

**CHAPTER  
3****Social Media Text,  
Action and Hyperlink  
Analytics****University Prescribed Syllabus****Social Media Text, Action & Hyperlink Analytics**

Social Media Text Analytics - Types of Social Media Text, Purpose of Text Analytics, Steps in Text Analytics, Social Media Text Analysis Tools

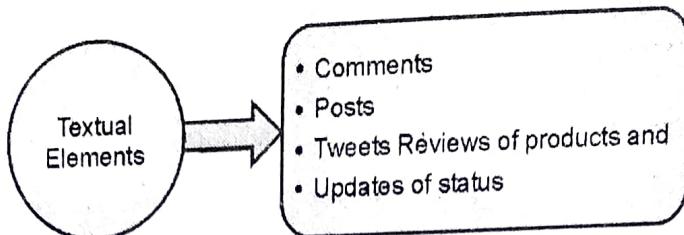
Social Media Action Analytics - What Is Actions Analytics? Common Social Media Actions, Actions Analytics Tools

Social Media Hyperlink Analytics - Types of Hyperlinks, Types of Hyperlink Analytics, Hyperlink Analytics Tools

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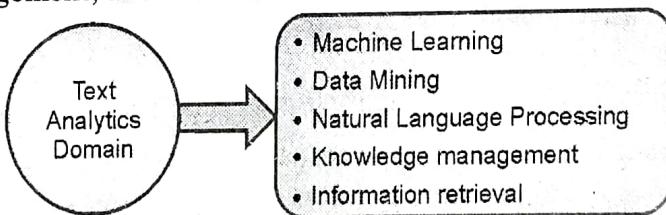
## ► 3.1 SOCIAL MEDIA TEXT ANALYTICS

- Social media platforms involve text as one of the basic elements.
- Textual elements of social media can be comments, posts, tweets, reviews of products and updates of status. Nowadays text mining and text analytics are considered the same.



**Fig. 3.1.1 : Variations of Textual Elements**

- Text analytics is the process of extracting, analyzing and interpreting the insights from the textual information present on social media.
- Text analysis is used for business intelligence purposes by extracting meaningful information, patterns of data and structures from the user generated data.
- The speed at which the comments are generated over social media and the volume of data does not allow for reading it manually.
- Text analytics has evolved into a well-established field with roots in a variety of domains, including data mining, machine learning, natural language processing, knowledge management, and information retrieval.



**Fig. 3.1.2 : Various Text Analytics Domain**

Metrics that should be tracked while performing social media analytics :

There are several types of analytics that need to be performed :

- |                         |                          |
|-------------------------|--------------------------|
| 1. Audience Analytics   | 2. Performance metrics   |
| 3. Competitor Analytics | 4. Paid Social Analytics |
| 5. Influencer Analytics | 6. Sentiment analytics   |

Let's See all these analytics in detail :

### ► 1. Audience Analytics

- Audience is most essential part of strategy you have defined for social media

- Audience analytics helps to understand requirements of customer and converting them into positive responses
- Previously user's data across multiple platforms which finds difficult to analyze.
- Analytics tools are available which can perform analytics on user's data on different platforms for better understanding of demographics, interests and behavior.
- Targeted content minimizes the cost and you can optimize cost per click.

## ► 2. Performance metrics

- Performance measurement is easy for checking whether your strategies are working or need any sort of improvement.
- Some of the key performance metrics are :
  - (1) Interactions across platforms and over time which help in measuring viewer's engagement.
  - (2) Check whether the number of customers is growing over time or not?

## ► 3. Competitor Analytics

- To understand performance metrics completely, you have to see them from a competitor's view.
- In short, we can say how your brand's performance is by comparing competitors.
- Analytics tools help to you to measure :
  - (1) Your product effectiveness
  - (2) Areas of improvement.
- This can be a good starting point for your social media efforts

## ► 4. Paid Social Analytics

- Advertising is one of the more important aspects of social media.
- Lack of integrity and content can result in higher bids for content that does not succeed
- Analytics tools often predict the contents which can work best thus resulting into lowering the risk of investing in your market budget.
- Key metrics that can be considered are :
  - Total no. of active ads
  - Total ad spend
  - Total clicks
  - Click-through rate
  - Cost per click
  - Cost per engagement
  - Cost per action
  - Cost per purchase

- These metrics used to keep track of every rupee spent and how much return your social media generates.

## ► 5. Influencer Analytics

- Social media analytics provides insight into the right metrics to ensure a successful influencer marketing.
- The influencer metrics we can track are :
  - (i) To check right engagement of users: total interactions per 1000 followers
  - (ii) Audience size and maximum reach with the help of hashtag
  - (iii) The no. of posts an influencer creates on a regular basis determines the strength of an influencer's activity and engagement.
- This can be a good indicator of an influencer's potential for success.

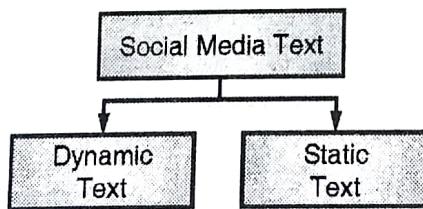
## ► 6. Sentiment analytics

- To check the popularity in your audience sentiment analysis is done.
- And for customer-service centric businesses, potential support for customer issues can be served by sentiment analysis.
- Engagement and engagement rates need to be tracked over time.
- It will ensure a high growth rate.
- Customer sentiment is collected and analyzed to guess the workout for designing business strategies and deciding which contents resonate with most of your audience.
- The type of analysis can also be used to identify type of content that can positively influence customer sentiment.

### ☒ 3.1.1 Types of Social Media Text

Types of social media text Based on its nature, classification of social media text is into two categories :

1. Dynamic text and
2. Static text.



**Fig. 3.1.3 : Types of social media text**

## ► 1. Dynamic Text

- Dynamic text is a real-time social media user-generated text or statement to express an opinion about content or information posted over social media.
- Dynamic text is mostly posed by social media users in response to social, political, economic, personal, cultural, or business issues to express their views and feelings related to it.
- Dynamic text is usually smaller in length (e.g., a couple of sentences), diverse in nature, and is updated or deleted more frequently.

Examples of dynamic social media text include tweets, Facebook comments, and product reviews. Below, we briefly explain the two most common dynamic social media texts: tweets and comments.

### Tweet

- A tweet is a one hundred forty-character message posted by a Twitter user. Text, images, video, or links to other websites are included by tweet.
- A tweet may also include a hashtag (#). For categorizing messages, marking of keywords in the message hashtags are used. The word used after a hashtag is used to search the tweetHashtag is used and if the hash tags are popular then they become trending topics.
- Tweets are mostly appearing as most recent tweets on the top, thus it carries a timestamp.
- Exploring trending topics, sentiment analysis of brand, business insights and collecting feedback of new brands and services for all these purposes twitter data acts as a valuable source.

### Comments

- Comments include short messages to express the views related to the contents on the social media. Comments can include text, images, video, or links to other websites, but most of the comments are in the form of text.
- Like tweets, social media comments are also a great source for mining valuable business insights from social media. Nearly commenting features are provided by all social media platforms.
- Like tweets, comments are also carrying a timestamp and the most recent comment will appear first.

### Discussion

- Internet forums are open for social media users for discussion. Discussion can be in the form of debate, service, textual conversation.
- Tree- like structure is formed by internet based forums, creating sub forums under one forum for discussion on some specific topic. Internet forum users are free to post questions and also can reply to the questions asked by other users.

- Discussions also carry the timestamp and also the recent discussions appear on the top of any forum. Vault Network is an example of an Internet forum that focuses on online games.

### **Conversation**

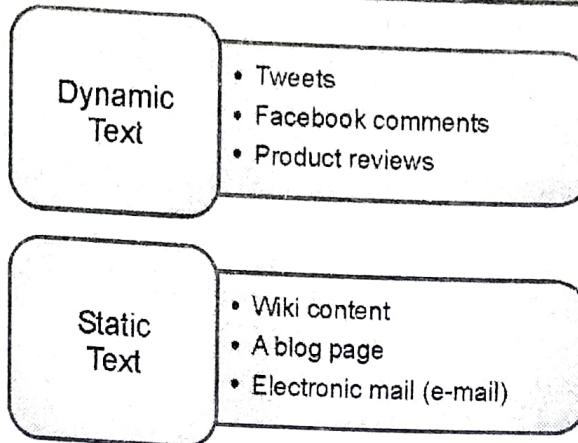
- For exchanging information in the form of short messages (we can also call it as chatting) conversations are used.
- Chatting usually takes a casual form and is carried out through dedicated messaging services/tools.
- A variety of messaging tools have been developed for textual conversation, including desktop-based (e.g., Skype); web-based (e.g., Google Hangouts and Facebook chat) and mobile-based (e.g., Viber). (Note that these services are not only limited to textual conversation, but also support video and voice conversation.) Most of the services come in the form of mobile as well as web applications.
- For example, Skype has both desktop and Smartphone versions. Many of the social media textual conversations are private so cannot be used for mining.

### **Reviews**

- Experts and customers give reviews of products or brands. Both the forms are available that are long or short.
- Customer reviews are generally short reviews and reviews by experts are long. Textual elements and ratings are included in review.
- ProductReview.com.au, for example, is a site devoted to product/service reviews and ratings submitted by customers. Mining of the opinion of customers and their feelings about the product can be easily analyzed by product reviews.

## **► 2. Static Text**

- When the text length is more and updates as well as deletion is not frequent then we can call this text as static text.
- Examples of static text include wiki content, a blog page, Word documents, corporate reports, electronic mail (e-mail), and news transcripts. At the highest level of abstraction, the purpose of static social media text is to inform, educate, and elaborate.



**Fig. 3.1.4 : Examples of Static and Dynamic Text**

**Table 3.1.1 : Summary of Dynamic Text**

Dynamic text	Meaning
Tweet	A tweet is a one hundred forty-character message posted by a Twitter user. Text, images, video, or links to other websites are included by tweet.
Comments	Comments include short messages to express the views related to the contents on the social media. Comments can include text, images, video, or links to other websites, but most of the comments are in the form of text.
Discussion	Internet forums are open for social media users for discussion. Discussion can be in the form of debate, service, textual conversation
Conversation	For exchanging information in the form of short messages, we can also call it chatting, and conversations are used.
Reviews	Experts and customers give reviews of products or brands. Both the forms are available that are long or short.

**Table 3.1.2 : Summary of Static Text**

Static Text	Meaning
Static Text	When the text length is more and updates as well as deletion is not frequent then we can call this text as static text.

### 3.1.2 Purpose of Text Analytics

Both dynamic and static text is subject to analytics. The following are some of the purposes of social media text analytics :

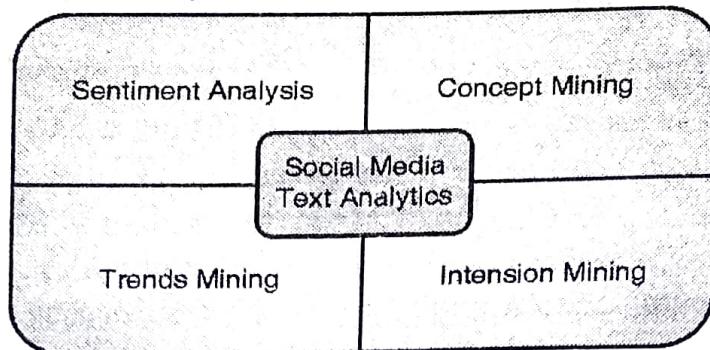


Fig. 3.1.5 : Purpose of Text Analytics

#### Sentiment analysis

- Social media text has been categorized as being positive, negative, or neutral by sentiment analysis.
- Dynamic text generally used by social media sentiment analysis.
- When we want to know the customer reviews about a product, brand or service, sentiment analysis is the best solution.
- For example, When you post an advertisement about some product, you might be interested to know how your customers feel about a product.
- The answer to the question is analysis of comments.
- Using sentiment analysis, you may be able to extract the wordings of the comments and determine if they are positive, negative, or neutral.

#### Intention Mining

- Intentions of the users such as buy, sell, recommend, quit, desire, or wish also be analyzed with the help of comments, blog posts or reviews etc.
- Many of the users of social media expressed their views, intentions on social media platforms.
- Intent mining can be used to find new customers who are actually willing to buy the product as well as used for providing service to existing customers who may have some problem with the product.
- For example, an analysis of brand-related tweets may detect purchase intention based on the presence of the word “buy” or “purchase.”

#### Trends mining

- Trends mining is also called as predictive analytics

- Future events are predicted with the help of historical data which is huge in shape and real-time social media data.
- For example, tweets and comments for a specific brand can be analyzed for customer satisfaction or identification of patterns of the product.
- Sophisticated statistical techniques, including machine learning, data mining, and social network analysis are used for exploring patterns in large amounts of data.
- It is used in a variety of domains, including marketing, banking, telecommunication, and healthcare.

### Concept mining

- Extracting ideas and concepts from documents is done with concept mining
- Information is extracted in text mining and ideas are extracted in concept mining.
- Thus, From the large amount of text, ideas are extracted with concept mining.
- Large amount of text contents are wiki content, a web page, Word documents, and news transcripts.
- Concept mining can be employed to classify, cluster, and rank ideas.

### 3.1.3 Steps in Text Analytics

- Extracting the desired business intelligence from the text which is posted on social media is done with text analytics.

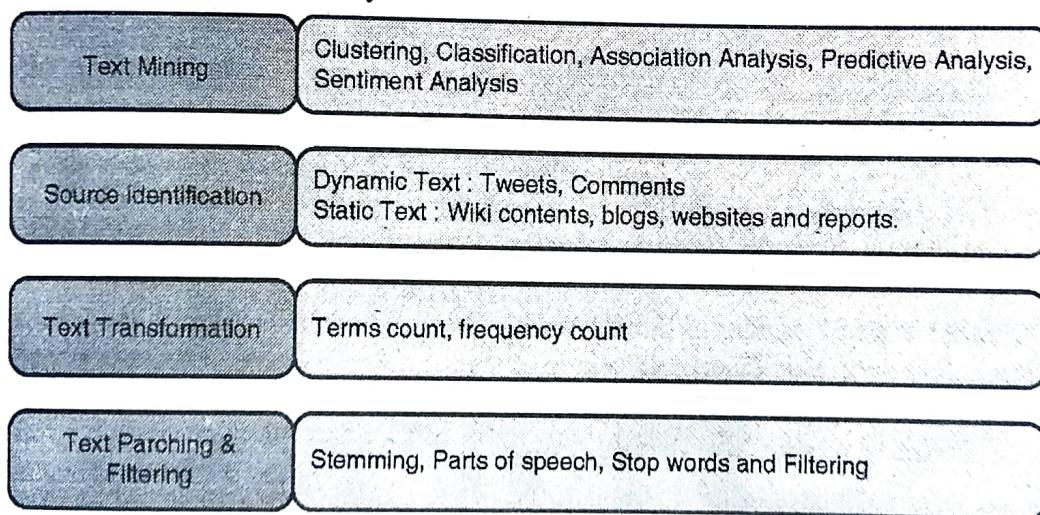


Fig. 3.1.6 : Steps in Text Analytics

- Following cyclical steps are included in text analytics

- |                                 |                               |
|---------------------------------|-------------------------------|
| 1. Identification and searching | 2. Text Parsing and Filtering |
| 3. Text Transformations         | 4. Text Mining                |

## ► 1. Identification and searching

- Source of the text which needs to be analyzed is identified first.
- Text posted on social media is dynamic, huge, diverse, multilingual, and noisy.
- Thus, for obtaining useful business insights, it becomes difficult to find the right source for text analytics.
- Type of tool depends on the genre of the source text
- For example, for twitter and website we will require different tools

## ► 2. Text Parsing and Filtering

- The next step is to parse, clean, and filter the text, and create a dictionary of words.
- To find out meaning from the text, parts of speech are identified, named entities are extracted (people, organizations, product/service names, etc.), removal of stop words are done and spellings are checked.
- While most of these steps are automatic, for some stages human interruption is required.

## ► 3. Text Transformations

- When the text is transformed into the computer readable format (0s and 1s), analytical algorithms can be applied.
- Linear algebra based techniques are applied for the conversion of text into numerical representations.
- Techniques used may be vector space models and latent semantic analysis.

## ► 4. Text Mining

- Required business insights are actually extracted at this stage.
- Number of text mining algorithms are applied such as clustering, association, classification, and predictive analysis, and sentiment analysis.
- Text analysis employs these sophisticated algorithms to extract sentiment and meanings from the text in a similar manner to the way humans do; however, the process is thousands of times faster.
- **Association :** Probability of co occurrence of items in collection of documents are expressed with association. Association rules are used for the same.
- **Clustering :** Clustering or cluster analysis groups objects based on similarity in non-overlapping groups. Social media text (such as tweets or comments), for example, can be clustered into positive, negative, and neutral.
- **Classification :** From the text analytics perspective, classification or categorization is used to find similarities in the document and groups them with predefined labels based on the themes contained in the document. For example, an e-mail can be classified as spam based on its contents.

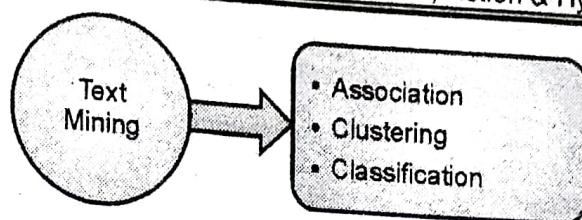


Fig. 3.1.7 : Text Mining Algorithms

#### 3.1.4 Social Media Text Analysis Tools

A variety of social media text analysis tools are available on the market. Some are free and others are paid. Below we list some popular text analysis tools.

1. **Discovertext** : Discovertext (<http://discovertext.com/>) is a powerful platform for collecting, cleaning, and analyzing text and social media data streams.
2. **Lexalytics** : Lexalytics (<http://www.lexalytics.com/>) is a social media text and semantic analysis tool for social media platforms, including Twitter, Face book, blogs, etc. Tweet
3. **Archivist** : Tweet Archivist (<https://www.tweetarchivist.com/>) is focused on searching, archiving, analyzing, and visualizing tweets based on a search term or hash tag (#).
4. **Twitonomy** : Twitonomy (<https://www.twitonomy.com/>) is a Twitter analytics tool for getting detailed and visual analytics on tweets, retweets, replies, mentions, hash tags, followers, etc.
5. **Netlytic** : Netlytic (<https://netlytic.org>) is a cloud-based text and social network analytics platform for social media text that discovers social networks from online conversations on social media sites.
6. **LIWC** : Linguistic Inquiry and Word Count (LIWC) is a text analysis tool for analyzing emotional, cognitive, structural, and process components present in individuals' verbal and written speech samples: <http://www.liwc.net/>
7. **Voyant** : Voyant (<http://voyant-tools.org/>) is a web-based text reading and analysis. With Voyant, a body of text can be read from a file or directly exported from a website.

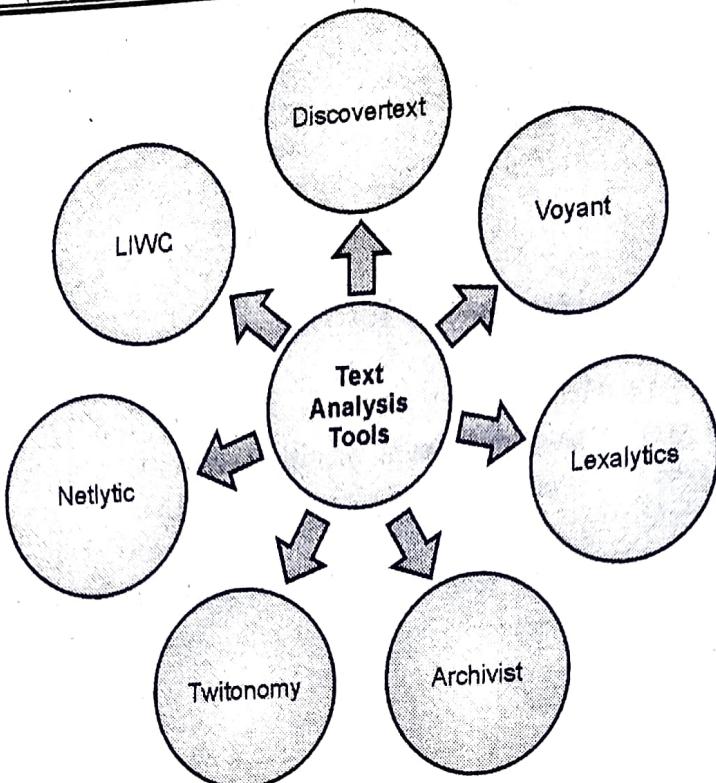


Fig. 3.1.8 : Social Media Text Analytics Tools

## 3.2 SOCIAL MEDIA ACTION ANALYTICS

- Social media actions are the most important things for social media. For most of the media markets, it matters greatly what the users of social media do on the social media.
- Actions such as likes, dislikes, shares, views, clicks, tags, mentions, recommendations, and endorsements are generally accomplished by social media users.
- Reactions to the contents of social media are nothing but symbolic action. Symbolic actions are an easy and fast way to express feelings, unlike written reactions in the form of textual comments.
- Along with symbolic reactions emotions and behaviors are also carried by actions. Social media actions are social expressions. When a user performs an action (such as comment) which is visible on social media particularly within friends then it's called a social expression.
- This feature creates attractive points to social media marketers and businesses.

### 3.2.1 What Is Actions Analytics ?

- Extracting, analysis and insight interpretation which are involved in actions accomplished by social media users done with social media actions analytics.

- Social media actions play a vital role for social media marketers because of some of the characteristics and they are increasing
  - revenue,
  - brand value, and
  - loyalty.
- Action analytics can be used to calculate the popularity and influence of a product, service, or idea over social media. For example, one may question how popular a new brand is? The answer to the question can be found with the help of action analytics such as face book likes, twitter mentions.

### **3.2.2 Common Social Media Actions**

- Below are some social media actions. These can be considered as metrics and all are accomplished by social media users.
- Metrics are nothing but by which you can count the performance.

#### **Like**

- Users express their feelings as liking people, places or contents, thoughts, products etc. with the help of the “Like” button.
- Like is sort of positive action accomplished by social media users.
- Face book provides a like button to convey their feelings and give the virtual thumbs up.
- Social media represents collective likes which are received for the post over the time.
- Face book’s “Like” button is the most famous one.

#### **Dislike**

- “Users express their feelings as not liking people, places or contents, thoughts, products etc. with the help of the “dislike” button.
- Similar to the “Like” feature, it is visible to others and over time it is accumulated .
- The “Dislike” button is not as common as the “Like” button.

#### **Share**

- When social media users want to distribute the contents to other users, the feature is used as a share or a share button.
- For example, the Face book “Share” button lets users add a personal message and customize who they share the content with.
- The Word Press (a blogging platform) “Share” button, for example, allows users to share their blog content across a range of social media platforms.

### **Visitors, Visit, Revisit**

- A visitor is a person who visits your website or blog.

- A single visitor may visit a page or content one or more times (revisits). Visits are also known as sessions.

### **Views**

- Views are the number of times social media content (a post, video, graphic, etc.) is viewed by users.
- A slightly different but related concept is page views, which is each time a visitor views a page on your company website or blog.

### **Clicks**

- When users press or click on the contents of hyperlink, click are the actions which are performed. Through clicks, users navigate the web.
- Click data can be harvested for business intelligence purposes, such as, to reduce bounce rate and improve website traffic. A technique called clickstream analysis is used by business managers for a variety of business intelligence purposes, including
  - website activity,
  - website design analysis,
  - path optimization, market research, and
  - Finding ways to improve visitor experience on the website.

### **Tagging**

- For identification, classification, and search purposes tagging is used
- Assigning or linking additional information to social media content (such as photographs and bookmarks) is known as tagging
- Tagging lets users classify social media content the way they see it.
- Tagging may occur in several forms.
- For example, bloggers can attach descriptive keywords (tags) to their posts to facilitate classification and searching of content, and
- Face book users can add tags to anything they post on their status, including photos and comments.

### **Mentions**

- Occurrence of name of person, thing or place is defined by mention.
- For example, In a face book comment the name of a friend is mentioned.
- For blog post brand name is mentioned
- Similar mentions can be there for YouTube or twitter.
- Popularity of anything is indicated by mentions.

### Hovering

- Hovering is the act of moving a cursor over social media content.
- Capturing users' cursor movement data can help you understand user behavior on a social media site.
- Cursor movement/hovering over an ad, for example, can be considered as a proxy for attention.
- Most people who view an ad do not necessarily click on it, thus if we are relying on clicks analytics only, we may lose a vital piece of information (i.e., attention).

### Check-in

- Arrival at a location, such as a hotel, airport, city, or store can be announced on social media by Check-in feature.
- The social media sites which provides check-in features are
  - Face book
  - Google+
- For check-in feature location is tracked by GPS (Global Positioning System) Technology.
- Check-in data can, for example, be mined to offer location-based services/products.

### Pinning

- Pinning is an action performed by social media users to pin and share interesting content (such as ideas, products, services, and information) using a virtual pinboard platform.
- Some famous pinning platforms include Pinterest, Tumblr, StumbleUpon, or Digg. Business can use these virtual pin boards to share information and connect with and inspire their customers.
- Four Seasons Hotels and Resorts, for example, use Pinterest to curate travel, food, and luxury lifestyle content to inspire customers.

### EMBEDS

- Embedding is the act of incorporating social media content (e.g., a link, video, or presentation) into a website or blog.
- An embed feature lets users embed interesting content into their personal social media outlets.

### Endorsement

- Endorsement is a feature of social media that lets people endorse and approve other people, products, and services.

- For example, LinkedIn lets users endorse the skills and qualifications of other people in their network.

### **Uploading and Downloading**

- Addition of new information (e.g., texts, photos, and videos) to a social media platform is uploading
- And vice versa is downloading that is receiving some data from social media platforms.
- Most of the information is uploaded by social media users and popularly known as user-generated content.
- For some companies, uploading and downloading is the single most important action to measure.
- For Instagram and Flickr, which are both photo-sharing platforms, the number of photos uploaded daily matters more than anything else.

**Table 3.2.1 : Common Social Media Actions**

Action	Meaning
Like	Users express their feelings as liking people, places or contents, thoughts, products etc. with the help of the “Like” button.
Dislike	Users express their feelings as not liking people, places or contents, thoughts, products etc. with the help of the “dislike” button.
Share	When social media users want to distribute the contents to other users, the feature is used as a share or a share button.
Visitors, Visit, Revisit	A visitor is a person who visits your website or blog. A single visitor may visit a page or content one or more times (revisits). Visits are also known as sessions.
Views:	Views are the number of times social media content (a post, video, graphic, etc.) is viewed by users
Clicks	When users press or click on the contents of hyperlink, click are the actions which are performed. Through clicks, users navigate the web.
Tagging:	For identification, classification, and search purposes tagging is used
Mentions	Occurrence of name of person, thing or place is defined by mention
Hovering:	Hovering is the act of moving a cursor over social media content.

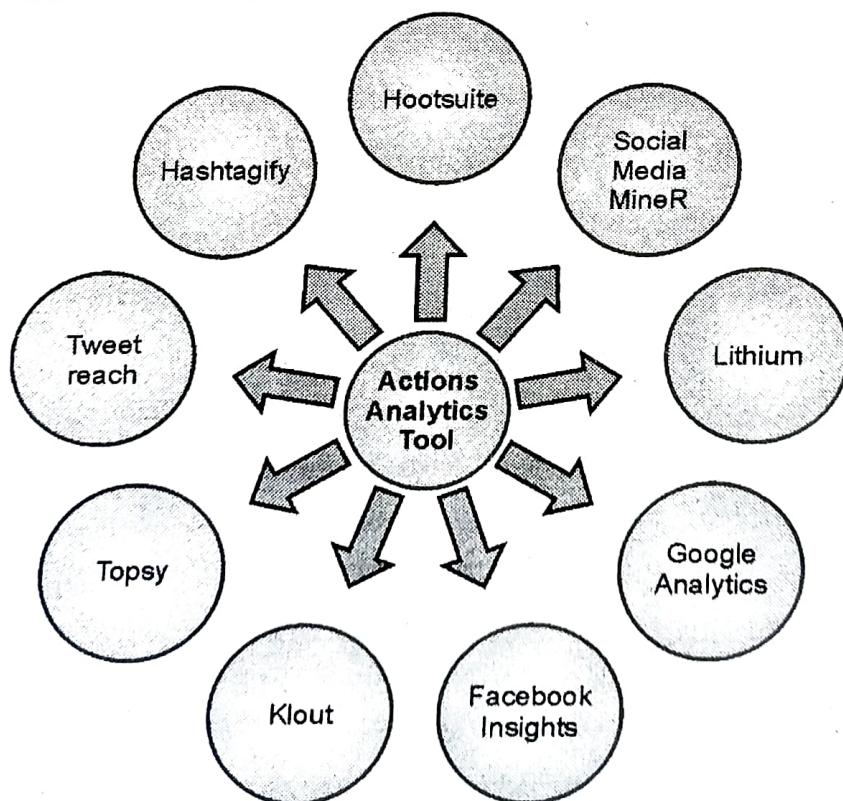
Action	Meaning
Check-in	Arrival at a location, such as a hotel, airport, city, or store can be announced on social media by Check-in feature.
Pinning	Pinning is an action performed by social media users to pin and share interesting content (such as ideas, products, services, and information) using a virtual pinboard platform.
EMBEDS	Embedding is the act of incorporating social media content (e.g., a link, video, or presentation) into a website or blog.
Endorsement	Endorsement is a feature of social media that lets people endorse and approve other people, products, and services.
Uploading and Downloading	Addition of new information (e.g., texts, photos, and videos) to a social media platform is uploading and vice versa is downloading that is receiving some data from social media platforms.

### 3.2.3 Actions Analytics Tools

All the actions are not provided by any single platform. Some of the action analytics tools are listed below :

- **Hootsuite** : Hootsuite is an easy-to-use online platform that enables you to manage your social media presence across the most popular social networks. Hootsuite offers different plans depending on your business needs and budget: free, pro, or enterprise. In this tutorial, we will employ the free version, which supports up to five social media profiles and has limited analytics information.
- **SocialMediaMineR** : SocialMediaMineR is a social media analytics tool that takes one or multiple URLs and returns the information about the popularity and reach of the URL(s) on social media, including the number of shares, likes, tweets, pins, and hits on Facebook, Twitter, Pinterest, StumbleUpon, LinkedIn, and Reddit. The tool can accessed from here:  
<http://cran.rproject.org/web/packages/SocialMediaMineR/index.html>
- **Lithium** : Lithium (<http://www.lithium.com/>) is social media management tool that provides a variety of products and services, including social media analytics, marking, crowd-sourcing, and social media marketing.
- **Google Analytics** : Google Analytics (<http://www.google.com/analytics/>) is an analytical tool offered by Google to track and analyze website traffic. It can also be used to for blogs and wiki analytics.

- **Facebook Insights** : Facebook Insights (<https://www.facebook.com/insights/>) helps Facebook page owners understand and analyze trends within user growth and demographics.
- **Klout** : Klout (<https://klout.com/>) measures your influence across a range of social media channels based on how many people interact with your posts. Your Klout score measures your influence on a scale from one to one hundred.
- **Topsy** : Topsy (<http://topsy.com/>) is similar to Icerocket and Social Mention, with its main focus around social media, especially multimedia sites and blogs.
- **Tweetreach** : This tool helps you measure the number of impressions and reach of hashtags. The tool can be accessed here: <https://tweetreach.com>
- **Kred** : Kred helps you measure the influence of a Twitter account: [www.kred.com](http://www.kred.com)
- **Hashtagify** : This tool measures the influence of hashtags: <http://hashtagify.me>
- **Twtrland** : Twtrland is a social intelligence research tool (<http://twtrland.com/>) for analyzing and visualizes your social footprints.
- **Tweetstats** : using your Twitter username, Tweetstats graphs Twitter stats including tweets per hour, tweets per month, tweet timelines, and reply statistics (<http://www.tweetstats.com>).



**Fig. 3.2.1 : Social Media Action Analytics Tools**

### 3.3 SOCIAL MEDIA HYPERLINK ANALYTICS

- Social media hyperlinks are pathways of social media traffic.
- References to web services are given by hyperlinks.
- Web resources include websites, files or documents.
- Users can access the contents by clicking on hyperlink.
- Clicking on any hyperlink text, it can go to the particular webpage
- As a website is an official and unique entity representing an organization itself therefore, embedding hyperlinks in an organization's website can be considered an official act of communication between two organizations.
- Hyperlinks among websites represent not only a reasonable approximation of a social relationship, but also serve as a symbolic meaning of validating or endorsing the linked organization

#### 3.3.1 Types of Hyperlinks

From hyperlink analytics point of view, mainly there are three types of hyperlinks,

1. In-links, 2. Out-links, and 3. Co-links.

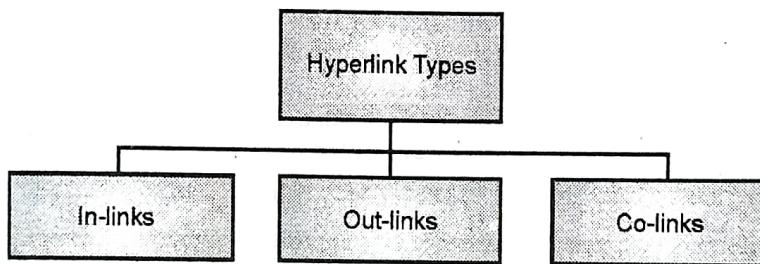


Fig 3.3.1 : Types of hyperlinks

#### 1. In-links

- The links which are directed towards a website and which are the incoming links are nothing but IN-LINKS.

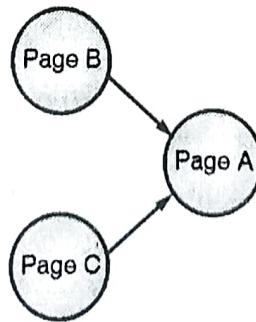


Fig. 3.3.2 : Page A receives in-link from page B and Page C

- For example, consider Fig. 3.3.1, page A is receiving two in-links coming from pages B and C.
- In-links are beneficial to social markers, because they bring traffic to a particular website.
- Thus, harvesting them can help us understand where the traffic to a corporate website is coming from.
- In-links also play an important role in website analytics, as both the quality and number of in-links can impact the search engine ranking of the website

## ► 2. Out-links

- Out-links are hyperlinks generated out of a website.

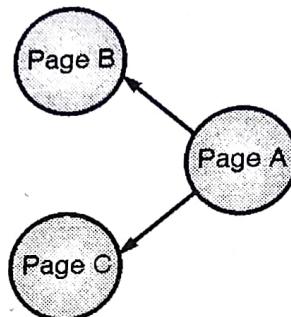


Fig. 3.3.3 : Page A sending out link to page B and Page C

- As shown in the Fig. 3.3.2, page A is sending two out-links: one to page B and one to page C

## ► 3. Co-Links

- Co-links have two dimensions.

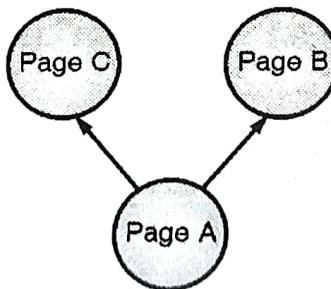


Fig. 3.3.4 : Page A Links both page B & C, therefore B & C are considered to be as co-linking

- First, if two websites receive a link from a third website, they are considered to be connected indirectly. For example, page A links to both pages B and C, therefore B and C are considered to be co-linking, or connected indirectly (Fig. 3.3.3).

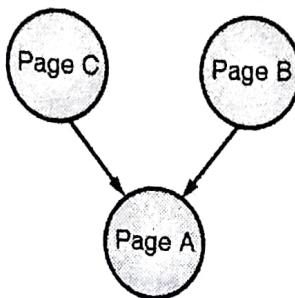


Fig. 3.3.5 : Pages B & C are linking to page A, therefore B & C are linking directly

- Second, if two pages link to a third page, they are also considered to be colinking. As shown in the bottom-right corner of the Figure 3.3.4, Pages B and C are linking to page A; therefore, B and C are connected indirectly.
- Co-links have been used to compare and map competitive similarity among companies

### 3.3.2 Types of Hyperlink Analytics

Hyperlink analytics can take several forms, including:

1. Hyperlink environment analysis,
2. Link impact analysis, and
3. Social media hyperlink analysis.

#### Hyperlink Environment Analysis

- Hyperlink environment analyses deal with a particular website or set of websites.
- Hyperlinks (i.e., out-links, in-links, and co-links) of a website are extracted and analyzed to identify the sources of Internet traffic.
- Hyperlinks environment networks can take two forms:
  1. co-links networks or
  2. in-links and out-links networks.

#### 1. Co-Link Networks

- In co-links environment networks, nodes are websites and links that represent similarity between websites, as measured by co-link counts.
- With the Webometric Analyst tool, one can construct a co-link network diagram among a set of websites

#### 2. In-Links and Out-Links Networks

- In-links and out-links hyperlink environment networks are constructed based on in-links and out-links from a website or set of websites.
- In such a network, nodes will be websites and links will present in-links and out-links.

- The tutorial provided in this chapter demonstrates constructs such as networks using the VOSON hyperlink analysis tool.

#### **Link Impact Analysis**

- Link impact analysis investigates the web impact of a website address (or URL) in terms of citations or mentions it receives over the web.
- In a link impact analysis, statistics about web pages that mention the URL of a given website are collected and analyzed .
- The assumption is that a URL (or website address) cited frequently over the web is more important. Thus, measuring the web impact of URLs may provide an idea about the importance of a website.

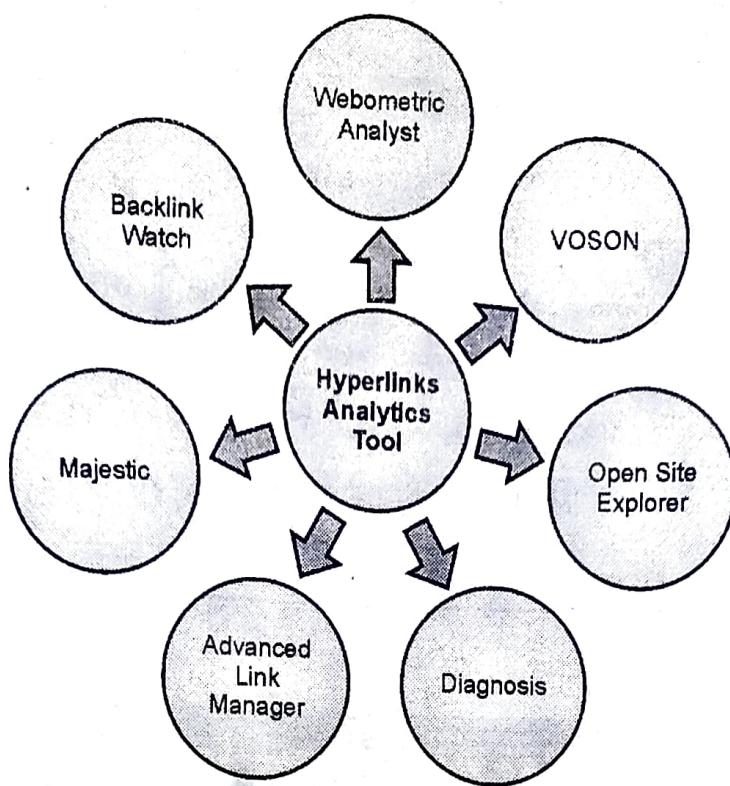
#### **Social Media Hyperlink Analysis**

- Social media hyperlink analysis deals with extraction and analysis of hyperlinks embedded within social media texts (e.g., tweets and comments).
- These hyperlinks can be extracted and studied to identify the sources and destination of social media traffic.

### **3.3.3 Hyperlink Analytics Tools**

The following are some popular hyperlink analytics tools.

- Webometric Analyst** : Webometric Analyst is a web impact analysis tool and can conduct variety of analysis on social media platforms including hyperlink network analysis and web mentions: <http://lexiurl.wlv.ac.uk/>
- VOSON** : VOSON (<http://www.uberlink.com/>) is a hyperlink tools for constructing and analyzing hyperlink networks. More details on VOSON are provided in the hyperlink analytics chapter.
- Open Site Explorer** : Open Site Explorer is a link analysis tool to research and compare competitor backlinks, identify top pages, view social activity data, and analyze anchor text: <https://moz.com/researchtools/ose/> Link
- Diagnosis** : Link Diagnosis (<http://www.linkdiagnosis.com/>) is a free online tool for analyzing and diagnosing links.
- Advanced Link Manager** : Advanced Link Manager provides a variety of link analysis capabilities, including the ability to track link-building progress over time, domain quality analysis, backlinks evolution, and website-crawling abilities: <http://www.advancedlinkmanager.com/>
- Majestic** : Majestic (<https://majestic.com>) provides a variety of link analysis tools, including link explorer, backlinks history, and link mapping tools.
- Backlink Watch** : Backlink Watch (<http://backlinkwatch.com/>) is a free tool for checking the quality and quantity of in-links pointing to a website.



**Fig. 3.3.6 Social Media Hypertext Analytics Tools**

*Chapter Ends...*

