



**Nexalogy**  
ENVIRONICS

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## **SOCIAL MEDIA INTELLIGENCE:**

### **Taking monitoring to task**

A White Paper by Nexalogy Environics

## Untangling the Social Web

People are writing. They're sharing. They're influencing each another's opinions, and they're doing it publicly. The openness of the online conversation offers businesses unprecedented access to consumer opinion, attitude and social behavior. There's more material than ever published about a company and its brands – and this material is freely offered, there for the taking. In many ways, we are – or should be – entering a golden age for businesses that put customer service and an understanding of customer needs, preferences, and desires at the top of their priority list.

In the age of social media, your customers will tell you almost everything you need to know to make the best possible strategic decisions. And it's more than just your customers – your suppliers, industry associations, partners, professional analysts – they're all joining a vast global conversation about almost every subject imaginable. And all of this material is offered free for the taking.

All you have to do is listen.

Listening to these online conversations is as essential today as having a website was yesterday. It's becoming today's standard business practice. Understanding and – for some – joining the online conversation not only helps customer service efforts, but can also guide strategic business decisions throughout the spectrum of communications and marketing activities, from basic product strategy to one-on-one interaction with customers.

The problem? There is so much material, published by so many different actors, that "listening" is easier said than done.

Years ago, keeping track of media and public opinion was fairly straightforward: companies hired a press clipping service to track news items related to their company and brands; then a junior communications staff member put together a monthly or quarterly summary. Add to that an attentive field force (for companies that had one) and a heavy dose of executive instinct, and a company could know all there was to know about their public perception.

Then the Internet came along. Things changed. The number of sources of data grew. Not only did managers have to be aware of what was being said about brands in newspapers and magazines, but also on hundreds of websites that sprung up in the mid-90s. Companies hired more staff to track public perceptions, used web search tools to gather whatever information they could find – and continued to use a lot of instinct to try and figure it all out.

Then the blogging and social media revolutions happened, and along with them, an explosion of new but potentially significant voices talking about every subject under the sun – including companies and brands. As social media emerged, networked, shared, entangled content and opinion became pervasive. In the era of blogs and other social media, there aren't simply dozens of print media sources and hundreds of websites to track, there are now tens of thousands – and for some brands, millions – of sources to follow.

No media clipping service – no matter how extensive – can keep up with the flow of information. Understanding public perceptions, attitudes, and trends has always had a huge upside – but it's more challenging than ever to deal with the volume of material being published.

This is the point at which “Listening Tools” are meant to enter the equation.

## Social Media Monitoring (SMM)

Savvy managers caught on right away to the fact that keeping track of all of this new information was an important challenge, and luckily they had some basic tools they could use. Almost as soon as blogs came along, so did some rudimentary tools for collecting this material for review. Between automatic blog syndication feeds (RSS) and Google search, people were able to gather a lot of the new material being published.

Understanding that a variety of tools were being cobbled together to gather all of this information, several software companies saw an opportunity and built web-based social media monitoring software to handle the increase in digital information. Essentially, these are digital extensions of media clipping services combining material from a variety of social media sources. Web-based Social Media Monitoring software such as Radian6, Scout Labs, Alterian SM2, and others give subscribers the ability to follow social media conversations in-house.

For what it attempts to do, this software does a good job: these software services gather data from social media sources, lightly organize the material, and provide users with tools to do some rudimentary analysis on the data.

In a nutshell, SMM software offers a specialized social media search engine, complete with management and organizational tools. By entering keywords, users get industry and brand-specific search results from a specialized social media database, hosted by the software provider.

With these search results, users can sort by media type and date, and drill down for statistical data on brand mentions, themes, simple “influencer” scoring, sentiment and regional information. Subscribers can also use the tools to slice and dice data and visualize it in different ways, such as pie charts and graphs.

A recent innovation among some SMM providers is to give subscribers the ability to engage with consumers directly through the portal and track their engagement efforts over time. Users can follow up on and assign specific posts to be followed up with specific team members –much like a Customer Relationship Management tool.

This first generation of SMM tools offer quick access to raw data and help give businesses a general overview of the conversations happening online. Compared with what went before – informal custom-built tools developed within a company using whatever inputs they could manage – SMM services were a great leap forward.

But they still don’t get to the heart of the challenges posed – and the opportunities offered – by social media.

At the end of the day, SMM users still have to manage and try to gain intelligence from a massive amount of raw data, which can be frustrating to say the least. While it’s interesting to explore the data, and these services offer a good approach to finding specific posts to which to respond, both of these goals are a long way from gaining real insight and analysis from social media – and insight

and analysis to help make important business decisions is the true promise of this explosion of social media data.

## The Challenge of Social Media

Social media analyst and blogger Jason Falls expressed his opinion openly in a blog post entitled “Where Social Media Monitoring Services Fail”:

...none of them (listening tools) do what you want them to do. They only do half the job. None of them tell you what to do with the information.

-Jason Falls, Social Media Analyst, Social Media Explorer

So what’s not working?

The challenge of taking massive amounts of social media data and transforming it into actionable insights is the critical challenge facing many businesses today.

To address Jason Falls’ problem and begin to learn what to do with this massive fountain of information requires two things. First, you must begin with as wide a frame of reference as possible. You must gather – and analyze – as much data as you possibly can. However, this problem has a flip side: when you have gathered so much data, how do you go about understanding it?

In the past this was simple – with only a small amount of information to digest, a single analyst could start at the beginning, read all of the articles about a brand or product, and after having done this, he or she would have a pretty accurate idea of the entire landscape available for analysis. That approach breaks down, however, when you move from analyzing a dozen or so articles a month to thousands or even tens of thousands. No analyst can simply start at the beginning and simply keep on going to the end and hope to gain any meaningful insights.

There are two highly interrelated problems with social media monitoring services as they are currently put together that prevents them from moving beyond “cool, interesting and helpful” to being able to provide Executive-Suite-Quality intelligence to drive fundamental business decisions.

1. Data sourcing – what are we monitoring?
2. Overall approach to analysis – what is our basic model of data analysis?

### Data Sourcing: What are we monitoring?

The social web is growing exponentially – so fast that it can be difficult to keep up with the growth. After its annual State of the Blogosphere report in 2008, even Technorati, the canonical source for blog statistics, stopped trying to count the total number of blogs in existence.

Jess3 made an attempt in early 2010, and published the following numbers:

- 126 Million Blogs on the Internet
- 27.3 Million Tweets Per Day
- Facebook serves 6 million pages per minute
- 4 Billion photos hosted by Flickr
- 182 Videos watched on average per month (per user)

Needless to say, it's a lot of information with a lot of potential impact – and when we talk about social media monitoring and intelligence, it's all about trying to convert all of that activity into meaningful insights.

What's happening in this picture?



It looks like a nice restaurant, probably in a tourist town by the sea. They probably make a wonderful clam chowder and serve a house cocktail named The Salty Dog! I'm sure a lot of local families go there for Sunday brunch as well.

Here's the full story:



The smaller version of the photo was exactly 10% of the overall photograph – and it's obvious what happens when you only focus on a small slice of the overall picture. Moreover, that small slice is what you **should** concentrate on, in theory – it's the stable, established business that anyone would assume is the “influencer” in the photograph... except when it's not, such as in this case.

The problem with looking at a small slice of data – particularly a small slice that has been predetermined by arbitrary decisions that are unconnected with events – is that you are guaranteed to miss everything outside of the frame. In terms of data collection and social media analysis, the same problems arise.

SMM is fundamentally about collecting, in a single location, a lot of relevant data for humans to analyze. As mentioned earlier, they do a reasonably good job of it as well. But, as Jason Falls' quote suggests, doing that well only gets you so far. Because humans must read **all** of the material to make sense of it, there is a built-in incentive to limit the amount of data to be analyzed.

Practically, this happens for a few reasons: SMM users cast a very limited net using only a few presumably relevant keywords; SMM providers' data streams are limited, often to no more than 10% of all existing data; and there are strict limits on the amount of historical data that is made available to users.

This approach can work well when a very specific, very well understood problem must be monitored, but when the goal is more ambitious – to gain insights that can drive business decision-making – this approach fails, because there is simply too much material for analysts to deal with.

SMM users are picking up on one aspect of the data-gathering problem in particular. Earlier this year, one business blogger wrote a blog entitled “The Dirty Little Secret of Social Media Monitoring”:

...I’ve begun to notice inconsistencies in the data that different social media monitoring tools produce. The dirty little secret or so it seems, is they aren’t all working with the same data sources....

...While I expect to find subtle variations in the results between tools, I DO NOT expect to be put into a position to question which tool is “right” and which is “wrong”...

Web Business Blog by Ken Burbary

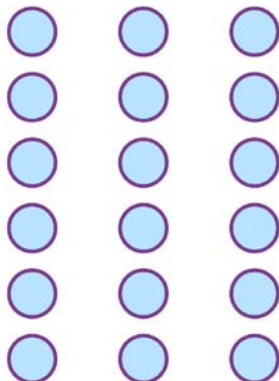
It’s clear that being able to handle as much data as possible is a critical component of accurate analysis. Doing so requires a different kind of software tool, based on fundamentally different approach, than we find in social media monitoring tools.

### **SOCIAL NETWORKS: How are we connecting the dots?**

One part of the problem with existing monitoring tools is that they encourage people to monitor less data than should be used for in-depth analysis. By setting the frame of reference tightly, there is too great a chance that the material that will yield the most valuable insights is never even considered.

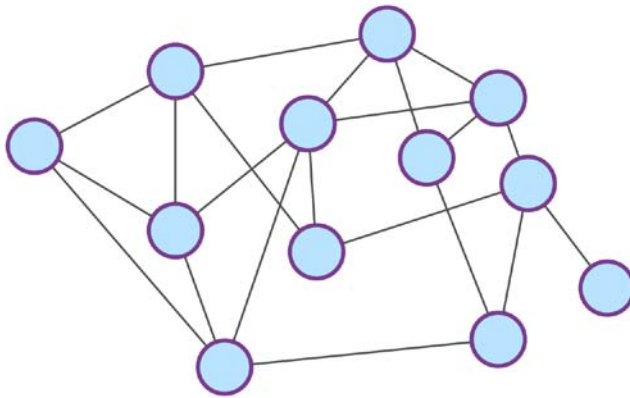
Addressing this issue is not simple, but it’s straightforward: gather more data to consider for analysis. As mentioned earlier, however, increasing the volume of data is not helpful unless you have appropriate tools to deal with a great deal more raw information.

Monitoring tools present the social media environment as long lists of blog posts, tweets, and other mentions, usually ordered by date.



SMM tools provide a lot of simple tools for slicing and dicing that data in different ways – but the fundamental problem remains the same: there’s simply too much information to digest. In addition, this information is usually presented to the user as raw data, with all context stripped. Each post must be examined, one by one. With the increasing volume of results, this proves a difficult task, to say the least.

The social web is not just a list of posts and tweets. In fact, social networks simply aren’t made up of sequentially ordered units of information; whether those are blog posts, twitter messages, or Facebook status updates. Each post in a social network is not the equivalent of a newspaper article that stands on its own by a particular author and publisher and these are fast disappearing. In traditional media, writers and editors did what they could to ensure that not only the news but also the context of the news was communicated in the article itself – this is not (necessarily) the case in social media.



The social media environment is a complex network, connected by relationships. Many things define these relationships, but the most fundamental is the language used in the text. Being able to understand these relationships is the most important thing to be able to do in order to perform a rich analysis of social media data.

When we connect the dots, we see that each piece of information embeds – and is embedded in – a complex series of thoughts, questions, answers, trends, social movements, news stories, events, and activities. The author of each item in a social network is a person or group that is connected in a complex network of other individuals and groups.

It’s only once the dynamics of these networks are understood that one can move on to analyze a specific item. Analysis requires contextual awareness – and this requires a much more advanced approach than is widely available today. It is this gap that the Nexalogy Social Media Analysis System enables clients to address directly.

## Social Media Intelligence (SMI)

Rome wasn’t built in a day, and neither were networks. Comprised of complex multi-layered physical and virtual links connecting reams of textual and multimedia data, social connectivity on the web is a complex study.

Today's automated tools do not take into account the textual, human-relationship and technical complexities that the social web incorporates. Academics have spent decades researching and analyzing the nature of networks and social behavior. Social psychologists, network theorists, mathematicians, physicists, and economists have all made contributions to the study of social networks, analyzing how they work, interact, and change, and how they can be measured and mapped.

Social media monitoring tools are being held under the microscope of leading market research firms, as they attempt to pinpoint how the tools help, and where they fall short. In a recent report on Listening Platforms, Forrester pointed out that SM software was not helping companies make informed decisions:

We believe that software alone does not deliver the insights marketers need to make informed decisions. To fully understand the impact of the ever-changing social landscape, vendors need to offer comprehensive consulting services. Good consulting organizations must be involved in all aspects of listening — from topic identification to data discovery and setup to sentiment and influence coding, market segmentation, and advice on how to proceed.  
*Forrester Research, The Forrester Wave: Listening Platforms*

Gaining an accurate, clear overview of what drives your brand and market is possible using social media. But it has to be accomplished with social media intelligence.

## What is Social Media Intelligence?

Social Media Intelligence refers to a series of analytical practices that, when combined, allow for rich analysis of text-based data that goes far beyond simple keyword counting, so-called “sentiment analysis” and other such simple measurements. Above all, Social Media Intelligence has been designed to provide insight about an entire dataset with three key questions in mind: a) what are the most important discussions found in the dataset; b) what is the relative importance of the various topics found in the data, and c) who are the key actors in the discussion?

Generating Social Media Intelligence, then, is all about understanding the overall dynamics of a discussion – not just focusing on the popular participants in the discussion and hoping what they have contributed is significant. Understanding the dynamics of a conversation means knowing who is involved in the discussion, how are they involved in the discussion, and what is being discussed using what language.

This approach to Social Media Intelligence is based on years of insights in several different fields, including primarily network theory and co-word analysis. Built into this approach is the idea that semantic networks can be visualized, and that doing so provides a richness of insight that cannot be matched by single-variable charts or graphs.

## Components of SMI: Scale-Free Network Theory

The starting point for studying social media conversations involves the idea that social networks are “scale-free” networks. Academics have been studying scale-free networks for many years, but the most complete study of this characteristic of networks was published in the 1999 book, *Linked*:

*How Everything Is Connected to Everything Else and What It Means* by Albert-László Barabási. This was followed a couple of years later by Duncan J Watts' *Six Degrees: The Science of a Connected Age*, which drew together Barabási's work on scale-free networks with related work about the scale-free nature of semantic (language-based) networks.

According to network theory, some nodes, called "hubs", have many more connections than others and that the network as a whole had a power-law distribution of the number of links connecting to a node. Work from further studies confirmed that scale-free network structures can be described in terms of power laws, meaning that a market with a high freedom of choice (such as the Internet) will create a certain degree of inequality by favoring the upper 20% of the items against the other 80%. This theory is also known as the 80–20 rule, or a power law.

This is important for a couple of reasons. Most importantly, it explains the fallacy in studying networks as if they behaved in the same way as distributions that can be described by a Normal or Gaussian distribution – i.e., a bell curve. In data that is described by a bell curve, it is appropriate to study a small slice of the data and extrapolate to the whole population.

In the case of a network described by a power law distribution, it is clear that what is found at the "head" of the curve (i.e., the most popular results) will not necessarily persist further along the curve – to the extent that (in practical terms) we can find entirely different discussions at different parts of the curve. And because the "long tail" part of the curve can be very long indeed, it is critical to not only gather enough data by enough distinct actors to understand what can be found there – but to use analysis approaches that ensure that language shared by many people – though no individual may be popular – will be properly included for analysis.

## **Components of SMI: Co-Word Analysis**

In well-defined academic fields, analysis relies on stable, published classification systems or ontologies that define the domain to be studied. Although researchers and companies alike have tried various strategies to apply ontologies to the web and social media, the scope of the web and its fundamentally chaotic nature have confounded such attempts. Therefore, to perform rigorous analysis on public, internet-based information requires a different approach than the analyst might use for a more clearly defined universe.

The approach that we use at Nexalogy is the innovative application of co-word analysis techniques to a different kind of data: weblog and social media. The core approaches were initially developed to study the evaluation of research and the study of scientific research as a sociological system. Co-word analysis was developed by Michel Callon at the 'Centre de Sociologie de l'Innovation' at ENSM in Paris. Callon was inspired by co-citation analysis techniques developed in the 1960s by Eugene Garfield and the development of Impact Factor calculations and co-citation analysis techniques to evaluate scientific research and analyze scientific publishing trends. Callon, however, worked in the context of Actor-Network Theory (ANT), which describes society by mapping relations that are simultaneously material (between things) and 'semiotic' (between concepts). His approach sought to use the entire text of scientific publications for analysis. The first paper on co-word analysis was, 'From translations to Problematic Networks: an introduction to co-word Analysis' (1983 Callon et al.).



Notice how information is clustered: the Launch Coverage is the biggest cluster, as expected, since the map was created in the 24 hours following the launch. Notice how Features and Apple product lineup/hardware overlap.

## Nexalogy Social Media Intelligence

Social Media Intelligence is the name we use to describe the next generation of software and methods being developed to derive true value-added analysis from social network data. At Nexalogy, our goal is to take social media monitoring to the next level – to give our clients results that don't only provide an overview of social media posts related to a brand or an issue, but provide valuable insights about companies, brands and issues, including detailed analysis of the online conversations and recommendations and strategies for dealing with opportunities and challenges that arise.

The promise of social media is much broader than simply learning how to interact with clients, prospects, customers, or the general public in the social media environment. The true value in all of this social media activity for a company lies in what it can tell you about the overall perception of a brand or important business issues. Alongside traditional market research and other activities, social media intelligence can help drive strategic decision-making, not just direct social media engagement.

We call this Social Media Intelligence.

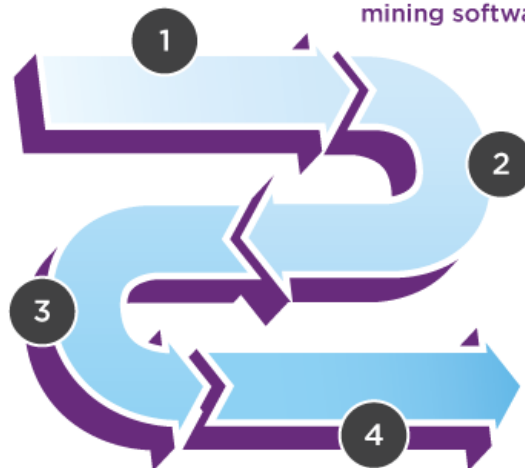
## Nexalogy's Methodology

### 1 Dataset Creation

Cleaning, filtering, and ordering of relevant blog posts

### 2 Quantitative Analysis

Mapping of blogosphere opinion areas through proprietary data mining software



### 3 Qualitative Analysis

Detailed reading of key blogs by team of content analysts

### 4 Reporting and Strategy

Analysis; strategic and tactical recommendations; outreach and engagement strategies

Studying the blogosphere means studying large, heterogeneous datasets. In any database of social media material, there are a huge variety of people represented: mainstream journalists, subject-matter experts, financial analysts, advocates, NGOs, interested non-experts, and the general public. Nexalogy Environics' semantic approach to analysis is the foundation of how we extract value added intelligence from such datasets.

The most valid way to analyze such large datasets is to first learn which of the thousands of blog posts are the most important based purely on what the blog posts say. This is a process based on techniques that come from co-word analysis approaches that were initially developed to facilitate the study of large academic databases, described earlier in this paper.

Only after Nexalogy Environics determines which elements of the dataset are the most resonant is it appropriate to further analyze using human processes to assess the relative importance of the actors in the dataset (i.e., journalists, "name" activists, influential citizens, etc.), and other such kinds of analysis. This is also important considering that any decision about the "value" of any contribution to the dataset is by definition a subjective, human decision.

Following the creation of a client-specific comprehensive dataset of social media and news, Nexalogy cleans (filters) the information, orders it, and maps relevant networks. We perform semantic analysis algorithms on the data in order to get a clear understanding of what drives the conversations, and how conversations and opinions are –or are not – connected.

Next, Nexalogy deploys a team of human content analysts to verify the pertinence of the data and results. This involves detailed reading of key blogs and posts in order to ensure relevant information and to respond to the key questions and concerns related to a specific business question – whether the goal is to address a challenge or an opportunity in the marketplace.

## **Services & Software**

Nexalogy offers its clients two complimentary ways they can use Social Media Intelligence: as a consulting service or as web-based software-as-a-service.

Nexalogy has been providing clients with high-quality Social Media Intelligence on a services basis for over three years, and in this time has helped dozens of clients – large and small – with intelligence that has helped them to make better business decisions based on social media data. Our projects have run the gamut from providing key intelligence on corporate risk in social media for large companies in Canada's Oil Patch, to rebranding advice for a global cosmetics and grooming products company, to advice on how to tailor communications and messaging for Gen Y in the banking sector. Smaller organizations have also benefited from Social Media Intelligence: in one case, our work provided the foundation for a complete re-think of a small but important holiday giving campaign – which led to much greater results than in years past.

In addition to providing Social Media Intelligence as a service, starting in the spring of 2011 we're also providing companies, agencies, and consulting firms direct access to our entire software toolkit that they can use themselves.

## Conclusion

Nexalogy recognizes the human and technological complexities involved in social networking. By taking a multi-disciplinary approach to study the context and meaning of the online conversation, the company delivers strategic and tactical recommendations, with outreach and engagement strategies that fit a company's specific objectives.

We believe social media is a great opportunity for any organization that takes advantage.

We can guide you as you take on that opportunity. Contact us for a presentation and consultation. Be informed with Social Media Intelligence as you embark on engaging with the networked world.

See the connections.

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