

Online Social Networking for Radiology

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Online social networking services have changed the way we interact as a society and offer many opportunities to improve the way we practice radiology and medicine in general. This article begins with an introduction to social networking. Next, the latest advances in online social networking are reviewed, and areas where radiologists and clinicians may benefit from these new tools are discussed. This article concludes with several steps that the interested reader can take to become more involved in online social networking.

Key Words: Social networking; radiology.

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Online social networking has become a cultural phenomenon in recent years. Although people have socially networked since prehistoric times, the recognition of this as a distinct activity (ie, sometimes mediated by computers and the Internet) is relatively new. Social networking service has been defined as “a platform to build social networks or social relations among people who, for example, share interests, activities, backgrounds, or real-life connections” (1). Social networking is the process of using such services to build and/or maintain social networks.

Many busy doctors may read about the latest advances in social networking and think that this is a hobby for people with more free time on their hands than a busy physician. This is understandable as it is hard to keep track of all the latest advances in online social networking, let alone find time to use them. Although physicians may find themselves with limited free time at their disposal, online social networking should be a key part of every physician's professional practice.

There are several reasons why online social networking has become an important part of being a successful physician.

Online social networking is an important aspect of networking for employment and allows radiologists to network with other physicians for clinical- and research-related interests. Online social networking may also be useful for radiologists to network with patients. As radiologists have less face-to-face contact with patients than physicians of many other specialties, online social networking platforms offer the potential for radiologists to present a virtual “Face of Radiology” for patients.

This article has several goals. The first is to review the role of online social networking and why it matters or should matter to radiologists. Next, this article will present the latest technical developments in online social networking and how they may be used by radiologists and discuss some barriers to implementation with suggested ways to overcome these barriers. Finally, a few simple steps radiologists can take to increase their involvement in online social networking will be presented.

ONLINE SOCIAL NETWORKING AND WHY IT MATTERS (OR SHOULD MATTER) TO RADIOLOGISTS

Online social networking has become an increasingly common means by which people interact. As health care systems become ever larger, face-to-face conversations with colleagues are becoming fewer and further between. Online social networking offers an opportunity for the busy radiologist to stay socially connected even if one is networking with physicians across several different hospitals. To better understand why online social networking may play such a valuable role in contemporary professional networking, it is worthwhile to consider the role it plays in our society as a whole.

Social networking may be thought of as a relational structure between multiple participants: either individual

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people or organizations. Online social networks (OSNs) such as Twitter, LinkedIn, and Facebook have been rapidly adopted by people of all ages, enabling the unprecedented ease of communication of ideas to a mass audience (2). The rise in popularity of these networks has been dramatic. Facebook boasts 701 million active users and Google Plus boasts 359 million active users, recently surpassing Twitter which has 297 million active users (3). The ubiquity of OSNs is especially evident among Internet users aged 18–24 years, of whom 75% reported having a social profile in 2008 (4). However, like many Internet trends, social networking is a frontier which is only beginning to be explored by researchers and policy makers. As this technology becomes more prevalent with increases in broadband access and digital literacy in general, it would be prudent to understand its implications in both personal and professional life (2).

Electronic communication tools have permeated our environment in ways that have changed our social behaviors and daily life. Online social networking is just one of many consumer technologies such as blogs, SMS, and Wikis that have become common in the corporate world (5). The presence of medically related topics in these spaces is becoming more prevalent with up to 46% of physicians reporting interactions through blogging or other social media on a weekly basis (6).

Networks exclusively targeting medical professionals have emerged, such as QuantiaMD, Sermo, and Medscape's Physician Connect, which each boast greater than 100,000 members. However, a more effective measure of an OSN's strength may be user activity, which is less transparent to external observers (5).

Although Internet tools and most online social networking data are not specific to radiologists, most radiologists use the Internet with regularity. For example, in a 2007 survey, 97% of radiologists reported using the Internet for education with 42% using it daily. In particular, 84% of survey respondents claimed that their usage of the Internet for gathering radiology information had increased in the past 3 years (7). Many new educational and professional resources are now available online and not in a traditional paper format. For example, Radiopaedia.org is a radiology-specific Web-based reference tool that contains both cases and articles contributed by a community of members.

Providers and their patients have increasingly higher expectations of medical information systems, shaped by their experiences in other technological domains. The market will demand seamless quick access from anywhere and at any time. The emergence of new and more flexible communication paradigms such as OSNs is influencing the evolution of the health care experience. Many current social networking paradigms are based on communication, which are not in real time. However, some feel that real-time and continuous communication will likely become the norm rather than the exception in the medical professional community (5). The online social networking tools discussed in this article apply to both forms of information exchange.

SOCIAL NATURE OF MEDICINE AND INTERPERSONAL INTERACTIONS IN THE SETTING OF NEW TECHNOLOGY

Social Networking Theory

Social scientists have taken a formal approach to defining and investigating the ties that form between us called Social Network Analysis. These scholars define a social network as a set of relationships between entities (also called *nodes*). These entities or nodes usually represent individual people but can also represent groups of people, such as hospitals, organizations such as patient interest groups, or professional societies (8). The types of relationships (or *links*) that exist between nodes can vary; for example, radiologists might be connected to one another because they work at the same institution or a group of hospitals might be part of the same social network because they are all affiliated with the same university.

The relationship between two nodes is also characterized by *flow*—the passage of things or ideas from one node to another. Money, information, friendship, physical objects, and even disease are all examples of what can pass between nodes in a social network. Flow can be unidirectional or bidirectional and is often not symmetric. For example, it is common for some members of the radiology chat forums to contribute regularly, whereas others tend to “lurk” or consume information posted by others although not actively posting themselves. An example of a relationship between two nodes with bidirectional flow is shown in [Figure 1a](#).

Another important characteristic of a social network is the *density* of that network or the number of direct connections or ties between nodes. Density is calculated by dividing the number of potential links between nodes by the number of actual links. *Multiplexity*, in contrast, reflects how two nodes can be connected by several different relationships. For example, two radiologists can be coworkers, friends, neighbors, and belong to the same religious group. An example of multiplexity is shown in [Figure 1b](#). A high degree of density and multiplexity, often found in smaller social networks, is associated with increased social support, cohesive communities, and increased transmission of information such as ideas and rumors (9). Consequently, members of a relatively small social network such as an online forum catering to radiologists interested in pediatric neuroimaging might provide more professional support and information sharing than a much larger network in which ties between members are less dense and have low multiplexity (as might be seen in a network for radiologists in general).

Distance is another aspect of social networks, which is important to consider. Distance refers to the number of links that must be traversed to get from one node to another. For example, radiologist A and radiologist B might be part of the same social network because they are both radiologists; however, they do not know each other but instead have a mutual acquaintance, radiologist C, [Figure 1c](#). Thus, radiologists A and B are indirectly rather than directly linked. For information to reach radiologist B from Radiologist A,

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