Social Network Analysis
A Sparsee scenario by **Sparsity Technologies**

→ Motivation

Social Network Analysis has risen as one of the most interesting fields to explore. The popularity of networks like Facebook and Twitter made companies aware of the potential to explore the huge amounts of data shared among users. It is estimated that only inside the two giant social networks alone, Facebook with 483 million users and Twitter with 75 million users worldwide, more than 1 billion* pieces of content are daily shared among its members**. While the first step for companies is to reach those millions of users joining actively the social networks, a move forward arrives soon when the need to effectively analyze the results of their efforts, and minimize them pointing to the correct target, becomes a must.

→ Use Case Features

01 Solutions for Social Network Analysis must be transversal, considering content and actions in several contexts, in order to really track complete user/information's behavior. For instance we could consider the following sources:

Relationships networks	Microblogging	Blogs
Facebook, Linkedin, Tuenti, email …	Twitter, Tumblr …	Blogspot, Wordpress …
Video	Question & Answering	Online press
Youtube, Vimeo …	Quora, Stackoverflow …	Printed and online latest-news
Wikipedia	Web pages	Forums

02 Solutions must create a unique model to represent together information from different sources and different formats. New data would then be included easily since it should be only mapped against this general model, allowing later inclusion of sources.

03 We are talking about analyzing an average of 1B pieces of information per day: Volume is a big issue. Solutions must be scalable and solve queries fast. In addition analytical queries are already widely known to have high costs.

04 Solutions should approach the following detected topics which are key:

✓ Roles

People in the social networks tend to assume a specific role, which may change through time. Some are only spectators of what is happening, which means that they may belong to some groups but only interact viewing the contents shared. Usually people start with this role when they introduce themselves to a new network, and some of them change to more active roles after a while. For instance they may become dialoguers which are those who start new topics of interest and fuel conversation. People in a same role share the same pattern of behavior in the social network.

✓ Influence

As in real life, some people are influential while others tend to assume some behaviors while under their influence. In addition it is interesting to know how long the influence affects and how quick the response to this influence will be.

✓ Propagation of information

Pieces of content in a social network are propagated by people who share the same item of information.

✓ Communities

Groups of people who share similar feelings or tastes can be addressed for recommendation or for viral data propagation. The communities can be formed by people who perform different roles, so detecting those roles in communities may also be relevant.

→ **SNA Benefits**

01 Identifying the roles of your audience in a social network gives the possibility to give the appropriate message for every type of consumer/potential client...

02 Detecting the key people whose favorable opinion of your company/message will affect many others increasing the effectiveness of any marketing campaign.

03 Easy scheduling for marketing campaigns knowing the time of the propagation of information of my products.

04 Help discovering the REAL target of a product knowing the journey a specific unit of information takes in social networks.

05 Detect the loose knots in your message chain for more effectiveness when delivering your message.

06 Just to mention a few!

→ Sparksee Benefits

01 SNA needs a unique integrated model with strong relationships between data. Sparksee Graph Database is the perfect technology for this field, since the graph is the most suited model to store related information.

02 To have a powerful social network analysis tool, the most information processed the best the former benefits are achieved. Sparksee is able to work with billions of pieces of information at a time in a single off the shelf computer.

03 Although analytical queries are not intended to be answered in real time, the nature of the social networks make any delay in the results highly obsolete information in short times. Sparksee is the highest performance graph database that performs queries in shortest times, you will be able to identify roles, detect influences or see the propagation of the information in a few seconds.

04 In addition Sparksee graph database has a very flexible schema, which allows adding a very different source and not affecting at all your current application. For instance, you can start analyzing only Twitter, and adding more sources afterwards.

* 140 M of tweets (2011 statistics)
** http://blog.hubspot.com/blog/tabid/6307/bid/12234/10-Essential-Twitter-Stats-Data.aspx
** http://newsroom.fb.com/content/default.aspx?NewsAreaId=22