

## **The Growth Of Social Media In The Last Decade.**

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### **ABSTRACT**

Social media comprises communication websites that facilitate relationship forming between users from diverse backgrounds, resulting in a rich social structure. User generated content encourages inquiry and decision-making. Given the relevance of social media to various stakeholders, it has received significant attention from researchers of various fields, including information systems. There exists no comprehensive review that integrates and synthesizes the findings of literature on social media. This study discusses the findings of 132 papers (in selected IS journals) on social media and social networking published between 1997 and 2017. Most papers reviewed here examine the behavioral side of social media, investigate the aspect of reviews and recommendations, and study its integration for organizational purposes. Furthermore, many studies have investigated the viability of online communities/social media as a marketing medium, while others have explored various aspects of social media, including the risks associated with its use, the value that it creates, and the negative stigma attached to it within workplaces. The use of social media for information sharing during critical events as well as for seeking and/or rendering help has also been investigated in prior research. Other contexts include political and public administration, and the comparison between traditional and social media. Overall, our study identifies multiple emergent themes in the existing corpus, thereby furthering our understanding of advances in social media research. The integrated view of the extant literature that our study presents can help avoid duplication by future researchers, whilst offering fruitful lines of enquiry to help shape research for this emerging field.

**Keywords:** Information systems, Social networks, Socialmedia research, Systematic review

### **Introduction**

Social media allows relationship forming between users from distinct backgrounds, resulting

in a tenacious social structure. A prominent output of this structure is the generation of massive amounts of information, offering users exceptional service value proposition. However, a drawback of such information overload is sometimes evident in users' inability to find credible information of use to them at the time of need. Social media sites are already so deeply embedded in our daily lives that people rely on them for every need, ranging from daily news and updates on critical events to entertainment, connecting with family and friends, reviews and recommendations on products/ services and places, fulfilment of emotional needs, workplace management, and keeping up with the latest in fashion, to name but a few.

When we refer to social media, applications such as Facebook, WhatsApp, Twitter, YouTube, LinkedIn, Pinterest, and Instagram often come to mind. These applications are driven by user-generated content, and are highly influential in a myriad of settings, from purchasing/selling behaviours, entrepreneurship, political issues, to venture capitalism (Greenwood and Gopal 2015). As of April 2017, Facebook enjoys the exalted position of being the market leader of the social media world, with 1.97 billion monthly users (Statista 2017). In addition to posts, social media sites are bombarded with photo and video uploads, and according to the recent numbers, about 400 million snaps a day have been recorded on Snapchat, with around 9000 photos being shared every second (Lister 2017). While 50 million businesses are active on Facebook business pages, two million businesses are using Facebook advertising. Apparently, 88% businesses use Twitter for marketing purposes (Lister 2017).

Academics and practitioners have explored and examined the many sides of social media over the past years. Organizations engage in social media mostly with the aim of obtaining feedback from stakeholders (Phang et al. 2015). Consumer reviews are another big part of social media, bringing issues of information quality, credibility, and authenticity to the forefront. To a large extent, online communities have been successful in bringing together people with similar interests and goals, making the concept of micro blogging very popular. While most messages exchanged on social media sites are personal statuses or updates on current affairs, some posts are support seeking, where people are looking for assistance and help. Interestingly, these have been recognized as socially exhausting posts that engender social overload, causing other members to experience negative behavioural and psychological consequences, because they feel compelled to respond (Ganorkar R.A. et al., 2014).

Given the relevance of social media to various stakeholders, and the numerous consequences associated with its use, social media has attracted the attention of researchers from various fields, including information systems. This is evidenced by the large number of scholarly articles that have appeared in various outlets. Researchers have to expend an enormous amount of time and effort in collating, analysing, and synthesising findings from existing works before they embark on a new research project. Given the significant number of studies that have already been published, a comprehensive and systematic review can offer valuable assistance to researchers intending to engage in social media research. Our literature search suggests that there are reviews on social media in the marketing context (see for example, AlAlwan et al. 2017; Dwivedi et al. 2017a; Dwivedi et al. 2015; Ismagilova et al. 2017; Kapoor et al. 2016; Plume et al. 2016). However, there exists no comprehensive review that integrates and synthesises the findings from the articles published in Information Systems journals. Such an endeavour will not only provide a holistic view of

the extant re- search on social media, but will also provide researchers a comprehensive intellectual platform that can be used to pur- sue fruitful lines of enquiry to help advance research in this rapidly expanding area. To fulfill this goal, this study reviewed relevant articles to elucidate the key thematic areas of research on social media, including its benefits and spill-over effects. The resulting review is expected to serve as a one-stop source, offering insight into what has been accom- plished so far in terms of research on social media, what is currently being done, and what challenges and opportunities lie ahead. By doing so, this study explores the following aspects of existing research on social media:

How is social media defined in the IS literature?

How has social media literature evolved from a multidis- ciplinary perspective?

How have social media technologies, applications, prac- tices, and research evolved over the past 20 years?

Which social media issues and themes have already been examined in IS research?

What are the major limitations of extant literature on social media?

The next section of this paper gives a brief overview of the method employed for carrying out the literature search. The succeeding section discusses citation and text analyses of social media publications. Subsequently, we outline the various ways in which scholars have defined social media. This is followed by a section that focuses on the evolution of social media research from an IS perspective. Next, we articulate the major themes emerg- ing from prior research and use them as a backdrop for our review of the literature on social media. The ensuing section discusses our findings, followed by key conclu- sions and limitations of the study.

## Literature Search Method

The literature search for this analysis was conducted in the following two phases: (1) keyword-based search and analy- sis to explore the overall evolution of social media literature; and (2) manual search across specific IS journals to under- stand the emerging IS perspectives on this topic.

## Keywords Based Search and Analysis

In order to gain a deeper understanding of social media, we analyzed relevant abstracts that were downloaded from the Web of Science (WOS) database. Our search terms<sup>1</sup> yielded a total of 13,177 records, out of which 12,597 unique abstracts were obtained. The analysis of these records was undertaken in two steps. First, we used VOSviewer (Van Eck and Waltman 2011) to perform a co-citation analysis of first authors in the downloaded corpus. VOSviewer allows visualization of similar- ities in publications and authors through an examination of bibliometric networks. Furthermore, we used VOSviewer to an- alyze words derived from titles and abstracts. Second, we used Latent Dirichlet Allocation (LDA) (see Blei 2012) to extract key thematic areas latent in the literature on social media. Further details about these analyses and results are presented in section 3.

## Manual Search and Analysis

Given the inconsistencies in the use of keywords in social media research, a manual search, rather than a keyword-based one, was deemed to be more appropriate for identifying the existing literature on social media. Furthermore, since keywords in the social media literature tend to overlap with topics and/or theories in other related research areas, a keyword search may yield irrelevant articles. For instance, a keyword search for 'Social network' returns articles related to social

network theories, which are not necessarily part of social media. The articles reviewed in this study are from the following eight Senior Scholars' Basket of Information Systems journals: *European Journal of Information Systems* (EJIS); *Information Systems Journal* (ISJ); *Information Systems Research* (ISR); *Journal of the Association for Information Systems* (JAIS); *Journal of Information Technology* (JIT); *Journal of Management Information Systems* (JMIS); *Journal of Strategic Information Systems* (JSIS) and *Management Information Systems Quarterly* (MISQ)). Along with these eight journals, we have also analysed relevant articles from *Information Systems Frontier* (ISF) journal. This is because it focuses on examining new research and development at the interface of information systems (IS) and information technology (IT) from analytical, behavioural, and technological perspectives. It provides a common forum for both frontline industrial developments as well as pioneering academic research.<sup>2</sup> ISF enjoys the reputation of a high quality journal across continents. For example, a journal quality ranking by Chartered Association of Business Schools, UK, has given it a three star (high ranking) quality rating, while journal ranking by the Australian Business Deans Council (ABDC) has rated it as an 'A' class journal (the second highest quality journal category after A\*, which is reserved for premier publications). In light of these observations, it was deemed appropriate to consider articles from ISF along with the aforementioned eight journals.

Relevant articles were then identified and downloaded from each of the target journals by going through their archives. Specifically, all volumes and issues published in these journals between 1997 and 2017 were considered in our analysis. Articles, research notes, introductions, research commentaries, and editorial overviews relevant to social media were downloaded and numbered to prepare an APA style reference list. The first literature search resulted in 181 articles that had some relevance to the social media domain. A closer examination of individual abstracts and full articles led to the elimination of 49 irrelevant articles, thus giving us a total of 132 articles pertinent to the domain of interest (i.e., social media).

## Citation and Text Analyses of Social Media Publications

### Author Co-Citation Analysis (ACA)

Author Co-Citation Analysis (ACA) is a bibliometric technique that has been widely used to explicate the conceptual structure of disciplines (for example, see White and Griffith 1981; McCain 1984; Culnan 1986; Nerur et al. 2008). The underlying assumption in ACA is that authors who are frequently cited together tend to work on similar concepts. Thus, frequently co-cited authors are

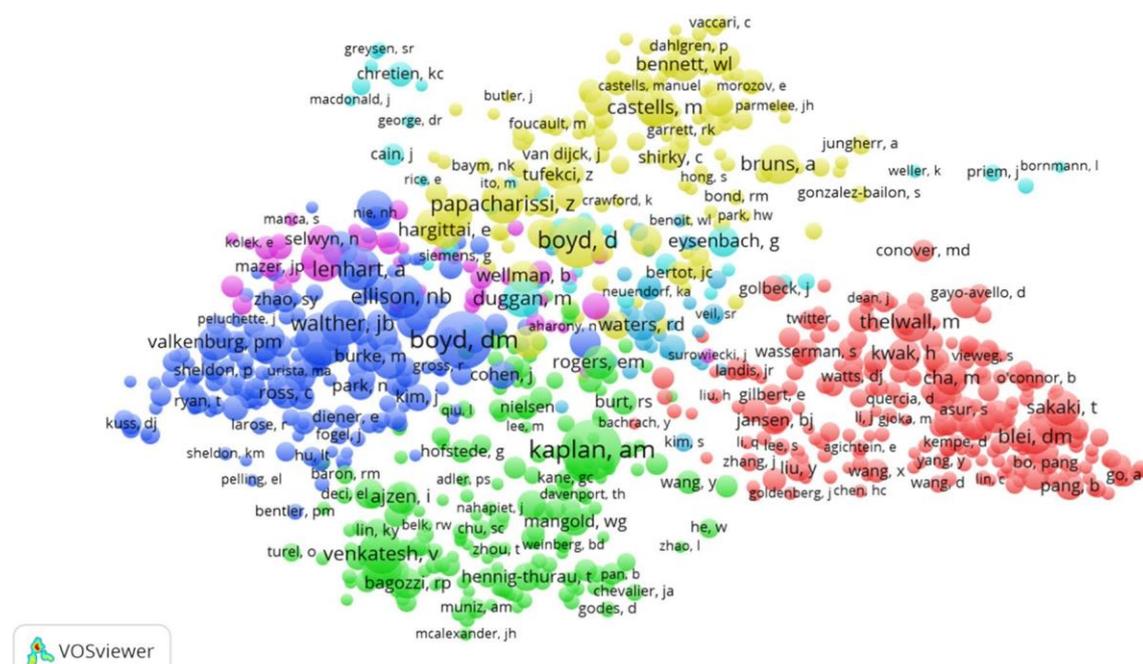
likely to cluster together when an ACA is performed. VOSviewer considers only first authors when it performs ACA. Only authors who had 50 or more citations were included in the analysis. Figure 1 shows the results of ACA.

VOSviewer identified seven distinct clusters:

Cluster 1: Authors in this cluster have contributed to research on Twitter (e.g., Sakaki), social network analysis (e.g., Wasserman), topic modeling (e.g., Blei), sociality and cognition (e.g., Dunbar), sentiment analysis of tweets (e.g., Thelwall), and other related topics.

Cluster 2: Authors in this cluster are well known for their work on technology adoption (e.g., Venkatesh), diffusion of technology (Rogers), culture (Hofstede), theory of planned behavior (Ajzen), marketing/consumer behavior (e.g., Hennig-Thurau), and statistical methods (e.g., Bagozzi, Fornell, Hair).

Cluster 3: This cluster comprises of authors who deal with a variety of issues related to social media (Facebook and Twitter) use. For example, Steinified and



**Fig. 1 Author clusters from ACA**

Ellison examined social capital across Facebook; Kuss studied online/social networking addiction (e.g., gaming addiction), and Lenhart focused on teens and technology (e.g., mobile internet use), particularly in the use of social media. Other topics include Bandura's self-efficacy, use and benefits of Twitter by scholars, and personality and social characteristics of Facebook users (e.g., Ross).

Cluster 4: Prominent social theorists/sociologists who have contributed to social capital theory, structuration theory and modern sociological theory are distinguished members of this cluster. These include Bourdieu, Coleman, Giddens, and Habermas. Papacharissi has written about a variety of topics including the exploration of factors that predict Internet use as well as users' behaviors, identity, sense of community and culture on social media. Tufekci has studied privacy and disclosure on social media, as well as other topics, including how social

networking sites such as Facebook might influence one's decision to participate in protests.

Cluster 5: In this cluster, there is evidence of the influence of Vygotsky's socio cultural learning theory as well as Lave and Wenger's work on communities of practice. In addition to his work on collaborative learning, Kirschner has examined the relationship between Facebook and academic performance. Likewise, Selwyn has explored pedagogical and learning engendered by the use of information and computer technologies (ICT).

Cluster 6: This cluster appears to reflect two broad themes. The first is a range of topics related to medical Internet research, broadly referred to as e-health (Eysenbach) or online health (Duggan). Themes in this category include electronic support groups and health in virtual communities (Eysenbach), and policies and healthcare associated with social media, and professionals among medical students and physicians in the use of social media (Chretien, Greysen). The second main thematic area in this cluster deals with scholarship on social media, scholarly communication, and metrics for evaluating impact of articles on the web (e.g., Weller, Bormann, Priem).

Cluster 7: The dominant theme here is the nature and content of communication. In particular, scholars in this cluster have focused on communication and response in the face of crises (Coombs), including image restoration after a controversy (Benoit), analysis and reliability of content (Krippendorff), and the use of social media sites such as Facebook and Twitter by government agencies and non-profit organizations to engage stakeholders (Waters).

### Text Analysis of Words in Titles and Abstracts

VOSviewer was used to analyze terms (i.e., words) in the titles and abstracts of our corpus to obtain a two-dimensional map showing proximities of words that are likely to be related based on their co-occurrences. Specifically, VOSviewer relies on the Apache OpenNLP Toolkit to identify noun phrases, and then compares their overall co-occurrence distribution with their distribution across other noun phrases to compute a relevance score (Van Eck and Waltman 2011). The intuition is that frequently co-occurring noun phrases with high relevance are likely to unravel a topic or theme that is latent in the corpus. The term map from VOSviewer is shown in Fig. 2. Only terms that occurred 50 times or more were included. Furthermore, relevance scores computed by VOSviewer for every term were used to select the top 80% that met the threshold.

VOSviewer identified five clusters here. It is evident from the clusters that research on social media has dealt with a broad range of topics, including but not restricted to diffusion of information and opinions, spread of diseases (e.g., influenza), identification of social and emotional health concerns and attendant interventions to deal with them, social media as an influence, the use of social media for marketing purposes, and the implications of social media as a tool for pedagogy (i.e., teaching and learning) and medical practice. These have been summarized in Table 1.

It must be noted that the topics are broad and don't reveal the nuances of research areas embodied in the abstracts examined in this study. The next sub-section presents the results of topic modeling, which has the potential to unravel more focused themes embodied in the large corpus that we analyzed.

### Topic Modeling

The fact that our search terms yielded over 12,000 abstracts suggests that scholars are investing



beyond organizational peripheries to become a part of the larger societal context, it is important for strategic information systems research to delve into the competitive setting of dynamic social systems. Online communities are introducing extrinsic rewards that do not limit users' intrinsic motivations. Research on such communities should expand to study the interplay between extrinsic and intrinsic rewards, particularly in terms of their ability to cultivate and sustain users' intrinsic motivations. From an organizational perspective, research on social media should move past the conventional dyadic view of the relationship between an online community and a firm, and focus on reconceptualising online users as an ecosystem of stakeholders. Social media has re-established the dynamics between organizations, employees, and consumers. Given the rise in number of publications focussing on workplace setting since 2014, future researchers should aim to analyze stakeholders' potential in adopting social media tools to successfully accomplish their work goals. As for the limitations of this collective review, publications reviewed here were limited to only nine journals. This potentially means studies with significant contributions to social media literature published in other journals have been overlooked. Future researchers can look to overcome such exclusions and focus on the overall review of literature on social media platforms. Future reviews may focus on reviewing articles published in a larger number of IS journals related to a specific type of social media (i.e. social networking sites, blogs), or specific issues related to social media use, such as information load, stress, and impact on productivity. Despite these limitations, our study provides a comprehensive and robust intellectual framework for social media research that would be of value to academics and practitioners alike.

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## References

1. Aggarwal, R., & Singh, H. (2013). Differential influence of blogs across different stages of decision making: The case of venture capitalists. *MIS Quarterly*, 37(4), 1093–1112.
2. Aggarwal, R., Gopal, R., Sankaranarayanan, R., & Singh, P. V. (2012). Blog, blogger, and the firm: Can negative employee posts lead to positive outcomes? *Information Systems Research*, 23(2), 306–322. AlAlwan, A., Rana, N. P., Dwivedi, Y. K., & Algharabat, R. (2017).
3. Social Media in Marketing: A review and analysis of the existing literature. *Telematics and Informatics* Available at <http://www.sciencedirect.com/science/article/pii/S0736585317301077>.
4. Ali-Hassan, H., Nevo, D., & Wade, M. (2015). Linking dimensions of social media use to job performance: The role of social capital. *The Journal of Strategic Information Systems*, 24(2), 65–89.
5. Ameripour, A., Nicholson, B., & Newman, M. (2010). Conviviality of internet social networks: An exploratory study of internet campaigns in Iran. *Journal of Information Technology*, 25(2), 244–257.

6. Baek, H., Ahn, J., & Choi, Y. (2012). Helpfulness of online consumer reviews: Readers' objectives and review cues. *International Journal of Electronic Commerce*, 17(2), 99-126.
7. Barrett, M., Oborn, E., & Orlikowski, W. (2016). Creating value in online communities: The sociomaterial configuring of strategy, platform, and stakeholder engagement. *Information Systems Research*, 27(4), 704–723.
8. Bateman, P. J., Gray, P. H., & Butler, B. S. (2011). Research note-the impact of community commitment on participation in online communities. *Information Systems Research*, 22(4), 841–854.
9. Baur, A. W. (2017). Harnessing the social web to enhance insights into people's opinions in business, government and public administration. *Information Systems Frontiers*, 19(2), 231–251.
10. Benthous, J., Risius, M., & Beck, R. (2016). Social media management strategies for organizational impression management and their effect on public perception. *The Journal of Strategic Information Systems*, 25(2), 127–139.
11. Bharati, P., Zhang, C., & Chaudhury, A. (2014). Social media assimilation in firms: Investigating the roles of absorptive capacity and institutional pressures. *Information Systems Frontiers*, 16(2), 257–272.
12. Xie, K., & Lee, Y. J. (2015). Social media and brand purchase: Quantifying the effects of exposures to earned and owned social media activities in a two-stage decision making model. *Journal of Management Information Systems*, 32(2), 204–238.
13. Xu, S. X., & Zhang, X. M. (2013). Impact of Wikipedia on market information environment: Evidence on management disclosure and investor reaction. *MIS Quarterly*, 37(4), 1043–1068.
14. Xu, Y. C., Yang, Y., Cheng, Z., & Lim, J. (2014). Retaining and attracting users in social networking services: An empirical investigation of cyber migration. *The Journal of Strategic Information Systems*, 23(3), 239–253.
15. Xu, B., Xu, Z., & Li, D. (2016). Internet aggression in online communities: A contemporary deterrence perspective. *Information Systems Journal*, 26(6), 641–667.
16. Yan, L., & Tan, Y. (2014). Feeling blue? Go online: An empirical study of social support among patients. *Information Systems Research*, 25(4), 690–709.
17. Yan, L., Peng, J., & Tan, Y. (2015a). Network dynamics: How can we find patients like us? *Information Systems Research*, 26(3), 496–512.
18. Yan, X., Wang, J., & Chau, M. (2015b). Customer revisit intention to restaurants: Evidence from online reviews. *Information Systems Frontiers*, 17(3), 645–657.
19. Yu, J., Hu, P. J. H., & Cheng, T. H. (2015). Role of affect in self-disclosure on social network websites: A test of two competing models. *Journal of Management Information Systems*, 32(2), 239–277.
20. Ganorkar RA, Rode PI, Bhambhulkar AV, Godse PA, Chavan SL. Development of water reclamation package for wastewater from a typical railway station. *Int J Innov Technol Res*. 2014;2(2):841-846 <http://ijitr.com/index.php/ojs/article/view/288/pdf>.
21. Zeng, X., & Wei, L. (2013). Social ties and user content generation: Evidence from Flickr. *Information Systems Research*, 24(1), 71–87. Zhang, J., & Piramuthu, S. (2016). Product recommendation with latent review topics. *Information Systems Frontiers*, 1–9. <https://doi.org/>
22. [10.1007/s10796-016-9697-z](https://doi.org/10.1007/s10796-016-9697-z).

23. Zhang, X., & Wang, C. (2012). Network positions and contributions to online public goods: The case of Chinese Wikipedia. *Journal of Management Information Systems*, 29(2), 11–40.
24. Zhang, D., Zhou, L., Kehoe, J. L., & Kilic, I. Y. (2016). What online reviewer behaviors really matter? Effects of verbal and nonverbal behaviors on detection of fake online reviews. *Journal of Management Information Systems*, 33(2), 456–481.
25. Zhao, L., Detlor, B., & Connelly, C. E. (2016). Sharing knowledge in Social Q&a Sites: The unintended consequences of extrinsic motivation. *Journal of Management Information Systems*, 33(1), 70–100.
26. Pandey, S. K. (2022). A Study on Digital Payments System & Consumer Perception: An Empirical Survey. *Journal of Positive School Psychology*, 6(3), 10121-10131.
27. Pandey, S. K., & Vishwakarma, A. (2020). A STUDY ON INVESTMENT PREFERENCES OF YOUNG INVESTORS IN THE CITY OF RAIPUR CHHATTISGARH, INDIA. *PalArch's Journal of Archaeology of Egypt/Egyptology*, 17(9), 9757-9768.
28. Nathani, S., Chakhiyar, N., & Pandey, S. K. (2022). A Study on Consumers Perception towards Digital Payment System in India and Various Affecting Its Growth. *Issue 3 Int'l JL Mgmt. & Human.*, 5, 1162.
29. Tripathi, A. (2019). Profit Maximization Theory and Value Maximization Theory. *International Journal of Scientific Development and Research*, 4(6), 284-289.
30. Tripathi, A. (2014). Globalization and Downsizing in India. *International Journal of Multidisciplinary and Current Research*, 2, 932-939.
31. Tripathi, A. (2019). Profit Maximization Theory and Value Maximization Theory. *International Journal of Scientific Development and Research*, 4(6), 284-289.