WEB MEDIATED COMMUNICATIONS - POSITIVE AND NEGATIVE EFFECTS

Master's Thesis in Informatics (15 credits)
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Web mediated communications revolutionized traditional social interactions. It is designed to facilitate information exchange between individuals and to enable people to connect with friends, family, classmates etc virtually. By the formation of virtual communities, “web mediated communication” is defined as a wider concept known as “social media”. Social media enhances the volume of communications and interpersonal interactions based on the power of web 2.0 technology. People join to the virtual communities of online social networks to procure information from everywhere, share ideas, experiences, photos, videos and memorable moments while extending friendships beyond the geographical and cultural borders. The emergence and fast growth of social media among people added value to the web activities and convinced web masters to integrate web services such as e-mail, chat, discussion rooms, forums and third party applications to the social media web sites. Many of social media web sites are hosting millions of members, equipping their web sites with communication tools, sharing options, dynamic content creation and collaborative authoring facilities which never experienced before. Facebook, Twitter and GooglePlus are examples of most known social media web sites which gained popularity among people so fast.

Social media helps people to make new friends, find lost friends and old classmates while providing an opportunity to build new friendships. This new communication technology empowers people to collaborate in authoring of the web content and causes the information sharing synergy. Such positive aspects are enough for people to ignore the consequences of joining social media. Despite the rise of friendships in number, the physical encounters are substituted by virtual ones which causes weak friendship ties. In addition, social media platforms promise the security and privacy of users, but issues such as identity theft and worm attacks threaten users' privacy and security. Social media is in its infancy, adopted among people for less than a decade whereas a lack of research in this field is evident. The author of this thesis aimed at filling this gap by investigating the positive and negative effects of using social media through collecting the users' experiences and professionals' viewpoints. Theoretical study primarily illuminated the main positive and negative aspects while the findings of empirical research verified by theoretical study identified other practical effects and aspects of social media.

Keywords: Web Mediated Communications, Web, Social Media, Virtual Communities, Positive Effects, Negative Effects.
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Ali Karimi
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1. Introduction

Web mediated communications are increasingly welcoming by the large number of people in the virtual world which is further described as social networks. Most known web sites such as Twitter, Facebook, GooglePlus and etc are attracting more people and changing to the big virtual community spaces where users correlate with their acquaintances and interact with friends in a borderless room. Such possibility formed a large sharing space on the internet which was never built before. Social communities are founded on the technologies of web 2.0 as basis platform for a social web consisting a group of services and applications to provide technological and ideological basis for online social networks, enabling members of social media to exchange information and customize the user-generated content (Kaplan & Haenlein, 2010). Web mediated communications can be found in different forms such as blogs, wikis, social media web sites and video sharing communities (Weber, 2009). Weber also describes that in addition to the social media web sites, the search engines are also included in definition of social web which aimed to aggregate the best services of web sites and to present the most rated web site as the result of the search query.

1.1 Background

Millions of people use social media to connect, meet and share. Online social networks are configuration of relationships to facilitate social interactions which are offered by new web applications, ranging communications among people from casual friendships to professional networks found in businesses (Adkins, 2009). By the advent of the Internet, geographical limits are disappeared by diversified social ties whereas people are enabled to connect to the world through making new connections and using specific services of social media web sites. In fact, the new virtual communities build on social media enable people to form globalized relationships.

Figure 1. Social Media

The growth of web mediated communications was noticeably fast within few years while revolutionized the landscape of Internet. In most of social media platforms, users are easily attracted to the open-networking because of their friends and/or their peers' membership. Each individual can lose or refuse relationships/connections when find them no more useful, an action which is less frequent in the real world. Users of social media are able to make unlimited friendships through
joining social groups or adding someone to their friends or connection list. The enormous potentiality of web sites in case of supporting the big number of users allowed formation of sub communities and small groups on the web while engaging everyone to connect and join to this new communication technology. Almost all of social units, professionals, organizations and groups of traditional society have noticed the power of social media and are aware of the values added to their activities by joining this phenomenon.

The popularity and the volume of interactions in social media motivated many organizations to benefit from the new opportunities for example as an efficient business expansion method. Although, it is not easy to gather the real number of social media platforms existing on the web, a study in 2005 stated that more than 200 active social media web sites are hosted by web. (Rainie & Horrigan, 2005)

Facebook as one of the most used and well known social media web sites reported a growth rate of 116 percent over a year while another site “MySpace” hosed 95 million users in 2008 (Nielsen 2008). Such a new communication technology engaged many companies to invest and advertise on social networks and to use the information provided by users to extend business according to the customers' needs. The organizations benefit from virtual networking to extend marketing and use it to build loyalty among customers (Johansson, 2010).

Today's new Internet applications enable people around the world to join to the advanced web sites, replacing face to face friendships and traditional social communications with virtual ones. First services provided by social media web sites are the possibilities to connect to the people and share, but the enhanced features of web platforms benefited from the features of web 2.0, attract more individuals and enterprises while empowering them with many new services. Today's virtual world is now broadly defined as “a social network or a structure shaped around a unifying theme by individuals, organizations and groups of people which are connected together according to one or more types of interdependencies”. Such connections engage interactions around common values, ideas, friends, interests, etc.” (Boyd & Ellison, 2007). Popular web sites such as GooglePlus have

Figure 2. Social Media Usage (Image courtesy of Smallbiztrends.com)

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integrated common web services such as chat, messaging, fun/hobby applications and multimedia sharing spaces.

1.2 Previous Research and Study within the Area

Studies focusing on the networks of real world connections are conducted extensively such as studies of family trees, real world connections and offline social communities. Early studies on social media are based on the observations and information about users' attitudes, see (Garton et al., 1997). The development and maturity of social media was so quick, facilitated by newer generation of web tools which overloaded information exchange over the Internet and changed the people's behavior on the web. New generation of social media based on web 2.0 got popularity within a few years whereas the recent studies within the area of social media are mostly focused on platform comparison, bridging social capital (Adkins, 2009), social media usage in specific fields such as online recruitment (Qurashi, 2009), marketing (Teixeria, 2009) and (Khan, 2010), branding (Johansson, 2010) and analysis of social networking on flickr and Yahoo 360 (Kumar et al., 2006). Few empirical researches are conducted to identify the influential factors, positive and negative effects of using social media.

1.3 Rationale

The adoption of web mediated communications is undeniable. One idea behind the successful adoption of social media is that it supports different levels of relationships between individuals, from the family members to the members of a big national group and also international communities. The positive aspect of communications on the web is that social media web sites provide free and convenient membership methods which help to be more attractive for young people who are less patient to sign up through a long registration page. Soon after joining, new members send connection requests to make new friends and become active users of these web sites, then they look for known people through their friends' connections and receive friendship suggestions as well. This is how online social networks become larger and larger in size. This phenomena brings new opportunities both for social media providers and members. On the other hand, the rich user experience and pro-sequences that social media have, make users ignore the consequences and hazards of online social networking.

1.4 Problem Statement

Web mediated platforms encourage interactions between people via world wide web. The applications provided via web 2.0 will change the social action room of people in virtual communities whilst the outcomes might go further and create consequences even in the real world. Some people find this medium enough to meet virtually and feel no need for physical meetings. There are however advantages as well as disadvantages, benefits and hazards with the virtual
environment. It is for example difficult to identify the real character of a person hiding behind the customizable virtual profile. Furthermore, the information exchange on the various platforms of social media may also be used for other purposes than intended whereas most of social media websites provide people with an environment to create profiles and share the content of their will. In other words, web mediated communications facilitate people’s life as in many cases has positive effects. On the other hand, some of the interaction that would have occurred in the real world will be substituted by virtual encounters. In this case, weak friendship ties expected because of the lack of physical friendships.

1.4.1 Research Questions

The main question is:

*Which benefits and negative effects will web mediated communications on social media create?*

Sub-questions:
1. What is “Web mediated communications”? How social media dominated communications on the web?
2. What is the role of social media and how this new medium shaped the virtual communities, users' interactions and correlations in the virtual world?
3. What are the positive effects of using social media?
4. What are possible hazards and negative effects of online social networks?

1.5 Purpose of Study (Research Objectives)

The purpose of this study is to identify the possible benefits and hazards that virtual room of social media creates for people. The followings are the objectives targeted for this research:

a. To define the concept of web mediated communications while achieving a theoretical understanding of social media.

b. To conduct an empirical study as primary research and to fill the gap of few research on the impacts of social media through investigating the opinions, perception of users and experts in online social networks.

c. To conduct a secondary study on the existing literature within the area of web mediated communications and social media.

d. To find out how and where web mediated communications have benefits.

e. To analyze the consequences of using social media and defining the hazards.
1.6 Delimitation

This thesis will study the outcomes and the consequences of using social media while introduces most known web sites such as GooglePlus, Twitter, Facebook, etc. The technology behind social media, the virtual communities and users' interactions are included in the study. This study will not cover the communications via applications such as messengers, Skype or Oovoo. The users' interaction in the real world and the offline social networks are not subject to study in this thesis. However, this study in some aspects covers the impacts of online interactions on daily life, such as the consequences of users' activities in virtual world of social media transferring far reaching effects to the daily life and communication routine.

1.7 Expected Outcome

It is expected that current research creates an understanding about the influential elements of social media and interactions made by users in online virtual communities. The outcomes can be useful for improving web platforms of social media and identifying the hazards of virtual networking, addressing the users as well as concerned people such as academicians and informatics people. In addition, the author of this thesis by presenting and analyzing the results and findings of the research, aimed at creating a deeper knowledge in web mediated communications.

1.8 Social Media and Informatics

When we consider the way that people procure information or share knowledge, we simply think of the traditional ways such as searching in the files and cabinets, watching television, reading newspaper or books. However, from the perspective of informatics, web-portals, internal networks, databases and the web are inseparable parts of information exchange. Information technology and science and the human computer interaction are involved as sub-disciplinary fields of Informatics. From informatics perspective, a computer system has the main role in virtual interactions. More specifically, an information environment consists of human being and the relationships accessible for information sharing (Cross et al. 2001). Informatics is a field that studies the use and development of information technology (IT) while the use and the development are crucial parts for knowledge creation in virtual networking (Lind, 2005). In social media, the interpersonal interactions and information exchanges happen around a unified theme such as media, fun, health-care etc. These interactions are powered by web features running on a computer system, targeting the goal of successful knowledge creation. In this research, the virtual world of social media and the users' interactions in the virtual communities are studied to illuminate different aspects of new friendship ties which address the future development of information systems and also address the users to improve computer-human interaction, hence it is highly contributing to the field of informatics.
1.9 Scientific Contribution and Target Groups

As described earlier, the study in this thesis generates new knowledge about online social networks and the interactions of users in social media. An immediate target group of this study are members of social media. The important positive and negative effects created by social media can be a basis for further development and for the use of social media platforms. The results and investigations of this study will also create an in-depth basis for future research within the area of online social networks as well as helping new members of social media to improve their interpersonal interactions and to aware them by the issues threatening their security and privacy in the virtual world. This research sheds some lights on different aspects of social media where virtual communities as a whole are considered as another target group. The outcomes of this research can form the future literature of online virtual networks while the results are targeted to fill the gap of empirical research. In simple words, the results of study in this thesis address the researchers, members of social media, platform designers and experts for future plans and development in the area of online virtual networking and social media.

1.10 The Outline of Thesis

This section provides a short overview of the chapters found in this thesis, showing an overall structure of the dissertation.

**Introduction**

First chapter of the thesis is the introduction which provides a background to the study and the research process. Furthermore, the objectives, the research questions and the area of study are defined in the introduction chapter.
Methodology
Second chapter contains the methodology of research applied in this thesis. This chapter discusses the chosen methods, strategies in research, approaches, research process, data collection, sampling and analysis method. The research process through literature study and empirical study are also explained in details.

Literature Review
The aim of this chapter is to conduct a literature study and to provide a theoretical basis through defining the concepts included in the area of research. The secondary research phase followed in this chapter aimed at setting out a phase of investigation based on which the future analysis within the area of research will be formed.

Results and Analysis
In the analysis chapter, the findings of the primary research as empirical part of study are presented and analyzed.

Conclusion
The analyzed data from both of the research phases are put together in the final chapter of the thesis. Following a comparative approach, the results of empirical research and literature study as a whole discussed and then final points as conclusions are added. The last section of this chapter also presents the evaluation method, the ideas for further research and the possibilities to generalize the study.
1.11 Preview of Research Process and Important Concepts of Thesis

The figure below (figure 4) shows a preview of research process followed in this thesis and the next figure (figure 5) shows an illustrative relationship model of important concepts of the thesis.

Figure 4. Preview of Research Process
*Co-design and successful knowledge creation in social media are not subjects to study in this thesis, however the author illustrated a horizon for future interdisciplinary studies of social media and co-design.

Figure 5. Important Concepts of Thesis
2. Methodology

Collis & Hussey (2009) describe the research as a procedure of proving hypotheses or finding the answers for specific questions. A hypothesis is a pre-conceived theory defined by the inputs from experts, own experience, observation or previous studies (Collins & Hussey, 2009). A research is a systematic investigation and study of resources to reach new horizons and to establish new facts (ibid). Since choosing a structure or methodology is an importance for a valid research process, the author in this chapter aimed at presenting the research methods and describing the method undertaken in this thesis. This chapter addresses the methods used for data collection and analysis, different alternatives for research design and strategy, research approach, data collection methods, sampling and research process. In order to reach the objectives of research, the relevant text on research methods among different textual resources are reviewed while the choices of appropriate method for conducting the research are discussed. The researcher first studied the different methods, philosophies and approaches and then chose the most applicable one for this thesis.

2.1 Research Philosophy

Research philosophy refers to the basis, the nature and the evolution of knowledge (Saunders et al. 2007). The idea behind employing a certain philosophy is that it helps supporting the methodologies in a research while specifying the ideas and concepts within the studied area. Three different types of research philosophy defined by Saunders et al. (2007) are the followings:

- Ontology: The nature of social phenomena as entities are studied through ontology;
- Axiology: Studies the values and the results of judgments;
- Epistemology: A research philosophy which studies what creates an acceptable knowledge in a certain field of study.

Bryman & Bell (2007) believe that in today's modern world, a research is conducted by either ontological or epistemological philosophies. The both are the frameworks for building knowledge. In the epistemological philosophy, the target communities should accept the conclusions and findings, while in an ontological framework a researcher should decide about two different directions of study. One direction of ontological philosophy suggests studying the society and the members of society independently. The second direction is to study an organization system or a society dependent upon the members. Ontological framework consists of two paradigms, constructivism and objectivism (ibid). Constructivism provides an overall concept of research objectives and interprets them easier which is suitable for studying the experiences and perceptions of people in a social context. Current research is not intended to study the structure of a society or an organization, therefore the epistemological philosophy is preferable. The current research is linked with information science and studies the communications and users’ interactions in virtual networks of social media. In fact, creating more knowledge and filling the gap of insufficient research through empirical study in the field of online social networks is the main objective of research in this thesis. Epistemology framework has two different paradigms, Positivism and Interpretivism. Positivism
proves hypotheses (theories) scientifically through statistics and mathematical data collection from the experiments. Interpretivism philosophy connects to the building of theories. An empirical collection of credible information from different sources of empirical and existing theories or interpretation of experiences and concepts are used by an interpretivist. Bryman & Bell (2007) describe that an interpretivist employs empirical approach for the research by collecting data through empirical study and previous literature, then applies interpretation skills (hermeneutics) to draw conclusions. Hence, between interpretivism and positivism the authors' choice as most suitable philosophy is interpretivism under the epistemological philosophy.

2.2 Scientific Perspective

A research is conducted to achieve different purposes. The purpose of a research should be well established, since it significantly contributes to the research strategy. Scientific perspective is a method to illustrate the dimensions of a scientific research plan and the methods underlying a scientific research.

2.2.1 Approaches to the Research Design

Kerlinger (1986) describes that research design reflects the nature and the structure of the problem studied in a research. In fact, research design defines a general plan to address the questions in a research (Saunders et al., 2007). Phillips (1971) states that research design is a model for data collection and analysis helping the allocation of limited resources and the choice of essential method for interpretations. *Explanatory, descriptive* and *exploratory* research are three types of research design.

**Explanatory**

In an explanatory research design, the researcher aims at studying the research problem through explaining the relationships among different variables in the research (Saunders et al., 2009). Explanatory research develops a theory which explains the phenomena generalized from the study precisely. The research in this thesis is conducted at initial phase by collecting relevant information about the subject and the problem area, however the author did not want to study the characters of people or personalities, hence this research is not explanatory.

**Descriptive Study**

Descriptive study as an approach to the research design, creates a comprehensive snapshot for different aspects of observations from events. Babbie (2011) believes that descriptive study is useful when the problem area and the research questions are well-structured. The objective of descriptive study is to provide an extensive profile of people, situations and events where the studied problem should to be clear prior to the study (Robson, 2002). Descriptive research is adopted in this research as the main method of research design together with an exploratory research design (See 2.4.3)
whereas the researcher initially identified specific objectives and purposes, then described the methodologies for conducting the research.

**Exploratory Study**

Exploratory study is a useful method to analyze events, find new concepts and the development in a new context (Robson, 2002). When the research problem is unclear or the problem area is new, exploratory study provides a deeper understanding and investigates the feasibility of deeper study to boost a method for further developments (Saunders et al., 2007) and (Cooper & Schindler, 2003). Babbie (2011) believes that this type of research design always can create new knowledge in a specific research field where the problem area might be unfamiliar and difficult to understand. Ghauri and Gronhaug (2005) believe that this approach has a key feature of flexibility to help the researcher understanding the problem area. Based on Saunders et al. (2007), the main methods to develop an exploratory design are *literature review*, *questionnaire* and *interview* with target sample. The research in this thesis is initially aimed at filling the gap of research within the area of social media. The adoption of social media is undeniable, since the interactions and the information sharing on social media is hugely increasing by the time, but few studies discuss the impacts of this new communication technology. This certifies that the research area is new which guides the researcher to select an exploratory research design.

**2.2.2 Qualitative or Quantitative method?**

Two different types of data collection used in a research are: *qualitative* and *quantitative*. Both primary and secondary study can produce quantitative or qualitative results (Babbie, 2011). The difference between these two is that how the researcher according to the research objectives collects data and based on which data the questions of the research are answered (Ghauri & Gronhaug, 2005). Bryman & Bell (2007) state that quantitative method and positivism are linked while qualitative method is in line with interpretivism.

Data collection and analysis in a quantitative method treats with numerical data while qualitative method employs data collection techniques and the analysis method to produce non numerical data (Saunders et al., 201). In fact, quantitative method is based on numerical findings rather than frequencies. In a quantitative method, the experiments mainly create reliable information which are statistically analyzed. This method is linked with experiments and the scientific research process which is criticized for the lack of richness in meaning (Robson, 2002).

A qualitative research offers data collection methods which is used to describe the events rather than creating statistical interpretations. Qualitative method may risk the reliability, but creates in- depth results and richness in meaning. Yin (2009) describes that in a quantitative method, the researcher needs to have the ability of developing a proper hypothesis and have enough skills to test the hypothesis. By contrast, in a qualitative method, no statistical calculation prepared to form the correlations of variables in a research, but various techniques such as observations, questionnaire, analysis of text or a mixture of them possibly cover multiple purposes in the research (ibid).
Some discussions showed up with the relative merits of quantitative and qualitative research which focus on using a combination of both methods (Blaxter et al., 2001). Sanders et al. (2009) called the mixture of both methods “methodology triangulation” and believes that data triangulation is also applicable where data in numerical form and textual data are needed to be mixed. The researcher in this thesis decided to use a questionnaire (see 2.4) and also targeted to collect textual data, then sort and reduce them into definitive statements. Textual data and primary data set collected from empirical phase of the research carried out separately, however the coherence of the concepts and the scope of the study kept in line with the research objectives through exploratory design. To reach final points and draw conclusions, a comparative approach used to interpret textual and empirical data (quantitative and qualitative data). Hence, both of qualitative and quantitative methods for presentation and mainly qualitative method for analysis is applied (see 2.8 & 2.9).

### 2.2.3 Methodology of Research

Different methods under the framework of a qualitative research exist, including: Action Research, Anthropological Ethnography, Grounded Theory and Phenomenology. Anthropological ethnography is one of the oldest methods to study the communities and the behavior of people, believes, actions and decisions which is followed in sociological studies (Tilley, 1980). Studies under the context of ethnography conducted over a long time period of observations, therefore is not applicable to this thesis with time constraints. Action research offers to study the interactions of participating and non-participating subjects which is also time consuming. Grounded theory is a method to study the previous empirical and theoretical studies in details and suggests the comparison of recent and past studies accurately to conclude with optimal and rich interpretations (LaRossa, 2005). In this study, grounded theory is partially applicable where previous literature prepared a basis for interpretations. Phenomenology which is commonly applicable to the researches with time constraints, suggests data collection on experiences of users, their concept and viewpoints and develops a suitable method for empirical research phase (Gallagher & Sorensen, 2006). The research in this thesis adopted phenomenology whereas the primary data is collected through surveying.

### 2.3 Research Strategy

Two types of research strategy are inductive and deductive. Deductive research is used when the theory of research is testable through conducting the research logically and reaching the goals of research are possible through logical interpretations (Ghauri & Gronhaug, 2005). An inductive research approach starts first by data collection then a theoretical development in form of data analysis (Saunders et al., 2007). (ibid) adds that in an inductive research, the researcher collects information from credible resources, then sort, reduce, analyze and finally come up with conclusions to induce reliable and valid information. Interpreters use inductive research while deductive research is commonly used by positivists. Deductive research requires the researcher to collect data from empirical study (survey, experiment etc.), formulate the relation of the variables of research, use proven methods to convert data to the numbers and deduce the results applying mathematical and
statistical theories (Saunders et al., 2007). Inductive strategy suggests the development of specific observations to broaden theories. In contrast, deductive strategy begins from general concepts to the specific ones whereas the researcher tests theories then narrows down to address specific problems. In such a way, the researcher uses quantitative methods to draw conclusions and generalize results. In brief, the difference between two strategies is that through an inductive strategy the researcher builds the theory but in a deductive strategy aims at testing the theory (Saunders et al., 2009).

<table>
<thead>
<tr>
<th>Research</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deductive</td>
<td>The process of logical implications from the results or analysis based on a known promise or something as true.</td>
</tr>
<tr>
<td>Inductive</td>
<td>The process of establishing an overall proposition based on observations or particular facts.</td>
</tr>
</tbody>
</table>

Table 1. Deductive and Inductive Research

Ghauri and Gronhaug (2005) believe that the process of both approaches are not certainly exclusive, but it is not possible to use both strategies in a research, so it is important for the author in this thesis to choose either inductive or deductive strategy. The author tries to create new knowledge according to the inputs from literature study and from primary research phase (empirical study). In fact, the collected data from textual resources and the results of empirical study are basis to induce valid information in an interpretable form, then organize and draw the conclusions. Hence, inductive strategy is completely in line with the process of research in this thesis.

2.4 Data Collection

Two different types of data collection applicable to a research are Theoretical and Empirical. The difference between two methods is that primary data set is collected by the researcher based on the research objectives and secondary research is conducted on past studies. It is necessary to decide which data set and in which level the gathered data can be used to answer the research questions. (Ghauri & Gronhaug, 2005).

2.4.1 The role of Empirical and Theoretical study

Research strategy helps the research procedure to be in line with the objectives of research and defines how the research questions are answered. However, the researcher needs to define the type and the role of the primary and secondary data collection phases if are applicable to the research. Theoretical materials help the researcher to select valid data and it is also used as a basis for analysis. The theory will be emerged as the result of the research both from collected data sets and analyzed data. Several research procedures exist which can be used as empirical research such as case study, survey and experiment. (Saunders et al., 2009)
2.4.2 Empirical Study

Experiment

In both natural and social studies, experiment is chosen for explanatory and exploratory research to answer “Why” or “How” questions. The experiment in a research will be conducted in two groups while each group member is similar basically in most of the aspects. One group is chosen as control group while the other one considered as experimental group. The researcher measures dependent variables in both groups and compares the results. Then some manipulations only in experimental group is applied by the researcher. Finally, the dependency between variables are remeasured (Saunders et al., 2009). Such a research method can be used in both of field experiment and laboratory studies (ibid). According to the objectives of this thesis, there is no experiment or laboratory work applicable to the current research, therefore this type of empirical study is not suitable for study in this thesis.

Survey

The most popular and common data collection method for empirical study is to survey. A survey is mainly applied in both descriptive and exploratory research. “A survey is a method for data collection conducted through posing preformulated questions in a predetermined order” (Hutton, 1990). A questionnaire is a form of survey exposed to a sample as representatives of a population. Different ways for surveying exist such as structured interviews and/or in form of a questionnaire. Observation is also another way for surveying, but the questionnaire and interview are commonly used by researchers in informatics.

Questionnaire

A questionnaire is an optimal method for data collection, can be better designed by standard questions and prepares a basis for different kinds of interpretations (Saunders et al., 2007). Questionnaire as a common research strategy helps the researcher to gather the viewpoints of a sample of people in a short time with minimum effort. A questionnaire can be answered by individuals or it can target a number of them in a group. In addition, the structure and the content of questionnaire are important as they can determine or change the rate of responses and bring the outcome other than what is expected initially (ibid).

Interview

Interview is another efficient way to collect data in an empirical research. Interview is a bidirectional communication between interviewer and interviewee which is designed to access the interviewee’s information by some questions. Lind (2005) states that two different types of questions are commonly used to design an interview: open questions and close questions. Open questions normally leave room for interviewee to answer with more details and in longer sentences, but close questions usually require interviewee to answer in less than one sentence. Regarding the objectives of research in this thesis, the characteristics of social media, the members of social media
and the third party actors who are involved in the virtual world of social media, the author of this thesis prefers a cross-sectional method for surveying as the primary research phase in this thesis (both questionnaire and interview).

Web as a new media connected people together, formed a big virtual community and shaped the communications over the world wide web in a different way than the real world interactions. The researcher in this thesis aimed at identifying the benefits and negative effects of web mediated communications, so the primary research is designed to receive the concepts of the members of social media as they have the most important role in shaping the huge virtual interactions over the web. The researcher designed to inquire the members of social media and to collect their concepts, the view points and the problems they experience in social networking. While it is not possible to access all of the users of social media, the researcher decided to design a questionnaire exposed to the proper sample of users as representatives of the population. Questionnaire is an easy and cost-effective way which is in line with time constraints of research in this thesis. By designing the questionnaire and selecting the sample carefully, author aimed to map the fitment of the research criteria and expect to have valid information. On the other hand, there are problems and issues which are not tangible for the users, but professionals, social organizations or legal organizations are more concerned about. Hence, structured interviews designed to have enough scope and accurate view over the key concepts involved in this research. In other words, a cross-sectional technique used for primary research which benefits from both of interview and the questionnaire. More discussion about how the questionnaire and the interviews are designed, the population and the sampling method used in this study explained in section 2.5 of this chapter.

2.4.3 Textual Review

Scientific papers, journals and textbooks often contain the results of published scientific practices and recent studies which provide a basis for further research and form the foundation of current study (Kuhn, 1996). Textual study connects the recent and current research to provide a well-structured scientific contribution. In order to review the literature suitable for dissertation, different materials in different databases are studied. Many rich databases as mentioned in the following table (table 2) are essential for the researcher in this thesis to prepare a rich background and to help reaching the objectives of research. Each database provides information in certain format such as conference proceedings, papers, journals and e-books.
<table>
<thead>
<tr>
<th>Database</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Library of the University of Borås</strong></td>
<td>The library of the university of Borås founded by the School of Library Science in Borås city in 1972. The main library moved to its new location in 2004 which is around 6,000 square meters and consisting of 117,719 books, printed materials and 86,700 e-books. (University of Borås web site, 2013)</td>
</tr>
<tr>
<td>Summon</td>
<td>Summon is an extensive search portal which commonly helps the researches of universities and students to access catalogs, e-journals and e-books of libraries which are useful for research and study. Summon provides an overall search simultaneously in university libraries and other databases.</td>
</tr>
<tr>
<td>Google Scholar</td>
<td>“Google Scholar provides a simple method to search the scholar literature. Through Google Scholar, the search across different materials and scholars such as peer reviewed papers, theses, e-books, articles and abstracts published by professionals, academicians, scholarly organizations and universities is possible. Google Scholar suggests rich content and relevant research from all over the world of research.” (Google Scholar, 2013)</td>
</tr>
<tr>
<td>Science Direct</td>
<td>“Science Direct is reborn of an Elsevier tradition which is a scholarly database and often extends a vision of a digital library available through subscription” It has one of the most advanced database systems and a search portal for science, technology or medical information in different formats. (ScienceDirect, 2013).</td>
</tr>
<tr>
<td>CiteSeer</td>
<td>Through CiteSeer as a digital library, literature in computer and information sciences are accessible. CiteSeer provides scientific literature to improve the writings and helps the improvement in availability, cost, usability and timeliness of scholar knowledge bases. (CiteSeer, 2013)</td>
</tr>
<tr>
<td>SpringerLink</td>
<td>Springer manages, develops and spreads knowledge in form of e-journals, e-books and scientific papers on the web with the aim of quality in knowledge and information. More than 150 Nobel winners have published their papers, books and scientific writings on Springer. (Springer, 2013)</td>
</tr>
<tr>
<td>IEEE Xplore</td>
<td>A rich database established in 1988 which contains full-text and e-journals, scientific standards and conference proceedings, specially as a rich database for research in electronics, information technology and computer science.</td>
</tr>
</tbody>
</table>

Table 2. Main Databases Used for Textual Review

---


17
2.5 Sampling

Sampling helps to choose a small group of population as representatives to map to the large population of the research. While the target population is big and is impossible to collect data from each individuals of the population, sampling theory offers a reasonable method to conduct the study with valid and reliable results. In the current research, the population comprises of the users of social media and the experts dealing with web mediated communications. Sampling theories are used to infer back the results of the primary research to the target population reasonably (Sekaran, 2010). (ibid) states that an appropriate sampling method should be applied by the researcher to choose the best possible representatives from the population. For sampling, probabilistic and non-probabilistic techniques can be used. Probabilistic theories are linked with quantitative method and non probabilistic theories are linked with qualitative method (ibid). Since in current research the qualitative methodology is mainly used in analysis and interpretations, non-probabilistic theories are found suitable.

Table below explains different types of sampling applicable to a qualitative research;

<table>
<thead>
<tr>
<th>Sampling type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Convenience Sampling</strong></td>
<td>Convenience sampling is applicable when the researcher can access the respondents easily and conveniently. In this type of sampling, large data can be collected in a few hours or in one day and in a convenient place.</td>
</tr>
<tr>
<td><strong>Judgmental Sampling</strong></td>
<td>This type of sampling suggests that the sample should be carefully selected by passing predefined criteria and should be in line with the research problem.</td>
</tr>
<tr>
<td><strong>Quota Sampling</strong></td>
<td>Quota sampling is applied on multiple populations to have multiple samples referring to its related population.</td>
</tr>
<tr>
<td><strong>Snowball Sampling</strong></td>
<td>Snowball sampling is applicable to the multiphase studies in which, the sample size at each research phase increases and the criteria for sample selection is changed according to the outcomes of that phase.</td>
</tr>
</tbody>
</table>

Table 3. Sampling in a Qualitative Research (Sekaran, 2010)

The researcher in this thesis applied judgmental sampling technique to map the fitment of the sample to the defined criteria described in next section. This technique enables researcher to have access to the individuals who are target of study as the proper representatives among the huge number of users in social media. The individuals as interviewees are also chosen according to the criteria which is predefined for empirical study. The size of the sample is really important as it can reasonably reflect the viewpoints of the population. The important factors for selecting the sample size are accessibility, time, cost, variability of sample and precision of selection criteria (ibid).
Sekran (2010) believes that any size from 50 to 500 is suitable for the research in a qualitative method. The author of this thesis targeted a sample size around 60 which is reasonable in cost and is in line with time constraints in this thesis. The variability of sample is not a very big concern while the impacts of using social media are studied without any difference on ethnicity, race, religion or nationality. Furthermore, enough descriptions prior to the survey session provided an explanation of the purpose and context of study to verify the proper sample who answer the questions. In addition, the questionnaire is designed and published on the web to make the survey accessible for participants of the survey easily. For the precision of sample selection, the following criteria both for questionnaire and interview are defined:

**Criteria for selecting sample (Questionnaire):**

1. The participants of questionnaire should be member of popular social media (Twitter, Facebook etc.) and their membership experience should be more than 3 months.
2. The participants are not enforced to participate in the survey while asked to answer when they are ready to cooperate.
3. It is necessary that participants understand the problem area of study (provided with a short description at the beginning of survey, more information is also available upon request).
4. Participants can choose either English or Persian as their choice of language for questionnaire (the Persian version is accessible through email request).
5. The participants are required to fill in an online questionnaire (for convenience).

**Criteria for selecting sample (Interview):**

1. Individuals must be accessible in person or over the phone.
2. The researcher informed the interviewees that their voice will be recorded, so their consent is important.
3. The interviewees active membership in any social media is not important, but their professional knowledge is an importance.
4. Individuals must be ready to participate. Zero enforcement policy is applied by the researcher.
5. The interviewees should know either Persian or English.

At first view, many individuals may fit to the criteria of selection as interviewees, but they should also have expert knowledge about social media and deal as a professional with the problems and be conscious of the pro-sequences and consequences of using social media. In order to have accurate data collection from the interviewees, before the interview the context, the scope and the problem area of the research is described and before the main interview session, the questions are sent to the interviewees. The selection of interviewees became possible by seeking among professionals and asking other experts.
**Literature Sampling**

Sampling method for textual analysis is also important. Patton (2002) describes that sampling method aims to determine the criteria to choose and study the specific literature in text analysis. Within the area of research in social media, many textual sources exist, out of them it was impossible to include every single detail. Hence, it is important for the researcher to sample literature. Current dissertation benefited from rich databases described before (see 2.4.3) aimed at studying the recent research publications. It is also very important to connect the previous established knowledge, results and examples to the current study by choosing suitable sources to achieve successful knowledge creation. The researcher chose the most recent sources and eliminated the sources containing duplicate information or irrelevant content regardless of title relevance to the area of study.

**2.6 Strategies for Validating Findings**

The created knowledge as an outcome of a research should be trustful and add value to the area of the research (Bryman, 2002). The high quality knowledge contribution for chosen target groups of research is successfully achieved when the findings of study are valid and reliable. Saunders et al. (2009) believe that testing of validity is possible through analyzing the accuracy of indicators which represent the studied concepts. As described before (see 2.2.2), scientific methods such as statistics and qualitative statements are adopted to this research. Extra efforts should be done to have generalized, logical, acceptable, trustful and transferable conclusions (Saunders et al., 2009). However, there are some issues that put the validity of findings in a research at risk (ibid).

The validity of a research is at risk when:

1. The problem area is not appropriately defined;
2. The illogical and false or personal assumptions are included;
3. The studied population is not accurately identified;
4. Data collection method is not in accordance with research objectives;
5. The selection of sampling is not accurate;
6. No ethical considerations are applied for data collection (see 2.7 for more description);
7. The interpretations are not true and are biased;
8. Conclusions are also biased and poor interpretations are included.

At first step, the criteria defined by the School of Business and IT at university of Borås are applied as key considerations for research validity in this thesis. In addition, as Bryman (2004) states, by comparing the current data set with previous validated data, the validity of current findings can be tested. In this thesis, regarding the criteria of school of informatics, the author tried to avoid validity risks described above and used a comparative approach to validate the findings of primary research phase. To apply such a method, data collection from empirical part are compared with outcomes of textual review.
2.7 Ethical Considerations

The researcher of current study took extreme care to avoid any kind of plagiarism in the dissertation. In this way, the ethical guidelines defined by the University of Borås are followed and the referencing techniques for authoring are followed accurately using Harvard referencing method. On the other hand, as an importance to achieve the validity in research, the primary data collection phase (empirical part) followed by some ethical codes mentioned below (Saunders et al., 2009):

- Respect the privacy and confidentiality of survey participants;
- The informed consent of participants is very important;
- No forced participation applied;
- No discrimination policy used.

The participant of the survey are primarily informed about the context, the problem area and their role as being the main actors in the virtual world of social media or as experts whose viewpoints are important for the study in this thesis. The questions have sent before the main survey session and then they asked to participate with their full satisfaction. While the identity and the privacy of participants are promised to be kept anonymous.

2.8 Presentation Methodology

Current research consists of two research phases which described earlier (see 2.2). For both phases, qualitative and quantitative data presentation methods applied which are consistent fundamentally with other phase. Based on theoretical review and in accordance with data collection method used in this thesis, a mixture of qualitative and quantitative data presentation method in form of charts, bars and tables used for presentation of survey data. To reflect the relevant concepts of textual study and to prepare a basis for final interpretations, a comparative approach applied where the data collected from initial research and secondary research phase analyzed, then conclusions are drawn.

2.9 Analysis Method

Key steps for processing data and analysis are to reduce to definitive statements and sort, codify, classify or categorize in form of theoretical concepts, analyze concepts and compare with the outcomes of textual review, then drawing conclusions (Saunders et al., 2009). To analyze the theoretical concepts, text analysis is done in form of qualitative data processing which means spending hours and hours of time to read and re-read data, then to create and assign codes. This is not different from the analysis of data while coding means giving rise to the insights as well as to the patterns (Babbie, 2011). An important purpose of analysis is to build a deeper view where sometimes is known as an objective view. The findings of primary data collection phase are in form of qualitative concepts and also bars and diagrams. But the analysis of the results is done applying the qualitative method, meaning that the final analysis is mainly done through presenting, classifying, coding and reducing in form of definitive statements.
2.10 Chapter Review

In this chapter, the methodology used in this thesis is presented. A short summary of the methodologies applied to the research and used for authoring in this thesis is presented in the table below:

<table>
<thead>
<tr>
<th>Research</th>
<th>Selection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Philosophy</td>
<td>Epistemology, Interpretivism</td>
</tr>
<tr>
<td>Strategy</td>
<td>Inductive</td>
</tr>
<tr>
<td>Methodology</td>
<td>Qualitative and Quantitative data presentation (text and numbers),</td>
</tr>
<tr>
<td></td>
<td>Qualitative Analysis</td>
</tr>
<tr>
<td>Design</td>
<td>Empirical study (Phenomenology), Textual review, drawing conclusions</td>
</tr>
<tr>
<td></td>
<td>applying a comparative approach</td>
</tr>
<tr>
<td>Sampling Method</td>
<td>Non-probabilistic sampling under the category of Judgmental Sampling</td>
</tr>
<tr>
<td>Data Collection</td>
<td>Cross-sectional data collection, Textual review and Survey. (Text,</td>
</tr>
<tr>
<td></td>
<td>Questionnaire and Interview)</td>
</tr>
<tr>
<td>Validity of Findings</td>
<td>Avoiding validity risks, comparison of current data with previous</td>
</tr>
<tr>
<td></td>
<td>validated findings</td>
</tr>
<tr>
<td>Ethical Considerations</td>
<td>Respecting Privacy and Confidentiality of respondents, No</td>
</tr>
<tr>
<td></td>
<td>enforcement, Satisfactory participation, No plagiarism</td>
</tr>
<tr>
<td>Result Presentation Method</td>
<td>Definitive statements, charts, bars and tables</td>
</tr>
<tr>
<td>Analysis Method</td>
<td>Mainly Qualitative Analysis (Reduce, Sort, Analyze, Categorize)</td>
</tr>
</tbody>
</table>

Table 4. Summary of Chapter
3. Literature Review

Web mediated communications provide people with connection and friendship facilities. New web technologies equipped web platforms to enhance interpersonal interactions for the huge number of people joining online social networks while defined the term “web mediated communications” as an evolutionary concept of computer mediated communications. Social media is a term identically used for social networking which replaced traditional social interactions with new online and virtual interactions. Social media is in its infancy and as much as this paradigm matures, more sophisticated applications and web features are expected to emerge. It is unpredicted that social media web sites are eventually becoming so popular for both personal and commercial online interactions. Such popularity will have influential aspects and will have negative effects on people’s life. At the beginning of this chapter, interpersonal interactions in social media and virtual communities as the nature of a socialized web are reviewed. Following a historical overview, web 2.0 as the basis technology for social media and its features are introduced. Then the most popular social media web sites and their characteristics are studied. In the meanwhile, the reason behind the growth of communications through social media and finally, the positive and negative aspects created by social media are studied.

3.1 The growth of Online Activity

Internet has become a big part of our daily life while connected us to everywhere via a mass network called “web”. Some of the most important trends impacting growth in online activity are:

- Online marketing increased significantly as Internet is the most vital part of today's business activities, e.g. advertising is shown a big growth as more business people allocate their budget to boost their business on the web. (Jayamaha, 2011)
- Online entertainment such as gaming, video/music/photo sharing, gambling activities and dating remarkably impacted the online usage.
- The openness of web 2.0 provided people with collaboration in information and content sharing. (O'reilly, 2005)
- Increase in cloud computing and online services such as Internet banking, online booking email, messaging and online meetings.
- Immense information exchange via Internet and big growth of consumer accessibility to the information has changed the traditional business activities where both companies and consumers meet their needs through online activity. (Jayamaha, 2011)
- Blogging and online networking revolutionized traditional social communities, most of the social activities are brought to the web.
- The growth of mobile networking using mobile devices/net-books increased mobile connection and provided unlimited access to the web. (Netage, 2013)
3.2 Historical Overview of Social Media

The first social media based on web was Geocities in 1994, theglobe.com in 1995 (Cotriss, 2008) and Classmates.com which began operation in 1995. Company of Friends was the next online network offered by Fast Company Business Magazine launched in 1997 and introduced business networking on the Internet. Other sites have followed them soon after, including Sixdegrees.com which established in 1997, then Epinions.com as a circle of trust in 1999 followed by European equivalents Ciao, Dooyoo and ToLuna (Boyd & Ellison, 2007). Many of early social media tried to bring people together and facilitate connections by chat rooms while enabled users to share personal information and ideas via personal web pages (Wikipedia, 2013). The newer generation of social media web sites began to flourish with the emergence of Makeoutclub in 2000, however from 2002, online social media began to appear based on web 2.0 technology. The new form of online social networks which is commonly used in online communities, became particularly popular in 2002 and flourished with the advent of the web site called Friendster. Friendster is using the social media model called "circle of friends" which developed by the British computer scientist Jonathan Bishop. The popularity of social media web sites has grown rapidly, so much so that in 2006, MySpace has had a higher rate of visited pages than the search engine “Google” (Nexopia, 2011).

3.3 The Advent of Web 2.0

Social Media is one of the most important technologies benefiting from web 2.0 technology. The explanation of web 2.0 was always debating among researchers while few sources discussed about the definition of web 2.0 (Yourdon, 2006). Tim O’Reilly (2007) introduced a concept for web2.0 as:

"Web 2.0 does not bias with a hard boundary, but more likely it has a gravitational core. It is possible to visualize web 2.0 as principles that make together a system of web sites representing all or some of the practices locating on a different distance from the central core".

The concept of O'Reilly is too general and seems to be unclear, but Murugesan (2007) presents a more specific definition of web 2.0:

"Web 2.0 can be a wisdom web, a centered web for people, enabling read or write on the web as a participative web. Web 2.0 equips platforms through collaborating and interacting methods especially on peers through social collaborative intelligence, presents new horizons to equip the web and encourages users to join and interact in an efficient way”.

The term web 2.0 is generally associated with applications designed for the web which facilitate user-centered collaboration and design. In fact, web 2.0 allows users to do more than retrieving information by providing data and exercising control over data flow (O'Reilly, 2005). The examples of web 2.0 are social media web sites, wikis, blogs, video sharing sites, etc.
Table 5. Examples of web 2.0 in comparison with web 1.0 (Tim O'Reilly, 2005)

<table>
<thead>
<tr>
<th>Web 2.0</th>
<th>Web 1.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wikis</td>
<td>Content Management</td>
</tr>
<tr>
<td>Participation</td>
<td>Content Publishing</td>
</tr>
<tr>
<td>Web Services</td>
<td>Screen Scrapping</td>
</tr>
<tr>
<td>Tagging</td>
<td>Directories</td>
</tr>
<tr>
<td>Search Engine Optimization</td>
<td>Domain Name Speculation</td>
</tr>
<tr>
<td>Cost per Click</td>
<td>Page Views</td>
</tr>
<tr>
<td>Blogging</td>
<td>Personal Web Sites</td>
</tr>
<tr>
<td>Wikipedia</td>
<td>Britannica Online</td>
</tr>
<tr>
<td>Napster</td>
<td>Mp3.com</td>
</tr>
<tr>
<td>Syndication</td>
<td>Stickiness</td>
</tr>
</tbody>
</table>

3.3.1 Specifications of Web 2.0

The importance of web 2.0 as a lead technology where social media is based on, convinced the author of this thesis to introduce the most significant specifications of this version of web. The aim of this part of the chapter is to present a summary of web 2.0 to illustrate influential technologies which helped successful integration of web mediated communications in the people's virtual life.

**Web as Platform**

Traditional software development was dependent on a specific operating system. By the advent of web 2.0, new services are not bounded to the client download condition or any specific platform. The development and design are independent from any particular operating system enabling web based applications to run on different operating systems. (Greenfield, 2007). (ibid) states that web as a platform has advantages over traditional desktop based applications. Web as a central storage system for data provides collaboration, sharing facilities and hardware/OS compatibility.

**User-Centered Design**

A kind of design built in a way to fulfill the possibilities and needs of high-end users which enables them to change the options in design. This kind of design is easier to navigate and is cleaner in appearance (Cashman, 2010). iGoogle is a homepage designed according to the User-Centered design.
Crowd-Sourcing

Each small piece of contribution is necessary for a web 2.0 service representing bigger community of collaborations. Millions of contributions may change the site to the state of utmost popularity. For example, a media company (employing hundreds of journalists) has now been easily beaten by blogging platforms such as Blogger and WordPress in production of a great information resource in much less time than before. (Cashman, 2010)

Power Decentralization

Web 2.0 services are not dependent to the administrators. The new services of web 2.0 follow a self-service method. This method does not rely on administrators to allow or reject requests from users (O’reilly, 2005). Such a service is implemented by Google called “Google Absence” which is a self-service platform. This service helps users deploying advertisements on their web page or blogs in a convenient way.

Collaboration

Wikipedia owns the first rank when it comes to the meaning of collaboration. Before the emergence of Wikipedia, the Britannica was the only information source as an encyclopedia, also About.com and some other sources existed where they never experienced collaboration. After 2001, Wikipedia dominated the world of information resource in both content quality and quantity.

Dynamic Content

Dynamism in content of web 2.0 services offers a new generation of blogosphere which empowers the conventional media. These services are highly proactive and dynamic (O’reilly, 2005). Static content is usually in textual or visual forms (photo or video) cached by servers and can be retrieved using a keyword upon users' request. But, dynamism in content increases users' interactions through dynamic web contents. The dynamic contents allow personalized content sharing provided by users. (Akami, 2010)

Rich User Experience

Rich User Experience as another specification of web 2.0 helps web pages and web services to be faster and less cluttered. This specification has made more users come back to the web services (Cashman, 2010). Facebook graph search introduced in June 2013, provided a comprehensive search engine empowering users to search and find connections between people, places and other piece of information, offering a rich user experience.

Software as a Service (SaaS)

When a web service is completely compatible with all of the web platforms, this software distribution model is called software as a service. Since this specification enables web 2.0 technology to be compatible with many platforms, more and more web pages and web services are on the route of offering SaaS (Software as a Service). SaaS is become an strategy for development
of CRM (Customer Relationship Management), MIS (Management Information Systems), virtualization, accounting, cloud computing, CAD (Computer Aided Design), DBMS (Data Base Management Systems) and businesses applications such as office and messaging services (OpenCrowd, 2013). TechTarget (2010) states that accessibility, easy administration, automatic updates, compatibility and collaboration are the advantages of SaaS.

3.3.2 Web2.0 Technologies

**Tagging**

Tagging contributes to the popularity growth of web pages and web content by allowing the shared content to be rated or categorized by users (Murugesan, 2007). The advantages of this technology provided by web 2.0 are both for users and web masters to adapt themselves with the new conditions and to provide more response to the users' needs. According to Marlow et al. (2006), instead of pre-defined and static published contents, users provide their personal tags in order to organize information in a new way which can be an adaption between users’ needs and web masters’ development plans.

**Web 2.0 and Syndication**

Syndication is identified as a technology which is common in all of the interpretations of web 2.0. Advertising, content, creation effort, storage, and profile as identity are included in this definition. A technical interpretation of web 2.0 is along with a vision which exists in marketing and business and leads these professions to the success. From a community perspective, web 2.0 focuses on syndication, however with more emphasizes on social aspects rather than economical aspects. Since web 2.0 is a general term, it can be disappeared as quickly as it is adopted. The supported technologies may change quickly, too. In the meanwhile, web 2.0 is more likely to appear as a suitable generic descriptor which is available in many different directions for example over the ‘dotcom’ implosion period from the early years of the current century. The real changes are still happening and this revolution will roll over completely the old web 1.0 (Clark, 2008). RSS (Really Simple Syndication) and web feeds are example of web 2.0 features using Tag/Vote functions which benefit from syndication where users deplete or add value to the content by their votes or tags.
Collaborative Authoring

Collaboration is a way to integrate group-working into document sharing, writing, adding, edit, redo and undo others' work as well as posting and commenting in blogs. Collaborative authoring can be seen widely in wiki-based web sites, blogs and forums such as Wikipedia, Blogger and Google Docs.

Wikis

Social sciences refer to the analysis of relationships between different people such as individuals, groups or organizations which interact with each other. The analysis of social media deals with the patterns of relationships among social actors (Breiger, 2004). Social media can be regarded as constructions of entities and relationships. Wikis are consistent with these qualitative forms of social networking, representing the main idea of "writing articles in common" (Cunningham, 2005). Wikis are adopted successfully in the big projects such as Wikipedia as an encyclopedia with millions of entries in hundreds of languages which is being edited by millions of writers while the content sharing is highly relied on users' collaboration. Furthermore, in wikis the settings are set up by web 2.0 applications for convenience of content sharing (Klamma & Haasler, 2009).

Blogs

Blog is a word from the term “web-log” which is a web site or part of a web site (Blood, 2000). Blogs are typically updated by individuals with explanations, commenting and describing events or other content such as photo, music and video. The entries or comments are usually shown in reverse chronological order. Blogging means to create or add content to a web-log, enabling users to add comments and even allow them to be in contact with each other via messaging provided by widgets. These specification distinguish blogs from static websites (Mutum & Wang, 2010). Blogs are always providing tools and applications to enable users adding new content, posting a particular subject or news feeds. Typical blogs may support text, photos and links to the other related portals, web sites and media sources. The possibility for readers to leave text as comments in an interactive way is an essential specification of blogs. Many blogs exist in text form, however some blogs support other themes such as photographs called "photo blog", audio blogs called "podcasting", music blogs known as "MP3 blog" and "video blogs" (ibid).

Forums

A forum is an online message board or discussion web site where people interact by posting and commenting. Depending on the settings applied by webmasters, a post or a comment in a forum should be verified and approved by a moderator to become visible for the others. Forums are different from chat rooms where messages are temporarily cached. A discussion forum has a hierarchical structure containing number of sub communities. The authors in forums always need to be registered members to be able to post or comment while most of textual content in a forum is visible for everyone (Wikipedia, 2013). Forums in structure are more likely a hybrid type of virtual
communities (see 3.5.4) containing both hierarchical communities as sub forums and members who have activity in two or more sub forums inside the main forum which represent overlapping communities.

<table>
<thead>
<tr>
<th>Technology</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blog</td>
<td>Interactive authoring tool</td>
</tr>
<tr>
<td>Tags / Vote</td>
<td>Keywords added to material, articles or blogs</td>
</tr>
<tr>
<td>Wiki</td>
<td>A collaborative authoring tool for creating and editing content</td>
</tr>
<tr>
<td>Syndication</td>
<td>Summarized Information Feeds or (RSS)</td>
</tr>
<tr>
<td>Social Media</td>
<td>With the advent of social web along with the emergence of web 2.0, social media covered web 2.0 applications as an integrated web service platform.</td>
</tr>
</tbody>
</table>

Table 6. Summary of Web 2.0 Technology

The latest trend in world wide web is social media portals. Social media has gained popularity so fast, for instance, Twitter experienced a growth rate of tweets exceeding 1300% in 2009, in comparison with the year 2008. The active users of social media expected to pass 230 million in 2008 (Seeking Alpha, 2009). However, a single site such as Facebook is registered with more than 1.1 billion active members as of March 2013 (Facebook, 2013).

3.4 Social Media Definition

Weaver & Morrison (2008) state that social media in today’s electronic media empowers individuals by using Internet and web based applications to connect and interact in a new and easy way which facilitates the formation of big virtual communities which were impossible before.

Boyd and Ellison (2008) defined social media as:

Web-based sites which allow individuals to:
- create a list of users and connections;
- build a public or a semi public profile via a system which is bounded;
- search and find connections list which is made by others in the system.

By the development of computer mediated communication, the old offline meeting between people changed to happen in a new place called "web". Social media originated from social groups organized around a unifying theme such as religion, culture, education, etc. It creates a kind of informal networking dedicated to a third party, meetings, etc. (ibid). With the advent of web 2.0, Internet is moving toward supporting social life. This new medium has taken its new dimensions, appeared in new forms and built new opportunities.
3.5 Interpersonal Interactions in Virtual Communities of Social Media

Social media is changing our concept of the word “friend” by affecting our interpersonal interactions, however the people’s concept of “friend” might not have changed a lot. Social media is restructuring our thoughts of relationships. It is criticized that a person might have a long list of friends in social media who have never met or may never meet them, however he/she believes that this virtual and distant friendship can serve many functions. According to Richard (2013), people have more tendency to dormant networks where they are not obliged to interact but may find these networks a tool for procuring information about their distant friends without the need to be in contact physically. This kind of friendship remains for years while in offline friendships, various life occurrences may cause friendships to be faded away. Social media can also influence how we present ourselves. *Impression management* and *self presentation* are key concepts in interpersonal interactions (ibid). Social media helps us to present ourselves by our friends and connections we make. Our sharing habits and the knowledge we share also contribute to our self-presentation. Social media is also a virtual meeting environment where we are influenced by. It has a contagion effect which makes us potentially emotional and even further behavioral influenced. For example, when someone is angry, alone or happy, these mood can takes on to the friends likely.

The evolution of web systems have initiated and sustained social relationships via social community systems. Social media focuses on online web based services, platforms and sites which create social relations and social communities mainly over the technology of web as a social media. New web mediated social relations are built to facilitate social interactions among people. Each user is registered and identified by a profile which generally represents a real member in the real world. This new medium offers a variety of web-based services to enable users to interact through connecting profiles, instant messaging, sharing ideas/photos/videos, discussing, sending email and using many other services and applications. Boyd and Ellison (2008) believe that the main type of social networking is to connect with classmates, co-workers and friends as a recommendation system built on trust.

### 3.5.1 Identity and Standard Activity in Social Media

A network consists of entities and the connections between them. At first view, each end-node in social media represents a real person in the real world. But, entities can be individuals or a group of individuals. Members of social media are usually represented in the system by number of signals which constitute their identity in the network. These signals are presented by user's profile information which can be accessed at user's request (Coenen, 2006). (ibid) adds that different social media web sites offer structured, unstructured information or a mixture of both as identity database space of the platform. Some platforms allow users to add only predefined avatars instead of real profile pictures. The others allow adding profile info and asking structured information of personals such as date of birth, marital status, education, diplomas, etc. The unstructured social media profiles enable users to add whatever they wish about themselves. Unstructured profiles can serve members representing a profile such as single profile for dyadic-person profiles (e.g. couples) or profile of a group of individuals.
The memberships policies of social media can be found in two different types such as “open memberships” and “closed memberships”. In a closed group policy, the contents of network is accessible to the members, but in an open group everyone can access to the contents. Coenen (2006) stated that a closed group has more knowledge sharing potentialities than an open group. The studies on the users of social media show that users are mostly focused on friendship activities (Kumar et al., 2006). The figure below shows users' standard activities in social media.

Figure 7. Different Types of a Profile

Figure 8. Users' Standard Activities  (Memic & Joldic, 2010)
3.5.2 Inter-dependencies in Social Media

Social media can be broadly defined as a social structure consist of individuals/groups that are connected together through one or multiple types of inter-dependencies. Common concern, value, idea, interest or friend can form different types of inter-dependencies. The diversity of users' needs in social media can not be easily fulfilled. Users' needs shall be identified to answer what and how should social media services perform and contribute to the users requirements to enhance inter-dependencies. Individuals in social media use the new generation of applications which are hybrid of information systems and hyper-media (Yang & Tang, 2003). Hyper media here means: a web platform equipped with new technologies enabling each end-node to communicate in an interactive way. Interactivity as nature of social media is more described by Tolstrup & Skouby (2009) as “foundation of communication on social media, exchanging rich materials for building new communities, searching old friends and making new friends in diversified virtual communities of social media”. (ibid) describe the influential elements of social media services through which the users can meet their requirements, providing an interactive platform enabling users to connect, meet and share.

**Important elements of social media:** (Tolstrup & Skouby, 2009):

- The system quality: Underlying technology which facilitates interpersonal interactions and transparency of data flow;
- A full infrastructure: Available applications and services on popular devices and different networks;
- Rich user experience: The users' control on content, fun interaction mechanisms and the value added by the system;
- Privacy and Trust: users need to interact in an environment which promise privacy and provide a trustful information flow.

3.5.3 Users' Correlation

Social ties are basis of users' influences on each other. Social influence happens through behavior dictation between friends who have any kind of inter-dependencies. Marlow et al. (2006) studied a tag usage problem on Flickr defining a negative correlation effect in social interactions (e.g. friendship) on Flickr. Friends of same social network tag their friends on Flickr photos which might be unpleasant for the tagged person. Anagnostopoulos (2008) categorizes the types of correlations in social media as influence, similarity and environment. “Influence” which is also defined as induction, happens when the recent action of a user triggers another user's action. For instance, an individual may support a cause or join an unknown group because his/her friend supports that cause or group. The second type of correlation is similarity. “Similarity” is the feeling of two people who have never met each other but when they meet virtually, they found similar interests. The third type of correlation is external influence or “environment” which can contribute both in events and interactions, helping users to make and maintain friendships. An effect of environment is seen when
for example two individuals from same city share photos of their city which further becomes a basis for their connection or future friendship.

3.5.4 Virtual Communities of Social Media

To understand the dynamics of social networks, it is important to identify the structure of virtual communities. Since the users of social media show a high degree of internal communications, an approach to a deeper understanding of virtual communities is to classify them to disjoint groups where users are active in (Keller et al., 2011). In some types of virtual communities, the structure shows levels of hierarchy where users from disjoint groups are subgroup of bigger groups. Many other communities known as “overlapping communities” consist of pairing communities which overlap each other by two or more end-node while they are not containing each other as sub communities (ibid). A hierarchical structure will cause complexity and missing of individuals’ activity information in the numerous circles where users are interacting with. In overlapping communities, the users associate with various social circles formed around specific theme such as art, music or sport. The study of overlapping communities illustrate an optimal understanding of interpersonal interactions as often seen in popular social media web sites.

![Figure 9. Hierarchic Communities](image)

![Figure 10. Overlapping Communities](image)

3.6 Popular Social Media Web Sites

As described earlier (see 3.3 and 3.4), social media web sites are web pages which create a new virtual community on the web provided by web 2.0 technologies. Users of social media come together with common interest to meet new people with same idea or concern, make connections with other people or other social groups aiming to add value to their online social interactions. The most known social media web sites are introduced in the followings.

**Facebook**

Facebook is the most popular social media web site established in February 2004 and achieved popularity fast. Everyone can join Facebook easily, send request for new friendships, send private messages, customize personal profiles and update status to notify friends. In February 2013,
Facebook hit a new record in number of users passing one billion from all over the world of web. Facebook estimated that users spend more than 950 billion minutes monthly on Facebook while more than half of the members use it every day. In average, each member has 130 friends and 80 connections with event/fan pages, community pages, causes and groups. More than 30 billion piece of content such as web site links, texts and notes, videos, photos and blog posts are shared on Facebook. The headquarters, web master company and the web servers of Facebook are located in the US while only 21% of active members are from inside the US. Facebook by the cooperation of 300000 users provided support for 70 languages. More than 20 million plugins and applications shared on Facebook whilst over 6 million web portals have integrated Facebook as their social boost service. This social media web site offers various services while the default services are developed and supported by the master company. The growth of other features is dedicated to third party developers providing services for businesses, professionals, web developers and entrepreneurs as well as offering the services via mobile devices such as smartphones and notebooks. In March 2013, Facebook published a report stating that approximately 750 million users log on Facebook with their mobile devices monthly. (Facebook, 2013)

![Figure 11. Facebook Membership Growth - Monthly Active Users in Millions (Facebook, 2013)](image)

**GooglePlus**

Google Plus is a social media web site owned by Google, enabling users from all over the world to meet and share. In January 2013, Google Plus surpassed Twitter with more than 230 million monthly active users and over 500 million registered members. Google Plus is further identified as a social layer which enhances many of online features such as creation, data liberation, search capabilities, tags, badges and social communities (Olanoff, 2012). Google Plus defined age requirements for users who sign up for joining. In September 2011, Google Plus required users to be 18 years old and more while from January 26, 2012 Google changed the age requirements to 14 years old for Spain and South Korea, 16 or older for Netherlands and 13 or older for the users from the US and most other countries. Google stated that minimum age requirements are applied for safety enhancements (Horowitz, 2012). Next figure illustrates how GooglePlus gained a very fast popularity among people in comparison with Facebook and Twitter. This figure shows that
GooglePlus gained 20 million users in less than 100 days, however Twitter and Facebook reached 20 million users in more than 1000 days.

![GooglePlus Fast Growth - Time to reach 20 million users](http://techbend.com/2011/08/05, retrieved July 2013)

**YouTube**

YouTube started activities in 2005, allowing billion of people to watch and download videos. It enables registered users to upload and share videos, clips and other video creations. In addition, YouTube empowers people to connect, inform and interact through a forum-based platform as well as supporting capabilities to comment and post on other users' videos and personal channels. YouTube has defined guidelines for users who post their video creations, asking users to respect copyright, respect others' people and hope to create a community based on trust. YouTube benefits HTML5 technology and Adobe Flash video to display video contents. According to the user's IP, YouTube detects the location of users and offers services to the users' respective languages. As of May 2013, this feature is available in 58 languages. Members can also create and customize their own channels to upload their videos while other members can follow the channels and comment on personal channels and content.

**Twitter**

Twitter is a micro blogging social media web site established in July 2006 by Jack Dorsey. Twitter aimed to be the best real time information network connecting people to the information of common interest. The founders have published a motto "We present the best way to discover what is new in the world" as main strategy of their micro blogging service. Tweets as the most used piece of shared information are shorter than 140 characters long which play a big role in quick information sharing on social web. The simplicity of information sharing on Twitter unlike other social media web sites has significantly contributed to the fast growth of this social media network while users can sign up in Twitter quickly, follow other users, send or notify them by tweets (Twitter, 2013). Twitter’s worldwide adoption has jumped with a big growth in year 2009, hitting the record

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of 1,300% growth in number of users within a year (Seeking Alpha, 2009). Currently, Twitter has more than 500 million active members who post 340 million tweets every day and deliver 1.6 billion search queries each day. (Twitter, 2013)

![Figure 13. Top 20 Twitter Popular Countries – Chart Courtesy of SemioCast 2012](http://www.digitalnewsasia.com/sites/default/files/images/digital%20economy/PH1.png, retrieved July 2013)

**MySpace**

MySpace established in the US, enabling members to customize web pages, share content and create personalized blogs. MySpace is also popular as host of many web portals used by musical bands and DJs who often upload and share their musical creations. MySpace provides new social ties through offering a rich user experience in entertainment and connecting people to TV programs, musicians and celebrities based on same interest (MySpace, 2013). MySpace benefits from web 2.0 technology and empowers members to create their own profiles. In 2006, MySpace was the most known social media web site in the United States. On April 12th, 2008, MySpace registered with more than 240 million members, however by the fast growth of Twitter and Facebook, the popularity of MySpace slowed down (Smith, 2009). In June 2011, the holder company sold MySpace to Specific Media Group and Justin Timberlake jointly (Wikipedia, 2013).

**LinkedIn**

LinkedIn found in 2002 but launched officially in May 2003, providing an interconnected social networking for experts and professionals worldwide. LinkedIn introduces its users to the world of business to accomplish marketing goals and establish a successful business while empowering them to collaborate with professionals and business people in more than 170 big industries from 200 countries (LinkedIn, 2013). LinkedIn boosts its business model with advertising and membership fees requested from members. Currently, it hosts more than 225 million users from all over the

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world offering professional services in six languages. LinkedIn can be used for recruitment, to connect people through business opportunities, to offer job positions or suggest related profiles to the businesses and professionals. LinkedIn enables users to find companies of same field to connect and join to the specific chain of business. LinkedIn by its search tools offers a particular company including business models, statistics and other information. For instance, the proportion of male and female employees, the most common titles and positions, the headquarters, history of company and etc. (ibid)

Online social networks experience year by year growth and attract people by diversified offered services. In 2011, Americans consisted one quarter of registered members while they were ahead of Europe (Nexopia, 2011). Almost each individual has used social media once, but the popularity growth of a certain social media web site is still changing. Web sites such as GooglePlus have integrated different online applications as default services offered to the users. Facebook also provides useful services such as profile customization, content sharing and messaging to the members, although the services other than basic ones are provided by third-party providers. In 2008, Facebook hosted more than 30000 applications provided by external companies (Ustinova, 2008).

### 3.7 Positive Effects of Social Media

On a popular social media web site such as Facebook, each user usually has a profile in which personal information including marital status, age, gender, interests and personal photos are shared. In another level, it is possible to integrate services from social media websites to the blogs, upload video or photo and create friends and connections lists. The volume of potential interactions with other users is a factor for potential growth of a certain web site. The huge load of interactions on a web site such as Facebook is because of the growing number of members who exchange information materials in a convenient way which was impossible before. The 25-35 ages who constitute the majority of registered users (Pingdom, 2012) are encouraged by the users of a casual or a professional network and possibilities to contact with new people. Furthermore, developers offer diversity of applications for free, for example applications to predict the results of a football league, for trading or preparing tests or polls and games of any kind. In addition, web sites provide possibilities to create and join groups and causes, for example to applaud the ban on goods or joining humanitarian groups and causes.

#### 3.7.1 Diversity of Social Ties

Social media enables people to create and follow various kinds of relationships. In fact, social media boosts people's social capital (Adkins, 2009). Since social communities are formed based on users’ interactions, the reason behind using a certain social media web site is to benefit from interactions and communication services offered to the users (Coenen, 2006). Different types of social media web sites are developed and adopted among people over the past few years while each of them support and create specific type of relationships. Table 7 shows the emphasis on different types of relationships and examples of web sites providing that kind of relationship.
<table>
<thead>
<tr>
<th>System Type</th>
<th>Relationship Type</th>
<th>Examples of Web Sites</th>
</tr>
</thead>
<tbody>
<tr>
<td>Making Friend</td>
<td>Friendship</td>
<td>Facebook, GooglePlus, Twitter</td>
</tr>
<tr>
<td>Procuring Information</td>
<td>Knowledge Sharing</td>
<td>Blogs, Wikis, Twitter</td>
</tr>
<tr>
<td>from everywhere</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Academic</td>
<td>Learning</td>
<td>Ecademy</td>
</tr>
<tr>
<td>Professionals/Business</td>
<td>Professional Collaboration</td>
<td>LinkedIn</td>
</tr>
<tr>
<td>Democratic</td>
<td>Joining/Supporting Campaigns or Groups</td>
<td>News Feeds, Causes (Campaigns)</td>
</tr>
<tr>
<td>Dating</td>
<td>Love / Sexual</td>
<td>MSN Dating</td>
</tr>
<tr>
<td>Art/Celebrity</td>
<td>Artistic Works / Finding new Talents</td>
<td>MySpace</td>
</tr>
</tbody>
</table>

Table 7. Examples of Connection/Relationship Types in Social Media

### 3.7.2 Information Sharing Synergy

Web 2.0 technology changed traditional information exchange which was based on one to one connection and old ways of information distribution between a sender and a receiver. Web 2.0 equipped applications and web sites to enable collaborative sharing in online communities of social media, enabling information exchange in forms of one to one, one to many and many to many. Corning (1995) defines a situation when two people benefit from working with each other as “synergy”. In term of information exchange, the fast adoption of social media among people significantly increased the synergy of collaborative information exchange and authoring of web-content. Individuals share information, receive feedback and edit others' work which caused a huge information flow in social media.

### 3.7.3 Social Media and Branding

Business people and professionals noticed the importance of brand development through building connections with customers on social media. The customers are also encouraged to the social networking whereas they find their needs, discuss about specifications and features of products, share experiences and receive comments from other experienced users. Both customers and businessmen benefit from suggestions of other people who are interacting around any specific brand. Harris and Rae (2010) state that a future business will achieve success through virtual networking and describe the role of social media as a big opportunity to realize potentialities of business and marketing. Based on a study in 2010, among 30 businesses in Britain, the fact of activities in social media and connecting with key customers is recognized by companies as an efficient development strategy and a powerful business expansion method (Harris & Rae, 2010).

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3.7.4 Low Cost

Although professional services on professional social media web sites such as LinkedIn require users with subscription fees, but most of social media web sites provide services for users free of cost which engaged everyone to join and get services without any cost. Many individuals and most of the unions, groups or causes are able to join online virtual communities of social media, expand their activities and make new connections and relationships free of any expense which was always high cost through interactions in offline and traditional communities.

3.7.5 New Opportunities

Social media enables professionals, academicians, students and many other individuals to meet and to connect with each other. Such a potentiality has also benefits for people who seek new opportunities such as for job seekers. A survey by IRS (2005) compared online recruitment with old recruitment methods, states that online recruitment empowers the employer to access a larger pool of potential employees through social networking. Qurashi (2009) adds that online communities provide a big opportunity both for job seekers and employers to benefit from an interactive recruitment space. Some other researchers also noticed relative merits between social media and new opportunities such as in marketing (Khan, 2010) and online admissions (Gruber, 2009).

Many discussions raised about the potentialities of social media as a basis for new generation of search engines complementary to the traditional search engines such as Yahoo! And Google. Finally, in June 2013, Facebook offered a service called Graph Search (Facebook, 2013) which enables users to find the material, people, place or event they are looking for according to the relationships and connections between that specific subject and the other dependent subjects used as search key words. Although, Facebook Graph search is in its infancy, but it is expected to be a revolution in the world of information technology in search engines and knowledge bases.

On April 23rd, 2009, Facebook published the results of a government vote polling the members’ opinions about multiple rights on user generated content in social media. This was the first official vote run on social media, however later, Boldi et al. (2009) proposed an enhanced voting system based on social media which can be used as an efficient medium for voting in larger sizes even in national voting events.

3.7.6 Social Media and Globalization

Social media hosts members from almost all countries with different nationalities and different cultures. No matter what kind of ethnicity or color the people are, they can easily join, new connections can be made, new friendships types are created and different ideas or viewpoints are exchanged. Such a potentiality realized a big step toward globalization which never happened through traditional social correlations. According to the latest statistics, users of Facebook are coming from more than 212 different countries (Facebook, 2013).
3.8 Negative Effects of Social Media

Social media revolutionized our communication methods. Social interactions are becoming more and more dependent on this new medium while few of us notice that we are getting far from the basics of human communication such as face to face interactions which is being replaced by human-computer interaction. Furthermore, the security issues and threats to the Internet are also affecting social media. In online social networking, users usually ignore the alerts which warn the fast spread of malwares. In addition, social media has some other negative impacts which are not experienced before.

3.8.1 Lack of Physical Encounters

Social media is changing the basics of our communications. We can find examples of people in restaurants, cafes and even at school with their heads down utilizing their tablets or smart phones for tweeting, texting or updating their status on social media while they are having meals at restaurant or listening to the school lectures. Social media has changed the way we relate in all of the aspects of our social interactions. In fact, as described before (see 3.5), our interaction ability is being restructured by social media. We rather prefer to send text instead of making calls or prefer to sent email instead of meeting physically. In other words, social media has made a shift in our interpersonal interactions and our inter dependencies (see 3.5.2) while replacing our face to face communications with web mediated communications. Keller (2013) believes that interactions in social media are forming weak ties while we do not have advantages and the feelings that we experience during face to face friendships. People in social media are more open to new friendships, always trusting the other end of the communication, meaning that our connections are not as trustful and strength as connections in traditional society. Usually, there is no tendency to deepen the virtual relationships (ibid). In social media, we rather prefer to interact with the people who are agree with us and have same concern or interest (see 3.5.2) instead of having various ideas, interests or opinions found through friendships of traditional society. Social media allows us to make more friendships, more quickly, seeking friendships among people with same concern or interest which makes us to adopt positive or negative behavior, attitude or believes faster and easier.
3.8.2 Privacy and Security Issues

Privacy is a rising concern in online social networks. Since social media is a new communication tool and is still adopting among people, current policy configurations are causing complexity while some settings are difficult for normal users to be set and configured (Cutillo et al., 2009). Recent studies have consistently stated that members have difficulties to conceive and apply security options (Church et al., 2009). Web sites such as GooglePlus enable users to access control options over connections and friends who are allowed to visit personal profiles, however it is not easy for basic members to define and set the proper level of privacy. For example, Facebook provides users with an option called “Privacy Settings” allowing members to define which profile data for which target audience(s) is possible to be viewed. Facebook also provides another option which helps users to choose which piece of shared content can be accessible for connections and friends.

![Security in Social Media Framework](image)

Figure 15. Framework of Security in Social Media - (Weimin et al., 2009)

3.8.3 Exploiting Social Media for Spam

Penetration to the pool of personal information stored in databases of social media and collecting users’ information by third party applications can cause a big security challenge. A successful capture of users’ personal information from social media web sites can be used for spam attacks (Huber et al., 2009).
3.8.4 Worm Attacks on Social Media

Worms are types of malwares which are self-replicated and are able to spread fast. A worm is designed to collect users’ private information such as usernames and passwords or bank account information. The collected information by worms might be handed to illegal and underground organizations. Usually, such information are used for identity fraud or for example, accessing the bank credits (Weimin et al., 2009).

3.8.5 Third-Party Applications Threats

Popular social media web sites offer basic services such as messaging, email and sharing tools, however other supported applications are provided by third party web developers. A potential privacy issue is the users' interaction tracking and collecting personal information by third parties or data aggregators (Krishnamurthy, 2008). It is easy for many members of social media to have control over their privacy in social media by shrinking the amount of shared information which can be accessed by unknown connections and untrusted data aggregators. A complete access to the members' private information is not possible, since social media web sites warn members if they permit to run or download an application. Although, some users by allowing third party applications to run on their profile accept the privacy risks.

3.8.6 Other Negative Impacts of Social Media

<table>
<thead>
<tr>
<th>Impact</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identity Theft</td>
<td>Sharing personal information in social media can be used for identity fraud, known as a high potential risk.</td>
</tr>
<tr>
<td>Advertisements</td>
<td>Advertising in social media with millions of daily visits provides a big occasion both for businesses and social media web masters. But, the advertisements can be disturbing or misleading for users.</td>
</tr>
</tbody>
</table>
CyberStalking

Cyberstalking is to abuse social media to harass individual(s) or groups/organization in social media.

Time Consuming

According to a report published in Aug. 2010, Facebook hit the record of most time-consuming web site ahead of Yahoo! & Google where users spend more than 41.1 billion minutes daily. (Internet Traffic Report, 2010)

Sharing Confidentiality

Users provide any content in social media which might be improper either in content validity or share classified and confidential information. Users often trust their connections/friends or friend of friends as their audiences which have potential privacy risks.

| Table 8. Other Negative Impacts of Social Media |

3.8.7 Examples of Security and Privacy issues in Social Media

- MySpace in 2005 attacked by a worm called “Samy” which spread so fast and infected the loopholes of MySpace. (Kotadia, 2005)

- The Kaspersky Lab reported over 43 000 malwares relating to the social media web sites in the end of 2008. (Weimin et al., 2009)

- In 2009, a worm called “Mikeyyy” targeted Twitter and changed profiles of users by spreading irritating texts. (ibid)

- In 2009, Facebook infected by “Koobface” worm which collected passwords and users' information. (ibid)

- On June 26, 2013, Turkish government asked Facebook to provide Turkish users' information to the Turkish authorities in order to identify the users related to the protests against government in June and July 2013. Facebook rejected and pushed it to formal legal channels. (Facebook, 2013)

3.9 Summary of Chapter

In this chapter, the author conducted a theoretical study through reviewing the relevant resources to the subject area. The researcher aimed at answering the research questions by text sampling while extending some key concepts to the details which are crucial for a deeper study within the field of social media and web mediated communications. The textual resources are primarily verified to comprise the literature on past studies. Then in another level, textual review prepared a theoretical basis for empirical study as well as exploring influential aspects that web mediated communications create.
4. Result Presentation and Analysis

This chapter presents the results of the primary and secondary data sets which are gathered through literature review and surveying. The researcher in this thesis used a mixture of quantitative and qualitative data presentation method (see methodology chapter). The analysis also follows the same method while the data sets from primary and secondary phases of research are analyzed and interpreted separately. Later, both of the analysis phases are put together and discussed in the final sections of this chapter. At the beginning, the results of literature review applying a qualitative method are presented and analyzed whilst the author tried to answer research questions, then the results of survey are analyzed. Members of social media are surveyed using a questionnaire which consists 19 questions. The author aimed to make the survey available for proper sample of people who use social media, so the questionnaire published on the web using the powerful tools of “kwiksurveys.com”. The respondents are invited through email, discussion forums and through popular social media web pages.

4.1 Secondary Research Phase – Literature Analysis

Literature study in this thesis generates a theoretical understanding of communications on the web, users' inter-dependencies, correlations and different types of online virtual communities. In addition, social media as a milestone in world wide web, a conceptual technical background of social media, the most known social media web sites and the extend of successful adoption among users are also included in theoretical study. At first, the author in this section prefers to answer the research questions based on literature review and to specify how it contributes to the research process.

1. What is “Web mediated communications”? How social media dominated communications on the web?

Social web as a new communication technology provided people with connection facilities and encouraged them to boost their friendships faster and easier. New generation of web mediated communications gained popularity within a decade (see 3.2). The new specifications (see 3.3.1) and technologies (see 3.3.2) offered by advanced version of web (see 3.3), enhanced the quality and dimensions of users' interactions on social web (see 3.1) and in online virtual communities (see 3.5.4). Virtual communities provide a border-less room for people by the help of advanced web platforms and web sites called "social media web sites" (see 3.6). People in social media can create content and exchange information (see 3.5.1). Users are experiencing freedom to share which was never seen in traditional and offline social networks. This significantly helped the successful adoption of social media.

2. What is the role of social media and how this new medium shaped the virtual communities, users' interactions and correlations in the virtual world?

Social media platforms and web sites provide users with customization and content creation of various types (see 3.6). Users are usually attracted by the numerous services offered in social media web sites, then they invite other friends and relatives to join, find and add old friends, classmates or
coworkers to their connections lists, this contributes to shape small communities of friends. Each individual welcomes number of friends and connections while each small community overlaps (see 3.5.4) other communities by some end-nodes (friends) leading to form bigger virtual communities on the web. The nature of social media encourages interpersonal interactions (see 3.5) and triggers the curiosity of new registered members to share ideas, photos etc. with friends and look forward for friends' feedback. This cycle is repeated where each small community can be the sub community of a bigger community, shaping huge number of interactions and big volume of information exchange in social media. Individuals can gather around a unified theme such as music, food etc. (see 3.4), interact based on common concern or interest (see 3.5.2) and create a huge virtual community on the web which never experienced before.

3. What are positive effects of using social media?

Social media will continue its way to integrate into the people's life. In fact, social media is impacting on human's life while settling into a routine in communication process and interpersonal interactions via web. The most influential positive factors of social media detected through textual review are:

- Social media supports various types of social ties;
- Social media increases information sharing synergy significantly;
- Communication on social media is low cost;
- Social Media provides new opportunities such as:
  - for job market and recruitment;
  - for business and marketing;
  - provides new search possibilities (new search engines);
  - facilitates and supports big social activities such as voting.
- Social media is a powerful tool for globalization.

4. What are possible hazards and negative effects of social media?

The more social media is entering into our life, the less we are feeling the changes it makes in our interaction skills and in our normalized social correlations. Social media is changing human-human interaction to an intermediate method of human-computer interaction (see 3.8). Social media as a communication medium is accessible almost everywhere, on our smart phones in our pockets, on laptops in our beds, on tablets on our dinner tables and etc., replacing our physical encounters with online meetings. The experiences from previous successful communication technologies such as the phone show that we easily change and adapt to the new technologies. In this case, we lose our natural communication clues, skills and feelings. The negative influences (hazards) of social media are summarized in the followings.

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Hazards of social media (Textual review):

- Social media decreases physical encounters replacing face to face friendships with virtual ones;
- Privacy and security issues threaten users of social media;
- Social media can be used for spam;
- Third party applications in social media can cause security issues;
- Worm attacks on social media threaten users' personal information;
- Social media can be used to harass individual(s) or an organization;
- Identity fraud and identity theft happen in social media;
- The freedom of content creation in social media can cause other problems such as untrusted information, improper content and sharing confidentiality issues.

4.2 Primary Research Phase – Empirical Study

The primary research is conducted through surveying in form of a questionnaire and performing two interviews with social media and communication experts (see 2.4.2). The questionnaire published on the web for a period of one month, in which 57 individuals participated. As stated in the methodology chapter (see 2.5), a sample size of 50 to 80 is suitable for the research within the field of informatics.

4.2.1 Presentation and Analysis of Survey Data

At the beginning, the data set collected by questionnaire is presented and analyzed, then the interviews are coming. In the end, both data from questionnaire, interviews and textual analysis are put together. Below is summary of participants' general information captured by questionnaire.

Users' gender:
- Males: 35
- Females: 22

Age group:
- 13-19: 3
- 20-34: 37
- 35-49: 15
- 50 or more: 2

Users' location:
- Europe and Australia: 24
- America: 9
- Asia: 6
- Middle East: 18
Users' occupation:
- Student: 39
- Professor/Teacher: 2
- Manager/Clerk: 3
- Self-employed: 8
- Unemployed: 4
- Other: 1

Users' education:
- School/High School level: 9
- University degree: 46
- Doctoral degree: 2

This is not surprising that most of participants have a high education level whereas the questionnaire is mainly answered by academic people. This is a big opportunity, since academic people are able to answer the questions accurately and able to help conducting the survey in a scientific way, specially in understanding their situation in social media as well as being able to express their experiences. In next level, participants of questionnaire are inquired to specify their experiences of using social media by answering how old their membership is and how much social media is entered to their daily life.
More than half of the participants are experiencing social media for three years or more, meaning that they joined the web sites before 2010 and obtaining membership within the high growth years (see 3.6). Figure 18 shows that most of the users sign in social media for 1-2 hours daily, meaning that social media is entered in their routine as an important activity in their daily life. The users are also inquired about the social media web sites they use and number of connections/friends they have. The author by asking these questions aimed at identifying users’ attributes in virtual communities while collecting practical findings about the volume of users' interactions in online social networks. Since it is not possible to put all of the social media web sites on the list, the most popular web sites studied in textual review are entered as the choices of question (9). There are also options for participants to choose the frequency of usage in order to assess the extend of adoption of a certain site based on the number of visits per day.

The figures above confirms that users are more likely interested in boosting friendships through social media while the majority of them have more than 50 friends in their connections list, since social media is a virtual place where people can meet and make more friends more quickly.

<table>
<thead>
<tr>
<th>Social Media</th>
<th>Often</th>
<th>Sometimes</th>
<th>Rare / Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facebook (n=54)</td>
<td>33</td>
<td>17</td>
<td>4</td>
</tr>
<tr>
<td>Twitter (n=52)</td>
<td>12</td>
<td>26</td>
<td>14</td>
</tr>
<tr>
<td>Google Plus (n=50)</td>
<td>17</td>
<td>25</td>
<td>18</td>
</tr>
<tr>
<td>LinkedIn (n=42)</td>
<td>1</td>
<td>7</td>
<td>34</td>
</tr>
<tr>
<td>MySpace (n=48)</td>
<td>2</td>
<td>6</td>
<td>40</td>
</tr>
<tr>
<td>Forums and Blogs (n=47)</td>
<td>10</td>
<td>24</td>
<td>13</td>
</tr>
</tbody>
</table>

Table 9. Users' Popular Social Media Web Site
Table 9 shows that Facebook is the most used web site by users. GooglePlus despite its newer age, stands at second place of usage between other sites, expecting a bright future and quick growth among people. The other social media web sites such as blogs and forums are not frequently used by users. Other sites such as LinkedIn which is a professional/business social media web site and MySpace which is popular among artists and musicians are visited rarely by individuals.

<table>
<thead>
<tr>
<th>Popularity and number of users</th>
<th>Important</th>
<th>Neutral</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accessiblility and availability on different devices</td>
<td>46</td>
<td>92%</td>
</tr>
<tr>
<td>Design</td>
<td>44</td>
<td>93.62%</td>
</tr>
<tr>
<td>Integrated Services (Chat, E-mail, Third party...)</td>
<td>45</td>
<td>93.75%</td>
</tr>
<tr>
<td>User friendly environment</td>
<td>52</td>
<td>98.11%</td>
</tr>
<tr>
<td>Supported languages</td>
<td>36</td>
<td>87.8%</td>
</tr>
<tr>
<td>Other</td>
<td>23</td>
<td>76.67%</td>
</tr>
</tbody>
</table>

Table 10. Important Factors for Successful Adoption of Social Media

In another level, users are asked to specify and categorize important factors which help social media platforms to adopt successfully among people. The respondents of the survey expressed their view points which are summarized in table 10. The important factors classified by users are: (from less important to the most important)

- User-friendly environment
- Availability on different devices
- Integrated services
- Design
- Popularity and number of users
- Supported languages

Users of social media prefer a web platform which is more attractive in graphics, easy to access to the customization options and meet their expectations in case of content creation features. Hence, social media web sites are needed to be a user-friendly place. The users also need most used communication and interaction services available on the platform, so they believe that “integrated services” is next important factor for successful growth of a web sites. While it is boring and sometimes impossible to sit in front of a desktop PC, it is a vital for platforms to be accessible through mobile devices. The members need to update their status, share experiences and places they check in or post the mood they are in. Therefore, they need to have social media available almost everywhere. This is a factor which significantly contributes to the popularity of specific platform.

Connections and “friendship” ties are foundation of interactions and correlations in online social networks, linking people to the point (or individual) of their desire. Number of connections and users' perspective on connections are two important factors affecting users' interactions and correlations in social media.

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The users’ perspective of using social media reflected on figure 20 specifies that users are also interested in “Learning and Teaching” which includes status updates and getting news about other people and events. “Socializing” and “Youth perspective” are other important perspectives of users when interacting in social media.

Another question of the survey asks users about their activity in social media. Members of social media are inquired to classify types of their activity from most important to the less important.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Often</th>
<th>Sometimes</th>
<th>Rare / Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sharing Photo / Video / Idea</td>
<td>30 54.55%</td>
<td>21 38.18%</td>
<td>4 7.27%</td>
</tr>
<tr>
<td>Making friends / Connecting with friends</td>
<td>24 47.06%</td>
<td>23 45.1%</td>
<td>4 7.84%</td>
</tr>
<tr>
<td>E-mail / Chat</td>
<td>23 44.23%</td>
<td>26 50%</td>
<td>3 5.77%</td>
</tr>
<tr>
<td>Third-party applications (games etc.)</td>
<td>2 3.7%</td>
<td>35 64.81%</td>
<td>17 31.48%</td>
</tr>
<tr>
<td>Joining campaigns / Supporting a group</td>
<td>5 10.2%</td>
<td>25 51.02%</td>
<td>19 38.78%</td>
</tr>
<tr>
<td>News / Information sharing</td>
<td>16 40%</td>
<td>18 45%</td>
<td>6 15%</td>
</tr>
</tbody>
</table>

Table 11. Users' Activity in Social Media

According to the table above, the most important activities of users are “sharing ideas/photo/video”, “connecting with friends” and “email / chat”. On the other hand, “third party applications” provided by external developers is fallen in last place of standard activities among users. This can be because of very current updated services provided by social media webmasters and potential security and privacy risks, therefore applications of external providers are not as popular as default social media services.
Next questions of the survey ask users about the positive influences that social media brought for them. One particular question is about the impact of social media on people in case of loneliness. This question at first view might fall apart from the scope of study in this thesis, but the researcher aimed at identifying the role of social media as it can reduce physical meetings. Some researchers believe that online social networks has a negative influence on relationships and psychological well-being, hypothesizing that this kind of relationship is replacing face to face friendships (see 3.8.1). In contrast, the users of social media don't feel a need for physical meeting while they found human-computer interaction a replacement for their physical meetings. They feel that the other end of communications in social media are also human. Although, the users might lose close contact clues, they search to replace their friendships virtually while they believe that social media can help their loneliness. Around half of responders of survey confirmed that.

From users' points of view, positive aspects of social media in general are “free cost”, “openness” and “globalization” while most of participants believe that free cost is the most important factor for popularity growth.
One of the most important question of the questionnaire inquired users to express their viewpoints about the positive effects that social media have. According to the figure above which reflects the results of question 15, social media helped users to “strengthen friendships” while “creates new relationship types”. The users' experiences show that cultural and geographical limits in social media are non-sense, meaning that users of any region from any culture or ethnicity can join and interact with others. In other words, they believe that “social media removes cultural and geographical boundaries”. To receive further ideas and concepts from users, the questionnaire asked them to send any further comment about the effects of using social media which might be ignored by the author to add in the list.

**Other benefits of social media by participants:**

- Social media brings new friendships;
- It helped to reconnect with old lost friends.
- Social networks on the web help to overcome shyness.

Although social media helps us to create and maintain relationships, some scholars believe that social media deteriorate the quality of social ties and weakens the strength of friendships (see 3.8.1). As analyzed before (see page 48), the users are tended to make more friendships more quick via social media while this kind of socializing has negative aspects.
As seen in the figure above, some users classified “security and privacy risks” in social media as the most negative effect, while it does not necessarily mean that the rest of other users are not aware of the privacy and security issues. The users stated that “face to face interactions are weakened because of social media” as second negative effect. They also believe that “social media is a time consuming activity”, since we have more friends/connections, we get more information about our friends in comparison with offline social networks. In fact, we feel a necessity to process and respond to our friends which takes more time, causing a communication overload in social media. Both of the issues “social media is time consuming” and “lack of face to face friendships” caused by a behavior called “technology addiction”. This confirms what is described earlier (see 3.8.1) that individuals spend much time with their gadgets such as smartphones, tablets and laptops to interact with friends rather than physical encounters.

While “security and privacy” is the most important issue in social media, next question asked users to express their level of attention to the security and privacy threats in social media.
More than half of the respondents (see figure 25) feel that security and privacy in social media are important issues, however the rest of them do not consider such issues as important threats. As mentioned in the theoretical study (see 3.8.2), it might be difficult for some users to interpret, understand and apply proper privacy settings.

In another level, the users are asked to express their viewpoints and to specify how and where social media has negative effects. They classified the category of “Unpleasant material/Advertisement/Confidentiality/Trust” as one of the biggest negative effect of social media, meaning that users are not fully satisfied with content creation options provided by webmasters. The freedom of content creation as a vital specification in online virtual communities empowers users to customize their personal profiles, post the content of their will and vote/tag/comment on other users' posts. Since services offered by social media are free of cost, social media providers boost their business by the fees requested from third party advertisers, although the advertisements can be unpleasant for users. “Unpleasant material” as another users' viewpoint of disadvantages found in any form including negative posts against individuals, ethnicity or gender which causes dissatisfaction among users. The confidentiality of information and untrusted content are other problems which can obstruct the popularity of social media. The users also added that “ideological and generation gaps” in social media can be disadvantageous. Since inter-dependencies in social media are based on users' common interest or concern (see 3.5.2), the differences in generation, age or thoughts can weaken the users' correlations. According to the respondents, “weak ties” in social media is next consequence of using social media. Users usually tend to make new friendships or may accept the connection/friendship requests from others quickly, although they have never seen them. This type of friendship is limited to virtual encounters where interpersonal interactions happen only in the virtual world causing weak relationship ties.

Figure 26. Negative Effects of Social Media
The third classified disadvantage of social media by users' choice (see figure 26) is “identity theft and privacy issues”. Through the last question, the users are inquired to choose the security and privacy issues they have experienced.

![Figure 27. Security and Privacy Issues Experienced by Users](image)

According to the users' responses shown in figure 27, “unknown connection/friendship requests” is chosen as the most common cause of privacy issues in social media. As mentioned before, people are open to make new friendship even with unseen people. This behavior is further known as “friend collecting” behavior (see 4.2.2 in 2nd Interview) which is followed by some users to increase the size of online network they interact with, assuming that more friends make them more popular to the others. Although, they ignore that their privacy and security are exposed to the risks. On the other hand, as described in section 3.8.3 of literature review, social media can be used for spreading “spam/irritating messages”. The participants of survey also confirmed that spam is the second important issue targeting their privacy.

Based on some users, “third-party applications” is a source for privacy attacks in social media websites whereas the applications from third party providers access the users' personal information for advertising based on captured personal information. Although, applications can run and access users' information and photos or videos by users' permission, some users have no idea their profile is scanned by third party applications. In fact, users give permission to access private information which potentially endanger their security and privacy. A few of users have also chosen “identity theft” as another experienced issue whereas their personal photos and profile content have been used to create falsified profiles. Cyberstalking is experienced rarely by responders which can be found for instance when individuals' information is used to create unreal personal profiles, for invitation on dating or encouraging to join illegal campaigns while the creators of such pages provide improper information pretending to have legal activities.
4.2.2 Interviews

According to the objectives of research, the author in this thesis aimed at filling the gap of empirical study in the area of social media to detect the positive and negative effects. Social media is a decade old, so the users are new to this new communication technology. They might lag behind or be unfamiliar to the changes happening through social networking in their interpersonal interactions and real life. The author also believes that users alone can not determine how and where social media changes positively or negatively their communication behavior and social interactions. So, it is important to add the viewpoints, interpretations and experiences of experts of social media specially about the issues and impacts of using social media. In order to to collect valuable data from social authority officials and also social media and communication experts who often deal with benefits and issues around online communities, couple of interviews are performed. Interviews are in English and Persian. The first one is done with a person in charge of cyberspace activities in Iran focusing on legal and illegal activities in social media. The second interview is performed with a professional in social media and communication technology. Although, it was possible to collect data from experts through phenomenology (using questionnaire), but multiple-choice questions could not inquire their valuable comments and concepts in detail. As described before (see 2.4.2), an interview leaves room for further comments and descriptions. An interview as a bilateral communication session which puts the interviewees in the context of research to provide valid and reliable data.

First Interview: CyberSpace Police in Iran

In this section of the survey, the author conducted an interview in Persian with captain Hossein Foroughi who is in charge of investigating and protecting cyberspace activities in Isfahan province, in Iran. He deals with the issues and problems in cyberspace (virtual communities), specially in social media. He has studied computer science while being assistant in conducting studies on security in virtual communities and online social networks. The cyberspace police in Iran established in 2011 called “FATA police” with the aim of investigating internet crimes and helping people who are victims of security and privacy on the web. Captain Foroughi has worked from February 2012 for FATA police, states that by the spread of internet crimes specially in social media networks, Iran as well as other countries such as the US, England, Germany and Russia, is one of the pioneers in detecting and investigating crimes in cyberspace. FATA police provides security for people, government online services or other organizations and helps users/organizations who are victim of illegal online activities such as:

- Phishing and Identity Theft;
- Cyber attacks on organizations and peoples' privacy;
- Creating falsified pages and causes to harass people or organizations;
- Spreading porn and prostitution in social media;
Illegal virtual groups/pages to share or sell digital creations without authors’ permission;

Spreading rumor and false information against people;

Sharing personal photos and official secrets on social media;

Spreading negative speech against people’s religion, ethnicity or traditions.

He added that social media is an efficient medium which help people and organizations to benefit from group working and information sharing, however the old crimes happening in traditional societies are transferring to the cyberspace specially in case of planning, cheating and motivating individuals for illegal activities. FATA police created pages in social media to inform people about the issues and threats as well as suggesting safety recommendations. Updated news about the sources of security problems and discovered crimes are exposed to the public by putting up exhibitions and training workshops as well as sharing on the pages of FATA police on social media web sites. FATA police reports removal of any illegal content, community or groups illegal activity to the webmasters. In addition, any suspected international activities are also reported to the officials in other countries. The crimes and the persons in charge of illegal cyberspace interactions are investigated, the cases are filed and pushed to the legal channels.

In the end, the researcher asked the interviewee to express any recommendation or suggestion for the users of social media. The followings are summary of his suggestions:

- Do not trust unknown friendships;
- Have proper people in circle of your friends, family members in the family circle, classmates or coworkers in their own circle, close friends and others’ in their respective circles by configuring privacy settings properly;
- Do not share personal information for example about plans for traveling or visiting places, time plans, bank accounts or phone numbers in social media;
- If you are working or cooperating with an organization or work place, do not share protected information in social media;
- Think about your activities in social media before doing, virtual interactions can also have consequences equal to those happening in offline world.
- In case of confronting any suspected activity mentioned earlier, contact cyberspace police.

**Second Interview: Social Media and Communication Expert**

Second interview aimed at collecting data from a social media and communication technology expert. The researcher in this part of the survey performed an interview over the phone with Dr. Paul Booth who is an assistant professor at Depaul university in Chicago as a researcher in social media and communication technology. It is more than 5 years that he studies virtual communities and the effects of this new communication technology. He is also in close contact with members of social media, IT professionals and web developers. He is personally an active member of social media web sites such as Twitter, Facebook and Blogs, informing people about his activities and studies whilst he receives feedback from people. He described that the new media known as social media is the
most powerful technology and communication tool between previous few generations. In other words, social media is the most revolutionary technology affecting our interpersonal and social inter-activities. Social media also affects the way we think of our real world connections. Not only our presentation from the friendships is changing, social media changes the presentation from ourselves. It expands our perspective of the world, people and events happening around us. Social media can also help people with social support as a helpful medium decreasing the sense of isolation. Through receiving feedback and comments from others in social media, we perceive that other people are kind and helpful. The sense of convenient friend making can help us feeling self-confident which can not be experienced in the real world. In addition, when social media is used as a supplementary space for connection with friends and extended family in our today's busy schedule, it helps the maintenance of our relationships and social interactions. In addition, social media can help us to overcome stress while we stay in touch with friends and other people having believes, views and attitudes in common.

On the other hand, social media can emerge level of interactions and correlations which are rarely seen in the real world. A kind of behavior called “friend collecting” seen in virtual communities. Big number of friends can reduce the positive effects of virtual interactions, since it exposes us to an addiction to the social media in case we need to keep up levels of interactions with friends we have collected. In the virtual society, we overestimate our friendship ties, ignoring that there are some people who capture our daily life to use it for unpredicted abuses. Another effect social networking caused is to compare ourselves with others. In the virtual world, we are not in close contact with other people's lives to understand the situation they are in, causing a sense that we are less successful than others or we are weaker than our friends.

Dr. Booth believes that despite the downsides that social media have, it is designed by human for human to expand and facilitate human-human interactions. The effects mentioned before can be reduced to minimal or even to the zero if we care of our virtual behavior and interactions.

4.3 Summary of the Chapter

The main purpose of research in thesis was at first step to study the concepts of web mediated communications and social media, then to detect the positive and negative effects. The findings of survey as primary research phase and literature study as secondary research phase shared two perspectives. In particular, an investigation on the most used social media web sites such as Facebook and other well-known sites such as wikis, forums and blogs linked with the perspectives, experiences and viewpoints of users and experts in online social networks built interesting data. The summary of the results and the analysis of textual study, the questionnaire and interviews in form of definitive statements is briefly shown in the following table.
### Results Analysis (in brief)

#### Research Phase(s)

<table>
<thead>
<tr>
<th>Research Question</th>
<th>Results Analysis (in brief)</th>
<th>Research Phase(s)</th>
<th>Research Objectives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sub-question 1</td>
<td>Web mediated communication is versatile users' interactivity on the web platform.</td>
<td>Literature Review (3), (3.1), (3.3) Questionnaire (11)</td>
<td>(a), (b), (c)</td>
</tr>
<tr>
<td></td>
<td>Web 2.0 features and technologies encourage people to use web as a media and enhance users' online interactions.</td>
<td>Literature Review (3.3), (3.3.1), (3.3.2) Questionnaire (3), (4), (5), (12)</td>
<td>(a), (b), (c)</td>
</tr>
<tr>
<td></td>
<td>Virtual communities organized on the web by users' interdependencies.</td>
<td>Literature Review (3.5), (3.5.2), (3.5.4) Questionnaire (11)</td>
<td>(a), (b), (c)</td>
</tr>
<tr>
<td></td>
<td>By the advent of online virtual networks, new socializing environment shaped online and changed the concept of web mediated communications to “Social Media”.</td>
<td>Literature Review (3), (3.1), (3.4)</td>
<td>(a), (c)</td>
</tr>
<tr>
<td>Sub-question 2</td>
<td>Social media provides users a virtual and user-friendly meeting place with customization and freedom of content creation.</td>
<td>Literature Review (3.4), (3.7) Questionnaire (10), (12)</td>
<td>(a), (b)</td>
</tr>
<tr>
<td></td>
<td>Social media provides diversity of web services which facilitate users’ inter-activities and relationships.</td>
<td>Literature Review (3.5), (3.5.1) Questionnaire (11), (12)</td>
<td>(a), (b), (c)</td>
</tr>
<tr>
<td></td>
<td>Popular social media web sites are increasingly welcoming more people.</td>
<td>Literature Review (3.2), (3.6) Questionnaire (6), (7), (8), (9)</td>
<td>(b), (c)</td>
</tr>
<tr>
<td></td>
<td>Social media facilitated the formation of virtual communities, enhanced users' correlations and interpersonal interactions.</td>
<td>Literature Review (3.5), (3.5.3)</td>
<td>2nd Interview</td>
</tr>
<tr>
<td>Sub-question 3</td>
<td>• Social media created by human for human to help human-human interactions; • Supports various interactions and Relationship types; • Increases information sharing synergy; • Social media is low cost; • Social media facilitates and brings new opportunities such as for branding, recruitment and online admissions; • Social media helps loneliness; • Helps to overcome Shyness; • Provides freedom of content sharing; • Is a strong tool for globalization; • Social media removes cultural and geographical communication limits; • Boosts more interpersonal interactions faster; • Reduces business/life costs; • Social media creates new friendship ties; • Is a strong virtual community for social support; • Decreases the sense of isolation; • Increases the sense of help and cooperation; • SM helps to reconnect with old/lost friends; • Can be an Alternative for our real world communications;</td>
<td>Literature Review (3.7), (3.7.1), (3.7.2), (3.7.3), (3.7.4), (3.7.5), (3.7.6) Questionnaire (13), (14), (15)</td>
<td>1st Interview, 2nd Interview</td>
</tr>
</tbody>
</table>
Table 12. Summary of the Chapter (Results/Analysis in brief)

<table>
<thead>
<tr>
<th>Sub-question 3 (continued)</th>
<th>Sub-question 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expands humans' perspective; SM helps interacting with friends having same idea/concern which helps reducing stress. Provides rich user experience; Empowers collaborative authoring and collaborative content creation; Online contents are dynamic as are added value or depleted by users' votes/tags; Crowd-sourcing enriches content sharing in social media.</td>
<td>Face to face friendships are decreased; Untrusted and confidential sharing; Social media is time consuming; Ideological and generation gaps are causing issues in social media; Friendship ties in social media are weaker than real world ones; Using social media to spread negative language against people/groups; Friend collecting behavior causes privacy and security issues; Sending friendship requests to unknown people; Using SM to harass people/groups; Hiding behind unreal identity; Spreading porn/prostitution; Promotes alcohol/drug or violence faster; Using social media for illegal distribution of digital creations and violating copyright; Spreading rumor and improper information; Sharing personal photos and organizations' secrets; Spreading negative speech against traditions, religion or ethnicity; Causes technology addiction; SM spreads contagious behavior between friends faster; Security and privacy issues are rising; Third-party applications threaten privacy and security of users; Worm attacks on social media collect private information; It is difficult for some users to interpret and configure security settings in SM; Unpleasant material and advertisements; Phishing/identity theft; Spreading spam/irritating messages.</td>
</tr>
<tr>
<td>Literature Review (3.7), (3.7.1), (3.7.2), (3.7.3), (3.7.4), (3.7.5), (3.7.6) Questionnaire (13), (14), (15) 1st Interview, 2nd Interview</td>
<td>Literature Review (3.8), (3.8.1), (3.8.2), (3.8.3), (3.8.4), (3.8.5), (3.8.6), (3.8.7) Questionnaire (16), (18), (19) 1st Interview, 2nd Interview</td>
</tr>
</tbody>
</table>
5. Discussion

Social media has completely changed the way that people use the Internet. By the advancement of web platforms, many services like chat, news feeds, email etc. integrated to a single platform. People sign up in a new virtual community and invite their friends, families or classmates. They are moving to a new platform which is attractive, transfer their interactions from physical world to virtual communities and exchange information over social media. in such a new way, people often neglect that they are losing physical ties or their privacy might be at risk. Off course, social media brings new horizons and has benefits, but there are also hazards and problems that people need to be aware of. The critics against the development of social media believe that it may encourage unrealistic communications among people. In online virtual networking, some users dare to publish everything which might be inappropriate. In addition, privacy risks caused by integrated applications on social media web sites, unknown people who hide themselves behind unreal profiles and the amount of the time that people consume using social media, raised more concerns. Some individuals suspect that social media collects personal information which might later be accessible by legal or illegal organizations without permission. In addition, as derived from empirical study, some users do not care enough while interacting in virtual communities whereas some of them are victims of security and privacy issues such as identity fraud and cyberstalking. Although, webmasters interpret the consent as an “informed consent page” when users sign up for membership, but it does not guarantee that users' information would not be given to a third party. In fact, members do not have enough knowledge or power to control the flow of personal information to the secondary use. Furthermore, there is not any conventional law or regulation to address such issues. Usually it is difficult to prove that a fact is private for example when a user publishes other people's personal information or shares improper content in social media, the damage seems impossible to be estimated. Above all, social media is widely adopted among people and is irrational to prohibit them from joining just because of concerns over the privacy and security. However, the users should be aware of the risks and have control over the content they share. Most webmasters provide comprehensive security options to empower users having enough control on what they share and to control the target audiences to whom their private information is visible and accessible.

5.1 Research Evaluation

Research evaluation in this thesis provide guidelines to discuss the reliability and validity of research as well as the quality of presentations and interpretations.

5.1.1 Validity and Reliability

Reliability determines which data methods emerge consistent findings, which similarities in results are seen and how conclusions are come up by the researcher. On the other hand, validity estimates which data collection method is accurately corresponding to the problem area and based on which
results the problem is studied (Saunders et al., 2009). The criteria to evaluate validity and reliability in this research are:

(a) Method Evaluation
(b) Consistency and Similarity of Findings
(c) Validity of Results (value of responses)
(d) Validity of Research

Both in literature review and in empirical study, careful attention is given to provide valid and reliable results, first by choosing proper research methodology, then applying that to study the problem area. The strategies for validating findings are described in the methodology chapter (see 2.6 and 2.7). In addition, the primary research conducted through designing a survey in form of a questionnaire targeting the proper sample of users who have enough experience in social media. The questions sent before-head and enough time is given to the participants. In addition, the questionnaire designed with multiple-choice questions to attract all of the target sample of users to put time for participation. Due to the good will of interviewees, both of interviews received new experiences and ideas from experts which helped the researcher to focus more on interpersonal impacts of social media.

By literature sampling, author aimed at choosing the most known literature resources and using the very recent publications to accord the latest findings with the results of the survey. Surprisingly, secondary research phase which was done through literature review in many cases was in line with the results of survey.

To test the validity of results and the research as a whole, it is important for the researcher that the findings of both research phases contribute to the area of study and to emerge consistent findings. It is a certainty that theoretical study contributes more than empirical part to a valid research process. The relationship between both phases of research are shown in table 12, however, small differences in few parts exist, since different theories from different subject areas contributed to the research process.

### 5.1.2 The Quality of Research

The researcher used the following criteria to evaluate the quality of presentations and interpretations:

(a) Perspective on Research
(b) Structured Study
(c) Ethical Considerations
(d) Richness of Interpretations

The study in this thesis started using a perspective on research and identifying the problem area, then defining the questions and objectives of the research while deigned to follow a structured methodology from the very beginning of the the dissertation. The methodology chapter (see second chapter) comprehensively discussed the methods undertaken in the research, the method to evaluate
and choose literature, sampling method used in empirical research and the ethics considered in the study to have a high quality and valuable research. In the meanwhile, the researcher used extreme care to follow a zero plagiarism policy to accord the literature to the subject area and the survey results. Based on chosen philosophy, the researcher avoided biased interpretations in the analysis while applied self-experienced interpretations (hermeneutics - see 2.1) to achieve richness of interpretations.

5.2 Conclusions

In this thesis, findings are solid affirmation that social media is the latest trend where the study highlights the fast growth and increasing volume of communications and correlations in online communities. Social media enables people to meet in a newer place and revolutionized traditional socializing methods. The successful growth of virtual networking is achieved through a collaborative environment and collective content sharing. The findings of recent research confirmed by the results of survey state that friendship is the most important perspective of users in social media and a key success in growth of virtual communities. Users primarily encourage their relatives, friends, classmates or co-workers to join, then in another phase, people from different locations can find same interests and to connect to each other. As key facts provided by social media web sites show and according to the survey participants, most users visit social media every day and use web sites for more than one hour daily, proving that virtual communities are not only interesting places, they are also becoming an essential part of people's communication behavior.

People primarily feel that social media is problem free. Both perspectives from literature study and empirical study agree that the most important positive aspects of social media which attracted people are the facilities to make limitless connections and friends, abilities to share and discuss on a multicultural community and low cost membership. By contrast, the concerns and critics which target this new trend focused on analyzing the aspects of social media which have consequences. For example, webmasters who might deliver users' private information to specific companies, advertisers or third party developers, violate the privacy of users. Furthermore, the amount of time that users spend on the web sites, weak friendship ties and worm attacks are other instances of problems in social media. Never the less, it is rational that more value will be gained when some security and privacy considerations done properly by users. In virtual communities, people perceive of us based on what we shared and posted on profiles, according to our comments and the content we vote for. The users we interact with is also another point for others to form impression of us. In fact, the people are judged online by the relationships they make.

All in all, the detected advantages and disadvantages of online social media in this thesis are aimed at maximizing the benefits and reducing the negative impacts.
5.3 Implications for Informatics

As mentioned before (see 1.8), informatics is a wide study area including sub-disciplines such as information science, information technology and human computer interaction. In informatics, dialectical relationship between development and user is crucial (Lind, 2005). While online social networks provide users' activity on the web platform, the users' interactions, the platform specifications and web technologies are subject to study and develop in informatics. The implications derived from the results of study in this thesis illuminate the influential aspects of social media and virtual communities. As stated in the analysis chapter, social media forms virtual communities and attracts users to interact virtually based on interdependencies which can further engage more people to join by developing interpersonal relationships.

Another implication is for developers and web masters of social media who seek leadership in the world of web mediated communications. Popular web sites such as GooglePlus adapt their services with users' needs, such as the new search possibility which is recently developed by Facebook (see 3.7.5). As the results of this study confirm, a user friendly environment and availability on different device are two important factors which help increasing the successful adoption of a web platform, the factors which should become the basis of further developments. In another level, developers of web technologies need to update the features and specifications of web platform to enhance security and privacy of users' online activity. The developers of social media should also notice that collaboration is the foundation of social media, hence such a potentiality in social media merits to be used in co-design developments.

An important implication of this study is for users of social media. While there is not a complete resource addressing the consequences and consequences of social media, the users as the main actors in virtual world can use the outcomes of this study to improve their understanding about social media and its impacts.

The last implication is for the researchers in informatics. The detected corners and investigated aspects of social media in this study can be cited by researchers or be presented in seminars and conferences. While social media is becoming a sensitive issue in informatics and communication technology, the future research in the area of this study can cite the findings of current research.

5.4 Possibilities to Generalize

Social media is a wider concept than web mediated communications. The huge volume of communications in social media and the level that people are involved in interactions of virtual communities, gathered the sociologists, legal authorities, informatics people, academicians and other people to talk and study about this new medium.

This thesis in another perspective formulates the ethics of social media and improves users' online activity. In addition, other social units and organizations who might have ignored the role of social media as an efficient and powerful tool which can add value to their activities, will be noticed by the power of social media.
The literature resources in this thesis are from publications of different locations and the textual sources from different countries worldwide. The participants of the survey are also from different locations (see pages 40 and 46). The author at this point states that the results of this study can be used for public benefits.

5.4.1 Recommendations

To generalize the outcomes of study in this thesis, the author feels a need to add some recommendations and to maximize the benefits of using online social networks. The followings are key suggestions for users based on what studied in this thesis.

(a) Online activity is an inseparable part of our life. We should keep in mind that social media can not completely replace our interpersonal interactions in the real world. Social media should be an alternative for our friendships. If we transfer most of our communications to the virtual world, we lose the benefits we have in the real world through face to face communications. We should keep a balance between our online and offline networking.

(b) People need to monitor their activities and interpersonal interactions in social media. We can benefit from social media when we watch our behavior, share valid and truthworthy content, control our reactions, impressions and emotions in virtual communities.

(c) Remember that privacy in social media is remaining an issue. The more connections we have and the more unknown our connections or friends are, the more our privacy is at risk.

(d) Use third party applications as little as possible. Although social media web masters let the applications to be accessible on their platform, the users should keep in mind that applications might be designed by third party developers to collect personal information, however the real purpose is not evident.

(e) Apply proper security and privacy settings in your profile. Update profile settings according to the new options provided by webmasters.

5.5 Ideas for Further Research

Due to the time constraints in this thesis, the researcher questioned a sample size of 57 which might lag behind the fast growth of social media and the diversified demography of users. The researcher feels that if the scale of study becomes larger, more characters of users and a better demography will be identified. In addition, a research on specific services offered by webmasters of each social media web site, can help detecting success keys for the extension of social media and the development of integrated applications. Further researches are needed to focus on development of newer versions of web and technologies for example developing the semantic web and enriching the relational search engines using public contents in social media as data and knowledge bases. Another research is necessary for the development of co-design and cloud computing through social media.
References


Khan, K. (2010). “Marketing Communication Phenomenon within Social Networks & Blogs; A Consumer Prospective”. Italy: Luiss Guido Carli University.


Appendix 1: Questionnaire

Some of the interaction that would have occurred in the real world will be substituted by virtual encounters using social media. In this case, some of the communication cues included in physical meetings will be lost. As a student of IT, I have designed a questionnaire for the primary phase of my thesis research to investigate "What advantages and disadvantages will the use of web mediated communication create". The answers are designed in form of multiple-choices to save the respondents time while the whole survey takes 5-10 minutes to complete.

Please read the following criteria to know if you are qualified for participation:

1. You should be a member of any social media sites;
2. Your membership should be 3 months or older;
3. You are not enforced to answer all of the questions, you can leave the survey at any point, then your data will be destroyed.
4. Questionnaire in other languages is available (Persian).

Send your enquiries to s101235@student hb.se.

I would like to thank you in advance for helping me in my study.

1. Please select your gender:
   - Male
   - Female

2. Please specify your age group:
   - 13-19
   - 20-34
   - 35-49
   - 50 and more

3. Which location are you from originally?
   (Please select the current location where you reside for more than 5 years)
   - Europe and Australia
   - America
   - Asia
   - Middle East

4. Please select your occupation:
   - Student
   - Professor / Teacher
   - Manager / Clerk
   - Self-employed
   - Unemployed
   - Other
5 Select your education level:
- School level
- High school level
- University degree
- Doctoral level

6 How old your membership on social networks is?
- 3 - 6 months
- 6 - 12 months
- 1 - 3 years
- More than 3 years

7 How frequently do you use and how much time do you spend on social media sites?
- More than 2 hours daily
- Daily 1-2 hours
- Daily less than 20 minutes
- Weekly
- Monthly

8 Please specify the number of connections or friends you have on your most used social media web-site:
- Less than 20
- 20 - 50
- 50 - 200
- 200 - 500
- More than 500

9 Which of the following social media sites have you ever used?

<table>
<thead>
<tr>
<th>Social Media Site</th>
<th>Often</th>
<th>Sometimes</th>
<th>Rare / Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facebook</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Twitter</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Google Plus</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LinkedIn</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MySpace</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Forums and Blogs</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

10 Which of the followings are important for you while choosing a certain social media site?

<table>
<thead>
<tr>
<th>Feature</th>
<th>Important</th>
<th>Neutral</th>
</tr>
</thead>
<tbody>
<tr>
<td>Popularity and number of users</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accessibility and availability on different devices</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Design</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Integrated Services (Chat, E-mail, Third party applications etc.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>User friendly environment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supported languages</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
11 Which of the following(s) represent your perspective of using social media?

- Friendship
- Learning / Teaching
- Group working
- Love / Dating
- Promoting business / services
- Branding
- Democracy / Freedom
- Socializing
- Youth perspective
- Procuring information from everywhere

12 Which social media service(s) do you use?

<table>
<thead>
<tr>
<th>Service</th>
<th>Often</th>
<th>Sometimes</th>
<th>Rare / Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sharing Photo / Video / Idea</td>
<td>○</td>
<td>●</td>
<td>○</td>
</tr>
<tr>
<td>Making friends / Connecting with friends</td>
<td>○</td>
<td>●</td>
<td>○</td>
</tr>
<tr>
<td>E-mail / Chat</td>
<td>○</td>
<td>●</td>
<td>○</td>
</tr>
<tr>
<td>Third-party applications (games etc.)</td>
<td>○</td>
<td>●</td>
<td>○</td>
</tr>
<tr>
<td>Joining campaigns / Supporting a group</td>
<td>○</td>
<td>●</td>
<td>○</td>
</tr>
<tr>
<td>News / Information sharing</td>
<td>○</td>
<td>●</td>
<td>○</td>
</tr>
</tbody>
</table>

13 Does social media help your loneliness?

- N/A
- Helpful but still isolated from friends
- Very helpful
- No

14 In your opinion, which factor has made social media successfully adopted among people?

- Helps decentralization of socialism
- Offering many services free of cost
- Opens
- A strong tool for globalization
- Other

15 In case you believe that social media has a positive effect(s) in your life, select the appropriate answer:

- Social media strengthened my friendships
- Social media reduced my business / life costs
- Social media removed cultural and geographical boundaries
- Social media created new relations
- Helped reconnect with old friends / classmates / co-workers
- Other positive effects
- No positive effect
16 In case you believe that social media has negative influence(s) in your life, please select appropriate answer:

- Social media has taken most of my time sitting in front of computer (addicted to the social media)
- Face to face interactions are weakened because of social media
- I am worried about the security and privacy in social media sites
- Other
- No negative influence

17 How much do you care of security and privacy issues on social media sites?

- Always careful
- Not worried excessively
- Feel free

18 Which of the followings make you unhappy in social media networking?

- Cultural differences / Ideological differences / Generation gaps
- Weak friendship ties
- Identity theft and privacy issues
- Negative Language / Promoting alcohol, drugs and violence
- Unpleasant material / Trust / Confidentiality / Advertisements
- Other issues

19 In case you have encountered any privacy and security issues, please select appropriate answer:

- Spam / Imitating messages
- Unknown connection / friendship requests
- Malicious third-party applications
- Phishing / Identity theft
- Cyberstalking
- Sharing confidentiality
- Other

Remember to push the finish button after completing the survey.

Send your further comments about questions, specially any idea about positive and negative effects of social media to s101255@student.hb.se.

Your participation is really appreciated,
Wish you all the best,
Ali Karimi.

Finish Survey
Appendix 2:

Interview1

Questions:
1. Which background do you come from?
2. What is your main role or position?
3. Since when your department exists and how long do you work in your position?
4. What are the services offered by your department?
5. Do people have knowledge about the existence of your department?
6. Do you believe that social networking has benefits?
7. In your opinion, is there any problem or negative effect while using social media?
8. Do you have any cooperation or contact with other legal organizations? Please describe shortly.
9. How people can get help from you?
10. What are the main problems and issues you are dealing with?
11. What are your recommendations for users to keep their virtual life safe?
12. In the end, is there anything you would like to add?

Interview2

Questions:
1. Which background do you come from?
2. Since when do you study social media and how long do you work in your position?
3. Do you believe that social media has benefits?
4. In your opinion, is there any problem or negative effect while using social media?
5. Are you personally member of any social media? Which one? What is your motivation for joining?
6. Do you have contact with other professionals such as social media web masters or legal authorities?
7. What are your recommendations for users of social media?
8. In the end, is there anything you would like to add?
University of Borås is a modern university in the city center. We give courses in business administration and informatics, library and information science, fashion and textiles, behavioral sciences and teacher education, engineering and health sciences.

In the School of Business and IT (HIT), we have focused on the students' future needs. Therefore we have created programs in which employability is a key word. Subject integration and contextualization are other important concepts. The department has a closeness, both between students and teachers as well as between industry and education.

Our courses in business administration give students the opportunity to learn more about different businesses and governments and how governance and organization of these activities take place. They may also learn about society development and organizations' adaptation to the outside world. They have the opportunity to improve their ability to analyze, develop and control activities, whether they want to engage in auditing, management or marketing.

Among our IT courses, there's always something for those who want to design the future of IT-based communications, analyze the needs and demands on organizations' information to design their content structures, integrating IT and business development, developing their ability to analyze and design business processes or focus on programming and development of good use of IT in enterprises and organizations.

The research in the school is well recognized and oriented towards professionalism as well as design and development. The overall research profile is Business-IT-Services which combine knowledge and skills in informatics as well as in business administration. The research is profession-oriented, which is reflected in the research, in many cases conducted on action research-based grounds, with businesses and government organizations at local, national and international arenas. The research design and professional orientation is manifested also in Innovation Lab, which is the department's and university's unit for research-supporting system development.