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# A Review for the Online Social Networks Literature (2005-2011)

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**Abstract**

Although Online Social Networks (OSNs) such as MySpace, Facebook, and Youtube are still under development; they have attracted millions of users, many of whom have integrated these sites into their daily practices. There are hundreds of OSNs, with various technological affordances, supporting a wide range of interests and practices. However, impact of OSNs is increasingly pervasive and numerous researchers worked on different aspects on social networks. There is no research work for identification and classification of this literature. So, the purpose of this study is to presents a literature review for research works in OSNs. The review covers 132 journal articles published from 2005 to 2011. The reviewed articles classified OSNs literature into four distinct categories: the "Application", "Survey and Analysis", "Concept", and "Technique". The findings of our study reveal that "applications" were the most frequently category has been considered in the literature. Also, the subject of social networking is somehow overlooked in developing and under-developed countries. This review will provide a source for anyone interested in discovering research trends in social network sites literature, and will help to simulate further interest fields in the area.

**Keywords:** Social network sites (SNSs), Online Social Networks (OSNs), Social media, Social networking.

## 1. Introduction

During the past 10 years, millions of Internet users all over the world have visited thousands of social media sites. They have taken advantage of the free services of such sites in order to stay connected online with their friends, or to share user-created contents, such as photos, videos, bookmarks, blogs, etc (W. Kim, Jeong, & Lee, 2010). Social media can be defined as online applications, platforms and media which aim to facilitate interactions, collaborations and the sharing of content (Palmer & Koenig-Lewis, 2009). The term social media has tended to be used interchangeably with the term "Web 2.0", and can be identified by the following principal categories (Constantinides & Fountain, 2008):

- Blogs: encompassing individuals' or enterprises' online journals often combined with audio or video podcasts.
- Social network: Applications allowing users to build personal web sites accessible to other users for exchanging content.
- Content communities: Web sites organizing and sharing particular types of content.
- Forums: Sites for exchanging ideas usually around special interests.
- Content aggregators: Applications allowing users to fully customize the web content they wish to access.

Social network sites (SNSs) or Online Social Networks (OSNs) are considered the core of network resource for organizations that link strategic value and business performance (Zhou, Wu, & Luo, 2007). On larger social network sites, individuals are normally not looking to meet new people but are more interested in managing relationships by maintaining contacts with old friends who are already part of their extended social network (Boyd & Ellison, 2007). To sum up, social network sites can be seen as alternative communication tools which support existing relationships and activities in a fun and colorful way that can deepen the users' experiences

 

(Palmer & Koenig-Lewis, 2009). Many social network web sites have emerged; attracting especial groups of users based on their demographics and some tend to communities with specific shared interests (Palmer & Koenig-Lewis, 2009).

There is now a lot of evidence that social network sites have become mainstream and it has been reported that globally, these sites account for one in every 11 minutes spent online (Jones, 2009). 54 percent of internet users between 16 and 24 have set up their own page or profile on a social networking site (Palmer & Koenig-Lewis, 2009). Social network sites have audience more than any other social media tools, today. Facebook reaches 710 million users (H. Hanafizadeh & Behboudi, 2012). Meanwhile, if Facebook were a country, it would be the third largest nation in the world, lagging behind only China and India. Half of those "citizens" log in every day and using the site on a daily basis (Zarrella & Zarrella, 2011). The average user has 130 friends and is connected to 80 community pages, groups, and events each one spend an average of 46 minutes per day on Facebook (Facebook.com, 2011). Also, 100 million people take a social action on YouTube every week and 800 million unique users visit this site each month (Youtube.com). Social network sites offer opportunities to connect with these hard-to-reach audiences drifting away from traditional media.

It can be implied that usage of social networking is increasing at a tremendous speed, and it is influencing how people share knowledge across the globe. SNS is is a brand new topic for researchers due to its relative novelty, and some researchers in different contexts tried to study this new phonemena. The impact of social networks is increasingly pervasive, with activities ranging from the economic (e.g., shopping) and marketing (e.g., brand building, advertizing) to the social (e.g., cultural and physiological impacts) and educational (e.g., distance education) (e.g. Mangold & Smith, 2011; Palmer & Koenig-Lewis, 2009; S. Pookulangara & K. Koesler, 2011; Teo, Chan, Weib, & Zhang, 2003).

However, despite its importance in the new information era, no comprehensive literature review has been conducted in the field of social networks except for a review paper conducted by Hanafizadeh, et al. (2012) on social networking business impacts literature. Nevertheless, there is a need for conducting this kind of research works, because it will serve as a roadmap for both academics and practitioners. It will also indicate the current state and direction of research topics, and should be of interest. So, the purpose of this study is to presents a literature review of research works in SNSs. The review covers 132 journal articles published from 2005 to 2011. The reason for selecting this time period is that the topic is fairly new and most of the research on SNSs began to be conducted only during this period. The paper is organized as follows: first, the concept of SNSs is defined; second, the research methodology used in the study is described; third, the criteria used for classifying the literature are presented; fourth, the papers are analyzed and the results are reported; and, finally, conclusions are presented and the implications of the study are discussed.

## 2. Online Social Networks

A social network can broadly be defined as a set of actors and the set of ties representing some relationship – or lack of relationship – amongst the actors (Brass, Butterfield, & Skaggs, 1998). Actors in a social network (people, organizations or other social entities) are connected by a set of relationships, such as friendship, affiliation, financial exchanges, trading relations or information exchange. An online social network (OSN) is an extension of the traditional social network on the Internet, which is actually online software that people use to establish social connections. OSN includes various online technologies such as blog, Twitter, Facebook, Mashup, instant message, video conference, virtual world, semantic websites, etc (S. M. Lee & Chen, 2011). OSNs use computer support as the basis of communication amongst its members (Andrews, Preece, & Turoff, 2001). Drawing on Boyd and Ellison (2007), OSNs are defined as web-based services that (1) allow individuals to create a public or semi-public profile for themselves within a bounded system, (2) indicate a list of other users with whom they are connected, and (3) view and traverse their list of connections and those made out by other users within the system. In some contexts such as the marketing literature, the terms 'online social network' and 'virtual community' are often used synonymously. Virtual communities are viewed as consumer groups of varying sizes that communicate regularly and for some duration in an organized way over the Internet through a common location or mechanism to achieve personal as well as shared goals of their members (Dholakia, Bagozzi, & Pearo, 2004; Ridings, Gefen, & Arinze, 2002).

The major advantage of OSN is its ability to provide greater social networking opportunities than the traditional social network across different geographical, social, cultural, or institutional settings. OSN does not replace the traditional social network, rather complements it and initiates new social connections. The disadvantage of OSN is that people have low trust and often feel nervous or uncertain in the virtual environment (S. M. Lee & Chen, 2011).

 

Currently, there are a lot of OSN both for business (e.g. Doostang.com, LinkedIn.com) and private purposes (e.g. Facebook.com, MySpace.com) aiming at different target groups. Moreover, they differ in size and in the degree of privacy, i.e. who can see your profile and how much of it is visible (Howard, 2008). Hundreds of OSNs have been launched, with similar technological features that support a wide range of interests and practices (Ellison, Steinfield, & Lampe, 2007c). These social network sites provide a dynamic and multimodal platform which enables discussions, sharing of multimedia content, organization of events, etc., amongst members with common interests, such as school, friendship, work, and hobbies (Cachia, Compañó, & Da Costa, 2007; Grabner-Kräuter, 2009). Most OSNs support the maintenance of already existing social ties, but there are also networking services that support the formation of new connections with strangers, based on shared interests, political views, or activities. Some OSNs are directed at diverse audiences, whereas others attract people based on common interests or shared racial, sexual, religious, or nationality-based identities (Boyd & Ellison, 2007).

In the past decade, an increasing number of firms began adopting OSN as a strategic tool to achieve competitive advantage in the market. For example, in October of 2007, Bank of America Corp. (BAC) launched a social networking website, Small Business Online Community, to help small business users share their business stories and find expertise from a variety of areas. Small businesses and entrepreneurs have realized the benefits of OSN with its low cost and high efficiency. Using OSN, small businesses can easily build up their reputation and trust with customers with the minimum effort. E-commerce is another business that benefits from OSN (e.g., doing customer support, marketing, customer involved product/service design and innovation, etc.) due to its close connection to the online society (S. M. Lee & Chen, 2011).

## 3. Research method

To assure the verification of current research, a systematic procedure for literature review was designed and executed, which depicted in Figure 1. As systematic procedure, three steps should be done, in first step the resources were determined and relevant researches and papers were extracted. In the second step the researches were refined and their profiles were recorded. Finally in third step, the selected researches were studied and the results were analyzed and explained.

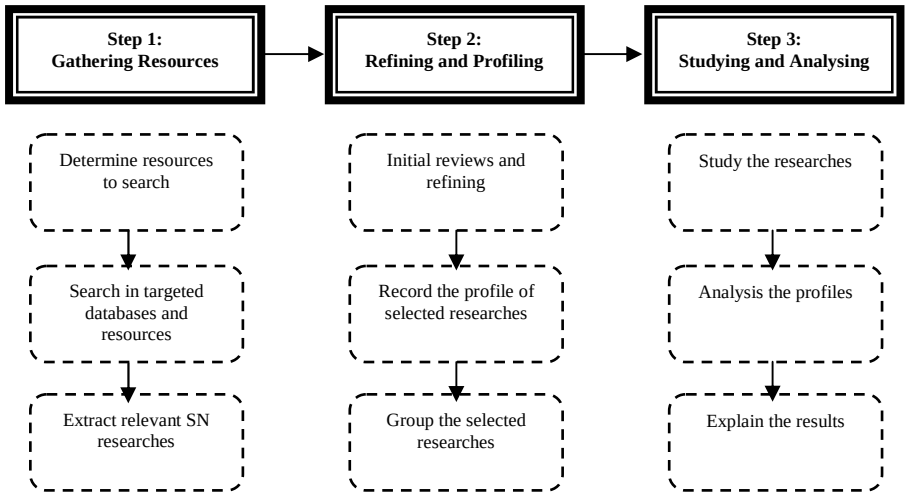


Figure 1. Systematic procedure for literature review

Considering the nature of the research on SNSs, it would be difficult to group the literature under any specific disciplines. Further evidence of this can be seen from the fact that published articles are spread across various journals in disciplines such as business, education and training, management, marketing, social sciences and Information Systems (ISs). Consequently, the following online databases were searched to provide an ample bibliography of the target literature (Science Direct, Emeraldinsight, IEEE Xplore, Taylor and Francis, Proquest, and Springer)

The literature search was based on the general descriptor, “Online Social Network”, “Social Network site”, “Social Network website”, and “Social Media”. The search was conducted in December 2011 and was limited to peer reviewed journal articles published between 2005 to 2011. More than 170 articles were found in the initial search of the literature. The full text of each article was reviewed to eliminate those articles that were not actually related to research purpose. Also, conference papers and textbooks were excluded from the list. So the

 

search yielded 132 related articles from 41 journals. Each of the 132 articles was carefully reviewed and classified into one of the four categories namely Applications, Techniques, Concepts, and Survey and analysis.

## 4. Results and analysis of the review

The 132 articles were analyzed by year of publication, keywords, publisher name, journal name, country, author names, and research category. This particular analysis will provide guidelines for pursuing rigorous research on SNSs and on its impacts on different contexts over the years. The details are presented below.

### *4.1. Distribution by the year of publication*

The distribution of articles published by year, from 2005 to 2011 is shown in Figure 2. It is clear from the figure that the research work in SNSs has increased significantly in recent years. Meanwhile, since 2009, researchers published a total of 109 papers (83 percent of the total).

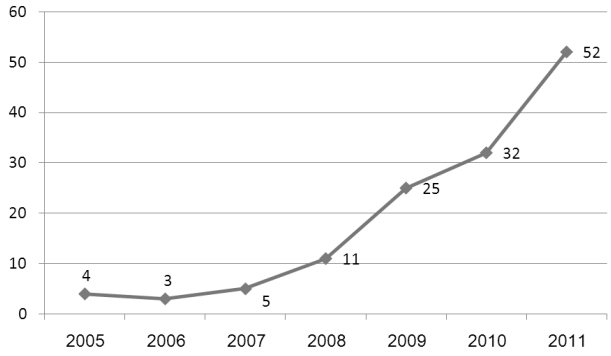


Figure 2. Articles distribution by year

### *4.2. Distribution by keywords*

The distribution of articles published by keywords is shown in Figure 3. It should be noted that the figure illustrates keywords with 3+ counts in the studied papers.

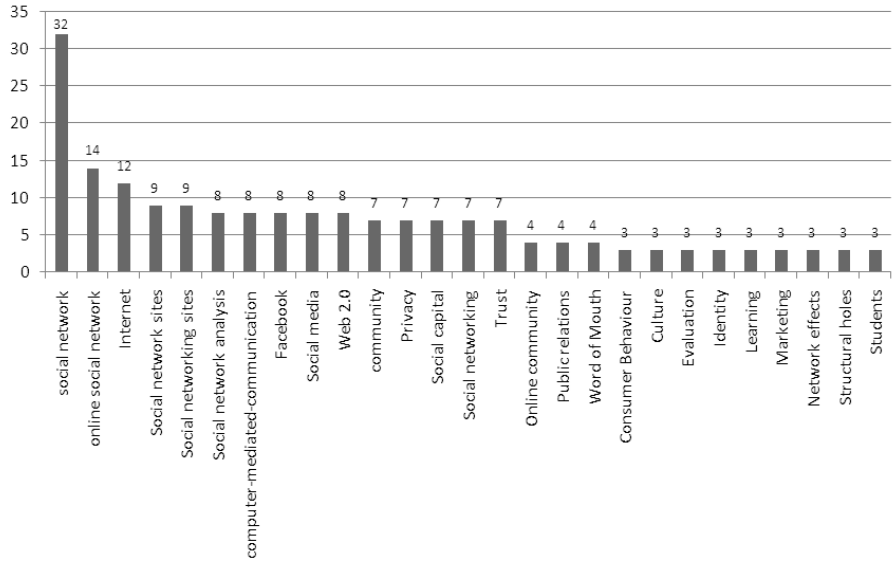


Figure 3. Articles distribution by keywords

As it was expected, "Social network", "Online social network ", and "Social network sites" are among the most cited keywords. Meanwhile, these keywords totally appeared 55 times in 132 reviewed papers.

### *4.3. Distribution of articles by publisher name*

The distribution of articles published by publisher name is shown in Figure 4. It can be implied form the figure that Science Direct has the most published papers in the field of social networking following by Springer and

 

Emerlad.

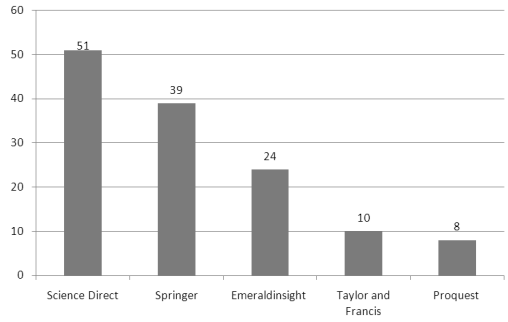


Figure 4. Articles distribution by Publisher name

*4.4. Distribution of articles by journal name*

In our result list, there were a total of 21 different journals from various disciplines (e.g., IS, Computer Science, Social Science, and so on.) that published 2+ articles about SNSs as it is appeared in Table 1. 12 out of 21 journals were IT/IS related and the rest mostly covered social and management topics. Computers in Human Behavior, Electronic Commerce Research and Applications, and Internet Research journals have the most published papers (6 articles for each journal).

Table 1. Distribution of articles by journal name

| **Journal Name** | **Number of Articles** |
|---|---|
| Computers in Human Behavior | 6 |
| Electronic Commerce Research and Applications | 6 |
| Internet Research | 6 |
| Business Ethics | 4 |
| Public Relations Review | 4 |
| Social Networks | 4 |
| Decision Support Systems | 3 |
| The European Physical | 3 |
| The International Information & Library Review | 2 |
| AIDS and Behavior | 2 |
| Asian Journal of Communication | 2 |
| computers & security | 2 |
| Expert Systems with Applications | 2 |
| Identity in the Information Society | 2 |
| Instructional Science | 2 |
| Knowledge and Information Systems | 2 |
| Knowledge-Based Systems | 2 |
| On The Horizon | 2 |
| Online Information Review | 2 |
| Sexuality Research and Social Policy | 2 |
| Social Network Analysis and Mining | 2 |

*4.5.Distribution of articles by country*

The distribution of articles by the first author's country name is shown in Figure 5. There is a tremendous difference between the number of publications of USA and other countries, so that research works conducted in USA contains 46 articles or 34% of total. UK and China are ranked in second and third order, with 9% and 7% of total, respectively.

 

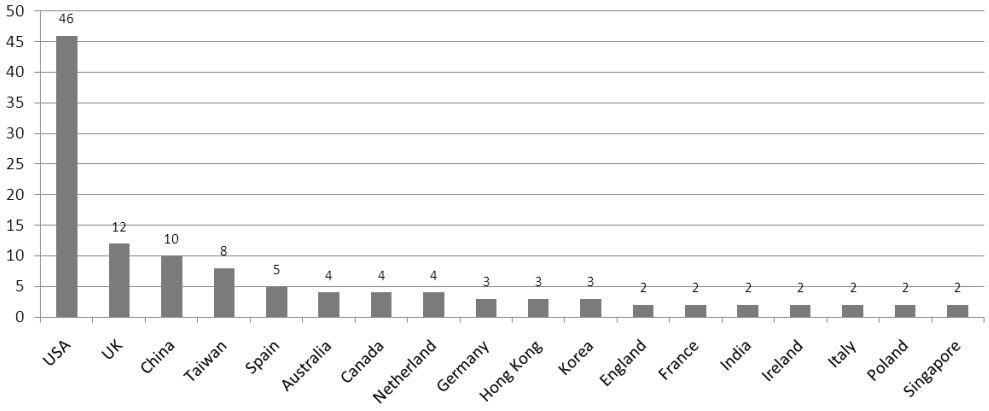


Figure 5. Distribution of articles by country names

*4.6. Distribution of articles by author names*

The distribution of articles by the authors' name who have published 2+ papers on SNSs is shown in Table 2. As can be seen from the table, regarding the brand novelty of SNSs in the academic literature, we can see a few numbers of scholars who have published more than two scholarly works in academic journals. It can be implied from the table that social networking literature is in its infancy and we have not even very well known and mostly cited scholars in the field.

Table 2. Distribution of articles by author name

| Author Name | No. of Articles | Author Name | No. of Articles |
|---|---|---|---|
| Kim, Y | 3 | Liu, L | 2 |
| Martínez-Torres, M. R | 3 | Peter, J | 2 |
| Ang, C. S | 2 | Rice, E | 2 |
| Barrero, F | 2 | Robelia, B. A | 2 |
| Cortés, F | 2 | Toral, S. L | 2 |
| Ellison, N. B | 2 | Valkenburg, P. M | 2 |
| Fang, X | 2 | Wang, B | 2 |
| Greenhow, C | 2 | Wang, L | 2 |
| Hu, H | 2 | Young, S. D | 2 |
| Lampe, C | 2 | | |

*4.7. Distribution of articles by research category*

The 132 articles were classified into four distinct categories: the “Application”, “Survey and Analysis”, “Concept”, and “Technique”. Each category can be defined as below:

Application Category: In this category, the studies have been classified that use the social network tools/software in organization or society. The design of application, result and recommendations are the basic of these researches.

1. Survey and Analysis Category: This category includes studies witch concentrated on surveys as research method and utilize statistics to analysis a model or phenomenon in social network science. These researches usually have survey procedure and questionnaire or interview with targeted audiences.
2. Concept category: The researches in this category are focused to clarify and define concepts about social networks. These researches contribute in this field with their reviews and comparisons or case study.
3. Technique Category: This category includes studies with focus on innovation and improvement the algorithms and techniques that would be employed in social networks for folksonomy, tagging, ranking, voting and other related technologies.

 

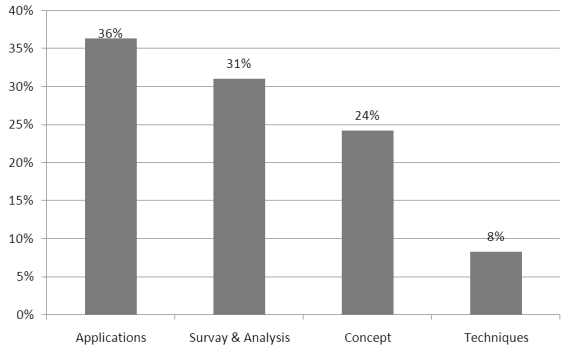


Figure 6. Distribution of articles by category

As shown in Figure 6, a majority of articles (36 % of the total) were related to application category which relates to subjects such as use the social network tools/software in organization or society. There are very novel potentials in social networks in organizations such as electronic word-of-mouth (Brown, Broderick, & Lee, 2007; Mohammad Reza Jalilvand, Sharif Shekarchizadeh Esfahani, & Neda Samiei, 2011; Mangold & Smith, 2011), marketing strategy (Hanna, Rohm, & Crittenden, 2011; Zhiling, 2012), direct marketing (Palmer & Koenig-Lewis, 2009), and online public relations (Jungmi, 2011; Men & Tsai, 2011; Omurtag, Jimenez, Ratts, Odem, & Cooper, 2012) to name only a few, which should be considered by scholars.

The second most cited category relates to survey and analysis which utilize statistics to analysis a model or phenomenon in social network science such as consumer posting behavior (Y. Chen, Fay, & Wang, 2011), online purchase intentions (Sanjukta Pookulangara & Kristian Koesler, 2011), and relationships in online communities (Sarah Quinton, 2010). Less published papers on concept category which relates to innovation and improvement of the algorithms and techniques that would be employed in social networks, might be due to the fact that the related field is a relatively new area of research.

Table 3 summarizes all of the reviewed articles that correspond to the identified categories. This is a helpful resource for anyone searching for SNSs literature in a specific area.

Table 3. Categorization of reviewed literature

| **Category** | **Authors** |
|---|---|
| Application | (Aggarwal & Yu, 2011; Ang, 2011; Birke & Swann, 2006; Burke, Wallen, Vail-Smith, & Knox, 2011; Chamlee-Wright & Myers, 2008; Chan, 2011; Dabner, 2012; Dadzie, 2011; Fieseler, Fleck, & Meckel, 2010; Gold & Otte, 2011; Greenhow, 2011; Greenhow & Robelia, 2009a; Hinchcliffe & Gavin, 2009; Houghton & Joinson, 2010; Johnston, Tanner, Lalla, & Kawalski, 2011; Jun, 2011; Junco, 2012; Kidane & Gloor, 2007; Y. Kim, Sohn, & Choi, 2011; Kujawski & Abell, 2011; Laat, Lally, Lipponen, & Simons, 2007; Lasén & Gómez-Cruz, 2009; Law & Nguyen-Ngoc, 2010; Leon Tan, 2008; Malikhao & Servaes, 2011; Mandayam Comar, Tan, & Jain, 2012; Martínez-Torres, Toral, Barrero, & Cortés, 2010; Martínez-Torres, Toral, Palacios, & Barrero, 2011; McKerliea, 2011; Merchant, 2012; Naaman, 2012; Nierenberg et al., 2011; Pitt, Merwe, Berthon, Salehi-Sangari, & Barnes, 2006; Quinton & Harridge-March, 2010; Ralph, Berglas, Schwartz, & Brindis, 2011; Robelia, Greenhow, & Burton, 2011; Rosen, Barnett, & Kim, 2011; Sadan & Schwartz, 2011; Simon & Schramm, 2008; Skoric & Kwan, 2011; Takhteyev, Gruzd, & Wellman, 2012; Thomas, 2009; Toral, Martínez-Torres, Barrero, & Cortés, 2009; Vergeer, Lim, & Park, 2011; von Friedrichs Grängsjö & Gummesson, 2006; L. Wang, 2010; Workman, 2010; Wu, Li, & Kuo, 2011; Young & Rice, 2011; Yuan, Guan, Lee, Lee, & Hur, 2010; Zhai, Sun, Qing, & Chen, 2011; Zhu, 2006) |
| Survey and Analysis | (Ancu & Cozma, 2009; Angus, Thelwall, & Stuart, 2008; Antheunis, Valkenburg, & Peter, 2010; Bicen & Cavus, 2010; Casalo, Cisneros, Flavián, & Guinalíu, 2009; Caverlee, Liu, & Webb, 2010; Chalkiti & Sigala, 2010; Chau & Xu, 2007; Cheung & Lee, 2010; Chiu, Wang, Shih, & Fan, 2011; Cobb, Graham, & Abrams, 2010; Cucchiarelli, D'Antonio, & Velardi, 2012; Ellison, Steinfield, & Lampe, 2007b; Gneiser, Heidemann, Klier, Landherr, & Probst, 2012; Goggins, Laffey, & Gallagher, 2011; Grabowski, Kruszewska, & Kosiński, 2008; Guo, |

 

| | |
|---|---|
| | 2012; Hogg, 2010; Hong, Li, Fang, Lin, & Zhang, 2011; Hu & Wang, 2012; L. Y. Huang & Hsieh, 2011; Hwang, Wei, & Liao, 2010; Y. Kim, 2011; Kingston et al., 2009; Kirsty, 2009; Lampe, Wohn, Vitak, Ellison, & Wash, 2011; Lariscy, Avery, Sweetser, & Howes, 2009; C. Lee, Scherngell, & Barber, 2011; D. C. Li, 2011; Y. M. Li & Chen, 2009; Lin & Chiou, 2010; Logsdon & Patterson, 2009; Malouf & Mullen, 2008; Massari, 2010; Muramoto, Wassum, Connolly, Matthews, & Floden, 2010; Ploderer, Howard, & Thomas, 2010; Rice, Monro, Barman-Adhikari, & Young, 2010; Rybalko & Seltzer, 2010; Shittu, Basha, AbdulRahman, & Ahmad, 2011; Tang & Liu, 2011; B. Wang, 2010) |
| Concept | (Arakji, Benbunan-Fich, & Koufaris, 2009; Bodle, 2010; Chai & Kim, 2012; S. Chen, 2009; Fogel & Nehmad, 2009; Fournier & Avery, 2011; Fu, Chen, Liu, & Wang, 2007; Ganley & Lampe, 2009; Goodings, 2011; Grabner-Kräuter, 2009; Hoser & Nitschke, 2010; Hull, Stornaiuolo, & Sahni, 2010; Joo, Kim, & Yang, 2011; Khoo et al., 2011; Kisilevich, Ang, & Last, 2012; Lăzăroiu, Păun, Goran-Băzărea, Danciu, & Marin, 2011; S. M. Lee & Chen, 2011; Lu, Zhao, & Wang, 2010; Men & Tsai, 2012; Musiał & Kazienko, 2012; Nabeth, 2009; Neumann et al., 2005; Palmer & Koenig-Lewis, 2009; Petrovčič, Vehovar, & Žiberna, 2011; Pitt, et al., 2006; S. Pookulangara & K. Koesler, 2011; Russo & Koesten, 2005; Shaheen, 2008; Shin, 2010; Squicciarini, Shehab, & Wede, 2010; Tan & Tan, 2012; Van Alsenoy, Ballet, Kuczerawy, & Dumortier, 2009; B. Wang, 2010) |
| Technique | (Cheung & Lee, 2010; J.-W. Huang & Lin, 2011; M.R. Jalilvand, S.S. Esfahani, & N. Samiei, 2011; Mo, King, & Leung, 2011; Morzy, 2005; Saravanan, Prasad, Karishma, & Suganthi, 2011; Utulu & Okoye, 2010; Valkenburg & Peter, 2011; Van Mieghem, Blenn, & Doerr, 2011; Zeng, Zhang, & Wu, 2008; Zhao, Wu, Feng, Xiong, & Xu, 2012) |

## 5. Conclusions and future research directions

Social network sites have attracted the attention of both practitioners and academics and we believe that applications and impacts of SNSs in life and businesses are becoming increasingly pervasive. The paper reviewed 132 journal articles published from 2005 to 2011 and classified them into five distinct categories; the "Concept", "Survey and Analysis", "Application", and "Technique". The findings of our study reveal that "Application" category was the most frequently cited category which has been considered in the literature.

It is obvious from the data analysis that research activities on OSNs have increased significantly after 2009. However, this review does not claim to be exhaustive, but it does provide a reasonable amount of insight into the SNSs research. The results presented in this paper have several important implications:

- There is no doubt that research works on OSNs will proliferate in the future. Academics have many avenues for conducting research on OSNs.
- It is not surprising that a large portion of the reviewed articles in this study were related to application category, especially in the field of marketing and advertisement, probably due to the fact that marketing and advertising is becoming a mature business discipline and SNSs provide facilities and tools to enable direct marketing and advertising. For instance, Facebook business account allows businesses to build a simple business presence by creating public business pages. Nevertheless, they have limited access to the profiles of people who interact with or "fan" their page, as well as little access to other features on the site. It was not long ago that many organizations discouraged employees from visiting social media sites, with many of them blocking access to sites outright. But today, 41.2% of businesses have employees whose job function includes spending time on social media sites, while only 9% report blocking internal access for employees (Gordon, 2010). Hence, regarding the wide interest of businesses in using SNSs, it is not surprising that a significant part of the reviewed papers were devoted to application of SNSs in organizations and society.
- SNSs may facilitate collaborative sense making among employees. Some popular SNSs such as Facebook have been widely used by the majority of USA students and many use them for communicating with their colleagues (Ellison, Steinfield, & Lampe, 2007a; Lampe, et al., 2011; Smith & Salaway, 2009). Also, some authors have found that students employ SNSs as a way to discuss academics (e.g.Greenhow & Robelia, 2009b; Madge, Meek, Wellens, & Hooley, 2009; Selwyn, 2009). Drawing from these studies, we believe that SNSs have high capability in connecting people and building a knowledge sharing environment in organizations in a same manner. The argument is

 

supported by Gordon (2010) who claimed that organizations can save expense by using existing social networks to create work groups where documents are shared collaboratively. Nevertheless, the point should be considered in future organizational studies and investigate how can an organization effectively use a SNSs to share and create organizational knowledge.

- A large portion of the published papers on SNSs and their business impacts belongs to developed and e-ready countries. Meanwhile, 74 percent of all the reviewed papers belong to USA, UK and China. One might imply that there is a great research potential in studying social networks people and business opportunities and impacts in less developed countries.

In addition to the above implications, we would like to offer the following suggestions for further research in SNSs:

- Categories in the classification framework were identified based on our observations from reviewing the articles. We believe that with increasing number of articles in this area more categories and sub-categories should be added and updated in the classification framework particularly in the area of "applications", as more articles can be found.
- Investigating the features and functionalities of SNSs in supporting businesses in doing economic operations is also highly suggested for future works.

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