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MAPPING THE SOCIAL MEDIA LANDSCAPE: A PROFILE OF TOOLS, APPLICATIONS AND KEY FEATURES

ABSTRACT

This article is based on a 2014 explorative study investigating the use of social media applications in an educational context by means of a systematic analysis of internationally published and researched studies. The purpose of this article is to present a brief overview of the evolution of the Internet and the WWW in order to draw a “map” of the rapidly evolving and ever-changing social media landscape. The mapping exercise leads to an overview of the most prominent features of social media tools and applications. As a whole, the information presented in the article should be regarded as a glance at a vast, ever-changing terrain; a set of summarised “directions” intended for practitioners and researchers in the field of computer-mediated communication (CMC) who are less experienced or relatively new to the field. Based on the study, key features of social media are highlighted and the role of social media in communication, interaction and collaboration are highlighted. Furthermore, by highlighting the key features of social media, a profile of social media as a CMC tool is compiled, which must be considered when utilising social media in any context.

Keywords: social media; computer-mediated communication; social media landscape; Web 2.0; social bookmarking; social networking services; virtual worlds

INTRODUCTION

Over the last century computer technology has developed very rapidly and permanently changed the ways in which people communicate. Improved, smaller and easier to use technology, coinciding with the development of the Internet and the World Wide Web (WWW), gives people access to unlimited sources of information and enables fast communication worldwide. Currently, the WWW is the primary source of information for most people, while Web 2.0-based social networking sites (e.g. Facebook, Twitter, blogs, wikis, etc.) are becoming the main means of communication, interaction and entertainment.

Thousands of social media applications and tools exist, creating a vast social media landscape from which users can choose media to suit their specific needs. The social media landscape is however evolving with increasing acceleration

(Solis 2013): new applications are added daily to the repertoire of available technologies while existing applications are improved and adapted — motivated by user preferences and needs, or based on the successes of their predecessors — although many just as quickly disappear or become obsolete. For many people (including researchers) it has become impossible to know which applications exist or to keep up to date with new developments.

Against this background, the purpose of this article is to present a brief overview of the evolution of the Internet and the WWW, subsequently define the term “social media” and then draw a “map” of the rapidly evolving and ever-changing social media landscape. The mapping exercise concludes with a synopsis (or profile) of the most prominent features of social media tools and applications. As a whole, the information presented in the article should be regarded as a glance at a vast, ever-changing terrain, a set of summarised “directions” intended for practitioners and researchers in the field of computer-mediated communication (CMC) who are less experienced or relatively new to the field. The article should, however, not be seen as a comprehensive source of all the historical and evolving social media tools and applications: only 15 social media categories are discussed with examples of some of the most used or most popular applications — supported by current statistics — in each category.

This article was informed by a comprehensive qualitative, explorative study (Coetzee 2014) which emanated from the field of Communication Science and which investigated the use of social media applications in an educational context by means of a systematic analysis of internationally published and researched studies. The study followed the guidelines of a comprehensive search of databases and websites to find applicable research about the topic (Crombie & Davies 2009: 2). An estimated 2 400 documents were originally evaluated for possible inclusion in the study sample, of which 220 were selected through a thorough iterative evaluation process for inclusion in the systematic analysis. The information presented in this article formed part of the social media “lens” through which an appropriate focus on the topic in the original (broader) study could be attained. This information is descriptive in nature, dealing with key social media tools and applications which were the focus of attention in research undertaken in the period 2006 to 2013. In order to clarify the term “social media” it is first necessary to consider the evolution of the Internet and Web 2.0.

SOCIAL MEDIA: FROM COMPUTERS TO THE INTERNET AND WEB 2.0

The development of the computer since 1930 had a slow, but serious impact on human communication. The establishment of ARPANet, the first network of the US Defence Department’s Advanced Research Projects Agency (ARPA), in the early 1960s triggered many computer-related developments (Murage 2003: 39); it has since evolved to become a large, international collection of networks called the Internet.

The word “Internet” is defined as a “vast global system of interconnected computer networks” (Howe 2012). By 1985 the first Internet was well established, and increasing amounts of data were transmitted at higher and higher speeds over more and more networks to more and more people (Leiner *et al.* 2012: 8). The Internet enabled near-

instant communication by means of electronic mail, instant messaging, discussion forums, Voice over Internet Protocol (VoIP), two-way interactive video calls and Internet conferencing. In 1989 Tim Berners-Lee developed the Hyper Text Markup Language (HTML) using specifications such as Uniform Resource Locator (URL) and Hyper Text Transfer Protocol (HTTP), enabling geographically dispersed people to work together by combining their knowledge in a global web of hypertext documents on computers linked by servers (Computer History Museum 2008: 90). Berners-Lee called this system the World Wide Web (WWW).

The WWW as a service of the Internet is a system of Internet servers that supports documents linked to other documents, graphics, audio or video files on the Internet. High-speed Internet connections, low connectivity charges, broadband access and online companies allowed the WWW to grow into Web 1.0. Web 1.0 contained “read-only” material, allowing users to view web pages but not contribute to the content. However, Web 1.0 developed a few tools users could use to communicate with one another online. These include, *inter alia*, video and audio conferencing tools, discussion forums, bulletin boards, chat rooms, newsrooms, usenet groups, e-mail, listservs, instant messaging, Internet Relay Chat (IRC), Internet telephony, and eventually Social Networking Sites (SNSs) (Yilmaz 2011: 115; Saritas 2006: 74; Lo 2009: 206; Baird & Fisher 2005: 17). After 2002 technological developments, such as improved broadband access and faster browsers, initiated the shift from Web 1.0 to Web 2.0 (Baird & Fisher 2005: 16; Cormode & Krishnamurthy 2008: 6).

O'Reilly (2007: 17) emphasises that Web 2.0 is a platform on which Web 2.0 applications run as services that provide users with control over content and that facilitate collaboration between individuals and groups. Web 2.0 is also defined in the context of web platforms and technologies that support the content and functionality of websites. These platforms consist of various technologies that promote social networking, the forming of online communities, user interaction, collaboration and the sharing of knowledge (Cormode & Krishnamurthy 2008: 1). Users obtain access to Web 2.0 sites through a web browser that provides the user with a user interface, software and storage facilities (Hughes 2011: 15; Cullen *et al.* 2009: 17).

A key aspect of Web 2.0 is the opportunities that exist for users to not only create content, but also to contribute to the content of existing web pages. User-generated content (UGC) can be described as all the different ways in which people can add pages of various kinds to Web 2.0 sites (Pillay & Maharaj 2010; Bell 2011: 100; Kaplan & Haenlein 2010: 61), and is encapsulated in services such as blogs, wikis, podcasts, SNSs and many other web applications. UGC was the catalyst for the establishment of social content on Web 2.0 and for those Web 2.0 applications known as “social media”.

The term “social media” can be defined based on either 1) the tools or the devices social media use; 2) the web applications that enable communication; or 3) as Web 2.0 resources. Social media can be described as Internet and mobile-based *tools and devices* that integrate technology, telecommunications and social interaction, enabling the construction, co-construction and dissemination of words, images and audio (Dabner 2012: 69; Junco & Chickering 2010: 12). The term “social media” describes

a range of user-centred, interactive *web applications* that facilitate the construction and dissemination of words, images and audio on the WWW (ASTD 2011: 3; Dabner 2012: 69). Social media is characterised as a collection of *Web 2.0 resources* that emphasise active participation, connectivity, collaboration and the sharing of knowledge and ideas among users (Rutherford 2010: 703; Dabbagh & Kitsantas 2012: 3).

In the context of this article, the term “social media” is seen as an umbrella term that embraces all three the above notions, and is defined as computer-mediated tools and applications using fixed or mobile computer technologies that allow people to create, share or exchange information in various formats, and to communicate in both a social and professional manner over a variety of Web 2.0 platforms. Fifteen categories of the current social media landscape are discussed next, with the focus on the most popular applications and tools in each category.

KEY TOOLS AND APPLICATIONS IN THE SOCIAL MEDIA LANDSCAPE

The social media landscape comprises social networks, blog platforms, wikis, niche networks, social bookmarks, virtual worlds, gaming sites, forums, message boards and many other social media applications, each with vast numbers of social media tools. Because of the ever-changing social media landscape, it will be impossible to discuss all available applications and tools, therefore a list of current popular applications are selected from the literature studied, supported by statistical information on the use and popularity of these applications.

Blogs

The term “blog”, a contraction of “web log”, refers to a web page consisting of an opinion, information, event description or personal diary entries, arranged chronologically with the most recent entry first, in the style of an online journal (Anderson 2007: 7; Armstrong & Franklin 2008: 7). A blog is usually maintained by an individual with regular entries on which readers can comment. The posting and commenting process entails a conversation between an author and a group of secondary contributors who communicate to an unlimited number of readers (Benkler 2006: 217; Harris & Rea 2009: 138). Blogs can include digital material, graphics and visual, audio or video content (Cullen *et al.* 2009: 18; Bates 2011: 25; Conole & Alevizou 2010: 49; Green & Hannon 2007: 12).

There are a variety of web services available that offer users storage space and tools to create their own blogs, for example Blogger and Word Press. Blog software also facilitates syndication, in which entries or key words can be “tagged” so that related items can easily be brought together, or to form links to other blogs or websites. Blogs can also be published using RSS feeds which allow readers to see when new postings have been made (Armstrong & Franklin 2008: 7). Statistics show that 12.7 million people regularly write blogs, while 46 million people worldwide regularly read and/or comment on blogs (Napier Marketing 2014).

Bulletin boards and message boards

The terms “bulletin board”, “online bulletin board”, “message board”, “pinboard” or “online notice board” are used interchangeably to refer to applications that allow people to post articles, pictures, photos, messages or comments on the postings of other people (Rambe 2011: 284). Each board is hierarchical in structure and can contain a number of sub-boards. Currently the most popular pinboard worldwide is Pinterest with 176 million registered users (Digital Stat Articles 2016). Flipboard, also a highly popular board, focuses on providing news items and discussions on popular topics. Flipboard has 70 million users who flip 7 billion pages a day (Kantrowitz 2013).

Conferencing services

Computer conferencing services (for example Adobe Connect) enable groups of people to hold discussions by reading and posting text messages on a computer system (Feenberg 1987: 169; King 2008: 49). It allows participants to contribute and communicate simultaneously on different topics, and participation can be anonymous. Asynchronous computer conferencing is used in contrast to synchronous conferencing, which refers to various chat systems in which users communicate simultaneously in real-time using text (Hewitt 1997: 2; Baird & Fisher 2005: 18).

Another popular type of computer conferencing is videoconferencing – a means by which geographically distant people can hold discussions or meetings in real-time during which they are able to hear and see each other using dedicated computer equipment as well as telephone connections (Baird & Fisher 2005: 18; King 2008: 61; Murage 2003: 28).

E-mail

E-mail is not only the oldest form of CMC, but also the best known, and one of the largest network applications on the Internet (Leiner *et al.* 2012: 3). E-mail allows a message to be sent to one or to many people, with the choice of attaching documents, pictures, videos or any other electronic item (Baird & Fisher 2005: 17). Users can also send a message to an electronic mailing list. An electronic mailing list is used for widespread distribution of information to many Internet users simultaneously (PCMag.com Encyclopedia 2009). Napier (2014) reports that e-mail accounts worldwide are predicted to grow to over 5.2 billion at the end of 2018. Worldwide, 196.3 billion e-mails are sent and received each day (Radicati 2014: 3-4).

Forums and discussion forums

The terms “discussion forum”, “message forum” or “Internet forum” are used interchangeably to refer to applications that allow people to hold conversations in the form of posted messages or comments on the messages of other people (Rambe 2011: 284). “The central features of a discussion forum are a means of posting messages, a repository for storing them, and an interface for navigating through the ‘threads’ of messages and replies”, write Kear *et al.* (2010: 218). Each forum

is hierarchical or tree-like in structure and can contain a number of sub-forums or discussion groups, each of which may have a separate topic. Within a forum's topic, each new discussion started is called a thread, and can be replied to by as many people as desired (Bigley 2012: 41; Greenhow & Robelia 2009: 128). Threaded discussions on these applications are very much like e-mail, except that everyone subscribed can see all the messages. There are many threaded discussion programmes available, and these vary widely in their features (Schroeder & Greenbowe 2009: 3).

Media manipulating tools and mashups

The terms “digital media manipulation” and “data mashup” refer to web applications that mix and combine the data and functionality of multiple web sources into one (Armstrong & Franklin 2008: 9; Lamb 2007: 13). The characteristics of a mashup include combination, visualisation and aggregation in order to make existing data more useful for personal and professional use (Crook 2008: 72). Lamb (2007: 13) distinguishes between remix and mashup in the following way:

- *Remix* refers to the reworking or adaptation of an existing or of any number of digital media sources to either create a totally new work or to provide an alternate version of the original.
- A *mashup* involves the combination of the data and functionalities of two or more totally different web applications.

Mashable, with 4.4 million users worldwide, is the leader in this category of social media applications. Mashable connects various social media sites into one easy-to-read blog with news, information and interesting facts.

Microblogging

A microblog is a type of blog that allows users to publish short text updates. The posts are called micro-posts, while the act of using these services is called microblogging (Kaplan & Haenlein 2011: 106). Twitter, the most well-known microblogging service, calls its posts “tweets”. Tweets are micro-posts or short messages limited to 140 characters. Communication over Twitter is in real-time and the exchange of information is immediate (Dunlap & Lowenthal 2009: 131). Users are able to reject the requests of anyone wishing to be a follower, allowing the user to define his or her own audience (Tong & Walther 2011: 8; Preece & Schneiderman 2009: 14). In addition to short messages, Twitter users can share web links, photos, videos and other media content. Twitter also allows users to make tweets exclusively available to only those followers to whom they want to give access (Rockinson-Szapkiw & Szapkiw 2011: 360). Twitter has 1.3 billion registered users, of which 100 million are daily users (Digital Stat Articles 2016).

Multi-media and file sharing

Multi-media sharing allows people to upload photos, videos (vodcasts), podcasts and other audio files on third-party websites (Crook 2008: 18). There is a wide variety of

websites available for multi-media sharing, for example Flickr and Instagram for photos, Dropbox for documents, YouTube for videos, iTunes for podcasts and vodcasts, Slideshare for presentations, DeviantArt for art work, Scribd for documents, and so forth. These websites allow users to post content and to tag these with keywords. Viewers may also post comments or reviews, or rate the uploaded content from other users (Armstrong & Franklin 2008: 8; Cullen *et al.* 2009: 18; Green & Hannon 2007: 14).

YouTube – with one billion users – is the largest and fastest growing web service for multi-media and the second largest search engine in the world. YouTube content can be produced, stored, shared or downloaded (Pillay & Maharaj 2010: 3). Millions of people participate in the sharing and exchange of multi-media on YouTube, either by producing their own podcasts and videos, or by uploading movies and videos from other media sources (Anderson 2007: 10). MediaBistro (2014: 7) reports that YouTube users watch an average of six billion hours of video each month and upload 100 hours of video every minute. The popularity of YouTube, combined with the increasing availability of high-speed connections, has made video content a popular social medium on the web (Armstrong & Franklin 2008: 8).

File sharing is the practice of providing access to digitally stored information such as multi-media, computer programmes, documents or electronic books. It may be implemented through centralised servers on computer networks, Web-based hyperlinked documents, or the use of distributed peer-to-peer networking. Users can use peer-to-peer software to search for shared files on the computers of other users. Files of interest can then be downloaded directly through the network (Farwell & Waters 2010: 10). Instagram, a photo sharing and special effects application, has 400 million active monthly users worldwide, uploading 80 million photos daily (Instagram.com 2016).

Online chat

Synchronous chat refers to real-time, text-based communication between one-to-one or one-to-many users via a computer. Once a chat has been initiated, a user enters text on a keyboard and it will immediately appear on the other user's monitor (Conole & Alevizou 2010: 48).

Instant Messaging (IM) is a type of communication service that enables a person to communicate ("chat") with other people in real-time over the Internet using text. The programme will indicate who of these people are online and a chat can be initiated by anyone of the people online. IM also allows one to include more than two people in a conversation by creating a chat room (Baird & Fisher 2005: 17). Mobile phone short messaging service (SMS) is also an example of online chat. SMS enables the user to use instant messaging clients through their mobile device (Vyas 2011: 38).

Internet Relay Chat (IRC) is a web service that allows users to chat online, or to use IM. IRC allows the instant exchange of text messages between any two users – they do not need to belong to a specific chat group to participate (Green & Hannon 2007: 13). To join an IRC discussion, the user needs an IRC client and Internet access. The IRC client is a programme that runs on computers and sends and receives messages to and from an IRC server.

WhatsApp is currently the most popular chat application with over 1 billion monthly users, handling 42 billion messages a day and sharing 8 796 photos per second (Yeung 2016). Snapchat, another popular chat application, has 100 million active daily users who send 9 000 photos (snaps) a second (Digital Stat Articles 2016).

Online games

Being able to interact with other users is also possible using online game websites. Alexa, the Web Information Company, listed 37 664 online games in 24 categories in the 2013 List of Most Popular Games (ALEXA 2014). The two most popular games worldwide are MMOGs and MMVWs:

- Massively Multiplayer Online Games (MMOGs) are games that take place in a computer-generated imaginary world with live interaction between Internet users (Green & Hannon 2007: 13; Conole & Alevizou 2010: 49).
- Massively Multiplayer Virtual Worlds (MMVWs) are complex digital environments that allow participants to project a non-physical presence of themselves, using a custom-designed character (avatar) in a three-dimensional (3D) reality, and within that reality, to interact with other players (Bates 2011: 27; Green & Hannon 2007: 13).

Podcasting and vodcasting

Podcasting allows a user access to online audio or video content through RSS feeds (Cullen *et al.* 2009: 18; Green & Hannon 2007: 13; Harris & Rea 2009: 138). Originally called audio blogs, podcasts developed from efforts to add audio streams to blogs. Audio podcasts are audio recordings of conversations, talks, interviews or lectures, usually in MP3 format, which can be played either on a computer or on a wide range of handheld devices and smartphones (Pillay & Maharaj 2010: 3; Harris & Rea 2009: 138). Video podcasts (called vodcasts) are online video clips that can be played on a computer or handheld device, mostly in MP4 format. Podcasts and vodcasts are freely available for download from the Internet using software that can handle RSS feeds. YouTube is currently the most popular application to upload and download both podcasts and vodcasts (Pillay & Maharaj 2010: 3; Anderson 2007: 10).

Social bookmarking

Social bookmarking, tagging and folksonomies allow the recording (bookmarking) of web pages, tagging these with keywords (called tags) and organising the tags into folksonomic metadata (Cullen *et al.* 2009: 18; Pillay & Maharaj 2010: 3). Social bookmarking sites (for example CiteULike, Digg, Delicious and Diigo) allow people to gather web pages they are interested in into a set of bookmarks (or favourites). Bookmarks are held on a server instead of on the user's computer and are available either for later use by the person or to be shared with other users (Pillay & Maharaj 2010: 3). Bookmarks also allow entries to be tagged.

Some sites (for example Delicious) collect and aggregate the tags on bookmarks that users have shared, while other sites (for example Diigo) incorporate user annotations

with the tagging (Green & Hannon 2007: 12) to create tag clouds. Tag clouds are groups of tags (tag sets), which indicate the frequency with which particular tags are used. This frequency information is sometimes displayed as a “word cloud” in which tags are displayed according to their frequency of use in different sizes of text, with those most frequently used in the largest text (Anderson 2007: 9).

Social Networking Services (SNSs)

Social networking consists of interactive web-based applications that facilitate social interaction among members in a virtual environment. Social Network Sites (SNSs) are specifically designed to allow members to form subgroups of “friends” and online communities of people with common interests. SNSs enable users to connect to family, friends and colleagues, but also to meet new people and develop new friendships (Conole & Alevizou 2010: 48; Tong & Walther 2011: 12; Merchant 2012: 7).

Users interact with one another through online messages or mails, or post personal information in which they describe themselves and their interests, and then display these messages (called status updates) to the people on their friend list (Tong & Walther 2011: 12; Ghosh, Chawla & Mallott 2012: 105). Personal information profiles may comprise photos, videos, images, audio content, links to other websites and/or user-generated content (Armstrong & Franklin 2008: 8; Cullen *et al.* 2009: 17).

There are currently hundreds of SNSs on the Web, supporting a spectrum of different practices, interests, niche groups and user groups (Steinfeld, Ellison & Lampe 2008: 434). Facebook, LinkedIn, Google+ (or Google Plus), MySpace, Twitter, Pinterest and Bebo are some of the more popular SNSs (Ghosh, Chawla & Mallott 2012: 105), although Facebook is by far the largest. Facebook has 1.65 billion active monthly users worldwide of which 1.9 billion use Facebook daily for at least 20 minutes (Facebook.com 2016).

Virtual worlds

A virtual world is a computer-simulated environment that enables users to navigate in a virtual space and interact with others through avatars. The avatar may be a generic representation of the user that may or may not resemble the user. Within the virtual simulation, a user can explore, socialise and solve collaborative challenges (Harris & Rea 2009: 138). Virtual worlds are enjoyed as networking forums for individuals to meet and socialise, as marketing or training platforms for businesses, and as educational and research environments for schools and higher education institutions (Dreher *et al.* 2009: 212).

Second Life is one of the best-known virtual world applications with more than a million registered users, of which 600 000 are active monthly users. Second Life is an online environment in which users have avatars that live simulated “real lives”. Users can go to school, college or church, can own a business, build buildings, host parties and even indulge in virtual sex (Armstrong & Franklin 2008: 9).

Wikis

Wikis (for example Wikipedia) and collaborative editing tools (for example Google Docs) are web-based services that allow users unrestricted access to create, edit and link web pages (Conole & Alevizou 2010: 52; Armstrong & Franklin 2008: 9). A wiki (a Hawaiian word for “quick”) is a web page or collection of web pages designed to enable any number of people to interactively create collaborative websites, or to contribute to or modify content by using a simplified Online Markup Language (OML). Wikis use basic file-sharing and content-editing tools to create navigable pages with hypertext-style linking between the pages (Harris & Rea 2009: 138; Armstrong & Franklin 2008: 8).

Wikipedia is arguably the best-known wiki. Wikipedia has more than 470 million monthly users viewing more than 18 billion pages (ALEXA 2014). The English Wikipedia alone (one of 200 Wikipedias) hosts over 4.6 million articles which are edited by 73 000 people worldwide (Wikipedia Statistics 2014).

The Web 2.0 applications and tools discussed above illustrate the current social media landscape with those tools currently the most popular, although the included tools should only be seen as the tip of the iceberg. Although these applications and tools may be popular now, new applications and tools are constantly being developed or improved and users may at any time move to other, newer media which may offer more or better features. In the context of this article it is therefore necessary to look at current trends and developments as well as predictions about the future of social media.

SOCIAL MEDIA TRENDS AND DEVELOPMENTS: FUTURE EVOLVEMENTS

Wellons (2014) predicts that by 2018, 2.44 billion of the world’s population will be using social networks. This will only be possible via technological apparatus affordable and accessible to many people worldwide. Already in 2001, Tim Berners-Lee predicted that a new type of WWW was needed: he posited that “if the past was *document* sharing, the future is *data* sharing” (Morris 2011: 44). Berners-Lee calls this new web “Web 3.0” or the “Semantic Web”, a web “in which computers become capable of analysing all the data on the web”.

The development of the Semantic Web is led by the W3C, with the aim to convert the current web into a “web of data” that allows computers to understand the meaning of information and in that way enable users to easily find, share and combine information (Ohler 2008: 7; Morris 2011: 44; Bradwell 2009: 27). Web 3.0 will, in other words, interpret the meaning of data in a similar fashion to a human being (Gylfason 2010: 4). Web 3.0 is supposed to lay the groundwork for Web 4.0, which will be the “Intelligent Web”, functioning on interaction between humans and machines in symbiosis (Aghaei, Nematbakhsh & Farsani 2012: 9).

Web 4.0 can be described as “the Ultra-Intelligent Electronic Agent”. Kurzweil (in Gylfason 2010: 6) is of the opinion that Web 4.0 will function like the human brain: “Intelligent machines will combine the subtle and supple skills that humans now excel in (essentially our powers of pattern recognition) with ways in which machines are already superior, such as remembering trillions of facts accurately, searching quickly

through vast databases, and downloading skills and knowledge". Computers running Web 4.0 will be parallel to the human brain with a massive web of highly intelligent interactions and mind-controlled interfaces (Aghaei *et al.* 2012: 9).

With Web 4.0 technology the masses of information on the Internet will become even more accessible. Kurzweil (in DeMers 2014) predicts that Google's *Hummingbird* algorithm will enable computers to read: "We want [them] to read everything on the web and every page of every book, then be able to engage an intelligent dialogue with the user to be able to answer their questions". Kimzey (in Wellons 2014) predicts that personalised content, supported by "extremely speedy mobile wireless broadband built into even the most affordable devices", will become the norm to manage the huge amounts of data available. By adding emotional features to these intelligent devices, the next step will be the development of Web 5.0.

Although Web 5.0 (the "Emotional Web") is still many years away, signals are that Web 5.0 will be about emotional and intellectual interaction between humans and computers with computers able to communicate with humans like humans communicate with each other (Benito-Osorio *et al.* 2013: 286).

Careful comparison of the main aspects of the definitions of social media and the features of each of the tools or applications focused on in the 220 articles analysed and those discussed above, reveals a list of features of social media which can be grouped into six categories:

- the technology and resources needed to use social media;
- the way social media allows information processing and knowledge creation;
- the characteristics of social media content;
- the ways of communication possible via social media;
- aspects of the communication process possible via social media; and
- the variety of content that can be shared using social media applications.

These features of social media are summarised in Figure 1.

Figure 1 shows that social media enables users to participate in crowd-sourced, open projects through the sharing and processing of information that constitute online content and allow knowledge creation. Social media allows online communities of interests to form and motivates social interaction and collaboration. Social media can meet business and educational needs, but also the needs of the individual who wants to share a wide assortment of information with family and friends, or form new friendships and build new relationships.

By extending the key features of social media (Figure 1) with the characteristics of the social media tools and applications discussed above, enhanced by the features of new and future technology, a profile of social media as a tool of CMC can be compiled. The profile is presented in Figure 2.

FIGURE 1: FEATURES OF SOCIAL MEDIA

Features of social media	
1. Social media depends upon:	
Telecommunication networks; computer hardware; computer and network software; interactive web applications; high-speed internet connections; broadband access; links between websites; user-centric infrastructure; mobile tools and devices.	
2. Social media allows knowledge creation:	3. Social media context is/can be:
<ul style="list-style-type: none"> • Access to digital information • Bookmark, tag web sites • Classification of knowledge • Contribute to existing information • Create knowledge • Create folksonomic meta-data • Disseminate, exchange information • Download information • Produce and process information • Remix, rework, adapt data • Storing of data and information 	<ul style="list-style-type: none"> • Asynchronous • Business-centred • Crowd-sourced • Educational • Informal • Personalised • Professional • Synchronous • User-centred • User-controlled • User-generated
4. Social media enables effective communication:	5. Social media encourages
<ul style="list-style-type: none"> • Anonymous participation • Communities of interest • Focused conversations • Instantaneous communication • Online discussions and conferences • Personal audience selection • Personalised websites • RSS feeds • Social networking • Two-way interaction 	<ul style="list-style-type: none"> • Active participation • Collaboration • Connectivity • Engagement • Explorations/experimentation • Feedback • Networking • Openness • Social interaction • Communication
6. Social media can share:	
Articles; audio content; comments; digital material; documents; games; graphics; messages; metadata; news; photos; pictures; podcasts; sounds clips; text updates; video content; visual content; web links, etc.	

(Source: Coetzee 2014)

The profile shows that users of Web 2.0 technologies prefer mobile, wearable and affordable technology with fast access to the Internet and user-centric infrastructures. Social media applications must support users in their search for applicable information and must allow users to create or edit online content in order to create new

knowledge according to their personal or professional needs. Users are looking for social interaction with people of similar interests and they want communication that encourages interaction, participation, engagement and openness. Users do not only want instantaneous access to all forms of content, but they also want to share a wide variety of content with others.

FIGURE 2: PROFILE OF SOCIAL MEDIA AS A TOOL OF CMC

Profile of social media as tools of CMC
Computer hardware
Users need computers, phones, tablets, or other mobile, personalised, wearable and affordable tools and devices to access data and participate on social media.
Computer and network software
Social media runs on telecommunication networks, interactive web applications, high-speed internet connections, broadband access, user-centric infrastructure.
Access to information
Social media must allow users to produce and edit information, find information easily, and to access, download, disseminate, exchange and store information.
Create knowledge
Users want to bookmark and tag information to create folksonomic metadata, and to classify, remix, rework and adapt data in order to create knowledge.
Communication
Users want SNSs with communities of interests where they can select the audience with whom to have conversations, online discussions or conferences.
Characteristics of the communication process
Social media must allow active participation, social interaction, instantaneous communication, engagement, anonymity, collaboration, feedback, openness.
Content that can be shared
Articles, audio clips, comments, documents, games, graphics, messages, news, photos, pictures, podcasts, text updates, video clips, movies, web links, etc.

(Source: Coetzee 2014)

The profile shows that users of Web 2.0 technologies prefer mobile, wearable and affordable technology with fast access to the Internet and user-centric infrastructures. Social media applications must support users in their search for applicable information and must allow users to create or edit online content in order to create new knowledge according to their personal or professional needs. Users are looking for social interaction with people of similar interests and they want communication that encourages interaction, participation, engagement and openness. Users do not only want instantaneous access to all forms of content, but they also want to share a wide variety of content with others.

The profile of social media as tool of CMC presented in Figure 2 above summarises those key features of social media which must be considered when utilising social media in any context, including business, education, organisational, private or social.

CONCLUSION

It is nearly impossible to predict what the future of social media will entail. By the time this article about social media is published, the information may already be outdated. Revolutionary changes are happening every day, while the influence of social media on human communication is accelerating to an unknown level. The “map” provided in this article may therefore also be antiquated within a couple of years. The evolutionary nature of computer-mediated communication will continuously demand new editions of records of (then) current tools and applications. The profile, delineating the key features of social media communication, may however present more stable contours which may need extension rather than major change from time to time. As in the original study, a profile like this can therefore serve as a theoretical point of departure (or social media “lens”) through which applicable theory could be illuminated and narrowed down to a conceptual framework that directs any study in which the focus centres on social media tools and applications.

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