

# Social Computing and Big Data Analytics

## 社群運算與大數據分析

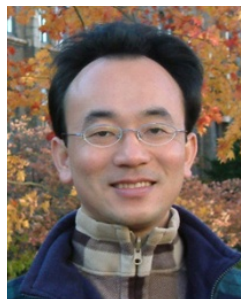
# Social Media Marketing Analytics

## (社群媒體行銷分析)

1042SCBDA08

MIS MBA (M2226) (8628)

Wed, 8,9, (15:10-17:00) (B309)



Min-Yuh Day

戴敏育

Assistant Professor

專任助理教授

Dept. of Information Management, Tamkang University

淡江大學 資訊管理學系

<http://mail.tku.edu.tw/myday/>

2016-04-13



# 課程大綱 (Syllabus)

週次 (Week)	日期 (Date)	內容 (Subject/Topics)
1	2016/02/17	Course Orientation for Social Computing and Big Data Analytics (社群運算與大數據分析課程介紹)
2	2016/02/24	Data Science and Big Data Analytics: Discovering, Analyzing, Visualizing and Presenting Data (資料科學與大數據分析： 探索、分析、視覺化與呈現資料)
3	2016/03/02	Fundamental Big Data: MapReduce Paradigm, Hadoop and Spark Ecosystem (大數據基礎：MapReduce典範、 Hadoop與Spark生態系統)

# 課程大綱 (Syllabus)

週次 (Week)	日期 (Date)	內容 (Subject/Topics)
4	2016/03/09	Big Data Processing Platforms with SMACK: Spark, Mesos, Akka, Cassandra and Kafka (大數據處理平台SMACK : Spark, Mesos, Akka, Cassandra, Kafka)
5	2016/03/16	Big Data Analytics with Numpy in Python (Python Numpy 大數據分析)
6	2016/03/23	Finance Big Data Analytics with Pandas in Python (Python Pandas 財務大數據分析)
7	2016/03/30	Text Mining Techniques and Natural Language Processing (文字探勘分析技術與自然語言處理)
8	2016/04/06	Off-campus study (教學行政觀摩日)

# 課程大綱 (Syllabus)

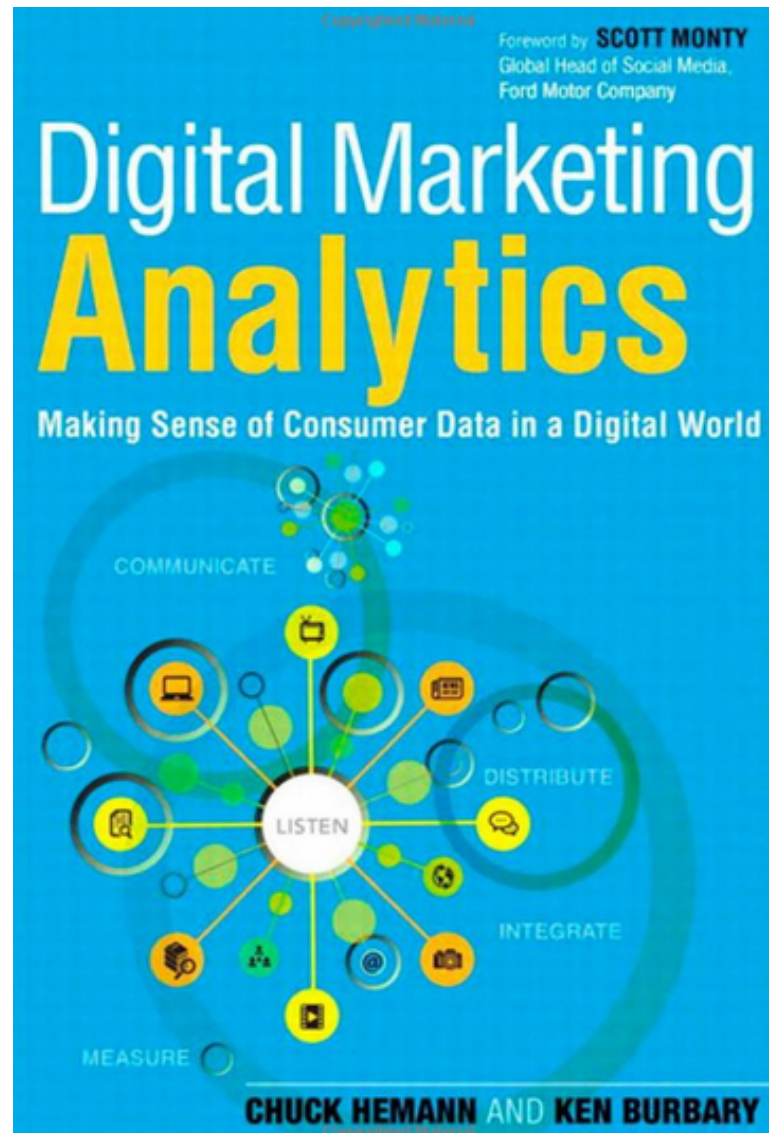
週次 (Week)	日期 (Date)	內容 (Subject/Topics)
9	2016/04/13	Social Media Marketing Analytics (社群媒體行銷分析)
10	2016/04/20	期中報告 (Midterm Project Report)
11	2016/04/27	Deep Learning with Theano and Keras in Python (Python Theano 和 Keras 深度學習)
12	2016/05/04	Deep Learning with Google TensorFlow (Google TensorFlow 深度學習)
13	2016/05/11	Sentiment Analysis on Social Media with Deep Learning (深度學習社群媒體情感分析)

# 課程大綱 (Syllabus)

週次 (Week)	日期 (Date)	內容 (Subject/Topics)
14	2016/05/18	Social Network Analysis (社會網絡分析)
15	2016/05/25	Measurements of Social Network (社會網絡量測)
16	2016/06/01	Tools of Social Network Analysis (社會網絡分析工具)
17	2016/06/08	Final Project Presentation I (期末報告 I)
18	2016/06/15	Final Project Presentation II (期末報告 II)

# **Social Media Marketing Analytics**

# Digital Marketing Analytics: Making Sense of Consumer Data in a Digital World, Chuck Hemann and Ken Burbary, Que. 2013



# **Consumer Psychology and Behavior on Social Media**

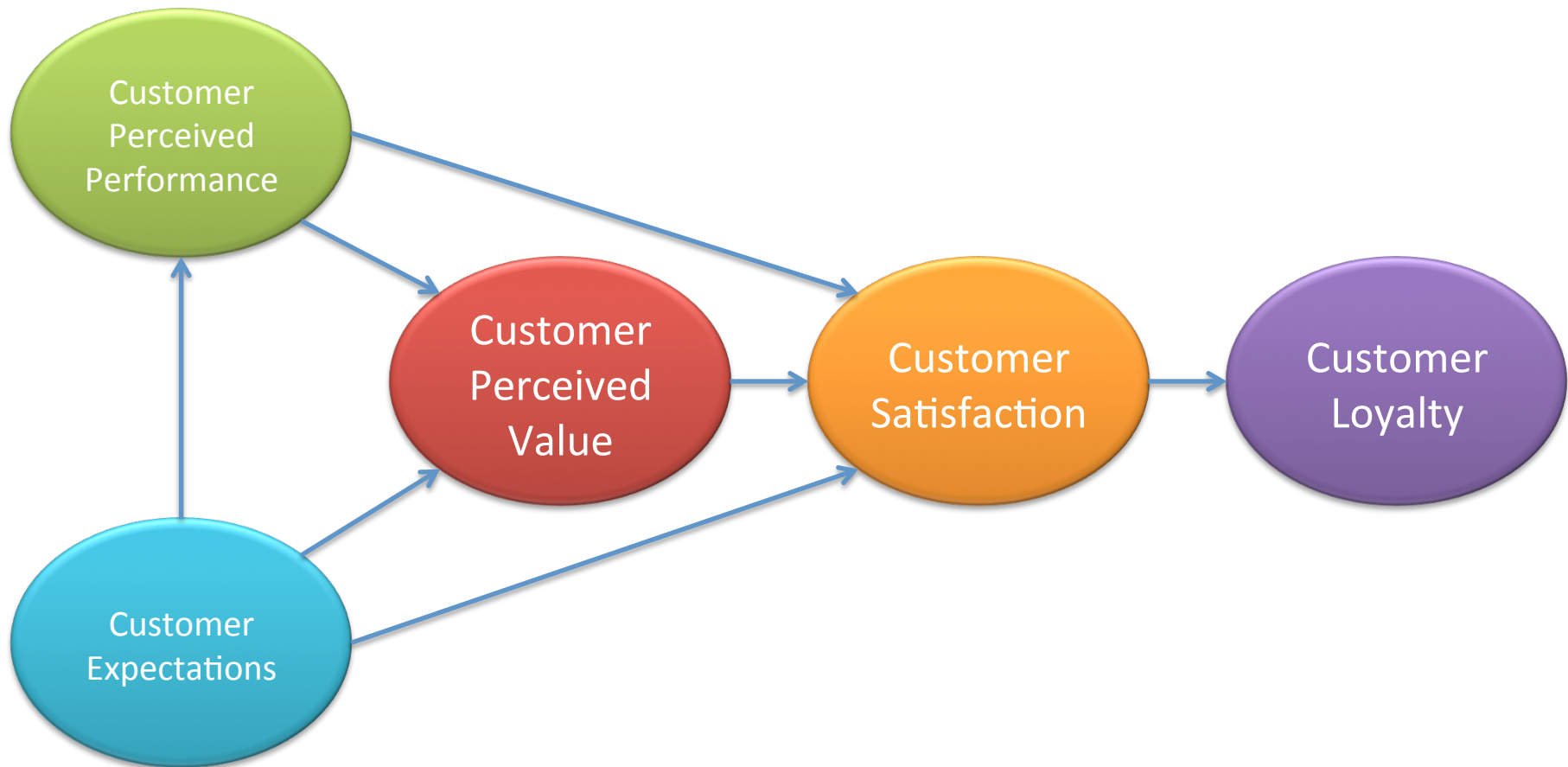


# How consumers think, feel, and act

# Analyzing Consumer Markets

- The aim of marketing is to **meet** and **satisfy** target customers' **needs and wants** better than competitors.
- Marketers must have a thorough understanding of **how consumers think, feel, and act** and **offer clear value** to each and every target consumer.

# Customer Perceived Value, Customer Satisfaction, and Loyalty



# Social Media Marketing Analytics

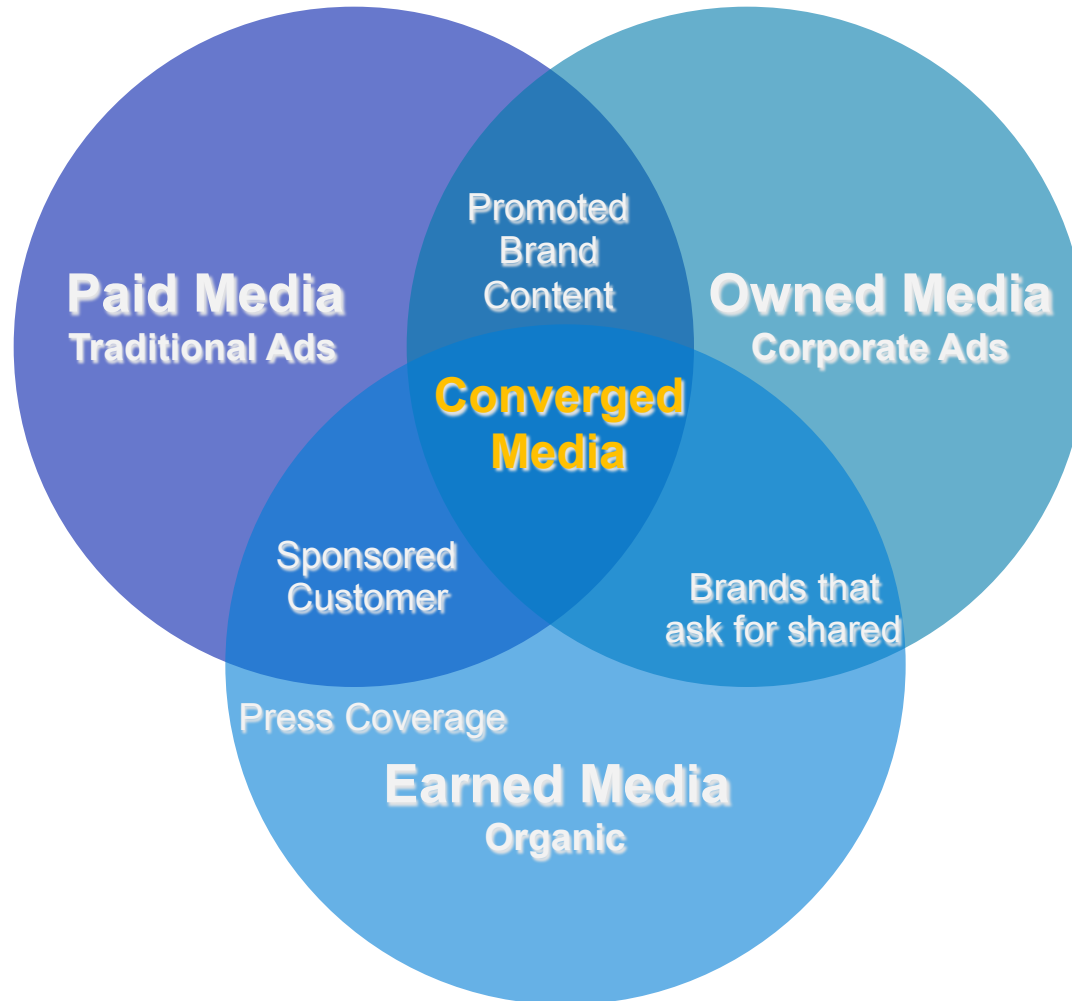
Social Media Listening

Search Analytics

Content Analytics

Engagement Analytics

# The Convergence of Paid, Owned & Earned Media



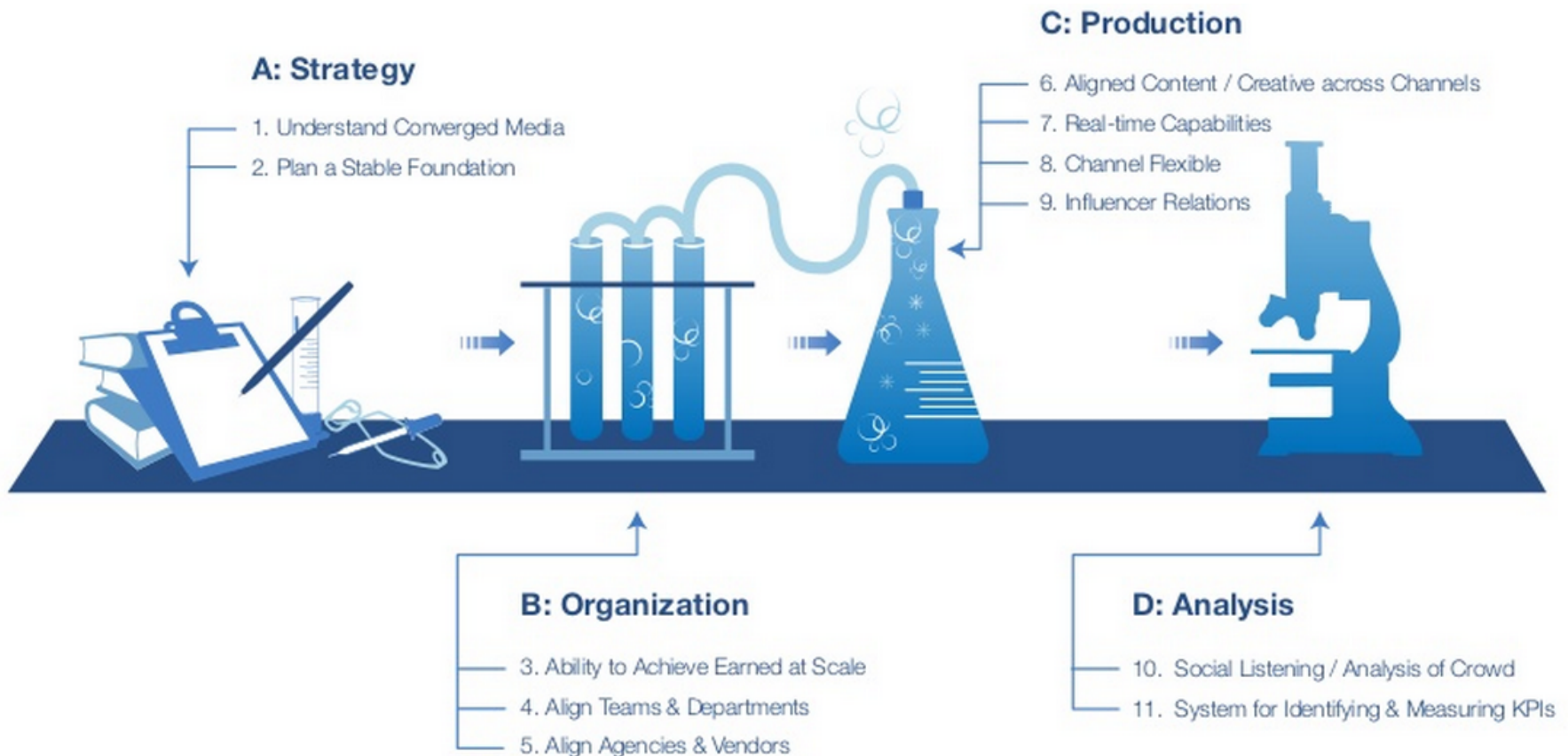
Source: "The Converged Media Imperative: How Brands Will Combine Paid, Owned and Earned Media",  
Altimeter Group, July 19, 2012)

<http://www.altimetergroup.com/2012/07/the-converged-media-imperative/>

# Converged Media

## Top 11 Success Criteria

### Social Listening / Analysis of Crowd

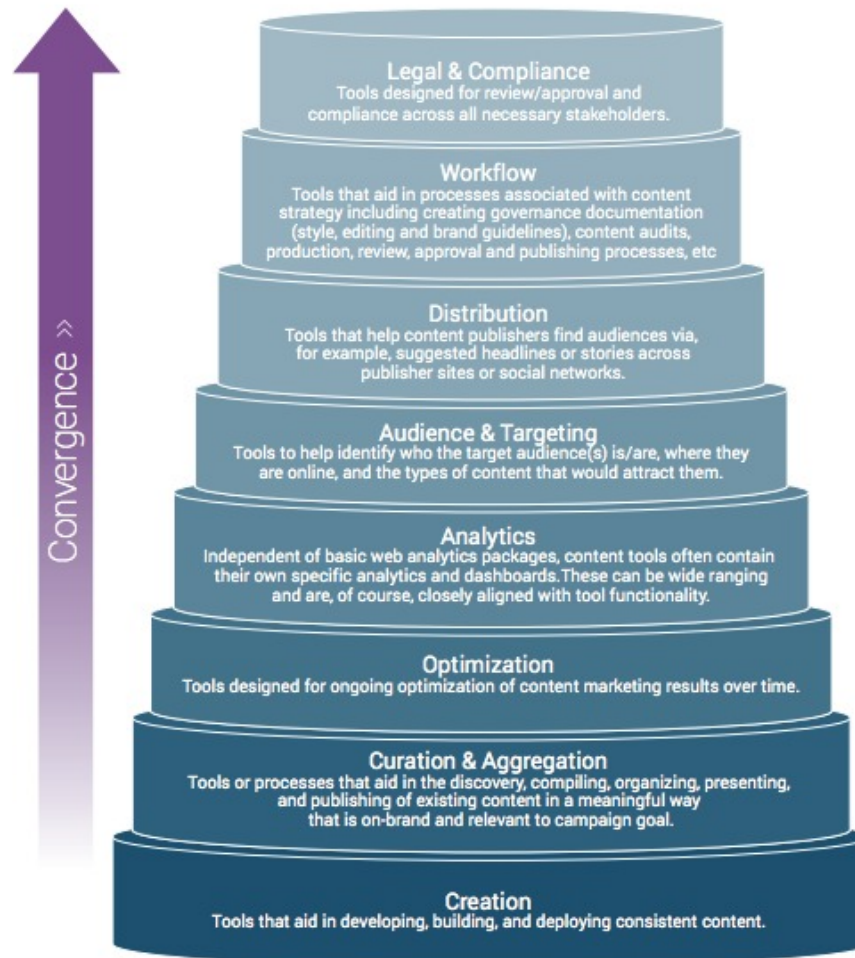


Source: "The Converged Media Imperative: How Brands Will Combine Paid, Owned and Earned Media",  
Altimeter Group, July 19, 2012)

<http://www.altimetergroup.com/2012/07/the-converged-media-imperative/>

# Content Tool Stack Hierarchy

Figure 3 Content Tool Stack Hierarchy



Source: Altimeter Group

Source: Rebecca Lieb, "Content marketing in 2015 -- research, not predictions", December 16, 2014

<http://www.imediaconnection.com/content/37909.asp>

# Competitive Intelligence

- Gather competitive intelligence data



# Google Alexa Compete

- Which audience segments are competitors reaching that you are not?
- What keywords are successful for your competitors?
- What sources are driving traffic to your competitors' websites?

# Competitive Intelligence

- Facebook competitive analysis
- Facebook content analysis
- YouTube competitive analysis
- YouTube channel analysis
- Twitter profile analysis

# Web Analytics (Clickstream)

- Content Analytics
- Mobile Analytics

# Mobile Analytics

- Where is my mobile traffic coming from?
- What content are mobile users most interested in?
- How is my mobile app being used?  
What's working?  
What isn't?
- Which mobile platforms work best with my site?
- How does mobile user's engagement with my site compare to traditional web users' engagement?

# Identifying a Social Media Listening Tool

- Data Capture
- Spam Prevention
- Integration with Other Data Sources
- Cost
- Mobile Capability
- API Access
- Consistent User Interface
- Workflow Functionality
- Historical Data

# Search Analytics

- Free Tools for Collecting Insights Through
  - Search Data
  - Google Trends
  - YouTube Trends
  - The Google AdWords Keyword Tool
  - Yahoo! Clues
- Paid Tools for Collecting Insights Through Search Data
- The BrightEdge SEO Platform

# Owned Social Metrics

- Facebook page
- Twitter account
- YouTube channel

# Own Social Media Metrics: Facebook

- Total likes
- Reach
  - Organic
  - Paid reach
  - Viral reach
- Engaged users
- People talking about this (PTAT)
- Likes, comments, and shares by post



# Own Social Media Metrics: Twitter

- Followers
- Retweets
- Replies
- Clicks and click-through rate (CTR)
- Impressions

# Own Social Media Metrics: YouTube

- Views
- Subscribers
- Likes/dislikes
- Comments
- Favorites
- Sharing

# Own Social Media Metrics: SlideShare

- Followers
- Views
- Comments
- Shares

# Own Social Media Metrics: Pinterest

- Followers
- Number of boards
- Number of pins
- Likes
- Repins
- Comments

# Own Social Media Metrics: Google+

- Number of people who have an account circled
- +1s
- Comments

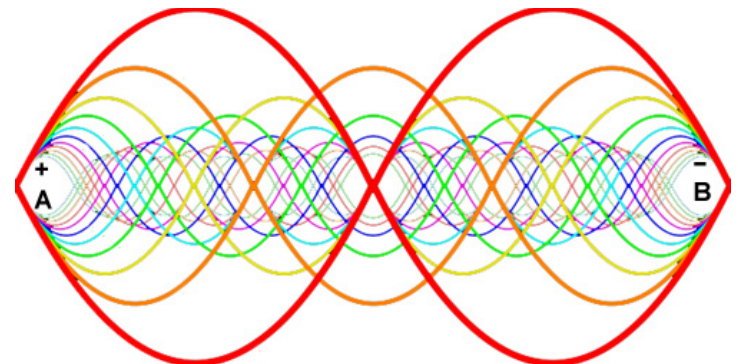
# Earned Social Media Metrics

- Earned conversations
- In-network conversations

# Earned Social Media Metrics:

## Earned conversations

- Share of voice
- Share of conversation
- Sentiment
- Message resonance
- Overall conversation volume



Source: <http://www.elvtd.com/elevation/p/beings-of-resonance>

# Demystifying Web Data

- Visits
- Unique page views
- Bounce rate
- Pages per visit
- Traffic sources
- Conversion



# Searching for the Right Metrics



# Paid Searches

- Impressions
- Clicks
- Click-through rate (CTR)
- Cost per click (CPC)
- Impression share
- Sales or revenue per click
- Average position

# Organic Searches

- Known and unknown keywords
- Known and unknown branded keywords
- Total visits
- Total conversions from known keywords
- Average search position

# Aligning Digital and Traditional Analytics

- Primary Research
  - Brand reputation
  - Message resonance
  - Executive reputation
  - Advertising performance
- Traditional Media Monitoring
- Traditional CRM Data

# Social Media Listening Evolution

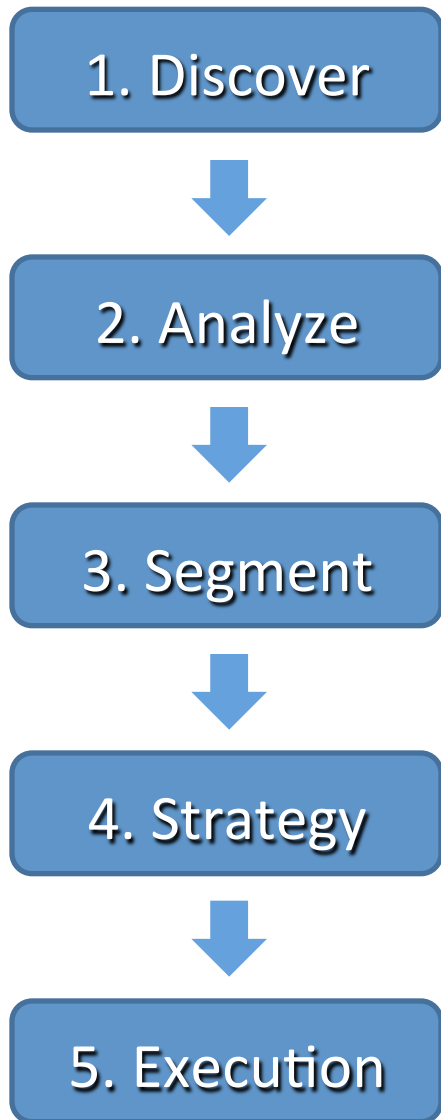
Location of conversations

Sentiment

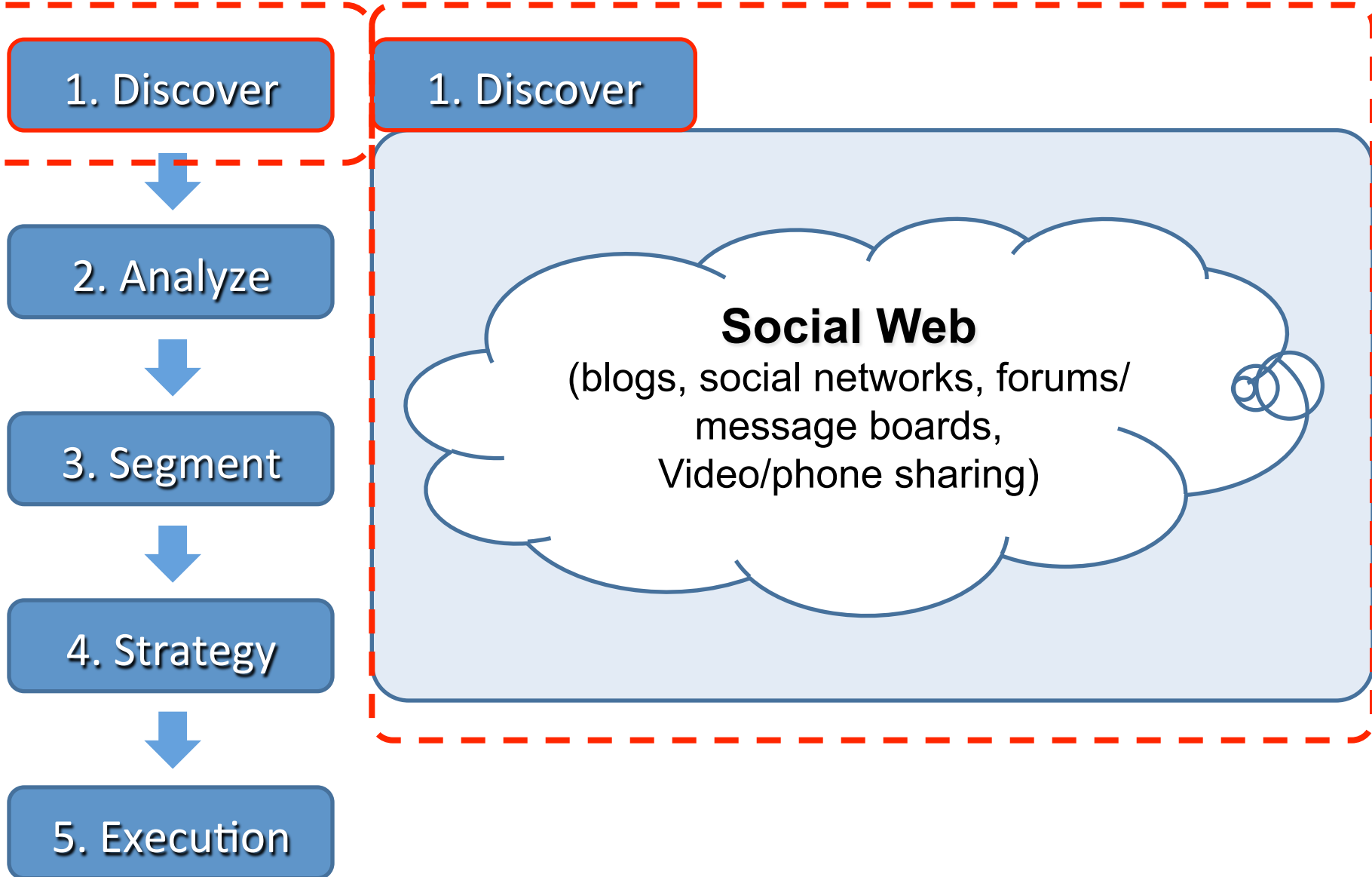
Key message penetration

Key influencers

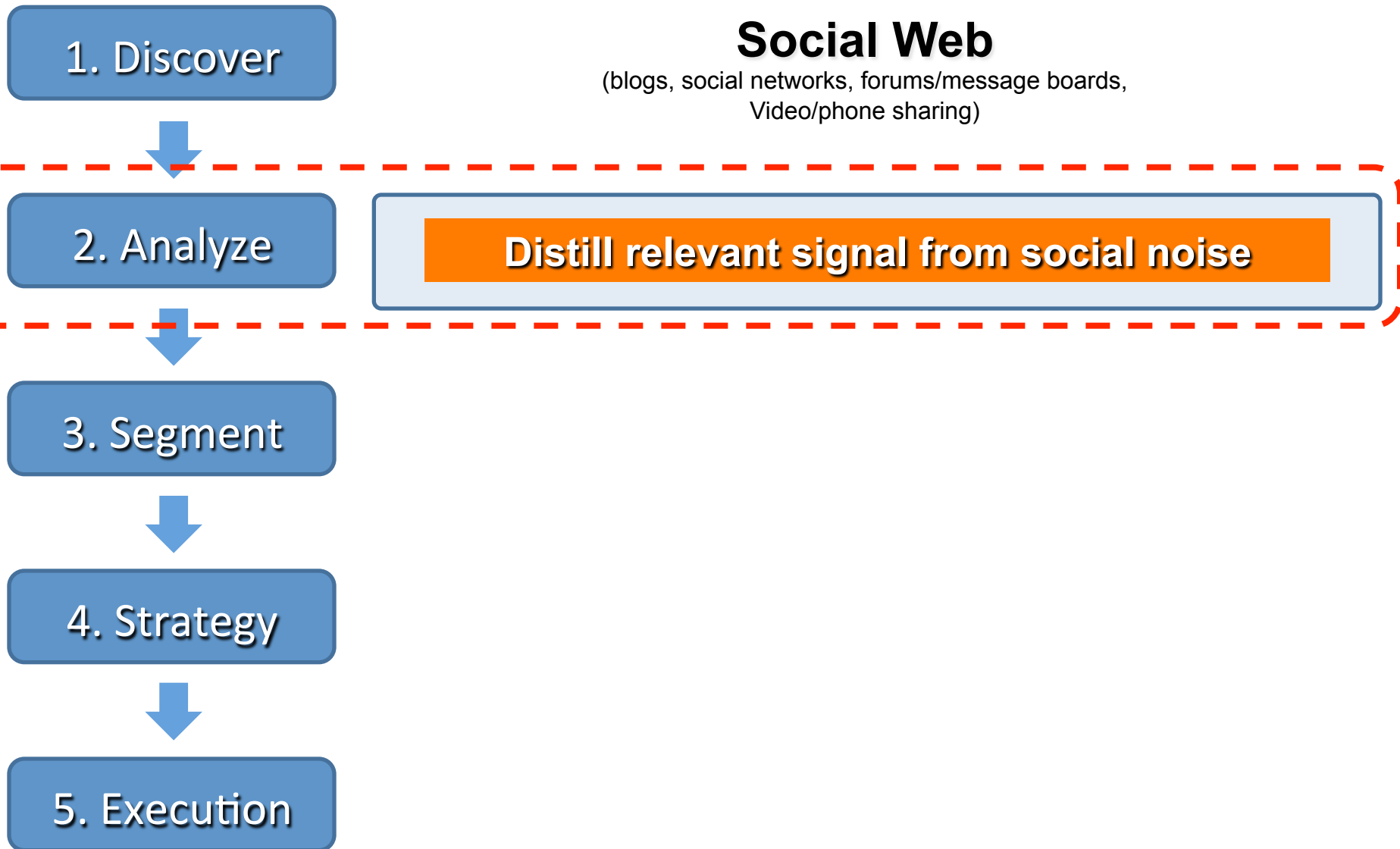
# Social Analytics Lifecycle (5 Stages)



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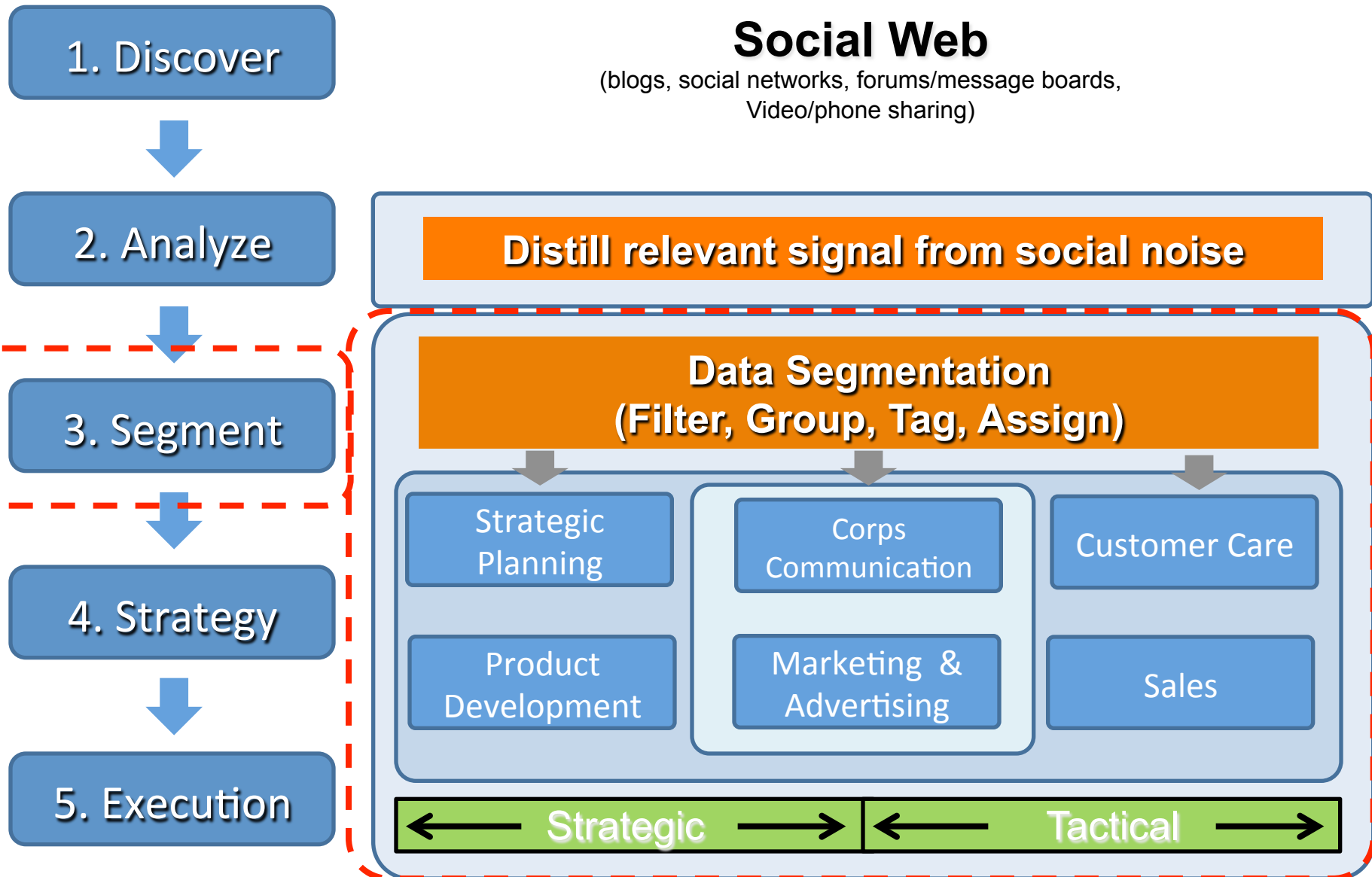


# Social Analytics Lifecycle (5 Stages)

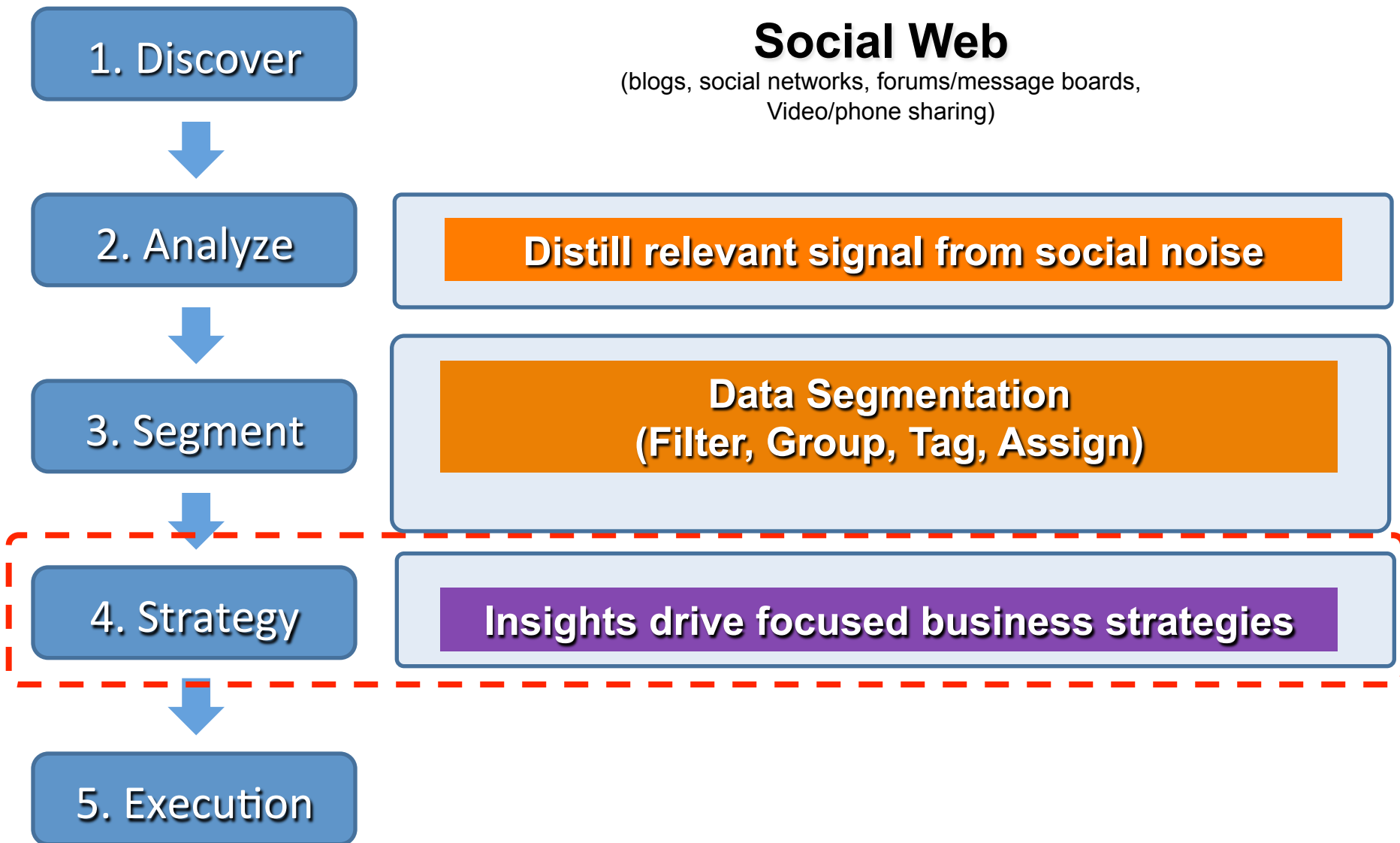




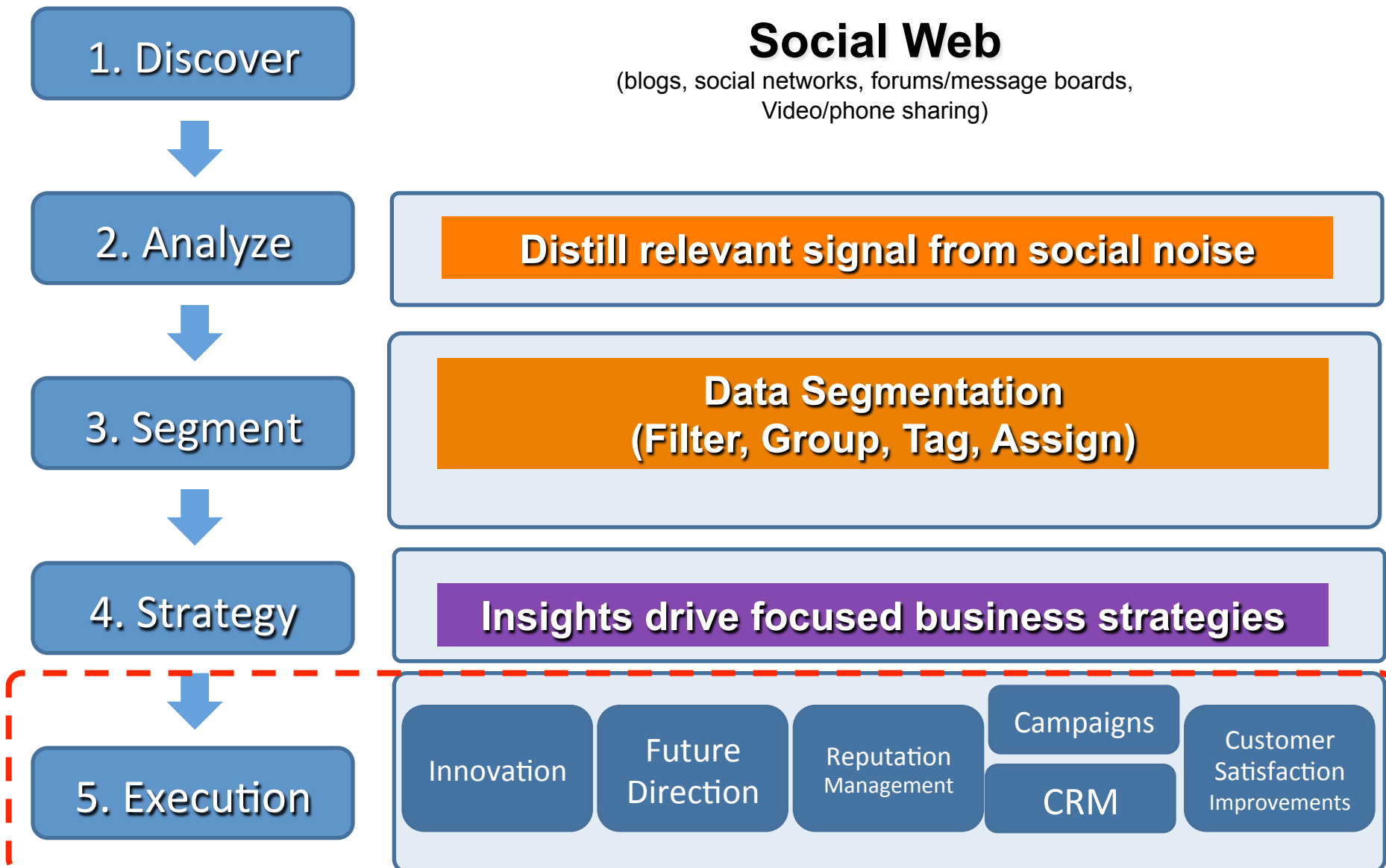
# Social Analytics Lifecycle (5 Stages)



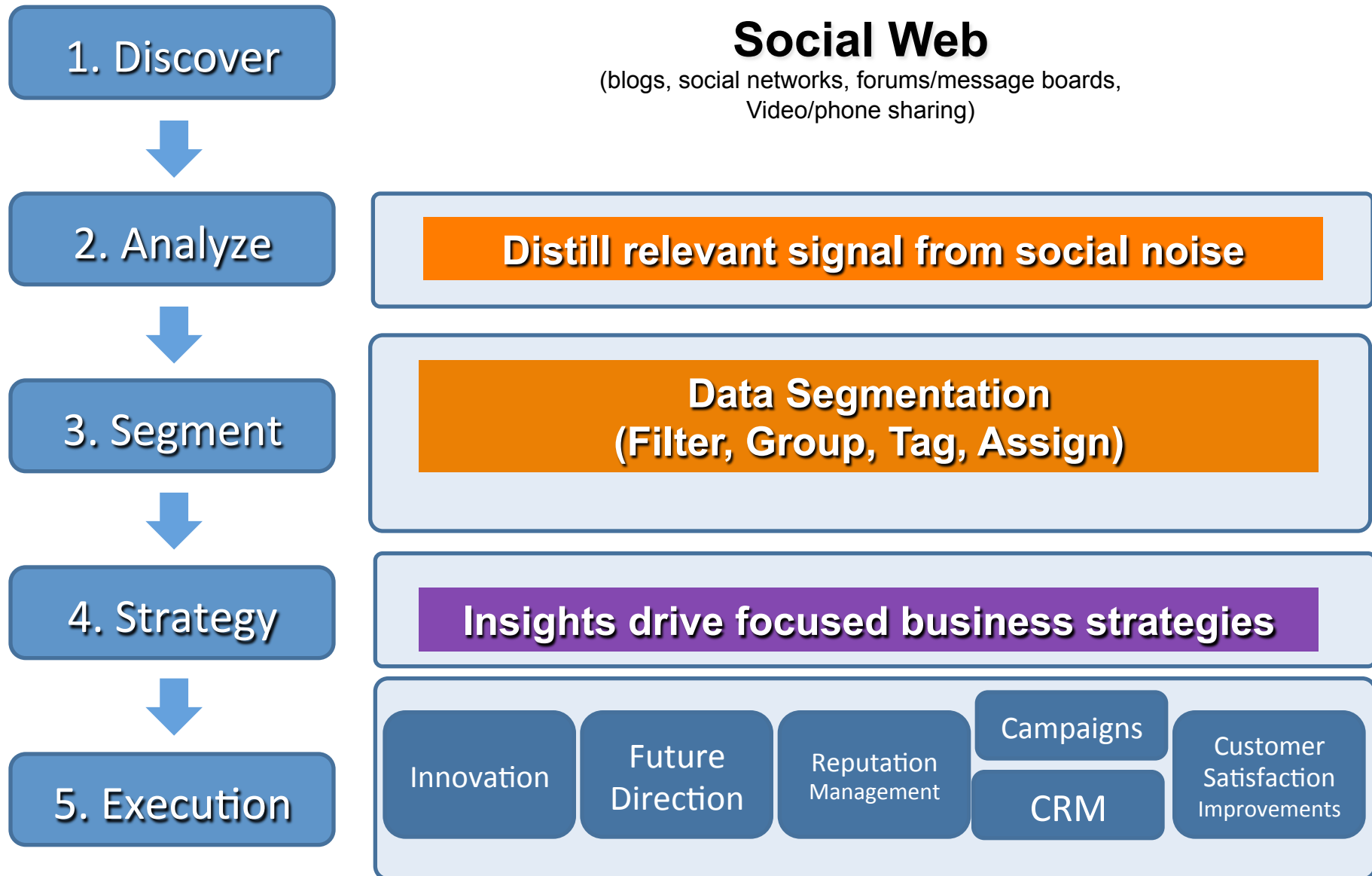
# Social Analytics Lifecycle (5 Stages)



# Social Analytics Lifecycle (5 Stages)



# Social Analytics Lifecycle (5 Stages)



# How consumers think, feel, and act

# Emotions



Love

Anger

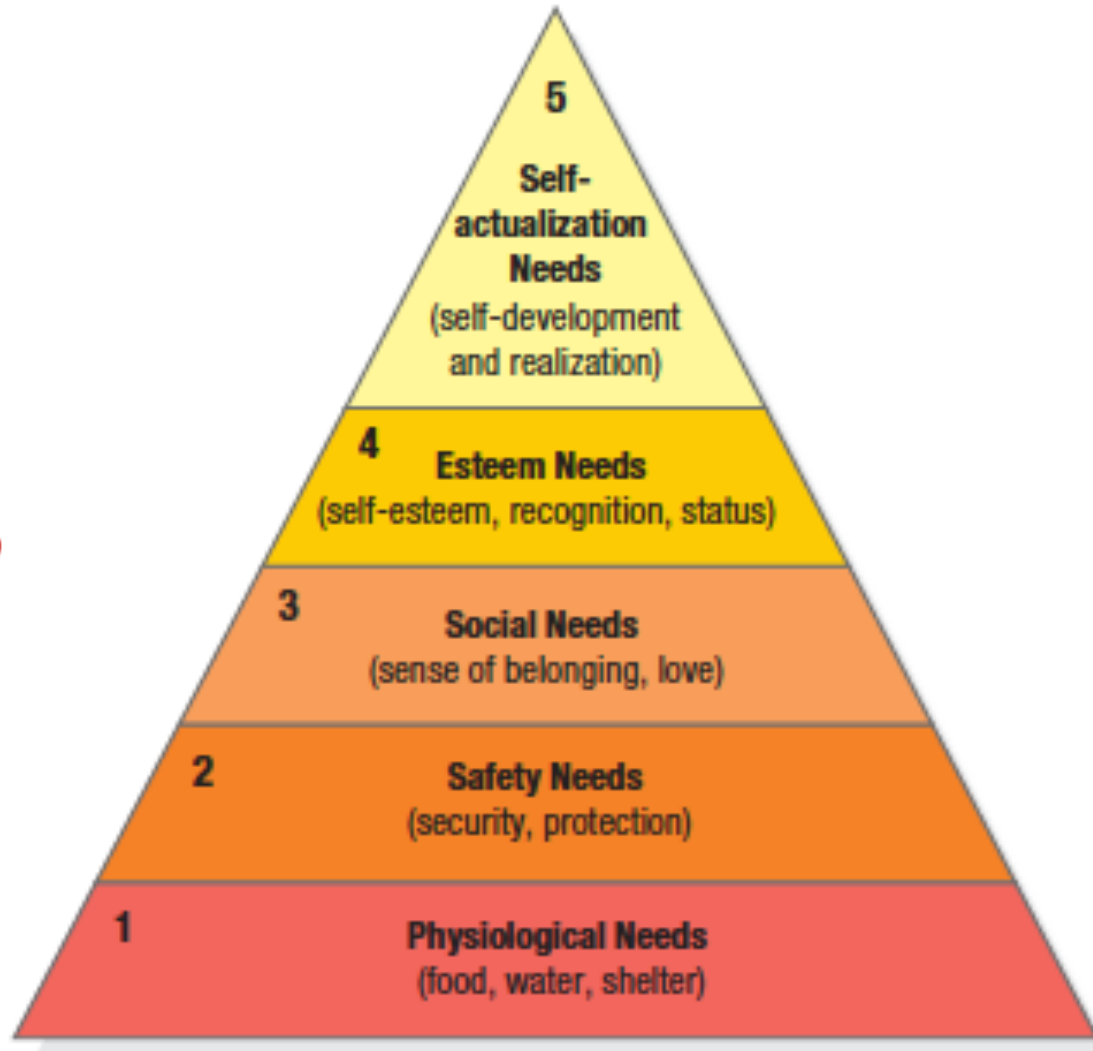
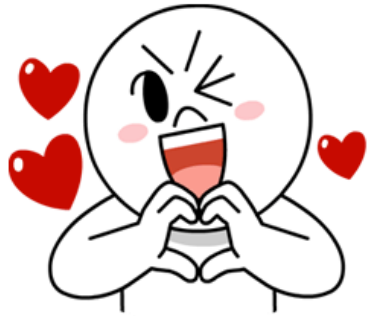
Joy

Sadness

Surprise

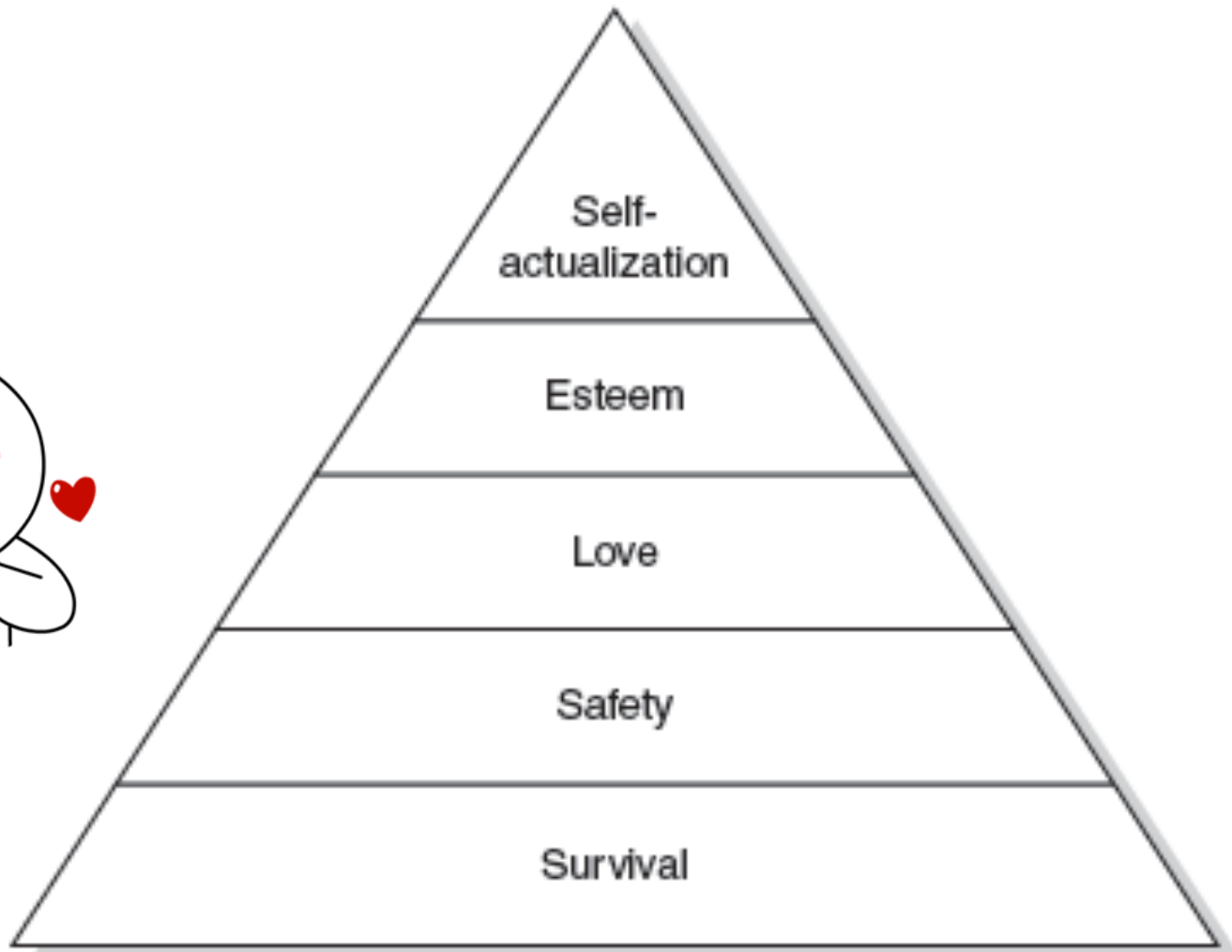
Fear

# Maslow's Hierarchy of Needs



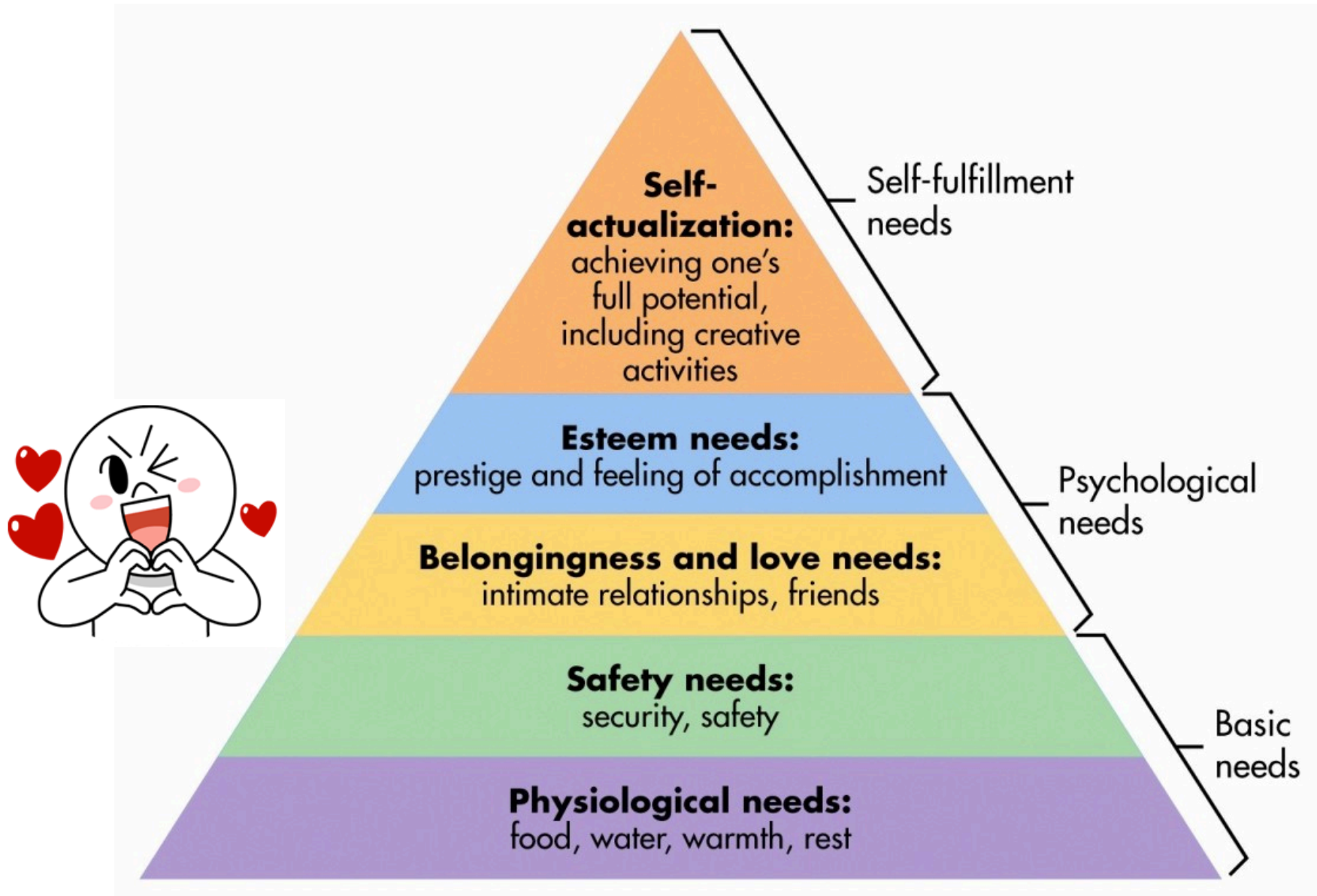
# Maslow's hierarchy of human needs

(Maslow, 1943)

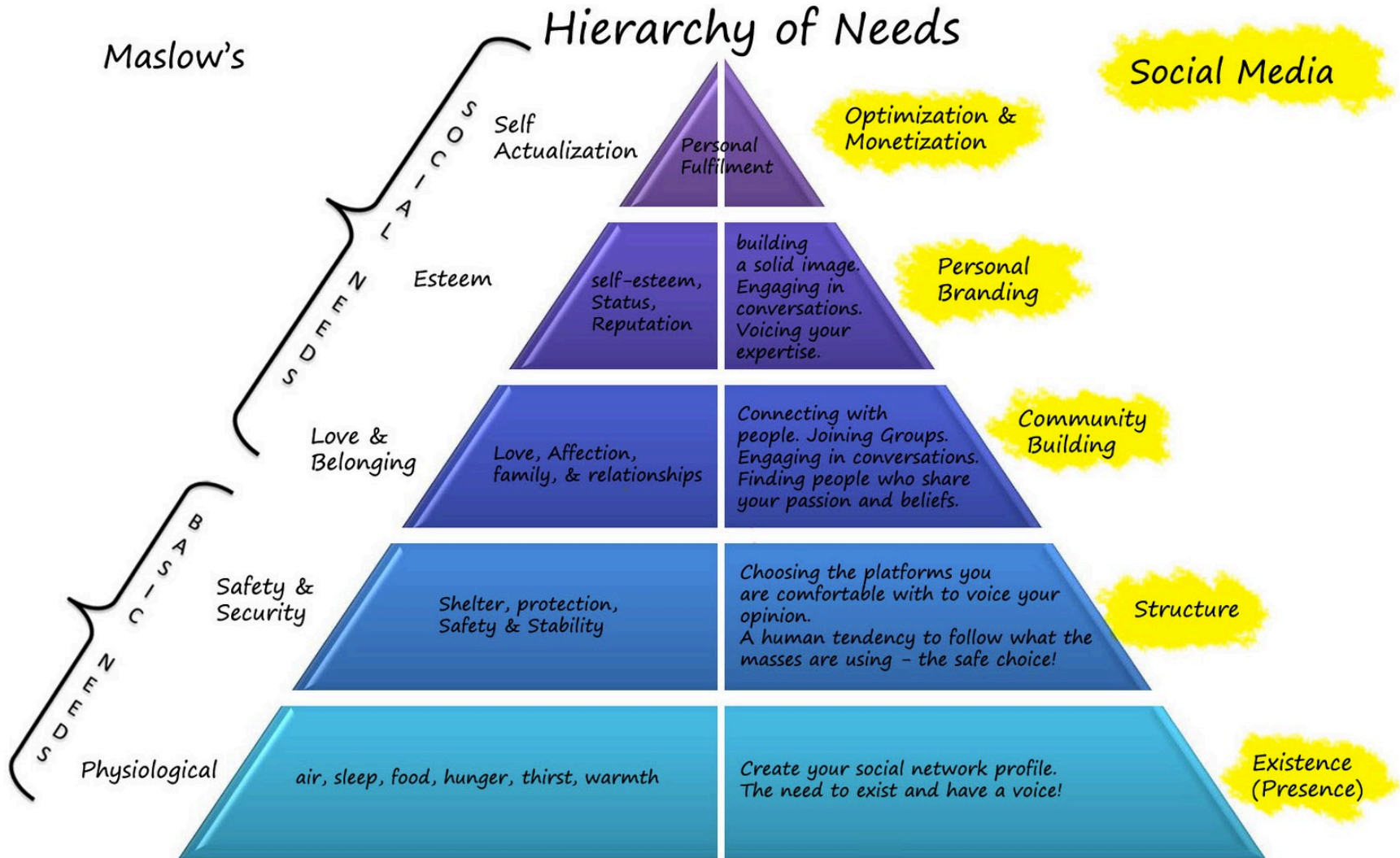




# Maslow's Hierarchy of Needs

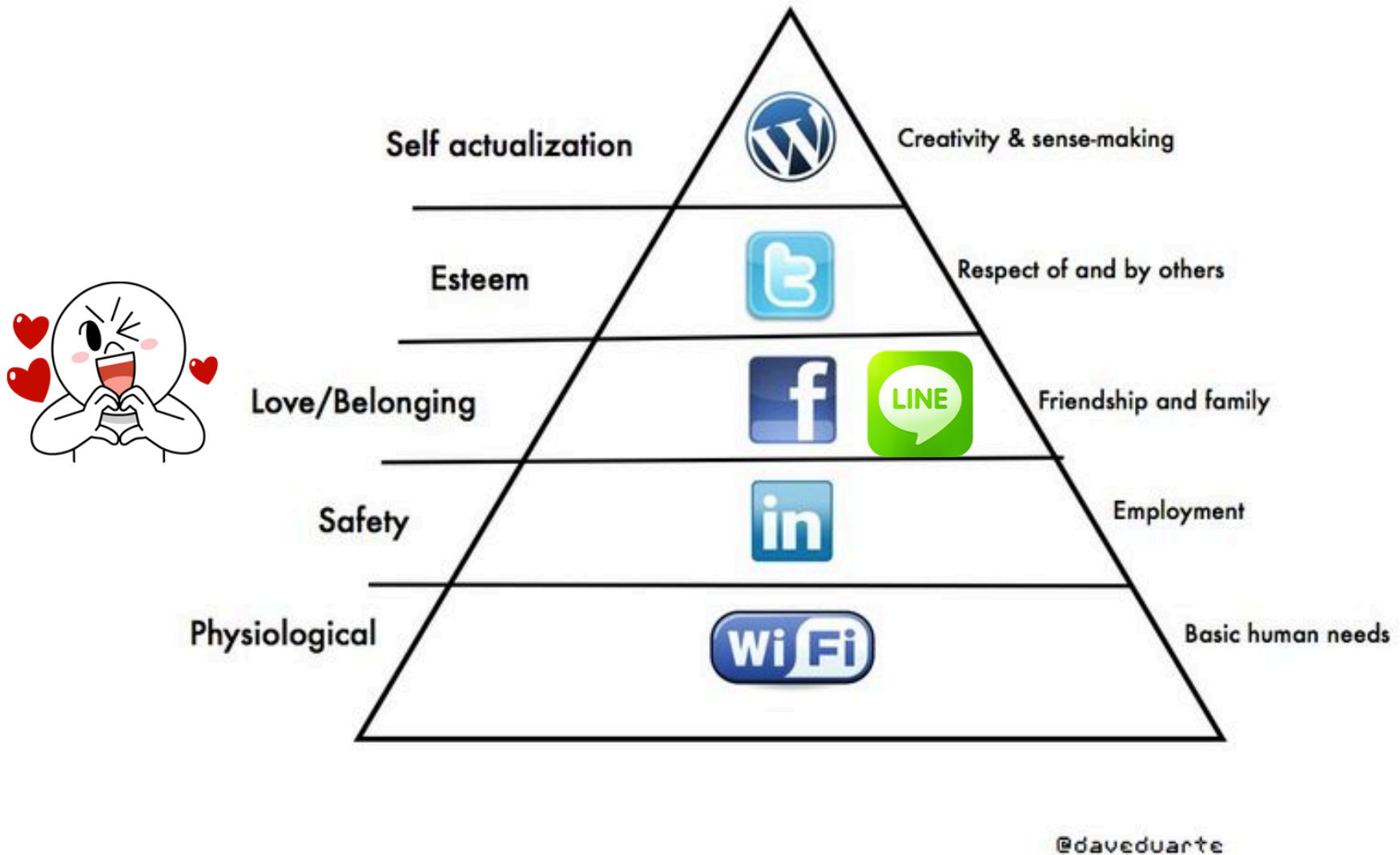


# Social Media Hierarchy of Needs



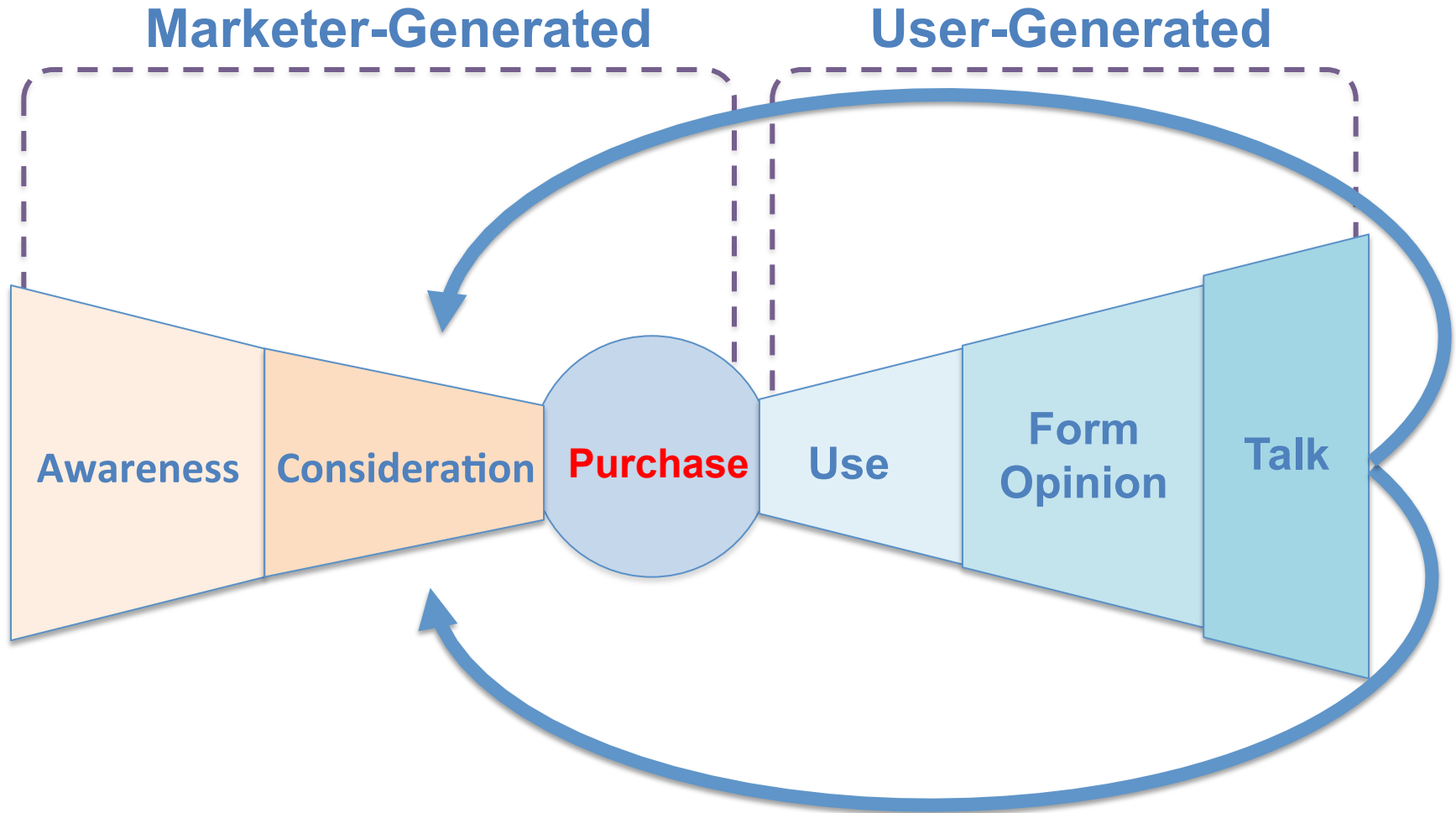
Social Media Hierarchy of Needs - by John Antonios

# Social Media Hierarchy of Needs

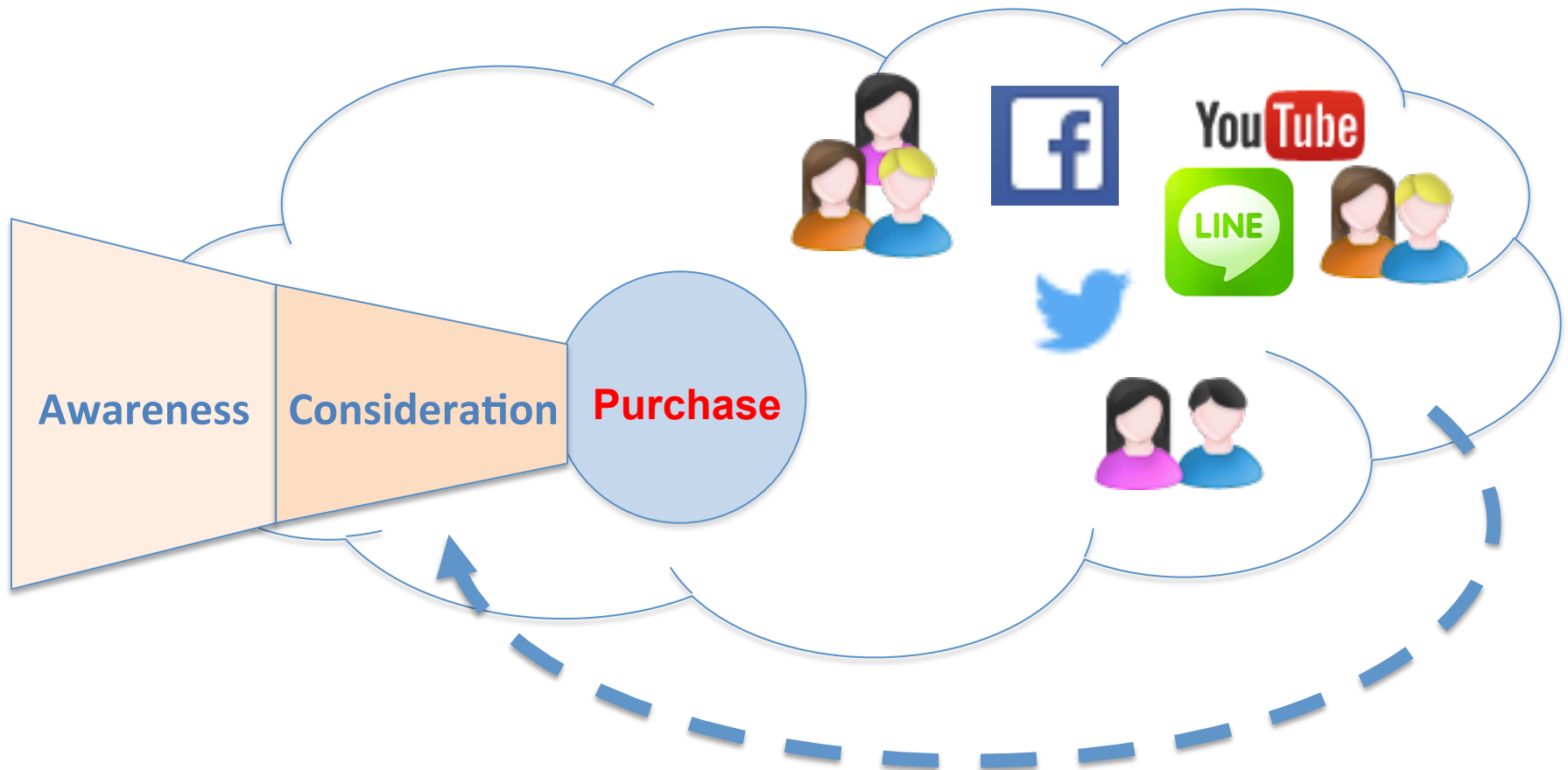


# The Social Feedback Cycle

## Consumer Behavior on Social Media



# The New Customer Influence Path





# Example of Opinion: review segment on iPhone



“I bought an iPhone a few days ago.

It was such a nice phone.

The touch screen was really cool.

The voice quality was clear too.

However, my mother was mad with me as I did not tell her before I bought it.

She also thought the phone was too expensive, and wanted me to return it to the shop. ... ”

# Example of Opinion: review segment on iPhone

“(1) I bought an iPhone a few days ago.

(2) It was such a **nice** phone.

(3) The touch screen was really **cool**.

(4) The voice quality was **clear** too.

(5) However, my mother was mad with me as I did not tell her before I bought it.

(6) She also thought the phone was too expensive, and wanted me to return it to the shop. ...”



**+Positive  
Opinion**



**-Negative  
Opinion**



# Attensity: Track social sentiment across brands and competitors

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

The screenshot displays the Attensity website homepage. At the top, there's a navigation bar with the Attensity logo, a language selector set to 'English', and links for 'Contact', 'Resources', 'Support', 'Blog', and a search bar. Below this is a secondary navigation bar with 'Products', 'Solutions', 'Services', 'Customers', and 'Partners'. The main hero section features the headline 'Your real-time window into the social web.' and a quote from Yahoo! about their partnership with Attensity. To the left of the hero section is a vertical menu with links to 'Social Analytics', 'Social Response', 'Customer Analytics', 'Industry Solutions', and 'Why Attensity'. To the right, there are several charts and graphs illustrating social sentiment analysis. Below the hero section, there are three columns: 'Attensity for Marketing' (highlighted), 'Attensity for Customer Service', and 'Attensity for IT'. The 'Attensity for Marketing' section includes a link to 'Effectiveness of your social marketing strategies:'. The 'Attensity for Customer Service' section includes a 'Success Story' for JetBlue Airways with a 'DOWNLOAD NOW' button. The 'Attensity for IT' section includes a 'Watch Video' for 'Command Center Video'. The footer contains the URL 'www.attensity.com/home/#fragment-1' and a 'jence.' logo.

Attensity Home Page | Attensity

www.attensity.com/home/

Select your language **English**

**ATTENSITY**

Products Solutions Services Customers Partners

**Your real-time window into the social web.**

*"Teaming with a leading analytics provider like Attensity offers Yahoo! a great opportunity to deliver the key news and analysis that matter."*

**– Yahoo!**

**Learn More**

**Attensity for Marketing**

Attensity for Customer Service

Attensity for IT

**Effectiveness of your social marketing strategies:**

**Success Story**

JetBlue Airways

**Watch Video**

Command Center Video

**About Attensity**

Attensity is the leading provider of social analytics and engagement solutions.

**Listen.**

**DOWNLOAD NOW**

www.attensity.com/home/#fragment-1

jence.

<http://www.youtube.com/watch?v=4goxmBEg2lw#/>



# Sentiment Analysis vs. Subjectivity Analysis

Sentiment Analysis	Subjectivity Analysis
Positive	Subjective
Negative	
Neutral	Objective

# Example of SentiWordNet

POS	ID	PosScore		NegScore		SynsetTerms	Gloss
a	00217728	0.75	0		beautiful#1	delighting the senses or exciting intellectual or emotional admiration; "a beautiful child"; "beautiful country"; "a beautiful painting"; "a beautiful theory"; "a beautiful party"	
a	00227507	0.75	0		best#1	(superlative of `good') having the most positive qualities; "the best film of the year"; "the best solution"; "the best time for planting"; "wore his best suit"	
r	00042614	0	0.625	unhappily#2	sadly#1	in an unfortunate way; "sadly he died before he could see his grandchild"	
r	00093270	0	0.875	woefully#1	sadly#3	lamentably#1 deplorably#1	in an unfortunate or deplorable manner; "he was sadly neglected"; "it was woefully inadequate"
r	00404501	0	0.25	sadly#2		with sadness; in a sad manner; "She died last night,' he said sadly"	

# References

- Chuck Hemann and Ken Burbary,  
Digital Marketing Analytics: Making Sense of  
Consumer Data in a Digital World,  
Que. 2013