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SOCIAL MEDIA MONITORING TOOLS: AN IN-DEPTH LOOK

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Introduction

The growing relevance of social media

Information is power and, in this day and age, the Internet is increasingly becoming the primary source and vector for the transfer of information between people. Digital media is an essential source of information for people worldwide. Compared to traditional media, digital media consumption grows rapidly with each year. The COVID-19 pandemic contributed to this process,¹ with most work, learning, entertainment and communication in technologically advanced countries transferring to the online environment.²

Social media plays a significant role in people's lives. There are 4.2 billion social media users worldwide, more than 53% of the world's population. Since 2021, the number of social media users has grown by 490 million, a 13% increase.³ This means that the number of new social media users grew by more than 900 users per minute.

The amount of content generated on social media is tremendous—there are 474,000 Tweets, 69 000 Instagram posts, and 400 hours of new Youtube videos uploaded each minute. On Facebook alone, there are 510,000 comments, 293,000 status updates, and 136,000 photos uploaded per minute.⁴

An Introduction to Media Monitoring

From press clippings in the area of traditional media to online media monitoring (or sometimes also listening), online media monitoring is used to observe social media and other media on the Internet (websites, blogs, news, etc.). Tools to conduct monitoring



can vary, from a simple Excel sheet, to using a specific tool to analyse data. In addition, there are possibilities to analyse data on-the-go via mobile-friendly platforms.

One of the important aspects is to know how and what data to gather. However, one of the challenges is getting useful insights from the gathered data as this is a process on its own.

The aims of media monitoring can vary, and analysis can be conducted by different parties. As these tools primarily have a limited trial or a demo, depending on the target group (for businesses, decision/makers, media specialists, governments etc.); this is also reflected in the business plans of the tools.

Public figures may be interested in how their brand is doing and what people say about them; entrepreneurs and businesses may be interested in how their products are being received, PR specialists or agencies would be interested in keeping their eye on their clients and online campaigns. Also, understanding the depth of and belief in disinformation and its effect on democracy or a military operation, governments and military organisations can use media monitoring to serve their interests. The gathered data can provide many insights into current or past conversations about a certain topic, opinions of the public, identify sources or originators of information, and more.

It all can be done manually by creating a systematic overview of when, what, and how something was posted. For large amounts of work, automation is helpful to process data. With automation, third-party tools and getting data directly from social media platforms is possible.

The analysis can be done based on different levels, starting from hashtags or finding trending topics, but also in a more complex way of understanding how something was commented, for example, searching for negative comments about a brand.

Therefore, the main functionalities that help make sense of the data would then include real-time listening, analysis, access to historical data, and visualisation of data via dashboards.

In order to get information, there are various ways to get the data—either programmatically, using the methods officially provided by social media platforms, or using the tools discussed in this report, or manually searching social media platforms using their built-in functionality.



Social media monitoring tools are extremely useful for understanding the information environment. It is possible to save time, effort, and resources. The more the user wants to get into details, the more differences will appear—giants like Brandwatch, Meltwater, Sprinklr and Digimind will have the most features, their tools answer questions users might not even think of asking (for e.g., analysing picture content), they provide and analyse an enormous amount of information. Simpler tools also have their advantages—it is much easier to learn everything about the tool, and each of them has specific benefits.

This amount of data is complicated to comprehend, in addition to analysing manually. For this purpose, solutions are built to automate the process and provide insights into what is happening in the online world. These solutions are Media Monitoring Tools. This report is focused on narrower solutions—*Social Media Monitoring Tools*, which are designed to monitor and analyse communication in social networks specifically.

Media Monitoring Tools are software created to analyse content on the internet—social media posts, comments, blog posts, micro-blogs, forums, news sites, video sites, image sites, and other media content.

This type of software is widely represented on the market and has many different features. Some companies offer complicated tools with a large number of monitored

sources and they can analyse a lot of data and provide deep insights. There are also more straightforward solutions that are much easier to acquire but they cannot provide the same level of analysis. Beyond social media monitoring, some solutions utilise the insights gleaned from media monitoring to recommend how users can manage their social media accounts to stay up-to-date on engagement with their audience.

The purpose of this research is to develop criteria on how to compare social media monitoring tools and then gather information on those tools to understand what the market offers. The developed criteria could be used independently by government and military agencies to make the decision about subscribing to a certain product, even if it is not covered in this report. This work will provide an understanding of how different government and military agencies can benefit from these tools, whether it is a smaller agency with a smaller budget and team dedicated to this task, or a larger institution, which can allocate more finances and workload on this objective.

Areas of applicability for governments and military organisations

Social media has become more relevant to security and public safety as different channels have been used to trick innocent people into doing a variety of things. Sharing information about themselves can also lead

one to fall victim to predators who do not have good intentions (from cyberbullying to being a target of a paedophile).⁵ Protecting people is still one of the challenges faced by governments and platforms alike.

When it comes to governmental institutions, they are more likely to look at this area from the national security and public safety aspect—from knowing who supports and spreads the messages of the host organisation, to serving policy goals and identifying suspicious coordinated behaviour. Ordinary citizens who have been trained to detect suspicious content can also be of help to government and military organisations.

Implementing the tools in daily workflow

Most of the tools are able to analyse specific platforms, but also public sources like the news. It is important to keep in mind that, most likely, some organisations are interested in very specific functionality to achieve their analysis goal, so it is worth contacting the companies themselves to see what the possibilities of collaboration may be.

Clients who are interested in doing research can use various tools that help to facilitate project management and communication. Some of the tools have integrations in place to help fit more into the workflow of the client. The fit of the tools and integrations also depends on the security level of the

organisation. In some cases, on-the-go monitoring via mobile is not possible or is rather limited.






Depending on the organisation's goal of either focusing on social media management, monitoring or other, some of the tools have posting and scheduling functionality, so the tool can also help in social media content management.

When a tool has been set up, it is then possible to start analysing a specific upcoming trend and the tools will give the desired overview or notifications of the topic. Another option is to analyse data that is in the past and make conclusions based on that data. A combination of the two approaches is also possible.



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How to Assess the Social Media Monitoring Tool

There are multiple criteria to consider when choosing a social media monitoring tool. But, before deciding to use a commercial tool for social media monitoring, it is important to decide on goals for monitoring social media and develop a strategy for media monitoring. This process was covered in the publication “Social Media Monitoring: A Primer” by NATO StratCom COE.⁶

Once it is clear what the strategy and goals are, you can begin to assess which tool available on the market will best help to achieve those goals. The factors to consider

are summarised in the table below (the same criteria were used during this research to assess eight different tools):

Consideration	Description
Social media platforms	How much data the tool analyses, which platforms the tool assesses, if data is filtered and how the tool analyses visual content
News	If the tool analyses news and if it can access paid content
Historical data	If the platform analyses it and the length of the analysis period
Keyword search	Number limits, granularity, response time, ease of use
Artificial Intelligence (AI) tools	Presence of AI-assisted analytics (opinion mining, semantic search), how well these tools work in a multi-lingual setting
Visualisations	Which type of visualisations does a platform provide for the user, and how easy is it to get and customise them
Alerts	If the user can set them, how are they set, and how fast and in which channels the tool alerts the user
Posting, scheduling	If the platform supports not only analytics but also engagement and posting on different social media platforms
Mobile functionality	The possibility to access the tool using a mobile device
Support	How fast and helpful is the response from the tool's team
Trial period availability	If it is possible to try out the tool before committing to the service
Application Programming Interface (API) access	Necessity of having API access, what type of data could be accessed via API, what are daily/monthly API usage limits
Cost range and cost-dependent features	Price, pricing model, if costs change depending on number of used features, monitored queries, users, etc.



In more detail, the features for assessing platforms or tools are:

1. Social media platforms (Twitter, Facebook, YouTube, etc.)—how much data the tool analyses, which platforms the tool assesses, if data is filtered and if the tool analyses visual content

Not all social media platforms allow in-depth analysis. Analysed social media platforms vary within different tools. When choosing the tool for social media monitoring, it is important to assess which platforms are available and the kind of data they analyse. In some cases, the more platforms are available, the better; in other cases, it may be essential to have access to region-specific social media platforms.

One more vital detail to consider is how much data (number of pages, time period, etc.) is collected from each particular platform. Some tools have more extensive arrangements that allow them access to more data. It may be relatively easy to obtain data from Twitter using Twitter provided real-time data streaming services,⁷ but Meta (Facebook and Instagram) releases only a specific amount of information for social media monitoring tools (this includes public pages on Facebook and commercial pages on Instagram). The tools, however, can provide workarounds, and that additional functionality can vary across different tools.

We can also look at the extent to which the

collected data is processed: for instance, if the tool only looks for text information or also analyses visual information. In some cases, the information from social media platforms may not be collected in real-time, but with some delay (e.g. a couple of hours or a day), which is also worth considering, especially if there is a need to receive alerts about new posts or comments, or spikes in the user activity.

Additionally, some tools have access to region-specific social media platforms, like VKontakte (the most popular social media platform in Russia⁸) or WeChat (the most popular social media platform in China⁹). This is also important because social media monitoring tools may need to be adjusted to the specific region the user wants to monitor.

2. News—if the tool analyses it and if it can access paid content

Usually, it is not enough for a government or military official to monitor only social media but also understand the information environment landscape in general. Social media monitoring tools often provide access to other information channels, such as news articles, and it may be convenient to combine multiple sources of information in one tool.

The challenge with accessing news is that there are often no specific engagement metrics, as in likes and shares, which can help understand the spread of particular



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topics. One of the most used metrics to assess the potential impact of the article is the size of the potentially reached audience due to the relative ease of measuring it. Sometimes the impact of the particular news story is difficult to define quantitatively, for example, as it may not have reached a large audience but results in the policies being changed,¹⁰ but such cases are beyond the scope of what automatic analytics tools can provide. In addition, analysing the content beyond paywalls is another aspect of accessing information. In this report, we include the tools that analyse information behind paywalls, as well.

3. Historical data—if the platform analyses it and how long is the analysis period

Some use cases, such as past information operation analysis or trend changes over a period of time, require access to the data collected sometime in the past. Different tools provide different access to historical data, as it can be challenging or even impossible to store or collect data from the past. During the review process, it was

assessed for which period of time it is possible to access the data.

It is worth mentioning, that there may be different approaches for accessing historical data. Often, companies store the data archive on its servers, allowing access to the data from the past, even if the particular social media post or news article was deleted; but it is also possible to retrieve the data when it was requested, therefore possibly causing the loss or incompleteness of the requested historical data.

4. Keyword search—their number limits, refining and narrowing the search, response time, ease of use

A keyword search provides an opportunity to analyse posts that include specific words or phrases. In some cases, the tool offers a simple user interface to make it happen, and in other cases it is transparent and also shows the query itself. Thanks to this, one can find any posts related to some particular event, person, or topic on social media platforms. Most tools use a Boolean search that allows for combining search terms into

a machine-readable format, using specific operators, such as AND, OR, or NOT.¹¹ Most of the reviewed social media monitoring tools also provide a variety of additional operators, which allow, for example, to search for terms within a certain distance from each other, filter only those documents created in a specific country, and search for posts that contain particular hashtags and so on.¹² The Boolean search might be challenging to get used to, but it provides the granularity needed to assess specific questions. In addition to a Boolean search, some tools offer narrowing down the search with additional filters, as well (such as user location, language, source and so on). This is especially helpful if a Boolean search as a topic is not familiar to the user.

5. Artificial Intelligence tools

Current Artificial Intelligence (AI) tools enable both content generation and analysis, allowing for building better recommendation systems, ensure engagement and messaging for the audience, support crisis management, boost adversary messaging analysis, etc.

Very broadly, we can distinguish highlighting areas that include AI:

- **Computer Vision:** Image recognition (for example, to recognise logos, weapons, vehicles from pictures or video frames, understanding actions, etc.)
- **Natural Language Understanding and Processing:** Text filtering, information extraction and classification, summarising, translating, semantic search, topic modelling, etc.
- **Audio Processing:** Converting speech to text when transcribing news, interviews, etc.
- **Deepfake detection:** A cross-disciplinary field. Using Computer Vision and Audio Processing capabilities to detect manipulated or generated content
- **Graph analysis,** also including detection of inauthentic accounts (bots and bot networks)

Using AI to assist with information environment analysis

Specific AI models and tools combined enable development of powerful and intelligent data processing pipelines. Despite the latest advancements and hype driven promises, AI, especially Deep Learning (DL), models still require significant resources to train. The challenges brought by the multi-lingual online and social media information space hinders the wide adoption of current AI in social media monitoring tools. For example,



training/fine-tuning models to perform already widely used tasks, such as named entity recognition (NER) or sentiment analysis in smaller, less supported languages, is a difficult task due to lack of normalised, well-balanced cross-lingual datasets.¹³ As quality comes first, such products are usually fine-tuned for large and well-supported languages, such as English, Russian, and others. In some cases, less supported language documents are translated to English (or another well-supported language) and then used in AI-enabled processing pipelines.

Another challenge arises when trying to deploy AI models at scale on large data corpora, which require significant time/computing resources which might be the reason some of the companies still stick to classical Machine Learning (ML) text processing techniques. But cloud computing seems to be solving this issue and we will gradually see more and more multi-lingual transformer models being deployed, enabling semantic search functionality, improved topic modelling, NER, sentiment analysis, and more.

From an analyst's perspective, AI tools can assist in more sophisticated social media analysis: semantic search and topic modelling can help to uncover networks of people talking about a specific topic, it can help to find other (related) topics they are interested in, how they are divided geographically or between social communities. Analysing influencers and opinion leaders can help in times of crisis, for instance, in the case of a disinformation campaign on Hindu and Muslim clashes in Assam, India, it was later discovered by Indian officials that only a few individuals sent out the misleading information, with one person sending out 20,000 messages.¹⁴

Opinion mining can help to understand not only what overall sentiment people are expressing, but in a more granular manner their specific opinions towards the mentioned entities. It should be stressed that opinion mining in all social media monitoring tools still is in the early stages and provides rather general or overall sentiment and lacks accuracy, especially for articles or posts on political topics. For AI, it is still difficult to determine, for example, which party of the conflict the author is negative about. Using markers on the word war and labelling the text negative can be misleading. Therefore, it can be useful to look at the sentiment trend for desired topics in a political context. However, for all reviewed monitoring tools, AI is still in the early stages and can provide general sentiment indicators. Similar challenges are true for emotion detection. For example, GCAM¹⁵ proves to be a powerful measure of various emotions in news articles which are processed and stored in the GDELT database. Without a doubt, fully-automated understanding of the emotional tone of conversations in social media can be beneficial, but current AI tools cannot be fully relied on to accurately detect emotions in

social media.¹⁶ However, the estimation of sentiment analysis is improving due to rapidly evolving transformer¹⁷ models.

According to an article:¹⁸ “For efficient social media monitoring, brands need to go through and learn from all user-generated content, including images.” Training the models to recognise logos and other elements in the picture will give further insights to the party monitoring a specific topic. More sophisticated capabilities for the slightly more distant future are promised by a newly emerging type of model called vision-transformer¹⁹ that allows for leveraging the benefits of transformer architecture in computer vision.

One of the major fall-backs of current AI is that it lacks contextual awareness. However, the role of current, yet rapidly evolving, AI in social media monitoring tools is expected to grow and bring monitoring tools to the next level towards more semantic, more context aware, and language agnostic products.

6. Visualisations—which type of visualisations does a platform provide for the user, and how easy is it to get and customise them

Visualisations are increasingly important due to the sheer volume of data being collected by social media platforms every minute. Graphical representations help identify trends and patterns in the data, which may have been overlooked otherwise. Moreover, visuals are essential for presenting the information to clients, decision-makers and other stakeholders, who are not involved in social media monitoring and data analytics directly, to provide them with essential information in a clear way. That is why it is essential to determine which types of visualisations the reviewed social media monitoring tools can provide, their features, and how

convenient their use is. If a tool has various visuals which are easy to access and clearly represent the data, it can save a lot of time and resources, both financial and human, as there will be no need to have data analysts and designers work on charts for reports. Visualisations can often be organised and customised in dashboards to have a general overview of the current state of the information environment.

7. Alerts—if the user can set them, how are they set, and how fast will the tool alert the user

One of the ways of monitoring activity on social media is via the use of alerts. Alerts provide important information about updates on monitored social media platforms in real-time or nearly real-time—anything from a negative comment being



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posted to spikes in post volume about specific topics. Alerts can be simple as notifying about a change to performing actions set in advance. Alerts are needed to detect potential issues and have the ability to address these issues as fast as possible. During the assessment, it was evaluated whether a tool provides alert functionality, how flexible it is, and how quickly the alert is delivered.

8. Posting, scheduling—if the platform supports not only analytics but also engagement and posting on different social media platforms

This report’s main focus was on assessing social media monitoring functionality. Posting during the best time²⁰ on a platform considering the target group, is where an intelligent social media monitoring tool can be of help, as this will influence the reach of the posts to the designated audience.

Some tools, though, have built-in functionality to create posts and engage on social media platforms, and some have it as the main functionality with social media monitoring

as an additional feature. If the organisation needs to both monitor social media and actively engage there, it may be convenient to choose a tool that offers these built-in capabilities.

9. Mobile functionality

Concerning the mobile-first trend, many social media monitoring tools are accessible from mobile devices, as well. Some tools have a dedicated mobile application that can be downloaded from app stores, while others offer a mobile-friendly interface for accessing data via smartphones or tablets. Mobile functionality is especially useful for organisations that monitor social media in real-time on the go.

10. Support—how fast and helpful is the response from the tool’s team.

Social media monitoring tools have different approaches to providing support for their users. Some providers have a dedicated customer service team that is available 24/7 to help users with any issues or questions, while others may instead offer

self-help support articles and FAQs. Some providers also offer learning materials: regular introductory webinars, explanatory articles or even academies with full-fledged courses that support self-development and might also lead to getting certified.

11. Trial period availability

A trial period helps the users assess and determine if the system is suitable for their needs. Usually, the functionality of the tool may be limited during the trial period. However, the user has the possibility to look at a tool's interface and try out a tool in action before deciding to commit to the service or even before scheduling a demo session with the provider. Some of the tools covered in this report had a free trial period for the public, some offered demos. The trial period of the reviewed tools varied between 7 days to 30 days.

12. API access

For social media monitoring, Application Programming Interface (API) provides programmatic access to the data, allowing

one to incorporate this data into internal custom solutions. Usually, the type of data that could be accessed using these APIs are social media posts themselves and information related to these posts (engagements, comments, etc.). It is important to note that the user is not getting access to the API of social media platforms themselves, only for the data already stored by the social media monitoring company. Although API use requires a certain level of technical expertise, the API can be a helpful tool for building custom reporting or analytic solutions.

13. Cost range and cost-dependent features

Social media monitoring tools that offer access to multiple platforms and historical data are usually subscription-based services. The price may vary significantly depending on the amount of provided features, number of queries monitored simultaneously, number of supported languages, etc. Often platforms offer different price tiers, each suitable for different needs.



Methodology

The primary focus of this research is to compare social media monitoring tools for their use by military and government institutions. By conducting interviews with professionals, who use these tools on a daily basis, analysing tools that appear regularly in market research companies' reports, and analysing the use of social media monitoring tools in existing research

reports, we have identified eight tools that are popular on the market and represent different angles on how social media monitoring is implemented. The tools include both prominent market leaders and more niche products, those specialising in listening exclusively and those offering it as an additional feature, cheaper and more expensive options.

Reviews were conducted during the period from December 2021 to January 2022.

The reviewed tools are:

Tool logo	Name	Headquarters	Website
 Brandwatch	Brandwatch	Brighton, GB	https://www.brandwatch.com/
 Mediatoolkit	Mediatoolkit	Zagreb, Croatia	https://www.mediatoolkit.com/
 Meltwater	Meltwater	San Francisco, California, USA	https://www.meltwater.com/en
 BuzzSumo	BuzzSumo	Brighton, GB	https://buzzsumo.com/
 Keyhole	Keyhole	Toronto, Canada	https://keyhole.co/
 sprinklr	Sprinklr	New York, USA	https://www.sprinklr.com/
 sproutsocial	Sprout Social	Chicago, Illinois, USA	https://sproutsocial.com/
 digimind	Digimind	Paris, France	https://www.digimind.com/



The comparison was performed in several steps:

1. Conducting an interview with a company representative to discuss the main points of each tool covered below;
2. Exploring the demo-version trial in order to get hands-on experience with the platform where the focus was on functionality but also on non-functional requirements like accessibility. In addition, gathering information from demo videos, if available, attending webinars provided by the companies, as well as gathering information from companies' websites;
3. Review of feedback by users of tools via www.g2.com as it is a trusted platform by many known companies (IMB, Oracle, etc.) and the platform tries to verify user identities to make sure that reviews are coming from real people.



Overview of Tools

The criteria for rating social media monitoring tools were derived from three main factors: data, search, and accessibility. **Data** refers to the ability of the tool to collect and store data from social media platforms: how many sources are included, how much information is collected from each search, and for how long historical data is available. **Search** refers to the ability of the tool to search and filter data from social media platforms, how granulated the search is, and how many filtering options are available. **Accessibility** refers to the platform's ease of use, learning material availability, and quality of support.

Brandwatch



Tool focused fully on social media monitoring

Brandwatch Consumer Research is a versatile social media monitoring tool, it is an integrated suite of monitoring, analytics, and reporting tools.

Brandwatch provides the customer with the opportunity to search and analyse data from 100 million websites, including social networks, micro-blogging platforms, blogs, image sites, video sites, forums, news sites, and more (Facebook, Instagram, Twitter, Reddit, Tumblr, Youtube, etc.).

Historical data is available for the last 3 years, for Twitter from 2008. Historical data is also obtained from some sites.

Brandwatch has an extensive keyword search, which utilises a large number of search operators (not only basic AND, OR and NOT operators, but also more complex ones, for example, to search for the posts where a certain word is within a specific proximity from another word), allowing a user to search the data with a high level of granularity. The platform also has AI tools, which can analyse sentiment, uncover networks of people and their common interests, and detect influencers. The unique Brandwatch feature is insight detection from images, which is the most beneficial for detecting brand names and logos on shared images in social media, but it is also



capable of detecting entities in images (e.g. soldier, fighter aircraft, flag) and relative changes in image content over time.

Brandwatch has a separate visualisation platform called Brandwatch Vizia, which allows for integrating data from various other sources (such as Google Sheets, Google Analytics, Instagram User Insights, Facebook Page Insights, etc.), to combine data and create reports effectively, which could be acquired as an addition to the main Brandwatch Consumer Research platform.

Alerts can be set on specific topics, so if the platform sees a sudden growth of more than 1000 people talking about one thing, it will alert its user via email.

Brandwatch provides the opportunity to make the user experience as simple or as detailed as the user wants it to be. For simpler use, it is possible to set the dashboards, which will provide stakeholders with visuals and information on a daily basis.

Brandwatch claims that a company usually needs 3 to 4 weeks to get comfortable with the platform and benefit from using it. This, of course, depends on the company and how much time it dedicates to social media monitoring. As for individuals,

usually, 2-3 days are more than enough to get acquainted with the program and its extensive features.

Brandwatch also has an in-house agency that can help a client gather information for more challenging cases.

Brandwatch provides API access, allowing users to query search results across websites and social networks. API clients are limited to making 30 calls every 10 minutes, with the possibility of increasing the limit on an individual basis.

Typically, a client spends between €35,000 to €90,000 per year with Brandwatch. The price depends on the number of queries (searches the user wants to monitor at one given time i.e., if you have 10 queries, you can only run 10 queries at once NOT 20. You can, however, recycle and change the searches you use).

Based on the reviews, users generally enjoy customised dashboards, visualisations, a user-friendly interface, and the amount of historical data. As for the disadvantages of the platform, users mention relatively slow support, tricky queries and Boolean coding, not the easiest way of getting visuals, and the lack of their customisation and price.

Pros	Cons
Very granulated search options	Steep learning curve
Has a separate visualisation platform	High cost
Insight detection from images	

Mediatoolkit



Tool that focuses on offering regional support

Mediatoolkit is a real-time social listening tool.

It analyses many sources, including the following social media: Facebook, Twitter, Instagram, Youtube, and Reddit.

Mediatoolkit's team is broadening the number of website sources they cover, resulting in the ever-growing basis of 100+ million online sources. Mediatoolkit also adds additional sources by request if the web resource a customer is interested in is not yet present in their database. Mediatoolkit listens to only textual information and does not analyse visual content.

Mediatoolkit claims to cover each country's top or most requested media outlets and sources.

Historical data is available for the last 90 days. For cases that need more historical data, they can provide it for a one-time fee—the price depends on the number of mentions and is defined on a case-by-case basis.

Mediatoolkit's keyword search is a basic Boolean search—it only uses AND, OR and NOT operators. It also has the possibility

to include/exclude languages, authors, and domains.

Visualisation of the information is limited to the reports section, however, it is very easy to get a PDF, Excel or custom report with simple visuals on mentions dynamic, sentiment analysis, sources, and locations once the query is set.

Mediatoolkit has real-time and virality alerts and custom digests.

Mediatoolkit includes sentiment analysis, and the user can set alerts using it for even only one negative comment on the chosen topic. It also provides spike alerts for desired topics or mentions.

Mediatoolkit also has a free 7-day trial period.

Branded reports and API access²¹ are also available in more expensive plans. A definite bonus of this platform is that, with every plan, it has an unlimited number of users, which can all be set for adjusted access—the admin has full access. Other users can have limited access in regards to redacting specific queries or just looking at the results.



The price depends on the number of topics and mentions you would like to monitor and varies from €3990 to €9990 per year, with a customised enterprise plan option.

In the reviews of Mediatoolkit, users note simplicity, user-friendly interface, easy ac-

cess to reports, and mobile functionality. Users especially frequently mention their satisfaction with Mediatoolkit’s team and customer support. As disadvantages, users mention little customisation of reports and not enough historical data.

Pros	Cons
Open to offers on adding new sources	Little customisation
Straightforward and easy to use	Short historical data period
Trial period available	

Meltwater

 **Data:** ●●●●● **Search:** ●●●●● **Accessibility:** ●●●●●

Tool that includes social media monitoring and management

Meltwater is a social media monitoring and management tool.

With Meltwater, a company can listen to topics across different social media platforms like Twitter, Facebook, Instagram, Youtube, Pinterest, Reddit, TikTok, news, forums (including 4chan), streaming platforms like Twitch, as well as product reviews and comments. Meltwater also allows for analysing some Asian social media platforms on a weekly or monthly basis: WeChat, Sina Weibo, YOUKU, and LINE, for an additional fee. Moreover, using Meltwater, users can also manage a brand’s social media across different platforms—

schedule posts, answer messages and comments, etc.

Meltwater provides access to 15 months of historical data for most of the social media platforms.

Like all reviewed tools, Meltwater’s keyword search uses Boolean coding, and it has more than 70 operators to make the search as granulated as possible.

Meltwater has AI tools that help identify the sentiment of the post, define emotion associated with the text and extract entities. However, there is still room for development

with entity recognition and emotion recognition models (especially for non-English languages).²²

With Meltwater, it is possible to create multiple types of alerts—event alerts for detecting business events for the companies the user is following, spike detection alerts, which are sent when the search volume for the specific query is higher than the baseline. There is also the possibility of tracking sentiment shift or even every mention of a certain topic. The alerts can be received via email and, recently, integration with Slack and Microsoft Teams was introduced.

Meltwater also has social media management functionality. It is possible to integrate accounts across multiple social media platforms to create and schedule posts directly from Meltwater. Recently, Meltwater acquired social influencer marketing company, Klear, in order to develop their products in that direction, as well.²³ Meltwater also has a database of media-related people (e.g., journalists) to allow for easier engagement.

Dashboards are automatically generated for each separate search query, it is also

possible to compare multiple search queries in a single dashboard. Users are also able to create custom dashboards using widgets from the library provided by Meltwater.

Like Brandwatch, Meltwater also has an in-house agency for more complicated tasks.

It also features a learning platform, Meltwater Academy, which provides courses on different platform functionalities.

Including API in the subscription plan is also an option.

The price depends on the number of available features and capabilities—it varies starting at €5000 per year and can go up as high as €100,000 per year and even higher, in the case of personalised services.

Meltwater users value a user-friendly interface, variety of customisation options, and responsive support. As disadvantages, users frequently mention high price, and occasional platform slowdown. Due to complex Boolean search options, it might also get tricky to build a correct query.

Pros	Cons
A lot of Boolean search options	Steep learning curve according to users
Analyses data from a lot of different platforms, also used in Asia	High cost
Integration with Slack and Microsoft Teams	



BuzzSumo



Data: ●●●●●

Search: ●●●●●

Accessibility: ●●●●●

Tool that focuses on alerts and content discovery

BuzzSumo is a cloud-based tool owned by Brandwatch that helps discover the best engagement, content and outreach opportunities. BuzzSumo mainly focuses on content discovery by topic or website and providing alerts.

BuzzSumo analyses social media platforms Twitter, Facebook, Pinterest, Reddit, and Youtube, as well as news sites and other web pages.

Historical data is available for 1-2 years with subscription (not enterprise) plans.

BuzzSumo's keyword search is straightforward and easy to use. It only has basic Boolean search operators (AND, OR, NOT), but it has a lot of filters to make the search more granulated. When analysing articles, Buzzsumo identifies the author of the article, and it is possible to save the author and create journalist alerts for their new publications. Users can analyse the articles and view likes, shares, and comments for those on Facebook and see the Evergreen score of the article—if it is still interesting to readers after some time passes after publication.

The key feature of Buzzsumo is alerts—Buzzsumo has put extra focus on their fast alerts. Users can create an alert for a brand,

competitor, backlink, content, keyword, or author. It is possible to filter the alert for minimum engagement number, domain, country, publisher size and others.

Buzzsumo has a lot of tools to help their users analyse and generate content: Content Idea Generator, Questions tool, which allows users to see which questions the audience is asking about specific topics or products, and the Trending tool, to see trends across the globe and in different locations. Buzzsumo identifies influencers on Facebook, Twitter, and YouTube. It provides a retweet ratio for influencers to see how much of their content is original and how much are they retweeting, to understand their influence and to see if this person creates content themselves and will be valuable if onboarded by the brand. It is also possible to see if the influencer frequently replies and engages with their audience.

Buzzsumo provides the possibility to work as a team and restrict access for different users.

Buzzsumo has a 30-day free trial with 100 searches available. It also has a Chrome extension.

Buzzsumo offers access to two APIs—Search API (with a limit of 100 calls per



month) and Account API (with a limit of 100,000 calls per month). Search API allows, for example, to search popular articles by a given topic or domain, and Account API is used for creating alerts and accessing data in users' projects.

Buzzsumo's pricing varies from €840 to €2500 per year. The price plans vary in historical data availability, user, alert, custom feed, and export count. The more extensive plans also have access to different tools, such as YouTube Analyser and Top Author Search. A free version is also available,

with 10 free searches per month, 1 user and 1 custom feed. There is also an option of purchasing an enterprise plan, which is customised to suit the company's needs and gives access to 5 years of historical data.

Buzzsumo users generally enjoy the variety of tools it offers, such as the content analyser, which helps discover high-performance content and content idea generator influencer identification. The disadvantage of the tool mentioned in the reviews most frequently is pricing, though this is one of the cheaper options in our review.

Pros	Cons
A lot of filters to make queries granulated	Relatively expensive for the number of features it provides
Focused on alerts	Rudimentary Boolean search
Help with content idea generation	

Keyhole

Keyhole
Data: ●●●●●●●●
Search: ●●●●●●●●
Accessibility: ●●●●●●●●

Tool that focuses on offering social media monitoring for brands

Keyhole's social listening, influencer tracking, and social media analytics products help marketers improve their social media strategy, and prove their impact to colleagues and clients. Keyhole has 4 main tools: profile analytics, cross-platform performance measuring of brand's accounts, comparison against competition, and social listening.

Users can analyse accounts from Twitter, Instagram, Facebook, YouTube, TikTok, and LinkedIn (in the enterprise plan), post to platforms, and schedule posts. Companies can also invite their influencers to Keyhole and analyse their accounts and their post performance. Regarding social listening, Keyhole includes social media platforms mentioned before (TikTok and YouTube

listening is available in the enterprise plan), news, blogs and forums.

Historical data is available for Twitter with enterprise subscriptions or as one-time reports for a time chosen by the user for a fee.

The keyword search is based on simple operators like AND and OR. The user can also filter the results by country and language and show posts from only specific accounts. These features, however, are only available in enterprise plans. The search is the most convenient to use for monitoring a single keyword or a brand name, it is not flexible enough to create complicated searches for tracking narratives, for example. Keyhole has AI-driven trend analysis.

Keyhole also has influencer identification, sentiment analysis, and related topic tracking around the selected tracker. All the information is instantly visualised and can be exported in a PDF or an Excel report.

Keyhole has alerts that allow users to receive notifications based on the level of influence and volume of conversation the user wants to track, and the frequency of alerts can also be customised.

Posting and scheduling functionalities are also available within the platform, with Keyhole providing suggested scheduling times based on their algorithm.

Keyhole's interface is very simple and intuitive. Each tool is straightforward to set up, it provides visuals and demonstrates account performance. It is possible to get a trial for seven days, as well as schedule the demo session with the company's representatives.

Keyhole's API allows for retrieving and modifying hashtag and account tracking data.

Users usually pay from around €80 per month (€1000 per year) to €20,000 per year for Keyhole. The minimal plan includes 2 queries for tracking and 5 social media accounts for analysis. There are a lot of features that are included only in enterprise plans.

It is noted as Easiest to Use by g2.com. The advantages noted by users are simplicity of the interface, user-friendly dashboard, and good value at a reasonable price. However, a lot of users mention that additional features, like historical data or hashtag tracking, come at a high price. Users also mention the limits of the hashtags they can track.

Pros	Cons
Has influencer identification	Not convenient to use with complicated keyword searches
Simple interface	Not suitable for tracking more complex entities, such as narratives





Tool that focuses on customisation using AI

Sprinklr is a unified customer experience management tool for all customer-facing functions. It has four suites, which are combined in one platform—Modern Care for customer engagement, Modern Sales & Engagement, Modern Marketing & Advertising and Modern Research. The Modern Care suite is focused on direct engagement with customers. Modern Sales & Engagement focuses on helping the company gain more revenue through social media engagement. Modern Marketing & Advertising is a suite focused on helping create quality content and protecting a brand's reputation. Modern Research is a tool focused on social listening. As it is the main focus of this report, it is worth getting into more details on this suite.

Sprinklr analyses 350+ million public digital sources, including key social platforms such as Twitter, Facebook, Instagram, Reddit, Youtube and others, as well as digital news, print and some paywalled news sites. For YouTube, Sprinklr retrieves and analyses the comments and titles.

In the Modern Research Lite plan (which is the Modern Research trial plan), historical data is available from 1 January 2020.

After entering keywords, Sprinklr automatically creates reports on customers, demographics, and top messages.

Sprinklr AI helps categorise conversations, engage on most important topics, and predict customer satisfaction. Sprinklr's unified platform is underpinned by a foundation of unified AI. Sprinklr's proprietary AI models focus on multiple use-cases: Natural Language Processing (NLP), Computer Vision, Network Graph analysis, anomaly detection, trends, predictive analysis. It helps analyse customer conversations, detect influencers, analyse sentiment etc. Regarding sentiment analysis, Sprinklr can also define the emotions associated with the text. Emotion is primarily driven by an NLP model.

One of the tools the Sprinklr Research suite has is the Smart Trends tool, which gathers information on real-time trends across the globe and brands. Sprinklr's AI identifies criticality, category, and summary of the trend. Trends can be filtered by location, criticality or brand.

There is also a possibility to train a model for custom use cases with the help of the Sprinklr team, for example, for classification tasks.

All the results are visualised even if you go into specifics. For instance, Sprinklr provides the information on the top categories of conversation, and you can further see the trend and sentiment analysis in each category.

Sprinklr shows top associated emotions and emoticons, as well as the author's listed age and gender trends.

Alerts are possible to set up in suites that are related to engagement with the audience, Modern Care and Modern Engagement, to automate interaction with customers.

Sprinklr has certification programmes that are aimed at teaching users how to work with different platform suites. There is also a free 7-day trial available.

Sprinklr offers a variety of APIs for integrating their products into custom-built solutions.

The pricing model is not transparent, but it is assumed that Sprinklr's pricing is in line with other multi-purpose tools such as Meltwater or Brandwatch.

As for the platform's advantages, users mention the unified platform approach, where they can listen to and manage social media in one place. Users also mention a good variety of features, good customer service, customised dashboards, ability to work on projects as a team. Users note that the interface is sometimes tricky to get used to, building dashboards can also be challenging at the start, and users also note that the price for the tool is quite high.

Pros	Cons
Automatically created reports	Limited customisation options
Main focus is on the research	

Sprout Social


sproutsocial

Data: ●●●●●

Search: ●●●●●

Accessibility: ●●●●●

Focused on social media management

Sprout Social is an all-in-one social media management platform. It is a tool that focuses on managing a brand's social media accounts across different platforms like Facebook, Instagram, Twitter, LinkedIn and

others, with social media listening as an additional feature.

Historical data differs depending on the platform. For instance, Twitter goes back to



2014, while other platforms' historical data is available from 1 month to 2 years back.

Query construction is limited to simple AND/OR operators.

Sprout Social's automation capabilities are also mostly focused on social media management—it has a toolkit to build a chatbot, select the best time for posting, and manage incoming communications.

Sprout Social also offers a social media listening tool. It is not the main focus feature, but it is easy to use, it quickly provides visuals on the overall volume of mentions, related topics and hashtags to the set query with the division into positive and negative mentions.

Sprout Social has the possibility of setting up alerts to notify users about spikes in incoming messages. Alert sensitivity can be adjusted by the user, so the alerts are sent only when activity is unusually increased by a certain threshold. There is also the possibility of receiving alerts via mobile push notifications.

This tool allows users to schedule posts for days, weeks, or months ahead, manage all messages, and get data on post

performance, brand's image, etc. It has many features like personalised optimal posting time depending on the audience, response templates that different users can use for the company to stay on brand, an approval tool to have the post approved by the superior before posting it, etc.

Sprout Social has a 30-day trial and a demo, as well as a learning portal with the materials about the platform's basic features, which is also supported by webinars and events.

Sprout Social has access to API, although media listening is not included, it is possible to interact only with the profile data and owned published post data.

Cost varies from around €950 to €2500 per user per year. It is crucial to note that employee advocacy, advanced analytics tools, and, most importantly, social media listening, are premium features that can be added to every plan for an additional price.

Users note the intuitive interface, and ease of use across all networks. In terms of negatives, users mention pre-built report templates without the option of customisation, tricky navigation of some features, and price.

Pros	Cons
Allows scheduling and posting for a long time into the future	Limited social media listening capabilities
Advanced social media management tools	





The most sources for social media monitoring

Digimind is a social listening and market intelligence tool.

Digimind analyses 850+ million sources across 20+ media types, including Facebook, Twitter, Youtube, Instagram, Pinterest, Tumblr, Reddit, LinkedIn, and TikTok, as well as forums, blogs, online news, web, reviews, and offline—TV and radio. It has the ability to monitor across 190+ countries and 200+ languages. Five features categorise Digimind's data: What (topics), When (time), Where (location), Who (influencers), How (sentiment) through the tool. Where feature—geolocation—is the feature that received the highest acclaim from other reviewers. Geographical data can be sorted by top links, countries, cities and geolocation. Digimind has a comparison feature, where users can compare their brand with competitors by volume of mentions, reach, and sentiment. Users can also look at the comparison of owned (brand's) vs earned (audience) media.

Digimind provides instant access to historical data for 24 months on any topic.

Digimind has a keyword search with the possibility of using AND/OR/NOT Boolean operators with multiple filtering

opportunities (such as languages, countries, and sources). Monitoring is assisted via the use of smart e-mail alerts.

Digimind's algorithm enables sentiment analysis for 61+ languages and emojis. It also has image recognition and smart classification.

The platform has visualisations to track changes in conversation on social media in real-time, as well as the opportunity to quickly generate reports using pre-designed or customised templates.

Digimind also offers consulting services. The company has local offices globally, where the analysts are working on specific requests from clients for more in-depth analysis.

Dashboards are pre-set, but users can also build their own. They have widgets where users can add different information or comments for the clients.

While trials are not available, it is possible to either request for a product demonstration or attend one of their weekly demonstration webinars. Although the information offered from the company was limited, Digimind



Academy offers self-paced e-learning courses and options to become a certified expert.

Minimum pricing for Digimind starts at €7000 to €8000 per year and goes up depending on the number of queries or mentions.

Users usually enjoy the intuitiveness and user-friendliness of the platform and the visualisation of the information. As for the platform's disadvantages, users note a steep learning curve, difficulties backtracking the information, and some reviewers mentioned slower response from customer service.

Pros	Cons
Consulting services	Steep learning curve
Comparison feature offers granularity	Lack of information from Digimind or third parties about provided features
Variety of tracked data sources	



Comparative Overview

To be able to analyse the tools more in-depth, we have identified three primary areas that the tools could be described and compared best: marketing insights, social media management, and social media analytics.

Marketing insights focus on content enhancement to users, social media management includes posting and planning of content, and social media analytics include monitoring and listening.

Some tools have the ability to post and

schedule content or, even more so, to provide support by offering insights in the area of content marketing.

All tools include social media analytics that, in this case, also included monitoring and listening as a functionality.

Overview on functionality

Tool	Brandwatch	Media toolkit	Melt water	BuzzSumo	Keyhole	Sprinklr	Sprout Social	Digimind
Marketing (insights)				✓		✓		✓
Social media management			✓		✓	✓	✓	
Social media analytics	✓	✓	✓	✓	✓	✓	✓	✓

Overview on functionality (detailed)

Name	Social Media ²⁴	News	Alerts	Mobile functionality	Support	Trial	API	Cost (\$-\$\$\$) ²⁵
Brandwatch	Facebook, Instagram, Twitter, YouTube, VKontakte, Pinterest, Tumblr, Reddit	Yes	Yes	No	Yes	No	Yes	\$\$\$
Mediatoolkit	Facebook, Instagram, Twitter, YouTube, VKontakte, Reddit	Yes	Yes	Yes	Yes	Yes	Yes	\$\$



Name	Social Media ²⁴	News	Alerts	Mobile functionality	Support	Trial	API	Cost (\$-\$\$\$) ²⁵
Meltwater	Facebook, Instagram, Twitter, YouTube, VKontakte, LinkedIn, TikTok, Pinterest, Reddit, Twitch, 4Chan, WeChat, Sina Weibo	Yes	Yes	Yes	Yes, but also Meltwater Academy ²⁶	No	Yes	\$\$-\$\$\$
BuzzSumo	Facebook, Twitter, YouTube, Pinterest, Reddit	Yes	Yes	No	Yes	Yes	Yes	\$
Keyhole	Facebook, Instagram, Twitter, YouTube, LinkedIn, TikTok	No	Yes	No	Yes	Yes	Yes	\$-\$\$
Sprinklr	Facebook, Instagram, Twitter, YouTube, VKontakte, Pinterest, Tumblr, Reddit, Twitch, Sina Weibo	Yes	Yes	Yes	Yes, but also Sprinklr University Learning Services ²⁷	Yes	Yes	\$\$\$
Sprout Social	Facebook, Instagram, Twitter, YouTube, LinkedIn, Pinterest	No	Yes	Yes	Yes, but also Learning portal ²⁸	Yes	Yes	\$
Digimind	Facebook, Instagram, Twitter, YouTube, LinkedIn, TikTok, Pinterest, Tumblr, Reddit	Yes	Yes	Yes	Yes, but also Digimind Academy ²⁹	No	Yes	\$\$-\$\$\$



Conclusions and Recommendations

During this research, eight platforms were reviewed to see what they provide and their differences, advantages, and disadvantages. We would also like to highlight some of the differences.

Differences Between Social Media Monitoring Tools

The tools focus on different areas, whether marketing and content creation, social media management, or more on monitoring and analytics. It is understandable that bigger systems might have more to discover and learn. This is also an opportunity for people interested in this to become certified and become more of a specialist on specific systems as some of the tools focus more on educating their users in different ways.

Concerning functionality, we see different levels of in-depth information analysis, but companies are developing their functionalities regularly to keep up-to-date, responding to what is happening in the market to stay competitive.

It is worth mentioning that there are a lot of players on the market, but gathering information on social media monitoring tools is not easy as not all companies are willing to disclose information on how their software operates.

Usually, platforms have basic plans, however, these plans fit small businesses with small teams and little resources. However, for larger enterprises with specific goals for social listening, these out-of-box solutions do not work. Therefore, a customised solution is usually provided by the company and the price for that differs from case to case and may not always be transparent.

Moreover, a lot of companies have customised plans for large enterprise users, and are not at liberty to disclose the information on how much these enterprises spend on them.

Additional Considerations

Most disadvantages are also quite similar and logical—less complex platforms lack some of the features and visuals, more complicated solutions require time dedicated to getting comfortable with the platform; limitations of analysis of some platforms are the same for all the platforms, as the company in charge of these social media releases only a specific amount of data;



” Based on this research, the main guiding points would be the resources the institution is ready to allocate to listening and how active the institution is on social media.

sentiment analysis, which is not accurate due to limitations of currently available artificial intelligence. Most customer reviews note the platform's price as a disadvantage for all of the platforms, which is natural, as the client is also interested in paying less.

So, how should government institutions or military officials choose social media monitoring tools for their purposes?

Based on this research, the main guiding points would be the resources the institution is ready to allocate to listening and how active the institution is on social media. If the institution is active on social media and has multiple accounts on different platforms, which need managing, engaging with the audience, and regular posting, it is better to choose a solution, which offers not only listening but also social media management, like Sprout Social, Sprinklr, or Keyhole. In cases where listening is the main focus, the only thing that can guide the company in choosing one or another platform is the budget, as the idea of how these tools work is fairly similar to each other. If the user of the platform wants additional features, beautiful visuals, and

deeper insights, then the logic is simple—if one pays more, one gets more.

For region-specific research that includes certain platforms, Meltwater is able to get information from platforms such as VK and WeChat. Being able to analyse data from these platforms, meaning regional ones, may also offer value to people interested analysing information about specific areas and platforms.

As for in-depth keyword search, it might be best to have a tool with more operators for more granularity.

It also matters how many sources are being analysed, as some platforms have information publicly mentioned and some do not, but the tools described will help to process a lot of data.

To be able to handle emerging crises well, a tool that focuses on advanced alerts will help to provide an overview of what topic is possibly trending.

It is worth keeping in mind that area interest also indicates what is important to monitor



at the moment, but this data will also show what people are concerned about. Therefore, keeping in mind the various security aspects, it might be worth exploring more what has been done to make sure that data is being stored in a secure way.

Upcoming Developments for Tools

Here is a generalised overview of the known developments that platforms are planning.

Firstly, the tools are planning on also focusing on improving their current functionality, making them more intuitive and smarter.

In addition, some of the tools are also extending what type of data they analyse, for example from text to video (for example—Youtube).

Thirdly, the tools that do not have relevant and emerging platforms (for example TikTok) included, are trying to include them to be able to analyse its data.

Finally, the companies that have recently made acquisitions are incorporating the functionality into the tool.

Recommendations for the Companies

1. Improving multilingual AI-enabled data processing support

Most of the currently available monitoring tools could improve multilingual AI-enabled data processing support. Using entity relation

models extracting time-varying knowledge graphs from various sources would bring the information environment assessment capability to the next level—for example, extracting a certain number of comments for analysis based on certain parameters.

More sophisticated AI integrations would enable an easy way to define narratives and thus, instead of keyword search, perform a more semantic search using either descriptive phrases or even narratives in a multilingual information space. Additionally, we see that instead of overall sentiment, analysts would strongly benefit from more granular opinion mining.

A more visual multimedia format is consumed on social media platforms which strongly indicates that the social media monitoring tools of tomorrow will have to invest resources in efficient audio/visual content processing.

2. Focusing on TV, radio, visual content analysis

It is also possible to focus on radio or TV content analysis or voice, in general.

All this integrated together in an intuitive, well-designed tool could become a powerful counter-disinformation weapon.

3. Focus on working with researchers

Furthermore, leveraging AI can be done through collaboration with research facilities



and other organisations that have the same aim.

4. **Partnership with government and military organisations**

In addition, it is also possible to think more through how to include the tools in the workflow of the specialist analysing the data. As one of the target groups can also be government and military organisations who would need only specific features for their research, it is possible to develop certain billing plans for them.

5. **Identifying hostile information campaigns, inauthentic behaviour, recognising disinformation**

Considering future threats, we see it necessary to focus on helping to identify suspicious behaviour with advanced tools, but by still keeping humans in the loop. Currently, none of the reviewed tools has a functionality of detecting inauthentic activity in social media (e.g. bots), which can potentially distort an overview of the current information environment.



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