

Successful customer knowledge management implementation through social media capabilities

Social media capabilities

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Abstract

Purpose – Nowadays, the recent advances in information and communications technology and the advent of Web 2.0 technology have resulted in the increasing popularity of social media and provided enterprises and companies with new horizons in establishing an effective significant relationship with clients. Despite the recognized importance of social media in knowledge management (KM) and customer relationships, there is not any research to identify social media capabilities related to customer knowledge management (CKM). Therefore, the purpose of this study is to recognize the social media capabilities related to CKM effectively.

Design/methodology/approach – To obtain research objectives, literature review, focus group method and expert interview were applied to identify and categorize social media capabilities. Analytical hierarchy process (AHP) also used to prioritize capabilities important.

Findings – The results indicate social media capabilities such as conversation capability, sharing capability, groups/community capability, relationship capability, speed and ease of access for the public are the main capabilities related to exploit customer knowledge and manage it successfully.

Research limitations/implications – The results highlight the different social media capabilities for CKM approach which will enhance customer insight and personalized services. Because of the newness of CKM and social media implementation in Iranian firms, empirical study was not conducted for a better understanding of their business value.

Originality/value – The main innovation of this study is identifying the social media capabilities related to CKM and prioritizing them which allow managers to select the most appropriate social media tools based on these results.

Keywords Web 2.0, Analytical hierarchy process (AHP), Customer knowledge management (CKM), Social media capabilities

Paper type Research paper

1. Introduction

Recent advances and developments in information and communications technology (ICT) and the advent of Web 2.0 technologies have opened new horizons for companies to establish an effective meaningful relationship with customers (Zhang, 2015), resulting in the increasing popularity of the social media (Hajli, 2015). Ngai *et al.* (2015) defined the social media as a group of Web 2.0-based applications which allows users to produce, create and exchange the content and enable them to interact virtually to create, obtain, share and exchange information online.

The use of social media as a set of tools empowering enterprises to communicate, cooperate and interact with customers can in turn facilitate creating value and sharing the knowledge (Sigala and Chalkiti, 2015). Thus, the use of social media is considered profitable for many organizations (Chua and Banerjee, 2013) to get value for their business; many large companies and enterprises seek to adopt social media with the intention of preserving and increasing customer loyalty, improving customer satisfaction, building up a



reputation and increasing their sales and incomes (He *et al.*, 2013). Moreover, in today's knowledge-based economy, the main source of sustainable competitive advantage depends on how to create, share and apply knowledge (Boateng, 2016; Beiryaei and Jamporazmay, 2010). Therefore, organizations which gather, manage and publish customer knowledge across their departments are more likely to achieve competitive advantage than others (Khodakarami and Chan, 2014) because customer knowledge management (CKM) provides organizations with the opportunities to acquire new customers and to keep their current customers, which in turn enables organizations to be more efficient in competition and affects the organizations' performance significantly (Chua and Banerjee, 2013). Therefore, to cooperate and interact with their customers, companies should develop special systems to meet the needs of customers and satisfy them. Also, they should provide a suitable environment to have a better access to knowledge and ideas of their customers and to use this knowledge in an innovation process. So it could be useful to build a knowledge-sharing platform in developing an interactive environment. Such a platform cannot allow only the company to do business, but it also creates an environment to share and exchange knowledge between customers and the company (Taherparvar *et al.*, 2014), leading to innovation in products and services and creating values for both company and customer (Tseng and Fang, 2015). Thus, given that social media are recognized community-based tools for organizations to gather knowledge and to provide feedback on their new products and services (Pepler and Solomou, 2011), the advent of these media has brought some capabilities for CKM system. According to Statista' report (2016), from nearly 7.4 billion people in the world, more than 3.4 billion are active internet users and more than 2.3 billion people have social media accounts. This report estimates that this statistics will rise to 2.95 billion in 2020 (Statista report, 2016).

Researchers have demonstrated that technologies alone rarely create value for companies, and instead, these technologies are most effective when integrated with other company resources and capabilities (Trainor *et al.*, 2014). While extant studies are conducted in CKM and social media technologies, little research has yet categorized and identified social media capabilities which enhance CKM systems performance.

Thus, doing this study has three basic logics:

- (1) the increasing attractiveness of social media among customers;
- (2) the important role of such media in CKM systems; and
- (3) the lack of theoretical foundation for CKM and social media capabilities.

Therefore, the aim of the study is to identify and prioritize the capabilities of social media to implement CKM successfully and effectively in social media age.

2. Literature review

2.1 Web 2.0 and social media

In the first generation of internet, which can be addressed as read-only web 1 or internet, applications and systems consisted of only static contents and the contents of sites were provided by certain individuals or resources, and the users of web 1 had only access to the existing information to take advantage of it and they would not be able to create or change the content.

In the new age of internet, users play a more active role and have more ability to select contents to use (Schneckenberg, 2009), and they can create content by themselves, share information with others, change the content and criticize. Thus, a part of data processing is done on the client side and each user can be considered as both the user and the producer of

the content. It has been possible through developing and improving a set of technologies and applications which is named the Web 2.0 (Tredinnick, 2006). The term Web 2.0 describes a wide range of interactions and user-centered web applications which facilitates the activities and is often associated with social media (Dabner, 2012). In fact, the advent of Web 2.0 paved the way for new forms of media mostly known as social media to emerge (Kwahk and Park, 2016).

Kaplan and Haenlein (2010) have a strong technical view and define the social media as a group of applications based on Web 2.0, allowing to create and share user-generated content (Kaplan and Haenlein, 2010). The definition of social media strongly depends on the view and perspective of the writer dealing with it, so it is difficult to find an acceptable comprehensive definition of social media across academic fields. Table I provides some definitions of the social media which are consistent with the subject of this study.

2.2 Social media tools and technologies

Social media consists of a wide variety of operating systems, platforms and online services, including blogs, private forums, social networking sites, shared websites and the virtual world (Haataja, 2011).

Moreover, for Black (2007), the principles and concepts of social media and of Web 2.0 are shown in tools relevant to these terms. So in this field, there are different categories of such instruments of which the most important ones are listed in Table II.

As seen, there are various social media tools and applications that can be used in different contexts and for different purposes, so classifying them definitely will lead to challenges. The common aspect of numerous varieties of social media is its audience orientation and user-generated content, so that any individual can share with other people the content which he/she has produced by him/herself or chosen from existing contents on virtual social networking (McCann and Barlow, 2015). To understand the potential of social media in various fields, it is necessary to understand for which purposes the various social media tools are relevant, suitable and applicable. It means what purposes they serve and

Author(s)	Definition
Ngai <i>et al.</i> (2015) Boateng (2016)	Social media is a group of internet-based applications which have been developed on Web 2.0 and allow users to create develop and exchange the content and enable them to interactive virtually to create, learn, share and exchange information online
Zhang (2015)	Social media refers to software that expands people's social behavior. Such media are effective means for communicating with customers and managing customer knowledge
Mccann and Barlow (2015)	Social media describes a manner in which content and information have become democratic via the internet and by which individuals play a role not only in using information and conveying it to others but also in creating and sharing the content
Peppler and Solomou (2011)	Social media is a recognized and community-based social tool for organizations to gather knowledge and receive feedback on their new products and services
Kaplan and Haenlein (2010)	Social media is a social tool based on Web 2.0 which provides companies with the possibility to communicate with their end customers directly at relatively low cost and high levels of efficiency, compared to traditional communication tools
Shahabi and Bayat (2013)	Virtual social media is a variety of contact patterns in which the interaction and communication between network elements are supported by a technical base and internet infrastructure. In these network, aims, interests or common needs could serve as linking elements leading the related factors to feel being in a real society and community even without a physical presence

Table I.
Definitions of social media

Table II.
Varieties of social
media and the Web
2.0 tools

Tools	References
Wikis, blogs, forums and RSS (RSS is a web content syndication system concerned with the propagation of XML documents containing short descriptions of web news)	Laughton (2011)
Blogs, forums, podcasts and wikis	Hossain and Aydin (2011)
Wikis, social bookmarking, podcasts, blogs and RSS	Shu and Chuang (2011)
Bookmarking, blogs, wikis, RSS, podcasts/woodcasts, instant messaging (IM), tags, social networking websites, audio and video streaming, chat, community service photos, community service books, twitter, browse books	Tripathi and Kumar (2010), Peltier-Davis (2009)
Blogs, calendars, wikis, RSS, photo collections, podcast or woodcasts, social bookmarking, mobile instant messaging, instant messaging (IM) and social networks	Howe (2010)
Co-publishing sites such as (Facebook, Bebo, MySpace, Friendster), wikis, blogs, social bookmarking sites and photo transferring sites	Harinarayana and Vasantha Raju (2010)
Blogs, wikis, RSS and community-based tools such as Facebook, MySpace, YouTube, Flickr and many more	Ribière <i>et al.</i> (2010)
Blogs, wikis, podcasts, social networks and tags	Kasavana <i>et al.</i> (2010)
Blogs, wikis, RSS, social bookmarking, community tags (Folksonomy), social networks, mashup	Rudman (2010)
Wikis, blogs, photo transferring sites, social bookmarking, video conferencing, etc	Lai-Chong Law and Vu Nguyen-Ngoc (2010)
Blogs, social networking services, file-transferring communities, forums, combined sites like Twitter and microblogging sites	Constantinides and Fountain (2008), Lai and Turban (2008)
Social networking, audio blogs, video blogs, blogs, instant messaging (IM) tools, podcasts and web conferencing, wikis, video blogs, blogs, electronic profiles and open newspaper, mashup, social bookmarking and RSS	McGee and Diaz (2007) and Richardson (2006)
Blogs (weblogs), wikis, social bookmarking, tagging, RSS	Swift (2007) Matuszak (2007) Godwin-Jones (2006)

how they can be used. So the following classification is based on features of social media tools introduced by Trainor *et al.* (2014) and Van Looy (2016).

2.2.1 Communication and interaction: publishing/releasing and sharing content. Communication and content publishing tools like blogs, media sharing systems and microblogging are the ways to communicate or share information with a broad audience. Such tools are used, for example, for discussion, sharing ideas, creating common senses, expressing opinions and sharing music, videos or photos.

2.2.2 Collaboration: collaborative content creation. Collaboration-focused tools including wikis and shared (or collaborative) workspaces facilitate the participation in content creation, regardless of the position of the participants. They make the collective content creation and the shared edition possible.

2.2.3 Connecting: people networking. Social media tools in this class are used to connect people to interact. They gather peoples with shared positions, interests and profits and enable them to maintain old social networks and to create new alternatives. Some of these tools provide opportunities to play a game, gain experience and create virtual environments. These tools would be included in the social networks, communities and virtual worlds.

2.2.3.1 Completion: adding, describing and filtering. A group of social media tools, including tagging, social bookmarking and links, are used to complete content through

describing information, adding data to the main content to make it more understandable and valuable, revealing the relationship between contents or filtering the information.

2.2.4 Aggregation: aggregating and adapting for different purposes. Based on the needs, social media tools can be integrated as all-purpose systems, resulting in new group of tools referred to aggregators or platforms.

In another classification, [Kwahk and Park \(2016\)](#) also divided the social media based on users' main objectives of using them into two groups: public social media and enterprise social media, and their comparison is shown in [Table III](#).

2.3 Business value of social media tools

The advent of social media brought along a new set of models for different businesses, challenging the traditional process of businesses ([Hanna et al., 2011](#); [Ngai et al., 2015](#)) and inducing significant changes in communication and interaction among people, communities and organizations ([Kaplan and Haenlein, 2010](#)).

For some companies, social media transforms previously conflicting communication with customers into the new stage of customers' productive revenue ([Wang and Zhang, 2012](#); [Barnes, 2014](#)). Also, businesses have taken on a new form by using social media applications, and markets of commodities and services have turned into a social sector and user-driven market ([Huang and Benyoucef, 2013](#)). As a means to facilitate activities and intra- and extra-organizational relations, social media can serve customers and trade partners in developing shared products ([Mangold and Faulds, 2009](#)), knowledge sharing,

Dimensions of comparison	Public social media	Enterprise social media
Main purpose	To present themselves in a digital format, allowing them to provide details concerning themselves and establish/maintain their network of relationships to fellow members (Ellison et al., 2007)	To share employee's expertise and support collaboration with other employees (Cummings and Reinicke, 2014)
Primary features	The ability to: Connect with others Share personal information Send/receive messages Provide "status" updates Post comments Personalize the site (Cummings and Reinicke, 2014)	The ability to: Incorporating visual components such as pictures of contacts Active engagement such as status of contacts Communication channel for maintenance of fringe relationships (e.g. staying in contact with former team members) (Shih, 2009)
Type of system	Hedonic system aiming to provide an enjoyable experience while filling a user's emotional needs (Premkumar et al., 2008)	Both hedonic and utilitarian system aiming to increase employee effectiveness and efficiency for communication or knowledge sharing (DiMicco et al., 2009)
Research topic	Privacy/risk taking (Fogel and Nehmad, 2009) Site usage (Dwyer, et al., 2008) Communication (Wigand et al., 2010) Self-presentation (Donath, 2007)	General organizational usage (Mislove et al., 2007) Establishment and maintenance of organizational relationships (Dwyer, 2007) Ongoing use of a social media including how users appropriate the technology in their interactions with known employees (DiMicco et al., 2009)

Table III.
Public social media versus enterprise social media ([Kwahk and Park, 2016](#))

financial operations, marketing strategies to manage brands and so on (Jin, 2012; Laroche *et al.*, 2013). Social media possesses unique features, including openness, two-way communication and openness to feedback. These features have brought along capabilities, have provided many people with the opportunity to share freely and easily, their thoughts, opinions, experiences, ideas, information and knowledge through social media (Kaplan and Haenlein, 2010). Among the capabilities of social media for organizations are speed and ease of access for the public and cost-effectiveness (Kaplan and Haenlein, 2010), creating space to establish and facilitate mutual interactions (Trainor *et al.*, 2014; Chua and Banerjee, 2013; Boateng, 2016; Kietzmann *et al.*, 2011), offering the possibility to share information and knowledge between customers, the company and customers, as well as different parts of organizations (Kwahk and Park, 2016; Trainor *et al.*, 2014; Ray, 2014) and to create and support groups/forums (creating virtual communities of current and potential customers) (Zhang, 2015, Trainor *et al.*, 2014). Van Looy (2016) summarized some advantages and disadvantages of social media. The first business value of social media is speed. Social media can be used to react to or share content faster than traditional media (e.g. television, radio and postal letters). The second value is scalability which means that organizations can potentially reach out to more people with a lower budget. Third, analyzing and monitoring social media use provide valuable insight related to customers behaviors. The final value refers to interactivity between multiple parties instead of a two-way communication. Table IV summarized the social media advantages along with its disadvantages.

Oftadeh (2010) has introduced 14 features for social media, including two-way dialogue, opening dialogue by audiences, involvement, encouraging participation, enabling collaboration, exciting personality, cost effectiveness, enhancing credit, a platform for various purpose from little to great and professional tasks, moderation and equality, content creation by user, sense of content ownership, enhancing honesty and a place for hot content.

2.4 Customer knowledge management

Today, because of an increasing number of competitors, customers encounter even more options, so the companies should adapt to the needs and expectations of customers to attract them and to increase their satisfaction. One of the effective methods to adapt to changing needs of customers is to use customers' knowledge and to manage it as an important implied resource (Taherparvar *et al.*, 2014). Customer knowledge plays an important role in corporate management, so organizations must absorb this knowledge and use it to improve their performance (Tseng and Fang, 2015). Customer knowledge consists of tools and techniques of KM to support the exchange of knowledge between organization and its customers and to enable the company to take appropriate commercial decisions (Najaf Lu *et al.*, 2013). In recent years, organizations have integrated the customer relationship management (CRM) with CKM because they have concluded that CKM plays a key role in the process of CRM (Dous *et al.*, 2005). According to Bose and Sugumaran (2003), the CRM is successful only in a commercial environment when it is possible to integrate it with KM systems resulting in processes of knowledge-based CRM. Boateng (2016) defines CKM as an integration of KM and CRM which

Table IV.
Some social media
advantages and
disadvantages (van
Looy, 2016)

Social media advantages	Social media disadvantages
Speed	New environment (learning curve)
Scalability	Transparency
Analytics	Undeletable
Interactivity	Privacy

provides organizations with an insight and profile of its customers and their latent needs and preferences and creates competitive advantages for organizations and values and service capabilities for customers (Boateng, 2016).

In general, CKM can be defined as the process of capturing, sharing, transferring and using data, information and knowledge related to customers to gain organizational benefits. When customers, instead of employees, are set as the source of knowledge, CKM becomes naturally the main focus for the company (Tseng and Fang, 2015). Table V includes various definitions of CKM.

2.5 Social media and customer knowledge management

Customer knowledge plays an important role in corporate management, so organizations must absorb this knowledge and use it to improve their performance (Tseng and Fang, 2015). McKeen and Smith (2003) have suggested based on their studies that 89 per cent of organizations believe that customers' information is very important and necessary for their business to be successful (Boateng, 2016). CKM helps organizations to better recognize the opportunities emerging in the market and thereby to create competitive advantage for themselves and the value for the customers (Najaf Lu *et al.*, 2013) and improves the quality of products and services, develops new products and services and results in the innovation and improvement of organizations' performance (Chua and Banerjee, 2013). Therefore, companies should afford an appropriate environment to have better access to the customers'

Author(s)	Definitions
Tseng and Fang (2015)	CKM can be generally considered as the process of capture, share, transfer and use of data, information and knowledge related to customers to gain organizational benefits
Boateng (2016)	CKM is an integration of knowledge management and CRM which provides organizations with an insight and profile of its customers and their latent needs and preferences and creates competitive advantages for organizations and values and service capabilities for customers
Chua and Banerjee (2013), Salomon <i>et al.</i> (2005)	CKM includes three types of knowledge flow "To", "From" and "About" the customer and plays a vital role in the relationship between company and customers and provides organizations with the opportunity to acquire new customers and to maintain present ones, which in turn enables organizations to be more competitive and affect significantly organizations' performance
Najaf Lu <i>et al.</i> (2013)	CKM is considers as the set of tools and techniques for knowledge management to support the exchange of knowledge between an organization and its customers and to enable the company to make business decisions appropriately
Salomann <i>et al.</i> (2005)	CKM is the process of sharing the customer knowledge to create organizational value through direct interaction with the customer
Allee (2008), Reich (2001), Wiig (1994)	CKM is considered as one of the strategic tools in the organization, developed with the aim of value creation in organization through turning the intellectual capital into a part of the organizational assets
Paquette (2008)	CKM consist of methods and systems used to acquire and distribute customer's valuable information. In this procedure, customers cooperate with the organization as partners in the process of knowledge creation, through sharing the knowledge in their mind with companies in order to create better products and values
Gibbert <i>et al.</i> (2002)	CKM integrates the principles and practices knowledge management and CRM creates a value which is beyond the total value from knowledge management and CRM

Table V.
Definitions of customer knowledge management

knowledge and ideas and to use such information in the process of innovation and to develop special systems to co-operate and interact with their customers, to enable the company to meet the customers' needs and satisfaction.

Thus, it could be useful to develop a knowledge-sharing platform to provide an interactive environment. This platform not only allows the company to transact with its business, but also provides an environment to share and exchange knowledge between the company and its customers (Taherparvar *et al.*, 2014), which consequently induces the innovation in products and services and creates value for both the company and customers (Tseng and Fang, 2015). Recent advances in information technology/communications and the advent of Web 2.0 technology have opened new horizons to companies in developing an effectively significant relationship with customers (Zhang, 2015), which have increased the popularity of social media (Hajli, 2015).

The advent of social media has induced significant changes in communication and interaction of people, communities and organizations (Kaplan and Haenlein, 2010). In fact, social media are recognized community-based tools for organizations to gather knowledge and to provide feedback on their new products and services (Peppler and Solomou, 2011) and provide the companies with the possibility to communicate directly and at relatively low cost and with high levels of efficiency with their end customers, compared to traditional communication tools (Kaplan and Haenlein, 2010).

Kietzmann *et al.* (2011) considered social media as new customer-based tools which enabled customers to interact with other people and business members in social media (Kietzmann *et al.*, 2011).

In addition, social media enables also organizations to communicate with customers and to participate in the interactions between network members (Trainor *et al.*, 2014), so using such technology, organizations can enjoy more accessibility to customers' information both directly through organization–customer interactions and indirectly through customer–customer interactions (Trainor *et al.*, 2014). Thus, the use of social media can be profitable for many organizations (Chua and Banerjee, 2013), and to attain the value for their business, many large companies are tending to adopt social media to attain and to increase the customers' loyalty, to improve customers' satisfaction, to build a reputation and to increase their sales and revenue (He *et al.*, 2013).

One of the most important components of social media is the ability to create a mutual social relationship between consumers and the company (Boateng, 2016), as a result of the advent of such media, online users are transformed from content readers to content publishers, and a significant role has been created for them (Chua and Banerjee, 2013). So social media serves as an effective tool in participating and sharing information among individuals and contributes to the accumulation of knowledge capital (Kwahk and Park, 2016). Thus, the application of social media in CKM is very pertinent and suitable, especially when it is not convenient and proper for developing new products to accumulate customers' information through traditional and conventional methods such as reviewing the statistics or they cannot be trusted (Boateng, 2016), because using social media, companies can create virtual communities from their current and potential customers to interact with each other and to share information and knowledge about their products and services. Also, they can apply such knowledge in relation to innovating and developing new products, attracting customers, increasing customers' loyalty and improving their performance (Zhang, 2015). For Kaplan and Haenlein (2010), social media enables multinational companies to reach their customers easily with less cost and time. Therefore, smart organizations are investing today in social media tools to enhance the accessibility to, share and transfer of knowledge in their

organization (Ray, 2014). Table VI summarized some studies which related CKM or generally KM with social media.

As shown in Table VI, social media are powerful and effective tools for managing organizational knowledge generally and particularly customer knowledge. Despite the importance of social media in managing customer knowledge, little studies are conducted to

Researcher(s)	Topic	Main finding
Kwahk and Park (2016)	The effects of network sharing on knowledge-sharing activities and job performance in enterprise social media environments	In this study, the impact of the capability of sharing social networks on knowledge sharing and job performance was investigated and admitted
Zhang (2015)	Customer knowledge management and the strategies of social software	This study examines different effects of social software for companies through customer knowledge management and provides some guidelines for social media implementation in business
Bharati <i>et al.</i> (2015)	Better knowledge with social media? Exploring the roles of social capital and organizational knowledge management	The results shows that while the implementation and application of social media would have a positive impact on organizations' social capital, the increase in social capital also helps to promote organizational efforts in knowledge management and eventually leads to increase the levels of quality of organizational knowledge
Chua and Banerjee (2013)	CKM via social media: the case of Starbucks	It was shown in this study that applying a whole range of social media, Starbucks has changed its passive customers to active partners of innovation and used their knowledge and ideas in its innovative products and services
Boateng (2016)	CKM practices on a social media platform: A case study of MTN Ghana and Vodafone Ghana	According to the results from this research, to access customers' knowledge and also to provide their customers with knowledge and information on products and services, companies and enterprises can interact with them through social. The results of this study indicate organizations' need to the development and implementation social media to capture, share and use customers' knowledge as a source of competitive advantage
Sigala and Chalkiti (2015)	Knowledge management, social media and employee creativity	This study shows how social networks can affect their employees' creativity. So the findings of this study suggest organizations' need to shift their focus from identifying and managing creative people (micro level) or organizational context (macro level) to focusing on creating and managing creative social networks
Wu <i>et al.</i> (2013)	CKM and IT-enabled business model innovation: A conceptual framework and a case study from China	This study through investigating the impact of different types of customer knowledge on value creation and the role of IT in delivering value and capturing value. This study provided a conceptual framework to describe the relationship between CKM and IT capabilities in innovative business models and considered IT as an essential tool in managing customer knowledge as well
Najaf Lu <i>et al.</i> (2013)	Conceptual framework for the use of social software in CKM: A case study of Hamkaran System Company	This research proposed a conceptual framework to applying social software in CKM. This study related some kind of social software with customers' various knowledge (knowledge "To", "From" and "About" the customer). The results supported that social media are useful for CKM

Table VI.
Some related studies in domain of customer knowledge management and social media

identify and prioritize social media capabilities which enable and facilitate CKM implementation. This study seeks to fill this theoretical gap and proposed social media capabilities for successful CKM in social commerce environment.

3. Research methodology

To identify social media capabilities which contribute to CKM successful implementation, some relevant literature are reviewed and studied. These process reveals the capabilities which influence CKM implementation based on the analysis of social media and Web 2.0 literature. After the literature review, the study analyzes qualitative data obtained from: (i) focus group interviews and (ii) consultation with specialists, scholars and practitioners in CKM and social media. One mentioned purpose of the focus group is to learn more about attitudes and opinions. Focus groups are typically composed of 6 to 12 homogeneous participants, although larger and smaller groups have sometimes been recommended (Massey, 2011). In this study, focus group is formed to deepen the understanding of social media capabilities related to CKM and finally prioritized them. Our criteria for selecting experts are:

- marketing managers with at least 6 years of work on social media marketing;
- professors with expertise in the field of CKM and social media; and
- the experts which have related books and papers. After continuous track, final six experts with these criteria were willing to participate.

Four of the six experts have more practical experiences related to social media marketing and customer relations and two of them are academic professors. All of them have more than 7 years of complete familiarity with social media features in marketing and customer relation context.

Quantitative data are obtained from AHP questionnaires and are analyzed statistically by computer using analytic hierarchy process (AHP) to prioritize influential social media capabilities.

The basic steps in using AHP remain the same in all the applications and consist of:

- description of complex decision problem as a hierarchy;
- the use of pair-wise comparisons to estimate the relative weight (importance) of the various elements on each level of the hierarchy;
- the integration of these weights to develop an overall evaluation of decision alternatives; and
- estimation of the consistency ratio (CR):

$$CR = \frac{CI}{RI}$$

where RI is the random index and CI is the consistency index. The formula for CI is:

$$CI = \frac{\lambda_{max} - n}{n - 1}$$

The consistency ratio indicates the degree of consistency with answers. A higher number means less consistency, while a lower number means that data collected are consistent. In

general, if the consistency ratio is 0.10 or less, then the decision-maker's answers are relatively consistent.

To assist in the pair-wise comparisons, in this study like [Wen \(2009\)](#), a nine-point scale of importance between two elements are used. The suggested numbers express degrees of preference between the two elements, as shown in [Table VII](#).

The values of 2, 4, 6 and 8 are allotted to indicate compromise values of importance. The relative priorities can be considered as the results of using the geometric mean of the pair-wise relative importance obtained from a set of participants.

As determining the priorities of social media capabilities is an objective, AHP can be a useful method. Their importance are measured by six experts in social media fields and CKM fields.

4. What social media capabilities affect customer knowledge management success implementation?

A deep review of literature on Web 2.0, social media as well as CKM systems along with interviewing with experts in focus group led to an identification of certain capabilities of social media for CKM systems, described in [Table VIII](#).

Deep conversation among focus group participants lead to identify major social media capabilities along with their descriptions which contribute to CKM systems success. The finding of focus group was analyzed using content analysis and the capabilities that extract from initial round of focus group are marked in above table, and in Round 2, the first result along with literature finding are offered to them and finally participants agreed upon mentioned capabilities in the above table. Each round of focus group took an average of 70 minutes.

For prioritizing social media capabilities, the AHP questionnaire is designed and distributed between six experts. The questionnaires included the 5×5 matrix and analyzed using AHP software, Expert Choice version 11.5. The responses under consistency index (CI) 0.2 were accepted ([Wen, 2009](#)). The analysis results are demonstrated in [Figure 1](#).

As [Figure 1](#) shows, conversation capability ranks first and sharing capability ranks second in relation to CKM successfully implementation. The third important capability is groups/community capability. Relationship capability and speed and ease of access to the capability are, respectively, in the next ranks.

5. Discussion and conclusion

In today's global knowledge-based economy, the main source of sustainable competitive advantage depends on how to create, share and apply knowledge ([Beiryaei and Jamporzmay, 2010](#)). So to

Verbal judgment	Numerical rating
Extremely important/preferred	9
Very strongly to extremely important/preferred	8
Very strongly important/preferred	7
Strongly to very strongly important/preferred	6
Strongly important/preferred	5
Moderately to strongly important/preferred	4
Moderately important/preferred	3
Equally to moderately important/preferred	2
Equally important/preferred	1

Table VII.
Judgment scores for the importance/preference of criteria using analytical hierarchy process

Table VIII.
Identified capabilities of social media for customer knowledge management systems

Social media capabilities	Description	Resources	Results of focus group
Speed and ease of access for the public	Removing temporal and spatial limitations in communication, social media enables companies to communicate with and among their end customers easily and with less cost and time and high levels of efficiency, compared to traditional means of communication	Kaplan and Haenlein (2010); Boateng (2016); Van Looy (2016)	* (Four experts mention this capability)
Sharing capability	Social media allows customers' knowledge to be shared with and among customers and between different parts of the organization by providing the opportunity to share information, photos and video. Therefore, the media is an effective tool to participate and share information among individuals and helps in the accumulation of knowledge capital	Kwahk and Park (2016), McCann and Barlow (2015), Trainor <i>et al.</i> (2014), Ray (2014), Najaf Lu <i>et al.</i> (2013)	* (Six experts point to this capability)
Conversation capability	One of the most important components of social media is the ability to create a mutual social relationship between consumers and the company (Boateng, 2016), as a result of the advent of such media, online users are transformed from content readers to content publishers, and a significant role has been created for them. So through creating a space for developing and facilitating interactive conversation, social media provide the company with the mutual interaction with and among customers and serve as an effective tools in producing contribution among individuals in creating/ acquiring knowledge. For example, blog	McCann and Barlow (2015), Trainor <i>et al.</i> (2014), Chua and Banerjee (2013), Kietzmann <i>et al.</i> (2011)	* (Six experts mention this capability)
Relationship capability	Social media is a set of technologies that allows consumers and businesses to build social networks. Thus, such media are introduced as new customer-based tools which enable customers to interact with other members in social networks as well as business members in networks. So using such technology, organizations can have more access to customers' information both directly through organization–customer interactions and indirectly through customer–customer interactions, and make use of the information and content created within the networks	McCann and Barlow (2015), Trainor <i>et al.</i> (2014), Kietzmann <i>et al.</i> (2011), Najaf Lu <i>et al.</i> (2013)	* (Five experts cited this capability)

(continued)

Social media capabilities	Description	Resources	Results of focus group
Groups/ community capability	Providing the ability to create groups/communities, social media has enabled organizations to create virtual communities from current and potential customers around topic, brands or specific products in order to interact with each other and to share information and knowledge on the products and services	Van Looy (2016); McCann and Barlow (2015); Trainor <i>et al.</i> (2014); Zhang (2015)	* (Five experts mentioned this capability)

Note: *Indicates the results extracted from focus group

Table VIII.

achieve a competitive advantage, companies need an outstanding ability to manage customer knowledge, because it will help them in creating a lasting relationship with the customer, improving customer value and achieving superior performance. Therefore, as Web 2.0 and social software application have currently resulted in the popularity of the social media and opened new horizons for companies to establish a significant effective relationship with customers, this study dealt with the identification of social media capabilities in CKM. According to Kaplan and Haenlein (2010), social media is a social tool based on Web 2.0, which makes it possible for companies to communicate with their end customers directly and at relatively low cost and high levels of efficiency, compared to traditional communication tools. So the advent of such a media has brought along capabilities for CKM systems as well.

Despite the recognized importance of social media for CKM, our understanding of this phenomenon is limited and new studies can help shed further light on the unique features of social media in the CKM context. Therefore, this study aims to recognize social media capabilities which contribute to CKM systems effectiveness. After a deep study of literature and studies conducted on Web 2.0, social media and CKM and experts opinions about social media capabilities influencing CKM, it was concluded that social media provides CKM with the capabilities including speed and ease of access for the public sharing capability, conversation capability, relationship capability and groups/community capability.

After identifying social media capabilities, AHP was applied to rank them by regarding important in CKM success. The most important capability of social media is conversation capability which provides a space for the communication and facilitation of mutual interactions. The second most important capability is the sharing capability which refers to the possibility to share information and knowledge with/between customers as well as among different parts of the organization. The third rank is groups/community capability which refers to the creation of and support for groups/forums (creating virtual communities from current and potential customers). The next rank belongs to the relationship capability which facilitates social relationship between consumers themselves and also the relationship between customers with the company. The final rank is speed and ease of access for the public which results to pervasiveness of social media and its value for CKM.

It is worth to mention that social media serves as an effective tool in participating and sharing information among individuals and contributes to the accumulation of knowledge capital. Therefore, by using social media, companies can create virtual communities from their current and potential customers to interact with each other and to share information

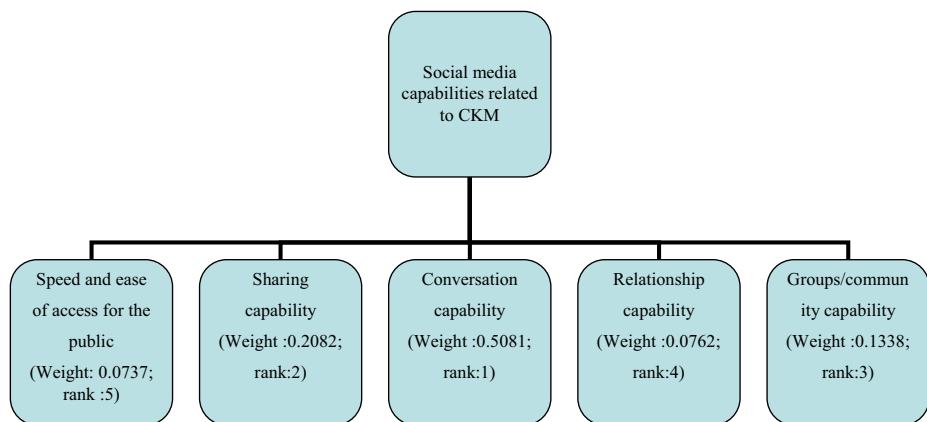


Figure 1.
Priorities weights for social media capabilities for customer knowledge management implementation

and knowledge about their products and services and use this knowledge in relation to the innovation and development of new products, attracting customers, increasing customer loyalty, improving their performance and achieving a competitive advantage. So the use of social media for CKM provides capabilities and its use will be profitable for many organizations.

The main contribution of this research is identifying and prioritizing social media capabilities related to CKM which is not considered yet. Its results are useful for managers and marketing analysts to evaluate social media tools and technologies based on their role in managing customer's knowledge.

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