

Usage of Social Networking Sites and Technological Impact on the Interaction-Enabling Features

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Abstract

Technology mediated social networking site conveniently allows its users to communicate, develop and maintain friendships. The usage pattern of social networking consumes time and exposes users profile information to online threat. Increasing security concern necessitate for a study especially as the population of the mostly used online social networking site has rapidly increased to about 4.545 billion users spending an average time of 2 hours 43 seconds daily. The technological impact of social networking site reviewed focuses on the information used for communication, interaction and to socialize with other users. The study highlighted alternative pathway to circumvent online security risks.

Key Words: Social networking, Communication, Interaction, Online, User's information.

1. Introduction

People around the world are rapidly integrating virtual form of communication in their everyday lives (Haythornthwaite and Kendall, 2010). Specifically, social networking sites users consistently log online to communicate and interact with other users. The convenience of the networks is technology-mediated unlike the social communities found in the physical world that requires face-to-face contact. Digital social networking site are operated and confined with the internet (Boase and Wellman, 2006). The rapid growth of online network is transforming interpersonal relationships with a shift to the digital world (Buffardi and Campbell, 2008; Putnam, 2000) changing landscape of social communities from the physical to the digital realm and developing contrasting views in cultivating and maintaining online social connectedness that befits face-to-face relationships (Putnam, 2000; Ellison et al., 2005).

However, media networking site affects social, emotional and cognitive development of youth accounting for a large portion of their time (Roberts and Dunbar, 2010). Among the online application that has grown rapidly in prevalence and popularity in recent years such as Facebook, MySpace, Friendster, LiveJournal, and Bebo, are Internet-based and allows users to post profile information, such as their name and photograph (Peluchette and Karl, 2010). Sending public and private online messages as well as sharing photos online while communicating with other users exposes their personal information to unknown users.

The rapid growth of online social networking site represents an alternative communication platform that necessitate for further research (Fox et al., 2007). Social networking dominant all form of communication over the internet.

The social media network allows its users to create and share media content (Kaplan and Haenlein, 2010). However, despite the widespread use and proliferation of the site very little research has focused on its technological impact and privacy concern (Brickman-Bhutta, 2009). This paper reported usage pattern of most popular social networking and the major users by country as well as the average time spent on the network. The enabling features mediated by technology, type of information supported as well as concern over privacy were reviewed. The information is required to enhance the effectiveness of online communication and to circumvent security risks.

2. Social Networking Sites

A social networking sites provide interactive platform that enables its users communicate with other members to establish social relations to share information and knowledge relative to individual experiences activities in real-life. A social networking site encompasses a representation of user profile information such as profile name, age, gender, marital status and is directly links to a variety social network site with additional services (Chiu et al., 2008). Social networking site are web-based communication platform that provides it users with an interactive features over the internet and are facilitated using e-mail, instant message, offline massages and posting of images and pictures (Johnson and Onwuegbuzie, 2004). Because the nature of interaction afforded by social networking site is limited to registered members, in a broader sense it can be considered as a community-centered interactive service. The Social networking sites allow users to share ideas, pictures, posts, activities, events, and interests among members in their network. Table 1 show that the average population of the first ten most used social networking site constituted 4.545 billion daily users as of January 2014 (Mediabistro, 2014). Fig. 1 shows that the average time spent on social network users by country. On average, Argentines used social networking site more that other countries of the world with an average user spending a minimum of 4hrs. 3 minutes daily while Japanese are the least spending an average time 0.8 hours daily (Mediabistro, 2014).

Table 1: Active Daily Users of the Most Used Social Networking Site Platform

Social networking site	Average active daily users
Facebook	1.184 B
Tencent QQ	816 M
Ozone	632 M
WhatsApp	400 M
Google +	300 M
Wechat	272 M
LinkedIn	259 M
Twitter	232 M
Tumblr	230 M
TencentWeibo	220 M

B depicts active daily user’s population in “billion” and M, in “millions”. Average population of first ten major social networking site users in the world is about 4.545 billion.

Source: Mediabistro (2014).

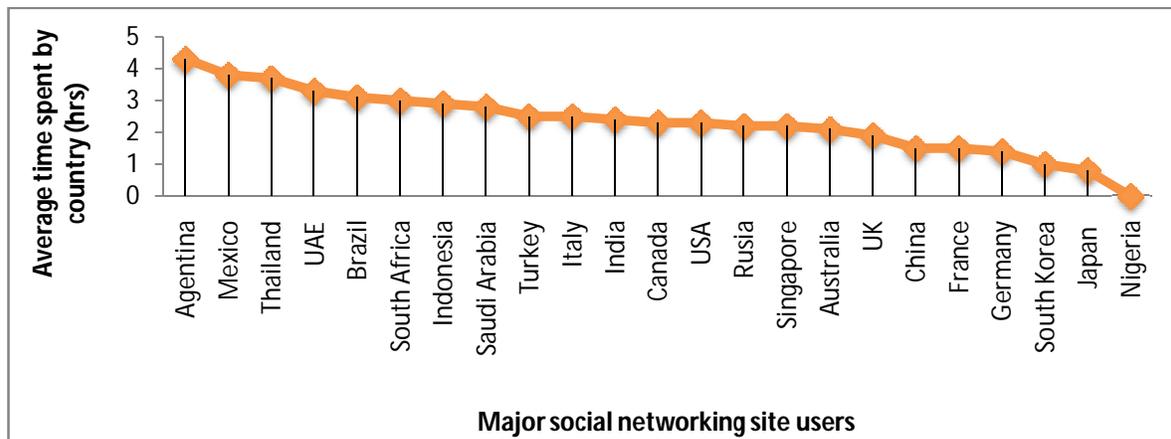


Fig. 1: Argentina 4.3, Mexico 3.8, Thailand 3.7, UAE 3.3, Brazil 3.1, South Africa 3.0, Indonesia 2.9, Saudi Arabia 2.8, Turkey 2.5, Italy 2.5, India 2.4, Canada 2.3, USA 2.3, Russia 2.2, Singapore 2.2, Australia 2.1, UK 1.9, China 1.5, France 1.5, Germany 1.4, South Korea 1.0, Japan 0.8, and Nigeria (information not available). Average time spent on social networking site by the major users in the world by country is 2 hrs. 43minutes daily based on information provided in January 2014.

Source: Mediabistro (2014).

The advent of computer-based telecommunication and its integration with the social networking site facilitated wider communication and social interaction among users (Livingstone and Brake, 2010). Efforts to improve social networking site services have concentrated on improving its interactive features (Chiu et al., 2008). Early social networking site on the World Wide Web such as Theglobe.com, Geocities and Tripod.com (Barker, 2009) are generalized online communities with the intension of providing a platform for people to socialize with other using chat rooms and encourages users to share their personal information and knowledge through their personal webpages. This led to the establishment of easy-to-use publishing features that enables online users to post images at free. The online communities initially constitute students usually classmates, peers, family members (Debatin et al., 2009) and have extensively been used by organizations, government and individuals for various services such as business transaction, job interview and notification of job offer (Connolly and Bannister, 2007) because of its efficient services. Most of the services are provided using email that is connected directly to the user profiles which is central social networking sites and allows users to compile lists of friends and search for other users of similar interest (Rosen, 2007). The social networking sites have flourished and have become part of the internet mainstream allowing users to communicate, interact and to develop social ties.

Communicating

Communicating using social networking site enables individuals to meet old friends, family members and to make new friends by freely expressing themselves as it is in the real-world (Rosen, 2007; Posey et al., 2010; Sas et al., 2009). In providing platform for communication, social networking site such as Facebook, Twitter, MySpace, LinkedIn enable its user to post anything about themselves and relate to other users based on their intended image (Amichai-Hamburger and Vinitzky, 2010). An important question that deserves urgent answer is to whether the images posted using the social networking sites reflect real-world identity or portray honest representation of their personality (Dwyer et al., 2007; Posey et al., 2010). This is because users are provided with the opportunity present themselves in varying fashion which could be deceitful since there is no standard to justify the originality of the information presented to the audience (Posey et al., 2010; Dwyer et al., 2007; Lewis and George, 2008). Studies have shown that users of media social network create their own avatars to describe their identity, priming it with physical attributes that portrays the intension with the information they wish to communicate (Cachia, 2009; Jin, 2009; Talamo and Ligorio, 2001). Though the free communication assess afforded by social networking sites posses security concern to its user's privacy, overcoming the security issues will provides endless opportunities in various ways to the users to satisfy their communication needs using its interactive features (Cachia, 2009; Papacharissi, 2009).

Interaction

Interaction using social networking site provides venue for users to freely express themselves (Posey et al., 2010). The open access of social networking sites enables those with valid account to interact. The nature of interaction between users is often confined to the profile information that explains user's preferences to accept public data (Posey et al., 2010; Dwyer et al., 2007). The willingness to interact and make friend is optional and solely depends on individual user especially as the concern to protect users privacy becomes a necessity (Dwyer et al., 2007; Lewis and George, 2008). Security issues have reduces online interaction especially with unknown users (Cachia, 2009; Papacharissi, 2009). In building an interactive networking of like-minded users, individual are free to demonstrate and share their feeling, experience and knowledge among the online members. This attribute of social networking site opens up opportunity for users to socialize with people and enlarge their network profile (Jin, 2009). It therefore becomes necessary to understand the agents of socializations that facilitate online interactions among various users.

2.1 Socialization

Socialization depicts the process of learning and participating in a culture and to live with it and is grouped as primary or secondary (Zhao, 2006). Primary socialization agents encompass the processes of learning attitude, value and action of other member of a particular culture and mostly confines to the family. Secondary socialization embodies learning the behavior of a small group in a larger society and is commonly linked with young adult and amount to a smaller change compare primary socialization. A typical form of this form of socialization is entering into a new career and relocating to a new environment. Specific groups that carries out socialization are refer to as socialization agents. The agents of socialization largely contribute to the development or upbringing of young adult and how they socialize via social networking sites (2009). Socialization and the level of interaction via online social networking site are initiated to develop relationship and this viewed in terms of social tie.

2.2 Social Tie

The level of interaction and relationships between online users are determined by the level of their social ties (Papacharissi, 2009, Zhao, 2006; Stefanone and Jang, 2007). The strength of social tie strength embodies the multidimensional construct of interpersonal relationships in the context of social networking (Money, 1998). The two main streams of online socialization include making new friend or interacting with the existing friends or members. Larger and strong social tie support existing relationships and aid in reconstructing and established a new social networks in a way to complement online and offline socialization among members (Papacharissi, 2009; Stefanone and Jang, 2007; Dotan and Zaphiris, 2010; Marshall et al., 2008). In contrast, weak social ties are common with unknown users or strangers and are characterized by a strange form of communication distinguishable by its low reciprocity and lack of emotional closeness. Subsequent section discusses the agents of socialization comprising primary and secondary agents that extend interaction from the family setting with other non-family members.

3. Agents of Socialization

Agents of socialization are grouped as primary such as the family and secondary such as mass media services, peer group and the school system.

3.1 The Family

The family is the initial and the most influential agent of socialization and start at birth when a child need help most and depends on the parents to provide necessities of life such as food, shelter, care which extend throughout their lifetime (Stefanone and Jang, 2007). Socialization in the family is very influential because:

It establishes foundation for all behavior such as development of language abilities, learning to talk, body control such as "training to eat", emotional control such as "don't fight, don't insult", rules of public conduct such as "obey the law, respect elders" and moral values such as "don't lie" (Stefanone and Jang, 2007). Control of access by parent over their children extends to building an extremely strong and effective relationship that curtails their association with others. The lifetime impacts of parents affects how individual interact and identify with others and form the strength social tie among family and friendship in social network community.

The strength of social tie among members of a family as an agent of socialization is established from the combination of two influential factors;

- I. The family has a total control of people from infancy through to adolescent years and impact cultural norms and laws recognize by the parents.
- II. Parent and child emotional bond motivates them to socialize and share their feelings.

Socialization processes is difficult and painful because it involves training, learning and how to control emotion anger and aggression (Barab, 2001). The ease with which a child can be cultured to learn and socialize is developed from the emotional attachment to their parents. Children tend to please their parents because they want their parents support and affection.

This implies that without parental support, children life becomes very vulnerable and perhaps threatening to the society (Marshall, 2008). Socialization is developed through the emotional bond between children and their parents that further opens them up to lessons taught by their parents. The family relationship is strongest, especially during infancy after that the media, then peers and finally the school. Secondary agent of socialization discussed in this paper comprises mass media services, peer groups and the school system where knowledge and developing skills are provided to equip young adult for future challenges.

3.2 Mass Media

Socialization through the media is developed via characters, words, images and narrative stories (Ellison, 2007). Most media specific acts to be an agent of socialization by providing entertainment programs. Children spend much time watching television and socializing with their online friends using social networking sites such as Facebook, Twitter and MySpace. Images and messages posted using media networks are and seductive and often contradicts the parent's way of teaching. This influence continues to grow and strengthens adolescence to adopt lifestyles of various film actors and actresses, music and movies become more influential among peers (Knobel and Lankshear, 2008). This form of socialization is facilitated using internet web pages, e-mail, chat rooms and has emerged as active media source (Knobel and Lankshear, 2008). The socialization power of the media declines as children grows to adulthood.

3.3 Peer Groups

Peers refer to people within the same age, similar social identity and close social proximity (Amichai-Hamburger and Vinitzky, 2010). Children are associated with a stronger peer group influence at their infant stage through to adolescent (Amichai-Hamburger and Vinitzky, 2010). Peers broaden their circle of socialization influence to people outside of their family as they become more exposed to other agents of socialization such as media and schools. The interaction between peers adds to their socialization and becomes part of their social skills (Amichai-Hamburger and Vinitzky, 2010) and this enables them to relate with people in a superior position (Amichai-Hamburger, 2002). Interaction between peers decreases as they grow in age and tends to be autonomous. Their experience and lessons learned becomes a basic rule for more complex strategies used for leadership, cooperation, dominance, negotiation, and compromise. Peer group relationships become extremely important as they learn how to navigate the complexities of group interaction without adult guidance. Peer group socialization linked to puberty and their relationship with others in life. As an agent of socialization, peer group develops a social tie that extends to adulthood (Amichai-Hamburger, 2002). This is because they learn and practice together things that seem unusual, such as interaction with the opposite sex, development of friendship between and to be liked by others as well as making choices.

3.4 School

Traditionally at about seven years old a child enrolls into the school system. The process is initiated at the Kindergarten or day care. Socialization in a school setting strengthens teachers-students social ties as they grow to acquire knowledge and skills learned in English, math, sciences, social studies and other subjects (Avram, 2007). The school is an official place the society transmits it knowledge and skills to the children and officially pass on cultural values, tradition, and heritage. This school curriculum usually reinforces family training and in most cases challenges family socialization such as teaching values of tolerance from a racist family to learn how to live peaceably with another race.

Learning social behavior of peer groups become the model for secondary group interactions.

The skills learned in peer groups are transferable and develops the child on how to communicate, negotiate, dominate with peers outside of their immediate social circle to expose them to diverse social backgrounds (Barker, 2009). However, socialization starts in the family and continued in the peer group through to school age (primary and secondary) where they expose to largely learn how to socialize with others (Barker, 2009) and broadens away from general group interaction to interact with the opposite sex, especially in sports, classroom discussion and during school competition.

School exposes children to learning the rules of behavior needed to function informally organized groups such as “do not talk when the teacher is talking”, “complete your assignments on time, “follow the teacher’s instruction” and many others (Amichai-Hamburger, 2002). This aimed at shaping the conduct of the student in order to fit into the societal leadership. The socialization afforded by various social agents has been improved through the use of technology. Although there is significant improvement on how people interact using technology mediated social networks, there is increasing concern over how users privacy are protected from on-line threats.

4. Technological System of Social Networking Site

Technological system supporting social media services such as internet and computer provides a reliable platform for online interaction and socialization. The quality of a technological system considering its reliability, convenience, ease of use and system flexibility is a significant predictor of user satisfaction and behavioral intention to interact via online social networking site (Liu et al., 2005). A survey comprising 77 virtual communities in Korea have shown that technological infrastructure had a moderating effect on the users’ posting behavior (Koh, et al., 2007). This is consistent with Whitaker’s case study findings from a of a virtual community that issues regarding information infrastructure such as cost, accessibility, speed and information search facilities constrain online interaction (Whitaker and Parker, 2000). Regarding communication technology used for social purposes, motivation has been found to be a dominant factor that explains its adoption (Li, et al., 2005).

This suggests that the integration of technological mediated on-line social network is not only useful for fun, but provides an accessible network for users to interact. The aesthetic design of social software used for online communication is important because it determines how users are attracted to use it to develop their everyday social life (Hampton and Wellman, 2003). In the other hand, the use of technology requires skills which are also important for users to adapt to effectively use the technology (Avram, 2003;Bross et al., 2007; Chatti, 2007). Most research on social networking has focused on developing sociability features with the intention that improving certain functions or presentation features such as a widget showing the presence of other people, proper visualizations of social activities will effectively elicit the sociability of specific contexts without considering its adverse impact to the users (Knobel and Lankshear, 2008; Farnham et al., 2001;Kreijns, et al., 2004). The problem that arises from such design concept is that the real effect of the design features on sociability was not empirically examined, partly due to lack of a proper measurement of the sociability limit of the technology to the users. Detailed description of the technological impact of social networking sites based on its advantages could elaborate more about its usefulness and will enable the designers to incorporate features that will confine its usage within a limit of interest for security reasons.

5. Technological Impact on Social Networking Development

The advent of information and communication technologies (ICTs) has enhanced people’s access to information, change flows of information and communications, and provide traditionally disadvantaged groups with communication channels (De Souza, Z. and Dick, 2007). In the context of social network development, the impact of social networking site could alleviate poverty level in the following ways:

- Provides faster and easier information delivery channels. The speed at which information and ideas travels and their available are the key social impact of ICTs to the social network. ICTs delivers information more effectively in a cost effective way and this facilitates people’s access to information leading to increasing adoption of the technology (Boyd and Ellison, 2007).
- Information exchange and network creation using ICT foster information exchange and enables the technology to link to different groups of people remotely and globally. At this, people can exchange ideas, knowledge, and experience and collaborate on matters of their interest (Ali and Lee, 2010).

- Efficiency and transparency afforded by ICTs improves media service processes. The government administration has improved the effectiveness of their service delivery pattern to their citizens through ICTs (Boyd and Ellison, 2007).
- ICTs incorporation into social networking services has transformed people's lives by changing the way they live, learn, and conduct business (Coates, 2003; De Souza and Dick). The transformational services are currently being used to potentially to improve social and economic development and break the vicious cycle of poverty and segregation, especially in rural communities (De Souza and Dick, 2007).
- ICT has enabled decentralization and empowerment in decision-making. Providing the right to access information and freedom of use of information motivate the people build confidence in the government. It then implies that the above five-point's enhancement platform provide the compelling impact that contributes significantly to social development (Guradian, 2011; Bross et al., 2007).

Technological advance has facilitated mobile-accessed via social network. For instance, Facebook Statistics has shown that more than 250 million active users currently access the site through their mobile devices (Guradian, 2011). This acquisition presumably spurs the mobile access trend, especially in developing countries where second generation (2G) Global System for Mobile Communications (GSM) mobile phones is widely utilized. Twitter, another well-established social networking site, has been classified as microblogging (Mediabistro, 2014).

Twitter is a real-time information network that enables its users to communicate and stay connected through the exchange of instant messages refers to as "Tweets." These short messages constituting about 140 characters are posted to the user's profile or blog, sent to their followers who receive their messages, and searchable on Twitter search. Twitter has over 230 million active members (Mediabistro, 2014). On average 140 million tweets are sent daily and more than 460,000 new accounts were added daily in February 2011 and the number of mobile Twitter users has increased by 182 % in 2010 (Telegraph, 2011).

6. Enabling Features

Social media are used for social interaction and are based on highly accessible and scalable communication techniques (Hester Group, 2010). Social media use web based and mobile technologies to turn communication into interactive dialogue. Social media essentially depicts a category of online media that enables users discuss, share information, socialize and bookmark online. Most social media services such as Facebook encourage feedback, voting, comments, and sharing of information for all interested members and can refer to as a "two-way conversation" rather than a one-way broadcast as in traditional media such as the television. This interactive feature afforded by social networking site that facilitate two-way access and instant interaction is referred to as enabling factors.

The social networking site features facilitate the idea of staying connected or linked to other sites, information resources and people (Jones, 2009). This enables a social media site to be used as effective marketing tools to promote products and services, interact with customers enlarge the marketing networks. Governmental organizations take the advantage of social media as an effective communications channel to obtain feedbacks from citizens for the improvement of public services (Jones, 2009). However, social media possesses distinctive features that differentiate them from convectional media services. These features include; they are internet-based, mobility and ubiquity, focus on users with valid identification, support two-way and multi-group communications, flexible and interactive, promote co-creation at low cost (Boyd and Ellison, 2007).

Most social media networking are website-based and depend on the internet. With the advent of cloud computing, device with an internet connection can easily access social media from anywhere. The broadband internet connection allows users to access large content such video clips and audio files, though it may complicate online applications. Site visitors can connect to other link. For instance, Twitter and Facebook users can link their account setting in such a way that Twitter messages automatically show up on the Facebook web page. This integrated service features of social networking site enhances the effectiveness of social media to the users.

Mobility and ubiquity is another enabling feature of social networking site that promoted the incorporation online services into mobile phones notably smartphones and has accelerated the usage at home, office and cyber cafe. Many features of Smartphones such as digital camera and efficient small-sized laptop computers supports social network services such as posting of message and images (Ali and Lee, 2010). Users can snap and post photo momentarily and send to their online members using the social media site.

Focusing on users, enabling features of social networking sites enables users to become viewers, readers, content producers, feedback providers and editors of various online contents. By this user can create content if they have basic writing skills and understanding of social media tools and disseminate their own contents, express their opinions without any influence by the authorities.

The enabling features of social networking sites ensure that the multi-way group communication pattern extends to people in remote locations with access to the internet even across borders. This flexibility in services contributes to the contents and accommodates interaction among millions members. Such large-scale flexible with respect to group communications encourages a massive scale interactive and enables message or contents posted by a user to be read, heard or viewed by a number of users. This form of interaction supports flexible participation in specific forms such as online chatting and consistent discussion on a Bulletin Board System (De Souza and Dick, 2007).

Co-creation is another interactive way online users share, learn, and distribute ideas and thoughts even remotely. This led to innovative knowledge, competencies, advertisement of products and services which are conducive to people's better life. The interesting thing about the media social network services is its low cost. A necessity to socialize is internet access or internet-accessible devices, signing up for and using social media which is mostly free (Guradian, 2011). From the contents production viewpoint, it is very cheap since contents are usually generated by the users. Unlike traditional media services system, special expertise and equipment is usually needed such as in newspaper and television. The enabling features of media social networking sites empowers its users and promote collective efforts to enhance civil engagement and equitable distribution of knowledge between civil society and government (Tufekci, 2008). Conventional media system is limited in services and is regulated by government authority and is expensive. The flexible inexpensive, effective and efficient social media networking services provides information world wide. Typical relevance of a social networking site can be understood from the varieties of services afforded by Facebook social networking site.

7. Backdrop and Relevance of Social Networking Sites

While the common purpose of social networking sites is to provide its members with an online platform for social connection, interaction and communication, the patterns of usage among members vary significantly across different services.

Numerous studies try to classify the relevance of social networking site based on their usage and specific services provided to ascertain the possibility to predict one service over other using different dimensions (Tufekci, 2008; Subrahmanyam, 2008). A considerable number of researchers have focused on explaining, the categories and patterns of user's behaviors. Among these studies, common issues discussed comprise of the relationship between motivations the usage of social networking sites (Barker, 2009; Park et al., 2007). Others focused on attitudes on social networking sites (Dwyer et al., 2007; Tufekci, 2008). Usage pattern, type of information supported and developmental consideration has scarcely been discussed along with the concern over privacy. These issues are important if the use of social networking site is to be encouraged especially among young adult. The necessity arises as the number of hawking cases is on the increases, sexual harassment over online network and use of fake images (Cachia, 2009; Richter and Koch, 2008).

As members constantly evaluating the value of their membership and building their own perceptions towards the benefit and cost of being members of the social network, the consequences of their intended images concerning the value of their membership increases. Studies found that the perceived risks online social networking is associated with identity theft, fraud, harassment, hackers, leaking private information and blackmail (Tidwell and Walther, 2002; Tiffany et al., 2009). A number of studies reported that these perceived risks may change the user's evaluation of membership over time (Dwyer et al., 2007; Debatin et al., 2009). This depicted that the usage will decline once the novelty wears off. This because membership value is affected by user's behavior, specifically on the frequency of visits, regular usage, frequency of updating the profile information, the strength of social ties, types of information exchanged and time spent on the site (Cachia, 2009; Dwyer et al., 2007; Papacharissi, 2009; Debatin et al., 2009).

Relevance

The relevance of social networking sites such as Facebook is evident in a multitude of ways.

Facebook is used as a typical example, because it accommodate the highest number of online users globally as of January 2014 (Mediabistro, 2014), therefore it best represents justifiable criteria for acceptance among social networking users. Politically, electoral candidates use Facebook and other similar sites to facilitate campaigns, and culturally the term 'to friend' is used socially among people in the same network (Rosen, 2007). It difficult for people to organize social activities without use of such social networking sites (Rosen, 2007). The impacts of social networking sites such as Facebook have not been well-explored. Facebook is currently the largest and the most popular social networking site on the internet in terms of regular active membership (Mediabistro, 2014). Many features prove useful and sheer size of the site's membership among which include access to diverse racial communities comprising various socioeconomic standings (Lenhart, 2010).

Facebook allows users to articulate 'Friends list' of their choice and share connection with the Friends lists of other users (Boyd and Ellison, 2007). This articulation Friends list enables researchers to utilize snowball method of recruitment in a way that have been never before. The snowball method of recruitment is based on the active social networks of users (Browne, 2005; Hardey, 2008) and sharing of positive recommendations (Liamputtong, 2010). The Friends list feature on Facebook makes it easier for researchers to build on their participants' social networks making it easier for participants to share URL links and project information with online member in their social networks.

Facebook users are able to create and join existing social groups that reflect their personal and social interests (Balter and Brunet, 2012). Researchers can use the social groups to explain eligible research participants by a method grouping that reflect research location. This can be realized by posting notices on individual contact group members to promote the research aim and thereby recruiting eligible participants that will generate data for the research.

Facebook social networking site content is largely consumer created and the uninitiated types of activities consumers engage with can be categorized. For instance; messages posted on Facebook essentially like emails that automatically link the message to the profile of the sender and omits the need for an introduction. Facebook messages are swiftly becoming a preferred means of communication in universities (Shih, 2009). Facebook Wall Posts are publicly broadcast messages and appears not only on the recipient's profile page "wall" but also into the News Feed. This often used to congratulate, wish happy birthday or share other achievement (Balter and Brunet, 2012).

Facebook Pokes are playful element used to remind someone that you exist. It is a just a notification without content. The recipient can also return by poke. Other applications such as games available on Facebook allow its users to engage in numerous activities such as quizzes, 'Pick your top five celebrities', sending of virtual cupcakes, giving virtual hugs, and playing Scrabble (Shih, 2009).

Social networking site such as Facebook has been useful for recruiting research participants. A successful instance is provided by Brickman-Bhutta(2009) and was among earlier researchers that reported about experiences in using Facebook as a recruitment tool for participants for a questionnaire based study. The description of the group was based on the purpose of the research and outlined eligibility requirements and instructions on how to be involved. The study by Brickman-Bhutta (2009) posted a link to the online questionnaire and received 2,788 completed questionnaires after 2 days and a total of 3,988 completed questionnaire responses were received after 5 days (Brickman-Bhutta, 2009)

Balter and Brunet (2012) have successfully used Facebook as a recruitment tool in a different way as in Brickman-Bhutta, (2009). In their article virtual snowball sampling method using Facebook' the authors recounted the characteristics of their research population and used Facebook users to recruit eligible participants. Balter and Brunet (2012) identified Facebook groups and individually contacted them through Facebook and assess their eligibility and interest in participating in the study. The study found that Facebook was more effective in increasing the sample size (Balter and Brunet, 2012). Based on these findings, it was concluded that sampling through Facebook was cost and time-effective and were appropriate in extending the size and geographical scope of a research (Balter and Brunet, 2012).

Ramo and Prochaska (2012) have also Facebook as a successful recruitment tool for participants comprising cigarette users aged between 18-25 years living in the United States. Facebook profiles of users meeting their eligibility criteria were selected (Ramo and Prochaska, 2012).

Their 13 month Facebook campaign resulted in total expenses of US\$6,628.24 and a total of 1,548 completed surveys (Ramo and Prochaska, 2012). The study concluded that Facebook campaign is a successful and cost-effective recruitment tool for researchers.

8. Usage Patterns of Social Networking Site

Various dimensions of personal network characteristics have been associated with Facebook use patterns (Dimmick et al., 2007). Facebook multiplexity presents consistent positive associations with various usage patterns for individuals with multitude of relationships to use varieties of communication features such as posting messages and photos in order to maintain social interactions with friends and family members. It indicates that people who are active on Facebook are likely to take advantage of the diverse functions and features of Facebook. Facebook user spent time in posting messages, posting photos and lurking. This may be attributed to the racial composition of online social networking site such as Facebook (Hargittai, 2007). The study showed that race proportion varies across different social networking site. The present study suggests that individuals’ user of social networking site largely involves social connections with online members from different networks.

However, population and race heterogeneity can be used to measure specific and pre-existing relationships via social networking sites. Recent report has shown that the population of Facebook users and race heterogeneity were positively associated with time spent by the users (Mediabistro, 2014). This suggests that individuals with friends from diverse race on Facebook are likely to use it more. On the other hand, users with less pre-existing personal network and ethnic diversity spend less time on Facebook. This finding indicates that the characteristics of personal networks play different roles in explaining time spent interacting with other members. However, studies found that individuals’ offline network is translated to online network (Wellman et al., 2001). It then implies that online social networking site such as Facebook has different characteristics compared to other internet applications basically in the ways in individuals communicate with other users.

9. Types of Information Supported by Social Media Networking Sites

There are several types of activities provided by social media that supports social development of users. Table 2 provided a list of activities supported by social networking site and instance they are used.

Table 2: Type of Activity Supported by Social Media for Social Movement

Type of activity	Typical instances social network are used
Group discussion	Twitter was used during Iranian presidential election in 2009 to protests and support Mir- Hussein Moussavi using Persian and English language to interact with more than 7,000 followers (Ghannam, 2011) Facebook was used to interact and discuss with more than 50,000 members during the election day online site (NY Times, 2009b). Facebook was used to initiate and support protest in Burma with over 160,000 online members (Toronto Star, 2007).
Organize events	Young adult used Facebook and Twitter online social network to send message and protesters after the 2009 parliamentary election in Moldova (NY Times, 2009a). Social movement during the uprising in Tunisia and Egypt was organized using Facebook and Twitter with the activist leaders directing followers were to assembly at different location to facilitated cooperation (Globe and Mail, 2011).
Post messages and images	During the Egyptian protests Facebook was used to post information and messages, images and video clip of the demonstrations online (Mackey, 2011). During Iranian presidential election in 2009, Twitter feed links was used to page photo-hosting site that comprising pictures from Tehran (NY Times, 2009b).
Access information	During the social movement organized in Egypt and Tunisia, activist used Twitter feeds to access information on what was happening. The citizen’s access locally created social media platforms such as NowLebanon.com based in Beirut and Aramram.com. 7iber.com, Ammannet.net, and AmmonNews.net, in Amman (Ghannam, 2011). UNESCO implemented a number of community radio programs to address social issues at a community level such as poverty and social exclusion, marginalized rural groups as well as democratic processes and development efforts. Community radio provides an opportunity for any member of the community to initiate communication and participate in the program (Tabing, 2002).
Publish opinions and receive feedbacks	Tbilisi a city in Georgia in June 2011 launched a Facebook site “Tbilisicds Georgia” which was used to discuss ongoing process of Tbilisi City Development Strategy for Sustainable Development with the financial assistance of the World Bank.

10. Developmental Considerations of Social Networking Site

There are different ways individual user of social networking spend their time on social networking sites. However, a key developmental characteristic of social network is the formation of identity, the development of intimate relationships leading to the formation of social ties (Ramo and Prochaska, 2012). Erikson's (1968) theory asserted that identity development encompasses series stages that conflicts with early child development. Every individual is expected consider many facets of life particularly moral, social and physiological in building identity and moral ideology. This process encompasses struggle between intimacy and isolation in which the individual presumably possesses a well formulated sense of self to identity with others in a relationship. Baym et al. (2004) found that emerging adulthood offers more freedom and independence and settling adult roles. The changes occurring in individual from infant to adulthood is to be carefully considered in developing social networking site to ensure that the services provided meet the need of the users.

Identity poses different challenges to emerging adult and may be addressed through self-disclosure particularly with peers. Mazer et al. (2007) model of self-disclosure suggested that users of media services can resolve issues through social input from others. However, the developmental consideration should reflect self-disclosure with the purpose of identity development especially where external feedback from social networking site users is a necessity in clarifying other user's sense of 'self'. Another developmental consideration of social networking site is intimacy development where the interaction between users requires to be strengthened. This consideration is relevant because internet-based social networking site has become a pervasive presence in the lives of users especially adolescents and young adults (Lenhart et al., 2010).

Therefore the developmental consideration is to be observed since online interactions influences the developmental outcomes of peer (Lenhart et al., 2010). The study found that personal webpages of youth were found to express themselves by posting information about their interests and their identity. It has been argued that the inclusion of various channels for reader feedback such as online guest books should be directed to satisfy the responses to the content posted for self-validation and relationships development (Schaar et al., 2013). However, the need for developmental consideration is to ensure the users of social networking sites to explore themselves through feedback from others, to compensate for social limitations of shyness and to facilitate social relationships (Schaar et al., 2013). Social relationship are established through personal websites and instant messaging afforded by social networking sites that provides an easy and accessible way for users to interact and gather feedback. These considerations are particularly significant since users of online network are readily available and the tools provided make communication easy to accomplish. Therefore prior consideration of social network usage pattern fosters the development of identity and intimate relationships including friendships.

11. Concerns over Privacy in Social Networking Site

Online social networks represent a fast growing phenomenon and are emerging as the web's top application (Chiu et al., 2008). Presently, billions of people have joined different networking site adding profiles that reveal their personal information. The most popular online networking sites, Facebook, serves as online directory that connects people through social networks (Dwyer et al., 2007). Initially designed to target high school and college students and presently being used at various levels of organization and for government services to the citizens (Ramo and Prochaska, 2012; Cheung, et al., 2010; Kalpidou, et al., 2011). Social networking site such as Facebook provides numerous advantages to its users among which include exposing the users to meet new people, interact cheaply with friends and family when circumstances make face-to-face contact difficult, reach a sizable population of other network users when posting information and images, tap into other services provided through the site and access other users globally (Ellison et al., 2008). The immense popularity is due to its benefits however, the shortcomings of the social networking site are on increase and gradually reducing its usage although they have not been fully explored (Rosen, 2007; Barnes, 2007; Baron, 2008).

Among the glaring problems associated with online social networks is trust and security management (Acquisti and Gross, 2006). This increasing risk with trust and security is being triggered by sharing of a wide variety of information among the users which record all interactions and retain them for potential use in social-data mining (Donath, 2007). Users may open themselves to public scrutiny that potentially risks their physical safety by revealing their personal information. This because by default, personal profiles of online users shows their contact information and additional data rarely available on other networks on the web (Joinson, 2005).

Generally, security, access controls and privacy of social networking sites are weak by design because the ease with which people can join with other users seems to be a point of consideration than safety of users.

Over 20,000 Facebook applications have been developed and about 95% of the user has used at least one application (Baron, 2008). These multiple applications pose additional risks on the security of social networking site usage. Inherent concern over privacy risks associated with social networking site include; difficulty in controlling access to the information and images posted on social networking walls, lack of access to sites without identity verification and identity theft. Most popular social networking sites such as Facebook and Twitter identify 'circles of friends' that allows phisher to extract reliable social network information and other illegal or unethical activities such as the creation of fake accounts for malicious purposes (Jagatic et al., 2007). Concern over privacy intensifies on control over the flow of user's information. Privacy over social networking sites is not defined (Dwyer et al., 2007).

12. Implications for Practice and Research

Privacy associated with online social networking websites also has significant implications are practice. A key privacy concern about Facebook for instance Lehavot, Barnett, and Powers (2010) found that 81% of graduate student's psychology use social networking site to facilitate student-interaction in their core courses. Another study by Taylor, McMinn, Bufford, and Chang (2010) found that 77.3% of doctoral students reported that used social networking sites to communicate with friends and family member and asserted that personal information is an important issue that calls for urgent attention. Taylor et al. (2010) added that although social networking site is connected with a widespread search engines on the internet that virtually research there a need to circumvent problems associated with security. This is because information used for online interaction is not properly monitored, and as a result, unwanted personal information can be used by unknown users. However, in most cases accessing other user's social networking sites can be for therapy (Dwyer et al., 2007). MySpace profile was used by a psychologist to have an insight into client's state of mind. Psychologically, using the online social networking site with the consent of clients can provide valuable information that can be used to explain feeling, emotion and the state of users mind set (Dwyer et al., 2007).

13. Conclusion

The study has shown that social networking site has become an important communication platform appreciated and used among students, organization and government to provide cheap and efficient service. Social networking sites allow users to conveniently interact with millions of other users instantaneously. The technological features of online networking site support information sharing, posting of images and allow users to socialize with other users who are at distant location. Various service features of networking sites were supported by information and communication technology and allow users to communicate, interact and socialized. Online social networking extends from family circle to other agents of socialization such as mass media, peers groups and school system. The interactive services provided by online social networking system are supported by technology and determines the size and nature of information communicated across users. Developmental consideration of online social networking services is proposed to concentrate more on security issues especially in protecting uses personal information across widespread search engines that provides access to social networking sites.

References

- Acquisti, A. and Gross, R. (2006), 'Imagined Communities: Awareness, Information Sharing, and Privacy on the Facebook', 6th Workshop on Privacy Enhancing Technologies, accessed online 5 January 2014, <<http://www.heinz.cmu.edu/~acquisti/papers/acquisti-gross-facebook-privacy-PETfinal.pdf>>.
- Ali, M., and Lee, H. (2010). Culture or social Interaction? A study of influential factors on weblog design. In European and Mediterranean Conference on Information Systems. Abu Dhabi, UAE.
- Amichai-Hamburger, Y. and Vinitzky, G. (2010). Social network use and personality. *Computers in Human Behavior*, 26, 1289-1295.
- Amichai-Hamburger, Y., Wainapel, G., and Fox, S. (2002). On the Internet no one knows I'm an introvert: Extroversion, neuroticism, and internet interactions. *Cyber Psychology & Behavior* 5(2), 125-128.
- Avram, G. (2006). At the crossroads of knowledge management and social software. *Electronic Journal of Knowledge Management*, 4(1), 1-10.

- Balter, F. and Brunet, I. (2012), 'Social research 2.0: virtual snowball sampling method using Facebook', *Internet Research*, 21(1), 57-74.
- Barab, S., MaKinster, J., Moore, J. and Cunningham, D. (2001). Designing and building an on-line community: The struggle to support sociability in the inquiry learning forum. *Educational Technology Research and Development*, 49(4), 71–96.
- Barker, V. (2009). Older adolescents' motivations for social network site use: The influence of gender, group identity, and collective self-esteem. *CyberPsychology and Behavior*, 12, (2), 209-213.
- Barnes, S., (2007). A privacy paradox: social networking in the US. *First Monday* 11(9). <http://www.firstmonday.org/issues/issue11_9/barnes/index.html>(retrieved January 22, 2014). Kalpidou, M.,
- Baron, N.S., (2008). *Always On: Language in an Online and Mobile World*. Oxford University Press, Oxford, New York.
- Baym, N.K., Zhang Y.B. and Lin, C.M.C. (2004). 'Social Interactions Across Media', *New Media & Society* 6(3): 299–318.
- Boase, J., and Wellman, B. (2006). Personal Relationships: On and Off the Internet. In Perlman, D., & Vangelisti, A. L. (Eds.). *The Cambridge Handbook of Personal Relationships*. New York: Cambridge University Press.
- Boyd, D.M. and Ellison, N. B. (2007). Social network sites: Definition, history, and scholarship. *Journal of Computer-Mediated Communication*, 13 (1), 210–230.
- Brickman-Bhutta, C. (2009), 'Not by the book: Facebook as sampling frame', available at www.thearda.com/./Not%20by%20the%20Book%20-%20Bhutta.doc (accessed 02 January, 2014).
- Bross, J., Sack, H., and Meinel, C. (2007). Encouraging participation in virtual communities: The "IT-summit-blog" case. In *Proceedings of IADIS e-Society 2007*, Lisbon, Portugal, July.
- Browne, K (2005), 'Snowball sampling: using social networks to research non-heterosexual women', *International Journal of Social Research Methodology*, 8(1), 47-60.
- Buffardi, L. and Campbell, K (2008). Narcissism and Social Networking Websites. *Personality And Social Psychology Bulletin*. 34(10), 1303-1314.
- Cachia, R. (2009). The social, less social and the fecund aspects of social networking sites. In *Conference proceedings: conference book of proceedings – The good, the bad and the challenge* (pp. 1–10). Brussels (Belgium): European Cooperation in Science and Technology – COST.
- Chatti, M. A., Jarke, M. and Frosch-Wilke, D. (2007). The future of e-learning: a shift to knowledge networking and social software. *International Journal of Knowledge and Learning*, 3(4), 404–420.
- Cheung, C. Chiu, P. and Lee, M. (2010). Online Social Networks: Why do students use Facebook?. *Computers in Human Behaviour*. Article in Press. pp.1-4.
- Chiu, P., Cheung, C. and Lee, M., (2008). Online social networks: why do we use Facebook? *Communications in Computer and Information Science* 19, 67–74.
- Connolly, R. and Bannister, F., (2007). Consumer trust in Internet shopping in Ireland: towards the development of a more effective trust measurement instrument. *Journal of Information Technology* 22, 102–118.
- Costin, D. and Morris, J. (2011). The relationship between Facebook and the well-being of undergraduate college students. *Cyberpsychology, Behavior and Social Networking*, 14 (4), 183-189.
- Coates, D. (2003). *Watches tell more than time: Product design, information, and the quest for elegance*. New York: McGraw-Hill.
- Debatin, B., Lovejoy, J. P., Horn, A., and Hughes, B. N. (2009). Facebook and online privacy: Attitudes, behaviors, and unintended consequences. *Journal of Computer-Mediated Communication*, 15(1), 83-108.
- De Souza, Z. and Dick, G.N. (2007). What explains the MySpace phenomenon? Extending the technology acceptance model to explain the use of social networking by school children. In *Proceedings of the 22nd international conference on informatics education & research*, Montreal.
- Dimmick, J. Ramirez, A.J.R, Wang, T and Shu-Fang L. (2007). Extending Society': the role of personal networks and gratification-utilities in the use of interactive communication media. *New Media Society* 9, 795.
- Donath, J., (2007). Signals in social supernets. *Journal of Computer-Mediated Communication* 13 (1), 231–251.
- Dotan, A. and Zaphiris, P. (2010). A cross-cultural analysis of Flickr users from Peru, Israel, Iran, Taiwan and the United Kingdom. *International Journal of Web Based Communities*, 6 (3), 284–302.

- Dwyer, C., Hiltz, S. and Passerini, K., (2007). Trust and privacy concern within social networking sites: a comparison of Facebook and MySpace. In: Proceedings of the Thirteenth Americas Conference on Information Systems, Keystone, Colorado, August 9–12 2007.
- Ellison, N. B.; Steinfield, C. and Lampe, C. (2007). "The Benefits of Facebook "Friends:" Social Capital and College Student's Use of Online Social Network Sites". *Journal of Computer-Mediated Communication* 12, 1143–1168.
- Ellison, N., Steinfield, C. and Lampe, N. (2008). Net Worth: Facebook Use and Changes in Social Capital Over Time. Presentation to the International Communication Association. Montreal, Canada. May 22-26. pp. 23.
- Erikson, E. H. (1968). *Identity: Youth and crisis*. New York, NY: W. W. Norton & Company.
- Farnham, S., Zaner, M. and Cheng, L. (2001). Supporting sociability in a shared browser. In *interact 2001*. Tokyo, Japan.
- Fox, F.E., Morris, M. and Rumsey, N. (2007), 'Doing Synchronous Online Focus Groups With Young People: Methodological Reflections', *Qualitative Health Research*, 17(4), 539-547.
- Ghannam, J. (2011). *Social Media in the Arab World: Leading up to the Uprisings of 2011*. Washington, DC: National Endowment for Democracy, TheCenter for International Media Assistance.
- Globe and Mail, (2011). "Revolution 2.0: democracy promotion in the age of social media." Internet news article on February 2, 2011. Toronto, Ontario, Canada: [theglobeandmail.com](http://www.theglobeandmail.com). Retrieved on January 9, 2014 from <http://www.theglobeandmail.com/news/opinions/opinion/revolution-20-emocracypromotion-in-the-age-of-social-media/article1891015/>
- Guardian, (2011). "Facebook buys mobile startupSnaptu." Internet news article on March 21, 2011. London, UK: [guardian.co.uk](http://www.guardian.co.uk). Retrieved on Junaury 19, 2014 from <http://www.guardian.co.uk/technology/2011/mar/21/facebook-buys-snaptu>.
- Hampton, K. and Wellman, B. (2003). Neighboring in Netville: How the internet supports community and social capital in a wired suburb. *City and Community*, 2(4), 277–311.
- Hardey, M. (2008). *Seriously Social: Making Connections in the Information Age*, Thesis (PhD), The University of York.
- Haythornthwaite, C., and Kendall, L (2010). Internet and Community. *American Behavioral Scientist*. 52(8), 1083-1094.
- Hargittai, E. (2007). Whose space? Differences among users and non-users of social network sites. *Journal of Computer-Mediated Communication* 13 (1).article 14.
- Hester Group, (2010). "Reaching the Public through Social Media." Presentation at 33rd Annual Conference of U.S. Department of Transportation, Federal Aviation Administration, Eastern Region on March 3, 2010. Retrieved on January 19, 2014 from http://www.faa.gov/airports/eastern/airports_news_events/hershey/media_10/E-3%20Reaching%20The%20Public%20Through%20Social%20Media.pdf
- Jagatic, T., Johnson, N., Jakobsson, M. and Menczer, F. (2007). Social phishing. *Communications of the ACM* 50 (10), 94–100.
- Jin, S.A. (2009). Avatars mirroring the actual self versus projecting the ideal self: The effects of self-priming on interactivity and immersion in an exergame, *Wii Fit*. *CyberPsychology and Behavior*, 12 (6) (2009), pp. 761–765.
- Joinson, A.N. (2005), 'Internet behaviour and the design of virtual methods', in: C. Hine (Ed.), *Virtual methods: Issues in social research on the Internet*, Oxford: Berg, 21-34.
- Jones, R. (2009). "Social Media Marketing 101, Part 1." Internet article on February 1, 2009. Retrieved on January 19, 2014 from <http://searchenginewatch.com/article/2064413/Social-Media-Marketing-101-Part-1>
- Kaplan, A.M. and Haenlein, M. (2010). Users of the world, unite! The challenges and opportunities of social media, *Business Horizons*, 53(1), 59-68.
- Lewis, C. C. and George, J. F. (2008). Cross-cultural deception in social networking sites and face-to-face communication. *Computers in Human Behavior*, 24 (6), 2945–2964.
- Koh, J., Kim, Y. G., Butler, B., and Bock, G. W. (2007). Encouraging participation in virtual communities. *Communications of the ACM*, 50(2), 69–73.
- Knobel, M., and Lankshear, C. (2008). *Digital Literacy and Participation in Online Social Networking Spaces*. New York: Peter Lang. pp. 249–278.

- Kreijns, K., Kirschner, P. A., Jochems, W., and Van Buuren, H. (2004). Determining sociability, social space, and social presence in (a)synchronous collaborative groups. *Cyberpsychology and Behavior*, 7(2), 155–172.
- Lenhart, A., Purcell, K., Smith, A., and Zickuhr, K. (2010), 'Social media and young adults', PEW Internet and American life [Online]. Retrieved from <http://www.pewinternet.org/Reports/2010/Social-Media-and-Young-Adults.aspx>.
- Li, D., Chau, P. Y., and Lou, H. (2005). Understanding individual adoption of instant messaging: An empirical investigation. *Journal of the Association for Information Systems*, 6(4), 102–129.
- Liamputtong, P. (2010), *Performing qualitative cross-cultural research*, Cambridge: Cambridge University Press.
- Liu, C., Marchewka, J., Lu, J. and Yu, C., (2005). Beyond concern: a privacy–trust–behavioral intention model of electronic commerce. *Information and Management* 41 (2), 289–304.
- Livingstone, S. and Brake, D. R. (2010) On the rapid rise of social networking sites: new findings and policy implications. *Children & society*, 24 (1), 75-83.
- Mackey, R. (2011). "YouTube Video of Protests in Egypt." Blog post on New York Times website on January 25, 2011. New York, NY: thelede.blogs.nytimes.com. Retrieved on July 19, 2011 from <http://thelede.blogs.nytimes.com/2011/01/25/video-of-protests-in-egypt-on-youtube/> Nielsen. 2011. Retrieved on January 19, 2011 from <http://www.blogpulse.com/>.
- Marshall, B.A., Cardon, P.W., Norris, D.T., Goreva, N. and D'Souza, R. (2008). Social networking websites in India and the United States: A cross-national comparison of online privacy and communication Issues in *Information Systems*, IX (2), 87–94.
- Mazer, J. Murphy, R. & Simonds, C. (2007). I'll See You On "Facebook": The Effects of Computer-Mediated Teacher Self-Disclosure on Student Motivation, Affective Learning, and Classroom Climate. *Communication Education*. 56 (1), 1-3.
- Mediabistro (2014). Bookmark It: A Comprehensive Look At 2014 Global Internet And Social Media Stats [DECK]. Available at: mediabistro.com/alltwitter/files/2014/01/wearesocial-social-media-penetration-worldwide-e1389183989165.png.
- Money, R.B. Gilly, M.C. and Graham J.L. (1998). Explorations of national culture and word-of-mouth referral behavior in the purchase of industrial services in the United States and Japan. *Journal of Marketing*, 62 (4), pp. 76–87.
- NY Times, (2009b). "Social Networks Spread Defiance Online." Internet news article on June 15, 2009. New York, NY: [nytimes.com](http://www.nytimes.com). Retrieved on January 29, 2014 from <http://www.nytimes.com/2009/06/16/world/middleeast/16media.html?hp>
- NY Times, (2009a). "Protests in Moldova Explode, With Help of Twitter." Internet news article on April 7, 2009. New York, NY: [nytimes.com](http://www.nytimes.com). Retrieved on February 1, 2014 from <http://www.nytimes.com/2009/04/08/world/europe/08moldova.html>.
- Papacharissi, Z. (2009). The virtual geographies of social networks: A comparative analysis of Facebook, LinkedIn and ASmallWorld. *New Media and Society*, 11 (1–2), 199–220.
- Park, J. Yang, S. and Lehto, X. (2007). Adoption of mobile technologies for Chinese consumers *Journal of Electronic Commerce Research*, 8 (3) (2007), pp. 196–206.
- Peluchette, J. and Karl, K. (2010). Examining students intended image on Facebook: What were they thinking? *Journal of Education for Business*, 85(1), 30-37.
- Posey, C., Lowry, P.B., Roberts, T.L. and Ellis, T.S. (2010). Proposing the online community self-disclosure model: The case of working professionals in France and the U.K. Who use online communities? *European Journal of Information Systems*, 19 (2) (2010), pp. 181–195
- Putnam, R (2000). *Bowling Alone: The Collapse and Revival of American Community*. New York: Simon and Schuster. pp. 544.
- Ramo, D.E. and Prochaska, J.J. (2012), 'Broad Reach and Targeted Recruitment Using Facebook for an Online Survey of Young Adult Substance Use', *Journal of Medical Internet Research*, 14(1), e28.
- Richter, A. and Koch, M. (2008). Functions of social networking services. In P. Hassanaly, A. Ramrajsingh, D. Randall, P. Salembier & M. Tixier (Ed.). In *Proceedings of the 8th international conference on the design of cooperative systems* (pp. 87–98). May 20–23, 2008. Carry-le-Rouet, France.
- Roberts, S. G. B. and Dunbar, R. I. M. (2010). Communication in social networks: Effects of kinship, network size, and emotional closeness. *Personal Relationships*, 18(3), 439-452.

- Rosen, C. (2007). Virtual friendship and the new narcissism. *The New Atlantis: A Journal of Technology and Society*, 17 (2), 3–15.
- Sas, C., Dix, J. A., Hart, J., and Su, R. (2009). Dramaturgical capitalization of positive emotions: The answer for Facebook success? In *Proceedings of the 23rd British HCI Group annual conference on people and computers: Celebrating people and technology* (pp. 120–129). Cambridge, United Kingdom.
- Schaar, A. K., Valdez, A. C., and Ziefle, M. (2013). The Impact of User Diversity on the Willingness to Disclose Personal Information in Social Network Services. In *Human Factors in Computing and Informatics* (pp. 174-193). Springer Berlin Heidelberg.
- Shih, C.C. (2009). *The Facebook era: tapping online social networks to build better products, reach new audiences, and sell more stuff*. London: Prentice Hall.
- Stefanone, M. A and Jang, C. Y. (2007). Writing for friends and family: The interpersonal nature of blogs *Journal of Computer-Mediated Communication*, 13 (1), 123–140.
- Subrahmanyam, K., Reich, S.M., Waechter, N. and Espinoza, G. (2008). Online and offline social networks: Use of social networking sites by emerging adults. *Journal of Applied Developmental Psychology*, 29 (6), 420–433.
- Tabing, L. (2002). “How to Do Community Radio.” *A Primer for Community Radio Operators*. New Delhi, India: United Nations Educational, Scientific and Cultural Organization (UNESCO), Asia-Pacific Bureau For Communication and Information.
- Talamo, A. and Ligorio, B. (2001). Strategic identities in cyberspace. *Cyberpsychology and Behavior*, 4 (1) (2001), pp. 109–122
- Taylor, L., McMinn, M. R., Bufford, R. K., and Chang, K. T. (2010). Psychologists’ attitudes and ethical concerns regarding the use of social networking web sites. *Professional Psychology: Research and Practice*, 41(2), 153-159. doi:10.1037/a0017996.
- Telegraph, (2011). “Twitter breaks ‘one billion tweets barrier’ on fifth birthday” Internet news article on January 15, 2014. London, UK: telegraph.co.uk. Retrieved on January 19, 2014 from <http://www.telegraph.co.uk/technology/twitter/8383044/Twitter-breaks-one-billion-tweets-barrier-on-fifth-birthday.html>
- Tidwell, L. C., and Walther, J. B. (2002). Computer-mediated communication effects on disclosure, impressions, and interpersonal evaluations: Getting to know one another a bit at a time. *Human Communication Research*, 28(3), 317–348.
- Tiffany, A. P., Yevdokiya, A. Y. and Sandra, L. C. (2009). College students' social networking experiences on Facebook. *Journal of Applied Developmental Psychology* 30, 227–238.
- Toronto Star, (2007). “‘Support the monks’ via Facebook.” Internet news article on September 30, 2007. Toronto, Ontario, Canada: .thestar.com. Retrieved on January 29, 2014 from <http://www.thestar.com/News/article/261973>.
- Tufekci, Z. (2008). Can you see me now? Audience and disclosure regulation in online social network sites. *Bulletin of Science, Technology and Society*, 28 (1), 20–36
- Wellman, B., Haase, A. Q., Witte, J., and Hampton, K. (2001). Does the internet increase, decrease, or supplement social capital? Social networks, participation, and community commitment. *American Behavioral Scientist*, 45(3), 436–455.
- Whitaker, V. M., and Parker, C. M. (2000). The factors enabling and inhibiting the development of agricultural internet virtual communities: An Australian case study. In *Proceedings of the 8th European conference on information systems, trends in information and communication systems for the 21st century (ECIS 2000)* (pp. 148–155). Vienna, Austria.
- Zhao, S. (2006). Do internet users have more social ties? A call for differentiated analyses of internet use. *Journal of Computer-Mediated Communication*, 11 (3), 844–862.