Executive Summary

“In the long history of humankind ... those who learned to collaborate and improvise most effectively have prevailed.” – Charles Darwin

Social network analysis (SNA) offers a mechanism to help organizations better understand these relationships and the strength of individuals’ network connections. It provides an effective way to analyze and understand the complex networks of individuals, groups, advocates and detractors by assessing interactions in terms of strength, frequency and other relevant factors.

In this white paper, we will bring explore SNA and how it is used to “make the invisible visible” for building brand awareness and addressing other important business concerns.

A Look Back

The term “social networking” was coined in the 1950’s by professor J. A. Barnes while he studied social ties in a Norwegian fishing village. In this study, he concluded that the intricacies of social life can be envisioned as a set of points that can be joined to form a network of relations.

Since then, scientists and mathematicians have developed this idea further as they have worked to understand how people interact and form networks. They have translated such concepts into mathematical models that enable the measurement and close study of social networks.

Social Network Analysis

As with any systematic evaluation, conducting an effective social network analysis comprises four stages:

• Defining objectives.
• Data gathering.
• Data visualization.
• Results analysis and insights.

Defining Objectives: An analysis lacks meaning until it has a stated objective. We need to clearly define why we seek to understand social networks. Within a business context, some possible objectives include the following:

• Better targeting and messaging.
• Identification of brand advocates.
• Impact of competition on the network.
However, there is much more that can be done with the analysis. Some applications of the analysis are discussed later in this paper.

**Data Gathering:** The data required to undertake any analysis is often bought from third-party vendors, but in the case of this analysis there are no vendors that collect social network data specific to brands or organizations. Thus, the data has to be extracted. The amount of data that can be collected is voluminous, so it is important to capture the right data.

There are two ways to capture information about the relationships within a defined social network.

- **MR Surveys:** A questionnaire is designed with the stated objective in mind and is then presented to the panel – which should consist of individuals and teams in the network. The questions should focus on identifying the relationships and information flows among the network’s elements. A few examples of plausible questions are:
  
  - Please share the names of five people whom you know who are aware of the brand ABC.
  - How are you connected with them?
  - How did they get to know about the brand?
  - How do you discuss the brand?

  However, the biggest drawbacks of going the market research route is its limited reach and high associated costs.

- **Web Crawlers:** These are computer programs that browse the Web in an organized and automated manner. There is a plethora of Web crawlers available that can either be licensed or created to suit an organization’s needs. Utilizing Web crawlers eliminates the need for expensive market research while extracting a wide swath of information. In some situations, however, privacy policies and regulations force organizations to employ both methods.

**Data Visualization**

Now that all the data has been acquired, why do we need to visualize the network? A simple answer is that visualization will heighten our understanding of such a social network. To best connect the elements and aid visualization, organizations must understand the possible types of connections:

- **Simple:** This is the study from the standpoint of an individual. Here there is only one center

  (the individual or entity) and various vertices (the individual’s network) that do not connect. (See Figure 1.)

  Key benefits of such networks include:

  - **Awareness information:** To assess how aware is the network about the brand.
  - **Influence:** To understand the immediate reach the brand has on the network.

- **Complex:** These are scale-free networks where the pattern of connections between the nodes (building elements of a network) are neither purely random nor purely organized. Here the entities in the network can be connected to each other. (See Figure 2.)
The benefits of such networks include:

- Individual satisfaction and network-level performance.
- Identification of opinion leaders and influencers.
- Success of community for the brand.

There are many third-party freeware tools that can be used for data visualization. An exhaustive list of these can be found here on Wikipedia.

An example of data visualization for a complete network is illustrated in Figure 3. This patient-centric flow of networked healthcare information can be utilized to understand how marketing campaigns on consumer sites can be leveraged to influence targeted prescribers.

Results Analysis and Insights

SNA examines interpersonal networks and value exchanges. Here, we gauge and use certain attributes to better understand the potential of marketing to a network and to gauge ROI. Some of the attributes include:

- Strength of relationships.
- Information capacity of the network.
- Rate of flow or traffic across the network.
- Distance between network points.
- Probabilities of passing on information.

Practical Applications

The next section explores business applications that exploit insights gathered via SNA and how this knowledge can be leveraged to guide marketing decisions.

Keyword Connectivity Analysis

Nodes of a network need not comprise only people but can include anything (e.g., technology, keywords, etc.).

The beauty of network analysis is that it can be applied to any network with suitable modifications. In a keyword analysis, first a network mapping is created to understand how the various keywords are linked (based on their associated connotations) to a brand. Based on this mapping, various messages can be created to suit the needs.

Key Opinion Leaders Identification

If the information flow in a network is understood, questions can be raised, such as who would be the best person to influence; who can be easily identified, etc.

A solid understanding of network connections, interests and engagement levels allows organizations to identify central nodes of influence that can be leveraged as key opinion leaders (KOLs). Communication and engagement can be directed toward KOLs and the viral power of their connections will allow messages to move to the intended audience.

Competitive Intelligence

Any relevant information that can be derived about a competitor is important. In today's world where there is an abundance of freely available public information, insights can be derived to identify what the competition is doing. For example, if the analysis is intended to identify various positions which an organization has created for a particular brand (Chief Technical Officer, etc.), this can provide an idea of the organization’s plans for that brand. Platforms such as LinkedIn can be used to ascertain this. This data can then be consumed with other secondary research information – such as annual reports, etc. – to understand the intent of the organization or brand.

Measuring Social Capital for a Brand

The combination of a network’s strength along with the network members’ engagement and satisfaction are the key elements that contribute to a brand’s social capital. A small network, even if it consists of highly engaged and satisfied members, does not carry the viral strength to generate much social capital for a brand. By the same token, a large network that is relatively apathetic about a
CASE STUDY: Applying Social Network Analysis

The following hypothetical scenario is designed to provide a taste of social network analysis.

• Situation: A large consumer brand wishes to increase sales and enhance its brand image. The brand wants to use social media as a channel in its consumer marketing plan. To successfully implement and manage a social media campaign, it wants to first identify key opinion leaders and quantify network size to estimate reach and impact of the social campaigns. This information will allow the brand to engage with leaders and their network, which will generate positive buzz in the market.

• Challenge(s): With a consumer base that runs in the millions, the brand needs to determine the most efficient way to make sure it has current and accurate customer information. While the company has information linking sales to demographics and a “consumer VIP” program, very little information is known about what drives consumers to purchase or how the brand’s products are perceived in the market.

• Approach: To meet these objectives, the company did the following:
  It started by collecting information about customers who like the brand and have been engaged on the brand page of its social Web presence (Facebook). Based on their level of engagement, network reach, demographics and product satisfaction, a survey was launched to better understand unmet customer requirements, needs and perceptions. The survey focused on collecting the following information:
  ♦ Brands and competitive products they have used.
  ♦ Time associated with the brand.
  ♦ Last use of the brand.
  ♦ Primary medium of shopping/contact.
  ♦ Main points of satisfaction around products.
  ♦ How they shop for other brands.

Later a process was developed to segment the network. This allowed for the addition of various weights to the aforementioned parameters and helped to determine the proximity of the customer to the brand in the network. The proximity also governed the advocacy of the customer to the brand. This approach was further used on an ongoing basis to evaluate if a key opinion leader had moved down the pecking order.

Once a deeper level of understanding was acquired around key opinion leaders, the brand was able to quantify the impact that key opinion leaders had on the brand’s sales.
Footnotes
1 http://www.brainyquote.com/quotes/quotes/c/charlesdar393305.html
2 http://www.bioteams.com/2006/03/28/social_network_analysis.html

References


About the Authors
Udit Rastogi is an Engagement Manager with Cognizant’s Enterprise Analytics Practice, working within its Digital Analytics Center of Excellence. He has over 10 years of industry experience and specializes in strategy, and measurement/assessment of digital marketing activities for customers across verticals. Udit can be reached at Udit-1.Rastogi-1@cognizant.com.

Tom Jirele is a Principal and Practice Leader within Cognizant’s Multi-Channel Marketing and Measurement Center of Excellence, focusing on the measurement and interaction of marketing channels to optimize client spend. He has over 30 years of experience in measurement and modeling across the life sciences, retail, finance and education industries. For the past 15 years he has worked in the life sciences industry leading engagements related to promotional measurement, marketing strategy and multi-channel optimization. He can be reached at Thomas.Jirele@Cognizant.com.

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