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## **The Criticality of "Tuning In" to Social Media with Next Generation Monitoring Tools**

### **Executive Summary**

Social Media Monitoring is the logical consequence of the emergence of Social Media in recent years. Due to the digital nature of Social Media, one might assume effective monitoring solutions are simple and widespread. However, because human interactions with Social Media Platforms involve messages in multiple languages, effective monitoring systems must also support multilingual natural language processing. Counting and subsequently quantifying engagement in Social Media about themes of interest is one side of the coin. Understanding what is being said represents the other side. While natural language processing and entity recognition technology have been around for some time, their dependence on a single natural language makes them more elusive to the universal realm of Social Media Monitoring. That's why MediaMiner has been developed, based on solid natural language processing and enterprise search expertise. MediaMiner's Social Media Monitoring capabilities go beyond "bean counting", but reveal the true meaning and sentiment - currently in German and English - of what is being communicated about your theme of interest. Packaged as a multi-client, multi-user system with a web-based, multi-lingual user interface, MediaMiner will reveal real-time insights and hind-sights, allowing you to "stay tuned" and confident about your services, products, brands or general themes of interest.

**MEDIAMINER**  
BRINGING IT UP TO YOUR ATTENTION

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## **1 Social Media – “Market whispers” at a global scale**

Social Media has revolutionized how we communicate and continues to affect and shape how we perceive and use the internet. It was never easier to share opinions, to influence people, to complain about something or, to boost the sentiment of an expression with simply one click – “like”. Whatever we say, comment, like or share, with whoever we connect or disconnect, whatever we tweet – all that is instantly propagated around the globe, inspiring reactions and counter-reactions. The social media world never stands still. It’s like an ongoing giant party reflecting all aspects of our lives. Most of all everybody can participate, everybody has a voice, everybody has a potential to impact.

Social Media enables the “power of the masses” in every imaginable way. Recent examples of global magnitude include the “Arab Spring” as well as the “Occupy Movements”. Likewise, Social Media significantly amplifies the “power of the customers”. While each customer has its own level of influence by making a decision in favour of or against a certain product or service, his or her shared opinion may and will affect an ever increasing circle of connected or following people. Social media boosts our impact factor by facilitating the power of trusted recommendation or vice-versa the power of trusted dissatisfaction and disapproval.

## **2 Why is it necessary to tune in?**

Social Media not only shifts communication away from traditional media, it also encourages every participant to get involved and to share his or her opinion. Imagine, when discussing your product and brand, if:

- Somebody asks the “Social Media” for recommendations?
- Somebody shares bad experiences with others influencing their decision making?
- Somebody complains about bad service or product quality in front of all others?
- Your competitor infiltrates Social Media and misrepresents your services?
- You run a marketing campaign across conventional and perhaps Social Media and you have no means to measure its impact on your customer base?

Further imagine when it is not just a single person, but thousands voicing their opinions. Clearly, in order to protect and enhance your brand reputation you must be aware of both discrete messages, but the sentiment of the overall consensus in order to effectively respond.

These and other pressing questions will challenge every business and demand answers, tools and commitment. That’s why the term “Social Media Monitoring” has become so popular in

recent months. Everybody talks about it, everybody seems to be aware of its importance and inevitability, but does everybody really know what it takes to monitor Social Media?

Social Media Monitoring is not new and started off almost 10 years ago with companies hiring "blog watchers" and "influencing bloggers" to stay informed about what was being discussed in blogs but also to influence those enthusiastic blog readers. This approach was certainly effective in times where each product or service had its dedicated forum on the web and where exchange of information, experience and opinion was channelled and focused on a few websites.

With the emergence of new players, such as Facebook or Twitter, the game changed significantly. Established information channels diversified, people became more involved, information became less accessible. Bottom line, the "blog watcher" of the past cannot keep up with the ever expanding and diversifying Social Media and you might again be left in the dark.

### **3 From "Blog watchers" to Social Media Monitoring Tools**

While hiring more "blog watchers" might have been one way to keep up with increasing social media engagement, this approach would become less and less efficient but also less feasible against increasing monitoring demands. Reading posts, comments and tweets takes time, understanding and evaluating their sentiment would still be subjective and biased, counting messages and relating them to each other would add another layer of complexity, not to speak of identifying each and every language. Consistency and real-time insights would be out of reach, if you still would rely on human monitoring.

Therefore, social media monitoring tools started to emerge thanks to technologies such as crawling particular websites, but also thanks to the availability of programming interfaces into the worlds of Facebook or Twitter. Such interfaces enabled automated searches or subscription based content delivery, paving the way for a new suite of tools, which automatically harvest, analyze, enhance, count and present information in a consistent and timely manner.

Though counting messages is fairly simple, making a computer "understand" a message as negative or positive is far more challenging. What, if your customers speak multiple languages? Needless to mention, expectations on Natural Language Processing (NLP) capabilities are high and those technologies available today often lack significant quality in order to make Social Media Monitoring a "done deal". That's why the primary focus of many Social Media monitoring tools is on quantitative facts, such as message or author number counts rather than on providing realistic insight into the quality and sentiment of the content.

## **4 Stop watching – Start mining with MediaMiner**

MediaMiner tackles exactly this most challenging of all monitoring expectations – making sense of what is being said about your themes of interest. MediaMiner utilizes advanced Natural Language Processing services in German and English (more languages to follow) to identify language and sentiment of your content. MediaMiner is in fact the first Social Media Monitoring product with true German language processing and sentiment analyses capabilities, designed and implemented by a German company with a long standing reputation in enterprise search. That's why MediaMiner also boasts many advanced search and navigational features, allowing you to mine and understand what is being communicated about your theme of interest.

MediaMiner not just counts messages, posts, tweets and replies related to your interest, it enhances those information with language and sentiment information, determines relationships to other messages and stores all of that in a high performance, scalable data warehouse. This approach allows you to monitor communication frequency in real-time but also its historical dimension. If you like charts and plots, MediaMiners' flex dashboard technology allows you to combine any of your data in chart types of your choice, which are updated real-time and optionally delivered to your Email box. If you like to read what has been said and perhaps why, then MediaMiners' advanced search will reveal just that to you. Here you can drill down and explore the many dimensions associated to each Social Media message. You can identify influencers, spam bots, doomsayers or complainers and perhaps react to anything you find detrimental to your business. If you happen to run a marketing campaign, you will find if and what impact it has in Social Media engagement by quantitative facts and numbers, but also by qualitative insights.

That's why MediaMiner goes beyond passive watching - it mines and refines Social Media Content and provides tools for you to understand the "Market whispers" about your themes of interest.

## **5 How does MediaMiner work?**

MediaMiner integrates a set of advanced technologies in order to achieve its many features. First of all, MediaMiner needs to harvest specific information – your themes of interest organized in categories and topics – from Social Media Platforms in a consistent manner. Since each Social Media Platform has its own programming interface and information paradigm, MediaMiner developed a data abstraction layer to normalize the messages of each platform into a common message model. This approach allows for easy integration of other Social Media Platforms.

Language detection and sentiment analysis are performed on all harvested Social Media messages. Larger messages, such as articles from blogs and forums are subjected to entity extraction in order to identify the major theme of the text. Extracted entities and keywords

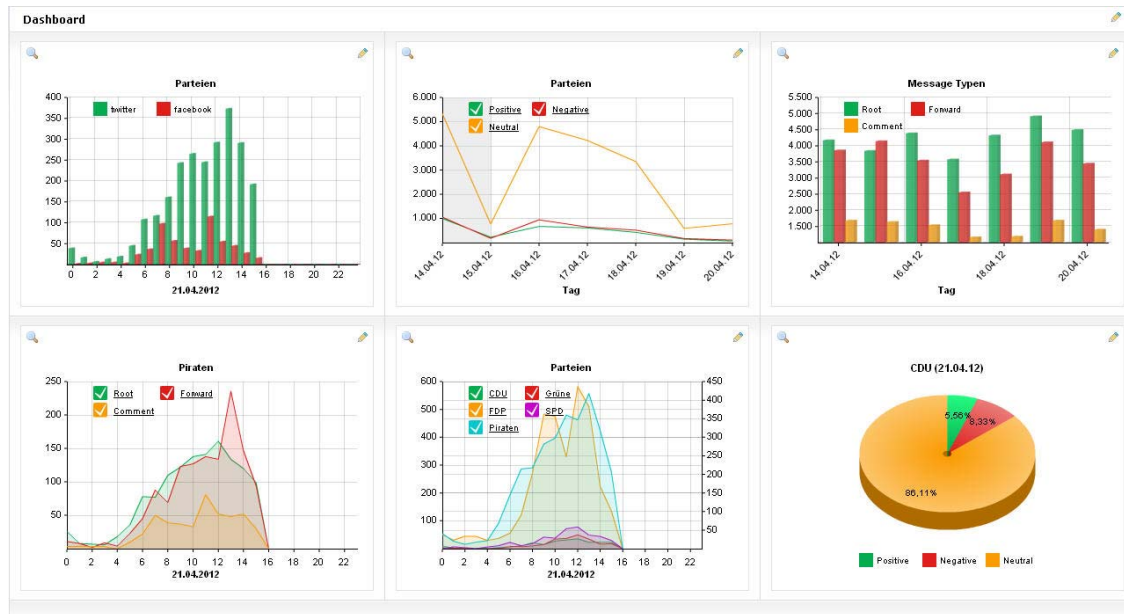
are added as meta-data to the harvested message allowing to explore contextual relationships between different themes. Likewise, authors and potential relationships to other messages are identified. The analysed and enhanced message is then being stored in MediaMiners' data warehouse and immediately available for MediaMiners' presentation layer.

From a users perspective, working with MediaMiner is easy and straight forward. MediaMiner provides an intuitive web-based, multi-lingual user interface. Depending on a user's permissions, a user can create Monitors – representing categories of your themes of interest, such as Airlines, Smart Phones, Hybrid Cars or Political Parties. A user can then add Media Streams – representing the topics of your themes of interest - or actual instances of your categories, such as Lufthansa, iPhone 4, Toyota Prius or the Social Democratic Party. A Media Stream maps one Topic to one Social Media Platform, such as Twitter. The concept of a Media Stream allows you to monitor the same topic in multiple Social Media Platforms. Once your Monitors and Media Streams are in place, data collection starts almost immediately. If there is some current buzz about your theme of interest, you will see message numbers increase in short time. Without further doing, you can use the search and explore what is going on.

The screenshot displays the MediaMiner search interface. At the top, there is a breadcrumb trail: [-] > Category:Parteien > Topic:CDU > Sentiment:Positive > Sentiment:Positive. A search bar contains the term 'merkel' and a 'Search' button. Below the search bar, the results are sorted by 'Time [+]' and 'Relevancy [-]'. The interface shows 1 - 11 of 174 Results. On the left side, there are filters for Category (All, Parteien (174)), Topic (All, CDU (174)), Sentiment (All, Positive (174)), Message Type (Root (86), Forward (64), Comment (24)), Media Type (Twitter (158), Facebook (16)), Authors (checked), and Top Keywords (checked). The main content area lists 11 search results, each with a social media icon, author name, text snippet, and metadata like 'Parteien | CDU | Positive | Comment [R] | De | [Date] [Time]'. The results include tweets from @GeraldBrazell, @GerhardtBernd, @vincentkiefer, @benita061, @altberliner, Hartmut von Elm, @quehart, @Gezo2301, @listo\_w, and @Schandmaske.

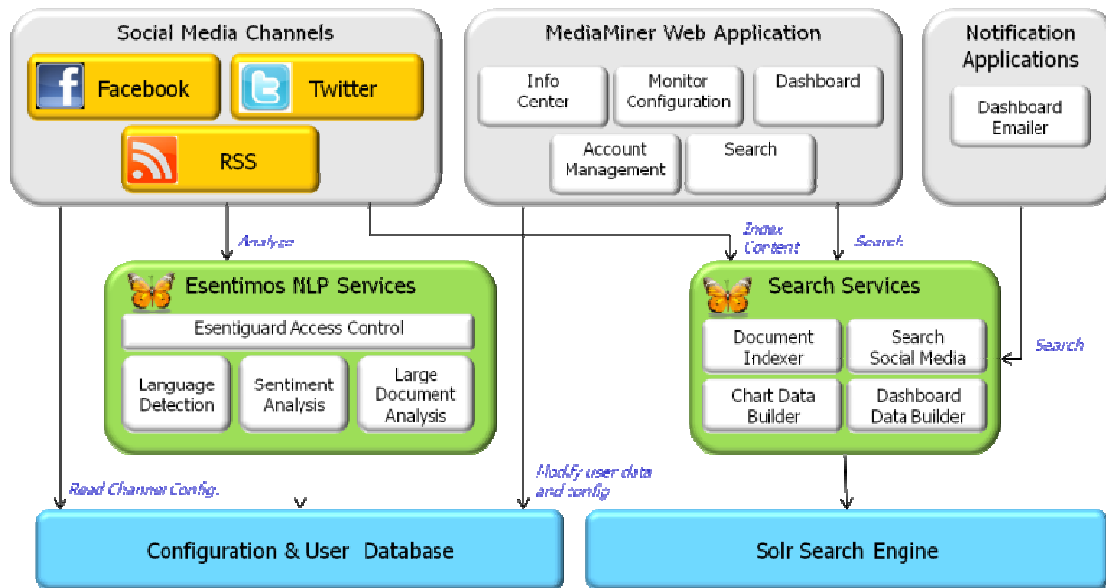
**Figure 1: MediaMiner Search**

Once monitors and media streams have been created, you can create dashboards to visualize the data as you like. Each user of your account can create his or her own dashboards and share them with others or not. Hence data analysis can be tailored to the interest of a particular employee of your company. MediaMiner also allows for Email delivery of any dashboard you create.



**Figure 2: MediaMiner Dashboard**

Finally, MediaMiner is a multi-client, multi-user system allowing for two kinds of operations – Software as a Service (SaaS) or Onsite (Third Party) operation. If you just want to use MediaMiner via SaaS, you wouldn't be concerned about the multi-client capability, because your account represents one MediaMiner client. Permissions and privileges of your staff, however, can be tailored. If you operate MediaMiner, then, as a Super User, you have full control over client settings and package restrictions.



**Figure 3: System Overview**

## 6 Why MediaMiner?

MediaMiner goes beyond counting messages exchanged in Social Media Platforms by leveraging on advanced Natural Language Processing services developed in Germany by ESEMOS GmbH in collaboration with the Chair of NLP of the University of Leipzig. Having full control over this important aspect of Social Media Mining allows for continuous improvement and extension of sentiment analysis and speedy integration of new customer requirements, such as integration of new languages.

MediaMiner is also backed by extensive expertise in enterprise search – visible in the many advanced search and navigational features – but also in the capacity to deal with “big data”. In fact, the core components of MediaMiner are used in high performance production systems by numerous customers, including one of the Europe's largest ISP's.

Last but not least, MediaMiners’ operational flexibility (SaaS vs. Third Party) combined with its logical and intuitive user interface should eliminate any doubt as to why MediaMiner is your choice when it comes to Social Media Mining.

## **7 Who can benefit from MediaMiner?**

The simple answer is – everybody who wants to be “tuned in” to major social Media Platforms. If you are interested in the “public” perception of your product, service or brand or how its perception compares to that of your competitors, then MediaMiner will reveal just that for you.

If you run a marketing campaign and want to quantify its impact in Social Media, MediaMiner will allow you to monitor pre- and post campaign engagement in Social Media. If you have to deal with customer support, MediaMiner will help you to put support requests into perspective, recognize patterns as they emerge and simply be better prepared for your customer’s requests. Knowing what’s going will also allow you to respond early and adequately – perhaps and most likely in Social Media itself.

MediaMiner provides feedback like “viewing figures” or “programme ratings” in conventional media, while the programme is your product, brand, service or theme of interest.

## **8 What’s under the hood?**

For those readers interested in operating MediaMiner – let’s have a quick look under the hood. All MediaMiner components are built in Java or Java based technologies, such as J2EE. Therefore, MediaMiner can be run where Java is available and supported. Even Solr – the core of our data warehouse is entirely based on Java.

MediaMiner can be operated on one single server, but it is advisable to provide some level of redundancy and failover. Our data warehouse can be scaled and partitioned along with increasing demand. MediaMiners’ modest CPU and RAM requirements correlate with the amount of information being processed.

MediaMiner allows throttling and / or sampling the volume of messages retrieved from Social Media Platforms as a way to deal and cope with information overload. Continuous high volume topics are best sampled instead of fully monitored. This approach is equivalent to conducting representative polls instead of interviewing each and every person in a universe. Unexpected peaks in Social Media engagement related to your monitored themes will lead to automated throttling based on configurable settings.

MediaMiners’ Natural Language Processing capabilities are based on Esentimos – a Web service provided by ESEMOS GmbH and also available on its own. Esentimos must be operated by ESEMOS GmbH due to license agreements with the University of Leipzig. Therefore MediaMiner will need to have access to Esentimos if sentiment analysis is required.

Last but not least, MediaMiner is a Web application and therefore dependent on a Web Browsers’ compliance with common standards. MediaMiner is currently best experienced with one of the three major browsers (IE 7/8, FF 3 to 12, Chrome).

## 9 MediaMiner – Features and Packages

MediaMiners’ features can be packaged but also individually enabled on a per client basis.

**SaaS Feature List**

Features	Packages				Description
	Simple	Basic	Advanced	Professional	
Media Miner UI	Yes	Yes	Yes	Yes	Access via Media Miner Web UI
# Users	1	1	20	100	Each user can create and control his / her views (via Dashboards) of the data and share those with other users
# Monitors	1	5	10	40	Number of Monitors / Categories
# Media Streams per Monitor	5	10	20	25	Number of Media Streams per Monitor
# Media Types	2	2	3	All	Number of Media Types (Twitter, Facebook, RSS) to be monitored
# Dashboards	0	1	10	20	Number of Dashboards which can be created
# Sentiment Languages	0	0	2	All	Languages supported for sentiment analysis, currently German and English
Sentiment Analysis	No	No	Yes	Yes	Detailed Sentiment (neutral, positive, negative) analysis in dashboard and search
Search	Yes	Yes	Yes	Yes	Allows Full Text Search over the collected content in the Media Warehouse
Periodic Email Notification	No	Yes	Yes	Yes	Daily or weekly email with Dashboard as PDF
Message Types	No	No	Yes	Yes	Detailed Message Type (root, forward, comment) analysis in the dashboards and search, allows to identify influencers
Language Analysis	No	No	Yes	Yes	Detailed Analysis of the detected languages in the dashboards and search
Author Analysis	No	No	No	Yes	Detailed Analysis of Authors in Search (Facets)
Keyword Analysis	No	No	No	Yes	Detailed Analysis of Related Keywords in Search (Facets)
Threshold Analysis	No	No	No	Yes	Allows for definition of threshold values on data series based on which an email notification can be triggered
Event Calendar	No	No	No	Yes	Allows for marking events (e.g. campaign or incident days) in a calendar, which can then be visualized in the Dashboard charts
Data Retention	3	6	12	60	The number of months data is retained in the Media Warehouse
8x5 Support	18% of package Price				
24x7 Support	24% of package Price				
<b>Pricing on request</b>					

**Figure 4: MediaMiner Packages and Features**

## 10 Warranty, Maintenance and Support

MediaMiner comes with 30 days warranty after activating your account or after installation followed by maintenance, which is covered by two support options: 8x5 = business hours during business days or 24x7 = full time support. No matter what, ESEMOS’ support team will make sure that your MediaMiner experience is as smooth as possible.

## **11 Contact and further information**

If you are interested in MediaMiner and / or Esentimos, please visit us at [www.esemos.de](http://www.esemos.de) or [www.mediaminer.de](http://www.mediaminer.de) or contact us :

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