

# **SEM VII : DLOC**

# **Social Media Analytics**

Course Code	Course Name	Course Component	Teaching Scheme (Contact Hours)		Credits Assigned		
			Theory	Pract.	Theory	Pract.	Total
CE 401	Software Testing and Quality Assurance	TL	3	2	3	1	4
CE 4xx	Department Level Optional Course V	TL	3	2	3	1	4
CE 4xx	Department Level Optional Course VI	TL	3	2	3	1	4
IL 4xx	Institute Level Optional Course II	T	3	-	3	-	3
CE 491	Project B	LP	-	8	-	4	4
<b>Total</b>			<b>12</b>	<b>14</b>	<b>12</b>	<b>7</b>	<b>19</b>

Course Code	Course Name	Course Component	Teaching Scheme (Contact Hours)		Credits Assigned				
Course Code	Course Name	Examination Scheme							
		Theory					Term Work	Oral/ Pract.	Total
		Internal Assessment			End Sem Exam	Exam Duration (Hrs)			
		1	2	Average					
CE 401	Software Testing and Quality Assurance	40	40	40	60	2	25	25	150
CE 4xx	Department Level Optional Course V	40	40	40	60	2	25	25	150
CE 4xx	Department Level Optional Course VI	40	40	40	60	2	25	25	150
IL 4xx	Institute Level Optional Course II	40	40	40	60	2	-	-	100
CE 491	Project B	-	-	-	-	-	100	50	150
Total				160	240		175	125	700

<b>Specializations</b> □	<b>Data Analytics and Language Processing</b>	<b>Network and Information Security</b>	<b>Computational Intelligence and Automation</b>	<b>Systems and Computing</b>
<b>Course Code</b>	CE 402	CE 403	CE 404	CE 405
<b>Department Level Optional Course V (DLOC V)</b>	Data Science	Pentesting and Vulnerability Assessment	Deep Learning	User Experience Design

<b>Specializations</b> □	<b>Data Analytics and Language Processing</b>	<b>Network and Information Security</b>	<b>Computational Intelligence and Automation</b>	<b>Systems and Computing</b>
Course Code	CE 406	CE 407	CE 408	CE 409
Department Level Optional Course VI (DLOC VI)	Social Media Analytics	Digital Forensics	Computer Vision	High Performance Computing

Course Code	Course Name	Scheme	Theory	Practical	Tutorial	Total
CE 406	Social Media Analytics	Contact Hours	3	2	-	5
		Credits	3	1	-	4

Course Code	Course Name	Examination Scheme							
		Theory Marks				Term Work	Practical	Oral	Total
		Internal Assessment			End Sem Exam				
		IA 1	IA 2	Average					
CE 406	Social Media Analytics	40	40	40	60	25	--	25	150

# Course Objectives

**The course is aimed to:**

1. Understand the concept of social media analytics and understand its significance
2. Understand social network analytics essentials and visualization tools for navigating diverse social media network
3. Develop expertise in analyzing social media text, actions, and hyperlinks
4. Recognize the significance of social media location and search engine analytics
5. Understand advanced strategies for social media engagement, brand reputation management, and risk mitigation
6. Examine social media campaigns through analytics while navigating privacy, ethics, and legal consideration

# **Course Outcomes: On successful completion of course learner/student will be able to:**

1. Demonstrate an understanding of the concept of social media analytics and recognize its significance in contemporary digital environments.
2. Acquire proficiency in essential social network analytics principles and visualization tools to effectively navigate diverse social media networks.
3. Develop expertise in analyzing social media text, actions, and hyperlinks to extract valuable insights.
4. Recognize the importance of social media location and search engine analytics and apply them to optimize digital strategies.
5. Apply advanced strategies to enhance social media engagement, manage brand reputation effectively, and mitigate risks.
6. Apply analytics techniques to evaluate and optimize social media campaigns, while adhering to privacy, ethics, and legal considerations

<b>Textbooks:</b>	
1.	<b>Seven Layers of Social Media Analytics_</b> Mining Business Insights from Social Media Text, Actions, Networks, Hyperlinks, Apps, Search Engine, and Location Data, Gohar F. Khan,(ISBN-10: 1507823207).
2.	<b>Analyzing the Social Web</b> 1st Edition by Jennifer Golbeck
3.	Mining the Social Web_ Analyzing Data from Facebook, Twitter, LinkedIn, and Other Social Media Sites, Matthew A Russell, O'Reilly
4.	Social Media Analytics [2015], Techniques and Insights for Extracting Business Value Out of Social Media, Matthew Ganis, Avinash Kohirkar, IBM Press
5.	Charu Aggarwal (ed.), Social Network Data Analytics, Springer, 2011
<b>References:</b>	
1.	Social Media Analytics [2015], Techniques and Insights for Extracting Business Value Out of Social Media, Matthew Ganis, Avinash Kohirkar, IBM Press
2.	Social Media Analytics Strategy_ Using Data to Optimize Business Performance, Alex Gonçalves, APress Business Team
3.	Social Media Data Mining and Analytics, Szabo, G., G. Polatkan, O. Boykin & A. Chalkiopoulos (2019), Wiley, ISBN 978-1-118-82485-6



# Module 1

(6 hrs)

Module	Detailed Content	References	Hours/Weight
1.	<b>Social Media Analytics: An Overview</b>	<b>T1 -Ch1</b>	
	Core Characteristics of Social Media, Types of Social Media, Social media landscape, Need for Social Media Analytics (SMA), SMA in organizations. Purpose of Social Media Analytics, Social Media vs. Traditional Business Analytics, Seven Layers of Social Media Analytics, Types of Social Media Analytics, Social Media Analytics Cycle, Challenges to Social Media Analytics, The Limitations of Social Media Analytics, Social Media Analytics Tools		6

# Module 2

(8 hrs)

Module	Detailed Content	References	Hours/Weight
2.	<b>Social Network Structure, Measures &amp; Visualization</b>	<b>T2-Ch 3,4,5,6 T1-Ch 4</b>	
	<b>Basics of Social Network Structure</b> - Nodes, Edges & Tie <b>Describing the Networks Measures</b> - Degree Distribution, Density, Connectivity, Centralization, Tie Strength & Trust  <b>Network Visualization</b> - Graph Layout, Visualizing Network features, Scale Issues.  <b>Social Media Network Analytics</b> - Common Network Terms, Common Social Media Network Types, Types of Networks, Common Network Terminologies, Network Analytics Tools.		8

# Module 3

(6 hrs)

Module	Detailed Content	References	Hours/Weight
3.	<b>Social Media Text, Action &amp; Hyperlink Analytics</b>	T1- Ch 3,5,7	
	<b>Social Media Text Analytics</b> - Types of Social Media Text, Purpose of Text Analytics, Steps in Text Analytics, Social Media Text Analysis Tools  <b>Social Media Action Analytics</b> - What Is Actions Analytics? Common Social Media Actions, Actions Analytics Tools  <b>Social Media HyperLink Analytics</b> - Types of Hyperlinks, Types of Hyperlink Analytics, Hyperlink Analytics Tools		6

# Module 4

(6 hrs)

Module	Detailed Content	References	Hours/Weight
4.	<b>Social Media Location &amp; Search Engine Analytics</b>	T1- Ch 8,9	
	<b>Location Analytics</b> - Sources of Location Data, Categories of Location Analytics, Location Analytics and Privacy Concerns, Location Analytics Tools  <b>Search Engine Analytics</b> - Types of Search Engines, Search Engine Analytics, Search Engine Analytics Tools		6

# Module 5

(6 hrs)

Module	Detailed Content	References	Hours/Weight
5.	<b>Social Information Filtering</b>		
	<b>Social Information Filtering</b> - Social Sharing and filtering , Automated Recommendation systems, Traditional Vs social Recommendation Systems, Understanding Social Media and Business Alignment, Social Media KPI, Formulating a Social Media Strategy, Managing Social Media Risks  <b>Brand Reputation Management</b> - Strategies for monitoring and managing online brand reputation, crisis management, and responding to customer feedback.		6

# Module 6

(6 hrs)

Module	Detailed Content	References	Hours/Weight
6.	<b>Social Media Campaign Analytics &amp; Privacy, Ethical and Legal Considerations</b>		
	<b>Social Media Campaign Analytics</b> - Evaluating the effectiveness of social media marketing campaigns, tracking conversions, and optimizing campaign performance. <b>Privacy, Ethical and Legal Considerations</b> Addressing privacy concerns, data protection, ethical implications in social media analytics and legal considerations		6

# Module 1

- Core Characteristics of Social Media
- Types of Social Media
- Social media landscape
- Need for Social Media Analytics (SMA)
- SMA in organizations.
- Purpose of Social Media Analytics
- Social Media vs. Traditional Business Analytics
- Seven Layers of Social Media Analytics
- Types of Social Media Analytics
- Social Media Analytics Cycle
- Challenges to Social Media Analytics
- The Limitations of Social Media Analytics
- Social Media Analytics Tools

# Social Media

- Social media is a platform that allows you
  - To **share media** such as **pages, videos, or text** in **different formats**.
  - To **connect and communicate with people** you know and even those you don't know.
- Social media sites are widely used by **businesses and marketers**
  - To reach a wider audience and sell their brands, products, and services.
  - To advertise products and services to many different people online to maximize the full potential of social media.





FEB  
2025

# OVERVIEW OF SOCIAL MEDIA USE

HEADLINES FOR SOCIAL MEDIA ADOPTION AND USE (NOTE: USER IDENTITIES MAY NOT REPRESENT UNIQUE INDIVIDUALS)



NUMBER OF SOCIAL  
MEDIA USER IDENTITIES



**5.24**  
BILLION

QUARTER-ON-QUARTER CHANGE  
IN SOCIAL MEDIA USER IDENTITIES



**+0.5%**  
**+24 MILLION**

YEAR-ON-YEAR CHANGE IN  
SOCIAL MEDIA USER IDENTITIES



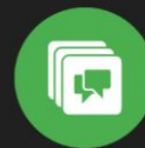
**+4.1%**  
**+206 MILLION**

AVERAGE DAILY TIME SPENT  
USING SOCIAL MEDIA



**2H 21M**  
**YOY: -1.3% (-2 MINS)**

AVERAGE NUMBER OF SOCIAL  
PLATFORMS USED EACH MONTH



**6.8**  
**YOY: +2.3% (+0.2)**

SOCIAL MEDIA  
USER IDENTITIES vs.  
TOTAL POPULATION



**63.9%**

SOCIAL MEDIA USER  
IDENTITIES AGED 18+ vs.  
POPULATION AGED 18+



**86.6%**

SOCIAL MEDIA USER  
IDENTITIES vs. INDIVIDUALS  
USING THE INTERNET



**94.2%**

FEMALE SOCIAL MEDIA USER  
IDENTITIES vs. TOTAL SOCIAL  
MEDIA USER IDENTITIES



**45.4%**

MALE SOCIAL MEDIA USER  
IDENTITIES vs. TOTAL SOCIAL  
MEDIA USER IDENTITIES



**54.6%**

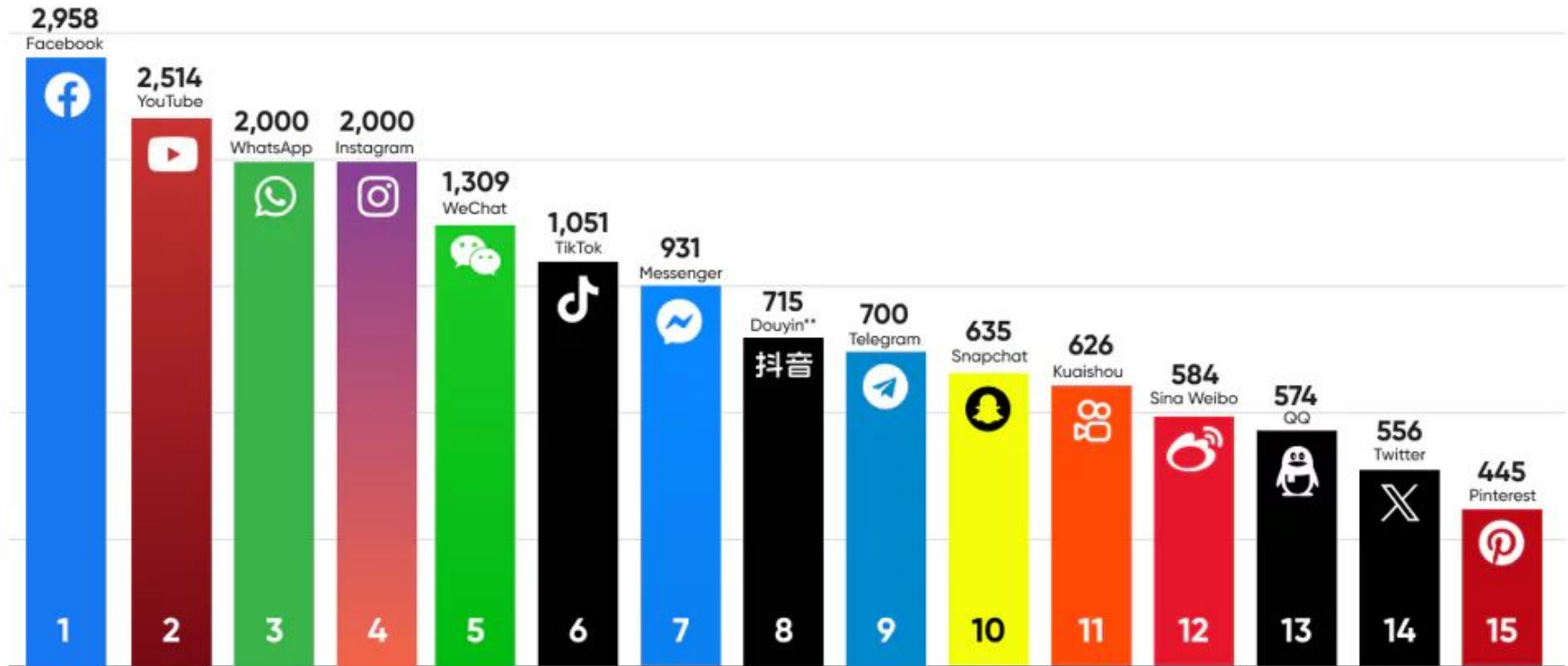
**SOURCES:** KEPIOS ANALYSIS; COMPANY ADVERTISING RESOURCES; CNNIC, BETA RESEARCH CENTER; OCDH; U.N.; GWI (Q3 2024). **NOTE:** AVERAGE NUMBER OF PLATFORMS INCLUDES DATA FOR YOUTUBE ACCOUNTS; USER AGE MISSTATEMENTS; DIFFERENT REPORTING PERIODS, AND DIFFERENCES BETWEEN CENSUS COUNTS AND RESIDENT POPULATIONS. **COMPARABILITY:** SOURCE AND METHODOLOGY CHANGES, BASE REVISIONS. SEE [NOTES ON DATA](#).

# Popular Social Media Platforms:

As per Statista, these are the sites with the most numbers of users in the world in 2025 based on the monthly active users.

- Facebook: 2,958 Million
- YouTube: 2,514 Million
- WhatsApp: 2,000 Million
- Instagram: 2,000 Million
- WeChat: 1,309 Million
- TikTok: 1,051 Million
- Facebook Messenger: 931 Million
- Douyin: 715 Million (TikTok's Chinese Version)
- Telegram: 700 Million
- Snapchat: 635 Million
- Kuaishou: 626 Million (China Specific)
- Sina Weibo: 584 Million (China Specific)
- QQ: 574 million (Tencent QQ, China Specific)
- Twitter: 556 Million
- Pinterest: 445 Million

# Social Media Platform Users in Millions



source: [statista.com](https://www.statista.com)

tagembed

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# FAVOURITE SOCIAL MEDIA PLATFORMS

PERCENTAGE OF ACTIVE SOCIAL MEDIA USERS WHO SAY THAT EACH OPTION IS THEIR "FAVOURITE" SOCIAL MEDIA PLATFORM

**NOTE:** YOUTUBE IS NOT AVAILABLE AS AN ANSWER OPTION IN THE SURVEY QUESTION THAT INFORMS THESE TABLES



## FAVOURITE SOCIAL MEDIA PLATFORMS AMONGST FEMALE INTERNET USERS

SOCIAL PLATFORM	AGE 16-24	AGE 25-34	AGE 35-44	AGE 45-54	AGE 55-64
INSTAGRAM	24.8%	20.8%	16.0%	13.9%	10.2%
WHATSAPP	12.7%	14.3%	15.4%	17.3%	21.1%
FACEBOOK	5.9%	10.6%	13.2%	14.9%	17.1%
WECHAT	8.2%	11.7%	15.5%	13.6%	12.0%
TIKTOK	15.5%	11.3%	7.8%	6.9%	5.0%
DOUYIN	6.6%	8.1%	9.8%	6.4%	5.4%
X	3.1%	2.1%	1.8%	1.6%	1.7%
TELEGRAM	2.6%	2.1%	2.0%	2.1%	2.2%
MESSENGER	1.7%	2.5%	2.5%	2.7%	3.0%
LINE	0.5%	0.8%	1.2%	2.6%	3.5%

## FAVOURITE SOCIAL MEDIA PLATFORMS AMONGST MALE INTERNET USERS

SOCIAL PLATFORM	AGE 16-24	AGE 25-34	AGE 35-44	AGE 45-54	AGE 55-64
INSTAGRAM	26.6%	18.4%	11.7%	9.4%	6.1%
WHATSAPP	14.1%	14.7%	17.3%	19.5%	21.9%
FACEBOOK	7.8%	13.5%	14.7%	16.4%	17.5%
WECHAT	8.2%	11.8%	16.0%	14.4%	14.4%
TIKTOK	9.6%	7.1%	5.7%	5.3%	4.3%
DOUYIN	6.5%	8.5%	8.2%	6.8%	6.6%
X	4.2%	4.6%	4.0%	3.8%	3.3%
TELEGRAM	4.0%	3.2%	3.2%	2.6%	2.5%
MESSENGER	1.8%	2.4%	2.2%	2.4%	2.3%
LINE	0.7%	1.0%	1.2%	2.4%	2.9%

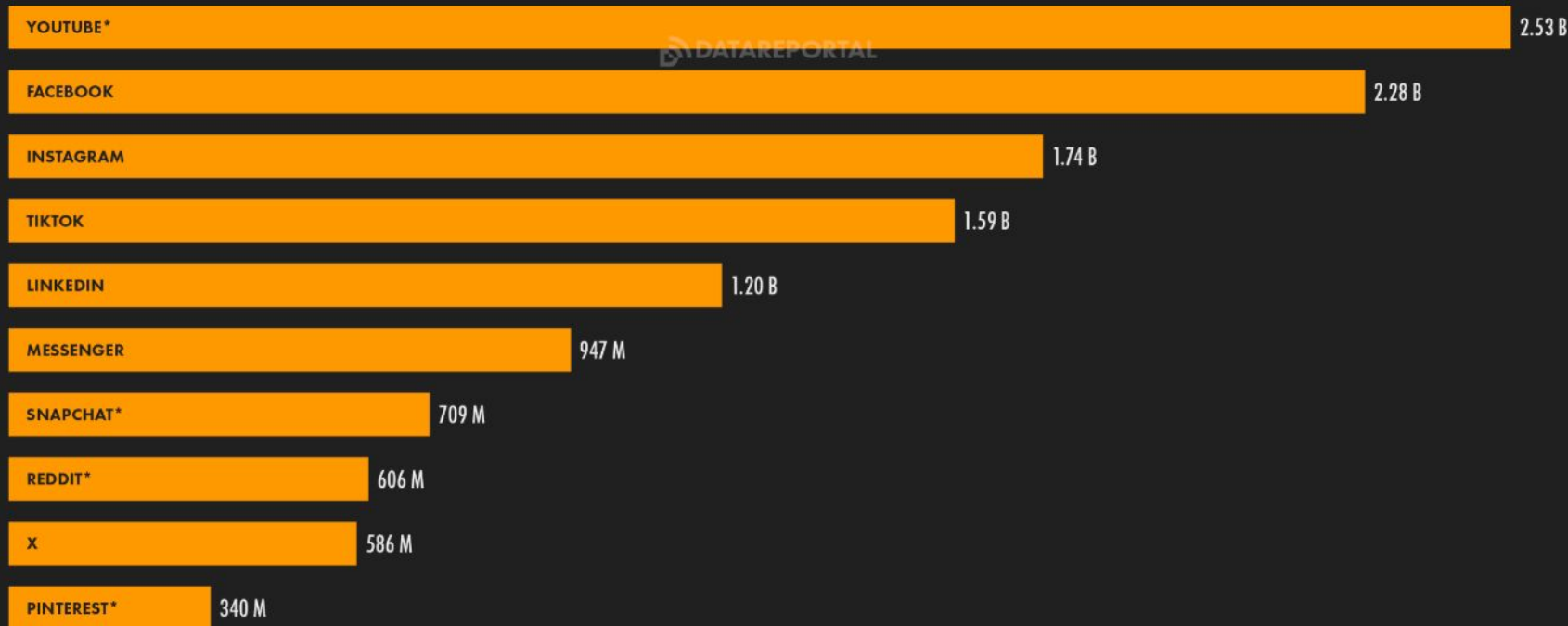
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2025

# SOCIAL MEDIA AD AUDIENCES: TOTAL REPORTED

POTENTIAL ADVERTISING REACH REPORTED BY TOP SOCIAL PLATFORMS (NOTE: USERS MAY NOT REPRESENT UNIQUE INDIVIDUALS)



GLOBAL OVERVIEW



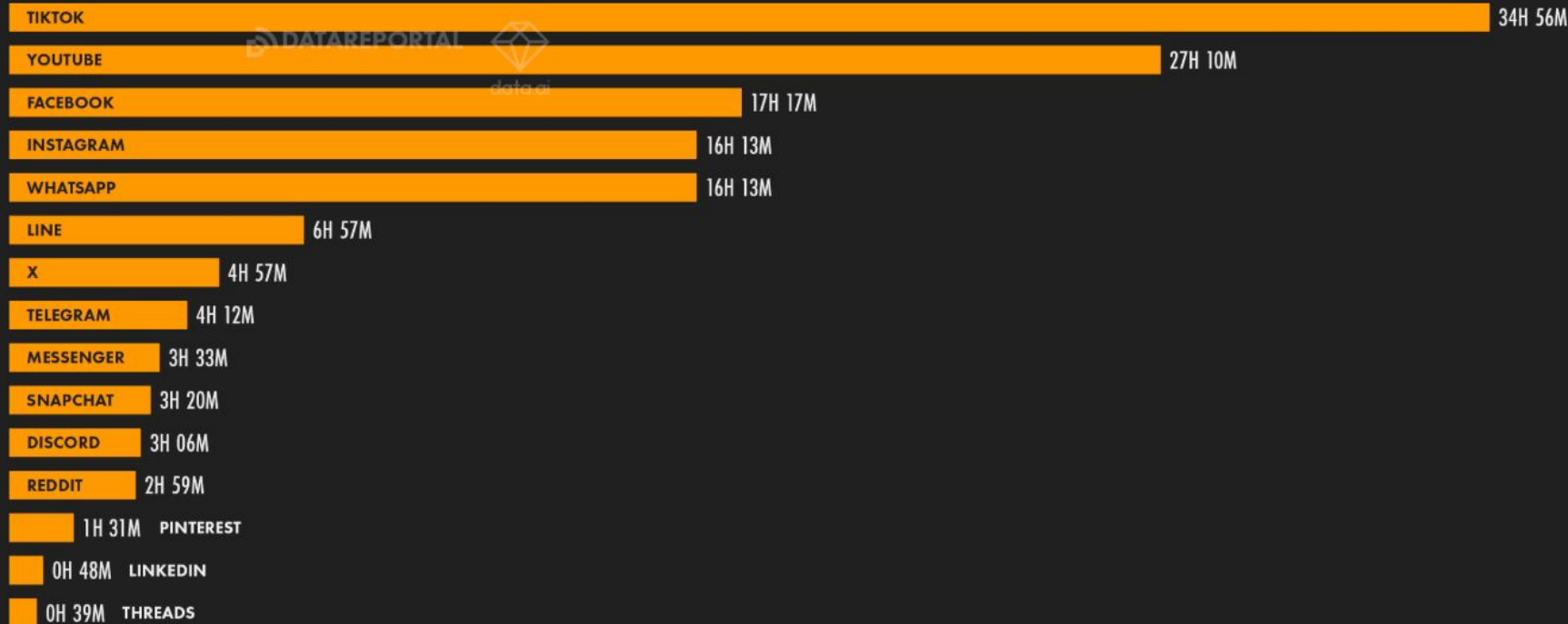
FEB  
2025

# SOCIAL MEDIA APPS: AVERAGE TIME PER USER

AVERAGE TIME PER MONTH THAT ACTIVE USERS SPENT USING EACH PLATFORM'S ANDROID APP IN NOVEMBER 2024



GLOBAL OVERVIEW



# Module 1

- **Core Characteristics of Social Media**
- Types of Social Media
- Social media landscape
- Need for Social Media Analytics (SMA)
- SMA in small & large organizations.
- Purpose of Social Media Analytics
- Social Media vs. Traditional Business Analytics
- Seven Layers of Social Media Analytics
- Types of Social Media Analytics
- Social Media Analytics Cycle
- Challenges to Social Media Analytics
- Social Media Analytics Tools

# Core Characteristics of Social Media

- **SOCIAL MEDIA IS**
  - MANY-TO-MANY
  - PARTICIPATORY
  - USER OWNED
  - CONVERSATIONAL
  - ENABLES OPENNESS
  - ENABLES MASS COLLABORATION
  - FREE AND EASY TO USE
  - RELATIONSHIP ORIENTED



# Core Characteristics of Social Media

## SOCIAL MEDIA IS MANY-TO-MANY

Social media enables interaction among the users in a **many-to-many fashion**. This is unlike conventional technological media such as print, radio, telephone, and television.

## SOCIAL MEDIA IS PARTICIPATORY

Unlike conventional technologies, social media encourages **participation and feedback from users**. Social media users can participate in online discourse through **blogging, comments, tagging, and sharing content**.

# Core Characteristics of Social Media

## SOCIAL MEDIA IS USER OWNED

While social media platforms are provided by corporations (such as Google and Facebook), the **content is generated, owned, and controlled by social media users**. Without the user-generated contents and active involvement from the users, social media would be **empty, boring online spaces**.

## SOCIAL MEDIA IS CONVERSATIONAL

It is not only the ease of conversation but also the **many-to-many conversation abilities** that make social media stand out from the traditional one-to-one or one- to-many medium of interaction. The many-to-many conversation characteristics of social media make it possible for the **masses to communicate and collaborate in real time**.

# **Core Characteristics of Social Media**

## **SOCIAL MEDIA ENABLES OPENNESS**

Social media provides new opportunities to access data and information through Web 2.0./3.0 channels.

## **SOCIAL MEDIA ENABLES MASS COLLABORATION**

Social media channels allow masses to collaborate in a many-to-many fashion to achieve certain shared goals.

## **SOCIAL MEDIA IS FREE AND EASY TO USE**

Being free and easy to use are two of the reasons that social media has proliferated in such a space.

# Core Characteristics of Social Media

## SOCIAL MEDIA IS RELATIONSHIP ORIENTED

Most social media tools allow users

- To easily establish and maintain **social and professional relationships and ties.**
- Some social media tools, such as **Facebook**, are solely focused on **personal relationships**, whereas others, such as **Twitter**, are focused on **professional relationships.**

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# Types Of Social Media

The main factor that distinguishes the different types of social media is the **type of content**:

1. **Social Networking Sites**
2. **Image-based sites**
3. **Video sharing/streaming platforms**
4. **Discussion forums**
5. **Blogs and community platforms**

# Types Of Social Media

The main factor that distinguishes the different types of social media is the type of content

## 1. Social Networking Sites

- Mainly used for connecting with friends and family.
- Focus more on **person-to-person** conversations.
- Encourages knowledge sharing.
- Accommodate the different types of content formats from **text to photos, videos, and other creative forms of content.**
- Considered the center of communication and a jack of all trades. ex: **Facebook, LinkedIn, and Twitter.**



# Types Of Social Media...

## 1. Social Networking Sites ...

Businesses and marketers can fully maximize these platforms because they provide:

- Immense amount of data.
- Able to **reach the right people through adverts with specific metrics** and demographics.
- Provide the **opportunity to engage with users which helps people connect with your brand** on a more personal level.



# Types Of Social Media...

## 2. Image-based sites

- Image-based types of content have gained **more prominence in recent times**.
- Content like **infographics, illustrations, and images capture** the attention of users more.
- Social media apps like **Pinterest, Instagram, and Snapchat** are designed to amplify the sharing of images.
- They say a **picture is worth a thousand words**, and using this can have lots of positive effects.



# Snapchat

# Types Of Social Media...

## 2. Image-based sites...

**As a business, you can**

- Encourage your audience to **generate unique content** as a way of engaging with your brand.
- Use **pictures to tell personal stories, inspire,** and engage with your audience.
- Use these platforms to **boost sales through shoppable posts and images.**

# Types Of Social Media...

## 3. Video sharing/streaming platforms

- Video content is one of the most **captivating and engaging forms of content.**
- This form of content aids assimilation and understanding, hence **largely preferred by users.**
- One major platform that reshaped how people interact with video content is **YouTube.**
- With over one billion active users monthly, the platform **sometimes serves as a search engine for most users.**



# Types Of Social Media...

## 3. Video sharing/streaming platforms...

As a business, you can

- Content can be used to **engage with customers, promote a new product, answer questions, or shed light on features and packages.**
- Aside from having a channel and putting out content, **marketers can advertise on these platforms** as well.
- **Ads are placed in between videos** and advertisements have said they have gotten higher click rates

# Types Of Social Media...

## 4. Discussion forums

- Discussion forums are very essential because they allow users to **ask questions and get answers from different people**.
- These platforms are designed to spark conversations based on shared interests or out of curiosity.
- Some of such platforms include **Quora and Reddit**.
- Businesses can get a better understanding of **how people feel about certain products**, services, or topics pertaining to their interest.
- It is a way to get unfiltered thoughts and be part of everyday conversations your customers have around certain issues.
- These platforms can be used to **conduct research or answer whatever questions people may have** about your industry.

# Types Of Social Media...

## 5. Blogs and community platforms : wordpress, blogger

- Blogs are a great way for businesses and marketers to reach and provide credible information to their target audience.
- Platforms like **Tumblr**(short blog posts) and **Medium** allow users to create a community where **people with similar interests can follow** them and **read all they have to say about certain topics.**
- Businesses can create blogs on these platforms or on their website to provide more information about the brand.
- Curating content that also answers questions and allows customers to freely express their views not only establishes you as an expert but also shows your brand is relatable

# The distinct stamp of social platforms

12

% of each platforms' monthly visitors who mainly use the service for the following

## Facebook/Messenger

- 1 Message friends/family
- 2 Post/share photos or videos
- 3 Keep up-to-date with news/the world

## Instagram

- 1 Post/share photos or videos
- 2 Find funny/entertaining content
- 3 Follow/find information about products/brands

## Pinterest

- 1 Follow/find information about products/brands
- 2 Find funny/entertaining content
- 3 Post/share photos or videos

## Reddit

- 1 Find funny/entertaining content
- 2 Keep up-to-date with news/the world
- 3 Follow/find information about products/brands

## LinkedIn

- 1 Keep up-to-date with news/the world
- 2 Follow/find information about products/brands
- 3 Post/share photos or videos

## TikTok

- 1 Find funny/entertaining content
- 2 Post/share photos or videos
- 3 Keep up-to-date with news/the world

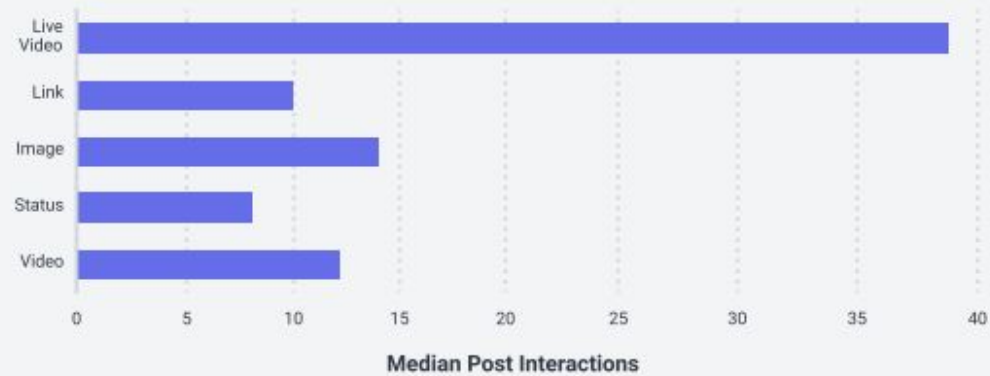
## Snapchat

- 1 Post/share photos or videos
- 2 Find funny/entertaining content
- 3 Message friends/family

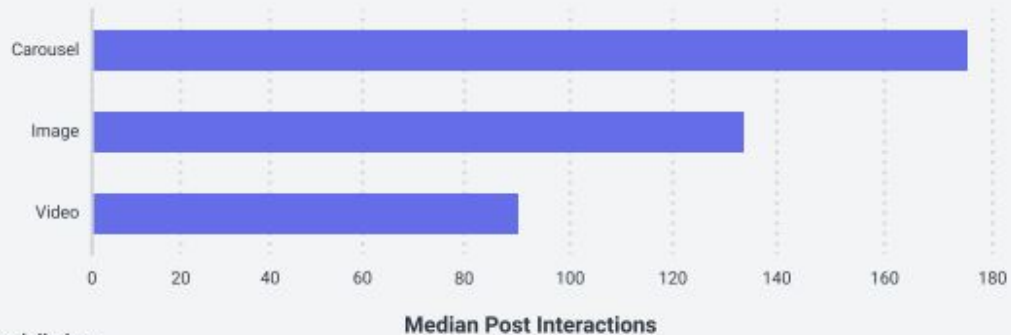
## Twitter

- 1 Keep up-to-date with news/the world
- 2 Find funny/entertaining content
- 3 Follow/find information about products/brands

### Facebook Organic Interactions by Post Type



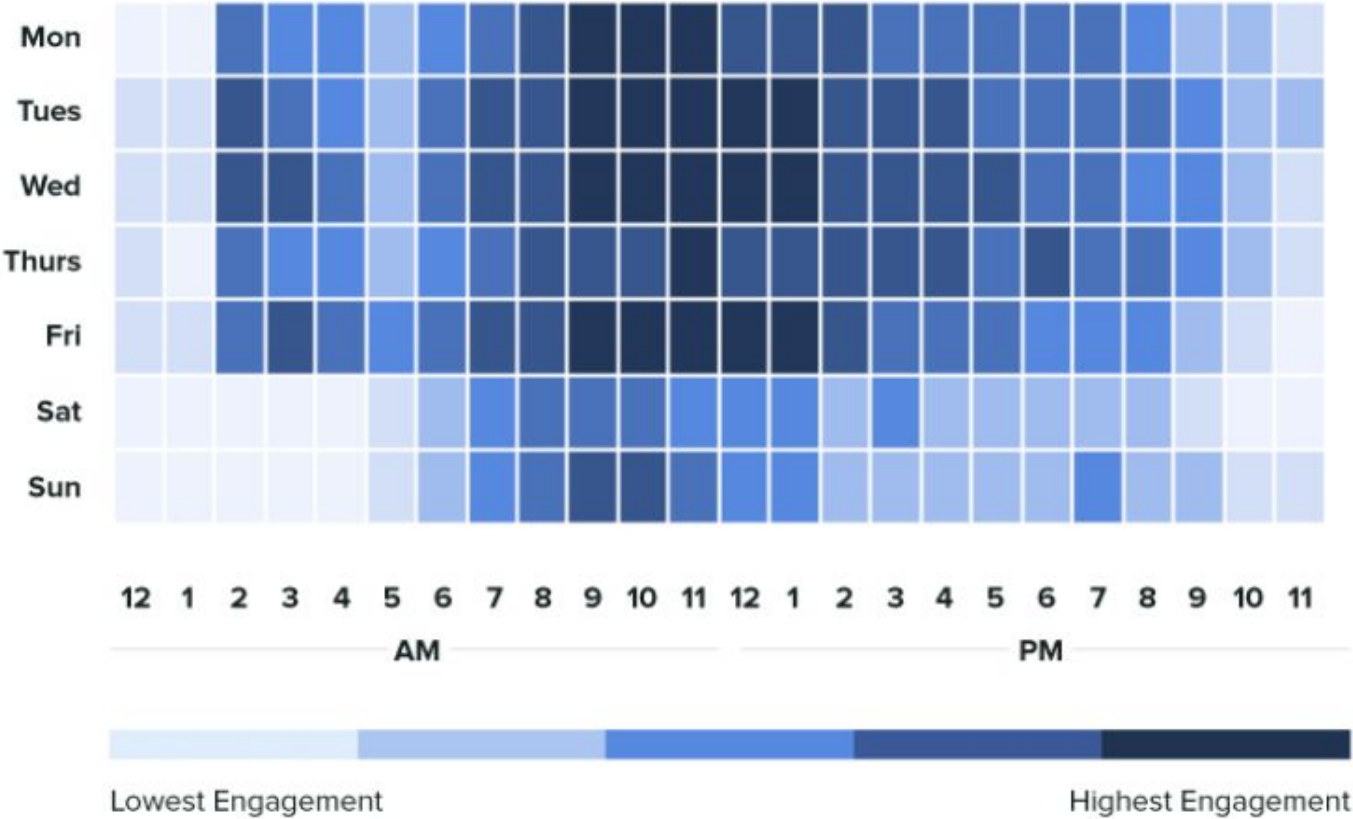
### Instagram Organic Interactions by Post Type





# Facebook Global Engagement

sproutsocial



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- **Social media landscape**
- Need for Social Media Analytics (SMA)
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# Social Media Landscape

- The social media landscape is **diverse and enables people to connect and share in different ways.**
- The **social media landscape** includes sites like **YouTube and Facebook**. These platforms tend to have broad access to users and distinctive characteristics.
- People often use social media for different purposes.
  - They may visit one app to get the latest news,
  - another to make professional connections and
  - another to discover what their favourite celebrities are doing.



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# Need for Social Media Analytics (SMA)

- Social media analytics refers to the process of collecting, analyzing, and interpreting data from various social media platforms to gain insights into user behavior, content performance, and overall social media marketing effectiveness. It is an essential aspect of social media management and marketing as it helps businesses and individuals make informed decisions and optimize their social media strategies.
- Social media analytics is the ability to gather and find meaning in data gathered from social channels to support business decisions and measure the performance of actions based on those decisions through social media.

# Need for Social Media Analytics (SMA)

- Social media analytics is **broader than metrics** such as **likes, follows, retweets, previews, clicks, and impressions** gathered from individual channels. It also differs from reporting offered by services that support marketing campaigns such as **LinkedIn or Google Analytics**.
- Social media analytics uses **specifically designed software platforms** that work similarly to **web search tools**. Data about keywords or topics is **retrieved through search queries** or web ‘crawlers’ that span channels. Fragments of text are **returned, loaded into a database, categorized and analyzed to derive meaningful insights**.

# Need for Social Media Analytics (SMA)

Need for Social Media Analytics:

- **Understanding Customer Behavior:** Social media platforms provide a vast amount of data on how customers interact with brands, products, and services. Analyzing this data can help businesses gain valuable insights into customer preferences, sentiments, and behaviors, enabling them to make informed decisions to improve their offerings and customer experience.
- **Measuring Campaign Effectiveness:** SMA allows businesses to evaluate the success of their marketing and advertising campaigns on social media. Metrics such as engagement rates, click-through rates, and conversions help assess the effectiveness of various marketing efforts and adjust strategies accordingly.

# Need for Social Media Analytics (SMA)

- **Competitive Analysis:** Social Media Analytics enables businesses to monitor their competitors' activities and performance on social media. This information can be used to identify opportunities, uncover potential threats, and stay ahead in the market.
- **Crisis Management and Reputation Monitoring:** SMA tools help organizations track and respond to mentions of their brand on social media. This real-time monitoring is crucial for managing crises, addressing negative sentiment, and protecting the company's reputation.



# Need for Social Media Analytics (SMA)

- **Identifying Influencers and Advocates:** Social media platforms are home to influencers and brand advocates who can significantly impact a company's reputation and sales. SMA helps identify influential individuals who can be engaged for marketing partnerships and leverage the advocacy of satisfied customers.
- **Market Research:** Social Media Analytics serves as a valuable source of information for market research. It can aid in identifying emerging trends, understanding customer needs, and discovering new market opportunities.

# Need for Social Media Analytics (SMA)

- **Enhancing Product Development:** By analyzing customer feedback and opinions shared on social media, businesses can gain valuable insights to improve existing products or develop new ones that better meet customer expectations.
- **Risk Management and Compliance:** SMA helps organizations identify potential risks and compliance issues associated with their brand or industry. This enables them to take proactive measures to mitigate these risks and ensure adherence to regulations.

# Need for Social Media Analytics (SMA)

- **Government and Public Policy Analysis:** Social Media Analytics is also used by governments and policymakers to gauge public sentiment, gather feedback on policies, and understand the impact of their initiatives.
- **Tracking Social Impact and Trends:** SMA can be used by social organizations to monitor the effectiveness of their campaigns and track trends related to social issues and causes.

# Need for Social Media Analytics (SMA)...

- IBM points out that with the prevalence of social media: “News of a great product can spread like wildfire. And news about a bad product — or a bad experience with a customer service rep — can spread just as quickly. Consumers are now holding organizations to account for their brand promises and sharing their experiences with friends, co-workers and the public at large.”

# Need for Social Media Analytics (SMA)...

Social media analytics helps companies address these experiences and use them to:

- **Spot trends related to offerings and brands**
- **Understand conversations** — what is being said and how it is being received
- **Derive customer sentiment** towards products and services
- **Gauge response to social media and other communications**
- **Identify high-value features for a product or service**
- **Uncover what competitors are saying** and its effectiveness
- **Map how third-party partners and channels may affect performance**

# **Need for Social Media Analytics (SMA)...**

Social media analytics is now “being brought into the core discussions about how businesses develop their strategies.”

These strategies affect a range of business activity:

- **Product development**
- **Customer experience**
- **Competitive Analysis**
- **Operational efficiency**

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# SMA in organizations : Crucial for Small Businesses

- Social media analytics tools are more important for **small businesses** than for larger corporations.
- You have to keep working on **improving your reach and visibility** while ensuring that your reputation is positive. All this, while you are on a **little budget**.
- With social media analytics, it's **smart-work more than hard-work**.



# SMA in organizations : Crucial for Small Businesses..

Social media analytics helps with each of these limitations

- You **don't need much time or a large team**. The **tool makes your job easier** by making most of the work automated.
- **Powerful analytics** help you optimize your social media and online performance.
- Every strategy or campaign **you plan is data-driven**.
- You get **automated insights and recommendations from across multiple online sources** on a single dashboard
- You get help with not only the marketing side of things. The tool brings you data about your target audience thus helping your sales team. It **brings you real-time customer feedback and sentiment analysis** helping the customer service aspect of your business and much more.

# **SMA in organizations : Crucial for Small Businesses...**

Social media analytics helps small businesses specifically in generating the following:

## **Visibility and Lead Generation: social listening**

Social listening is a part of social media analytics that allows you to **listen to every comment or conversation happening online across the globe on any topic**. This gives you a sense of the kind of people looking for your service/product.

# **SMA in organizations : Crucial for Small Businesses...**

## **Better Insights for your Business Functions**

Invest in a quality social media analytics tool and monitor every possible metric on one dashboard. This helps in data-driven decisions

- Identify which content works best for your audience members.
- What are the common complaints?
- Which are the most frequently asked questions about your product/service?
- What more needs to be done?

# **SMA in organizations : Crucial for Small Businesses...**

## **Save Time and Money**

Most importantly, social media analytics helps small businesses save the two most valuable resources – time and money. You get quick updates/alerts about every comment/mention made mentioning your business online.

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# Purpose of Social Media Analytics

The main premise of social media analytics is to **enable informed and insightful decision making by leveraging social media data.**

The following are some sample questions that can be answered with social media analytics.

- What are **customers using social media saying about our brand** or a new product launch?
- **Which content posted** over social media is **resonating more with my customers?**
- How can I use social media data (e.g., tweets and Facebook comments) to **improve our product/services?**
- Is the social media **conversation about our company, product, or service positive, negative, or neutral?**

# Purpose of Social Media Analytics...

- How can I leverage social media **to promote brand awareness?**
- Who are **our influential social media followers, fans, and friends?**
- Who are **our influential social media nodes** (e.g., people and organizations) and their position in the network?
- **Which social media platforms are driving the most traffic to our corporate website?**
- Where is the **geographical location of our social media customers?**

# Purpose of Social Media Analytics...

- Which **keywords and terms** are trending over social media?
- How **active is social media** in our business and **how many people are connected with us?**
- Which websites are connected to my corporate website?
- How are **my competitors doing on social media?**



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# Social Media vs. Traditional Business Analytics

<b>Social Media Analytics</b>	<b>Business Analytics</b>
Semistructured and unstructured data	Structured data
Data is not analytical friendly	Data is analytical friendly
Real-time data	Mostly historical data
Public data	Private data
Stored in third-party databases	Stored in business-owned databases
Boundary-less data (i.e Boundary within the Internet)	Bound within the business intranet
Data is high volume	Data is medium to high volume

# Social Media vs. Traditional Business Analytics

<b>Social Media Analytics</b>	<b>Business Analytics</b>
Highly diverse data	Uniform data
Data is widely shared over the Internet	Data is only shared within organizations
More sharing creates greater value/impact	Less sharing creates more value
No business control over data	Tightly controlled by business
Socialized data	Bureaucratic data
Data is informal in nature	Data is formal in nature

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# Seven Layers Of Social Media Analytics



# **Seven Layers Of Social Media Analytics...**

Each layer carries potentially valuable information and insights that can be harvested for business intelligence purposes.

**1. Text**

**2. Networks**

**3. Actions**

**4. Hyperlinks**

**5. Mobile**

**6. Location**

**7. Search engines**

# Seven Layers Of Social Media Analytics...

## 1. LAYER ONE: TEXT

- Social media **text analytics** deals with the **extraction and analysis of business insights from textual elements** of social media content, such as **comments, tweets, blog posts, and Facebook status updates**. Text analytics is mostly used to **understand social media users' sentiments or identify emerging themes and topics**.

## 2. LAYER TWO: NETWORKS

- Social media **network analytics** **extract, analyze, and interpret personal and professional social networks**, for example, Facebook, **Friendship Network, and Twitter**. Network analytics seeks to **identify influential nodes** (e.g., people and organizations) and **their position in the network**.

# Seven Layers Of Social Media Analytics...

## 3. LAYER THREE: ACTIONS

- Social media **actions analytics** deals with **extracting, analyzing, and interpreting the actions performed by social media users**, including **likes, dislikes, shares, mentions, and endorsement**. Actions analytics are mostly used to measure **popularity, influence, and prediction** in social media.

## 4. LAYER FOUR: MOBILE

- Mobile analytics is the **next frontier** in the social business landscape. Mobile analytics deals with **measuring and optimizing user engagement with mobile applications**.



# Seven Layers Of Social Media Analytics...

## 5. LAYER FIVE: HYPERLINKS

- Hyperlink analytics is about **extracting, analyzing, and interpreting social media hyperlinks (e.g., in-links and out-links)**. Hyperlink analysis can reveal, for example, **Internet traffic patterns and sources of incoming or outgoing traffic to and from a source**.

## 6.LAYER SIX: LOCATION

- Location analytics, also known as **spatial analysis or geospatial analytics**, is concerned with **mining and mapping the locations of social media users, contents, and data**.

# Seven Layers Of Social Media Analytics...

## 7. LAYER SEVEN: SEARCH ENGINES

- Search engines analytics focuses on **analyzing historical search data for gaining a valuable insight into a range of areas, including trends analysis, keyword monitoring, search result and advertisement history, and advertising spending statistics.**

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# **Types Of Social Media Analytics**

- 1) Descriptive analytics (Action and Text Analytics)**
- 2) Diagnostic Analytics (Is also Reactive in Nature)**
- 2) Predictive analytics**
- 3) Prescriptive analytics**

# Types Of Social Media Analytics

## 1) Descriptive analytics

- Descriptive SMA tackles the questions of “what happened and/or what is happening?”
- Descriptive analytics is mostly focused on gathering and describing social media data in the form of **reports, visualizations, and clustering to understand a business problem.**
- **Actions analytics** (e.g., no. of likes, tweets, and views) and **text analytics** are examples of **descriptive analytics.**
- Social media text (e.g., user comments), for example, can be used to understand users’ sentiments or identify emerging trends by clustering themes and topics.
- Currently, descriptive analytics **accounts for the majority of social media analytics.**

# Types Of Social Media Analytics

## 2) Diagnostic Analytics (Is also Reactive in Nature)

- Diagnostic SMA analytics looks into the questions of “why something happened?”
- For example, descriptive analytics can provide an overview of your social media marketing campaign’s performances (posts, mentions, followers, fans, page views, reviews, pins, etc); diagnostic analytics can distill this data into a single view to see what worked in your past campaigns and what didn’t.
- Diagnostic analysis focuses on the numbers: like counts, follower numbers, pageviews, reviews, shares, what have you. This type of analytics focuses on the performance of posts and campaigns and attempts to discern what made them successful. By comparing the performance of different campaigns, trends and consumer preferences can be discerned.
- Enablers of diagnostics analytics include inferential statistics, behavioral analytics, correlations & retrospective analysis and outcome being cause and effect analysis of a business issues.

# Types Of Social Media Analytics

## 3) Predictive analytics (Is Proactive in Nature)

- Predictive analytics involves analyzing large amounts of accumulated social media data to **predict a future event**. For example, an intention expressed over social media (such as **buy, sell, recommend, quit, desire, or wish**) can be mined to predict a future event (**such as purchase**).
- It deals with the question of “what will happen and/or why will it happen?”
- Or a business manager **can predict sales figures based on historical visits** (or in-links) to a corporate website.
- Determine the right time to tweet for maximum alignment with your audience time zone.
- It can range from simple things, like predicting possible visits to a location based upon posts expressing that intention, to forecasting entire trends and phenomena based upon mentions.

# Types Of Social Media Analytics

## 4) Prescriptive analytics

- While predictive analytics help to **predict the future**, **prescriptive analytics suggest the best action to take when handling a scenario**
- For example, if **you have groups of social media users that display certain patterns of buying behavior**, **how can you optimize your offering to each group?**
- Prescriptive analysis is the analysis of data with the intention of providing the best way to proceed at any given moment. This can be applied to situations ranging from handling social media crises and incidents (“how well does this type of apology track with our target audience?”) to purchase preferences (“we’ve identified this group of customers – how do we optimise our sales process to their habits?”). Although it’s an incredibly useful form of analysis, it requires a lot of data in order to truly show its potential.



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# Social Media Analytics Cycle



# Social Media Analytics Cycle

The social media analytics process involves **six steps to mine desired business insights from social media data**. The process begins with **defining business goals and objectives**, and continues until these objectives are fully satisfied.

The six general steps are:

1. **Data collection**: Gathering relevant data from social media platforms.
2. **Data processing**: Cleaning and preparing the data for analysis.
3. **Data analysis**: Analyzing the data using various methods and tools to uncover insights.
4. **Insights generation**: Interpreting the results of the analysis to generate insights.
5. **Insights communication**: Communicating the insights to relevant stakeholders.
6. **Insights implementation**: Using the insights to inform business decisions and actions.

# Social Media Analytics Cycle

## Step 1 - Identification

- The identification stage of social media analytics involves **finding the right sources of data** to analyze in order to gain valuable business insights.
- The data **should be aligned with the business's objectives** and can come from both **official business-owned platforms**, such as social media accounts and blogs, and **nonofficial platforms such as Google search trends or Twitter** search stream data.
- It is important to consider the business objectives when identifying the sources and types of data to be analyzed.

# Social Media Analytics Cycle

## Step 2 - Extraction

- The extraction stage of social media analytics involves using appropriate methods and tools to gather data from identified sources. This can include **manual data collection for small-scale data and automated extraction using APIs (application programming interfaces) for larger data sets.**
- It is important to consider **privacy and ethical issues when mining data from social media platforms** and to have a clear social media privacy policy in place to ensure that data handling and extraction practices **do not violate user privacy.**
- Specialized tools may be needed to extract certain types of data, such as **social network and hyperlink network data.**

# Social Media Analytics Cycle

## Step 3 - Cleaning

- The cleaning step in social media analytics involves **removing unwanted data from the collected data set.**
- This can involve processes such as **coding, filtering, clustering, and natural language processing to remove irrelevant data.**
- Both automated and manual techniques may be used for cleaning, depending on the type of data and the desired level of accuracy.

# Social Media Analytics Cycle

## Step 4 - Analyzing

- The analyzing stage of social media analytics involves **using clean data to identify valuable insights for the business.**
- The approach and techniques used will depend on the type of data being analyzed and the tools and algorithms employed.
- It is important to maintain the **integrity of the data while extracting meaningful insights and to have a good understanding of the capabilities of the tools being used.**

# Social Media Analytics Cycle

## Step 5 - Visualization

- The visualization step in social media analytics involves **creating visual representations of the results of the analysis**
- Visualization can help **reveal hidden patterns, relationships, and trends in complex and large data sets**
- Different types of data will result in **different types of visualizations, including network data, topical data, temporal data, and geospatial data**
- Other types of visualizations include **trees, hierarchical graphs, and heat maps**
- Effective visualization is important **for effectively communicating the results of the analysis to top management**



# Social Media Analytics Cycle

## Step 6 - Interpretation

- Interpret and **translate analytics results into a meaningful business problem.**
- Two strategies or approaches used are:
  - 1) Producing easily consumable analytical results
  - 2) Improving analytics consumption capabilities

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# Challenges To Social Media Analytics

Social media data is **high volume, high velocity, and highly diverse**, which, in a sense, is a blessing in terms of the insights it carries; however, analyzing and interpreting it presents several challenges.

## Volume And Velocity As A Challenge

- Social media **data is large in size and is swiftly generated.**
- **Capturing and analyzing millions of records that appear every second is a real challenge.**
- Capturing all this information **may not be feasible.**
- Knowing what to focus on is crucial for **narrowing down the scope and size of the data.** Luckily, sophisticated tools are being developed to handle high-volume and high-velocity data.

# Challenges To Social Media Analytics...

## Diversity As Challenge

- Social media users and the content they generate are **extremely diverse, multilingual, and vary across time and space.**
- **Not every tweet, like, or user is worth looking at.**
- A **tweet or mention coming from an influential social media user** is more important than a tweet from a non influential user.
- Due to the **noisy and diverse nature of social media data, separating important content from noise is challenging and time consuming.**

# Challenges To Social Media Analytics...

## Unstructured Ness As A Challenge

- Unlike the data stored in the corporate databases, which are mostly numbers, **social media data is highly unstructured and consists of text, graphics, actions, and relations.**
- Short social media text, such as tweets and comments, has dubious grammatical structure, and is laden with abbreviations, acronyms, and emoticons (a symbol or combination of symbols used to convey emotional expressions in text messages), thus representing a great **challenge for extracting business intelligence.**

# Challenges To Social Media Analytics...

## **Privacy and Ethical Concerns**

- Accessing and using personal user data can raise privacy issues.
- Compliance with GDPR, CCPA, and platform-specific APIs (like Twitter/X or Facebook Graph API) is required.

## **Data Integration Across Platforms**

- Different platforms (Facebook, X/Twitter, Instagram, TikTok) have different formats and metrics
- Combining data from multiple sources into a unified view is complex and time-consuming.

# Challenges To Social Media Analytics...

## **Fake Engagement and Bots**

- Fake followers, likes, and comments from bots or click farms skew analytics.
- Differentiating between genuine vs. artificial engagement is challenging.

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# The Limitations of Social Media Analytics

- **Accuracy of the data**

Social media platforms collect data from users, but this data can be biased or incomplete.

- **The sample size**

Social media analytics data is typically collected from a small subset of users, which may not accurately represent the entire audience.

- **Social media analytics can only analyze public data**

Private messages and interactions are not included in the data, which can limit our understanding of the audience.

# The Limitations of Social Media Analytics

- **Social media analytics cannot provide context for the data**

Social media posts are often brief and lack context, making it challenging to understand the underlying reasons behind certain trends or behaviors. This lack of context can lead to misinterpretation of data.

- **Inability to Capture Offline Conversations**

Social media analytics focus solely on online interactions. It means that conversations and sentiments expressed offline are not taken into account, potentially leading to an incomplete picture.

# The Limitations of Social Media Analytics

- **Focus on Quantity over Quality**

Social media metrics often prioritize the number of likes, shares, and followers, which may not always reflect the true impact or engagement level. High numbers do not necessarily equate to meaningful interactions or conversions.

- **Algorithmic Changes**

Social media platforms frequently update their algorithms, affecting how content is displayed and how data is collected. These changes can impact the accuracy and reliability of historical data and trend analysis.

# The Limitations of Social Media Analytics

- **Platform-specific Metrics**

Each social media platform has its own analytics tools and metrics, making it challenging to compare data across different platforms accurately. This can create inconsistencies and hinder comprehensive analysis.

- **Real-time Nature of Data**

Social media data is continuously changing and evolving in real-time. While this can provide up-to-date insights, it can also make it challenging to track long-term trends accurately.

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# Social Media Analytics Tools:

**Compare different social media analytics tools available in the market and explain their strengths and weakness.**

Layer of social media analytics	Example of tools
Text	Discovertext Lexalytics Tweet Archivist Twitonomy Netlytic LIWC Voyant

# Social Media Analytics Tools...

Layer of social media analytics	Example of tools
Actions	Lithium Twitonomy Google Analytics SocialMediaMineR

# Social Media Analytics Tools...

Layer of social media analytics	Example of tools
Network	NodeXL UCINET Pajek Netminer Flocker Netlytic Reach Mentionmapp



# Social Media Analytics Tools...

<b>Layer of social media analytics</b>	<b>Example of tools</b>
Mobile	Countly Mixpanel Google Mobile Analytics

# Social Media Analytics Tools...

<b>Layer of social media analytics</b>	<b>Example of tools</b>
Location	Tweepssmap Trendsmatp Followerwonk Esri Maps Agos
Hyperlinks	Webometrics Analyst VOSON
Research Engines	Google Trends

# Review Questions

1. Why it is important for business managers to understand and mine social media data?
2. What are some core characteristics of social media?
3. Briefly explain different social media types with examples.
4. Briefly explain how businesses can leverage Facebook, YouTube, Twitter, blogs, and wikis?
5. What is social media analytics, and how it is different from traditional business analytics?
6. Briefly explain the seven layers of social media data. Support your answer with examples.
7. Explain the social media analytics cycle.
8. What ethical issues should be considered when mining social media data?
9. What are some main challenges to social media analytics?
10. Compare different social media analytics tools available in the market and explain their strengths and weakness.
11. Differentiate among Web 1.0, Web 2.0, and Web 3.0.

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# Thank you