Towards a More Holistic Stakeholder Analysis Approach.  
Mapping Current And Potential Stakeholders From Social Media.  

Kristina Sedereviciute  
MA in Corporate communication  
Thesis supervisor - Lars Haahr  

A thesis submitted in conformity with the requirements for the degree of  
Master of Language and Business Communication  
Department of Language and Business Communication  
Aarhus School of Business, University of Aarhus  

August 31, 2010
ACKNOWLEDGEMENTS

I express my deepest gratitude to
my professor Chiara Valentini for encouraging me to write a thesis on this topic,
my friend Monika for reading the whole paper and providing valuable comments,
my supervisor Lars Haahr for constructive directions and feedbacks 24/7,
and finally my beloved boyfriend who has always supported me and
never stopped believing in me.
Content

ABSTRACT .................................................................................................................. 6

1. INTRODUCTION ....................................................................................................... 7
  1.1. Thesis design and methodology ......................................................................... 8
  1.2. Theoretical framework ....................................................................................... 10
    1.2.1. Stakeholder theory literature ....................................................................... 11
    1.2.2. Social media literature ............................................................................... 11
    1.2.3. Network theory literature .......................................................................... 12
  1.3. Delimitations and propositions for future research ............................................ 13

2. THEORETICAL BACKGROUND ............................................................................. 15
  2.1. Stakeholder theory ............................................................................................. 15
    2.1.1. An overview of the stakeholder theory ....................................................... 15
      2.1.1.1. The evolution of the theory .................................................................. 16
      2.1.1.2. The use and relevance of the stakeholder theory .................................. 17
    2.1.2. Stakeholder identification .......................................................................... 19
    2.1.3. Stakeholder grouping and prioritization ...................................................... 21
      2.1.3.1. Key typologies of organizational stakeholders ...................................... 21
      2.1.3.2. Stakeholder prioritization using stakeholder salience model .................. 24
  2.2. Understanding social media ................................................................................ 27
    2.2.1. Exploring the definition of social media ..................................................... 27
    2.2.2. Comparison of social and traditional media ................................................. 29
    2.2.3. The current landscape of social media ........................................................ 30
    2.2.4. Key social media activities and tools ............................................................ 32
      2.2.4.1. Blogging .............................................................................................. 32
      2.2.4.2. Microblogging ..................................................................................... 34
      2.2.4.3. Social networking and social network sites ............................................. 35
    2.2.5. Risks and opportunities in social media ....................................................... 37
  2.3. Network theory specifics ...................................................................................... 39
    2.3.1. Understanding networks: notions and notations .......................................... 39
      2.3.1.1. Vertices and edges ............................................................................... 40
      2.3.1.2. Directed graphs .................................................................................. 40
      2.3.1.3. Network and node connectivity ............................................................. 41
        2.3.1.3.1. Node Degree .................................................................................. 42
Towards a More Holistic Stakeholder Analysis Approach. Mapping Current And Potential Stakeholders From Social Media

2.3.1.3.2. Diameter, distance and geodesics.........................................................42
2.3.1.3.3. Graph density .................................................................................42
2.3.1.3.4. Node centrality and prestige.............................................................43
2.3.2. Network typologies...................................................................................46
2.3.2.1. Egocentric networks.............................................................................47
2.3.2.2. Complete and partial networks..............................................................48
2.3.3. Communities and their detection in networks..........................................48

3. DISCUSSION ......................................................................................................51
3.1. Definition of a stakeholder within social media context ................................51
   3.1.1. Defining stakeholders based on the content shared within social media........53
   3.1.2. Defining stakeholders based on their connectivity within social media network ....56
3.2. Prioritizing the identified stakeholders from social media................................60
3.3. Constructing a more holistic Stakeholder Mapping Model..........................62
3.4. The utilization of the holistic Stakeholder Mapping Model............................65
3.5. Empirical application of the holistic Stakeholder Mapping Model...............67
   3.5.1. Dataset, tools and the target company ....................................................68
   3.5.2. Analysis of the combined seven-day graph with Lego stakeholders ............68
      3.5.2.1. Extracting Lego stakeholders from Twitter........................................68
      3.5.2.2. Prioritization of Lego stakeholders from the extracted Twitter network ....70
   3.5.3. Capturing the dynamics of the network and Lego stakeholders over time .......73

4. CONCLUSIONS ..................................................................................................77

LITERATURE............................................................................................................83

APPENDICES ...........................................................................................................90
1. Lego stakeholders on Twitter – visualization of the network............................90
2. In and Out Degree Distributions of Lego stakeholders’ network .......................91
3. Extracting important Lego stakeholders from Twitter .....................................92
4. Lego stakeholders on Twitter – longitudinal data analysis ...............................93
   4.1. Top 10 Users with Highest Prestige .........................................................93
   4.2. Top 10 Users with Highest Degree centrality ..........................................94
   4.3. Top 10 Users with Highest Betweenness centrality ...................................96
   4.4. Top 10 Users with Highest Closeness centrality .......................................98

Number of characters (no spaces): 152,744
List of Figures

<table>
<thead>
<tr>
<th>Figure</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Stakeholder diagram</td>
<td>22</td>
</tr>
<tr>
<td>2</td>
<td>Stakeholder Salience Model (SSM)</td>
<td>25</td>
</tr>
<tr>
<td>3</td>
<td>Social media landscape</td>
<td>28</td>
</tr>
<tr>
<td>4</td>
<td>Activities Internet users engage in</td>
<td>30</td>
</tr>
<tr>
<td>5</td>
<td>Examples of egocentric networks</td>
<td>47</td>
</tr>
<tr>
<td>6</td>
<td>Online community diagram</td>
<td>57</td>
</tr>
<tr>
<td>7</td>
<td>Actor Degree centrality variations within Twitter graphs</td>
<td>59</td>
</tr>
<tr>
<td>8</td>
<td>Holistic Stakeholder Mapping Model</td>
<td>64</td>
</tr>
<tr>
<td>9</td>
<td>Stakeholders from “offline” and “online” environments</td>
<td>65</td>
</tr>
<tr>
<td>10</td>
<td>A closer look at two important Lego content spreaders on Twitter network</td>
<td>72</td>
</tr>
<tr>
<td>11</td>
<td>The egocentric network of &quot;webdevonlinux&quot; on the 25th June 2010</td>
<td>74</td>
</tr>
<tr>
<td>12</td>
<td>Sustainability of high Betweenness centrality and Prestige indices over time</td>
<td>75</td>
</tr>
</tbody>
</table>
ABSTRACT

This paper proposes a conceptual direction for organizations of how they could map their stakeholders in a more holistic way. Thesis suggests that stakeholder theory is useful in identifying and prioritizing stakeholders that a company is aware of. However, the theory is argued being ineffective in finding stakeholders on new environments (social media), where connectivity and relationships play a key role. As addressed by Rowley (1997), stakeholder theory dismisses relationships that go beyond dyadic ties. As a consequence, new approaches should be used to properly map stakeholders from social media.

This research paper proposes social network analysis (SNA) being suitable for analyzing social media. Moreover, SNA is argued being crucial in finding key actors\(^1\) within the network that particular company is not necessarily aware of. These actors are argued being important to identify since, they can be great intermediaries in communicating important information regarding a company or e.g. help preventing to cope with different crisis situations respectively (Coombs, 2008). As a consequence, they can be vital stakeholders of the company. Therefore, the importance of identifying them is considered being relevant.

A process of finding these social media members (stakeholders among others) is identified incorporating SNA. Analysis includes estimating key network characteristics such as Density (see part 2.3.1.3.3). In addition, the process of social media stakeholder identification suggests judging certain actor presence within social media network based on its Prestige and various Centrality measures presented in parts 2.3.1.3 accordingly. Centrality indices (see part 2.3) are argued being vital in finding important network actors (potential stakeholders) since it is proposed, that being connected to bad-connected others makes an actor “powerful\(^2\)" (Hanneman, & Riddle, 2005) or that having many connections refers to a greater possibility to reach other members of the network.

The combination of stakeholder theory and SNA is proposed as a more holistic solution for stakeholder mapping including those from social media (that company is not necessarily aware of).

Keywords: stakeholders, social media, networks, social network analysis.

---

1 Key actors are present in a densely connected area of the examined social network. In addition, an actor must have high Closeness, Degree, Betweenness centralities as presented and discussed later in parts 2.3 and 3 in this thesis. Key network actors are identified as current or potential stakeholders (see part 3.1).

2 In this context bad-connected actors are considered less important since they depend on their intermediaries (Hanneman, 2005). Whereas those who connect the bad-connected others serve as important brokers (they facilitate exchanges to less central actors).
1. INTRODUCTION

In today’s interconnected world, people are not just observing the changing environment; they are active and eagerly spend more and more time online (International Data Group, 2009). As a consequence, new types of social interactions and ways to communicate online emerge.

The recent challenge triggering both consumers and businesses is social media. As indicated by Coombs (2009), social media is about stakeholders who communicate and share information online using blogs (e.g. Posterous), microblogs (e.g. Twitter), social networking sites (e.g. Facebook) and other social media tools. The information shared online can be anything - news (Online English Dictionary [OED], 2003), negative comments regarding a product (e.g. recent Kryptonite lock crisis) or even scorn of certain policies a company implements (e.g. recent Nestle crisis) among others.

It can be argued, that the interconnectivity and the ability to share information globally, instantly and with numerous audiences simultaneously is why social media becomes so important to tackle by various businesses (Coombs, 2009). However, considering the online nature of social media, it is difficult to identify relevant stakeholders using traditional stakeholder mapping models since they judge stakeholder presence based on dyadic relationships that occur between a focal organization and its stakeholders (Rowley, 1997).

The need to analyze stakeholders beyond dyadic ties becomes vital since stakeholders do interact with each other on social media. It is observed, that the information within social media can be rich (content-wise) and shared fast. As a consequence, social media members (current stakeholders among others) often influence traditional media or publics at large³. Following this, it becomes significant to be aware of the stakeholder conversations present on social media. Moreover, it becomes even more vital to identify stakeholders who e.g. initiate and/or propagate certain content actively within social media.

Thus, to identify stakeholders within social media, where its members interact with each other (and not necessarily with a company itself), one must look beyond dyadic ties. Following this, the author of this thesis proposes that the notions from network theory can be used to analyze social media, since it enables to assess relationships (of a certain social media member) beyond a dyadic level.

The monitoring and engagement with stakeholders from social media would enable companies to have a closer contact with its stakeholders and therefore, be aware of the potential threats or

³ Blogs tend to cover new material faster than traditional media. This is argued to have created a powerful social phenomenon, where blog discussions often influence traditional media as well as public opinion (Adamic, & Glance, 2005 in Goetz et al., 2009).
opportunities present within social media. In addition, by being aware of its stakeholders companies can prevent certain crisis situations to appear (discussed later in parts 2.2 and 3).

As a consequence the research problem of this thesis is formed as follows: with the complex task of identifying stakeholders and their groups in social media, how can stakeholder and network theories be used in order to find key stakeholders present in different social media channels?

To support the analysis of this thesis and provide a solution to a formed research problem the following research questions are identified:

RQ 1. What defines a stakeholder in social media?
RQ 2. How can stakeholder theory be used in order to identify and prioritize stakeholders from social media?
RQ 3. How can network theory be used in order to identify and prioritize stakeholders from social media?
RQ 4. How can a company find its stakeholders on social media?

1.1. Thesis design and methodology

In order to answer the research questions portrayed above, an analysis of the theoretical studies as well as critical examination of social media phenomenon, stakeholder and network theories is conducted. As a consequence, this thesis is very theoretical in nature and should be considered as a pilot study that could be relevant to any individual or company willing to identify their social media stakeholders.

Thesis consists of four main parts. The first part introduces the purpose and an approach used to solve the observed research problem. The inner parts of the introductory section include thesis structure, methodology, theoretical framework as well as delimitations and propositions for the future research.

The second part of the thesis tackles theories and notations that are necessary to understand in order to answer the raised research questions. Theoretical background of this thesis is supported examining stakeholder theory (see part 2.1), social media (see part 2.2) and network theory (see part 2.3).

The inner sections of stakeholder theory part present the overview of the stakeholder theory, stakeholder identification as well as grouping and available prioritizations methods. Section is finished
Towards a More Holistic Stakeholder Analysis Approach. Mapping Current And Potential Stakeholders From Social Media

proposing stakeholder salience model (Mitchell, Agle, & Wood, 1997) as the most suitable stakeholder classification technique that can be used to identify stakeholders that companies are aware of.

The second inner section of theory analysis tackles social media phenomenon and its definition by critically questioning its similarities and differences with Web 2.0, new media and traditional media. In addition, section analyses the key social media activities users engage in (blogging, microblogging and social networking). As a consequence, an understanding of social media is derived through the perspective of individuals who communicate and share information online via blogs, microblogs and social networking sites (Coombs, 2009).

The third section supporting theoretical background of this thesis tackles network theory. The section introduces key notations relevant to understand the specifics of networks. Consequently, network characteristics and ways to analyze the importance of certain nodes within the network are presented. Section, in addition, introduces key network typologies as well as community detection specifics. The author of this thesis notes, that within complex and continuously changing networks (such as social media), it can be relevant to conduct analysis of certain egocentric, partial networks (see part 2.3.2) or relevant inner network communities (see part 2.3.3) instead of analyzing complete graphs (see part 2.3.2.2).

The third part of the thesis discusses theoretical findings and presents a holistic Stakeholder Mapping model (conceptual) for stakeholder identification and prioritization in social media. The inner sections of this part, therefore, first construct a definition of a stakeholder within social media context. Thesis proposes social media members can become stakeholders of a certain company: a) by sharing certain content via social media (stakeholder), or b) by being well-connected within the social media network (potential stakeholder). Since the model is very conceptual in nature, its utilization and a simplistic empirical application of the model are introduced. Considering the limited time and resources available, only the simplified empirical application of the model is performed. The empirical application

---

4 Stakeholder salience model (Mitchell et al., 1997) is the main stakeholder classification model in literature (Vos, & Achterkamp, 2006). Model has been empirically tested and proved being valid (Agle, Mitchell, & Sonnenfeld, 1999).

5 The inner section tackles notions such as graph diameter, density, node centralities (Degree, Closeness, Betweenness) and Prestige. These are the notions one can consider extracting important nodes within the network. Importance of the node is judged based on its presence/connectivity within certain network. Key equations used to derive certain network characteristics or node attributes are extracted from Wasserman and Faust (2008).

6 Well-connected in this context refers to actors who are concluded being important network actors. Such actors are present in a densely connected area of the network, have high centrality and Prestige indices (see part 2.3.1.3.4 and 3.1.2).

7 The author of this thesis notes, it is unfeasible to analyze a complete network of social media (see part 2.3.2.2) since the network is very big and dynamic (fast structural changes over time). However, companies who have more resources for that matter can crawl social media network on its own or get the data extracted from other specialized companies (see part 3.4).
Towards a More Holistic Stakeholder Analysis Approach. Mapping Current And Potential Stakeholders From Social Media

therefore tackles only social media stakeholder identification and prioritization based on the content shared within certain social media8 (Twitter).

The answers to the raised research problem and relevant research questions are finally summarized and portrayed in the fourth part (conclusions) of this thesis.


In addition, symbolic interactionism (Mead 1934, Blumer, 1986) is taken into account while researching the notions such as stakeholders and social media in order to explore the subjective ideas and be able to construct a unique perspective regarding stakeholder definition and identification within social media. As a consequence, symbolic interactionism is considered being an appropriate approach to construct a more credible thesis and thus support research validity since it implicitly and explicitly in the process of writing this report, portrays author’s of this thesis fundamental assumptions in relation to doing scientific research.

The project is written following the requirements for scientific research papers. The quotations, citing and references are conducted using the APA formatting and style standard.

1.2. Theoretical framework

To answer the previously raised research questions properly, thesis explores findings and publications of key academic figures within the fields of social media, stakeholder theory and network analysis objectively10 reflecting on relevant concepts (social media, stakeholder, network) and

---

8 Twitter (explained in part 2.2.4.2) is chosen because network wise it depicts big and dynamic structure. In addition, Twitter as a micro-blogging tool is highly used among numerous people (stakeholders among others) (see part 2.2). Furthermore, the author of this thesis notes, network theory is very broad (see part 2.3.1), thus in order to get the best results, the discussion of this thesis is focused not on all types of network analyses, but specifically on directed graphs (see part 2.3.1.2). Twitter is one of the networks where directional relations are present (see parts 2.3.3.2 and part 3).

9 In this context constructivism refers to the multiple meanings of experiences, socially and historically constructed meanings with the author’s intent to develop a more objective model for stakeholder identificati (Creswell, 2003).

10 Objective in this context should be understood from the sense that these authors are known experts within the field of social media, social network analysis or stakeholder theory and thus are expected to approach the analyzed concepts from a holistic angle. The author of this thesis still acknowledges the fact that their research contains subjective elements as derived from the social constructivist assumption. Ergo, the author’s experiences, which form a basis for their research, are gained from social interactions.
methodologies. The inner sections depict a summary of literature and scholars quoted during the overall research paper.

1.2.1. Stakeholder theory literature

This thesis focuses on broader analysis of the stakeholder theory and how it could be relevant in mapping stakeholders within social media. Therefore, both praise and scorn from various scholars (Friedman, & Miles, 2006 in Luoma-Aho, & Paloviita 2010) regarding the theory is assessed.

The author of the thesis carefully examines the critique directed toward the theory (Key, 1999) and the term “stakeholder” (Donaldson, & Preston, 1995, Philips, Freeman, & Wicks, 2003, Vos, & Achterkamp, 2006) in order to conduct a more holistic and objective analysis. Since the field is relatively rich regarding research publications, only peer-reviewed articles (Donaldson, & Preston, 1995; Mitchell et al., 1997; Fassin, 2009) and recognized publications (Freeman, 1984, Philips, 2003, Harrison et al., 2010) are used to support the examination of stakeholder theory in this thesis. Recent applications of stakeholder theory within Internet websites (Chung, Chen, & Reid, 2009), corporate communications (Cornelissen, 2008; Luoma-Aho, & Paloviita 2010) are taken into account and are used to address applicability of the theory and possible development within the nearest future.

1.2.2. Social media literature

Social media is a relatively new subject within the academic agenda. Coombs (2008) observes, that academia is lagging far away compared to practitioners. It can be noted, that different areas such as public relations (Solis, 2007) customer relationship management, crisis communication (Coombs, 2009), marketing, employer branding have a great potential to benefit from the utilization of social media. However, witnessing the little research conducted within the area, careful conclusions should be drawn on how to approach, analyze, and use social media from an organizational point of view.

During the very recent years articles started to emerge tackling different aspects of social media. Examples include analysis of blogs (Boyd, 2006; Kent, 2007), blog evolution modeling (Goetz, Leskovec, McGlohon, & Faloutsos, 2009), studies of social network sites (Boyd, & Ellison, 2007, Cha, Haddadi, Benevenuto, & Gummadi 2010) and microblogging tools (Kwak, Lee, Park, & Moon 2010, Boyd, Golder, & Lotan, 2010, Cha et al., 2010). It can be observed, that the overall research is focused
towards analysis of particular tools whereas the broader analysis of concept and social media phenomenon (e.g. what exactly is social media?) is dismissed.

Taking these notions into account, author of this thesis uses Coombs (2009) insights as a point of departure to define social media. The author is observed being the pioneer in explicitly introducing stakeholder notion within social media context. Coombs (2009) derives, that social media is about stakeholders who communicate and share information online via blogs, microblogs or social network sites. However, there are no (or very little) studies published regarding online stakeholders and stakeholder concept evolution in terms of social media11.

Since the field is so new, the author of this thesis focuses on finding as many sources as possible to justify the overview and analysis of the field. As a result of limited academic research, the author also refers to articles and analyses from acclaimed experts within the field such as Brian Solis, Jeremiah Owyang, Robert Scoble, Chris Brogan among others to understand the phenomenon better. However, the author of this thesis prioritizes academic research to practitioner reflections, therefore mostly academic references are quoted in this thesis.

1.2.3. Network theory literature

The focus of network theory is directed to relationships: how and why they form; what those relationships (ties) represent; how different ties affect behaviors and how they grow over time. Mathematics is used to represent relationships while statistics is used for analysis (Wasserman, & Faust, 2007, Cross, & Conway, 2010).

This thesis focuses on social networks and their analysis since social media (in which stakeholders are aimed to be identified) is understood through the notion of people who create, share etc. information online with others using various tools (Twitter, Facebook, see part 2.2.4) and engaging in various types of activities (sharing, networking, see part 2.2.1). By using various tools and engaging in various online activities, social media members form dynamic social network structures, which can be identified and analyzed using the notions of network theory (see part 2.3 and 3). Following this, important network actors (well-positioned within the network) can be identified too.

11 There are two main perspectives of how one may look at stakeholders- narrow and broad (Mitchell et al., 1997). As a consequence, it becomes bias of how organizations treat/identify their stakeholders. Therefore, one may ask: “When social media creators or participants become stakeholders?”
Towards a More Holistic Stakeholder Analysis Approach. Mapping Current And Potential Stakeholders From Social Media

Consequently, to understand what defines a network and how important network actors can be extracted, the author of this thesis conducts theoretical analysis of the network theory. The literature is chosen considering the novelty and popularity (citations) of the academic source.

As a consequence, the fundamental publications that are used to construct the key understanding regarding networks and their specifics are derived from Newman (2003), Newman, Barabasi, & Watts (2006), Izquierdo, & Hanneman (2006), Wasserman, & Faust (2007), Gudrais (2010). Complementary knowledge used to explore particular methods within social network analysis has been captured from Scott (2000), Knoke, & Yang (2008). Lastly to explore the concepts of communities and their relevance in detecting potential important actors was denoted from the works of Girvan, & Newman (2002), Porter, Onnela, & Mucha (2008) and Fortunato (2010).

1.3. Delimitations and propositions for future research

This thesis focuses only on general social network analysis (SNA) integration for stakeholder identification on social media. As a consequence, only key network and node attributes are tackled and discussed.

The model introduced is proposed being a more holistic method in mapping stakeholders since it enables to find stakeholders present on social media (that company could not be aware of). However, the construction of the model is very theoretical in nature, therefore, a more thorough testing should be conducted before employing the proposed approach for certain businesses.

In addition, author of this thesis notes, the proposed holistic Stakeholder Mapping Model suggests companies can identify their social media stakeholders based on (a) the content certain users share and based on (b) the position certain social media user occupies within the social media network. It can be observed, both identification approaches invite companies to capture stakeholder presence longitudinally. However, this can be difficult and costly to implement by the company itself (e.g. limited requests regarding data, huge size of the social media network). Therefore, stakeholder identification within social media still remains constrained and challenging for e.g. small companies who can afford to devote only very limited resources for stakeholder relationship management. On the other hand, this thesis could be very useful (conceptual) guidance for those who seek to analyze social media and program a solution that would e.g. identify and monitors social media stakeholders over time.

The author of this thesis notes, that considering the broad nature of network theory and limited scope of this thesis, only directional ties and graphs are discussed more deeply. As a consequence, notations depicted within the thesis are suitable only for di-graph analyses (unless stated differently where applicable).
Moreover, research does not discuss possibility to tackle and monitor various social media at a
time. That is, extracting stakeholders from various social media channels (e.g. LinkedIn, Facebook,
Youtube and others) and assessing their importance (potential to be a stakeholder) based on their
activity within various social media channels. Following this, one could propose within the more
channels a certain user is concluded being important, the more vital stakeholder it becomes from an
organizational point of view. However, the author of this thesis notes, that this approach should be
judged carefully, since certain users can be very influential within certain social media (e.g. Twitter) or
even within certain social media channel community (e.g. Twitter people who talk about Aarhus School
of Business). Therefore, they can still be important stakeholders for certain organization(s) even though
they would not be “important” in any other social media (e.g. Facebook, LinkedIn).

Following this, the author of this thesis observes, more studies could be done regarding deeper
analysis of social media tools’ specifics, social media user behavior (e.g. why users share certain content,
do the share motives change within various social media, how does the information propagate via
various social media). Furthermore, greater attention should be directed to social media network
structure analysis. More studies could be done regarding network evolution and e.g. network structure
implications to certain user behavior over time. These and similar observations would help to
understand social media better, thus construct even better approaches of how to find certain
stakeholders on social media.

As a consequence, this project should be considered as a pilot study and an initiative to open new
horizons within social media, stakeholder theory and SNA.
2. THEORETICAL BACKGROUND

Theoretical analysis of this project examines three main fields to support better foundation for this thesis research. Those fields are: stakeholders, social media and networks. The first section of this chapter presents stakeholder theory as well as depicts key stakeholder identification and prioritization methods. The second section tackles social media phenomenon. The definition of social media is explored comparing social media with traditional, new media and Web 2.0. The latest observations from Coombs (2009) are used additionally to portray the definition in a more holistic angle. In addition, the section introduces key social media activities (blogging, microblogging, social networking) as well as tackles the notions of more particular social media tools such as Twitter or Facebook accordingly. Finally, the third part presents the concept of networks, their key structural characteristics and typologies. Section overviews only the notions, that are relevant in identifying key actors within a certain network. These notions include various node centrality measures (Degree, Closeness, Betweenness) and Prestige index among others.

2.1. Stakeholder theory

This section analyzes stakeholder theory as well as examines main definitions behind it. A general theory overview is conducted in the first part of this section whereas; second and the third parts focus on a deeper analysis regarding the field researching of how companies can identify, group and prioritize different stakeholder groups\(^{12}\) so that e.g. communication efforts are differentiated properly.

2.1.1. An overview of the stakeholder theory

The notion, that organizations have stakeholders is widely conceived within scientific agenda (Freeman, 1984, Philips, 2003, Cornelissen, 2008, Fassin, 2009). It has been proposed, that the survival and prosperity of an organization depends on its ability to establish wealth, value, or satisfaction for its primary stakeholder groups (Clarkson, 1995, Chung et al., 2009).

\(^{12}\) Since companies have limited resources, stakeholder prioritization becomes essential (Mitchell et al., 1997) e.g. for the fields such as crisis communication, relationship management. Author of this thesis argues, that knowing which stakeholders are most important, one can direct communication flows to proper audiences and thus be more efficient.
Cornelissen (2008), in addition, suggests, that stakeholder concept plays a key role within corporate communication field since it offers organizations a way to consider their environments in terms of markets and publics. He observes, that organizations are increasingly acknowledging the need to actively communicate and be involved with various stakeholder groups and arguments, that previous observation stems: “from high-profile cases where undue attention to certain stakeholder groups has led to crises and severe damage for the organization concerned” (Cornelissen, 2008 p. 11).

It can be concluded, that stakeholder theory and the concepts behind it become important to utilize practically for various businesses. It can be noted, that theory introduces a unique way of how organizations could categorize its relevant publics\(^\text{13}\) into particular groups, thus have a framework of where to start, when willing to manage and communicate with them in a more structured way.

### 2.1.1.1. The evolution of the theory

The pioneering authors of the concept of stakeholders within the business arena were: Igor Ansoff, Robert Stewart, Russell Ackoff, James R. Emshoff, Richard Mason, Ian Mitroff and Eric Rhenman among others (Freeman, Harrison, & Wicks, 2007). However, the founder or the originating author of the stakeholder theory is Richard E. Freeman (Harrison et al., 2010). Freeman is mainly credited for bringing stakeholder mindset to the mainstream of management literature after publishing his seminal piece from 1984: “Strategic management: stakeholder approach” (Frooman, 1991; Rowley, 1997). However, as indicated by Key (1999), Freeman (1984) focuses on technique rather than on theory.

Harrison et al. (2010) notes, during the intervening years the literature on stakeholder theory has become vast and diverse. It can be observed, that theory has been applied within different business disciplines such as marketing (Miller, & Lewis, 1991; Payne, Ballantyne, & Christopher, 2005), finance (Cornell, & Shapiro, 1987), accounting, management (Friedman, & Miles, 2006), corporate social responsibility (Roberts, 1992, Harrison et al., 2010), corporate communication (Cornelissen, 2008) and business ethics (Jones, 1995).

As noted by Philips, Freeman, & Wicks (2003), there has been a lot of criticism regarding the terminology, explicitly the term “stakeholder” during the past years. The term is concluded having too wide conceptual breadth (Vos, & Achterkamp, 2006), which consequently lead to different interpretations and thus praise or scorn from various scholars\(^\text{14}\) (Luoma-Aho, & Paloviita 2010).

\(^\text{13}\) In this context, publics refer to the classic definition of stakeholders or their groups as proposed by the originating author of the stakeholder theory Freeman (1984) (see section 2.1.2).

\(^\text{14}\) This observation can be confirmed by examining the list of “stakeholder” definitions collected by Friedman and Miles (2006).
Donaldson and Preston (1995) notice, that concepts from stakeholder theory have been used by a great variety of authors. They observe, that the use of different definitions within stakeholder theory, are being portrayed in different ways as well as supported with “diverse and often contradictory arguments” (Donaldson, & Preston, 1995 p. 66).

As a consequence, Philips et al. (2003) redefined stakeholder theory clarifying previous misinterpretations by various scholars “Theory, that <..> addresses morals and values explicitly as a central feature of managing organizations. Attention to the interests and wellbeing of those who can assist or hinder the achievement of the organization's objectives is the central admonition of the theory” (Philips et al., 2003 p. 481).

This re-definition is complemented by Harrison et al. (2010) who go back to the origins of theory and remind “original intention of the stakeholder idea was less to redefine business in stakeholder terms and more to make it responsive to external demands” (Harrison et al., 2010, p. 47). In this context, organizations are viewed as entities that can be affected by internal or external factors namely stakeholders.

2.1.1.2. The use and relevance of the stakeholder theory

Mitchell et al. (1997) propose to understand the firm in its environment through the stakeholder approach has broadened the management's: “vision of its roles and responsibilities beyond the profit maximization function to include interests and claims of non-stockholding groups” (Mitchell et al., 1997, p. 855).

The initial views upon stakeholders appeared decades ago (as indicated above) and theory received a lot of criticism regarding the interpretational breath of concepts (Phillips, Freeman, & Wicks, 2003), being too general or “lacking specificity” (Key, 1999). However, it is widely used and popular today (De Bussy, Ewing, & Pitt, 2003).

The Economist (2010) notes, that the old debate whether companies should mostly focus on their shareholders or their stakeholders is revived. It can be observed, that both practitioners and academia are re-discussing the prioritization of different stakeholder groups after the latest financial crisis more actively (The Economist, 2010). The motives of prioritization may differ, however, the idea, that stakeholders matter is obvious, thus the reason to explore and understand them more properly.

15 Author of this thesis notes, The Economist (2010) does differentiate between shareholders and stakeholders. It is observed economists very often treat stakeholders as those who assist a firm to achieve it's main objective- maximize the shareholder wealth (Burton, & Dunn, 1996). This confirms Phillips et al. (2003) insight regarding the broad possibilities to interpret stakeholder definition.
As observed by Cornelissen (2008), each stakeholder group has certain interests in terms of a particular company. What stakeholder theory assists in - is the support of those needs by extracting various stakeholders and their groups. It suggests examining particular interests of different stakeholders as well as invites to respond to those interests.

For communication professionals this becomes essential since, by knowing the stakeholders and their needs, the receiver and the type of information needed to communicate to him/her become self-evident.

Phillips (2004) pinpoints stakeholder communication is “certainly good” for organizations. He exemplifies, that e.g. managers who have constant contact with different stakeholder groups are able to:

a) Better position and assess organizational goals;
b) Take advantage of unexpected but mutually relevant opportunities;
c) Avert conflict situations before it reaches critical stage (e.g. have contact with dissatisfied clients).

Donaldson and Preston (1995), in addition, observe that companies who follow the principles from stakeholder theory achieve “conventional corporate performance objectives as well (or better) than rival approaches” (Donaldson, & Preston, 1995, p. 71). They further support their argument with other researchers’ (Kotter, & Heskett, 1992 in Donaldson, & Preston, 1995) observation noting, that highly successful companies such as: Hewlett-Packard, Wal-Mart and Dayton Hudson share stakeholder perspective. This leads to a conclusion that theory can be applied within diverse business areas and most importantly, can still be useful in practice.

Jensen (2000) contends that a firm cannot maximize its value if it disregards the interests of its stakeholders. He proposes, that the long-term firm value maximization has to serve “as the criterion for making the requisite tradeoffs among its stakeholders” (Jensen, 2000). The Harvard Business School professor introduces so called “Enlightened stakeholder theory”, where the objective function of a firm is the maximization of the total long-term firm market value (Jensen, 2000). In this case the success is measured incorporating a scorecard. According to Jensen (2000), this is the only form the stakeholder theory should be used within the field since in this way it becomes a useful complement to value creation/maximization of a particular firm.

---

16 In this context Donaldson and Preston (1995) refer to stakeholder theory as instrumental. It should be noted, that authors also extract three more characteristics/uses of the stakeholder theory. Those are: normative, descriptive and managerial.

17 According to Jensen (2000), value maximization is about a scorecard, rather than a strategy, purpose or vision.

18 The author of the thesis notes, that maximization of the total firm market value depends not only on the consideration of the stakeholders’ interests but also on other internal/external factors and/or forces (Porter, 2008) that stakeholder theory does not specifically stress.
In addition to Jensen’s (2000) insights regarding possible usage of the stakeholder theory, Donaldson and Preston (1995) extract three more ways of how stakeholder theory can be utilized. Following this stakeholder theory can be used:

- to identify moral and philosophical guidelines for the operation and management of corporations;
- in combination with other relevant empirical information, it can be used to extract connections between stakeholder management and the achievement of corporate objectives such as profitability, market share etc.;
- to explain certain corporate characteristics and behaviors e.g. clarifying how certain corporation is actually managed.

As a consequence, four main central aspects of the stakeholder theory can be witnessed. Those aspects, as Donaldson and Preston (1995) propose, are: normative, instrumental, descriptive and managerial (recommends attitudes, structures and practices regarding stakeholder management).

In addition, it could be concluded that stakeholder theory presents relevant insights of how to look at organizations and how organizations could look at its relevant publics. As Luoma-Aho and Paloviita (2010) observe, examining and observing corporate environment should “consist of locating the interrelations of different stakes as well as their holders” (Luoma-Aho, & Paloviita, 2010, p.49). However, in order to be able to find those interrelations, one must understand of how to: a) find the stakeholders and b) prioritize them, since the resources of a corporation are limited.

As a consequence, the following sections examine possible stakeholder identification, mapping and prioritization techniques.

2.1.2. Stakeholder identification

There is a clear connection between definitions of what are stakeholders and identification of who they are (Friedman, & Miles, 2006).

The latest publication regarding stakeholder theory by Harrison et al. (2010) reveals that actual word “stakeholder” first appeared in management literature in an internal memorandum at the Stanford Research Institute in 1963. In that context “stakeholder” was used as a term generalizing group of people to whom management needed to respond. This served as an initial step-stone for further definitions to emerge. As a consequence, stakeholders were identified as groups of people without whose support an organization would not be able to exist. The focus was directed towards the survival
of a firm thus the initial list of stakeholders included: shareholders, customers, employees, lenders, suppliers and society at large (Harrison et al., 2010).

It can be observed the concept of stakeholder has been used in different ways. As witnessed by Burton and Dunn (1996) those who rely on economics in explanations of firm behavior - view stakeholders as having an instrumental value. In this case, stakeholders assist a firm in achieving it’s objective to maximize the wealth of the shareholders. Others contend that morality should form the basis for a firm’s behavior.

In addition, Burton and Dunn (1996) note there are two common versions explaining the previous argument:

a) Utilitarian- views stakeholders as having instrumental value. That is helping a firm achieve another objective;

b) Deontological- relies on Kantian ideas and gives stakeholders intrinsic value.

Freeman’s (1984) view on stakeholders is expressed in terms of possible affect to a firm or a stakeholder in terms of organizational achievements “A stakeholder is any group or individual who can affect or is affected by the achievement of the organization’s purpose and objectives.” (Freeman, 1984, p. 46). As a consequence, in order to apply the concept for a practical use, an organization could identify types of stakes different stakeholders possess regarding the company.

The concept of stake implies that an individual or a group has “an interest in or a share in an undertaking that can range from simply an interest in an undertaking at the one extreme to a legal claim of ownership at the other extreme” (Caroll, & Buchholtz, 2008, p. 83). Freeman’s (1984) and Caroll, & Buchholtz (2008) viewpoints can be accompanied with Donaldson and Preston (1995) insights who add, all interests should be considered as intrinsically valuable.

It can be concluded, the concept of a stakeholder and possible views of how to define/identify them (based on stake, value, importance regarding firm’s survival) can become too complicated to implement in practice. A possible path of departure, therefore, could be borrowed from Frooman (1999). Researcher suggests identification of stakeholders should begin with answering the question of “Who are they (stakeholders)?”

In addition, Cornelissen (2008) proposes, that stakeholder identification should capture: “the essential information needed for effective stakeholder communication” (Cornelissen, 2008, p. 49). He

19 Freeman’s (1984) stakeholder definition is considered being classical – widely used and cited within stakeholder theory literature (Mitchell et al., 1997).

20 Analysis of the concept is made counting the fact that there is still no universally acceptable definition of the term “stake” (Donaldson, & Preston, 1995) and that the meaning of the term “stakeholder” has not been applied consistently after Freeman’s (1984) publication (Starik, 1994).

witnesses the stakeholder model of the organization invites organizations to identify various stakeholders where: “they must be addressed for the stake they hold” (Cornelissen, 2008, p. 49). He explains that in practical world, this simply means acting or communication provision based on stakeholders’ interests.

As a consequence, Cornelissen (2008) extracts few more criteria to be used for stakeholder identification. According to Cornelissen (2008) the questions a firm should answer are:

- Who are the stakeholders? (listing of stakeholders)
- What are their interests and potential influence regarding an organization? (determination of stakeholder stakes)?
- What opportunities and threats exist in relation to identified stakeholders?
- What do stakeholders demand and expect from organization regarding economic, legal, ethical etc. issues? (identification of responsibilities for listed stakeholders).

The above mentioned notions are helpful to consider willing to come up with a more precise list of stakeholders. However, a list(s) of stakeholders is only a first step within stakeholder analysis process. In order to work with different stakeholder groups more effectively (e.g. to communicate information in alignment to particular stakeholder needs), stakeholders should be prioritized or at least clustered in one or another way. As a consequence, stakeholder mapping, grouping techniques can be employed to serve this purpose.

### 2.1.3. Stakeholder grouping and prioritization

The goal of this part is to present key methods of how companies can group and prioritize its stakeholders since the resources of an organization are limited. As a consequence, the inner sections of this part tackle key typologies of organizational stakeholders as well as conduct a deeper examination of one of the most recognized stakeholder prioritization models (Stakeholder Salience Model) introduced by Mitchell et al. in 1997.

#### 2.1.3.1. Key typologies of organizational stakeholders

It can be observed that some of the key changes stakeholder theory introduced during its evolution is the distinction between important and non-important stakeholders. Charkham (1992) proposes perhaps one of the most simplistic stakeholder groupings by separating them into two classes: *contractual* and *community stakeholders*. Contractual stakeholders are formally tied to the organization and
have a legal relationship with the organization for the exchange of goods or services. Community stakeholders such as government, various associations and media “are important in providing the authority for an organization to function, setting general rules and regulations by which activities are carried out, and monitoring and publicly evaluating the conduct of business operations” (Cornelissen, 2008, p. 43). As a consequence, community stakeholders are not contractually bound to an organization. Therefore, the relationships with these stakeholders are considered being more diffuse, however obvious in terms of its impact. It can be observed, that Charkham (1992) stakeholder classification is determined to explore types of connections that arise between stakeholders and an organization (Cornelissen, 2008).

An exemplifying generic graph illustrating different stakeholder groups and possible relationship flows is portrayed in the following graph (see Figure 1):

**Figure 1. Stakeholder diagram**

![Stakeholder Diagram](source: Philips, 2003)

This particular map captures main stakeholder groups introduced by Freeman (1984) as well as depicts some groups of stakeholders from his refined model introduced in 2003 (Freeman, 2003 in Fassin, 2009), where stakeholder groups such as *media, other, environmentalists*, stakeholder groups were added.

Considering Charkham’s (1992) stakeholder classification and the generic map portrayed above (see Figure 1), one should precisely define what type of relationship is denominated within the state of stakeholder analysis. If one would choose to simply distinguish actual and non-actual relationship options- it becomes questionable whether an entity can be/become a stakeholder at all. On the other hand, some researchers (Mitchell et al., 1997) argue firms should not dismiss the potential of future

---

22 Friedman and Miles (2006) observe, it is common to group organizational stakeholders based on the types of relationships they posses with particular corporation (Friedman, & Miles, 2006).
relationships. Moreover, they conclude: “potential relationship can be as relevant as the actual one” (Mitchell et al., 1997, p. 859). Thus new stakeholder groups could be formed.

Another example to categorize stakeholders was presented by Clarkson (1995). His classification system proposes to judge whether the interest of the stakeholder is primarily economic or moral in nature. As a consequence he extracts primary and secondary stakeholder groups. The primary groups are necessary for organization to survive and have a financial relationship with the organization. The secondary groups, including media, have a moral interest in the organization and are considered to have a capacity to mobilize public opinion (Cornelissen, 2008).

To sum up, it could be concluded that differences in determining stakeholder groups exist. The most common groups of stakeholders include: contractual versus community (Charkham, 1992), primary versus secondary (Clarkson, 1995), direct versus indirect, those who posses versus do not posses a distinguishable relationship with an organization (Friedman, & Miles, 2006), potential for threat versus potential for cooperation (Savage et al., 1991).

Fassin (2009) in addition, observes other very popular stakeholder distinctions are: generic versus specific, legitimate versus derivative. Other classifications include: internal versus external (Savage et al., 1991), owners versus non-owners of the firm, those having voluntary versus involuntary relationship with the firm, resource providers versus dependents and others (Mitchell et al., 1997).

Various researchers attempt to classify stakeholders using various criteria (Phillips, 2003). These criteria are used to better define who are the stakeholders of the firm and who are not (Mitchell et al., 1997). Most importantly classification of some kind assist in differentiating between less and more important stakeholders that companies accordingly should pay attention to.

The author of this thesis notes, the great variety of different stakeholder categorization options suggests, there is no restriction of how one could potentially classify its stakeholders. Every proposition will introduce some advantages and disadvantages. Therefore, a combination of few methods perhaps would be a better option willing to map stakeholders in a more holistic way.

As spotted by various researchers by now, the: “salience model of Mitchell et al. (1997) has developed into one of the main classification models in literature” (Vos, & Achtenkamp, 2006, p. 161). The founders of the model explored various theoretical classification methods, and their work is being suggested to refer to in order to get to know the field better. This suggests, authors are well acquainted with stakeholder theory and the classification methods available. In addition, the model has been tested

---

23 Important in this context refers to stakeholder groups that would require more attention and engagement from an organizational standpoint. Primary stakeholders in this case would be more “important”, than the secondary ones etc.

Towards a More Holistic Stakeholder Analysis Approach. Mapping Current And Potential Stakeholders From Social Media

Empirically by Agle, Mitchell and Sonnenfeld (1999) and was proved being valid\textsuperscript{25}. Thus, stakeholder salience model is concluded being relevant and most useful to examine stakeholder prioritization regarding theoretical and practical applicability and usage.

Next section therefore examines the model more thoroughly and presents a direction of how companies could incorporate it as a framework to extract and prioritize their stakeholders.

\textit{2.1.3.2. Stakeholder prioritization using stakeholder salience model}

A stakeholder salience model (SMM) suggests grouping stakeholders based on their salience to the particular organization (Cornelissen, 2008). The importance of a particular stakeholder is judged examining three dimensions: power, legitimacy and urgency (Mitchell et al., 1997). It is proposed, the more salient or prominent particular stakeholder or their group, the more priority (importance) should be devoted to that stakeholder (or group) from the company (Cornelissen, 2008).

\textit{Power} refers to the ability to get an actor (A) to do something an actor (B) would not do without A’s interference (Coombs, 1998). A stakeholder possesses power attribute, when he/she is able to impact organization to do something it would not do otherwise (Carroll, 2008). On the other hand, the more dependent the organization\textsuperscript{26}, the more powerful that stakeholder is (Savage et al., 1991).

Coombs (1998) observes stakeholders who have control of essential resources can possess strong power by e.g. forming coalitions. Therefore, the greater the power of a stakeholder, the less organization is able to resist their demands (Rowley, 1997). Following this, it can be proposed the greater the power of a stakeholder- the greater risks or opportunities would be present for a firm.

The second attribute of a model is \textit{legitimacy}, refers to possible claims laid upon the organization by the stakeholder group and \textit{urgency} represents the degree to which stakeholder claims would require immediate action and response (Mitchell et al., 1997).

The graph below (see Figure 2) illustrates stakeholder salience model as introduced by Mitchell et al. (1997).

\textsuperscript{25} Authors (Agle et al., 1999) conducted a study within U.S. where they examined whether CEOs of large organizations consider three main dimensions included in the model (see part 2.1.3.1.) being important while judging the salience of stakeholder groups.

\textsuperscript{26} For example considering resources or capabilities. Employers who have specialized knowledge and experience within the field vital for firm’s survival are important in this context powerful.
Towards a More Holistic Stakeholder Analysis Approach. Mapping Current And Potential Stakeholders From Social Media

Figure 2. Stakeholder Salience Model (SSM)

Based on the three dimensions (power, legitimacy and urgency) Mitchell et al. (1997) propose a system composed of the three main stakeholder classes: latent, expectant and definitive:

- **Latent** - can be dormant, discretionary or demanding (see Figure 2).
- **Expectant** - can be dominant, dangerous or dependent (see Figure 2).
- **Definitive** - can be definitive (see Figure 2).

*Latent* stakeholders possess one of the three possible attributes (power, legitimacy or urgency). *Expectant* class has two out of three attributes. Whereas, *definitive* class refers to stakeholders who have all three: high power, legitimacy and urgency. As indicated above each of these classes have sub-classes: dormant, discretionary, demanding, dominant, dangerous, dependent, definitive.

According to Cornelissen (2008) dormant stakeholders are those who can impose their will on others but have little interaction with organization. Discretionary stakeholders use legitimate claims, however, they don’t have actual power to influence organization. Whereas, demanding stakeholders possess urgent claims and to become influential first, have to acquire either power or legitimacy to move their claims to a more salient phase (Cornelissen, 2008).

As proposed by Mitchell et al. (1997) “with limited time, energy, and other resources <..> managers may well do nothing about stakeholders they believe possess only one of the identifying attributes” (Mitchell et al., 1997, p. 874). Latent stakeholder group can be hardly salient, therefore they area least important for an organization to communicate with it on an ongoing basis (Cornelissen, 2008). As proposed by Mitchell et al. (1997) these stakeholders are also less likely to pay attention or give acknowledgment to the firm.
Towards a More Holistic Stakeholder Analysis Approach. Mapping Current And Potential Stakeholders From Social Media

As Cornelissen (2008) explains the expectant stakeholder category is more salient (two attributes present), therefore they should be given more priority (compared to the latent ones). Stakeholders that belong to this category are dominant, dangerous and dependent (see Figure 2).

Dominant stakeholders influence arises from their powerful and legitimate claims, which they can lay against organization. Those could be employees, customers, owners etc. The other subclass—dangerous stakeholders are described as lacking legitimacy but possessing power and urgent claims. They can be dangerous since they “may resort to coercion and even violence” (Cornelissen, 2008, p. 52). Lastly, the dependent stakeholders are those who can impose urgent and legitimate claims, but have to rely on others’ power to carry out their will (Mitchell et al., 1997, Cornelissen, 2008).

The third stakeholder class from SMM has only one stakeholder’s subclass. These stakeholders possess all of the three attributes and are named as definite stakeholders. They are most salient and thus most powerful stakeholder group of all. As indicated by Mitchell et al. (1997), stakeholders from this group are members of a firm’s “dominant coalition”. Therefore, when these stakeholders pose an urgent claim managers “have a clear and immediate mandate to <…> give priority to those stakeholders’ claim” (Mitchell et al., 1997 p. 878).

It should be addressed, the more dimensions a stakeholder corresponds to, the more important27 it becomes. Therefore, stakeholders who are identified as dormant, discretionary, demanding are not as “important” as the ones from a definitive sub-class. However, stakeholders can move from one class to another (expectant to definite) by gaining the missing attribute from other stakeholders respectively (Mitchell et al., 1997). As a consequence, firms should examine their stakeholders on an ongoing basis.

To sum up, Mitchell et al. (1997) proposed a model of stakeholder clustering and prioritization where stakeholder groups are extracted by examining them based on three dimensions: power, legitimacy and urgency. The more dimensions a stakeholder responds to – the more important it becomes.

Since SMM includes various dimensions it could be considered a holistic stakeholder analysis/classification model. However, the author of this thesis notes “all synthesized representations, models and schemes are social constructions that inevitably simplify and reduce reality” (Fassin, 2009, p. 115), therefore, even a holistic approach will not provide a perfect solution.

---

27 In this context importance refers to: “the degree to which managers give priority to competing stakeholder claims” (Mitchell et al., 1997, p. 854).
2.2. Understanding social media

This section explores social media. The structure of the paragraph is divided into five main parts: examination of the social media concept, the similarities and differences between traditional and social media, an overview of various social media tools and platforms available, and finally, the risks and opportunities regarding the field for various companies.

2.2.1. Exploring the definition of social media

According to Coombs (2009) social media can be understood as information that stakeholders create and share online. This includes activities such as blogging, microblogging and social networking such as done on Facebook (Coombs, 2009).

Another recent definition/metaphor has been offered by Qualman (2009) in his latest book “Socialnomics”\textsuperscript{28}, where he proposes that social media is the new *Inbox*: His explanation derives from the usage of social media and the changes in user behavior during the recent years\textsuperscript{29}. Qualman (2009) observes that younger generations communicate more on social media than using their e-mail (thus this can explain the metaphor of the *Inbox*).

These two distinct interpretations regarding social media phenomenon suggest that different authors define social media differently. Even though the term (social media) is widely used today, it can be confusing and misleading. An illustration of the current situation regarding the problem can be also extracted from a recent blog entry on *Community of Ecommerce Professionals* website named: “What is social media? Here are 34 definitions...” (Lake, 2009). As indicated by Lake (2009) explanations of social media vary from engagement and conversation online to Internet tools that connect people.

Moreover, it can be observed that social media as a term is often used to describe an aggregation of online applications and services, which have recently emerged on the Internet and often, are also called as Web 2.0 (O’Reilly, 2005). These include blogs, wikis, multimedia sharing services, content syndication, pod casting, and e.g. content tagging services (Anderson, 2007). However these can be also found named as social media tools (Kent, 2008, Gillin et al., 2008). As a consequence, one may ask, what is the difference from the term *new media* then?

\textsuperscript{28} Qualman (2009). *Socialnomics: How social media transforms the way we live and do business*. Wiley & Sons, Inc.

\textsuperscript{29} According to Qualman (2009), younger generations find e-mail antiquated and passé.
As observed, by Boyd, Golder, & Lotan (2010) social media empowers conversations to appear asynchronously and beyond geographic constraints. The combination of conversation and interaction indeed are the key factors distinguishing social media from the new media. It could be noted that practitioners reflecting on social media may stress signifiers such as: discussions, relationships, collaboration, sharing, and community building.

As a consequence, social media is not alike new media. The latter refers to e-applications and Internet tools that enable online connectivity, content publication etc., whereas social media is a broader term that integrates both new media and interaction. In social media stakeholders not only communicate but interact online too (Coombs, 2009).

Cavazza (2009) introduced a conceptual model capturing social media tools and social platforms. He proposes, social media today could be divided into four main clusters by its usage: expressing, networking, sharing, and playing (Cavazza, 2009). Social platforms in this context play one of the key roles while integrating (being able to integrate) different tools from each of the named clusters (see Figure 3).

**Figure 3. Social media landscape**

![Social media landscape diagram](Adjusted from Cavazza, F. 2009)

It could be argued, however, that some of the social media tools arranged within Cavazza’s (2009) framework do share more practices of usage. An example could be Twitter and Blogger, which are initially listed under the “Expressing” category in Cavazza’s (2009) model. However, even though tweeters or bloggers produce content (expressive factor), they do share information too (sharing factor). Similarly, Youtube and Flickr initially assigned to the “Sharing” category could potentially be seen as tools enabling expression- some users post/share videos in order to express/present themselves to the millions of others. As a consequence, it could be proposed, that social media is about

---

30 Social platform is a place where individuals (and companies among others) start, observe, connect and participate in various conversations online.
sharing, networking, expressing and entertaining (with various tools combining one or more of these activities together).

### 2.2.2. Comparison of social and traditional media

Although, semantic overlap between social media and traditional media exists - both serve as channels for communicating messages, information or data and thus share the purpose of being communication tools. However, there are a number of significant differences, which positions social media in a separate category.

From the communication perspective the most important difference is a conceptual shift from one-way (traditional media) to two-way (social media) communication. One-way communication can be understood as: “the transmission of information, ideas, attitudes, or emotion from one person group to another (or others), primarily through symbols” (Theodorson, & Theodorson, 1969 in Fill, 2005). Whereas two-way communication refers to a process where participants create and share information with each other in order to reach a mutual understanding. In addition, two-way communication processes contain the premise of more balanced power relationships. As observed by Windahl, Signitzer, and Olson (1992), through dialog and mutual understanding, the parties in the process potentially can influence each other (Windahl et al., 1992). Qualman (2009) in addition, argues social media enables open two-way conversations and business should incorporate them with their audience.

Another crucial difference between the two media regards content creation. Traditional media employs journalists or freelancers for content creation. Each article should abide to editorial as well as journalistic rules, thus seeking assure that more objective content would be published. In social media content can be produced by anyone with an access to the Internet. However, the lack of rules and standardized practices makes this content more subjective than the one provided by traditional media.

As presented in part of 2.2.1, social media is about a dialog, thus readers can easily become “third-party” editors by commenting or criticizing the published content on social media. As a consequence, the author of the original content may correct it or leave other readers to judge themselves the trustworthiness of the commentary published by the others.

Finally, social media and traditional media differ from technological development, which fosters low content distribution and acquisition costs for writers and readers. This explains the increasing popularity of social media versus traditional media.\(^{31}\)

---

31 Penetration of online media surpassed traditional media among small-business advertisers in August 2009 (The Kelsey Group, 2009).
Towards a More Holistic Stakeholder Analysis Approach. Mapping Current And Potential Stakeholders From Social Media

To sum-up, it can be noted, that information on different social media is received and delivered in a more rich way, than in traditional media. Readers and writers of social media (e.g. of a blog) have possibility to “consume” the content itself, its related comments, writer's (blogger's) replies, reviews from other social media etc. As a consequence, social media differs from traditional media by enabling the open and inclusive content share, greater interaction options, two-way communication flows and increased transparency. Moreover, creators of social media can be anyone (current or potential stakeholder) anywhere.

2.2.3. The current landscape of social media

According to the latest empirical research regarding social media evolution: 82.9% of all Internet users watch videos; 72.8% read blogs; 63% share photos; 57% are active in social networks; 45% listen to pod-casts (Universal McCann, 2009). Moreover, the analysis of previously conducted studies (Universal McCann, 2008, Sifry, 2006 in Goetz et al., 2009) suggests, there has been a global growth in different social media consumption (creating, reading, commenting on blogs, uploading photos to a sharing site etc.) from the year 2006 to 2008, whereas in 2009, consumers started devoting more emphasis to social networks and e.g. blog commenting (see Figure 4).

Figure 4. Activities Internet users engage in

![Figure 4](image)

Source: Universal McCann social media tracker report, 2009 (Wave 4)

This information can be sound, video, text, pictures as well as combination of all (author of the project observation).
Towards a More Holistic Stakeholder Analysis Approach. Mapping Current And Potential Stakeholders From Social Media

According to Alexa\(^33\) statistics (2010), Facebook\(^34\) is the second most popular website visited globally after the search engine giant Google. Extracting the latest research data from Nielsen agency (Nielsen, 2009) can complement these findings. They conclude two thirds of global Internet population visit social networks and there has been a strong increase in share of time for video sites (Nielsen, 2009). This suggests, social media participants favor observing video information as well as are eager to engage in social networking.

The decline of social media tools such as Flickr\(^35\) and Blogger (free blog publishing tool) should not be considered too vulnerable since “it is not, that consumers are not blogging or sharing less images, they are increasingly opting to do that via their social network page rather than the likes of Flickr and Blogger” (Universal McCann, 2009, p. 5). The latent can be observed, by recognizing the fact Facebook became most popular place among users to share photo’s online (Wilson et al., 2009).

As a consequence, it can be argued the landscape of social media is changing – social media tools become more inter-integrated. An example can be Twitter and Facebook integration\(^36\). Other tools enable similar efficiencies (in terms of information share).

Some latest blogging tools like Posterous offer new ways of how the content could be published (via e.g. e-mail, web, mobile phone) and shared (on e.g. Twitter, Facebook). The major shift Posterous introduced was the ability for content creators to differentiate where the content should be shared when publishing the initial post. Users can use their online account or e-mail addresses to do that\(^37\).

It is early to judge whether this will make a great influence in terms of user activity and increase the amount of messages shared within different social media tools. On the other hand, it can be noted, that social media tools are not only integrating to social platforms but also within each other. As a consequence the use of particular tools might decrease eventually even more.

\(^{33}\) Alexa is a web traffic estimation statistics provider. In this context the research of the company is used to question other findings regarding social media presence and growth. Source URL: [http://www.alexa.com/topsites](http://www.alexa.com/topsites) (statistics website checked on May the 20th, 2010).

\(^{34}\) Facebook is a social networking website (URL: [http://www.facebook.com](http://www.facebook.com)).

\(^{35}\) Flickr is a photo sharing website, where users can upload, arrange and share their pictures publicly or privately. Flickr offers up to 100 MB monthly photo upload and up to two videos as a free service. Users who are willing to get higher quotas have to pay.

\(^{36}\) In this context integration refers to automatic post/tweet share between different social media tools- a published tweet appears on personal Facebook wall and vice versa.

\(^{37}\) In order to publish a post only on Facebook and Twitter user could use twitter+facebook@domain-name on Posterous. Whereas the use of a syntax/e-mail “posterous@websiteaddress”, would post a message everywhere (on Twitter, Facebook, blog). It should be noted users should activate their profiles from different social media (Twitter, Facebook etc.) first for this service to work (http://www.posterous.com).
2.2.4. Key social media activities and tools

This section examines key social media activities: blogging, microblogging and social networking. Each area is explored by explaining the concepts behind the field. Finally, the each inner section depicts introduction to the specifics of key social media tool within the category. The most popular tools are derived from Alexa statistics (2010), Universal McCann (2009). The overview of the tools is argued being relevant since each of the tools differ greatly among each other in terms of purpose and the use of content produced.

2.2.4.1. Blogging

Blogging refers to information dissemination online via blog. A blog is a website created and maintained by an individual (individual blog) or group (community blog) containing entries of posts (listed in chronological order) and commentary reflecting on various topics (Schmidt, 2007; Goetz et al., 2009). Common metaphors to describe blogs used by practitioners, mass media or academia are: a diary, a journal, the amateur journalism and a genre of computer-mediated communications (Boyd, 2006). Bloggers are the people who create and manage blog entries/content.

Boyd (2006) observes, that practitioners defining blogging put greater emphasis on conversational qualities of blogging and a desire to share. In addition, bloggers possess a sense of community and think of how blogging helps them to engage with a community of people. As a consequence, it can be argued, that the social side is essential for many blog content publishers.

The type of content produced by bloggers varies greatly. As indicated in the Oxford English Dictionary (OED, 2003), blogs contain information such as news, reflections on politics, family, and millions of other things or nothing at all.

The distinguishable features of blogs are interaction, frequently updated content, personalized and less formal content, finally, series of archived entries that readers can browse (Boyd, 2006, Goetz et al., 2009). Moreover, blogs demonstrate community structure and temporal dynamic aspects, which differentiates them from static web pages. In addition, in terms of content publishing, blogs tend to cover new material faster than traditional media. This is argued to have created a powerful social phenomenon, where blog discussions often influence traditional media as well as public opinion (Adamic, & Glance, 2005 in Goetz et al., 2009).

Reasoning why do blogs gain attention varies. Many blogs are interlinked between one another. As a consequence, there exist much interaction between different blogs (blog linking to another blog), blog posts (hyperlinked and time-stamped posts) and bloggers (commenting on other blogs).
Towards a More Holistic Stakeholder Analysis Approach. Mapping Current And Potential Stakeholders From Social Media

Therefore, it can be argued, certain messages can be proliferated easier among blogs, other social media and/or traditional media.

Moreover, even though many bloggers are not identified as journalist (which might lead to lower credibility of the content), they tend to overcome this “disadvantage” by covering new material faster than traditional media.

As noted by Boyd (2006), journalists “feel intimidated by bloggers’ ability to rapidly cover new material. On the other hand, they are dismissive of bloggers’ lack of code with respect to neutrality and checking of sources” (Boyd, 2006 p. 8). However, even though the majority of blogging practice refers to informal, personalized news or information publishing, there are examples of bloggers who care about the content quality. Those bloggers “<…> are actively involved in setting ethical codes and standards, although many do not believe that those set forth by mainstream media organizations are quintessential to the practice” (Boyd, 2006 p. 8).

As opposed to journalists, bloggers, usually are not paid for the content they publish. They also use different and often free tools to be heard and spread the information worldwide.

Commonly and intensively used tools by bloggers are Blogger and Wordpress (Alexa statistics, 2010). Those are the free tools, which bloggers can use to set up and run their blogs.

It can be argued, that after the introduction of Blogger in 1999 and later Wordpress in 2003, blogging witnessed explosive growth (Sifry, 2006 in Goetz et al., 2009). It should be noted, it became relatively easy to create a blog\footnote{To start a blog on Wordpress or Blogger, an individual has to set up an account, decide on the blog name (domain name) and appropriate design (choice from an extensive library of templates). Design layout can be customized by more experienced users as well as different application (or so called “widgets”) can be added to support more user friendly layout of the blog (more information can be found at www.blogger.com, www.wordpress.com).} and it was possible to do it for free. Both solutions are publicly hosted.

Wordpress, in addition, offers a self-hosted blogging tool, which differentiates them from the Blogger.

Both Blogger and Wordpress introduce various widgets and applications that support blogging practices for publishing (text, photo, audio and video posts), sharing information (ability to post links, integration to other services such as Digg etc.) and interaction (chat, commenting).

It has been proposed, the greater the amount of discussions generated by blog posts (a lot of comments) of a blogger, the more influential that blogger becomes (Agarwal et al., 2008). However, other factors such as incoming, outgoing links also count (Agarwal et al., 2008).
2.2.4.2. Microblogging

Microblogging refers to a form of blogging where users post short messages (tweets) of a length up to 140-character to individuals, groups and the public at large (Cha et al., 2010, Boyd et al., 2010). It can be argued, the concept of microblogging emerged after the launch of Twitter in 2006. Twitter is the most popular microblogging tool used today (Alexa statistics, 2010).

The key idea behind Twitter is the share of information publicly or to a private network of friends/people. As defined by Twitter founders, “Twitter is a real-time information network powered by people all around the world that lets them share and discover what's happening now” (Twitter, 2010). The content of a tweet may consist of a link (to a blog post, picture\textsuperscript{39}, video etc.), text or both. The microblog site is very simple and neat as opposed to a blog where users have ability to use different applications and widgets (calendar, post archive, comments archive, cluster content into pages and categories etc.).

To share information on Twitter, a personal account must be created and a message needs to be posted. Twitter users can see information published by other users via search or via accessing their profiles. However, with the growth and popularity of Twitter (Alexa statistics, 2010) it can be complicated to do so, if one finds various users content interesting to track.

As a consequence, Twitter participants “follow” other users to receive their all messages as streams to their personal profile sites. A user can follow any user and the user being followed does not need to be followed back (Kwak et al., 2010).

The main features of Twitter include inbox, favorites, lists, re-tweets, mentions and trends. Twitter Inbox serves as an online derivative of an e-mail Inbox, where Twitter users send direct messages to another user. Favorites include a list of tweets, that user favored on a certain time. A tweet remains favorite as long as user does not disfavors it.

Twitter lists enable to cluster twitter users into meaningful categories. Users assign other microbloggers to lists they have created. One user can be assigned to many lists.

Re-tweets stand for forwarded messages as in e-mail communication. When users re-tweet they resend and quote original tweet author together with his/her message (or part of it) to their followers and audience at large. As a result, re-tweets can be also interpreted as type of content validation and engagement with others (Boyd et al., 2010).

Similarly “mentions” are used to engage with other tweeters, invite them in the conversation or at least get their attention. This is noticeable through the use of special Twitter syntax. “@user” stands for

\textsuperscript{39} The easier share of content via Twitter is fostered through various Twitter-related applications such as \emph{twitpic} (pictures), \emph{twitlive}, \emph{tweetube} (videos), \emph{bit.ly} (shortening of links) and others.
a mention, “RT @user message” stands for a re-tweet (Kwak et al., 2009), “DM @user message” stands for a direct message to be sent straight to recipient inbox so that others would not see the content and finally “#topic” is hash-tagging (makes it easier to search for specific content), which is commonly used to indicate important keywords or trend within the content.

To sum up, Twitter enables a spread of conversations throughout a network of interconnected users. People can talk about particular topic at once so that others within the global Twitter network are able to listen and participate in the conversation when intended (Boyd et al., 2010).

2.2.4.3. Social networking and social network sites

Social networking and social network sites (SNS) are concepts that can be met to be used interchangeably; however a difference between the two exists. Networking stresses relationships and refers to relationship initiation (often between strangers). Whereas, SNSs refer to the online space where those relationships can be established “SNSs support both the maintenance of the existing and the formation of the new connections” (Ellison, Steinfield, & Lampe 2007, p. 1).

As a consequence, social network sites (SNSs) can be viewed as web-based services that let individuals to present themselves, articulate their social connections and establish/ maintain connections with others (Boyd, & Ellison, 2007). Whereas, social networks can be viewed as infrastructures for communication, interaction and information share online (Wilson et al., 2009).

SNSs uniqueness derives not from the idea that SNSs enable individuals to meet strangers, but rather the fact, that via SNSs users are able to articulate their social networks and make it visible to the others (Boyd, & Ellison, 2007). Users who join social networks establish social links with their friends and use those links to share content, organize events, search for other users etc. (Wilson et al., 2009). In this case SNSs serve as technological bridges between online and offline connections (Ellison et al., 2007) and make it possible for people to get informed of changes within their social networks.

It can be observed both SNSs and social networking play an important role in today’s world. The popularity of SNSs usage is increasing (Nielsen, 2009, Universal McCann, 2009, Benevenuto et al., 2009) with most popular SNSs becoming top second (after google.com) most visited websites among Internet users (Alexa statistics, 2010).

The most popular SNSs today is Facebook (Alexa statistics, 2010). Other popular examples of SNSs include MySpace (Wilson et al., 2009), Orkut, Hi5, LinkedIn (Boyd, & Ellison, 2007, Benevenuto et al., 2009).

---

40 Honeycutt and Herring in Boyd et al. (2010) observe @user is used to reference others, therefore it can be understood as a form of addressivity to/of particular Twitter user.
“Facebook is designed around the concept of networks that organizes users into membership-based groups.” (Wilson et al., 2009, p. 2). Wilson et al. (2009) observes there are different networks users can be a part of. Examples of networks include educational institutions, geographic location, company, interests etc.

It can be observed, Facebook is structured as personal (egocentric) network, where individual is at the center of his/her community (a person and his/her friends). The creation of personal networks evolves naturally, when users establish bidirectional social links (friendships) with other Facebook users.

The establishment of social links is driven by offline acquaintances. Researchers (Ellison et al., 2007) conclude the greater use of Facebook is captured among users, who share an offline connection to one-other. Examples include classmates, neighbors or someone met at the party etc. (Ellison et al. 2007). On the other hand, it has been also captured; social networks serve as a public display to represent status and identity. In this case, one will find many social links with little or no level of mutual trust or shared interests (Wilson et al., 2009).

There are limits on how many social links/friendships one user can possess on Facebook. Current limits let establish up to 5000 friendships per user. As a consequence, users who wish to attract greater audiences should create a page or a group rather than user profile.

Pages share the same features as user profiles, however have no restrictions as to how many “fans” one page may have. Pages are more oriented for businesses, however, anyone can create a page to join conversations on Facebook and engage with their current or potential fans, customers etc.

This is also one of the distinguishable features of Facebook – offering free and equal opportunities for everyone to connect and have a contact with their acquaintances/friends.

Other factors that distinguish Facebook as unique SNSs and social media tool are:

- *tagging*- refers to an equivalent of “marking”. Users can tag other users on photos, videos or wall posts (introduced recently). When users are tagged, information (together with the picture/video/name) appears on their profiles. It must be noted content depicted on profiles can be seen by everyone unless users change their privacy settings accordingly41.

- *open policy in terms of Facebook development*- outside developers can build applications that allow users to personalize their profiles, be entertained or involved in different activities (comparing music taste preferences to those of friends). Facebook reports42 there are

41 There is still an intensive debate regarding user privacy on Facebook (Fletcher, 2010). On the other hand, users are able to control what and how much information to disclose and with whom to share it (everyone, friends, friends of friends, nobody).

more than 550,000 active applications currently available on Facebook platform users can engage with.

- **mini feeds** - refers to detailed log of friends activity (information share/status updates on their profile/wall post, uploaded pictures etc.) depicted in reverse chronological order;
- **rich interfaces and communication possibilities** – users can post comments on information their friends shared, receive notifications when someone new engages in particular conversation, send/receive private messages (in-build inbox) to anybody etc.

As a consequence, SNSs can be concluded being vital to consider when researching social media. The overview suggests there are great differences among different social media tools and activities. While blogging and microblogging share the idea of information publishing, there are more constraints for micro-bloggers (type of content, limits for the length of messages) as opposed to bloggers. Moreover, micro-blogging shares some qualities those of SNSs. In both a list of social ties is depicted on users profile, both provide mini feeds from friends activities. However, unlike on most SNSs (e.g. Facebook), the relationship of following and being followed on microblogging site e.g. Twitter, requires no reciprocation (Kwak et al., 2010). It could be noted this is only applicable if users do not protect their profile/content (e.g. tweets).

### 2.2.5. Risks and opportunities in social media

Qualman (2009) notes social media changes the way companies do and live business. He proposes successful companies will have to be entertainers, publishers or party planners rather then traditional advertisers. According to the author: “marketers job has changed from creating and pushing messages to one that requires listening, engaging, and reacting to potential and current customer needs” (Qualman, 2009, p. 240).

There are great and yet undiscovered ways of how companies can benefit from using social media within marketing, sales, employer branding, customer service etc. Some examples include Dell outlet store of refurbished Dell products with exponentially increasing sales through Twitter account @DellOutlet, IKEA Sweden fan page on Facebook was successfully used to introduce new store in Malmo (giving away furniture for those who tagged themselves on that furniture first), Sun’s CEO Jonathan Schwartz’s blog is among the most cited CEO blogs (Uhrmacher, 2009).

Coombs (2009) observe the share of information is the reason why firms should care about social media and what is said online. If there are positive messages proliferated within different social media
Towards a More Holistic Stakeholder Analysis Approach. Mapping Current And Potential Stakeholders From Social Media

channels, there is no need to be worried. However, negative information can create many problems. He proposes, negative messages regarding a brand, company, product etc. are the riskiest since it can cause different types of crises to appear (Coombs, 2009).

An example could be an American company Domino Pizza who were recently hit by a scandal when two of the company’s employee’s posted five videos (showing their unsavory acts with food) on YouTube on April 13th, 2009 (Evangelista, 2009). The online buzz about the brand spiked during the crisis immediately (Nielsenwire, 2009) causing a lot attention from social media users and traditional media in general.

Another even more recent and widespread case relates to Nestle company. Crises erupted after Greenpeace released a report on Nestle’s use of questionably sourced Palm Oil in its products on March 17, 2010. Company failed to respond quickly to Greenpeace messages and received a lot of criticism for mismanaging the crisis. There is still a lot anti-Nestle conversation on social media with several users calling for a boycott of Nestle’s products (Chang, 2010).

As a consequence, social media introduces many new challenges for companies willing to compete and win consumers’ attention in today’s world. There are many opportunities that can be utilized to increase positive returns, strengthen company’s image or stakeholder relations generally. However, as indicated by Coombs (2009), consumers share both positive and negative information about everything. Consequently, it becomes challenging for a particular company to differentiate between numerous conversations (find relevant content) and people (is he/she able to spread the message?) who initiate those conversations in order to react in time, that is, when potential threats appear.

---

43 Youtube is a video-sharing website where people can upload and share various video clips with thousands of other users and/or website visitors.

44 Researchers observe, blog discussions often influence not only traditional media but also public opinion (Adamic, & Glance, 2005 in Goetz et al., 2009).

45 The trend can be extracted from Nielsen (research agency) BlogPulse Trend Search: [http://www.blogpulse.com/trend](http://www.blogpulse.com/trend) searching for keywords such as: Domino’s Pizza and Nestle.
2.3. Network theory specifics

This section presents the concept of networks, their typologies, and the key understanding behind the structure of networks.

The first part of the section tackles key network measures that help to estimate actor importance based on its position in the network. The measures introduced assist in examining node closeness (Closeness centrality), connectedness (Degree centrality) and possibilities of a node to be a broker (to the nonadjacent nodes) in the examined network (Betweenness centrality).

Following Wasserman and Faust (2007) proposition, Prestige index is introduced and considered being relevant since it explicitly assesses incoming ties of particular node. It can be argued that in social media where relationships are directed Prestige could be more important to assess since it is more difficult to get attention from the others rather than initiate action (e.g. it is easy to follow new people on Twitter but it is more difficult to get followed by others).

2.3.1. Understanding networks: notions and notations

Network is a broad concept that has been applied within different fields. However, as observed by Newman, Barabasi, & Watts (2006), the breadth of the network definition is one of the key reasons why graph theory became so powerful.

In the most general definition networks can be viewed as collections of interconnected components. These connected components can be anything e.g. people, computers, academic papers, blog comments etc. (Newman, 2003). The total population of components defines network size. As a consequence, there are small, large etc. networks one may observe and examine (Knoke, & Yang, 2008).

It can be noted, the size of the network affects its structure as well. Gudrais (2010) observes, as the number of connected components in the network increases, the number of possible configurations grows exponentially too. Therefore, networks are structurally simple, yet analytically complex to examine (Gudrais, 2010).

---

46 Highly relevant in examining Twitter or other networks where ties between certain nodes have directions (denoted later in this thesis in parts 2.3.1.2 and 3).

47 The start of the study of networks lies in mathematics. During the past three centuries graph theory has become the principal mathematical language to describe the properties of networks (Newman, Barabasi, & Watts, 2006).
Towards a More Holistic Stakeholder Analysis Approach. Mapping Current And Potential Stakeholders From Social Media

To understand networks more thoroughly key network notations are presented in the following subsections. The author of this thesis observes the framework for mathematical description of networks derives from graph theory (Börner, Sanyal, & Vespignani, 2007). However, each discipline adopting ideas from network theory has its own nomenclature. As a consequence, only key and necessary notations regarding networks are tackled.

2.3.1.1. Vertices and edges

Sets of nodes and sets of ties are two key fundamental components most commonly used to define networks within various fields (Girvan, & Newman, 2002, Newman, Barabasi, & Watts, 2006). Newman (2003) observes, within social science networks are considered as a set of actors (vertices) who may/have relationships (edges) to one another. Actors refer to people who within different literature can be named as agents, nodes or vertices (Newman, 2003, Newman, Barabasi, & Watts 2006, Knöke, & Yang, 2008). Whereas relationships are often indicated as links, archs, ties or edges (Izquierdo, & Hanneman, 2006, Wasserman, & Faust, 2007).

When actors get connected to each other, each actor gains certain amount of ties. The amount of ties between the actors within the network might differ greatly. Some actors might have no connections (ties) with others some may have many. Quantitative information about types, content, weights or other attributes for nodes and edges might exist as well. The content might include: “information, advice, or friendship, shared interest or membership, and typically some level of trust” (Castilla et al., 2000, p. 219). As a consequence, when analyzing networks one must first familiarize/identify what do vertices and edges represent and what type of content is carried (if any) between the existing relationships.

2.3.1.2. Directed graphs

Networks can be represented in graphs and are subsequently called so. “They have a certain structure (or topology) and can have additional quantitative information. The structure might be directed or undirected” (Newman, 2003, Börner, Sanyal, & Vespignani, 2007, p.5). Directional relations refer to graphs where relations between the nodes are oriented from one actor to another (Wasserman, & Faust, 2007). Such graphs are called digraphs \((G_d = (N, L))\) and are defined by a non-empty

---

48 As indicated at the beginning of this thesis, only directional relations will be tackled. Therefore the mathematical analysis defined in further subsections in this thesis will only depict cases regarding directed graphs.
Towards a More Holistic Stakeholder Analysis Approach. Mapping Current And Potential Stakeholders From Social Media

countable set of nodes \( N = \{n_1, n_2, ..., n_g\} \) and a set of ordered pairs of different ties, \( L = \{l_1, l_2, ..., l_g\} \) called directed edges (Börner, Sanyal, & Vespignani, 2007, Wasserman, & Faust, 2007). It must be noted that each tie is an ordered pair of distinct nodes, \( l_k = \{n_i, n_j\} \). The edge \( \{n_i, n_j\} \) depicts node i's orientation to node j (e.g. \( n_i \) sends a message, \( n_j \) receives). Since each node's arc in an ordered pair of nodes, there are \( g(g-1) \) possible arcs (\( g \) is the number of nodes) in a particular digraph (Wasserman, & Faust, 2007).

When a graph is presented as a diagram, nodes are depicted as points and edges as arrows (Wasserman, & Faust, 2007) or curved lines (e.g. in Gephi software), indicating the direction of a tie from one node to another.

2.3.1.3. Network and node connectivity

The connectivity of the network can be extracted by looking at individual node reachability within a particular network. Reachability of a node refers to the possibility to go from one node to another following the edges present in a network. A node is reachable from another node if there exists a path connecting the two nodes (Börner, Sanyal, & Vespignani, 2007). In digraphs paths to reach \( n_i \) from \( n_j \) has to follow the edge directions to reach \( n_i \) from \( n_j \).

As researched by Wasserman, & Faust (2007) there are four main ways two nodes can be connected by a path or a semi-path\(^{49}\). The connectivity in digraphs can be:

1. **Weak** - when \( n_i \) and \( n_j \) are mutually reachable via a semi-path;
2. **Unilateral** - when \( n_i \) and \( n_j \) are joined by a path from \( n_i \) to \( n_j \) or \( n_j \) to \( n_i \).
3. **Strong** - if there is a path from \( n_i \) to \( n_j \), and vice versa; the path from \( n_i \) to \( n_j \) may contain different nodes and edges that the path from \( n_j \) to \( n_i \).
4. **Recursive** - when the path from \( n_i \) to \( n_j \) uses the same nodes and edges as the path from \( n_j \) to \( n_i \), in reverse order.

Wasserman, & Faust, 2007, p. 132-133

\(^{49}\) A semi-path is: “a sequence of distinct nodes, where all successive pairs of nodes are connected by an arch from the first to the second, or by an arc from the second to the first for all successive pairs. The length of a semi-path is the number of arcs in it” (Wasserman, & Faust, 2007 p. 131)
2.3.1.3.1. Node Degree

*Degree* is (defined by) the number of direct ties one node has in relation to other nodes. Hanneman and Riddle (2005) observes, that actors who have many ties are less dependent on other individuals and are able to call on more of the resources of the network in general (Hanneman, & Riddle, 2005). The more direct ties, the higher Degree measure (Degree centrality). For digraphs In-degrees and Out-degrees are estimated. The In-degree of a node, \( d_i(n_i) \), is the number of nodes terminating at \( n_i \). The Out-degree of a node, \( d_o(n_i) \), is the number of nodes originating from node \( n_i \).

The Degree measures of a single node may differ. As a consequence, sometimes it is useful to know the mean of In-degrees, \( \bar{d}_i \) and Out-degrees, \( \bar{d}_o \) (e.g. compare particular node Degree with the average):

\[
\bar{d}_i = \frac{\sum_{i=1}^{g} d_i(n_i)}{g} \quad \text{(1.1)}
\]

\[
\bar{d}_o = \frac{\sum_{i=1}^{g} d_o(n_i)}{g} \quad \text{(1.2)}
\]

(Wasserman, & Faust, 2007)

2.3.1.3.2. Diameter, distance and geodesics

“The (geodesic) distance between a pair of nodes in a graph is the length of a shortest path between the two nodes, and is the basis for defining the diameter of the graph” (Wasserman, & Faust, 2007 p. 134). The shortest path length (geodesic), \( l_{i,j} \) is the length of the shortest path going from nodes \( n_i \) to \( n_j \). As a consequence, the diameter is defined as the maximum shortest path length in the network. In other words, the diameter of a particular network will be the longest of all shortest paths among all possible node pairs in a graph. Therefore, it could be proposed, diameter depicts amount of edges needed to connect the most distant node pairs in the network (Börner et al., 2007).

The distance \( d(i,j) \) from nodes \( n_i \) to \( n_j \) can be different from the distance, \( d(j,i) \) from \( n_j \) to \( n_i \). If no path exists between a pair of nodes, there is no geodesic and the distance is infinite.

2.3.1.3.3. Graph density

The Density, \( \Delta \), of a graph is defined as the ratio of the number of edges, \( L \), divided by the number of possible arcs (Wasserman, & Faust, 2007):

\[
\Delta = \frac{L}{g(g-1)} \quad \text{(1.3)}
\]
The more the number of edges of a graph is closer to the total number of edges possible, the more dense a particular graph will be. Contrary, when the graph has few edges, its density will be very low. Such graphs can be also called as sparse graphs (Börner et al., 2007).

The communication flows within sparsely connected nodes will be much slower (or no) compared to dense graph structures. However, it should be noted network density changes over time, therefore the communication between the nodes might change as well (some nodes might become more connected).

As a consequence, density measure can be used to describe network and predict whether various exchange activities between the nodes are possible and how widely.

2.3.1.3.4. Node centrality and prestige

Centrality is a general measure estimating the position of a node within the overall network (Rowley, 1997, Cross, & Conway, 2010). Knoke and Yang (2008) extract that centrality of node \( n_i \) is the average distance between \( n_i \) and all other nodes in the network. Therefore, centrality refers to actors’ prominence within a complete network by summarizing the structural ties among all nodes. The greater \( n_i \) prominence, the more is visible to the other network nodes (Knoke, & Yang, 2008).

As a consequence, it can be observed, that centrality is used to define influence of a node within particular network. Cross and Conway (2010) note, that e.g. on Twitter centrality measure can assist in defining influence based on amount of connections (followers) Twitter user has. In this case, an influential user would be the one who has many incoming connections (high “In-degree”). In addition, user who has many connections will have greater prominence and visibility within that network (Knoke, & Yang, 2008).

Knoke and Yang (2008) extract two classes of node prominence measures:

1. Centrality, where a prominent node has high involvement in many relations, regardless of whether sending or receiving ties;

2. Prestige, where a prominent node has few out-going relations, but received many direct ties.

As a consequence, the user with high overall Degree measure would be considered highly centered within particular network. Whereas the node that has low Out-degree but high level of In-degree measures would be considered having a high Prestige estimate. Therefore, in Twitter e.g.

\[50\] Knoke and Yang (2008) observe the number of edges grows faster than the number of nodes over time.

\[51\] Some authors denote it as status, popularity, rank, deference among other notations (Wasserman, & Faust, 2007).
Prestige scores would belong to users who have many followers, but follow less/little other people themselves.

Following the definition of Prestige (a need to distinguish between in and out degrees) it must be noted, Prestige is only possible to quantify in di-graphs (Wasserman, & Faust, 2007). One of the common ways to measure Prestige ($P$) for particular actor ($n_i$) is by estimating how many incoming connections a node has within particular network. As a consequence, Degree prestige ($P_d$) of an actor is simply equal to that actors In-degree ($d_i(n_i)$) estimate (Wasserman, & Faust, 2007). It can be observed that the standardized Degree prestige ($P_d$) could be consequently quantified while dividing the actor’s In-degree ($d_i(n_i)$) by the amount of connections the actor ($n_i$) can have within the examined network\(^{52}\) (\(g-1\)):

$$P_d(n_i) = \frac{d_i(n_i)}{g-1} \quad (1.4)$$

(Wasserman, & Faust, 2007).

Wasserman and Faust (2007) note, the larger the $P_d$ index measure, the more prestigious is the actor. The maximum score 1 is reached when actor is chosen by all other members.

To quantify centrality few measures are commonly used: Degree, Betweenness and Closeness (Hanneman, & Riddle, 2005, Wasserman, & Faust, 2007, Cross, & Conway, 2010). It is observed, each of the measures (Degree, Betweenness, Closeness) describe the locations of nodes: "in terms of how close they are to the "center" of the action in a network" (Hanneman, & Riddle 2005). However, it can be noted, that the definitions of the “center” within each measure differ.

Degree centrality is defined by the number of direct ties one actor has in relation to other actors in the network. As observed by Wasserman and Faust (2007), Centrality indices focus on choices made therefore within digraphs only Out-degree measures are counted. High Degree centrality is reached when a node has a large number of connections (outgoing) with other nodes (in this case that particular node will be considered being well-connected).

Actor-degree centrality ($C_d(n_i)$) in digraphs is estimated by taking the Out-degree of an actor ($d_o(n_i)$) and dividing it by the total number of connections an actor could have (\(g-1\)) within examined network (Wasserman, & Faust, 2007):

$$C_d(n_i) = \frac{d_o(n_i)}{g-1} \quad (1.5)$$

\(^{52}\) Certain actor's In-degree is dependent on the group size $g$ (Wasserman, & Faust, 2007).
Betweenness centrality refers to node's ability to control access (e.g. of information spread) to the other members of the network. Nodes who possess high Betweenness centrality facilitate exchanges between less central nodes (Scott, 2000). As noted by Wasserman and Faust (2007), nodes that facilitate exchanges between two nonadjacent nodes (nodes that are not connected directly with each other) potentially might have some control/influence over interactions between those nonadjacent nodes.

According to the researchers, an actor is central if it lies between other actors on their geodesics (Wasserman, & Faust, 2007 p. 189, p. 201). Therefore, actors who have high Betweenness centrality will bridge many nonadjacent actors in the examined network. This suggests that nodes with high Betweenness centrality could be considered more important/powerful since other nodes (the nonadjacent ones) depend on them (Hanneman, & Riddle, 2005). In addition, high Betweenness centrality scores indicate that a vertex can reach others on relatively short paths, or that a vertex lies on considerable fractions of shortest paths connecting others (Brandes, 2001). As a consequence, a node that occurs on many shortest paths between other nodes will have higher Betweenness centrality compared to nodes that do not occur so often on the short paths.

Actor Betweenness centrality $C_B(n_i)$ for digraphs can be estimated by summing up all probabilities, that a node $n_i$ is part of the shortest paths between two other actors $n_j$ and $n_k$ multiplied by 2 (see e.g. 1.6). Let $g_{jk}$ be the number of the shortest paths between actors $n_j$ and $n_k$. As a consequence, $g_{jk}(n_i)$ will be the number of links joining two nodes ($n_j$ and $n_k$), which contain the $n_i$ (Wasserman, & Faust, 2007).

$$C_B(n_i) = 2 \times \frac{\sum_{j<k} g_{jk}(n_i)}{g_{jk}(g-1)(g-2)/2} \quad (1.6)$$

(Wasserman, & Faust, 2007).

To sum up, actor Betweenness centrality is about finding the geodesic paths between all pairs of nodes and counting the frequencies each node falls into each of these pathways.

The last centrality measure assisting to define node importance/prominence based on its properties of its location in the network is Closeness centrality. Closeness centrality indicates how near a particular node is to all other members in the network (Hanneman, & Riddle, 2005, Cross, & Conway, 2010). Actors who have high Closeness centrality will have many direct connections to various members of the network. Therefore, it can be argued, the higher closeness centrality of a node, the
quicker that actor is able to interact with others (Knoke, & Yang, 2008). The maximum score (equal to the number of nodes) is achieved when others member of the network are one-step away from an examined actor. The reach closeness sum decreases, as actors are two steps, three steps etc. away from the examined actor (Hanneman, & Riddle, 2005). The quantification of Closeness-centrality for particular node ($C_c(n_i)$) can be conducted as follows:

$$C_c(n_i) = \frac{g - 1}{\sum_{j=1}^{g} d(n_i, n_j)}$$

(Wasserman, & Faust, 2007)

\[\sum_{j \neq i}^{g} d(n_i, n_j)\] notes the overall distance a node ($n_i$) is away from other actors, where $j = 1$ in other words, where $j \neq i$. Consequently $d(n_i, n_j)$ is the length of path (number of arcs) in the geodesics linking distant actors ($n_i$) and ($n_j$) whereas $(g - 1)$ is the minimum possible total distance.

### 2.3.2. Network typologies

Different elements, from which networks are formed, suggest different types of networks exist. As a consequence, different types of relationships within those elements will indicate and represent different types of networks (Knoke, & Yang, 2008). Therefore, a friendship network among people on Facebook is very likely to differ from their communication network (network of people who send messages to one another).

Newman (2003) extracts four main fields and categories of networks:

- **Social** (e.g. a set of people interacting with each other);
- **Informational** (e.g. citations between academic papers, www, hyperlinks);
- **Technological** (e.g. electric power grid. Network of high voltage transmission lines in a country);
- **Biological** (e.g. a number of biological systems).

---

53 The more direct ties a node has, the quicker it can send/spread the messages directly to other nodes of the network.
Towards a More Holistic Stakeholder Analysis Approach. Mapping Current And Potential Stakeholders From Social Media

Each category proposes different focus (people, papers, hardware units) for the analysis of the network. However, the fundamental principles remain the same. Each network will have certain amount of nodes and certain amount of edges connecting those nodes.

The focus of the thesis will remain to support the analysis of social networks. It can be noted, however, the fundamental typologies within various network fields usually share structural similarities. However, some differences to describe various types of networks exist, therefore the further subsections introduce key distinctions (types of networks) identified by network scientists.

2.3.2.1. Egocentric networks

Egocentric networks refer to networks that involve a focal node (ego) and the nodes (alters) to which the initial node is connected (Carrington et al., 2005). Within egocentric networks the focus of analysis is directed to particular node and its alters (see Figure 5).

![Figure 5. Examples of egocentric networks](source: own production inspired by Scott, 2000, Wasserman, & Faust, 2007)

The first example in Figure 5 depicts an egocentric network with an ego (in the middle) and its alters that are one step away from the ego (Degree of 1). Other egocentric network examples (Figure 5, b and c) include more alters and edges between them. Second graph depicts an ego and links between its alters (Degree of 1.5) whereas the third example exemplifies an ego network with its alters and their alters (e.g. “friends of friends”, Degree of 2).

It must be noted, that egocentric networks usually differ a lot from complete networks (networks of which they can be part from). However, as Carrington et al. (2005) observe, both are very inter-related. It is evident when egos are sampled “densely”, complete networks can be constructed using only egocentric network data (Carrington et al., 2005).

Next subsection presents complete and partial networks more thoroughly.
2.3.2.2. Complete and partial networks

*Complete networks* include the overall population of nodes and connections between those nodes regarding a particular network. Such networks might be as well noted as full or total (Scott, 2000).

As described by Knoke and Yang (2008), full networks might be considered the most important level of analysis since it grasps complete information about the patterns of ties among all nodes of the network with availability to examine distinct positions of roles within the overall system (Knoke, & Yang, 2008). On the other hand, full networks can be very challenging to analyze. An example could be Twitter or Facebook networks. On the one side, both networks are big in size (see parts 2.2.3, 2.2.4.2 and 2.2.4.3) and change over time (number of users and connections between those users grows), on the other side, restrictions limiting the accesses of network data exist. As a consequence, examination of such network as a complete graph becomes highly complicated. Therefore, in similar instances scientists extract *partial networks* instead.

A partial network is a sample of a full network. A sample can be extracted using various boundary specifications. The most general approaches proposed include: “an *positional approach* based on characteristics of objects or formal membership criteria, an *event-based approach* resting on participation in some class of activities, and a *relational approach* based on social connectedness”54. Following this, a partial network of Twitter users who are part of certain lists (e.g. CEOs, managers, social media experts) will be identified using positional approach. Users who tweet about certain topic on its incidence (e.g. Icelandic #ash, #tsunami etc.) will be specified via event-based approach. Finally, users who are connected to e.g. other certain individual will be identified using relational approach.

Very often a sample include particular users regarding their geographical location, type of information they share (e.g. a network of users from Aarhus who tweet about Aarhus School of business #ash etc.) or particular node based on its properties in that network (e.g. many incoming followers on Twitter). When the focus of analysis turns to particular node, egocentric network data are used.

2.3.3. Communities and their detection in networks

Community refers to the occurrence of groups of nodes in a network that are more densely connected internally than with the rest of the nodes in the network (Girvan, & Newman, 2002, Porter, Onnela, & Mucha, 2008). In addition, as noted by Leskovec et al. (2008) within community structures

54 Laumann, Marsden, & Prensky, 1989 in Carrington et al., 2005, p. 9.
densely linked sets of nodes are attached to the rest of the network only via few edges (Leskovec et al., 2008).

It can be observed, many complex networks display community structures and that identification of communities can reveal interesting and sometimes “hidden” properties of particular networks (Leskovec et al., 2008). An example could be the revelation of informal groups within organizational network or clustering of friendships in Facebook personal networks. Moreover, community detection is important for other reasons as well. It can be argued, that ability to identify communities enables to classify vertices according to their structural position in particular groups. As a consequence, vertices with a central position in their clusters could potentially play an important function within that group e.g. controlling stability within that group. On the other side, vertices located between few communities (connection points) can act as intermediaries and possess impact to control exchanges between various communities (Fortunato, 2010).

It must be noted that real networks are usually composed of hierarchical organization. As a consequence, networks are composed of communities, which include smaller communities and those smaller communities include other smaller communities etc. (Fortunato, 2010).

The detection of communities, therefore, is not so simple (Porter et al., 2008). Numerous methods have been developed, however, none of them solves the task (identify communities) satisfactorily enough (Fortunato, 2010). Additional challenges are met also because networks vary, so do communities and their structures within those networks.

Latest findings by Leskovec et al. (2008) reveal, that in large social and informational networks, communities depict different structures within various levels of analysis. Researchers observe, within the small scale, communities are tight but almost trivial, whereas at larger size scales, communities “blend in” with the rest of the network, therefore, become less “community-like. Other scientists observe, that real networks possess vertices that are shared between communities (Fortunato, 2010) or have highly overlapping cohesive groups of nodes (Pala et al., 2005).

Existing methods for community detection address these issues accordingly. Common techniques that detect communities include: modularity assessment, spectral partitioning, incorporation of centrality indices (Porter et al., 2008), the usage of divisive algorithms and many others (Fortunato, 2010).

For overlapping community detection cases, usual methods that focus on identifying standard partitions within networks are not very efficient. A better solution is to focus on finding local communities. The k-clique percolation method is considered being the best to satisfy this purpose (Porter, 2010).

As discussed earlier in part 2.3.1.2.4 centrality measures can be used to identify nodes and their position in the network. Fortunato (2010) insights can be understood as just applying centrality ideas within community structures.
et al., 2008). The explanation of k-clique percolation method can be found in the latest work of Fortunato (2010) “Community detection in graphs”.

To sum up, community detection in graphs is considered being relevant in order to extract important vertices from various networks. It should be noted, however, that general analysis of the network assists in identifying key positions actors take within the network (see part 2.3.1.3.4.), whereas community analysis helps to identify actor’s structural positions within particular groups (Fortunato, 2010).

As a consequence, actor influences can be identified both within network and within its communities. Therefore, it can be argued that in certain cases, both analyses should complement each other. An example could be a case where a node connects vital but a small community in particular network. The node could possess low overall Betweenness centrality (within the network), therefore would be considered less important. On the other hand, grasping the fact, the node (actor) is a brokerage to a small vital community; the node’s role could be vital, thus it could be an important actor.

The next part discusses theoretical insights presented in parts 2.1, 2.2 and 2.3 respectively. The insights from the stakeholder theory and social media are used to form initial definition of a stakeholder within social media context. The insights from network theory serve in identifying potential stakeholders based on their connectivity within certain social media network. However, the author of this thesis implies, that the principles from the network theory can also be successfully applied to prioritize social media stakeholders. As a consequence, a more holistic Stakeholder Mapping Model is introduced integrating both “online” and “offline” stakeholder mapping for a certain organization. In the end of the chapter, the empirical application of the model is performed using Lego as a case company. The application of the model is partial (reasoned in thesis design and methodology part 1.1) since only stakeholders (and not potential stakeholders) are extracted and analyzed.
3. DISCUSSION

Based on the overview and the introductory analysis of social media phenomenon, stakeholder theory and the notion of networks depicted in the previous chapters, this part discusses theoretical findings more deeply.

First, a definition and the identification of a stakeholder within social media context is derived. Discussion proposes that social media members can become stakeholders (or potential stakeholders) by sharing certain content via social media, or by being well connected within the certain social media network. Secondly, the prioritization of the extracted stakeholders (including potential stakeholders) from social media is introduced. The analysis proposes SNA as the most suitable approach to identify important stakeholders within the extracted network data.

Having identified and prioritized stakeholders from social media, the third section tackles the construction of a holistic Stakeholder Mapping Model. The model extends previous stakeholder mapping models by integrating SNA and Stakeholder theory for stakeholder identification and prioritization from the “offline” and the “online” (social media) environments. The model is very theoretical and conceptual in nature therefore the fourth inner section discusses its applicability. Finally, the fifth part conducts a simplified empirical testing of the model using Lego company and their stakeholders from Twitter as a target case for the analysis.

3.1. Definition of a stakeholder within social media context

In order to define stakeholders in social media, the author of this thesis looks at the notion of social media, the notion of networks and the definition of stakeholders that can be extracted from theory analysis presented in parts 2.1, 2.2, 2.3 respectively.

Following the theoretical examination of these three fields it can be revealed that the term of a stakeholder and the understanding of networks have long historical roots, whereas the phenomenon of social media is still sufficiently unexplored as of today. It is observed, however, all fields received a lot of attention. Stakeholder theory has been discussed within academic agenda (Luoma-Aho, & Paloviita 2010) for years, however, was as well captured being misinterpreted (Phillips et al., 2003) and supporting even contradictory arguments among various publications (Donaldson, & Preston, 1995).

---

56 In this context, the actors who possess an important position within the analyzed social media network. Such actors are present in a densely connected area of the network, have high centrality and Prestige indices (see part 2.3.1.3.4 and 3.1.2).
Towards a More Holistic Stakeholder Analysis Approach. Mapping Current And Potential Stakeholders From Social Media

Networks depict long history and applications within various disciplines as well. Similarly social media - except the exploration (theoretically-vice) of the field began recently and there is no explicit theory (theory of social media) defining it. As a consequence, the field is surrounded by confusion resulting in various interpretations and definitions of social media.

As indicated in part 2.2.1, some explanations regarding social media depict it as an online tool that connects people; others tend to label it as online conversations between various individuals (Lake, 2009) or an aggregation of online applications and services that recently emerged on the Internet (O’Reilly, 2005). In addition, Coombs (2009) re-emphasizes that social media is about stakeholders who interact and share information online.

Following these insights, one may suggest social media is both: an aggregation of various applications as well as interactions among various individuals online. However, as discussed in part 2.2.1 applications and tools that enable online connectivity should be referred as new media, whereas social media is a broader term that integrates new media and the notion of interaction.

As a consequence, it is the individuals who play the crucial role in social media. They endorse various social media tools (Twitter, Blogger etc.) by actively using and propagating it within the overall Internet ecosystem. Therefore, the notion of social media is argued being more theoretically accurate explaining it through the perspective of humans. As a consequence, social media is about individuals or their groups (stakeholders among others) who communicate with each other and engage in various activities online (blogging, microblogging). These activities include e.g. information production and sharing online (e.g. by tweeting, re-tweeting), as well as various (online) interactions with others (Coombs, 2009).

The aspects of humans and the share of information make it vital for organizations to tackle social media. The importance derives from the latest rise of social media (Sifry, 2006 in Goetz et al., 2009, Nielsen, 2009, Universal McCann, 2009); the potential threats or opportunities regarding particular content share within social media (e.g. crisis situations during/after the share of a negative content) as well as the potential ability of one (or few) social media participants to spread information (when it appears) throughout the network.

As a consequence, the author of this thesis argues, it is vital to consider stakeholder concept within social media from two aspects – the content shared and the potential/ability to propagate its spread.

---

57 By examining social media definitions portrayed in Lake (2009), it can be observed practitioners do not always differentiate between new media and social media. As a consequence, one must be very attentive before concluding which is which.

58 Ability in this context refers to actor’s capacity to influence the spread of information based on his/her connectivity within the social media network.
Towards a More Holistic Stakeholder Analysis Approach. Mapping Current And Potential Stakeholders From Social Media

Following this, the further subsections discuss stakeholder definitions based on individual’s:

a) Expressed interests regarding a particular company (e.g. creation or share of particular content in social media, that relates to a certain company).

b) Potential to spread the content (instantly or sometime in the future) within social media (e.g. by having many connections one can potentially spread certain content instantly).

As a consequence, the further subsections of this chapter tackle the extracted notions accordingly in order to define stakeholders within social media. The definitions derived within the following sections are also shaped by continuously assessing the insights from stakeholder, network theories and the specifics of social media.

3.1.1. Defining stakeholders based on the content shared within social media

As indicated earlier in this thesis (see part 2.2.3), social media users engage in various online activities. Following the model introduced by Cavazza (2009) (see part 2.2.1) activities within social media include networking, gaming, expressing, sharing. It is observed, that various social media tools may portray more than one type of activity. An example is Twitter that can be used as a tool to express oneself, share certain content or even entertain, educate oneself. In this context education or entertainment would refer to social media content consumption. Examples are reading blog posts, tweets, viewing photos on Facebook etc. Expression and share refers to content production (which is crucial for its consumers). Examples include tweeting, uploading photos, posting a blog entry.

As it can be extracted from Boyd (2006) and Goetz et al. (2009), blogs can be interesting or at least entertaining “journals”, since the content is informal and frequently updated. Moreover, they are interactive and have series of archived entries that one can browse at any time. In addition, the length of the post is much longer than e.g. the one of a tweet. The latter is limited to only 140 characters\(^59\) (Cha et al., 2010, Boyd et al., 2010).

As a consequence, blogs can be more demanding time-vise for both its creators (bloggers) and for those who browse them. Whereas Twitter is less time consuming regarding content publication though at the same time remains a great place for one to listen and participate in various conversations (Boyd et al., 2010). However, Twitter has great potential to be used as a pitch for the spread of certain

\(^{59}\) Original message size for a tweet is 140 characters. However, the author of this thesis observes there are solutions, which can be used to share longer messages on Twitter. It can be done using intermediary websites. In this case an original tweet would be saved on a certain website, whereas a shorter note with a link to the original message would be tweeted on the users profile.
messages since it allows posting hyperlinks (which could lead to a personal blog or other sources of information).

It should be noted, that user participation in various conversations (users commenting blog posts, replying to Facebook wall posts etc.) within social media has grown during the last few decades (Universal McCann, 2009, see also Figure 4). One of the reasons striving the proliferation of social media could be the notion of informality, very low costs of entry (time), individual’s will to express oneself, be closer to distant friends (Facebook as an intersection of social circles) etc. As a consequence, there is a lot of content shared within social media. It is done quickly\(^{60}\) and there is no boundaries when and how fast it can spread from an initial post. Scientists observe this leads to new phenomenon where social media influences traditional media as well as public opinion (Adamic, & Glance, in Goetz et al., 2009). As a consequence, the content shared among social media becomes vital to track (especially if it relates to a particular organization).

Consumers observe and participate in information sharing process via/through social media very actively (Universal McCann, 2009). The following trend presents challenges for businesses. As indicated above, the propagation of negative content within social media can be harmful for companies (e.g. cause crisis). As a consequence, it is crucial to monitor, assess and respond to what is said on social media (Coombs, 2009). To provide an example, an American company- Domino Pizza was recently hit by a scandal when two of the company’s employee’s posted five videos showing their unsavory acts with food on Youtube on April 13\(^{th}\), 2009 (Evangelista, B. 2009). According to Hobson (2009), information spread between consumers quickly through different social media and in two-days period resulted with more than 500.000 video views by people all over the world.

As observed by Pavlik (2007), it is difficult for companies to effectively respond to consumer generated online messages. He suggests, that transparency, immediacy and clarity could be one of the key elements to incorporate in the processes of “response” (Pavlik, 2007). On the other hand, it could be argued, that only responding is not enough (e.g. notion of ongoing crisis communication, Coombs (2007)). Therefore, firms need to engage with social media and be proactive. However, in order to communicate companies need to know to whom they should send the messages and/or engage with.

As a consequence, it becomes important to differentiate social media publics. That is, considering the limited resources of an organization, it is crucial to distinguish between “just individuals” and “stakeholders” or their groups within social media.

Therefore, following the notion of social media and applying a stakeholder mindset to it, the author of this thesis derives a stakeholder in social media is any individual who can affect the achievement of

\(^{60}\) In this context speed refers to content publication. As indicated in part 2.2.2 social media tends to cover certain information faster than e.g. traditional media.
Towards a More Holistic Stakeholder Analysis Approach. Mapping Current And Potential Stakeholders From Social Media

organization’s purpose and objectives\textsuperscript{61} using various social media tools. It should be stressed that since social media is about individuals who share information online, the way they can become stakeholders and thus affect a certain organization, is by sharing and/or by propagating particular content online. As a consequence, one may argue, that a potential stakeholder within social media is anyone present in it (since anyone at anytime can express their opinions or observations by posing certain content on social media).

Therefore, social media “members” can be divided into two main groups: stakeholders and potential stakeholders (from an organizational point of view). It should be noted, this distinction is derived assessing only one dimension – the content through which individuals do affect or can potentially affect an organization (e.g. cause crises as indicated earlier).

As a consequence, individuals who already share the content relevant to particular company (e.g. comments on certain products/services) are considered being stakeholders and individuals who do not share adequate messages are considered being potential stakeholders. In this context a potential stakeholder has all means to share certain content online (is a member of social media), however, does not do so currently (as opposed to stakeholders). Following this view, a potential stakeholder becomes a stakeholder after sharing relevant content regarding particular company. In this case:

a) he/she would have shown an explicit interest/concern regarding the company;

b) the share of a company targeted content increases a probability to affect that company\textsuperscript{62} accordingly.

As a consequence, stakeholder presence on social media should be considered being very dynamic. That is, some potential stakeholders may be invoked to take action on a case-by-case basis for only short periods of time. Whereas, others may be more persistently (un)committed. Dynamic presence therefore, refers to the notion that social media member status can change from “potential stakeholder” to “current stakeholder” (and vice versa) over time. Therefore, willing to track stakeholder actions and potential treats (or opportunities), companies should conduct an ongoing analysis and monitor it continuously or at least periodically.

It should be noted, that since social media is also about connections (ties, links) between various people and their messages (friendship ties on Facebook, re-tweet, topic ties on Twitter) there are other aspects of how one could affect certain organizations (thus be identified as stakeholders). These aspects

\textsuperscript{61} Extracted from Freeman (1984) and Phillips et al. (2003) where authors propose, that a stakeholder is any group or individual who can assist or hinder the achievement of the organization’s purpose and objectives (Freeman, 1984, Phillips et al., 2003).

\textsuperscript{62} E.g. by sharing a video depicting the drawbacks of certain products company produces. A crisis that hit Kryptonite company in 2004 could be a great example (a bike enthusiast posted a video on how to unlock an expensive Kryptonite’s bike lock in few minutes using a simple pen). The message spread virally, thus evolved into crisis for the Kryptonite.
include social media user’s connectivity and his/her position within the network. In other words, the nature of connections is relevant for the potential impact of certain social media user to others.

As a consequence, the next subsection tackles more thoroughly of how stakeholders could be identified through the notion of networks and thus various positions actors may take within those networks.

### 3.1.2. Defining stakeholders based on their connectivity within social media network

The previous section introduced how social media stakeholders can be defined based on their potential to influence organizations via share or propagation of particular content online (dimension of content). However, considering the online nature of social media and the presence of various network structures within it, one could argue, stakeholders could also be identified based on one’s connectivity within particular social media network (dimension of connectivity).

From the network perspective an actor is important if he/she can reach or be reached by many other actors in the network (e.g. has high Closeness centrality or Prestige) and/or if he/she facilitates exchanges between less central actors (high Betweenness centrality). By being able to reach many others and/or by being an intermediary (to less connected ones), certain actors can potentially influence what is being said/shared within social media. Therefore, it is relevant to identify them from an organizational point of view.

In order to be able to define stakeholders based on certain actor’s position in the social media network one must understand the specifics of social media networks. The first insights that can be portrayed are the size and dynamics.

As indicated earlier in this thesis, the use of social media is growing (Universal McCann, 2009). The growth has direct implications to the structure of a certain social media network(s). That is the more components (e.g. the more new Twitter users) in the network the larger the network size and the more possible configurations among them (Gudrais, 2010). As a consequence, social media networks can be very dynamic, large and thus analytically complex to examine.

The overall structure (complete graphs, see part 2.3.2.2) of social media networks has not been explored satisfactory yet. Partly because social media is relatively new phenomenon but also because

---

63 A network is a collection of interconnected components that can be anything like people, articles (Newman, 2003), blog posts, tweets etc. A thorough explanation of the concept of networks and relevant notions can be found in part 2.3.

64 Utilizing their position and connections within certain social media network they could affect organizations by e.g. sharing certain content within social media.
there are limits (from those who develop certain social media tools e.g. Twitter) of how much data can be extracted at a time.

One of the most recent attempts to visualize the structure of a certain online social network was conducted by Krebs (2007). His findings propose, that “most online communities are composed of three social rings: a densely connected core in the center, loosely connected fragments in the second ring and an outer ring of disconnected nodes, commonly known as lurkers” (see Figure 6).

**Figure 6. Online community diagram**

Krebs (2007) notes, that the core people driving the network are the ones within the densely connected center area. According to him, core members stay and build the network. In addition, Barabasi (2002) observes, large-scale networks are often driven by only few “hubs”, around which everything else is organized. Thus it can be proposed that actors from the kernel of the network (the most densely connected area) can potentially be the ones, who influence the rest of the network members most by e.g. setting specific agenda via social media tools, directing conversations and framing the topics of the discussion. Those key actors within the network can be potential stakeholders, however this approach (finding the core ring of the network) does not clarify what exactly identifies influence and an influential actor in the network, whether only the amount or perhaps also the quality of connections are the factors that should be counted.

Rowley (1997) proposed to use concepts from social network analysis (SNA) to examine and analyze stakeholder environments. He focused on explaining how organizations respond to stakeholder

---

65 In this context the notion of *community* is used as a substitute for a network. Community within network theory refers to groups of nodes that are more densely connected internally, than with the rest of the network (Girvan, & Newman, 2002, Porter et al., 2008).

66 Within the SNA nodes represent people and edges represent certain social relationships among those people.
influences and proposed that the density of stakeholder network surrounding an organization and the position of an organization (centrality) within that network affect its degree of resistance to stakeholder demands. Along with this idea, Coombs (1998) argues that “the greater the Density and Centrality of stakeholders in the network, the more power that stakeholder has in the relationship” (Coombs, 1998, p. 294). *Density* describe specifics of certain network and *Centrality* tackles the role/position certain nodes occupy within the network (Knoke, & Yang, 2008). Both Density and Centrality are important aspects to look at when finding key actors within certain social media network.

As indicated in part 2.3.1.3.3 Density characterizes network as a whole and refers to the number of ties all actors possess within a network. It can be argued, as Density increases (growth of ties between the network members), communication within the network becomes more efficient. Coombs (1998) proposes Density affects the increase of the stakeholder power in two ways. First, the higher the Density, the easier it is for stakeholders to monitor organizational actions since information is being collected and shared from/by different sources. Second, since stakeholders are inter-connected with each other, at some point they may come to share common expectations regarding the organization. As a consequence, the denser the network structure, the more influential the members of the network become. Therefore, the more important it is to indicate actors that play the crucial role within such networks (within communities of particular networks see part 2.3.3).

As indicated by Rowley (1997), *Centrality* can serve in estimating actor’s power (importance) within the network. A power, according to Rowley (1997) is gained via the amounts of connections to other nodes. There are three main types/estimates of centralities. Those estimates are *Degree*, *Closeness* and *Betweenness* (thoroughly explained in part 2.3.1.3.4).

*Closeness centrality* indicates how close a particular actor is to other members of the network (Hanneman, & Riddle, 2005, Cross, & Conway, 2010). The higher the Closeness centrality index, the less steps that particular actor is away from the others. Therefore, the higher the Closeness centrality of a node, the quicker it can reach other members of the network67.

*Degree centrality* indicates the number of direct ties one node has in relation to others within the network. Hanneman (2005) suggests that actors who have many ties are less dependent on other individuals and are able to call on more of the resources of the network in general. It should be noted within digraphs (see part 2.3.1.2) ties have orientation. Thus, there are more variations of possible ties among members of the network. An actor may have certain number of *incoming* (e.g. people who follow me on Twitter), *outgoing* (e.g. people whom I follow on Twitter) or *mutual* (e.g. people whom I follow

---

67 The maximum score (equal to the number of nodes) is achieved when every other member of the network is one-step away from and examined actor (Hanneman, 2005).
Towards a More Holistic Stakeholder Analysis Approach. Mapping Current And Potential Stakeholders From Social Media

and who follow me on Twitter) *connections*. The author of this thesis argues all these variations can be relevant to tackle since separately they indicate interesting information about certain actors.

An example can be portrayed using the graphs from Twitter network (see Figure 7). As presented in part 2.3.3.2 Twitter members follow users and thus receive content they post online (Kwak et al., 2010). As a consequence, two graphs can be portrayed: a graph where ties indicate followships among people (who follows whom) and a graph where ties depict the content received (who receives tweets from whom). In the first case, assessing actor Degree centrality, one will know how many people certain actor follows (out of the possible set). In the second case, Degree centrality index depicts how many people certain actor reaches (out of all possible) with his/her initiated content. As it can be observed from the graphs (see Figure 7) when the direction of ties changes, the actor Degree centrality changes as well (accordingly).

**Figure 7. Actor Degree centrality variations within Twitter graphs**

![Diagram showing actor Degree centrality variations](source: own production. Inspired by Kwak et al. (2010))

It can be observed actor A has the highest actor Degree centrality (equal to 1) in left graph in Figure 7. However, one may argue, A’s importance within this particular graph is questionable since there are no restrictions on how many followers one can have on Twitter. On the other hand, one may argue, it is more difficult to get others to follow you (indication of interest). As a consequence, in this particular graph actor’s Prestige index (see part 2.3.1.3.4) can be a more relevant indicator to judge actor’s importance since the level of In-degree relates to certain level of authority and trust from other actors.

On the other hand, within the graph of tweets (the right image in Figure 7), actor Degree centrality is highly applicable. In this context number of outgoing ties indicates the reach of other members, thus a potential to influence them. Therefore, the higher the actor’s Degree centrality, the more important that actor is in terms of his/her potential to influence others (by the content). As a consequence Degree centrality and Prestige indices are concluded being suitable indicators to support extraction of important nodes within particular network. In addition, the importance of actors who have high Prestige index (are followed by many) and high Degree centrality (have many followers who

---

68 Incoming ties on e.g. Twitter can indicate interest (high number of followers), trust (high number of re-tweets) etc.
receive their tweets) can be “strengthened” if other members of the network depend on them. An actor is depended on the other actor if he/she is bridged to other actors through that particular actor. E.g. A is connected to B and B is connected to C. Therefore if A and C need to reach each other, they have to use B as an intermediary. In this case A and C depend on B, therefore B is considered being important.

To find such “B’s” in the network Betweenness centrality is counted. It should be noted, that actor Betweenness centrality as depicted in equation 1.6 in this thesis, is constructed following the assumption that exchanges between the two nonadjacent nodes will flow through the shortest paths (Wasserman, & Faust, 2007). It can be argued, however, that this assumption is not necessarily met in all situations. That is, if two nonadjacent nodes are connected through a reluctant broker, the probability that they will use other brokers/path (if there exists one) should not be dismissed (Hanneman, & Riddle, 2005). On the other hand, actors may not be aware of other possible paths especially if those paths would go beyond dyadic ties. Therefore, Betweenness centrality is still suggested being suitable to use as an additional indicator (together with Prestige, Closeness and Degree centralities) in judging which actors of the network are important (and most visible).

The author of this thesis, therefore, proposes that actors who are situated in dense networks (or communities), have high Prestige and Centrality indices should be considered being potential stakeholders (regarding certain organization) since they can (potentially) influence other members of the network by propagating or discouraging the flow of certain information through social media network.

As a consequence, it should be stressed that being an important actor (high Prestige, Centrality indices etc.) within particular social media network does not make that certain social media member a stakeholder. An actor can only cause certain affects to an organization only by posting/sharing certain content via social media. Only by sharing certain content within social media network, the well-connected actor exploits its favorable position within the network and thus becomes a stakeholder. Whereas, by being an important actor (just having high Prestige, Centrality indices etc.), he/she is only a potential stakeholder.

3.2. Prioritizing the identified stakeholders from social media

As discussed earlier, stakeholder presence in social media can be traced incorporating content analysis and SNA (see part 3.1). By applying SNA, one analyzes a complete social media network (see part 2.3.2.2) and extracts important social media users based on their connectivity within the analyzed network (see part 3.1.2). Whereas, by conducting the search analysis within social media content, one obtains a list of social media members who expressed certain interest regarding particular company (see part 3.1.1).
As a consequence, there are two aspects that are assessed: content shared by certain user and connectivity (relations) of certain user within particular network. Assessing social media through the dimension of content we extract stakeholders and potential stakeholders (see part 3.1.1). Stakeholders are those who express certain interest in the company, thus share relevant content within social media. Potential stakeholders are the rest of the social media members who are part of the network but do not share (particular) company related messages online (they might share other company wise irrelevant content).

Assessing social media through the dimension of connectivity (using SNA) we extract a list of stakeholders who are well positioned within the analyzed network and therefore are concluded being important/powerful (from the network theory perspective). These are potential stakeholders and they can become stakeholders by (re)sharing certain content online.

The notion to extract stakeholders based on two dimensions (content and connectivity) is highly relevant and should be conducted separately. This is crucial to detect stakeholders who do not necessarily occupy great position within the network (have high Prestige, Centralities etc.) but who still can greatly influence certain organization via their messages shared within social media.\(^6^9\)

As a consequence, extracting stakeholders based on two dimensions one may derive with numerous lists of stakeholders to tackle and analyze. Therefore, a prioritization of those extracted stakeholders should be implemented.

It can be observed that stakeholders extracted using SNA will portray a list of potential important stakeholders with varying indices of their Prestige, Centralities etc. As a consequence, after analyzing a complete graph, potential stakeholders are initially prioritized based on their position within the analyzed social media network. As argued in part 3.1.2 the higher the certain indices are, the more important that potential stakeholder is.

To prioritize stakeholders who are extracted after conducting the content analysis of the chosen social media no initial prioritization exists. However, since the content within social media is shared among (or by) various stakeholders, there are still certain networks formed (networks as interconnected components, see part 2.3.1). As a consequence, SNA could be applied to prioritize stakeholders extracted via social media.

The author points out, that SNA implementation in this context is highly intuitive and relevant. Having extracted stakeholders based on the content they share one obtains a graph where relationships

\(^{69}\) The specifics of social media suggests, certain social media content can be observed by anyone anytime. E.g. one does not have to follow someone on Twitter to be able to read his/her tweets. Furthermore, network may consist of certain communities with only few actors being key leaders regarding the topic share/re-share among the members. These leaders may not necessarily have great position within the overall network, however, they can still play very important role in shaping discussions within the local community.
between actors (stakeholders) are explicitly represented by the edges. This means, that people within the graph are connected because of their interest regarding particular topic/organization (e.g. they are connected because they tweet and/or re-tweet about Aarhus School of Business). Therefore, as suggested by Wu (2010) such networks are great to apply SNA willing to find relevant influencers regarding particular company. Following this, the author of this thesis concludes it being appropriate to use SNA for the analysis and prioritization of stakeholders identified via content analysis of certain social media network.

As a consequence the prioritization of stakeholders extracted from social media (both potential stakeholders and stakeholders) is suggested being implemented using the principles of network theory (specifically SNA). As a consequence, the greater the presence of a certain actor within the network, the more important that actor/stakeholder is (see parts 2.3.1.3 and 3.1.2).

Having extracted and prioritized stakeholders from social media one can include them into the overall stakeholder map. As a consequence, the next section tackles the integration of SNA and Stakeholder Salience Model (SSM) with a purpose to construct a holistic Stakeholder Mapping Model that includes stakeholders from both the “offline” and the “online” environments.

3.3. Constructing a more holistic Stakeholder Mapping Model

This thesis argues that companies are not always aware of all of their stakeholders, that is, there are stakeholders who are identified and known and there are stakeholders who are difficult to identify and thus can remain unknown (e.g. stakeholders from social media). Both types of stakeholders can be present on social media, but companies are not necessarily responsive to them.

As a consequence, this thesis introduces stakeholder identification within social media (see part 3.1) and an approach of how those stakeholders can be prioritized (see part 3.2). Following this it becomes possible to find certain stakeholders on social media.

The first group of stakeholders that can be identified within social media are those extracted analyzing a complete network graph (see part 2.3.2.2 and 3.1.2). These are all social media users who are present in a densely connected core of an examined social media network and possess high Prestige and Centrality indices (see part 2.3.1.3.4 and 3.1.2). They are identified as (important) potential stakeholders since they are highly visible within the network and thus can:

1. Quickly reach other members of the network (high Closeness centrality, see section 2.3.1.3.4) and e.g. share negative information regarding the company;
Towards a More Holistic Stakeholder Analysis Approach. Mapping Current And Potential Stakeholders From Social Media

2. Using their high number of direct ties (e.g. direct Twitter followers being the nodes) they can e.g. spread information to a large audience instantly (high Degree centrality, see part 2.3.1.3.4);

3. Facilitate information exchanges between less central actors of the network, therefore can serve as great intermediaries to spread an important message (high Betweenness centrality, see part 2.3.1.3.4).

The second group of stakeholders that can be identified within social media tackles all the users that share certain content (relevant to a particular organization) within the social media network (see part 3.1). These social media members are simply identified as stakeholders since by sharing certain content via social media they express an interest in the organization, and in that way can affect it (organization). In this context stakeholders are defined following the notions from stakeholder theory (particularly Freeman’s, 1984 stakeholder definition). The importance to tackle these stakeholders arises from their potential to influence certain organization via share/propagation of certain content online (negative messages being potentially the most harmful for an organization). It is important to note, that content shared within social media is greatly visible (globally) and can spread through the network very fast. As a consequence, the monitoring of the content and thus stakeholders who share certain content online becomes highly essential for those companies who want to manage their stakeholder relations (or crisis communication etc.) properly.

As a result, it becomes relevant to tackle these two (new) groups of stakeholders. Therefore, it can be relevant to somehow include them into the overall stakeholder map of an organization. Therefore, the author of this thesis proposes a new approach enabling a more holistic stakeholder mapping.

The holistic Stakeholder Mapping Model (SMM) combines stakeholders from social media (possibly yet unknown for the company) and the stakeholders from the “offline” environment (known, customers, competitors etc.). The combination is achieved by integrating the SSM with SNA (see Figure 8).

70 “A stakeholder is any group or individual who can affect or is affected by the achievement of the organization’s purpose and objectives.” (Freeman, 1984, p. 46, see also part 2.1.2).
Towards a More Holistic Stakeholder Analysis Approach. Mapping Current And Potential
Stakeholders From Social Media

Figure 8. Holistic Stakeholder Mapping Model

Source: Own production.

The holistic stakeholder identification process (see Figure 8) suggests: a) identifying the “offline” stakeholders (see part 2.1.2), b) grouping the identified stakeholder into relevant groups (see part 2.1.3), c) recording the extracted findings; d) identifying stakeholders from social media (see part 3.1), e) classifying/prioritizing extracted social media stakeholders into groups (see part 3.2), f) recording findings, g) combining findings derived from the “offline” and “online” stakeholder analyses into one stakeholder map.

When important “online” stakeholders from social media are extracted, they become known for a particular organization, therefore, can be integrated into a stakeholder map as defined in the SSM. If an organization wants to assign these stakeholders to already established stakeholder groups, additional analysis of the identified online stakeholders could be conducted regarding their profile (whether they are customers, journalists, political leaders, etc.) and/or the content they share. However, organizations should not exclude the possibility for these “online”/social media stakeholders to form a separate group, e.g. “social media stakeholders”. Considering the nature of social media, it must be noted, that the priorities of these stakeholders can change faster over-time than those from the “offline” environment therefore analysis should be conducted continuously. It can be too challenging to apply the model practically (if one needs to qualitatively examine and assign certain social media stakeholders to existing stakeholder groups, like “customers”, “partners” it might be too time consuming).

As a consequence, the proposed holistic Stakeholder Mapping Model portrays a conceptual approach of how stakeholders can be identified and prioritized from social media and the “offline” environment. It can be noted, that assessing stakeholder presence within various environments, one may include additional dimension in judging the importance of a certain stakeholder. Specifically, it can be argued that if a certain stakeholder is identified as being important within both environments (see

---

71 The rise of the usage of social media (The Economist, 2009, Universal McCann, 2009) suggests there will be more users to examine. However, key network actors may not necessarily lose their position because of the growth of network.
Towards a More Holistic Stakeholder Analysis Approach. Mapping Current And Potential Stakeholders From Social Media

Figure 9), his/her significance becomes even more perceptible. As a consequence, such stakeholders should be monitored and tackled even more actively (within both environments).

Figure 9. Stakeholders from “offline” and “online” environments

Source: own production

The next section tackles the applicability of the proposed holistic Stakeholder Mapping Model. Section puts greater emphasis on the “online” stakeholder analysis process (extracting stakeholders from social media) since the “offline” stakeholder examination is tackled through the notion of SSM (see part 2.1.3.2).

3.4. The utilization of the holistic Stakeholder Mapping Model

As it was suggested earlier, there are two ways to define and identify stakeholders on social media (see part 3.1). Both ways are discovered by capturing the specifics of social media and understanding that social media is about people (stakeholders among others) who interact and share certain content online with each other. As a consequence, stakeholders are identified based on the content shared, and based on the type and amount of connections possessed (in other words location) within the network. Following this, social media is analyzed through two dimensions: content shared and relationships/connections possessed by a specific actor.

In order to analyze social media using the proposed holistic Stakeholder Mapping Model, companies first should decide which social media platforms or tools to examine. As discussed earlier, there are many social media tools available and they differ (see part 2.2.3 and 2.2.4). For example Facebook and Twitter differ in the nature of relationships that underlie them (The Economist, 2009).

On Facebook users can communicate only if one of them agrees to be a “friend” of the other. Whereas Twitter, users may follow each other without mutual agreement (Kwak et al., 2010). Therefore, one could argue it is much easier to gain connections (followers) on Twitter, rather than on Facebook. Ultimately, in estimating Twitter network, one should put more emphasis on the number of “followers”, incoming connections as this would signal others interest in a user or the content he/she
Towards a More Holistic Stakeholder Analysis Approach. Mapping Current And Potential Stakeholders From Social Media

shares (see parts 2.3.3.2 and 3.1.2). Following this, examining the network of certain social media users and extracting potential stakeholders (tackle user’s position within the network) or stakeholders (tackle content shared), one must familiarize with the structure of the network within particular social media and identify criteria to judge in order to find the level of connectivity (presence within certain social media network) of each stakeholder.

When specific social media is chosen, data can be extracted. The most popular social media websites such as Twitter and Facebook allow network data gathering through their API’s. Even though popular social media tools allow data gathering, there are limitations of how many queries one can make at a time. This has implications both for social media content scanning as well as for the complete network graph extraction. As a consequence, it may not be possible to extract all relevant network data for an organization on its own. An alternative would be to use services from specialized companies such as Spinn3r or others. However, one must still be aware social media network is continuously changing (see part 2.2.3), thus it will still be very difficult to extract/analyze complete network (one must do so real-time). As a consequence, companies may choose to focus on analyzing partial networks (see part 2.2.3.2) or conduct analysis only of those users who share relevant content within social media (thus focus only on finding stakeholders and not potential stakeholders).

Having retrieved data, potential and present stakeholders can be prioritized (see part 3.2). The prioritization includes assessment of nodes’ Centralities (Closeness, Betweenness, Degree) and Prestige indices (see part 2.3.1.3.4). In addition, network Density (see part 2.3.1.3.3) is estimated willing to identify the general connectivity of users within the examined network. The higher the network Density the better connected the users are. Following this, users from a dense network have more “power” (it’s easier for them to spread a message throughout the network and thus initiate certain actions for/against company etc.) than those from the sparse networks (Coombs, 1997).

Taking into consideration the above mentioned notions for mapping online/social media stakeholders the author of this thesis propose first to choose (and familiarize) a specific social media network for the analysis (e.g. Twitter), then to obtain network data and finally, extract important stakeholders from a certain social media network (potential and present, see part 3.1 and 3.2). Such analysis will then facilitate organizations to classify their stakeholders from social media. Since

---

72 API is an application-programming interface, which most of the social media tools or platforms have and which can be used by programmers to create applications or conduct specific analysis in relation to that social media tool or platform.

73 Spinn3r (http://www.spinn3r.com/) is a web service organization specializing in indexing the blogosphere, forums and other social media. Universities such as Harvard, Stanford, Cornell, Carnegie Mellon use their services for network data gathering and analysis.

74 In this case, analysis is biased since it dismisses potential stakeholders who are important to get familiar with regarding their potential to influence organization based on their connectivity and great visibility within the network (see part 3.1.2).
organizations do not necessarily know these stakeholders, a more in-depth and qualitative investigation on the “newly” found stakeholders is advised being conducted. This will enable responsible person to assign particular social media actor to a proper stakeholder group as classified by the Stakeholder Salience Model (SSM).

It is important to notice that SNA is used as a starting point in analyzing social media. While the Stakeholder Salience Model serves clustering/adding extracted stakeholders into applicable stakeholder groups (final step in the holistic stakeholder mapping process see Figure 8). A reverse sequence analysis could be incorporated as well. In this case, the SSM would serve as a starting point to find current and already known stakeholders on social media while SNA would enable clustering and prioritization (based on their presence and activity online). However, this approach would assess only stakeholders that organizations are aware of. Moreover, it can be too complicated to find these stakeholders on social media, since some of them may hide their identity (Oram, 2009). Therefore, a reverse analysis sequence should be judged carefully if conducted.

3.5. Empirical application of the holistic Stakeholder Mapping Model

This section applies the previously introduced holistic Stakeholder Mapping Model for stakeholder analysis on social media (see part 3.3). Considering the time and resources available the author of this thesis extracts only those social media members who express certain interest in a particular organization, and share relevant content online. As a consequence, only stakeholders and not potential stakeholders (see part 3.1) are the target of the analysis.

The empirical application of the model implemented within this section is very simplistic. The application of the model conducts the content search regarding one company, and based on one key keyword. The author of this thesis points out, that a proper analysis should identify, test and examine a list of relevant keywords. However, it should be noted, that the search algorithms that can be used to crawl social media content is not among the objectives of this research paper. Moreover, the goal of this section is rather to conduct an initial and partial application of the model rather than perform the holistic testing of the model (this could be the next step). Therefore, the content analysis using simplified search approach is argued being sufficient for an initial and pilot model application within this empirical setting.
3.5.1. Dataset, tools and the target company

Thesis specifically tackles di-graphs (see part 2.3). As a consequence the social media network chosen for the analysis is Twitter (a microblogging tool portraying directional relations within the network structure, see part 2.3.3.2). The target company to extract stakeholders from social media is Lego. The author notes that the choice of the organization is random. However, an initial monitoring of Twitter network was conducted regarding social media member activity in order to assure that the chosen company is discussed within social media (thus there are stakeholders to analyze).

The data collection regarding Lego stakeholders within Twitter was initiated on June the 22nd and finished on June the 28th in 2010. The author of this thesis notes, that longitudinal data collection approach is used in order to tackle the dynamic nature of stakeholders (see part 3.1) and the notion that network structure changes over time (see parts 2.2.3 and 2.3.3).

The partial network sample is extracted using positional (members of Twitter) and event-based approach (tweet about Lego) (see part 2.3.2.2). The data is collected using NodeXL application. The visualization of the graphs is performed using Gephi open source software. The statistical analysis regarding the network structure and the extraction of important stakeholders within the network is computed using NodeXL, Gephi and MS Excel where appropriate.

3.5.2. Analysis of the combined seven-day graph with Lego stakeholders

This subsection presents analysis of the network and data gathered from Twitter through the period of June the 22nd - June the 28th in 2010. The extracted datasets from each individual day are combined into one graph and analyzed as one network.

3.5.2.1. Extracting Lego stakeholders from Twitter

As indicated earlier in this thesis, stakeholders within social media are defined based on the content shared and based on their connectivity within certain social media network. To become a

---

75 NodeXL is an extension for MS Excel that is designed to conduct social network analysis of various networks. The application can import graph data from various file formats such as UCINet and Pajek. URL: http://nodexl.codeplex.com/

76 Gephi is a graph exploration and manipulation software, that can be used to visualize complex network data. URL: http://www.gephi.org/.
stakeholder social media user needs to express an interest in the company. As noted earlier, the interest regarding a particular organization can be expressed by publishing/sharing certain content within social media (see part 3.1.1). As a consequence, users who don’t share relevant content online are considered as potential stakeholders and users who share relevant content are identified as stakeholders.

It is noted, that within social media context the potential stakeholders are also the ones who occupy important position within the network (high Prestige, Centrality indices see part 3.1.2), however do not share a content expressing the interest regarding particular company. These potential stakeholders can become stakeholders only by sharing certain content online.

As indicated above, the analysis of Twitter network tackles only Lego stakeholders. Therefore, in order to find Lego stakeholders, the author of this thesis conducts a content search of Twitter users whose tweets, re-tweets include “lego” or “#lego” (further in the text ’lego’). Keywords with and without a hashtag are included since, not all the users might use a hashtag, even though the hashtag is commonly used to indicate important keywords or a trending topic (see part 2.3.3.2).

The extracted network data (see Table 1) portrays the network consists of ~ 6300 nodes (node duplicates are removed) and ~1100 edges between them (see Appendix 1 for the visual representation of the graph).

<table>
<thead>
<tr>
<th>Date</th>
<th>Number of nodes</th>
<th>Number of edges</th>
<th>Average In Degree</th>
<th>Average Out Degree</th>
<th>Graph Density (x10^-4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>June 22-28, 2010</td>
<td>6280</td>
<td>1103</td>
<td>0.176</td>
<td>0.176</td>
<td>0.028</td>
</tr>
</tbody>
</table>

Nodes in this graph represent social media users/Lego stakeholders and edges indicate the incidence of mentions of lego among Twitter users. An edge between two nodes is formed when a stakeholder re-tweets (e.g. RT @kristtina lego is great) or mentions (e.g. @kristtina #lego. Agree) certain social media user within lego context. As noted by Kwak et al. (2009) “mentions” are used to engage with other Twitter users. Therefore, “mentions” could be considered as a certain level of conversation between two Twitter members.

It can be observed that the intensity of conversations (re-tweets, mentions) is not very high. This insight can be traced by examining the Density of the graph and the means of In/Out degree measures. The low index of the Density of a graph (the closer to 1, the more denser the network, see part

---

77 By sharing certain content online social media members can eventually affect certain organization. Hence they are defined as stakeholders (see part 3.1.1).
2.3.1.3.3) indicates there are not many edges between the nodes. As a consequence, the graph is very sparse.

The In-degrees within the graphs represent certain actors being mentioned or re-tweeted by others. Whereas the Out-degrees portray the level of activity a certain user engages while re-tweeting, mentioning (conversation aspect) someone else. Therefore, the low indices of the means of the In and Out degrees (since it is a di-graph, the average of In and Out degrees should be the same if computed correctly) suggest stakeholders are not engaging into many conversations regarding lego.

The statistical analysis of the In and Out degrees suggests, that the majority of the users (~90%) possess an In-degree of 0. This means, that ~90% of the stakeholders’ lego messages are not re-tweeted within the examined network. Appendix 2 portrays the distribution of In and Out degree’s for the connected nodes within the graph. Results depict, there is ~9% of users who posses an In-degree of one or two. As a consequence, the rest of the network population (1%) are re-tweeted by three or more other stakeholders (see Appendix 2). Following this, it can be concluded, that only a little fraction (~1%) of the network users are re-tweeted, mentioned by more than two people.

The Out-degree distribution (see Appendix 2) confirms, that users are not very active regarding the share of the content within the observed period. The most active stakeholders (two) re-share the content of others possess an Out-degree of four (shares content from four users). In addition, there is only a small fraction of users who re-tweet the content from more than two other users (12 stakeholders). As a consequence, it can be concluded, there are only few stakeholders who actively participate in re-sharing the lego content. It can be noted, that the small amount of active stakeholders is favorable for the company which wants to monitor them. However, deeper analysis should be conducted in terms of the importance of certain stakeholders.

As a consequence, the next inner section of this part examines more thoroughly the connectivity of each stakeholder and thus extracts the most important stakeholders from the examined graph.

### 3.5.2.2. Prioritization of Lego stakeholders from the extracted Twitter network

The prioritization of stakeholders is conducted following the notions discussed in part 3.2. The notations necessary to understand networks are depicted in the overview of the network theory (see part 2.3) and thus are used throughout this section without additional explanations.

The importance of the node is judged by his/her position within the network. Therefore, the importance of a certain actor increases when its Prestige and Centralities’ (Degree, Betweenness, Closeness) indices increase as well. As a consequence, the higher the indices are, the more important the certain stakeholder is (see part 3.2).
The results depicted in Appendix 3, portray stakeholders (Top 10) who have highest Prestige index, Degree and Betweenness centralities. It can be observed, that users who have highest Betweenness centrality do not necessarily have high measures of other estimates. It can be noted that since Prestige and Degree centrality indices are estimated using the In and Out Degree measures, the indices (and thus the results) are influenced accordingly. As a consequence, users who have many incoming ties (who are re-tweeted regarding lego), have higher Prestige and users who have more outgoing ties (who reference to others while tweeting about lego), have higher Degree centrality index.

The list of important stakeholders includes Twitter members such as “thatkevinsmith”, “lego69lego”, “rosana”, “frugalgame”, “napix”, “newyorkology” and others (see Appendix 3). The data portrayed in Appendix 3 suggest that the user “thatkevinsmith” has distinguishably higher Prestige and Betweenness centrality indices than others. This indicates that “thatkevinsmith” is able to get a distinguishably high attention form the others (e.g. high Prestige index indicating numerous re-tweets or mentions by others). As a consequence, “thatkevinsmith” can be considered being able to influence (in terms of re-tweeting his published content) great audience within a short period of time (seven days).

The other important stakeholders occupy relatively similar position compared to those of others within the network (the indices of the rest of the Top 10 nodes do not differ among greatly). Examining the most active content spreaders (users with highest Degree centrality, Appendix 3), it can be concluded, the majority of the Top 10 important stakeholders (based on Degree centrality index) re-sharing lego related messages from three and more people. As a consequence, there are not many conversations proliferated by the important stakeholders.

It could be noted, that a low level of involvement in the re-share of the content with small amount of people may indicate the existence of communities within the network (see part 2.3.3). In this context, the messages are re-tweeted within a “closed” group of stakeholders thus there is no further propagation of the message within the network.

The visual representation of the network depicted in the Appendix 1, portrays there is a number of such communities within the analyzed network. Author notes, that this observation is expectable since the network is relatively sparse, however, there is still a certain amount of people who re-tweet the content of others. As a consequence, small communities are formed among various actors within the network.

The usual community within the examined graph consists of a few nodes and edges among them with no tie bridging it to the rest of the network (or the rest of the communities). An interesting community structure can be observed analyzing the ties of users who actively share the messages of others, thus have high Degree centrality (see Appendix 3, “Top 10 users with high Degree centrality”). The graph portrayed in Figure 10 depicts the presence of edges among the most active lego content
Towards a More Holistic Stakeholder Analysis Approach. Mapping Current And Potential Stakeholders From Social Media

spreaders (“luis_sierrag”, “desy412” and “oriannainfante”). The bigger and the darker the circle in the figure (see Figure 10), the higher the node’s Degree Centrality, thus the more users he/she re-tweets.

Figure 10. A closer look at two important Lego content spreaders on Twitter network

As depicted in Figure 10 three of the most active lego content spreaders (“luis_sierrag” and “desy412” and “oriannainfante”) have a mutual edge between each other. Furthermore, they only re-tweet the content from the same users (juanollaries, dra_oskarina). This indicates it is very likely that twitterers within this community have a common interest regarding certain lego content. As a consequence, depending of the goals of the company it might be relevant to examine deeper (even though their Prestige Index is not very high) what type of content is re-tweeted and whether this community structure remains present over time.

Author notes, that the longitudinal aspect can also be relevant in identifying other important stakeholders (among those already extracted within this section). Analyzing and extracting important stakeholders within each separate day it becomes possible to trace whether certain stakeholders remain persistently important over time (whether they posses high Prestige etc. within each day observed). Furthermore, more can be said about the dynamics of the network and thus the intensity of conversations regarding lego over time. As a consequence, the next section conducts the analysis of the network from the longitudinal perspective.

78 Except “desy412” and “oriannainfante” where an edge terminates only from “desy412” to “oriannainfante” and not back.

79 The deeper qualitative analysis of the tweets is not part of this thesis therefore the subject is not discussed further.
3.5.3. Capturing the dynamics of the network and Lego stakeholders over time

To capture the dynamics of the analyzed network, the author of this thesis first tackles the network data overview of each day individually. As portrayed in Table 2, there is a fixed amount of nodes\(^{80}\) and a varying amount of edges within the extracted datasets. As a consequence, it can be concluded the intensity of the conversations/mentions regarding Lego varies over time.

<table>
<thead>
<tr>
<th>Date</th>
<th>Number of nodes</th>
<th>Number of edges</th>
<th>Average In Degree</th>
<th>Average Out Degree</th>
<th>Graph Density (x10^-4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>June 22, 2010</td>
<td>1000</td>
<td>279</td>
<td>0.279</td>
<td>0.279</td>
<td>2.79</td>
</tr>
<tr>
<td>June 23, 2010</td>
<td>1000</td>
<td>189</td>
<td>0.189</td>
<td>0.189</td>
<td>1.89</td>
</tr>
<tr>
<td>June 24, 2010</td>
<td>1000</td>
<td>204</td>
<td>0.204</td>
<td>0.204</td>
<td>2.04</td>
</tr>
<tr>
<td>June 25, 2010</td>
<td>1000</td>
<td>154</td>
<td>0.154</td>
<td>0.154</td>
<td>1.54</td>
</tr>
<tr>
<td>June 26, 2010</td>
<td>1000</td>
<td>137</td>
<td>0.137</td>
<td>0.137</td>
<td>1.37</td>
</tr>
<tr>
<td>June 27, 2010</td>
<td>1000</td>
<td>162</td>
<td>0.162</td>
<td>0.162</td>
<td>1.62</td>
</tr>
<tr>
<td>June 28, 2010</td>
<td>1000</td>
<td>131</td>
<td>0.131</td>
<td>0.131</td>
<td>1.31</td>
</tr>
</tbody>
</table>

The extracted network data indicates (see Table 2) that stakeholders most actively tackled Lego on the 22\(^{nd}\) of June whereas the least discussions were initiated on the 28\(^{th}\) of June 2010. The means of In and Out Degrees vary accordingly thus indicate the dynamics of certain graphs over the analyzed period. The relatively low and changing indices of the graph Density suggest the graph remained sparsely connected over time. As a consequence, the network structure remains relatively consistent within the observation period (there are no great instant rises of the edges during the period analyzed).

Examining the data depicted in Appendix 4, it can be extracted that stakeholder presence changes greatly over time. There is only a small amount of stakeholders who sustain their certain high indices (such as Prestige and Centralities) within the analyzed period. It can be observed, there are not many users who have all indices distinguishably higher than those of the others. Data analysis depicts only one user "webdevonlinux" who had relatively high Betweenness, Degree centralities and Prestige index on June 25\(^{th}\) 2010. This indicates, that "webdevonlinux" is active in sharing messages regarding Lego (high Prestige). In addition, he/she is re-tweeted by relatively high amount of others (High Degree centrality) and consequently bridges other members of the network (see Figure 11).

---

\(^{80}\) Considering the available Search Rate Limits in Twitter (http://dev.twitter.com/pages/rate-limiting), NodeXL allows extracting only a maximum of 1000 user data at a time.
Towards a More Holistic Stakeholder Analysis Approach. Mapping Current And Potential Stakeholders From Social Media

Figure 11. The egocentric network of "webdevonlinux" on the 25th June 2010

The size of the circle and the brightness of the color depicted in the graph above (see Figure 11) correspond to the estimate of an In-degree (see part 2.3.1.3.1) of a node. The higher the In-degree is, the bigger (and the darker-green) is the circle in the depicted graph. The arrows terminating at a certain node indicate mentions of that node within lego context. Therefore, a (direct) tie between “woody_bristol” and “webdevonlinux” indicates, that the user “woody_bristol” mentioned or re-tweeted “webdevonlinux”’s message about lego on Twitter.

It can be observed (see Figure 11), that “daori” and “hibernatus” are also popular regarding their lego content. “daori” is re-tweeted by six members, however does not share the content of others as actively as “webdevonlinux”. Whereas “hibernatus” re-shares lego related messages as intensively as “webdevonlinux” (shares messages from two other people, that is they both have an Out-degree of two), however “hibernatus” is less popular, that the one initiated by “webdevonlinux” (In-degree of four vs In-degree of six). Following this, it can be concluded “webdevonlinux” is mostly involved and popular regarding lego content share and re-share on Twitter. However, there are other members who can potentially become as popular and engaged as “webdevonlinux”. Those members are “daori” and “hibernatus”.

Another interesting observations can be extracted examining the evolution of the egocentric network of lego stakeholder “thatkevinsmith”. As indicated earlier “thatkevinsmith” has distinguishably high Prestige and Betweenness centrality indices than the others (see part 3.5.2.2). However, his/her influence (location within the network) is not persistent over time, since he/she appears within the certain Top 10 lists’ only once (June 22, 2010) out of the seven times/days possible (see Appendix 4).

81 Insight is derived using only the current network structure (portrayed in Figure 11), assuming that the more popular (in this case better connected) actors can gain attention (in this case more connections) faster, than actors who are not as popular (as connected) (e.g. “newsgeek” in Figure 11).
Towards a More Holistic Stakeholder Analysis Approach. Mapping Current And Potential Stakeholders From Social Media

Examining the frequencies certain stakeholders appear within the Top 10 Prestige and Betweenness centrality record data (see Appendix 4.1 and 4.3) five members can be extracted having persistently high Betweenness Centrality and Prestige indices over the seven-day period analyzed (see Figure 12).

**Figure 12. Sustainability of high Betweenness centrality and Prestige indices over time**

![Sustainability of High Betweenness centrality and Prestige](image)

*Source: own production, generated using the data depicted in Appendix 4*

The data portrayed in Figure 12, indicate the frequency certain stakeholder is captured having high Betweenness centrality and Prestige indices. The higher the number, the more times certain stakeholder has high Betweenness centrality and Prestige index within the examined period.

As it can be observed from the graph (see Figure 12), Twitter user “Lego69lego” possesses high Betweenness centrality and Prestige index during five out of the seven days analyzed. Other users remain among the Top 10 important stakeholders for three (“Guykawasaki”, “Princesammie”) or two days (“Diamondatl”, “Kickersuk”) accordingly. This leads to the conclusion that within the graph analyzed, there are stakeholders whose importance remains relatively persistence over time. As a consequence, one may suggest these stakeholders are the most interesting to engage in, since they express an interest regarding Lego continuously and persistently.

To sum up, the analysis of the overall Twitter network reveals there are stakeholders to monitor and observe for Lego company. The extracted Lego stakeholder network (from Twitter) is concluded being very dynamic and changing over time. The number of edges (conversations) varies from ~280 to ~130 with few small peaks on the 24th and the 27th on June 2010. As a consequence, it can be concluded, stakeholders share certain _lego_ content however there is not much engagement and conversations regarding the topic. Results portray only ~10% of the identified Lego stakeholders on Twitter (combined seven-day data sets) were re-tweeted, mentioned once or more times within the analyzed period. Furthermore, the most active _lego_ content spreaders (who have highest Degree
Towards a More Holistic Stakeholder Analysis Approach. Mapping Current And Potential Stakeholders From Social Media

centrality index) re-tweet content only from a maximum of other four stakeholders (others re-tweet a content from less then four sources).

The overall network structure is also concluded being highly sparse since the majority of the stakeholders (~90%) possess an In-degree of zero. The rest of the network, however, forms small closed communities (no tie bridging certain community with the rest of the network) proposing there are users who share certain common interests regarding Lego.

Analysis extracted a list of Lego stakeholders incorporating content search on Twitter. The prioritization of the extracted Lego stakeholders was conducted using SNA (see part 3.2). The thorough list of the Top 10 Lego stakeholders identified examining the overall graph (seven-day data as a one graph) is depicted in Appendix 3.

Additional important stakeholders were identified tackling the dynamics of the network and thus examining, which stakeholders appear as the “important” ones within the examined Twitter network each day separately. This insight enabled to derive a small list of “persistent” Lego stakeholders who remained important during more than one day. The user “lego69lego” was identified as the most permanent (five days out of seven) stakeholder. Other consistent (important over-time) stakeholders within the analyzed period were “Guykawasaki”, “Princesamme”, “Diamondatl” and “Kickersuk” who sustained their important network position (remained within the Top 10 important stakeholders) two or three days out of seven possible.
4. CONCLUSIONS

The aim of this research paper was to find out how stakeholder and network theories can be utilized in order to identify stakeholders present on social media.

The motivation to conduct such research stems observing the recent growth of social media (see part 2.2) and the notion that stakeholders do use various social media tools (Coombs, 2009) to share company targeted messages online (crises that hit companies after certain content is shared by particular stakeholder on social media). Consequently, in a more and more interconnected and disintermediated world, user-generated contents construct the communicative environment in which stakeholder-stakeholder and/or stakeholder-organization relationships take place.

Taking these considerations into account, the author of this thesis posed the following research questions to conduct a thorough examination of the relevant fields and thus solve the initial research problem. The research questions (also depicted in the introductory part in this thesis) were formed as follows:

- **RQ 1.** What defines a stakeholder in social media?
- **RQ 2.** How can stakeholder theory be used in order to identify and prioritize stakeholders form social media?
- **RQ 3.** How can network theory be used in order to identify and prioritize stakeholders from social media?
- **RQ 4.** How can a company find its stakeholders on social media?

To answer these research questions, the author of this thesis conducted a theoretical analysis of stakeholder theory, social media and network theory (see part 2.1, 2.2 and 2.3). The overview of the stakeholder theory and the analysis of the notion of a stakeholder term propose, that stakeholder literature is vast and diverse (Harrison et al., 2010). As a consequence, stakeholder definitions are portrayed in different ways and often supported using contradictory arguments (Donaldson, & Preston, 1995). The author of this thesis therefore proposes that the classical definition of a stakeholder term initiated by Freeman (1984) should be used willing to tackle stakeholder notion properly.

It must be noted, that companies can have numerous and different types of stakeholders (see parts 2.1.3 and 3.1). Each of those stakeholders express certain interest and pose certain level of affect regarding the purpose or objectives of the company (Philips, 2003). It can be observed, that with limited resources, none of the companies are able to engage in proper relationship with all of its stakeholders. Following this, stakeholders should be prioritized.

The thesis identifies, stakeholder literature contributes greatly with various stakeholder grouping and prioritization techniques. It is observed that differences in determining stakeholder groups exist.
The most common groups of stakeholders include: contractual versus community (Charkham, 1992), primary versus secondary (Clarkson, 1995), direct versus indirect, generic versus specific, legitimate versus derivative (Fassin, 2009), internal versus external (Savage et al., 1991) among others.

After reviewing various classifications, the author of this thesis derives Stakeholder Salience Model (SSM) introduced by Mitchel et al. (1997) being one of the key stakeholder classification models within stakeholder literature (Wolfe, & Putler, 2002, Scholl, 2004 in Vos, & Achtenkamp, 2006). The model has been tested by Agle et al. (1999) and proved being valid. As a consequence, SSM is argued being an appropriate technique to map and classify stakeholders based on their salience to a certain organization. As a consequence, the more salient or prominent a particular stakeholder or their group is, the more priority (importance) should be devoted to that stakeholder (or group) from the company (Cornelissen, 2008).

The analysis of the stakeholder theory derives, that traditional stakeholder mapping techniques and models (including SSM) are relevant in identifying only stakeholders that companies are aware of.

This notion originates from an observation, that stakeholder-mapping models (including SSM) commonly tackle relationships between only a focal organization and its stakeholders (Charkham, 1992, Cornelissen, 2008). In other words, stakeholder theory generally considers only dyadic relationships that occur between a certain company and its stakeholders (Rowley, 1997).

However, the author of this thesis observes, there exist many relationships that go beyond dyadic ties. Those are the relationships that occur among stakeholders and their groups. This insight can be particularly spotted examining social media (see part 2.3), where numerous individuals (stakeholders among others) interact with each other and share certain information online using various social media tools (Coombs, 2009).

As a consequence, these stakeholders present on the online environment, specifically social media, become highly difficult to identify. Moreover, companies may not be aware of their existence.

Hence, the author of this thesis gauges, in order to extract stakeholders from social media, other approaches than assessment of dyadic stakeholder-organization relationships should be used. It must be noted that those approaches should tackle possible influences that go beyond dyadic (organization and a stakeholder) ties (Rowley, 1997). Moreover, they should not undermine the specifics of social media, which is about various individuals (stakeholders among others) who interact and share information online using numerous social media tools (see part 2.2).

Following this, it is derived that notions from the network theory (see part 2.3) can be used to extract stakeholders from social media. As observed by Rowley (1997) social network analysis\(^\text{(SNA)}\) within the SNA nodes represent people and edges represent certain social relationships among those people.
could be utilized to analyze stakeholder environments and explain how organizations respond to stakeholder influences. Subsequently, the author of this thesis, extends Rowley’s (1997) proposition, and suggests that SNA can be specifically applied in examining stakeholder presence on social media since it can particularly tackle relations that go beyond dyadic ties. Hence it becomes possible to identify stakeholders that exist above the dyadic (stakeholder-company) relationship level. Subsequently, based on relationships stakeholders’ posses, it becomes feasible to extract stakeholders who play crucial role within particular stakeholder networks. Taking these considerations into account, author of this thesis constructs a definition of a stakeholder within social media context and only then defines, how certain stakeholder can be prioritizes in terms of others within social media context.

As noted earlier, to derive a definition of a stakeholder within social media Freeman’s (1984) stakeholder concept is taken as a point of departure. As a consequence a stakeholder within social media (see part 2.2) is defined as any individual or group who can affect the achievement of organization’s purpose and objectives using various social media tools (see part 3.1).

Furthermore, the author of this thesis extracts two ways of how certain social media members can affect particular organizations. The first way is derived from the assessment of the notion, that social media is about individuals (stakeholders among others) who interact and share information online (Coombs, 2009). Thus it is noted social media members can possibly affect an organization by sharing particular content within social media. The content is publicly and globally accessible. Therefore, the share of negative messages within social media can be particularly harmful for certain organizations since it can cause various crises to appear (Coombs, 2009).

The second way of how social media members can potentially influence certain organization originates from user’s connectivity/relations with other members within certain social media (see part 3.1.2). It is observed, that by creating an online presence on social media (e.g. a profile on Twitter) one becomes a member/part of a certain social media network (e.g. a network of Twitter members). The network is very dynamic and thus changes over time (see part 2.2). As a consequence, there are social media members who are better connected than the others. Thus, there will always be more visible and present greater (potential) treats for a certain organization. As indicated earlier (see part 3.3) the “power” of these well-connected social media members arises from their ability to reach other members of the network (high Closeness centrality), spread certain content to a large audience instantly (high Degree centrality) as well as e.g. facilitate exchanges between less central actors (high Betweenness centrality).

Hence, by sharing (or choosing not to re-share) certain content online the latent social media members can exploit their favorable position within the network and subsequently influence certain organization. The author of this thesis emphasizes, that the crucial aspect in defining the difference between a stakeholder and a potential stakeholder remains the content.
Towards a More Holistic Stakeholder Analysis Approach. Mapping Current And Potential Stakeholders From Social Media

Social media members who are concluded being important based on their position within the network are defined only as potential stakeholders. Thus without expressing certain interest in a particular organization (sharing/re-sharing the relevant content), they can not exploit their favorable position within the network and affect a particular organization in this way (see part 3.1.2). However, these potential stakeholders are still important to identify and monitor since they have all the means to share certain content anytime, though differently from the less connected/visible actors, they are apparent for a greater amount of people directly (more members that are one step/tie away from them).

As a consequence, in order to identify stakeholders within social media two aspects are assessed in this thesis— the content shared by certain social media members and the connectivity of certain social media member within particular social media network. The author of this thesis notes, that assessing these dimensions, social media publics are divided into two main groups: potentials stakeholders and stakeholders. Potential stakeholders are social media members who can be well-positioned within the network (as derived from network analysis) but do not necessarily express an interest in a particular organization (as derived from content analysis), whereas, stakeholders are those who exhibit an interest by creating, sharing etc. positive or negative content (regarding particular company) on social media (see part 3.1.1).

Consequently, in order to extract stakeholders from social media, an analysis of the content shared and the chosen social media network should be conducted (see part 3.2). The initial prioritization of the identified stakeholders from social media is achieved using the notions from network theory. As indicated in part 3.2, social network analysis (SNA) can be incorporated willing to classify the extracted stakeholders from particular social media network.

Following these insights the author of this thesis, constructs a holistic Stakeholder Mapping Model (SMM), which tackles stakeholder identification from the “online” (social media) and the “offline” environments (see part 3.3). The proposed SMM offers a holistic paradigm on stakeholder mapping. The model integrates SNA and Stakeholder Salience Model (SSM) subsequently providing a path for stakeholder analysis that considers relationships existing within and above the dyadic ties (tackles stakeholder-stakeholder and stakeholder-organization relationships). In this manner, the suggested holistic SMM extends traditional stakeholder mapping models (such as SSM alone) and thus provides a path for stakeholder identification within social media. The model suggests SSM can be used to conduct final stakeholder classification/grouping and thus incorporate the “newly” extracted stakeholders from social media into the overall stakeholder map (see Figure 8).

It is important to underline that the proposed holistic SMM is very conceptual in nature; therefore, it should be thoroughly tested before applying it practically. For that manner, the author of this thesis conducted a simplistic empirical application of the SMM (see part 3.5) investigating the presence of Lego
stakeholders on Twitter. The data sets for the analysis were extracted during a seven-day (22-28 June, 2010) period, thus enabling to conduct both a general (see part 3.5.2) and a longitudinal (see part 3.5.3) examination of the derived Lego stakeholder network.

Results proposed there were many Lego stakeholders present on Twitter (the combined dataset included more than 6000). It was found, however, there were not many conversations present among them. Results portrayed, that only ~10% of the identified Lego stakeholders on Twitter (combined seven-day data sets) were re-tweeted, mentioned once or more times within the analyzed period. This resulted the network structure being sparse, which could have indicated Lego stakeholders on Twitter were less likely to share common expectations or interests regarding Lego and its products.

The important stakeholders (see Appendix 3) were observed having diverse indices regarding their Prestige, Betweenness and Degree centralities. It was noted that certain stakeholders did not necessarily possess all high indices over time (see Appendix 4). It was indicated that when prioritizing stakeholders it was relevant to extract members whose importance remained persistent over time. Regarding Lego case such important stakeholders were “lego69lego”, “Guykawasaki”, “Princesammie”, “Diamondatl” and “Kickersuk” (see part 3.5.2.3).

It was underlined that the identified stakeholders from social media still needed to be assessed in order to be able to integrate them into the overall stakeholder map of the company. However, since the nature of stakeholders within social media can be highly dynamic, it can be difficult to conduct qualitative examination of each important stakeholder extracted.

**To sum up,** the author of this thesis concludes the integration of stakeholder and network theories can serve in mapping stakeholders from social media. The notions from network theory particularly contribute in identifying and prioritizing stakeholders present on social media (if any), whereas stakeholder theory (specifically SSM) serves in integrating the extracted stakeholders into the overall/general stakeholder map of a certain company (see Figure 8). It must be noted, that it is highly relevant to apply the notions from network theory for stakeholder identification within social media since network approach enables to tackle stakeholder relations that go beyond dyadic ties (beyond a focal organization and its ties with stakeholders). Following this, companies can identify stakeholders from social media including those that they are not necessarily aware of.

---

83 As noted within the subsection of the empirical application of SMM (see part 3.5) only stakeholders and not potential stakeholders were the focus of the analysis. As a consequence, only social media members who expressed certain interest (shared messages with a keyword or a hash-tag “lego” among each other) regarding Lego were tackled.

84 The greater the interconnectivity among stakeholders, the more likely it is that at some point they could come to share common expectations regarding the organization (Coombs, 1997).
This thesis should be viewed as a pilot project that presents a thorough analysis of social media phenomenon and proposes an initial conceptual model for stakeholder (present on social media) identification and prioritizations using the notions from network and stakeholder theories. The greatest contribution of this thesis regarding scientific field regards the exploration of the very little academically tackled social media phenomenon (Coombs, 2008). Furthermore, proposing to integrate the notions from network and stakeholder theories, the author of this thesis constructs a more holistic stakeholder mapping approach, which extends/complements existing stakeholder mapping techniques (within the stakeholder theory perspective) by proposing a path of how stakeholders who do not necessarily have a dyadic relationship with a focal company could be extracted. Hence, this research paper is relevant for practitioners, who want to identify their stakeholders from social media and last but not least, those stakeholders, that they are not necessarily aware of.

It must be addressed, this is a scientific paper putting greater emphasis on theoretical possibility to integrate stakeholder and network theories in order to extract stakeholders from social media. Therefore, author of this thesis notes, that in order to implement the proposed techniques pinpointed thorough this thesis practically one should test them accordingly.

Following this, the author of this thesis proposes, this research paper can be useful for researchers, public relations, marketing, communication management professionals among others dealing with social media and stakeholder management. The paper can be particularly valuable for those willing to develop further models on stakeholder identification and prioritization within social media context.
Towards a More Holistic Stakeholder Analysis Approach. Mapping Current And Potential Stakeholders From Social Media

LITERATURE


Towards a More Holistic Stakeholder Analysis Approach. Mapping Current And Potential Stakeholders From Social Media


Towards a More Holistic Stakeholder Analysis Approach. Mapping Current And Potential Stakeholders From Social Media


Towards a More Holistic Stakeholder Analysis Approach. Mapping Current And Potential Stakeholders From Social Media

32-40.


Towards a More Holistic Stakeholder Analysis Approach. Mapping Current And Potential Stakeholders From Social Media


Towards a More Holistic Stakeholder Analysis Approach. Mapping Current And Potential Stakeholders From Social Media


