Sensemaking of Shared Information: Perspective of Relevance in WhatsApp

Joseph Kwame Adjei*, Pearl Tweneboah and Peter Ebo Tobbin

Ghana Institute of Management and Public Administration, School of Technology, Accra, Ghana

Email: jadjei@gimpa.edu.gh; pearl.tweneboah@yahoo.com; ptobbin@gimpa.edu.gh

Received 08 January 2020; Accepted 08 January 2020 Published 06 February 2020

Abstract

Despite the growing literature on information sharing in Social Media there is minimal understanding of how user's estimate relevant information from shared information in the media. This paper explores the issue of relevant information sharing in social media by using a qualitative approach drawing on Media Richness Theory (MRT) through the lens of sensemaking to collect data. A questionnaire and interview were used to obtain data from regular users of WhatsApp with different backgrounds in the social network group context. Besides the capabilities of the media the results showed additional variables Channel Influence, Social influence, Nature of the Content, Experiential influence and Individual processing capabilities by conveyance and convergence play an important role in sensemaking for the shaping of relevant information. A framework for sensemaking of media relevant information is developed; the paper extends the Media Richness concept and has also opened a new area of research for innovative knowledge to emerge to address the challenges in social media information use which is highly relevant to IS research.

Keywords: WhatsApp, social media, information sharing, sensemaking, media richness theory, shared information, social network.

Journal of NBICT, Vol. 1, 159–184. doi: 10.13052/nbjict1902-097X.2020.007

This is an Open Access publication. © 2020 the Author(s). All rights reserved.

^{*}Corresponding Author

1 Introduction

Social media has been predicted as the new search function for information. The richness of the social media for information sharing requires sensemaking of the information to derive value in its use. The basis of sensemaking is to construct reality of an ongoing situation or experience that emerges from efforts to create order and make retrospective sense of what occurs (Aguinis, 2019; Fulk et al., 1990; Mirbabaie and Zapatka, 2017).

WhatsApp was created by Brian Acton and Jan Koum in 2009, is one of the most popularly used messaging App for social networking. It was acquired by Facebook three years ago for an overwhelming amount of about \$19 billion. During that period, Business Insider reported that WhatsApp had about 450 million monthly active users and 315 million daily active users and additionally one million new users continually joining every day (Darrow, 2017). It has been reported that the average WhatsApp user sends more than 1,200 messages per month, receives more than 2,200 per month and uploads about 40 photos (Petronzio, 2014). The liberty conferred by the media leaves volumes of information for users to decide on or select from to fulfill their social, informational or other needs. The everyday circumstances of information shared occasionally present either several meanings or too few cues. Regardless of either situation, the result requires making sense of it (Mirbabaie and Zapatka, 2017) to derive the needed benefits.

There is a gap in literature, which has not provided an adequate explanation for the uncertainty and unequivocally nature of the information shared on social media. The purpose of our study is on understanding how users become empowered to estimate relevant information from information shared on WhatsApp. Additionally relatively, less is known about how the shared information shapes a user's estimation of relevant information through sensemaking of the social network information. This paper aims to bridge the gap in knowledge by exploring the theories behind Media Richness through the lens of sensemaking by Weick (1993).

The research questions are: RQ1: How do people come to understand relevant information? RQ2: To what extent do the richness capabilities of the media improve the understanding of information? RQ3: How does the information shared shape a user's estimation of relevant information?

To accomplish the objective of the study, related research on social media is reviewed and theoretical foundation established. An in-depth qualitative study is conducted employing two MRT data collection techniques – in-depth interviews, and questionnaires. The findings and discussions is presented,

in the outlining of limitations and in the future research directions needed to expand knowledge. The knowledge expansion is achieved by providing answers to the research questions and by addressing the identified knowledge gaps.

2 Literature Review

2.1 Overview of Social Media and Social Networking

Social Media is a useful tool primarily for either the diffusion or sharing of information to a broad audience (Edosomwan et al., 2011). It is also routinely used by many individuals and groups for building or reinforcing existing relationships (among family, friends, business associates, and strangers, whether they matter or not based on shared interests in information or other social agendas) (Kaplan and Haenlein, 2010; Yeboah and Ewur, 2014). Kietzmann et al. (2011) describes social media as consisting of seven functional resources: identity, conversations, sharing, presence, relationships, reputation, and groups.

The explosive growth of social media and the availability of large-scale social network data usage have driven many researchers to unravel issues regarding its usage covering impact on individuals, business and organizations. Further, exploring the cause and effect of the social networking to make sense of its media and aimed at quantifying various aspects of phenomenon (Bhatt and Arshad, 2016; Dijck and Poell, 2013; Edosomwan et al., 2011; Mirbabaie and Zapatka, 2017; Pan and Crotts, 2012; Parveen et al., 2015; Stieglitz et al., 2017; Xu, 2016; Yeboah and Ewur, 2014). Focus is thus shifted from technological devices aiding communication, marketing, and relationships to the changing information practices taking place within the networked relationships, which in effect is the reason for the continued dialogue in social media.

Examples of well-known social networks are LinkedIn (professional network), Twitter (Instant news and Microblogging network), Facebook, (Social Network), Flickr and Pinterest (Popular image sharing sites), Viddler, Vimeo (video sharing sites) (Scott, 2014). Some of these networks are media sharing platforms such as YouTube and Instagram. These platforms enable users to share their content (images, videos and the like), interact with others through social media profiles, messaging, commenting, playing, sharing, discovering, creating, influencing, learning and living a second life. Perceptibly, there is a blurry distinction between social networking and social media (Kümpel et al., 2015). Both have facilitated the means by which people connect to each other and share a common interest in information and others motives (Edosomwan et al., 2011).

2.2 The State of Social Media Technology

The technical definition of social media by Kaplan and Haenlein (2010) focusses on internet-based applications underpinned by Web 2.0 technology. It provides the technological platform for social networking by which people connect, produce and share content online (Farook and Abeysekara, 2016). The social media phenomenon has been propelled by rapid increase in access to digital technology such as computers, smart phones, tablets and the internet. The ease-of-use of modern smartphones and the proliferation of high-speed mobile networks has driven and developed a culture of impulsive and carefree usage (Smith et al., 2012) transforming the nature of networking and communication in varied ways. Progressively, the devices linked to the internet is the hub of a range of interactions to a variety of media and an entry to an array of social spaces for work and play (Baruah, 2012).

The social media technologies comprise wide-ranging Web-based technologies such as blogs, wikis, on-line social networking, and virtual worlds (Friedman and Friedman, 2011) which facilitates social interactions by enabling communications capability (e.g., Web conferencing, group chats), aided by the internet, digital devices and social software thus termed "social media technology" (Bradley and McDonald., 2011). Additionally the availability of wireless rather than the 'prehistoric' fixed line dial-up connections has allowed remote areas access to the internet and mobile phone services making it possible for most people to hook on social media.

2.3 Influencing Factors of Information Sharing

Several studies have addressed the use of social networking sites such as WhatsApp, Facebook Twitter, Snapchat etc. on interpersonal communication, news sharing (Kümpel et al., 2015), information sharing and user-generated content (Yang and Brown, 2013; Hughes, 2012), and in other disciplines such as management studies and social sciences. The information sharing perspective in social media takes its route from online sharing but rather than being static it is more interactive and its real-time impacts are felt the moment information is shared. The sharing process is conceptualized as a bidirectional or multi-directional one, flowing between a sender to receiver and vice versa

or one to many participants and it is also not limited by geographical location associated with alternative forms of communication (such as telephone and email) and it is done with almost minimal effort (Allan and Philip, 2014).

An understanding of what influences information sharing is desirable for the study. Pan and Crotts (2012) professed that understanding the complex and dynamic relationship of information sharing of individuals is vital for harnessing the power of social networks. Though the sites differ significantly in terms of functionality and graphical user interface, they indeed follow similar diffusion dynamics (Kümpel et al., 2015). Conversely, they have different factors driving sharing within them to motivate participation by both new and existing members. Nonetheless, according to Eugene et al. (2009) users often discover information by following recommendations from their social network or from other users on a different network site.

Benefits, risk, social network, information stewardship and quality, trust, privacy, reciprocity, complexity, expected rewards, associations and perceived effort were identified by Mohammed et al. (2015) as influencing factor in electronic sharing. Additionally genuine content-related factors (e.g., valence, interestingness, issues, or topics discussed) and factors related to form or presentation (e.g. recommendations, the current news etc.) have been identified as influencing factors to sharing. Social behaviors characterize the conversations and propagation of the information from one person to another within the social network (Adali et al., 2010). Kümpel et al. (2015) explained the critical role social influence of peers (such as the following of similar activities as their peers) play in recognizing, adapting, and sharing information.

Apparently, the interactions through information sharing in a social space are essential for the survival of the network. To make sense of the situation of information shared the question of "What relevant information is?" has to be answered.

2.4 Relevant Information Sharing

Relevant information is information that permits meaningful response on the part of the receiver, which is beneficial for accomplishing or approaching the tasked solutions. Irrelevant information cannot be used to deliver solutions (Streufert, 1973). Information that is relevant to an individual's processing goal is more practical for sharing compared to irrelevant information (Liu et al., 2015). Relevant information is meaningful for a user to meeting a particular interest. Moreover, the information shared that is relevant can often

serve as a cue towards expertise (Canini et al., 2011). The exchange of information will continue only if the content of the information is both understood and doubted in the exchanging of shared information and selection of the shared information (Weick et al., 2005).

Past research has suggested that increases in relevant and irrelevant information may be due to information overload (Streufert, 1973). Users are confronted with momentary sense impressions of the information that spawn sensemaking (Weick et al., 2005). Whether using social media privately, for seeking information, for social gatherings, collaboration, publicity, browsing, picture or video sharing, conversation, profiling or web journaling, learning or interpersonal communication etc. (Sleeper et al., 2016), all are tied to some form of information sharing. Nevertheless, the shared information on WhatsApp will be inadequate if it does not increase a person's sense of engagement or influence among their network. Furthermore, the sharing of information that is relevant will function as a sensemaking mechanism to help people gain the social support of similar individuals and reduce ambiguity and uncertainty as a result of developing a common understanding (Mirbabaie and Zapatka, 2017).

3 Theoretical Foundation

Research in information systems is used to provide guidance for analysis, explanation, and prediction of phenomena (Gregor 2006; Straub 2009). The MRT in the related field of study is discussed and the choice of MRT for this study is rationalized. Taking highlights from Weick (1993) and (Weick et al., 2005) sensemaking concepts within the framework of MRT is used as the theoretical backbone.

3.1 Media Richness Theory

Media Richness Theory evolved from contingency theory and developed by Daft and Lengel, 1986; Daft et al., 1987; Rice, 1992 and social presence theory Carlson and Zmud's, (1999). MRT also known as information richness theory was based on the information processing model of organizations (Kahai and Cooper, 2003; El-shinnawy and Markus, 1992) concerned with identifying the most appropriate communication medium for reducing uncertainty and resolving equivocality. It assumes that choice and use of organizational media and performance depended on the match between

task characteristics and medium characteristics used (richness medium useperformance and outcomes is positive if it fits the task requirement and negative when it does not) (Rice, 1992).

MRT literature ranks rich media as face-to-face (F2F) communication and computer-mediated, written or text-based forms communication such as memos and email as the lean media (Daft et al., 1987; Kahai and Cooper, 2003; Mandal and Mcqueen, 2013) also known as media richness continuum. MRT literature assumes that information is conveyed through rich or lean media (Daft and Lengel, 1986; Daft et al., 1987). The literature also states that richer media can better facilitate changes in understanding than lean media because it enables immediate feedback and the conveyance of cues such as facial expressions. Consequently rich media is suitable for resolving equivocal information (where there are multiple information cues and interpretations for available information). Lean media was more suitable for reducing uncertainty (are best suited to tasks with uncertain information and that require the quick transmission of information and fact) (Youngjin and Maryam, 2001) and for conveying unequivocal information (El-shinnawy and Markus, 1997), has less symbols and cues (Youngjin and Maryam, 2001) as well as increases decision time (Dennis et al., 1999).

Uncertainty was defined as the difference between the amount of information required to perform a task and the information already possessed (Wright et al., 2008). The absence of information brings uncertainty however as information increases, uncertainty decreases (Daft and Lengel, 1986). Whilst equivocality refers to ambiguity of a situation with multiple and sometimes conflicting interpretations (Wright et al., 2008), confusion, disagreement and lack of understanding of the information. MRT is also built on the assumption that increased richness is linked to increased social presence (Dennis and Valacich, 1999). Social presence is the degree to which a medium is perceived as conveying the actual physical presence of participants and also the degree of closeness of individuals (Zheng et al., 2010).

Although MRT is projected to have performed well in traditional media research, it has a weak empirical track record (Kahai and Cooper, 2003). With studies focusing initially on the perceived usefulness of a medium, perceptions of media fit or the likelihood that it will be used for a specific task (Daft and Lengel, 1986), overlooking the effects actual performance on usage of a media (Dennis et al., 1999). This have produced mixed outcomes (Carlson and Zwud, 1999; Dickinson, 2012; Youngjin and Maryam, 2001). Consequently the inconsistencies have brought to the fore, other theories

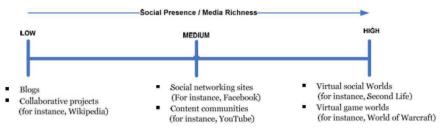


Figure 1 Types of social media (adapted from Kaplan and Haenlein, 2010).

(such as social influence model (Fulk et al., 1990), Channel Expansion Theory (Carlson and Zwud, 1999); media synchronicity theory (MST) (Dennis et al., 2006) to further expand the MRT for arriving at the intended purpose in theorizing the use of media. This is in line with the pursuit of this study for the exploration and sensemaking of WhatsApp information.

The capabilities of the media distinguish MST and MRT (Nordbäck, 2011). While MST supports the different stages of the sense making process, MRT suggests that different media capabilities are together contributory to the richness of the media (Nordbäck, 2011) thus the appropriateness of the media for a task is key in the use of the media for shared information. Moreover, MRT omits contextual and social factors (Youngjin and Maryam, 2001) that might influence the information sharing process. When combining MRT, MST, Social influence Theory and Channel expansion theory concepts, it is obvious that the focus of MRT on media capability in determining media use covers other influencing dynamics.

Channel Influence: refers to channel's

- 1. "Capacity to facilitate shared meaning" (Trevino et al., 1990);
- 2. Immediacy of feedback (extent to which a medium enables users to give rapid feedback on received information) (Dennis and Valacich, 1999);
- 3. Timeliness of the information (the extent to which constraints such as time, location, permanence, distribution and distance is overcome);
- 4. System-generated cues (Westerman et al., 2014);
- 5. Length of time of usage (number of years) (Carlson and Zwud, 1999);
- 6. And adaptability (El-shinnawy and Markus, 1992). (Adaptability refers to ability of the medium to adapt to the users diverse messaging needs).

Social influence: the extent to which one collaborates with different others. It relates to social influence per norms and pressure from peers for medium use, lack of users of a particular medium effect for its appropriateness for a task (Carlson and Zmud, 1999; (Rice et al., 1994). Social influence

on interactions in information sharing covers: timely responses to the messages, use of stylistic communication styles; casual conversation; appropriate message length; planning, creativity, intellectual, decision-making, and social tasks; and appropriate communication group size (Zheng et al., 2010). It plays a critical role in recognizing, adapting, and sharing information since people tend to follow similar activities as their peers (Kümpel et al., 2015).

Individual Processing Capability: refers to

- 1. The ability of an individual to process information shared (Daft et al., 1987);
- 2. The predictability of the information, intellect, knowledge, analytical capabilities, and limited visible information (Moturu and Liu, 2011);
- 3. The levels of participant expertise and deception (Kahai and Cooper, 2003);
- 4. The reprocess ability of the receiver (to repeatedly process the message to ensure accurate understanding of the information delivered); the accumulated experience and judgment and behavioral intention and cognitive elaboration (demonstrated in active participation in information processing) (Westerman et al., 2014);
- 5. And the self-efficacy (refers to individuals' beliefs that they have the ability and the resources to successfully perform a specific task (Monsuwé et al., 2004).

Nature of the Content: refers to the amount of information, value placed on the information (Herrero Crespo et al., 2015), quality of the information, the content structure (Ancona, 2012), content size (Streufert, 1973) and comprehensiveness, trustworthiness of the information. Bridging the gap between the amount of information already possessed and that required to perform the task reduces uncertainty, (El-shinnawy and Markus, 1992) and is related to the relevance (Canini et al., 2011).

Experiential Influence: refers to individual's experiences in knowledge building, topic experience, topic interest, increase participation in communicating (its perceived richness and interest of the sender or receiver (Carlson and Zwud, 1999)), time spent using the medium, and the number of messages processed (can seriously affect their participation as opposed to the proposal on perception of richness) (Dayani and Ariff, 2014). Further, experience with communication partner, association with the content or experience within the context of the dialog (interpersonal factors, such as one's experiences) (Urso and Rains, 2008). What the information means to users may differ based on the user how relevant the information is to of the media.

3.2 Concepts of Sensemaking

Sensemaking is defined as a social (Mirbabaie and Zapatka, 2017) and iterative process involving activities and tasks where the sensemaker goes through several rounds of identification and bridging the gap, information foraging, active seeking and processing of information or making sense of information to reach an understanding of the information to take action (Lebiere et al., 2013; Zhang, 2012). Its activity permits the turning of enduring complexity of information to be understood unequivocally in words and that serves as a stepping-stone for action (Ancona, 2012).

Sensemaking relates to sensegiving (a sensemaking variant undertaken to create meanings for a target audience), identity (shapes what people enact and how they interpret), mindset (that influences identity) and provides a more ordered social reality by reducing equivocality (Weick et al., 2005). According to Weick et al. (2005) sensemaking can be treated as reciprocal exchanges between actors (sender and receiver) and the media environments that are made meaningful (Selection) and preserved (Retention) for the conveyance of unequivocal information. However, as the term social implies the exchange between individuals is a crucial functionality on social media sites. The idea that sensemaking is concentrated on equivocality gives primacy to the search for meaning as a way to deal with uncertainty (Weick et al., 2005).

Dennis and Valacich, (1999) suggested five basic sensemaking strategies that individuals use to develop shared meaning: action, triangulation, contextualization, deliberation, affiliation. Action refers to asking questions or proposes actions, information or opinions to others on the network and waiting for a response. Triangulation refers bridging inaccurate or incomplete picture gaps in the information source by combining information from many sources for interpretation of the situation. Contextualization refers to the connection of the new events to past events to provide information links to more contexts to arrive at a better understanding of the situation. Deliberation: refers to slow and careful reasoning required to induce reasonable patterns from the information gained through action, triangulation, and contextualization (Dennis and Valacich, 1999). Lastly, affiliation helps to understand how other individuals interpret or understand information, and come to mutually agreed upon symbolic meaning and it seeks to arrive at a shared interpretation of the available information by soliciting and integrating the meaning individual participants place on that information.

Dennis, Valacich, et al., (2008) grouped the first three dimensions as conveyance phase. The fourth, which is deliberation requires no communication,

and the affiliation they linked to convergence phase. Moreover Dennis and Valacich, (1999) posited that the MRT emphasizes the need to converge; conveyance is left to tasks of uncertainty. Based on this understanding Channel Influence, Nature of the Content, Experiential Influence are grouped under conveyance processes (requires action, triangulation and contextualization) while social influence, is grouped under convergence. However, individual processing capability requires no communication and relates to deliberation.

3.3 Social Media and Sensemaking

On social media, people tend to make sense of the uncertain situation through information-sharing activities to provide both the individual and the collective sensemaking (e.g. Commenting on a topic-related issue) (Stieglitz et al., 2017). It has played a vital role not only for sharing information but also for communication in crisis situations (Mirbabaie and Zapatka, 2017). The characteristic of social media, which makes it "re-configurable and replicable", makes it easy to manipulate information and to replicate the actions of participants. This enables social media platforms to bridge space and time to facilitate sensemaking, interaction, and social alignment (Stieglitz et al., 2017). Equivocality arises where individuals' frames of reference differ. Furthermore, it has limitations that typically create a barrier to the understanding of the shared information. Understanding how the information in social media is shared, expressed, increased or decreased, and influences others requires sensemaking. Sensemaking becomes necessary to the making of the sense of something or how the unknown is structured to be able to act on it. Two important processes: (i) collection and (ii) framing of information in social media characterize sensemaking (Stieglitz et al., 2017). The unknown here means unknown relevant shared information. With the question of "How does sensemaking of the information occur?", preliminary answers are that influence is expressed in acts that shape what people accept, take for granted, and reject in the act of information sharing in social media.

4 Research Method

The qualitative research methodology was used in obtaining the data to enable thorough analyses, effectiveness, and completion of the research by applying the concepts of the sensemaking and framework of the media richness theory to primarily conduct an inductive investigation process. The principal instruments used were a self-administered online questionnaire and structured interview guides. Each conceptual construct were developed from the concepts of MRT. This theory has been used by Wright, (2008) for data collection and analyzing of lean and rich media data etc,. It was further refined to remove questions that appeared equivocal; to elicit a desired response; to give a clearer understanding of the data collection from the participants; and to gather user's views for understanding of how participants make sense of the WhatsApp information for estimating relevance. For this reason, purposeful sampling strategy was used in this study.

The study focused on twenty-five users of WhatsApp social network, from different work context comprising of 7 females and 18 males (72%) male and 28% female). The Open-ended questionnaires in Google forms were administered to WhatsApp users using online source (such as WhatsApp, LinkedIn, and emails which are all forms of lean media data collection) to gain access to individuals in far-off places or wider reach, and the ability for collection of an automated data (Dayani and Ariff, 2014). On the average, filling the questionnaire took 15 to 20 minutes. 15 responded to the questionnaires and 10 were F2F interviewed. To get valid accounts of what pertains in WhatsApp regarding the phenomena, the participants chosen were screened to establish whether they were regular users (for either work or non-work purposes) of WhatsApp who have rich experiences and knowledge of the phenomenon of this study. They traversed the range of different socioeconomic status categories and social life and different ages between 21-49 years, (who ranged from business owners, employees, students, professionals and business associates etc.).

The coding process involved going through the data from the questionnaire, extracted from Google forms, and transcribed interviews data were grouped together by applying identification and naming of segments using code words to sections that identified pertinent concepts, relating to the research topic. The answers obtained were analyzed in a way to build patterns of user's response and to explore the most frequently occurring practices or impacts. To provide a useful theoretical explanation of what is being studied a connection between the data and the summary of the variables in Table 1 was used to discover where they coincide or disagree. Patterns, common themes, and differences were identified and assigned to categories. Using the constant comparison method used by Iverson and Razavi, (2014) some codes were fused into broader or more abstract categories. Additional categories that

Table 1 Summary of variables for shaping relevant information derived from different theories and research streams

| Sensemaking Parameters | Requirement | Shaping Parameters |
|--|-------------------|--|
| Conveyance (focuses on the exchange of | Action, | Channel Influence |
| information with divergent interpretations of | Triangulation | Nature of Content |
| its meaning by individuals) | Contextualization | Experiential Influence |
| Deliberation | No communication | Individual Processing Capability |
| Convergence (focuses on the development of a shared meaning to information). | Affiliation | Social Influence |

were relevant to the research questions and found to have similar concepts were grouped under the main variables in the conceptual model.

5 Findings

The study found that additional influencing variables bedside media richness contributes to the sensemaking of information for users to estimate relevant information. The excerpts that were curled from participant's responses regarding the constructs are discussed below. A similar method was used by El-shinnawy and Markus, (1992) to relay the results of their study.

5.1 Conveyance Processes

5.1.1 Channel influence on shaping relevant information

Several participants described the usefulness of the channel for keeping in touch with family and friends, for socialization and for the fun aspect of being able to share jokes and reignite memories of past and present experiences with people and sharing of information. P2 uses it "to socialize, it allows interactions with others and its quick for gaining feedback". P15 described how repeatedly forwarded messages were irrelevant to her. P4 stated that "Most information I receive is fast and reliable and cheap". Regarding the channels capabilities, P21 answered "Speed of notifications and speed of receipt". P24 said, "Content can be made available on different platforms or from one individual to another". P23 alluded that "it supports different types of files or content". P11 "I use WhatsApp mainly for casual conversations.

I have been using it for about seven years". P9, 24, and 22 said it enables them access information at their convenience.

5.1.2 Nature of the content influence on shaping relevant information

Eleven Participants described source for information as vital to helping them shape and estimate relevant information this was bearing on person who sent the information and the place of origin of the information. P3 response was, "I ignore some and read others depending on the length of information streaming". With regards to the question on what kind of content is mostly shared on WhatsApp by users, P10 response was "All kinds, some are just junk and false information and irrelevant but others are educational like empowering information that I do share with my families and friends". Moreover, currency of information also featured in their responses P8 stated "When information is timely and not a message he's seen before. Another comment was on "Educational, politics, topical/current issues, religious issues" P5 and P12 explained cross checking information with other sources (credibility).

5.1.3 Social influence on shaping relevant information

Many participants (14) consider social and audience dynamics in their network contributing to what, how, when, and why they share. They described that sharing that influence the sender of or receiver of the information tends to shape decisions on relevant content. Participant 3 stated that "occasionally if not clear about say a specific subject matter, I try to link up with friends on WhatsApp for clarification". P10 explained that when the information is applicable to the people he communicated with he finds it relevant. P7 said "when you expect a response" he also said it depends on appropriateness "due to the norms of the platform or raises discussions among users". P21 said he assumes an "imagined audience" by describing that "people out there might still be interested in whatever information is put out on social media".

5.2 Convergence Process

5.2.1 Experiential influence on shaping relevant information

Generally all the participants related experiences to their answers. P6 indicated that "One with an interesting topic, short and precise", P5 responded that "when it stirs up a conversation around it and depending on the group interest". P6 also stated: "When more users who may be usually silent also

contribute". P20 also related the experience with the topic and content shared: "It depends. If I read the first paragraph and the article is not interesting I ignore further reading. Also, most videos shared without titles I mostly ignore them. The reason is that some of the videos have serious graphics contents".

5.2.2 Individual processing capability influence on shaping relevant information

P7 wrote "I try to separate the real from the hoax. I enjoy the jokes more". P1 alluded that "Information is relevant if it positively influences a decision or when it gives an idea or helps to solve a problem". "Some information is very educational, enlightening and are good and empowering messages and others are false and irrelevant" this came from P10. P11 indicated that "depends on the receiver and the type of information "signifying his predictability. P22 said that "Sometimes by the kind of people who send it because they are consistent with relevant information. It could also be random so one has to read through all messages to know its relevance". P5 indicated his mood sometimes determines whether the information shared is relevant.

6 Discussion

The MRT media ranking, when applied to WhatsApp, indicates lean media (reflected in the text-based or written form of the information exchange and interactions that take place) as well as rich media characteristics (the ability to sharing volumes of data in different formats should classify it as a rich medium for communication). The equivocal nature of WhatsApp information poses a conundrum for several users. It is bedeviled with issues of irrelevant content to users. Regardless of the shortcomings, individuals rate WhatsApp as a 'convenient' communication application in their everyday lives (Dayani and Ariff, 2014) and are primarily use it for information sharing. The question which comes to mind is does its richness or lean media capabilities improve the understanding of information in equivocal or uncertain situations (Dennis et al., 2008). In the present case, because real-time audio and video supports nonverbal cues and interactivity well (Rice et al., 1994), applying MRT concept means it should minimize the task involved which could lead to greater use of the WhatsApp medium (Mandal and Mcqueen, 2013). However challenges are faced due to the multiple cues and huge volumes of data availed to a user from different sources. Additionally, discrepancies and ambiguities may exist, if users get a different impression of the information received, which increases cost (time and effort) of reconciling the disparate views (Weick et al., 2005).

Sensemaking is central because it is the primary site where meanings to the information materialize (Weick et al., 2005). The summary of responses from participants discussed above reflects the parameters curled from literature and comparatively where they relate or differ is realized. A model framework has emerged from the findings which are a blend of contextual variables, social variable and human elements which is a true reflection of participant's perspectives in understanding relevant information. Though it has not been tested statistically, with the data collected it is framed by the sensemaking parameters identified and has demonstrated applicability to the findings above.

Sensemaking of the variables are intertwined with the task people perform with the information conveyed and how it is convergences. Exploring the components of the model framework it can be noticed that an interplay between them contribute to participants understanding of the information shared. The participants learn how to make sense of information by exploiting their experiences with the information available from individuals in their network of relationships by supplementing the information content with their knowledge base. Under the discussion of the tasks (encompassing conveyance and convergence), it is the core concepts through the lens of sensemaking for extending the MRT concepts and was a crucial step in providing an understanding of the issue. The interactions of the five variables in making sense of the information to arrive at understanding the relevant information correspond to central research questions in the study and for conceptualization, exploitation and, selection of the information.

When the information cue is ambiguous sensemaking helps arrive at an interpretation and frame of reference for user by helping a user to adapt, construct meaning, create knowledge, and make decisions on information that is relevant to them. Occasionally a user may seek for further explanation by taking action on ambiguous information to make sense and judgments on them to establish the relevance. Task equivocality decreases when the knowledge of the information shared is high and increases with less knowledge base of the shared information.

At the conveyance face, an individual may use more than one variable to decide, however all work together to either constrain or enable shared understanding of the information. Ultimately the sharer of the information

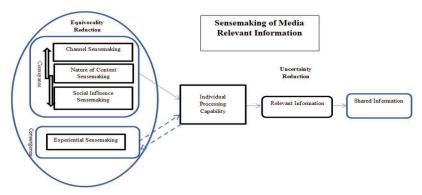


Figure 2 Proposed model framework for shaping information sharing and linkage to relevant information.

hopes it will be relevant to a receiver if it creates a change in cognition and behavior.

The experiential influences are dynamic and not stable once they are gained for instance a user's interactions or the sanity of the conversation on a platform can change which can impact on the shared information. It stands to reason that if one type of experience deteriorates (Urso and Rains, 2008), so would the decision of relevant information. Hence it is an iterative process which requires continual sensemaking therefore is a convergence process. Due to its individualistic dynamic nature thus indicated by the two broken arrows. The distinctiveness of individuals processing capability takes the next stage to finalize the process. As far as support for sensemaking in shaping relevant information is concerned, the model being proposed resonates with existing variables of theories discussed and prior studies revealing key factors in the context of the media and communication participants.

7 Conclusion

WhatsApp was used to understand how shared information shapes peoples' estimation of the relevant information and sensemaking, by examining individuals experience through realization of what relevant information is. While the study discussed how users make sense of shared information, it also helps us to understand what kind of content is shared and an understanding from a user's perspective in the shaping and estimating relevant information. The findings is a first step towards the creating a conceptual framework for sensemaking of social media shared information that addresses the particular needs of participants. Combining the variables from the MRT theories has provided an opportunity for innovative knowledge to emerge. The relationships of the models variables have addressed the research questions to achieve objectives of the study. It also offers a logical model relating media richness to the variables identified: channel influence, nature of the content, social influence, experiential influence, and insights surrounding individual processing capabilities. This helps links prior studies (mentioned during our model development) that focus on the variables individually or sparingly and offers an important setting for researchers interested in this area of research.

Secondly, the methodologies people apply when discovering relevant information witnessed additional parameters other than media capability suitability for the task of estimating relevant information. This extends the MRT theory to another angle for sensemaking of the media information to deliver shared understanding and in minimizing equivocality and uncertainty, that plagues social media information. By this development, a serves as a lens for a user to have control over sharing and understand shared information within their network connections for discovery of relevant information.

Based on the findings and discussions, the paper makes three main claims:

- 1. Firstly, the richness of a medium may not guarantee successful task outcomes in social media sharing. However collectively five variables come to play. These variables are, the medium for processing the information, the nature of the information shared, the influence from social factors, experiential knowledge base and the individual's ability to handle or resolve ambiguity and uncertainty of the information to obtain relevant information.
- 2. Secondly, that problem of ambiguity, subjectivity, and different frames of reference can be resolved by using not only the characteristics of the medium but by sensemaking.
- 3. Thirdly, that the proposed model reflects the sensemaking for shaping and estimating relevant information and that all variables play interactive roles to obtain the task outcome. Ultimately, social media concerns individuals sharing their information, identities and lives and, sharing relevant content was an interesting area for exploration.

7.1 Limitation and Future direction

The study limitations are: 1. the conceptualization of the variables though was based on existing MRT theories and studies from other researchers may

have unexpectedly overlooked or limited deep insights into specific themes such as specific strategies for conveying multiple cues to aid in minimizing ambiguity and uncertainty. 2. the study was not being able to know the extent and or how much relevant information participants receive and perhaps how much effort they put in to gain the information. 3. Perhaps another way to operationalize the variables identified would be through exploration social media that supports multiple dialogues (such as Facebook, Twitter, YouTube, etc.) which is likely to stimulate more task-oriented ideas for arriving at relevant information (Kahai and Cooper, 2003). Thus attempt for generalization should be done cautiously as what pertains in social networks may differ from one to the other.

Further empirical research is required for theorizing media richness theory to unravel issues surrounding it for explaining the dealings in new media (e.g. social media) and principally in the sharing of information. The study hopes to inspire new ideas and research to extend or contest the model developed. It could also be further expanded, to sharing practices and usage of social media across different social media networks and countries to discover more variables that can enhance the research area. Additionally the scope of participants can be varied to access participant's level of expertise by exploring relevance per demographics or on the basis of younger adults verse older generation for comparative purposes.

References

- Adali, S., Escriva, R., Goldberg, M. K., Hayvanovych, M., Magdon-ismail, M., Szymanski, B. K., ... and Williams, G. T. (2010). Measuring Behavioral Trust in Social Networks.
- Aguinis, H. (2019). On Corporate Social Responsibility, Sensemaking, and the Search for Meaningfulness Through Work, 45(3), 1057–1086. https://doi.org/10.1177/0149206317691575
- Allan J. K., and Philip J. K. (2014). WOM and social media: Presaging future directions for research and practice. Journal of Marketing Communications. Taylor & Francis. https://doi.org/10.1080/13527266.2013.79 7730
- Ancona, D. (2012). Framing and Acting in the Unknown. In Framing and Acting in the Unknown. S. Snook, N. Nohria, and R. Khurana, The *Handbook for Teaching Leadership* (pp. 3–19).

- Baruah, T. D. (2012). Effectiveness of Social Media as a tool of communication and its potential for technology enabled connections: A micro-level study, 2(5), 1–10.
- Bhatt, M. A., and Arshad, D. M. (2016). Impact of WhatsApp on youth: A Sociological Study, *04*(02), 376–386.
- Bradley, A. J., and McDonald, M. P. (2011). *The Social Organization: How to Use Social Media to Tap the Collective Genius of Your Customers and Employees*. Harvard Business Press, 2011.
- Canini, K. R., Pirolli, P. L., and Suh, B. (2011). Finding Credible Information Sources in Social Networks Based on Content and Social Structure. *IEEE*.
- Carlson, J. R., and Zwud, R. W. (1999). Channel Expansion Theory and the Experiential Nature of Media Richness Perceptions. *The Academy Management Journal*, 42(2), 153–170.
- Choudhury, M. De. (2011). Why Do We Converse on Social Media? An Analysis of Intrinsic and Extrinsic Network Factors, 53–58.
- Daft, R. L., and Lengel, R. H. (1986). Organizational Information Requirements, Media Richness and Structure. *Management Science*, 5(May 1986), 32.
- Daft, R. L., Lengel, R. H., and Trevino, L. K. (1987). Message Equivocality, Media Selection, and Manager Performance: Implications for Information Systems, *11*(3), 355–366.
- Darrow, B. (2017). WhatsApp Says 1 Billion People Use Its Chat App Every Day.
- Dayani, A., and Ariff, S. (2014). Convenience or Nuisance: The 'WhatsApp' Dilemma, 155(October), 189–196. https://doi.org/10.1016/j.sbspro.2 014.10.278
- Dennis, A. R., Fuller, R. M., and Valacich, J. S. (2006). Theory and Review Media, Tasks, and Communication Processes: (May 2014). https://doi.org/10.2307/25148857
- Dennis, A. R., Fuller, R. M., and Valacich, J. S. (2008). Media, Tasks, and Communication Processes: A Theory of Media Synchronicity. *MIS Quarterly*, 32(3), 575–600.
- Dennis, A. R., Kinney, S. T., and Hung, Y. C. (1999). Gender Differences in the Effects of Media Richness. *Small Group Research*, 30(4), 405–437.
- Dennis, A. R., and Valacich, J. S. (1999). Rethinking Media Richness: Towards a Theory of Media Synchronicity. In *Systems Sciences*, 1999.

- HICSS-32. Proceedings of the 32nd Annual Hawaii International Conference on (pp. 10-pp). IEEE (p. 10-pp).
- Dickinson, T. M. (2012). An Inefficient Choice: An Empirical Test of Media *Richness and Electronic Propinguity.* The Ohio State University.
- Dijck, J. Van, and Poell, T. (2013). Understanding Social Media Logic, 1(1), 2-14.
- Dunkerley, E., Allen, D., Pearman, A., Karanasios, S., and Crump, J. (2014). The influence of social media on information sharing and decision making in policing: research in progress. IR Information Research, 19(4). Retrieved from http://www.informationr.net/ir/19-4/isic/isicsp 7.html{#}.WKw5wtKLTIU
- Edosomwan, S., Prakasan, S. K., Kouame, D., Watson, J., and Seymour, T. (2011). The History of Social Media and its Impact on Business. The *Journal of Applied Management and Entrepreneurship*, 16(3), 79–91.
- El-shinnawy, M. M., and Markus, M. L. (1992). Media Richness Theory and New Electronic Communication Media: A Study of Voice Mail and Electronic Mail Communication Media. In International Conference on Information Systems.
- El-shinnawy, M. M., and Markus, M. L. (1997). The poverty of media richness theory: explaining people's choice of electronic mail vs. voice mail. Studies, Human-Computer Analysis, Business Science, Information St, Ninth, 443–467.
- Eugene, A., Gabrilovich, E., and Zha, H. (2009). The Social Future of Web Search: Modeling, Exploiting, and Searching Collaboratively Generated Content. IEEE Data Engineering Bulletin, 32(2), 52–61. Retrieved from http://citeseerx.ist.psu.edu/viewdoc/summary?doi=10. 1.1.161.5514
- Farook, F. S., and Abeysekara, N. (2016). Influence of Social Media Marketing on Customer Engagement, 5(December), 115–125.
- Friedman, H. H., and Friedman, L. W. (2011). Crises in Education: Online Learning as a Solution Crises in Education: Online Learning as a Solution. Creative Education, 2(03)(July 2014), 156. https://doi.or g/10.4236/ce.2011.23022
- Fulk, J., Schmitz, J., and Steinfield, C. W. (1990). A social influence model of technology use. Organizations and Communication Technology, (February 2015), 117–140.
- Hansen, T. (2009). Applying Social Network Theory and Analysis in the Struggle for Social Justice Author(s): Toran Hansen Published by:

- Canadian Mennonite University Stable URL: http://www.jstor.org/stable/23607964StruggleforSocialJustice, 41(1), 5–43.
- Herrero Crespo, Á., San Martín Gutiérrez, H., and Hernández Mogollón, J. M. (2015). Perceived influence on behavior of user-generated content on social network sites: An empirical application in the hotel sector. *Revista Española de Investigación En Marketing ESIC*, 19(1), 12–23. https://doi.org/10.1016/j.reimke.2014.09.001
- Kahai, S. S., and Cooper, R. B. (2003). Exploring the core concepts of media richness theory: The impact of cue multiplicity and feedback immediacy on decision quality. *Journal of Management Information Systems*, 20(1), 263–299.
- Kaplan, A. M., and Haenlein, M. (2010). Users of the world, unite! The challenges and opportunities of Social Media. https://doi.org/10.1016/j.bushor.2009.09.003
- Keller, S. L. (2013). Computer-Mediated Communication and Success in Educational Collaboration. *American Comunication Journal*, 15(3), 40–58.
- Kümpel, A. S., Karnowski, V., and Keyling, T. (2015). News Sharing in Social Media: A Review of Current Research on News Sharing Users, Content, and Networks Why Study News Sharing in Social. *Social Media + Society*, *1*(2), 2056305115610141.
- Lebiere, C., Pirolli, P., Thomson, R., Paik, J., Rutledge-Taylor, M., Staszewski, J., and Anderson, J. R. (2013). A functional model of sensemaking in a neurocognitive architecture. *Computational Intelligence and Neuroscience*, 2013, 5.
- Liu, F., Xiao, B., Lim, E. T., and Tan, C.-W. (2015). Deciphering Individuals' Preference for User Generated Content: An Empirical Test of the Impact of Personality on Users' Processing of Online Review Information. In *The 36th International Conference on Information Systems*. *ICIS 2015 International Conference on Information Systems*. AIS Electronic Library (AISeL).
- Mandal, D., and Mcqueen, R. J. (2013). Extending media richness theory to explain social media adoption by microbusinesses. *Te Kura Kete Aronui*, (5).
- Mathiyalakan, S., White, S. D., Brusa, J. O., and White, S. D. (2016). Facebook Use Among African American and Hispanic Students: An Exploratory Investigation of Perceived Academic Impact, 25(2).

- Mirbabaie, M., and Zapatka, E. (2017). Sensemaking in Social Media Crisis Communication – A Case Study on the Brussels Bombings in 2016, 2169.
- Mohammed, M. A., Maroof, E. Y., and Huda, I. (2015). What are the Electronic Information Sharing Factors that Influence the Participation Behavior in Higher Education Sector?. Procedia Computer Science, 72, 49–58.
- Monsuwé, T. P. Y., Dellaert, B. G. C., and Ruyter, K. De. (2004). What drives consumers to shop online? A literature review. International Journal of Service Industry Management, 15(1), 102–121. https://doi.org/10.1 108/09564230410523358
- Moturu, S. T., and Liu, H. (2011). Quantifying the trustworthiness of social media content. Distributed and Parallel Databases, 29(3), 239–260. https://doi.org/10.1007/s10619-010-7077-0
- Nordbäck, E. (2011). Decision-making in Virtual Teams: Role of Interaction and Technology.
- Pan, B., and Crotts, J. C. (2012). Theoretical models of social media, marketing implications, and future research directions. Social Media in Travel, Tourism and Hospitality: Theory, Practice and Cases, (1965), 73-86. https://doi.org/10.1017/CBO9781107415324.004
- Parveen, F., Jaafar, N. I., and Ainin, S. (2015). Role of Social Media on Information Accessibility. In *PACIS* (p. 237).
- Petronzio, M. (2014). Average WhatsApp User Sends More Than 1,200 Messages Each Month.
- Rice, R. E. (1992). Task Analyzability, use of new media, and effectiveness: A multi-site exploration of media richness. Organisation Science, *3*(4), 475–500.
- Rice, R. E., Kraut, R. E., Cool, C., and Fish, R. S. (1994). Individual, Structural and Social Influences on use of a New Communication Medium. In Academy of Management Proceedings (Vol. 1994, pp. 285-289). Briarcliff Manor, NY 10510: Academy of Management.
- Scott, M. (2014). Understanding the Basic Categories of Social Media Marketing. Retrieved March 3, 2017, from https://ahrefs.com/blog/unders tanding-basic-categories-social-media-marketing/
- Sleeper, M., Melicher, W., Habib, H., Bauer, L., Cranor, L. F., and Mazurek, M. L. (2016). Sharing Personal Content Online: Exploring Channel Choice and Multi-Channel Behaviors. Proceedings of the 2016 CHI Conference on Human Factors in Computing Systems, 101–112. https://doi.org/10.1145/2858036.2858170

- Smith, M., Szongott, C., Henne, B., and von Voigt, G. (2012). Big data privacy issues in public social media. *Digital Ecosystems Technologies* (*DEST*), 2012 6th IEEE International Conference On, 1–6. https://doi.org/10.1109/DEST.2012.6227909
- Stieglitz, S., Bunker, D., Mirbabaie, M., and Ehnis, C. (2017). Sense-making in social media during extreme events, 4–15. https://doi.org/10.1111/1468-5973.12193
- Streufert, S. C. (1973). Effects of information relevance on decision making in complex environments. *Memory & Cognition*, 1(3), 224–228.
- Trevino, L. K., Richard L. Daft, and Lengel., R. H. (1990). Understanding managers' media choices: A symbolic interactionist. *Organization and Communication Technology*, 71–94.
- Urso, S. D., and Rains, S. A. (2008). Examining the Scope of Channel Expansion: A Test of Channel Expansion Theory with New and Traditional Communication Media. *Management Communication Quarterly*, 21(4), 486–507.
- Weick, K. E. (1993). The collapse of sensemaking in organizations: The Mann Gulch disaster. *Administrative Science Quarterly*, 38(4), 628–652.
- Weick, K. E., Sutcliffe, K. M., and Obstfeld, D. (2005). Organizing and the Process of Sensemaking. *Organization Science*, 16(4), 409–421. https://doi.org/10.1287/orsc.1050.0133
- Westerman, D., Spence, P. R., and Heide, B. Van Der. (2014). Social media as information source: Recency of updates and credibility of information. *Journal of Computer-Mediated Communication*, 19(2), 171–183.
- Wright, B., Schwager, P. H., and Donthu, N. (2008). Application of Media Richness Theory to Data Collection. *Journal of Applied Business Research*, 24(1), 137.
- Xu, H. (2016). Benefits and Concerns of Using Social Media Users' Perspective Benefits and Concerns of Using Social Media Users'. In *MWAIS 2016 Proceedings 23*.
- Yeboah, J., and Ewur, G. D. (2014). The Impact of Whatsapp Messenger Usage on Students Performance in Tertiary Institutions in Ghana. *Journal of Education and Practice*, 5(6), 157–164. Retrieved from ht tp://www.iiste.org/Journals/index.php/JEP/article/view/11241/11555

- Youngjin, Y., and Maryam, A. (2001). Media and Group Cohesion: Relative Influences on social Presence, Participation, and Group Consensus. MIS Quaterly, 25(3), 371–390.
- Zhang, P. (2012). Information Seeking through Microblog Questions: The Impact of Social Capital and Relationships. In *Proceedings of the* Association for Information Science and Technology 49(1) (pp. 1–9).
- Zheng, Y., Li, L., and Zheng., F. (2010). Social Media Support for Knowledge Management. In Management and Service Science (MASS), 2010 *International Conference on IEEE* (pp. 9–12).

Biographies



Joseph Kwame Adjei is a Senior Lecturer and the Dean of School of Technology, Ghana Institute of Management and Public Administration (GIMPA). Joseph holds a PhD in Information Systems from Aalborg University, Denmark, and MSc in Advanced Information Technology from LSBU, UK. He is a fellow of Association of Chartered Certified Accountants. His research focuses on development of better frameworks for implementation of Trusted Digital Identity Management Systems, Mobile Financial Services and the use of Social Media and Cloud Computing. His previous research activities have been published in reputable journals and conference proceedings.



Pearl Tweneboah is a Mining Engineer with specialist knowledge in Information's System. She has Master of Science in Management information systems from GIMPA Institute of Management and Public Administration (GIMPA). He currently work as Information Systems researcher and also engaged mining software training and business process improvement. Her research interest is in factors affecting adoption and use of Social Media.



Peter Ebo Tobbin is a Senior Lecturer at School of Technology, Ghana Institute of Management and Public Administration (GIMPA). Peter holds a PhD in Information Technology and Telecommunications from Aalborg University, Denmark, M.Sc. in Information Technology Security from University of Westminster, UK and Bachelor of Law from University of London, UK. He is a Chartered Certified Accountant and holds a number IT certifications. Peter has published a number of peer-reviewed journal articles and academic conference papers. His research focuses on adoption and use of mobile money and social media.