Module 1: Introduction to Social Media Analytics (SMA)

Syllabus:

Lecture no	Content	Duration (Hr)	Self-Study (Hrs)
1	Core Characteristics of Social Media, Types of Social Media	1	1
2	Social media landscape, Need for Social Media Analytics (SMA), SMA in small & large organizations	1	1
3	Purpose of Social Media Analytics, Social Media vs. Traditional Business Analytics, Seven Layers of Social Media Analytics	1	1
4	Types of Social Media Analytics, Social Media Analytics Cycle	1	1
5	Challenges to Social Media Analytics, Social Media Analytics Tools	1	1

Theoretical Background:

- Social media analytics refers to the process of collecting and analyzing data from various social media platforms to gain insights into audience behavior, content performance, and overall social media marketing effectiveness.
- It involves using specialized tools and techniques to track, measure, and interpret data to make informed decisions and improve social media strategies.
- Social media can benefit businesses by enabling marketers to spot trends in consumer behavior that are relevant to a business's industry and can influence the success of marketing efforts.
- Furthermore, marketers can analyze performance of different social platforms -- such as Facebook, LinkedIn and Twitter -- and of specific social media posts to determine which messaging and topics resonate best with a target audience.

Key Definitions:

Social media analytics is the process of collecting and analyzing audience data shared on social networks to improve an organization's strategic business decisions.

Lecture 1

Learning Objective: Learners shall be able to understand the basics of Computing system.

Core Characteristics of social media

1. **Web space**
The website should provide the users free web space to upload content.

2. **Web address**
The users are given a unique web address that becomes their web identity. They can post and share all their content on this web address.

3. **Build profiles**
Users are is asked to enter personal details like name, address, date of birth, school/college education, professional details etc. The site then mines the personal data to connect individuals.

4. **Connect with friends**
Users are encouraged to post personal and professional updates about themselves. The site then becomes a platform to connect friends and relatives.

5. **Upload content in real time**
Users are provided the tools to post content in real time. This content can be text, images, audio, video or even symbolic likes and dislikes. The last post comes first, giving the site freshness.

6. **Enable conversations**
Members are given the rights to comment on posts made by friends and relatives. The conversations are a great social connect.

7. **Posts have time stamp**
All posts are time stamped, making it easy to follow posts.

Types of social media

1. Social networks
   E.g.: Facebook
   Twitter
   Instagram
   LinkedIn
   TikTok
2. Discussion forums
   E.g.: Reddit
   Digg
   Quora

Clubhouse
3. Image-sharing networks
   E.g.: Instagram
   Flickr
   Photobucket
4. Bookmarking networks
   E.g.: Feedly
   Flipboard
   Pocket
   StumbleUpon
   Pinterest
5. Blogging and publishing networks
   E.g.: Medium
   WordPress
   Facebook
   Tumblr
6. Consumer review networks
   E.g.: TripAdvisor
   Yelp
   OpenTable
   Google My Business
7. Interest-based networks
   E.g.: Strava
   Peanut
   Goodreads
8. Sharing economy networks
   E.g.: Lending Club
   Couchsurfing
   Eatwith
9. Social shopping networks
   E.g.: Instagram
   Poshmark
   Etsy
   Facebook
10. Video hosting platforms
    E.g: YouTube
    TikTok
    Snapchat
    Vimeo
    Instagram

Lecture 2

Learning Objective:

· **Learners shall be able to understand the basics of Computing system.**

Social media landscape:

The social media landscape refers to the overall ecosystem of social media platforms and their interactions with users, businesses, and other entities. It encompasses all the major

social media platforms, their features, user demographics, trends, and the ways in which people and organizations use these platforms to communicate, share content, and engage with others.

The social media landscape is continually evolving, with new platforms emerging and existing ones evolving to meet the changing needs and preferences of users.

Some of the key aspects that make up the social media landscape include:

1. **Social Media Platforms**: This includes the major social media platforms like Facebook, Twitter, Instagram, LinkedIn, YouTube, TikTok, Pinterest, Snapchat, Reddit, Tumblr, and others.
2. **User Demographics (Data from particular group):** Different social media platforms attract diverse user demographics based on factors like age, gender, location, interests, and professional backgrounds.
3. **Content Types:** Social media platforms support various content types, including text, images, videos, live streams, stories, and more.
4. **Interactivity and Engagement**: Many social media platforms facilitate real-time interactions through comments, likes, shares, retweets, and direct messaging, creating a sense of community and engagement.
5. **Social Media Marketing**: Businesses and brands use social media platforms for marketing and promoting their products and services to reach a broader audience.
6. **Influencer Marketing**: Influencers, who are individuals with a significant following on social media, play a vital role in promoting products and services to their audiences.
7. **Trends and Virality**: social media are known for rapidly spreading trends, challenges, and viral content, influencing pop culture and conversations.
8. **Privacy and Security**: Concerns about data privacy and security are integral to the social media landscape, with platforms continuously updating their policies to protect user information.
9. **Algorithm Changes**: Social media platforms often update their algorithms, affecting how content is displayed in users' feeds and timelines.
10. **Social Issues and Activism**: social media serves as a platform for discussing and advocating various social issues, sparking movements, and driving change.

Need for Social Media Analytics (SMA):

Social media analytics is vital since it helps business owners evaluate how potential customers interact with their brand and content on different social platforms. This generates insights and a report enabling the organization to know whether it needs to reconsider the initial marketing channels depending on how customers interact with the content posted on social media.

There are many reasons why analytics is important in social media.

Tracking and Monitoring Third-party Sites

Analytics is an awesome choice that can help you identify whether third-party websites have an impact on the success of your social media campaigns. You can use this feature to analyse

whether any third-party sites, such as social media influencers, have recommended any of your products or services.

Tracking these aspects enables your company to understand if certain aspects are worth investing in.

Identifying Valuable Trends

When you look at your social media data keenly, you will realize that there are trends within the industry that can help you foretell the future. Social media analytics helps businesses to identify possible purchasing patterns that revolve around the purchasing models of potential customers.

This hints at one of the best products and services you can invest in and make significant returns out of your business.

Engage with Customers

You can use SMA to identify possible consumer reactions to social media marketing content. As a result, the business stakeholders understand if the customers have approved of how the business presents its data and marketing content on social media. It allows customers to communicate with the company directly in real-time.

As not everyone speaks English, you will need to communicate with them in their native language to engage with them fully. Several studies have shown that businesses that aren't available in different languages will likely fail to attract international users.

So, let us say you are looking to connect and engage with French speakers on social media. The quickest and most effective way to do so is by communicating with your audience in the French language. Hence, you will need to create and translate content into French on your social media sites with the assistance of marketing experts in French translation.

This is why big brands, like Nike, create multiple business pages on one social media platform to directly target specific countries and markets.

It allows you to better position your brand by having it in a language they use every day. Also, customers can easily share their likes and dislikes in different business aspects based on what they feel is right or wrong.

Identify Demographics

SMA helps businesses understand who their exact customers are and the exact places where they come from. In return, the company gets a chance to learn whether its target market engages with the content published on social media.

SMA in small & large organizations

SMA (Social Media Analytics) plays a significant role in both small and large organizations. Social media analytics involves collecting, analysing, and interpreting data from social media

platforms to gain valuable insights into audience behaviour, content performance, and overall social media strategy.

Social Media Analytics in Small Organizations:

1. Audience Insights: SMA helps small businesses understand their target audience better. It provides demographic data, preferences, and interests of the audience, allowing small organizations to tailor their content and marketing efforts accordingly.
2. Content Performance: Small organizations can track the performance of their social media content using SMA. By analysing engagement metrics like likes, shares, comments, and click-through rates, they can identify the most effective content types and optimize their content strategy.
3. Competitive Analysis: SMA enables small businesses to monitor their competitors' social media activities. Understanding what works well for competitors can inspire new ideas and help stay competitive in the market.
4. Cost-Effectiveness: SMA tools come in various price ranges, including free options. Small organizations can find affordable solutions that provide essential analytics, helping them make data-driven decisions without breaking their budget.
5. Customer Service: SMA can be used to monitor and respond to customer inquiries, feedback, and complaints on social media platforms promptly. It enhances customer service and fosters positive customer relationships.

Social Media Analytics in Large Organizations:

1. Big Data Analysis: Large organizations deal with massive amounts of data from various social media platforms. SMA helps analyse and process this big data to identify patterns, trends, and insights that can guide strategic decision-making.
2. Multi-Channel Analysis: Large organizations often have a presence on multiple social media platforms. SMA consolidates data from various channels, providing a holistic view of their social media performance.
3. Brand Reputation Management: SMA helps large organizations monitor brand mentions, sentiment analysis, and online reputation. By promptly addressing negative feedback and managing crises, they can protect their brand reputation.
4. Influencer Marketing: SMA aids in identifying and analysing influencers who align with the organization's brand values. This helps large organizations make informed decisions when engaging influencers for marketing campaigns.
5. Campaign Measurement: SMA provides detailed **metrics** to evaluate the success of social media marketing campaigns. This data helps large organizations allocate resources effectively and optimize their future campaigns.
6. Integration with Business Analytics: In large organizations, social media data is often integrated with overall business analytics, providing a more comprehensive understanding of how social media impacts the company's performance and bottom line.

Purpose of Social Media Analytics

#1 They help you understand your audience

Taking steps to understand your audience using social data can help you in so many ways. For example, analyzing your past posts can help you find your unique best time to share.

Timing is an important part of social media marketing. If you post when your fans are online and at their highest level of alertness your posts will drive more engagement, traffic and sales.

Therefore, you should dissect your social data and find your unique best time to post on social media.

Some social networks let you do this easily through their built-in analytics.

On Facebook, you can find it by going to the 'Post' section in your insights.

You'll then see two graphs at the top of the screen.

They will show you the days and times at which most of the page's fans are online.

If you post content at these times, reach will be high.

#2 They show you what your best social networks are

Not all social networks will work perfectly for you. Just because Facebook has over 2 billion users and Instagram has over 800 million users does not mean they will drive the best results.

There might be smaller networks like Pinterest or Flickr that can help execute your strategy better.

The only way to confirm which social networks work best is through experimentation and using your analytics to measure how much engagement, traffic, and sales you are getting.

You can also use the data to prioritize the amount of time you spend managing each social network. More time can be spent on the top performing networks and lesser on ones that bring in smaller results.

To figure out which social networks are driving the highest engagement, you should use a social media dashboard tool like Cyfe. It connects to several social networks and you can place data from all of them in one single dashboard to compare performance.

Cyfe also has a feature known as mashups which can be used to mash data from different social networks to create one graph that compares performance.

#3 Social data can help you create better content

When you track your social networks, you will understand what content drives the best results.

On networks like Facebook and Twitter you will be able to see whether images, links or videos do better. While on visual-centric networks like Pinterest and Instagram you can check what type of images perform best.

To figure out what content is performing best you can use your social media page's analytics. Some social networks like Facebook have built-in analytics that shows what types of media perform best. You can view it in the 'Posts' section of your analytics on Facebook.

As you can see in the screenshot below, links are performing best on this page.

You can also use analytics to check how your blog performs. You can see which content is shared more, the number of visits each social network sends, how much time they spent and how many of those people converted to subscriptions and sales.

To check your content's performance on social media, you can use a tool like Buzzsumo.

And to check the amount of traffic a social network is driving you can use Google Analytics. This tool will also display other metrics like the amount of time these people spent on your site, the number of pages they visited, the bounce rate, etc.

#4 Help you Understand competitors

Your competitors are also creating content and running social media strategies. This will result in their own unique data.

If you analyze this data, you will be able to figure out what is working and what isn't. It will help you avoid the mistakes they are making and only focus on techniques that bring results.

To figure out which social networks are working best for your competitors you can use Similar Web.

Just add the URL to any website and it will show you the percentage of the traffic your site receives from social media and the social networks driving it.

Then you can spy on your competitors' top performing social media and content using Cyfe and Buzzsumo.

For example, on Cyfe you can create an Instagram widget and choose to track a competitors account instead of your own. You just add their username and select the metric.

Here I chose top posts by 'Likes' and I am able to view them.

I can click on each post and it will take me to the post on Instagram so that I can take a closer look.

#5 Social metrics can help you create a better strategy

You will not create the best strategy in your first attempt. You are bound to make several mistakes and use tactics that don't work.

But if you study your social media analytics regularly you will be able to figure out what these mistakes are. Hence, when you optimize your strategy you can eliminate them and fortify it.

To figure out these mistakes using any good social media analytics tool will do. But along with it you should use social media listening to check the impact your strategy is having on people.

Social media listening can be defined as…

'The process of tracking online conversations to learn what people are saying about a specific brand, industry, person, etc. and use the insights as a business leverage.'

Using social listening you can view in real-time what people are saying about your business online. This can help you modify your strategy to better connect with current and potential customers.

For executing social media listening you can use a tool like Sentione. Just sign up for an account and add in keywords like your product name, company name and other relevant keywords and the software will track all the mentions and list them out. It will also display the data in the form of graphs.

You can use this data to modify your strategy and create better content in the future.

#6 Social media analytics shows you how a social media campaign is performing

Once you launch a social media campaign you should regularly track it. You can check if it is panning out the way you intended it to.

If things aren't going according to plan you can make changes to your campaign and rectify it. And if results are very damaging you can nip it in the bud.

For this, you can use a tool like Sentione as it conducts a sentiment analysis of campaigns to show whether it is having a positive, negative or neutral effect.

Social Media vs. Traditional Business Analytics

Data Source:

Social media analytics focuses on data derived from social media platforms, such as Facebook, Twitter, Instagram, LinkedIn, etc. It involves analyzing user-generated content, interactions, sentiments, and other social media-specific metrics.

Traditional business analytics encompasses a broader range of data sources, including structured data from databases, transactional systems, customer relationship management (CRM) platforms, enterprise resource planning (ERP) systems, and other operational data sources.

Focus Areas:

Social media analytics is primarily concerned with understanding social media engagement, brand sentiment, customer feedback, social trends, influencer impact, and audience behavior on social media platforms.

Traditional business analytics covers various aspects of business operations, such as sales performance, financial analysis, supply chain management, customer behavior, inventory management, and overall business performance.

Methodologies:

Social media analytics often uses natural language processing (NLP) techniques to analyze textual data, sentiment analysis to gauge customer sentiments, and social network analysis to understand relationships and connections between users.

Traditional business analytics relies on statistical analysis, data mining, and data modeling techniques to identify patterns, correlations, and trends in structured data.

Use Cases:

Social media analytics is widely used in digital marketing and brand management. It helps businesses monitor their social media presence, identify trends, measure the success of social media campaigns, and engage with customers effectively.

Traditional business analytics is applied across various departments within an organization. It helps in optimizing business processes, improving decision-making, forecasting sales, identifying cost-saving opportunities, and enhancing overall efficiency and profitability.

SEVEN LAYERS OF SOCIAL MEDIA ANALYTICS

The following are seven social media layers:

1. Text

2. Networks

3. Actions

4. Hyperlinks

5. Mobile

6. Location

7. Search engines

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.

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

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.

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 (or apps for short).

LAYER FIVE: HYPERLINKS Hyperlink analytics is about extracting, analyzing, and interpreting social media hyperlinks (e.g., in-links and out-links)

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.

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.

TYPES OF SOCIAL MEDIA ANALYTICS

DESCRIPTIVE ANALYTICS 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.

PREDICTIVE ANALYTICS

Predictive analytics involves analyzing large amounts of accumulated social media data to predict a future event.

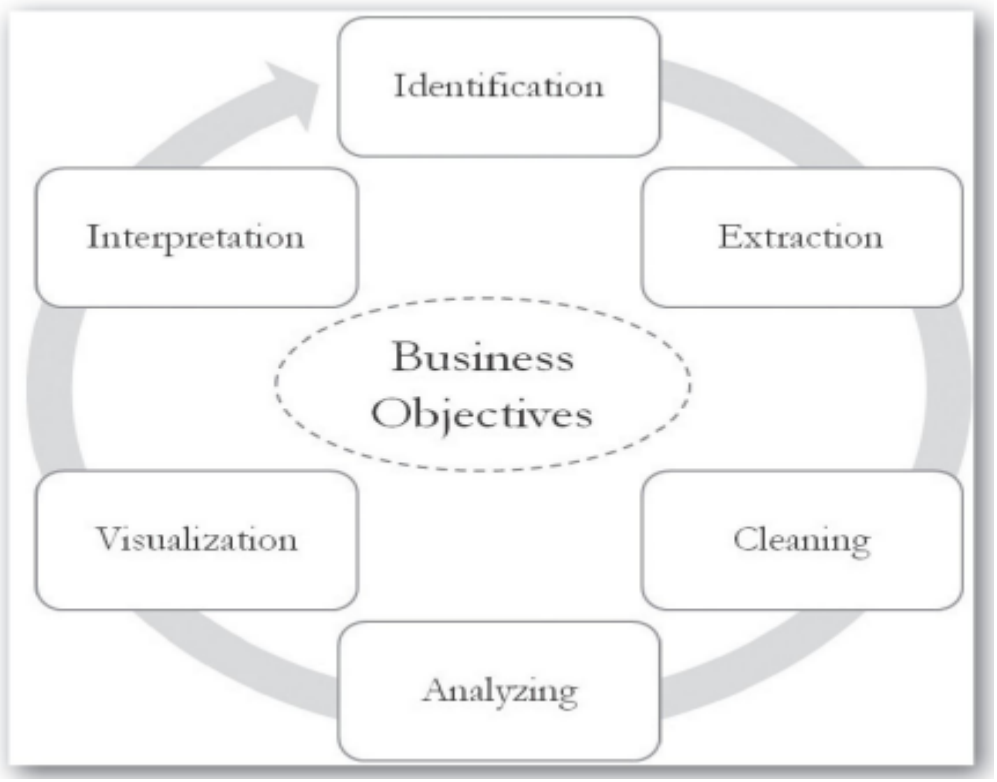
For example, an intention expressed over social media (such as buy, sell, recommend, quit, desire, or wish) can be mined to predict a future event (such as purchase). Or a business manager can predict sales figures based on historical visits (or in-links) to a corporate website.

The TweepsMap tool, for example, can help you determine the right time to tweet for maximum alignment with your audience time zone. Or, based on analyzing your social media users' languages, it can suggest if it is time to create a new Twitter account for another language.

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? Like predictive analytics, prescriptive analytics has not yet found its way into social media data.

SOCIAL MEDIA ANALYTICS CYCLE



STEP 1: IDENTIFICATION

The identification stage is the art part of social media analytics and is concerned with searching and identifying the right source of information for analytical purposes. The numbers and types of users and information (such as text, conversation, and networks) available over social media are huge, diverse, multilingual, and noisy. Thus, framing the right question and knowing what data to analyze is extremely crucial in gaining useful business insights. The source and type of data to be analyzed should be aligned with business objectives. Most of the data for analytics will come from your business-owned social media platforms, such as your official Twitter account, Facebook fan pages, blogs, and YouTube channel. Some data for analytics, however, will also be harvested from nonofficial social media platforms, such as Google search engine trends data or Twitter search stream data. The business objectives that need to be achieved will play an important role in identifying the sources and type of data to be mined.

STEP 2: EXTRACTION

Once a reliable and minable source of data is identified, next comes the science of the extraction stage. The type (e.g., text, numerical, or network) and size of data will determine the method and tools suitable for extraction. Small-size numerical information, for example, can be extracted manually (e.g., going through your Facebook fan page and counting likes and copying comments), and a large-scale automated extraction is done through an API (application programming interface). Manual data extraction maybe practical for small-scale data, but it is the API-based extraction tools that will help you get most out of your social media platforms. Mostly, the social media analytics tools use API-based data extraction. APIs, in simple words, are sets of routines/protocols that social media service companies (e.g., Twitter and Facebook) have set up that allow users to access small portions of data hosted in their databases. The greatest benefit of using APIs is that it allows other entities (e.g., customers, programmers, and other organizations) to build apps, widgets, websites, and other tools based on open social media data. Some data, such as social networks and

hyperlink networks, can only be extracted through specialized tools. Two important issues to bear in mind here are the privacy and ethical issues related to mining data from social media platforms. Privacy advocacy groups have long raised serious concerns regarding large-scale mining of social media data and warned against transforming social spaces into behavioral laboratories. The social media privacy issue first came into the spotlight particularly due to the large-scale "Facebook Experiment" carried out in 2012, in which Facebook manipulated the news feeds feature of thousands of people to see if emotion contagion occurs without face-to-face interaction (and absence of nonverbal cues) between people in social networks (Kramer, Guillory et al. 2014). Though the experiment was consistent with Facebook's Data Use Policy (Editorial 2014) and helped promote our understanding of online social behavior, it does, however, raise serious concerns regarding obtaining informed consent from participants and allowing them to opt out. The bottom line here is that your data extraction practices should not violate a user's privacy and the data extracted should be handled carefully.

While all social media platforms have their privacy policies in place, to be on the safe side it is advisable to craft your own social media privacy policy. Your policies should explicitly detail social media ownership in terms of both accounts and activities such as individual and page profiles, platform content, posting activity, data handling and extraction, etc.

STEP 3: CLEANING

This step involves removing the unwanted data from the automatically extracted data. Some data may need a lot of cleaning, and others can go into analysis directly. In the case of text analytics, for example, cleaning, coding, clustering, and filtering may be needed to get rid of irrelevant textual data using natural language processing (NPL). Coding and filtering can be performed by machines (i.e., automated) or can be performed manually by humans. For example, DiscoverText combines both machine learning and human coding techniques to code, cluster, and classify social media data (Shulman 2014).

STEP 4: ANALYZING

At this stage the clean data is analyzed for business insights. Depending on the layer of social media analytics under consideration and the tools and algorithm employed, the steps and approach you take will greatly vary. For example, nodes in a social media network can be clustered and visualized in a variety of ways depending on the algorithm employed. The overall objective at this stage is to extract meaningful insights without the data losing its integrity. While most of the analytics tools will follow you through the step-by-step procedure to analyze your data, having background knowledge and an understanding of the tools and its capabilities is crucial in arriving at the right answers.

STEP 5: VISUALIZATION

In addition to numerical results, most of the seven layers of social media analytics will also result in visual outcomes. The science of effective visualization known as visual analytics is becoming an important part of interactive decision making facilitated by solid visualization (Wong and Thomas 2004; Kielman and Thomas 2009). Effective visualization is particularly helpful with complex and huge data because it can reveal hidden patterns, relationships, and trends. It is the effective visualization of the results that will demonstrate the value of social media data to top management. Depending on the layer of the analytics, the analysis part will result in relevant visualizations for effective communication of results. Text analytics, for instance, can result in a word cooccurrence cloud; hyperlink analytics will provide visual hyperlink networks; and location analytics can produce interactive maps. Depending on the

type of data, different types of visualization are possible, including the following. Network data (with whom)—network data visualizations can show who is connected to whom. For example, a Twitter following-following network chart can show who is following whom.

STEP 6: INTERPRETATION

Interpreting and translating analytics results into a meaningful business problem is the art part of social media analytics. This step relies on human judgments to interpret valuable knowledge from the visual data. Meaningful interpretation is particularly important when we are dealing with descriptive analytics that leave room for different interpretations. Having domain knowledge and expertise are crucial in consuming the obtained results correctly. Two strategies or approaches used here can be 1) producing easily consumable analytical results and 2) improving analytics consumption capabilities . The first approach requires training data scientists and analysts to produce interactive and easy-to-use visual results. And the second strategy focuses on improving management analytics consumption capabilities .

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. Analyzing unstructured data requires new metrics, tools, and capabilities, particularly for real-time analytics that most businesses do not possess. Some social media analytics tools are listed in a later section.

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. For example, on Twitter, three-hundred forty-two thousand tweets appear every minute, and on Facebook, one million likes are shared every twenty minutes. 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.

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 noninfluential user. Due to the noisy and diverse nature of social media data, separating important content from noise is challenging and time consuming.

UNSTRUCTUREDNESS 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.