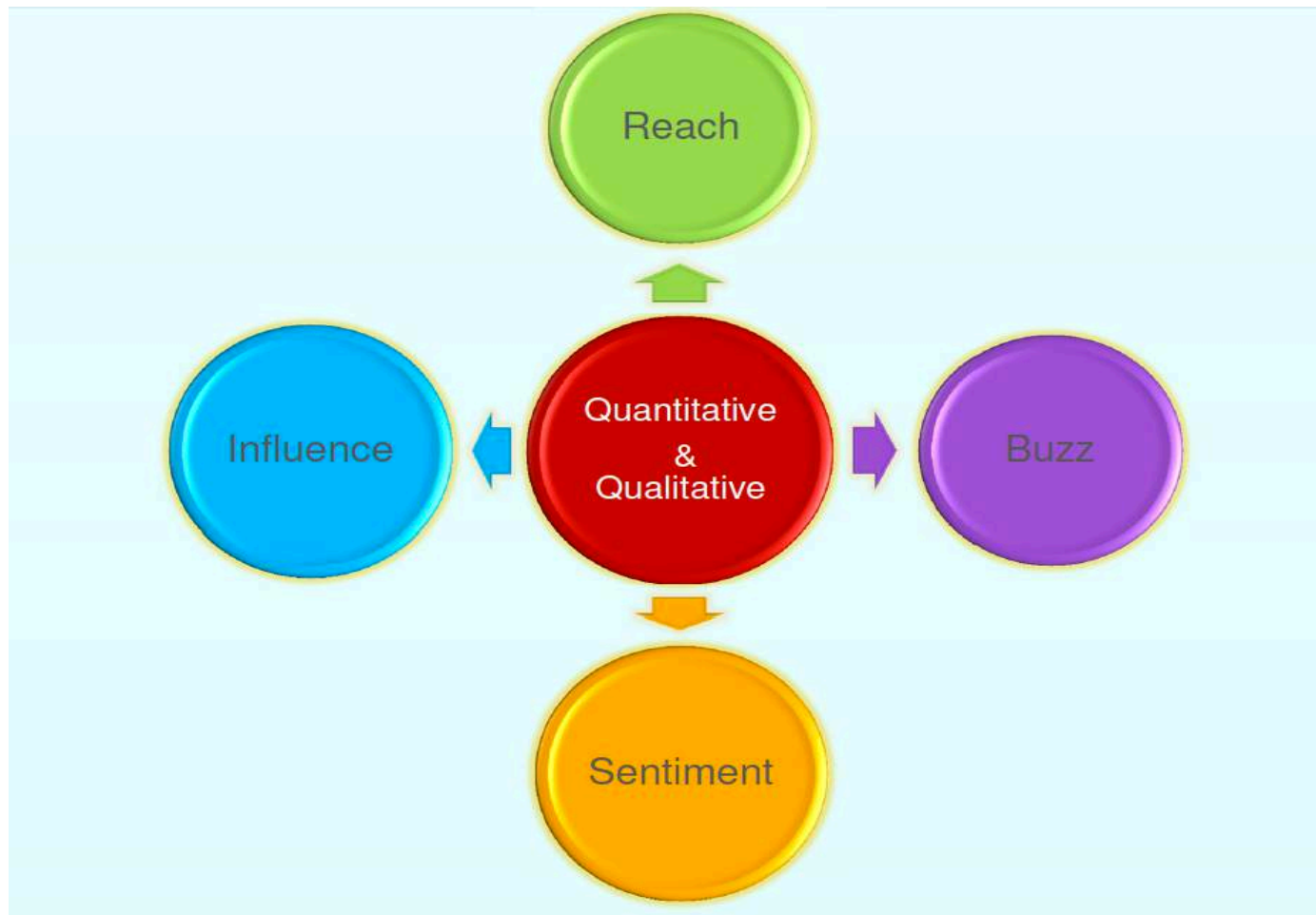
- news media, websites, social media and Twitter can be used by audiences, **but also by stakeholders and the media**
- Audience members can publish their opinions in the new media but are also **influenced themselves** by opinions of others in the new media

# Social Networks Measures

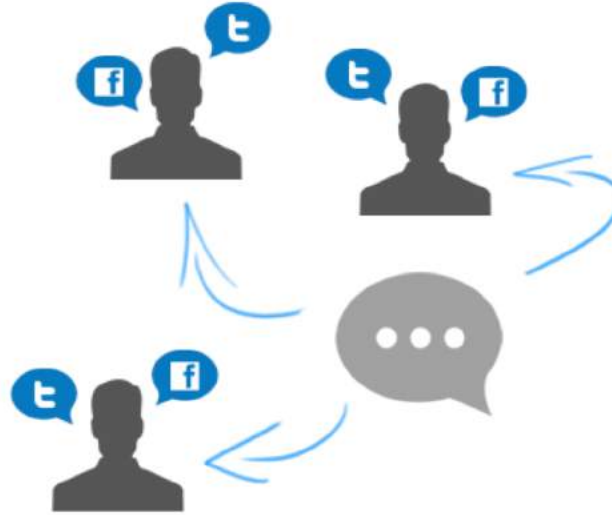
- **Surface Measures:** Based on some properties of specific nodes
- **Graph-based measures:** Based on the graph-structure of the network

# Measuring properties of individual nodes (users, web pages..)

## Key measurement goals



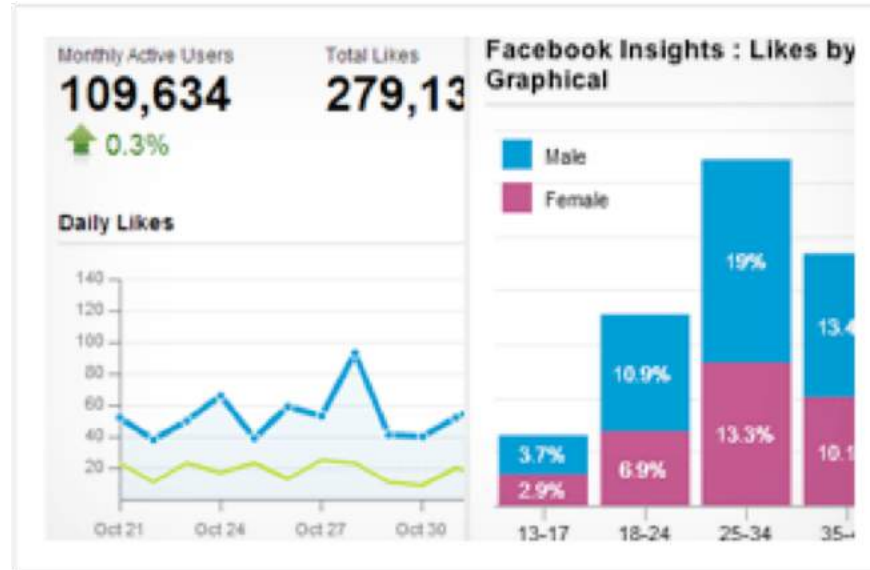
# 1. Reach



1. Reach
2. Buzz
3. Influence
4. Sentiment

- Reach
  - Size of your audience
  - How many saw your message
    - E.g. Twitter followers
    - Facebook posts (“seen by..”)

# Reach: Facebook Insights



Monitor and measure your fans, likes, comments and page activity

# Reach: Group Insight

Languages  
 Formal  
 Structures  
 Programming  
 Data  
 Architectures  
 Security  
 Algorithms  
 Computational  
 Methods  
 Web  
 Engineering  
 Graphics  
 Computational  
 Intelligence  
 Software  
 Complexity  
 Database



DIPARTIMENTO  
 DI INFORMATICA  
 SAPIENZA  
 UNIVERSITÀ DI ROMA

Joined ▾ ✓ Notifications ↗ Share ⋮ More

## Groups Insights

27 **+80%**

New Members  
Last 28 Days

⋮ More Growth Details

94 **-47%**

Posts, Comments and Reactions  
Last 28 Days

🔗 More Engagement Details



Saverio Gaminiti, Stefano Buccheri and others are top contributors.

👤 More Member Details

📄 Download Details

## Growth

Last 28 Days ▾

## Total Members

Apr 2, 2018 - Apr 29, 2018

617 Members



617  
Total Members  
**+5%**

Apr 2, 2018 - Apr 29, 2018

18 Posts

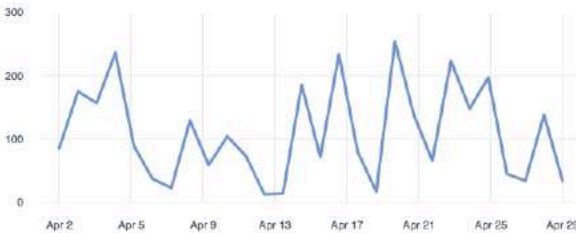


18  
Posts  
**-45%**

## Active Members

Apr 2, 2018 - Apr 29, 2018

444 Members



444  
Active Members

## Popular Days

Apr 1, 2018 - Apr 29, 2018

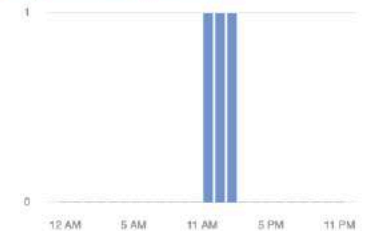
Posts, Comments and Reactions



## Popular Times

Apr 1, 2018 - Apr 29, 2018

Posts, Comments and Reactions

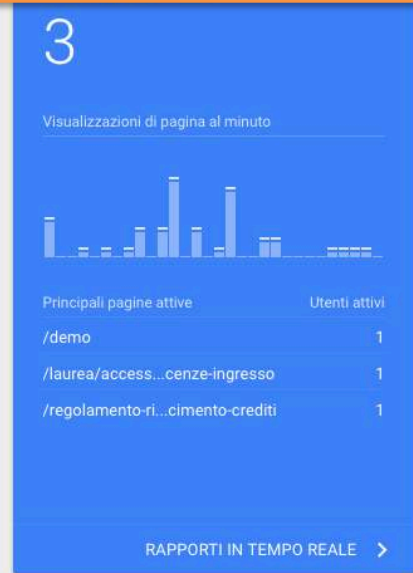
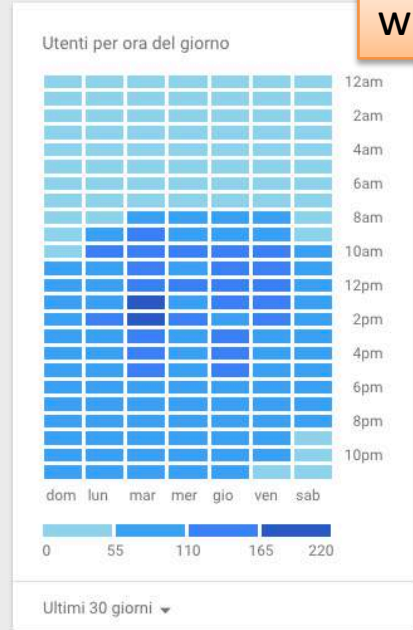


# Reach: Google Analytics

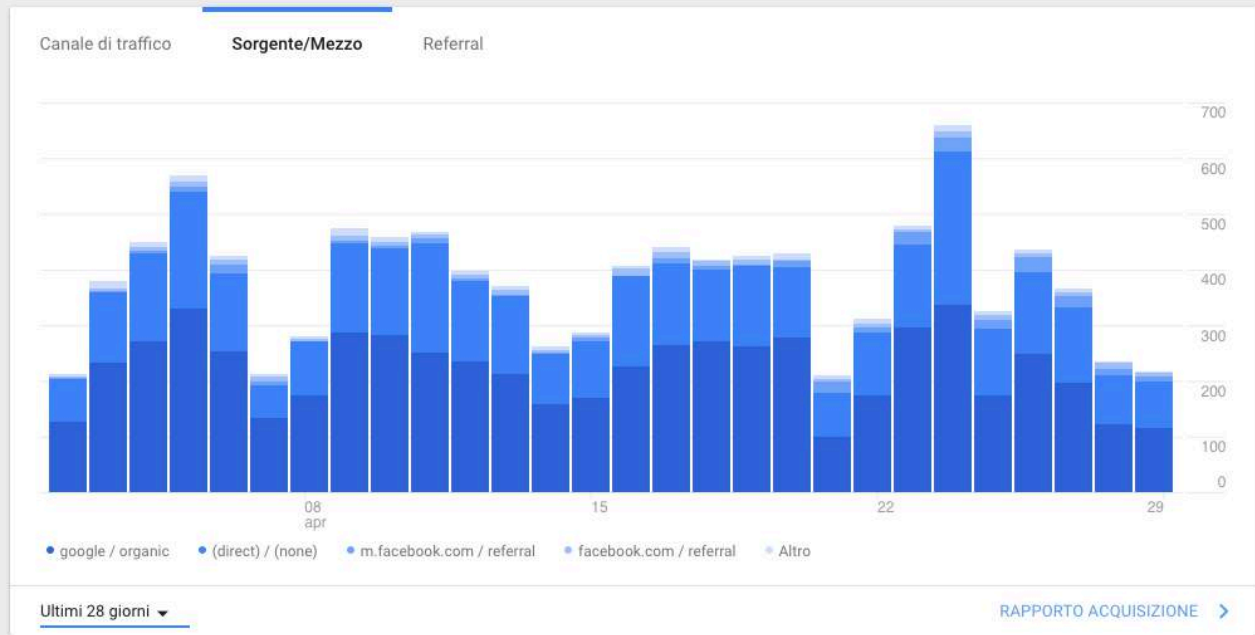
<http://www.google.com/analytics/>



With Google Analytics tool, you can monitor accesses on your web page. Drill down into site traffic data including source, and region. View sparklines for page views, bounce rates and more.



Come acquisisci nuovi utenti?



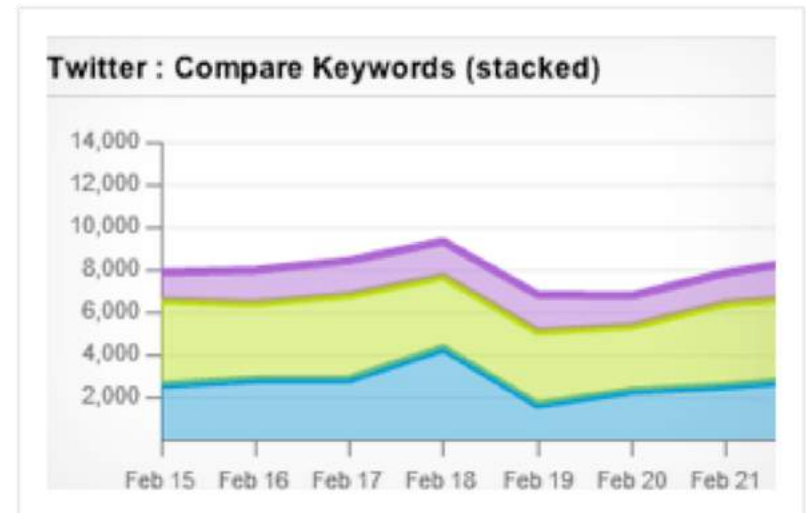
Dove si trovano i tuoi utenti?





# Reach: Twitter Profile statistics

- Track the number of followers, mentions, lists..
- Do more by comparing keywords over time and Twitter sentiment.



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

**TweetStats**

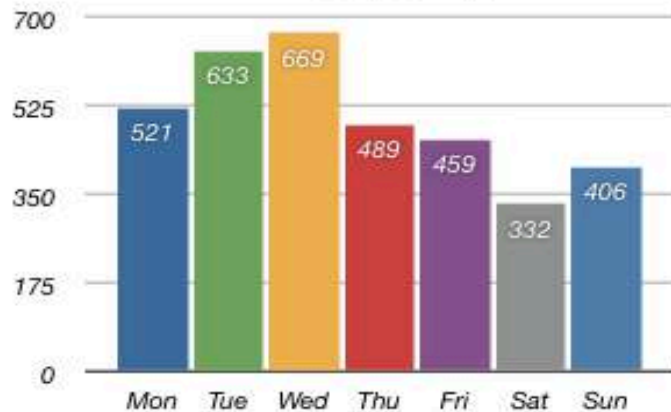
**In ur Tweets, Graphin' Your Stats!**

[Home](#)

[Trends](#)

[Donate](#)

*Tweets per Day*



Graph your Twitter Stats including

Tweets per hour

Tweets per month

Tweet timeline

Reply statistics

In use by nearly 1,000,000 Twitter-folk!

Enter your Twitter username

**Graph My Tweets!**

Looking for simple  
Social Media Monitoring?



Simply Measured

Brought to you by @dacort!

Refresh your stats - stats get updated when you come back after 8 hours and enter your username.

# Measures of Social Reach

- **Social reach**: #total followers across all social platforms
- **Growth**: month-over-month social reach growth
- **Engagement**=

$$\frac{\# \text{ Likes} + \# \text{ Shares} + \# \text{ Retweets} + \# \text{ blog comments}}{\# \text{ of published posts or pieces of content}}$$

## 2. Buzz

1. Reach
2. **Buzz**
3. Influence
4. Sentiment



- **Social Buzz** is the “amplification” of a topic/message through social media: **what are people saying about you**, **where** are they saying it, **how** are they saying it
  - 2 types:
    - Conversation Focus (@RP, reply) vs. Content Focus (#hashtags → topics)
- Mining **motivations**, in addition to data, as a way to understand an audience (either customers, voters, patients, or addressee of a campaign), is an entirely new approach to social analysis (e.g. opinions on #topic).

# Buzz Metrics example (1)

- Buzz metrics tool around the online social media elements related to the two U.S. Presidential candidates in 2012.
- Based on three measures:
  - **bookmarking,**
  - **social networking,**
  - **social knowledge**

## Buzz Metric example (2)

- **Bookmarking:** Social bookmarking relates to social media websites such as Digg, Del.icio.us, and Reddit. Users submit links to these websites that are of interest to them and other users vote on particular submissions of interest in order to increase their popularity.

# Buzz: Bookmarking

**digg**

Top Stories





Popular

Upcoming

THIS IS... SWEET?

## Kim Jong-Un And South Korean President Moon Jae-In Hug It Out After Making Peace Deal

 Benjamin Goggin Apr 27 2018, 9:57 AM

-  14 diggs
-  Save
-  Share
-  Tweet



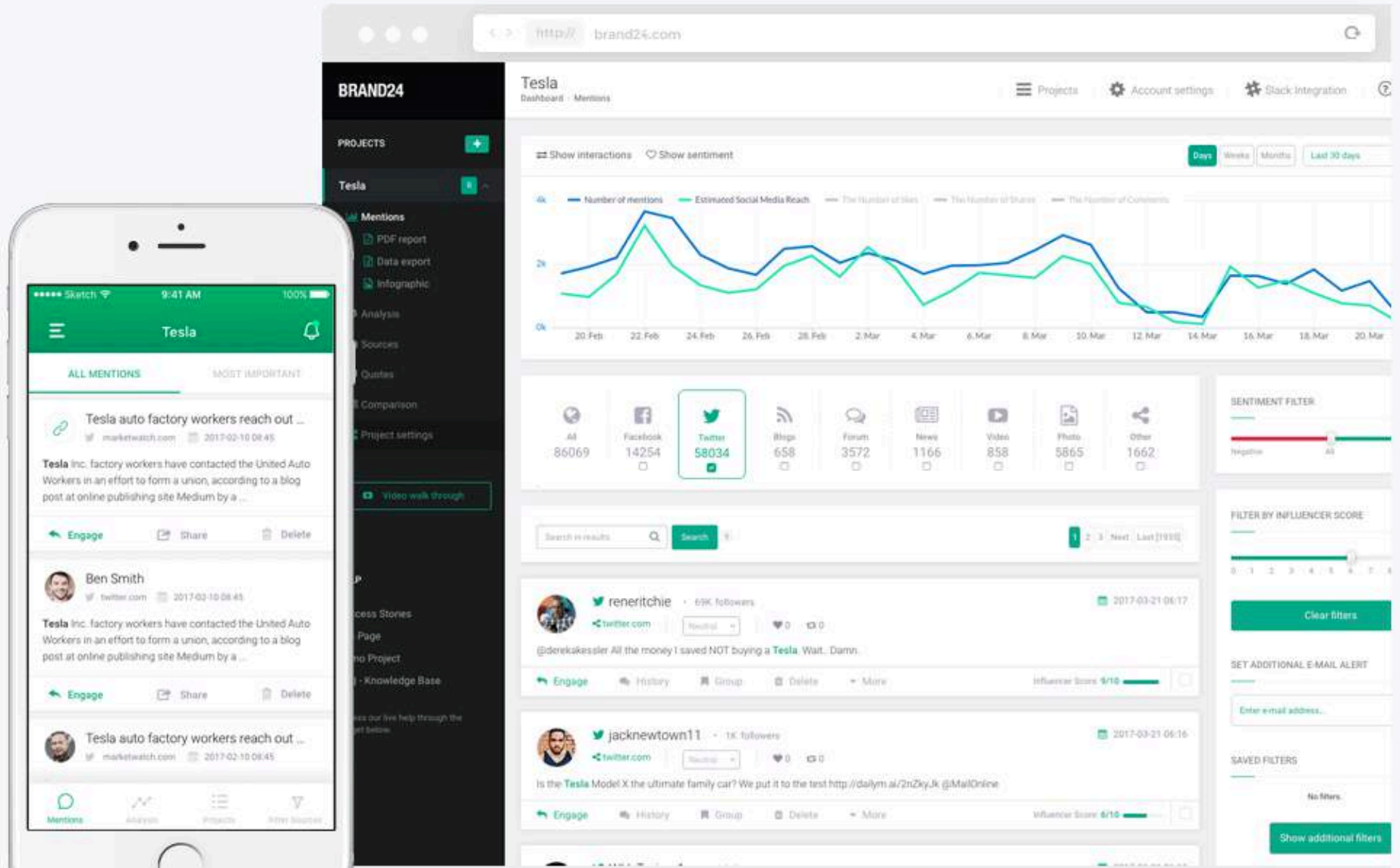
On Friday, North Korean leader Jim Jong-Un and South Korean President Moon Jae-In marked a historic agreement between their two countries with a hug. The act of friendliness, which no one could have predicted just a few months

## Buzz Metric example (3)

- **Social Networking:** Social Networking refers to communities such as MySpace, Facebook, and Friendster. **Account creation, total friends, mentioning of company on a particular page,** and other important factors to determine the total buzz.



# Buzz metric Example: Social Mention



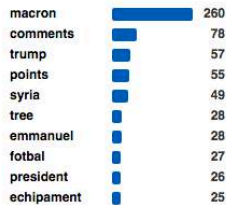
# Social mention: search (Macron)



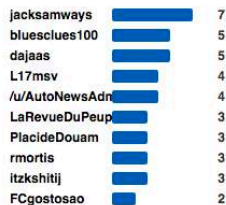
## Sentiment



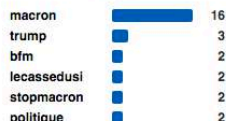
## Top Keywords



## Top Users



## Top Hashtags



## Mentions about Macron

Sort By:  Results:  Results 1 - 15 of 202 mentions.

- RT @actualiteitjunk: #Macron devant le congres des #USA.... Par @ChaunuShow #selfie** <https://t.co/9WQocrjXba>  
[twitter.com/LNavier/status/990898676154470400](https://twitter.com/LNavier/status/990898676154470400)  
 3 minutes ago - by @LNavier on [twitter](#)
- Macron's Trump ploy didn't work for Abe -** <https://t.co/KYtlcZ8Myf>  
[#LatestComments https://t.co/gaZK1Ehdkn](https://t.co/gaZK1Ehdkn)  
[twitter.com/LatestComments/status/990898677152612352](https://twitter.com/LatestComments/status/990898677152612352)  
 3 minutes ago - by @LatestComments on [twitter](#)
- « Président raté », « ego démesuré »: une tribune dans le New York Times assassine Macron** <https://t.co/7tgDp0hxG1> via @  
[twitter.com/anniedelagane/status/990898674086612992](https://twitter.com/anniedelagane/status/990898674086612992)  
 3 minutes ago - by @anniedelagane on [twitter](#)
- RT @Independent: Tree planted by Donald Trump and Emmanuel Macron on White House lawn mysteriously disappears** <https://t.co/wZAQfG2b84>  
[twitter.com/DreaPeking/status/990898664406122496](https://twitter.com/DreaPeking/status/990898664406122496)  
 3 minutes ago - by @DreaPeking on [twitter](#)
- RT @brutoficiel: LIVE - @ChTaubira répond à Brut : un an de présidence Macron, les 5 ans du mariage pour tous, la grogne sociale. Elle rép...**  
[twitter.com/MrLughsson/status/990898659637235712](https://twitter.com/MrLughsson/status/990898659637235712)  
 3 minutes ago - by @MrLughsson on [twitter](#)
- RT @dsn89s: Hallucinant tant de bobards pour sauver leur jupiter ..et masquer les magouilles de sa campagne il faut destituer macron .h...**  
[twitter.com/naiyana64/status/990898658508918784](https://twitter.com/naiyana64/status/990898658508918784)  
 3 minutes ago - by @naiyana64 on [twitter](#)
- #Revolting complicity #Rouhani tells Macron Iran nuclear deal 'non-negotiable.' Pompeo says 'fix it' or let it die...** <https://t.co/hnf8Dk17Of>  
[twitter.com/BolloDeanna/status/990898654306332672](https://twitter.com/BolloDeanna/status/990898654306332672)  
 3 minutes ago - by @BolloDeanna on [twitter](#)
- RT @CECKERT56: Les Macron ont emménagé à l'Elysée courant 2017. Ils ne recevront leur avis de taxe d'habitation pour leur logement de l'FI**

# Buzz Metric example (4)

- **Social Knowledge:** Social Knowledge refers to informational based websites such as “Yahoo! Answers” and “Wikipedia”. Buzz is calculated differently on each of these websites.

# Social Knowledge

## Yahoo! Answers



**Resolved Question** [Show me another »](#)

**Honestly, what's a democrat?**

Arthur Reeves 2 years ago [Report Abuse](#)

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**Best Answer** - Chosen by Asker

I don't know much about politics and I don't know what the democratic party of the past has been like, but I can tell you what I know about it now:  
Democrats are into big government:  
They want the government to take care of people with welfare, medicaid, unemployment, etc.  
Democrats care more about social issues like gay rights, abortion, etc.

That is all I know.

There is a lot more to research before you support one party or the other and I suggest you do.

Source(s):  
A democrat because of my social liberalism.


2 years ago [Report Abuse](#)

 1 person rated this as **good**

**Asker's Rating: \*\*\*\*\***  
Thank you Andi

[Interesting](#) [Email](#) [Comment \(0\)](#) [Save](#)

[f](#) [t](#) [in](#) [g+](#)

 This question about "Honestly, what's a d..." was originally asked on Yahoo! Answers United States

**Other Answers (4)**

# Buzz Metrics example (5)

- Trending topics: what (most) people is talking about on the web. Can be detected by analyzing “patterns of attentions” e.g. temporal sequences of words in messages or in users’ queries that show a “bursty” behaviour

Donald trump  
Termini di ricerca

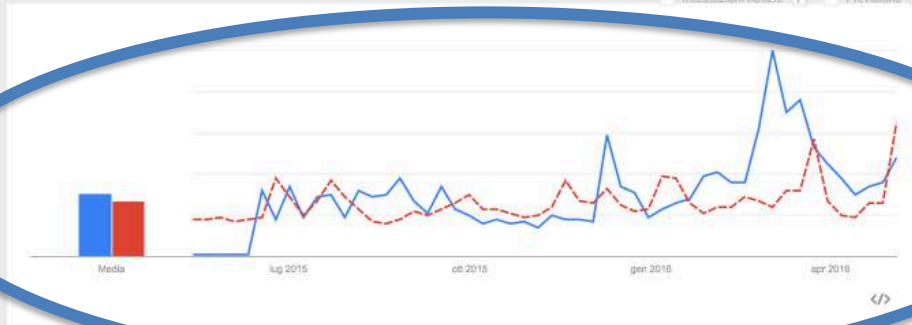
Barack Obama  
44th U.S. President

+ Aggiungi termine

Beta: la misurazione dell'interesse di ricerca per gli argomenti è una funzione beta che fornisce rapidamente misurazioni accurate dell'interesse di ricerca generale. Per misurare l'interesse di ricerca per una determinata query, seleziona l'opzione "termini di ricerca".

# Google Trends

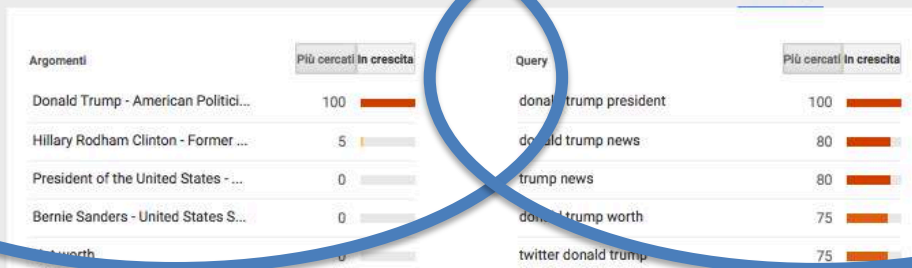
## Interesse nel tempo



## Interesse regionale



## Ricerche correlate



# Search for Hashtag Popularity, Trends and Correlations

# [Twitter] [Instagram]

Macron Search Track

Showing: #Macron Download Plugin



## Related Hashtags

**CORRELATION** POPULARITY



## Top Influencers

ALL-TIME RECENT



See Top Influencers Tweet

# Buzz Metric example (summary)

Website	Bookmarking	Social Networking	Social Knowledge	Total Buzz
RNC.org	272	142	314	728
GOP.org	28	56	85	169
Democrats.org	2,963	1,880	1,682	6,525
DemConvention.com	365	338	230	933

RNC and GOP = Republican official websites  
Democrats and DemConvention = same for Democrats



# Buzz Metric example (summary)

## Additional (simpler) measures

Keyword	Google	Yahoo	MSN	Total
Republican	84,300,000	453,000,000	20,700,000	558,000,000
Republican Party	14,500,000	209,000,000	19,500,000	243,000,000
Democrat	50,600,000	201,000,000	9,560,000	261,160,000
Democratic Party	25,900,000	254,000,000	24,400,000	304,300,000

Website	Traffic Rank	Links	Page Views	Competitive Rank
RNC.org	161,445	225,532	1	4
GOP.org	1,036,860	14,288	1	7
Democrats.org	31,738	1,109,598	2.2	1
DemConvention.com	23,993	154,377	1.7	3

# 3. Influence



1. Reach
2. Buzz
- 3. Influence**
4. Sentiment

- Your message is valuable when it is repeated and/or commented
  - High probability of others referencing & reproducing what you say
  - E.g. Twitter: reply/mention (@xxx) & retweet (RT)

# Twitter as a mean to disseminate information

- Its primary function is not as a social network but perhaps to **spread news** (including personal news) or other information.
- An unusual feature of Twitter is **re-tweeting**: forwarding a tweet by posting it again: “Hmmm pretty good incentive.. RT [@RT com](#): US high school allows Muslims time for prayer if they earn good grades <http://on.rt.com/kka96w>”
- If re-tweeted, a tweet can expect to reach an average of **1000 users (Kwak et al.)**
- Another communicational feature of Twitter is the **hashtag**: a meta-tag beginning with # that is designed to help others find a post:



**grumpybutcuddly** @grumpybutcuddly · 51 min

With a majority #Cameron will be able to sort out boundary changes & English votes for English matters & end left wing politics forever :-)



# Influential Analysis (Twitter)

- **Retweet** and **Reply** features of Twitter is used to enable real-time study

$$\text{Influential Index} = \frac{n(\text{Reply}) + n(\text{Retweet})}{n(\text{Tweet})}$$

For example, a tweet :

Verizon will launch iPhone 4 on 10 Feb sent by user ABC

Retweet (think of it as forwarding)

**RT @ABC** Verizon will launch iPhone 4 on 10 Feb

Reply

**@ABC** thanks... I will be there to get one

# Influential Analysis : Amplification



- On Twitter:
  - Amplification = # of Retweets Per Tweet
- On Facebook, Google Plus:
  - Amplification = # of Shares Per Post
- On a blog, YouTube:
  - Amplification = # of Share Clicks Per Post (or Video)

# Influential Analysis : Applause



- On Twitter:
  - Applause Rate = # of Favorite Clicks Per Post
- On Facebook:
  - Applause Rate = # of Likes Per Post
- On Google Plus:
  - Applause Rate = # of +1s Per Post
- On a Blog, YouTube:
  - Applause Rate = # of +1s and Likes Per Post (or video)



# Summary (Reach, Buzz, Influence)

Measure		
Reach	Social reach	#total followers
	Growth	social reach growth along time
	Engagement	$\frac{\# \text{ Likes} + \# \text{ Shares} + \# \text{ Retweets} + \# \text{ blog comments}}{\# \text{ of published posts or pieces of content}}$
Buzz	Nominations /visualizations	#bookmarks, #mentions on web, #likes, keyword trends
Influence	Influential index	$(\# \text{ reply} + \# \text{ retweets}) / \# \text{ tweets}$
	Amplification	# of Retweets (Shares) Per Tweet (post)
	Applause	#favorite clicks (or like, or +) x post

Sentiment analysis in a dedicated lesson