JOURNALISTS’ INFORMATION SEEKING AND BEHAVIOUR ON
SOCIAL MEDIA

A Thesis Submitted in Fulfilment of the requirements for
the Degree of Doctor of Philosophy

Omid Aghili
B.S.E (Software Engineering), IAU
Master of Software Engineering, UM

School of Science
College of Science, Engineering and Health
RMIT University

June 2018
Declaration

I certify that except where due acknowledgement has been made, the work is that of the author alone; the work has not been submitted previously, in whole or in part, to qualify for any other academic award; the content of the thesis is the result of work which has been carried out since the official commencement date of the approved research program; any editorial work, paid or unpaid, carried out by a third party is acknowledged; and, ethics procedures and guidelines have been followed.

Omid Aghili

June 2018
Acknowledgements

Throughout the PhD candidature, many people might be involved in influencing a PhD candidate, however, only some of those influences have tangible impacts on the PhD candidate’s thesis.

I would most like to thank Mark Sanderson, my supervisor, for his generous support and guidance throughout my PhD candidature. Nothing is perfect but I could not have wished for a better supervisor. I would also like to thank James Harland who held the role of the independent in my dissertation committee and then he became my joint supervisor for the last year of my PhD candidature.

I would also like to thank Douglas W. Oard and Tamer Elsayed who made the fortnightly meetings happen between RMIT, Maryland, and Qatar universities and consequently enabled my research to benefit from the discussions, comments, and criticisms taken place. Moreover, the journalists who participated in this research deserve recognition and thanks.

Finally, I am especially thankful for the emotional support of my parents. They have been instrumental in every stage of my life thus far.
Dedication

This thesis is dedicated to human wisdom and intelligence.
Abstract

This thesis presents the findings of journalists’ information seeking and behaviour on social media through exploiting grounded theory methodology. Based on interviews with twenty journalists along with a study of a set of university level journalism modules and observation of journalist students’ activities, journalists’ information behaviours are determined followed by journalists’ information seeking behaviour. Three main components of journalists’ information seeking behaviour on social media are investigated; journalists’ information need types, search strategies and tactics, and relevance judgement criteria. Moreover, examining journalists’ search strategies and tactics on social media leads this study to investigate the taxonomy of question types asked by journalists on social media. Finally, the influential factors which have an impact on journalists’ information seeking and behaviour and their social media uses are investigated.

The findings identify six motivations (purposes) of journalists’ social media uses which lead to introducing the concepts of overt and covert information behaviours. In addition, the findings propose that seven types of information need lead journalists to use social media to satisfy their information needs that expand the types found in previous work. These findings imply that not only is social media used as an information source, but it can also be a supplier of stories found serendipitously. The findings of journalists’ search strategies and tactics identify nine search strategies and tactics which lead to introducing the concepts of active, passive, overt, and covert search behaviours. The findings of the taxonomy of question types indicate that asking questions on social media platforms is not only used as a search tactic and strategy to satisfy journalists’ information needs but also it is used as a strategy to communicate with the audience and verify information. When it comes to relevance judgement criteria, this research determines twenty six relevance judgment criteria classified
into six categories. These findings imply that journalists’ relevance judgment criteria are not only interrelated to journalists’ information needs but also to journalists’ search strategies and tactics on social media. Finally, the findings also suggest five categories of influential factors that affect journalists’ information seeking and behaviour on social media. These findings indicate that to have a better understanding of journalists’ information seeking and behaviour and also to satisfy journalists’ information needs, the influential factors should be taken into consideration in real time.

The results not only enrich the information seeking and behaviour and journalism literature but also provide implications for designing and evaluating information retrieval systems, as well as for social media and journalism researches.
# Table of Contents

Declaration .................................................................................................................. ii  
Acknowledgements ..................................................................................................... iii  
Dedication .................................................................................................................... iv  
Abstract ....................................................................................................................... v  
Table of Contents ....................................................................................................... vii  
List of Tables ............................................................................................................... xi  
List of Figures ............................................................................................................. xii  
1. Introduction .............................................................................................................. 1  
   1.1 Social Media and Journalists ............................................................................ 3  
   1.2 Research Questions ......................................................................................... 4  
   1.3 Chapter Breakdown ......................................................................................... 5  
2. Literature Review .................................................................................................... 7  
   2.1 Role of Information Seeking Behaviour in Information Retrieval Studies .......... 7  
   2.2 Information Seeking Behaviour ...................................................................... 11  
      2.2.1 Information Need ....................................................................................... 12  
      2.2.2 Search Strategies and Tactics ................................................................... 15  
      2.2.3 Relevance Judgement Criteria ................................................................. 24  
   2.3 Models of Information Seeking Behaviour ...................................................... 34  
      2.3.1 Dervin’s Sense-making model ................................................................. 35  
      2.3.2 Wilson’s Information-seeking Behaviour Models .................................... 36  
      2.3.3 Ellis’s Descriptive Model ......................................................................... 40  
      2.3.4 Kuhlthau’s Information Search Process .................................................. 42  
      2.3.5 Bystrom and Javerlin’s Work Task Information Seeking Model ........... 43  
   2.4 Context of Information Seeking Behaviour ..................................................... 45  
   2.5 Journalists’ Information Seeking Behaviour .................................................... 46  
   2.6 Journalists’ Social Media Uses ........................................................................ 51  
      2.6.1 Verifying information ............................................................................... 52  
      2.6.2 Networking and Communication ............................................................. 53  
      2.6.3 Promoting and Branding .......................................................................... 53  
      2.6.4 Publishing, Broadcasting, and Disseminating Information ....................... 54  
      2.6.5 Satisfying Information Needs ................................................................... 54  
3. Methodology .......................................................................................................... 56  
   3.1 Introduction ....................................................................................................... 56
<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.</td>
<td>Influential Factors</td>
<td></td>
</tr>
<tr>
<td>6.1</td>
<td>Personal related factors</td>
<td>165</td>
</tr>
<tr>
<td>6.2</td>
<td>Workplace related factors</td>
<td>167</td>
</tr>
<tr>
<td>6.3</td>
<td>Information need type related factors</td>
<td>169</td>
</tr>
<tr>
<td>6.4</td>
<td>Surveillance related factors</td>
<td>170</td>
</tr>
<tr>
<td>6.5</td>
<td>Social media platforms related factors</td>
<td>171</td>
</tr>
<tr>
<td>7.</td>
<td>Discussion</td>
<td>174</td>
</tr>
<tr>
<td>7.1</td>
<td>Social Media Uses and Information Behaviour on Social Media</td>
<td>174</td>
</tr>
<tr>
<td>7.2</td>
<td>Journalists’ Social Media Uses (Journalists’ Information Behaviour on Social Media)</td>
<td>178</td>
</tr>
<tr>
<td>7.2.1</td>
<td>Promoting and Branding</td>
<td>181</td>
</tr>
<tr>
<td>7.2.2</td>
<td>Verifying Information</td>
<td>182</td>
</tr>
<tr>
<td>7.2.3</td>
<td>Networking and Communication</td>
<td>183</td>
</tr>
<tr>
<td>7.2.4</td>
<td>Publishing, Broadcasting, and Disseminating Information</td>
<td>184</td>
</tr>
<tr>
<td>7.2.5</td>
<td>Satisfying Other Types of Journalists’ Needs</td>
<td>184</td>
</tr>
<tr>
<td>7.2.6</td>
<td>Satisfying Information Needs</td>
<td>185</td>
</tr>
<tr>
<td>7.3</td>
<td>Journalists’ Information need types on Social Media</td>
<td>185</td>
</tr>
<tr>
<td>7.3.1</td>
<td>Real-Time Information</td>
<td>186</td>
</tr>
<tr>
<td>7.3.2</td>
<td>Opinions and Anecdotal Evidence</td>
<td>187</td>
</tr>
<tr>
<td>7.3.3</td>
<td>Facts and Knowledge</td>
<td>187</td>
</tr>
<tr>
<td>7.3.4</td>
<td>Events Driven Information</td>
<td>188</td>
</tr>
<tr>
<td>7.3.5</td>
<td>People (Sources, Contacts, Experts, etc.)</td>
<td>189</td>
</tr>
<tr>
<td>7.3.6</td>
<td>User Generated Content Information</td>
<td>189</td>
</tr>
<tr>
<td>7.3.7</td>
<td>Serendipity</td>
<td>189</td>
</tr>
<tr>
<td>7.4</td>
<td>Journalists’ Search Strategies and Tactics on social Media</td>
<td>190</td>
</tr>
<tr>
<td>7.5</td>
<td>Journalists’ Categories of Relevance Judgement Criteria</td>
<td>193</td>
</tr>
<tr>
<td>7.6</td>
<td>Influential Factors</td>
<td>195</td>
</tr>
<tr>
<td>7.6.1</td>
<td>Personal-related factors</td>
<td>196</td>
</tr>
<tr>
<td>7.6.2</td>
<td>Workplace related factors</td>
<td>197</td>
</tr>
<tr>
<td>7.6.3</td>
<td>Information need type related factors</td>
<td>198</td>
</tr>
<tr>
<td>7.6.4</td>
<td>Surveillance related factors</td>
<td>198</td>
</tr>
<tr>
<td>7.6.5</td>
<td>Social media platforms related factors</td>
<td>199</td>
</tr>
<tr>
<td>8.</td>
<td>Conclusions</td>
<td>200</td>
</tr>
</tbody>
</table>

APPENDIX A. Completion Seminar Presentation Slides ........................................ 204
APPENDIX B. Completion Seminar Transcript ...................................................... 205
List of Tables

Table 3.1. Participants’ details. ..............................................................................................................68
Table 3.2. From data (transcripts) to a focused code (Example 1). ......................................................74
Table 3.3. From data (transcripts) to a focused code (Example 2). ......................................................75
Table 7.1: Mapping the findings of journalists’ social media uses......................................................180
List of Figures

Figure 2.1. Information Retrieval (IR) Research continuum (Kelly, 2009). .............................................................. 9
Figure 2.2. Jeon and Rieh’s findings on Question-Formulation Strategies and Tactics (Jeon and Rieh, 2015). .................................................................................................................... 22
Figure 2.3. Dervin's sense-making model (Dervin, 1992). ................................................................. 36
Figure 2.4. The information user and the universe of knowledge (Wilson, 2005). .................. 37
Figure 2.5. Information needs and seeking (Wilson, 2005). ........................................................... 38
Figure 2.6. A revised general model of information seeking behaviour (Wilson, 2005). ....... 39
Figure 2.7. Ellis’s descriptive model of information seeking depicted by T. D. Wilson (Wilson, 1999). .................................................................................................................................... 41
Figure 2.8. Kuhlthau’s Information Search Process (Kuhlthau, 2004). ........................................ 43
Figure 2.9. Bystrom and Järvelin’s Work Task Information Seeking Model (Bystrom and Järvelin, 1995). .................................................................................................................... 44
Figure 2.10. The journalistic research and writing process (Simon Attfield and John Dowell, 2003). ................................................................................................................................. 49
Figure 3.1. General information seeking behaviour model in the context of information systems. ................................................................................................................................. 57
Figure 3.2. A conceptual model to explore journalists’ information seeking behaviour on social media. ........................................................................................................................... 58
Figure 3.3. A conceptual framework to explore journalists’ information behaviour on social media................................................................................................................................. 59
Figure 3.4. Grounded Theory Methodology (Charmaz, 2014). ...................................................... 71
Figure 4.1. Social media uses in journalism. .................................................................................. 79
Figure 4.2. Verification strategies employed through using social media.................................. 84
Figure 4.3. The reasons social media was used for networking and communication.............. 89
Figure 4.4. The reasons social media was used for publishing, broadcasting, and disseminating. ................................................................................................................................. 92
Figure 5.1. Big picture. .................................................................................................................. 99
Figure 5.2. Journalists’ information need types on social Media. .............................................. 100
Figure 5.3. Journalists’ Search Tactics & Strategies on Social. Media .................................... 109
Figure 5.4. Nested model of posting question on social media. ............................................... 117
Figure 5.5. Taxonomy of question types on social media. ......................................................... 118
Figure 5.6. Nested model of relevance judgement criteria. ...................................................... 124
Figure 5.7. Journalists’ categories of relevance judgement criteria ........................................ 125
Figure 5.8. Category of information relevance judgement criteria ........................................... 126
Figure 5.9. Category of source relevance judgement criteria ...................................................... 137
Figure 5.10. Category of journalism value and training relevance judgement criteria .......... 147
Figure 5.11. Category of journalist relevance judgement criteria ............................................. 155
Figure 5.12. Category of news piece/story relevance judgement criteria ................................ 157
Figure 5.13. Category of relevance judgement criteria related to social media users .......... 160
Figure 6.1. Journalists’ information behaviour on social media are influenced by different factors ...................................................................................................................................... 163
Figure 6.2. Influential factors on journalists’ information behaviour ...................................... 164
Figure 7.1. Wilson’s nested model (Wilson, 1999). ........................................................................ 175
Chapter 1

1. Introduction

Interaction with information systems happens when individuals feel a need for information. Therefore, the ultimate goal of interaction between an information system and an information seeker is to find the information object that satisfies an information need(s), which consequently lead to information seeking behaviour (Belkin, 2010). During these interactions, users expect the IR system to infer and interpret what they enter as queries and change them to what they look for. Belkin and Taylor (Belkin, 1980; Taylor, 1968) indicate that there are inherent problems in user interaction with information systems, which may affect satisfying users’ expectations and needs. Taylor’s four level of information need which consists of visceral, conscious, formalized and compromised need, shows that user’s real information need (the visceral need) is different from user’s query posed at information system (the compromised need) (Taylor, 1968), because real information needs reside in a users’ mind and, queries do not reflect them thoroughly and precisely. Similarly, Belkin proposed the concept of the anomalous state of knowledge (ASK) that refers to the inadequacy and insufficiency of user knowledge in expressing his/her need to information systems, and this occurs because information systems compel the user to articulate what he or she does not know (Belkin, 1980).

Therefore, to satisfy users’ expectations and needs, IR systems must predict, infer and interpret the queries which users enter in IR systems, change them to a user’s real information need and then retrieve and display results, which fulfil users’ expectations and needs. This burden is on IR system to tackle the incomplete or underspecified queries (the compromised need) and convert them to user’s real information need (the visceral need).
Ideally, to achieve this goal, IR systems must be equipped with user’s real information needs and respective information seeking behaviour. However, there is a valid question of how an IR system can recognize a user’s real information need by the queries posed by the user, because real information needs reside within the user’s head, and consist of conscious and unconscious needs, which may be unrecognized or misunderstood by the user (Green, 1990).

Moreover, due to the changing of a user’s understanding of his/her information need and the evolution of his/her mental model of an information system (user’s understanding of how a system works), a user’s information needs may change during interaction with IR systems, which consequently leads to changes in the user’s information seeking behaviour (ISB). The changing of a user’s information seeking behaviour is indicated in Marchionini’s Model (Marchionini, 1995), changing and evolving of a user’s thinking and real-life queries as depicted in Bates’s Berrypicking model (Bates, 1989), shifting of search strategies and moves as demonstrated by Xie’s Model (Xie, 2008), changing of user relevance criteria (due to changing of user’s mental model) as illustrated by Vakkari and Hakala’s model of the relations between problem stage and relevance (Pertti Vakkari, 2000), etc.

One of the efforts to tackle the dynamic nature of user’s information seeking behaviour is Saracevic’s stratified model (Saracevic, 1997). This model shows that information retrieval interaction occurs in different levels of users and systems, and adaptations happen between users and systems during the interaction. This model implies that the system and user must learn about each other through interaction to achieve better adaptations, which lead to satisfying user’s information needs.

To satisfy user’s information needs, IR systems must be equipped with user’s real information needs and respective information seeking behaviour. To get there, first, we must have a comprehensive understanding of user’s information seeking behaviour. As the context
of this research is defined by journalists (users) and social media, this research explores and examines journalists’ information seeking behaviour on social media.

1.1 Social Media and Journalists

Due to rapid changes in information technology and its influence on how information is produced, the information environment of journalists is changing very rapidly. Although the advent of the Internet\(^1\) and consequently the web has revolutionized the way information is published, stored, accessed and consumed, the advent of social media\(^2\) has revolutionized the way information is produced, which has been regarded as “ambient journalism” (Hermida, 2010a, 2010b); “an awareness system that offers diverse means to collect, communicate, share and display news and information, serving diverse purposes.” Journalists are in the front line of information and information is the product with which they work. Hence, they cannot disregard social media. Social media contains a wealth of information and its impacts on journalism and news have been already reported by many researchers. (Brautović et al., 2013; Hermida, 2012a; Herrera-Damas and Hermida, 2014; Lasorsa et al., 2012; Murthy, 2011; Oh et al., 2010; Opgenhaffen and Scheerlinck, 2014; Parmelee, 2013).

Moreover, social media not only is used as an information source, but also it is used for various professional journalistic objectives (Lasorsa et al., 2012), such as real-time reporting (Hermida et al., 2014; Papacharissi and de Fatima Oliveira, 2012), networking, branding and collaboration (Hedman and Djerf-Pierre, 2013). Also, social media helps people to be part of the journalism and news process (Brautović et al., 2013; Bruns and Highfield, 2012; Newman, 2009). These features of social media have made social media as an integral part of journalistic work and process and several studies indicate that the use of social media by journalists increases year after year (Djerf-Pierre et al., 2016; Opgenhaffen and Scheerlinck, 2014).

---

\(^1\) Internet is referred to Web 1.0, FTP, Email, group news resources, etc.
\(^2\) Social media is referred to Web 2.0 platforms such as Twitter, Facebook, YouTube, LinkedIn, Instagram, etc.
The importance of social media in journalism has brought different researchers from multiple disciplines to study social media in relation to journalists and journalism. Although there is research on the impact of social media on journalism and news and also some researchers have indicated different use of social media in journalism, there is not a comprehensive study of journalists’ information needs and their respective information seeking behaviour on social media and also the factors which bear on journalists’ social media uses and information seeking behaviour. Therefore, this research aims to explore, understand and bridge this gap.

The outcome of this research examines the ways journalists use social media and covers different aspects of journalists’ information seeking behaviour including their information needs, information seeking, search strategies and tactics and relevance judgement criteria. As social media has provided a new way of producing information, and will continue to be increasingly used to satisfy journalists’ information needs, a full understanding of journalists’ information needs and behaviours on social media is critical to design and evaluate information retrieval systems and services that satisfy journalists’ information needs on social media. Thus, the investigation of journalists’ information seeking and behaviour as well as, its determinant on social media form the basis of this thesis.

1.2 Research Questions

The central aim of this study is to explore journalists’ information seeking behaviour on social media. To get there, this thesis aims to explore why and how journalists use social media and what types of information needs lead journalists to social media. Journalists use social media for different aims which one of them is satisfying their information needs. Journalists use different search strategies and tactics on social media to satisfy their information needs including asking questions on social media platforms. Journalists employ different relevance judgement criteria and their use of social media is influenced by different factors. Therefore, this thesis aims to answer the following research questions:
1. Why (how) do journalists use social media?

2. What type of journalists’ information needs can be satisfied on social media?

3. What search strategies and tactics do journalists employ to start their search on social media?

4. What type of questions do journalists ask on social media platforms?

5. What relevance criteria do journalists employ to judge the relevancy of information on social media?

6. What factors influence journalists’ information seeking and behaviour on social media?

1.3 Chapter Breakdown

To achieve the aims, this thesis is organized as follows. First, a literature review (Chapter 2) on this subject is explored. Topics covered include the importance, role and place of information seeking behaviour (ISB) in information retrieval (IR) studies, the concept of information seeking behaviour and its different elements, some highly cited information seeking behaviour models, the significance of considering context in ISB studies, journalists’ information seeking behaviour, and journalists’ use of social media.

Chapter 3 outlines the methodology employed to conduct this research. It comprises the conceptual framework used in this research, the reason a particular grounded theory methodology (constructivist) is employed, followed by data collection, analysis, and evaluation methods.

Chapter 4, 5, and 6 explicate the findings of this research. Chapter 4 examines research question one and explores journalists’ social media uses (journalists’ information behaviour on social media), which provides a bigger context to examine journalists’ information seeking behaviour on social media. Chapter 5 examines research questions 2, 3, 4, and 5, which covers journalists’ information seeking behaviour on social media. It investigates what
type of journalists’ information needs (information need types) are satisfied on social media, what search strategies and tactics are employed, what type of questions journalists post on social media (taxonomy of question types), and journalists’ relevance judgement criteria on social media. Chapter 6 examines the research question 6 and investigates the influential factors on journalists’ social media uses (journalists’ information behaviour on social media) and their seeking behaviour.

Chapter 7 discusses the findings of this research in relation to past work, followed by Chapter 8, which concludes the thesis.
Chapter 2

2. Literature Review

This chapter starts with the importance of information seeking behaviour (ISB) studies and its position in the IR research realm. This is followed by the concept of information seeking behaviour and its different elements including information need and seeking, search strategies and tactics, and relevance judgement criteria. Then some of the highly cited information seeking behaviour models and the significance of considering the context in ISB studies are discussed. Finally, as the context of this research is defined by journalists and social media, journalists’ information seeking behaviour are explored, followed by journalists’ uses of social media.

2.1 Role of Information Seeking Behaviour in Information Retrieval Studies

Satisfying user’s information needs is one of the most determining factors in evaluating the success of information retrieval (IR) systems. Sanderson (Sanderson, 2010) points out that evaluation of IR system covers different areas including information seeking behaviour (ISB). He also indicates that in spite of the length of use of evaluation methods, evaluation methods have remained fixed. Using test collections and evaluation measures may help to provide the simulation of users of IR systems, and find system failures but it does not guarantee the satisfaction of users’ information needs. Gull (Gull, 1956) found that the judgement of document relevance is different based on different interpretation of the queries. It implies that relevance assessments conducted to form test collections are subjective judgments based on individuals or groups inference rather than objective assessments.
Considering the deficiencies in existing evaluation methods led Sanderson (Sanderson, 2010) to examine whether test collections and evaluation measures can predict user behaviour or not. Sanderson (Sanderson, 2010) examined different studies to find the correlation between test collections and real users behaviour when interacting with IR systems. His examinations of the literature reveal that 1) little or no correlation 2) some correlation 3) strong correlation exists. These contradictory findings denote that test collections cannot be used as user representative in all IR studies and having sufficient knowledge of users’ information seeking behaviour and user’s information needs are required in designing and evaluating IR systems, as developing a successful IR system is not only about the understanding of IR systems (indexing the collection, organizing the collection, and querying and searching the collection), but also about the understanding of users and of interfaces, which cause interactions to take place between users and IR systems.

To bridge the gap between IR systems and users studies, the interactive information retrieval (IIR) research domain emerged to study users along with their interaction with IR systems. IIR concentrates on users’ behaviour and experiences including physical, affective, cognitive and the interaction that takes place between a user and a system (Kelly, 2009). Due to the inclusion of user studies in IIR, it is, to some degree, a behavioural science.

As pointed out by IR researchers including Kelly (Kelly, 2009), there are obstacles inherent in IIR studies. For example, each user generally enters a different query for the same information need, which consequently produces different search results. In addition, causes and effects of user interaction with an IR system occur in the user’s head, so they are not observable. Therefore, researchers can only infer and interpret a user’s cognitive activity from observable behaviours, such as querying and saving documents. Furthermore, each user has a different cognitive ability and capacity and behavioural disposition; users are different based on the amount of their knowledge of specific topics, the amount of their motivation for
searching, the skills they have while searching, their expectations, intelligence etc. These difficulties in IIR studies may not enable researchers to obtain reliable results from user studies in IIR research or allow them to generalize the results of a study.

Kelly (Kelly, 2009) provides an information retrieval research continuum (Figure 2.1) to demonstrate different research realms in information retrieval, ranging from a system focus to a human focus and describes how intent and purpose of research can define where a study fits along the IR research continuum. For example, IIR studies are located in the middle of the continuum. Therefore, IIR studies are a bridge between the user-centred and system-centred research realm. The continuum shows how user involvement and study in IR research increases. Although the last three research realms on the right side of continuum represent information behaviour and information seeking behaviour, each of them has its own characteristics.

In “Experimental Information Behaviour”, researchers can control elements of the research process, search results retrieved in response to user’s queries, etc. As every user experiences search in a different way, the goal of this type of study, as highlighted by Kelly (Kelly, 2009), is to make users’ experiences as similar as possible. This helps researchers to study causality
with higher confidence. Also, studies which are placed in this group, usually use experimental methods. On the other hand, there are almost no experimental system studies involved in the next research realm represented by “Information-Seeking Behaviour with IR Systems” on the continuum. Researchers observe users’ natural search behaviour, including users’ search tactics, relevance judgments, re-finding information, etc. The aim of this group of studies is better understanding of users’ natural search behaviour, which is essential to enhance IR systems. Finally, the research realm at the right-end of the continuum represented by “Information-Seeking Behaviour in Context” completely focuses on humans, their information needs and information behaviours. Researchers exploit qualitative methodologies for this type of studies to explore and understand users’ real information needs and their information seeking behaviours within the specific context.

In addition, from a software engineering perspective, the software development life cycle starts with requirement elicitation and analysis. Considering IR systems as software systems whose ultimate goal is to satisfy users’ real information needs, users' information seeking behaviour in the context must be studied first before developing information retrieval systems. This is where the requirements elicitation and information seeking behaviour research realms can be mapped onto each other and the reason this research was conducted; to learn about the users. We must have a holistic and comprehensive understanding of users’ information seeking and behaviour in the context first to be able to satisfy users’ real information needs. Thus, it can be argued that information seeking behaviour research not only is required to design information system (IS) and IR systems but also it is required to evaluate IS and IR systems.

To have a better understanding of information seeking behaviour, the next section looks at the concept of information seeking behaviour and its different elements including information need and seeking, search strategies and tactics, and relevance judgment criteria.
2.2 Information Seeking Behaviour

A large amount of literature exists on information behaviour and seeking. Based on this literature, information seeking behaviour covers many different topics including: information needs, information seeking, searching information, browsing information resources, re-finding information, search strategies and tactics, relevance judgment, information credibility and validation, information use, information generation, information sharing, information transfer, information avoidance, the context in which information seeking behaviour occurs, etc. This section does not cover all topics introduced by information seeking behaviour, however, the topics which are the focus of this research and relevant to journalists’ information seeking behaviour in social media will be discussed in more detail. The primary purpose of this section is to introduce the concept of information seeking behaviour and reviewing the literature of its main derivatives.

As “information seeking behaviour” research has been developed over a period of time, the term has come to cover more topics and aspects of information seeking and behaviour. In the early stage of research development, what was essentially taken into consideration were the information sources and information systems, and how they were used, instead of users, their needs and how they seek information. By realizing the role of user studies in delivering successful, efficient and effective IR systems, the emphasis shifted from system focus toward human, and from a system viewpoint to a cognitive viewpoint. Cool and Belkin (Cool and Belkin, 2011), indicate that the cognitive viewpoint “challenge the notion that ‘information’ is an objective entity that individuals can ‘receive’.” and they continue that “generally speaking, the cognitive viewpoint is centrally concerned with the effectiveness of building and sharing, through interaction, common mental models between interactants.”. Therefore it is essential to consider that information as an objective entity is to be perceived in relation to user cognitive structures. The importance of considering user cognitive structure in designing
and evaluating IR systems was also addressed by Taylor (Taylor, 1968) and Belkin (Belkin, 1980).

Information needs are commonly described as a stimulus to information seeking and lead users to interact with information systems. The concept of information seeking behaviour is introduced by defining “information need” first.

2.2.1 Information Need

“Need for information consists of the process of perceiving a difference between an ideal state of knowledge and the actual state of knowledge.” (van de Wijngaert, 1999)

“An information need is a recognition that your knowledge is inadequate to satisfy a goal that you have.” (Case, 2012).

Ikoja-Odongo and Mostert (koja-Odongo and Mostert, 2006) mention that “an information need is a requirement that drives people into information seeking”. However, Case (Case, 2012) argues that we cannot consider that actions a user takes are only triggered by an earlier need. Therefore, having a clear link between the initial need, and the actions users take to satisfy that need, is crucial (e.g. selection of an information source).

Harter (Harter, 1992) indicates that a user’s information need is almost equivalent to her or his current psychological state, and needs change when the user encounters each piece of relevant information. Every small piece of relevant information may cause new needs, which change a user’s state of knowledge. Likewise, Dervin’s sense-making methodology (Dervin, 1992) implies that new knowledge obtained from query results may change a user’s state of knowledge. Use of time and space in Dervin’s sense making approach denotes the constantly changing nature of information need.

Belkin et al. (N.j. Belkin et al., 1982) refer to information need by introducing the concept of the anomalous state of knowledge (ASK). An ASK emerges when there is an uncertainty or anomaly in user’s state of knowledge. Then the user seeks information, and if the anomaly is
not resolved, another ASK may be created. Case (Case, 2012) argues that information seekers always give up eventually, as always there is more to be known about a topic. However, the available resources and level of motivation of the information seeker inform the time of forsaking.

Therefore, it is obvious that it is a very big challenge to identify and determine a user’s real information need. Similarly, Belkin and Vickery (Belkin and Vickery, 1985) indicate that observing information needs during a search process is almost impossible because information needs reside in the user’s head and must be inferred by researchers. Moreover, it is also discussed that the user may not be aware of his/her true need, as the need is not necessarily a state of mind (Green, 1990). Hence, what IR systems actually capture is a query limited by the user’s ability to articulate her/his conscious need.

Although Forsythe et al. (Forsythe et al., 1992) pointed out that “No explicit consensus exists in the literature regarding the meaning of the central concept of information need ... in effect, information need, has been defined according to the particular interests and expertise of various authors.”, from different definitions and viewpoints on the concept of information need it can be inferred that information needs lead to information seeking.

Case (Case, 2012) indicates that “Researchers rarely bother to define information seeking explicitly, it is described as a reaction to the recognition of an information need- a somewhat circular definition”, however, he defines information seeking as “A conscious effort to acquire information in response to a need or gap in your knowledge.”. Also Case together with Given (Case and Given, 2016) develops the definition of “information seeking” and adds: “Information also comes through serendipity, chance encounters, or when others share information that they believe may be useful to you.”

Belkin (Belkin, 1980) refers to information seeking as a way that users can resolve an anomaly that exists in their state of knowledge which restrains them from achieving some
desired goals. Dervin (Dervin, 2005) conceptualizes information seeking as a gap-bridging process in which the user makes moves, in time and space to obtain the desired goal; information seeking is the overall process in which a user engages to fulfil a need to bridge a knowledge gap. Bryce Allen (Allen, 1996) employs the term of “behaviour” explicitly in defining information seeking: “Information seeking is the behaviour that is directly observable evidence of information needs and the only basis upon which to judge both the nature of the need and its satisfaction.”

However, Case and Given (Case and Given, 2016) use a separate definition for information behaviour which encompasses information seeking. Their definition of information behaviour is: “Information behaviour Encompasses information seeking as well as the totality of other unintentional or serendipitous behaviours (such as glimpsing or encountering information), as well as purposive behaviours that do not involve seeking, such as actively avoiding information”.

On the other hand, Wilson (Wilson, 2000a) defines information seeking behaviour as “the purposive seeking for information as a consequence of a need to satisfy some goal”.

In contrast to Case’s definition of information seeking and behaviour which is suitable for describing a wide range of relevant human behaviours dealing with information, Wilson’s definition does not cover the wide range of studies currently being carried out on human use of information, as his definition only encompasses and emphasizes the purposive activity of seeking.

In the context of information systems, when users feel a need for information, they employ various search strategies and tactics to search information and satisfy their information needs. Hence, the next subsection looks at the concept of search strategies and tactics, and the previous studies in this regard.
2.2.2 Search Strategies and Tactics

Search strategies and tactics (SST) have been one of the main research focuses in information seeking behaviour studies because they reflect users’ search behaviour and reveal meanings behind those behaviour (Xie and Joo, 2010). Electronic environments have transformed information seeking by enabling users to systematically employ search strategies and tactics (e.g. selecting terms or synonyms, using Boolean operators to formulate queries, etc.). Consequently, these strategies and tactics have influenced the subsequent design of IR systems to increase retrieval effectiveness while reducing online costs (Marchionini, 1995). Thus, the design of IR systems must facilitate search strategies and tactics; For example the subjunctive exploratory search interface to support media studies researchers designed and proposed by Bron et al. (Bron et al., 2012).

Since the 1970s, a number of search strategies and tactic have been described (Bates, 1979; Fidel, 1985; Harter, 1986; Harter and Rogers Peters, 1985; Marchionini, 1995; Markey and Atherton, 1978; Sabbar and Xie, 2016; Smith, 2012; Thatcher, 2006; Wilson et al., 2009; Xie, 2000; Xie and Joo, 2010). Although search strategies and search tactics are defined as “a plan for the whole search” (e.g. keyword searching) and “a move made to further a search” (e.g. broadening search terms) respectively (Bates, 1979), their conceptual boundaries are not always clear and the terms “search strategies” and “search tactics” are sometimes used interchangeably (Joho et al., 2015; Savolainen, 2016).

Therefore, search strategies and tactics (SST) can be considered as one concept and they are an essential element of information seeking and searching process, because they determine what information is important and should be retrieved, what information should be ignored, how to access and obtain the information, and finally stop the search process (Hjørland, 2011).
The concept of SST can be illuminated by exploiting Wilson’s nested model of information behaviour (Wilson, 1999) and it can be mapped onto the sub-category of information search behaviour. This model consists of three nested categories; information behaviour, information seeking behaviour, and information searching behaviour. Wilson considers information behaviour as an umbrella category covering the totality of human behaviour interacting with information. A subcategory is information seeking behaviour which includes the range of approaches and methods employed in discovering and gaining access to information resources. Information searching behaviour is a subcategory of information seeking behaviour; “Information searching behaviour is the ‘micro-level’ of behaviour employed by the searcher in interacting with information systems of all kinds. It consists of all the interactions with the system, whether at the level of human computer interaction (for example, use of the mouse and clicks on links) or at the intellectual level (for example, adopting a Boolean search strategy or determining the criteria for deciding which of two books selected from adjacent places on a library shelf is most useful), which will also involve mental acts, such as judging the relevance of data or information retrieved.” (Wilson, 2000b).

Based on Wilson’s nested model of information behaviour (Wilson, 2000b) and considering the fact that the concept of information search behaviour and information SST are closely intertwined, there are studies on users’ search behaviour to identify users’ SST employed. For example, Catledge and Pitkow (Catledge and Pitkow, 1995) used uncontrolled search logs analysis to study users’ navigation strategies in the World Wide Web (WWW). Moreover, Hert and Marchionini (Hert and Marchionini, 1998) studied users’ search behaviour on federal government statistical websites by the means of interview and capturing users’ transaction logs to infer users’ SST. In this study, search behaviour was not observed directly, however it was captured through transaction logs.
Savolainen (Savolainen, 2016) borrowed two aspects of the strategy concept (plan and pattern) characterised by Mintzberg (Mintzberg, 1987) to conceptualize SST in the information seeking behaviour research area. The plan aspect indicates that users form SST ahead of the actions to which SST are applied and users develop SST consciously and intentionally. From the perspective of pattern, SST can be seen as a pattern in a stream of behaviours. From this viewpoint, SST are not only placed at the level of plan, but also they can be realized in resulting behaviour. The pattern aspect strategy also indicates that SST are consistent in behaviour, whether intended or not.

Considering SST as plans and patterns in a stream of behaviours implies that SST may result from human behaviours but not human plans. This definition also indicates that plans may go unrealized, while patterns may appear without preconception. In other words, not all plans develop patterns and not all patterns that develop are planned. If the plan aspect of strategy is considered as intended strategy describing the plan before resulting behaviour, and the pattern aspect of strategy is considered as realized strategy describing the resulting behaviour in practice, then it is possible to distinguish “deliberate strategies, where intentions that existed previously were realized, from emergent strategies, where patterns developed in the absence of intentions, or despite them (which went unrealized)” (Mintzberg, 1987).

Savolainen (Savolainen, 2016) exploited the types of intended, realized, deliberate, and emergent strategies in addition to the plan and pattern aspects of strategy to provide a conceptual analysis on information SST.

Studies relating to SST have been carried out mainly in two ways: identification of SST and analysis of SST patterns (Xie and Joo, 2012). There are studies on SST concerning query formulation and reformulation (Fidel, 1985; Jansen et al., 2007; Markey and Atherton, 1978; Rieh and Xie, 2001, 2006; Shute and Smith, 1993; Vakkari et al., 2003; Wildemuth, 2004). However, Bates’ work (Bates, 1979) is one of the primary studies that extends the SST to
other components of the search process. She identified twenty nine SST and classified them into four categories which are applicable to both bibliographic and reference searches and in both manual and online systems. They are the monitoring, file structure, search formulation, and term categories. Marchionini (Marchionini, 1995) categorized SST into two main groups 1) analytical, and 2) browsing strategies and tactics. Analytical SST, are more intentional, planned, goal driven, and systematic, and browsing SST, are heuristic, opportunistic, and less formalized.

Smith (Smith, 2012) proposed thirty four (34) Internet\(^3\) SST of which eighteen (18) are inherited from Bates’ study (Bates, 1979). Catledge and Pitkow’s early findings on browsing strategies in Web (Catledge and Pitkow, 1995) proposed three classifications of the Web browser: serendipitous browser (short navigational sequences), general-purpose browser (average navigational sequences), and searcher (long navigational sequences). Navarro-Prieto et al.’s early studies on web searching strategies (Navarro-Prieto et al., 1999) identified three Web search strategies: top-down, bottom-up, and mixed.

Using thinking aloud, field observations and interviews, Fidel et al. (Fidel et al., 1999) studied the Web searching behaviour of eight high school students. They identified several SST including focused searching, landmarks, swift and flexible, etc. Hawk and Wang (Hawk and Wang, 1999) reported on problem solving strategies and tactics in Web searching. Their findings showed ten problem solving strategies and tactics: surveying, exploring, double-checking, link following, back and forward going, shortcut seeking, engine using, loyal engine using, engine seeking, and metasearching.

In a study of the cognitive search strategies of eighty participants on the World Wide Web (WWW), Thatcher (Thatcher, 2006) identified twelve search strategies: safe player (broad first, search engine narrowing down, search engine player, and known address search

\(^3\) We assume Internet is meant to refer to web.
domain), parallel player, link-dependent, to-the-point, known address, sequential player, deductive reasoning, and secondary search (virtual tourist, parallel hub-and-spoke). Later, He (Thatcher, 2008) also investigated the impact of Web experience and task type on these search strategies.

Using query log analysis, Rieh and Xie (Rieh and Xie, 2001, 2006) identified eight Web query reformulation strategies: specified, generalized, parallel, building-block, dynamic, multitasking, recurrent, and format reformulation. Based on Bates’ definition of search tactics and search strategies (Bates, 1979), Xie and Joo (Xie and Joo, 2010) identified thirteen types of search tactics during the Web-based search process by means of search logs and think-aloud protocols analysis. Then, they specified several search strategies derived from the analysis of sequential search tactics including iterative result evaluation, iterative exploration, query-initiation, and known-item exploration strategy.

By means of content analysis, Ondrusek et al. (Ondrusek et al., 2017) investigated the online searching behaviours of graduate library and information science students to identify their SST. They identified twenty two types of search strategies classified into four groups: conceive (the conceptualization of where to start a search and what terms and moves to use initially); combine (term combination); design (the architectural structure and re-design); and evaluate (assessment of results).

There are also efforts to learn and identify SST within a specific type of users (Aula et al., 2005; Aula and Kellar, 2009; Hölscher and Strube, 2000) or specific context (Ford et al., 2003) in the Web environment. Hölscher and Strube’s study (Hölscher and Strube, 2000) on Web search behaviour of experts and novices showed the impact of Web experience and domain knowledge on SST. Their findings indicate that a successful search process needs the combination of both domain knowledge and Web experience. Moreover, there are specific SST which are originated from Web experience or domain knowledge.
Aula et al. (Aula et al., 2005) reported the findings of a survey that examined information search and re-access strategies of experienced Web users. Their findings showed that the experienced Web users frequently employed key search strategies such as opening multiple tabs (several browser windows in parallel) or using a search engine to find the information again (re-access information). Later, Aula worked together with Kellar (Aula and Kellar, 2009) to study on the Web search strategies of multilingual searchers. They found that language switching within a search happened when information could not be found with the language used initially for the search. Moreover, their findings showed that the main reasons for searching in a non-native language were availability and perceived quality of information.

Similarly, Sabbar and Xie (Sabbar and Xie, 2016) benefited from grounded theory methodology to investigate scholars’ SST carrying out research in non-English languages in the USA. They identified sixteen search strategies which consist of seven informal resource strategies, four interactive human strategies, four formal system strategies, and one hybrid strategy.

There are also studies examining other aspects of Web search strategies such as temporal Web search strategies (Joho et al., 2013, 2015) and collaborative Web search strategies (Yue et al., 2012, 2014) which aimed to investigate SST employed in temporal and collaborative Web search respectively. Moreover, Savolainen (Savolainen, 2017) aimed to provide new insights into SST by examining the heuristic elements of SST for information.

As SST do not occur in vacuum, there are studies aimed to investigate the factors which have an impact on SST (Ford et al., 2005; Hienert et al., 2018; Kao et al., 2008; Liu and Wei, 2016; Liu et al., 2013; Navarro-Prieto et al., 1999; Thatcher, 2008; White et al., 2009; Wildemuth, 2004; Xie and Joo, 2012; Yue et al., 2014). Navarro-Prieto et al.’s examination (Navarro-Prieto et al., 1999) on the impact of Web experience and search tasks showed that regarding specific fact-finding search tasks, experienced users began their search with queries.
that embodied the given topic, employed a mixed strategy, and were flexible during their process. On the contrary, novice users began their search with general keywords and added the words presented in Web search results to narrow down the search gradually.

Wildemuth’s study (Wildemuth, 2004) on the search tactics of medical students searching a factual database in microbiology showed that domain knowledge (the searcher’s knowledge of the search subject or topic) has an impact on search tactics as the students’ search tactics changed over time when their domain knowledge changed.

Ford et al. (Ford et al., 2005) investigated the effects of human individual differences on Web search strategy, including cognitive and demographic factors, internet attitudes and approaches. Their findings suggested possible insights into the interplay between human individual differences and choice of the search strategy. Similarly, Kao et al. (Kao et al., 2008) examined the impact of thinking style (an affective factor) on search strategies. Their findings showed that different thinking styles have an impact on the maximum depth of exploration, the number of revisited pages, and the number of Web pages visited for refining answers.

Thatcher (Thatcher, 2008) examined the influence of Web experience and task type on Web search strategies. He investigated how the search strategies of eighty participants might differ with Web experience as they were involved in four information seeking tasks (two researcher-defined and two participant-defined tasks). He found that users with higher levels of Web experience and users with lower levels of Web experience employed different patterns of search strategies. He also reported the impact of task type on search strategies.

Using multiple data collection methods including prequestionnaire, think-aloud protocols, log analysis, diaries, and post-questionnaires, Xie and Joo (Xie and Joo, 2012) examined how different factors in relation to the task, users’ knowledge, the search process, and the system influence users’ search tactic selection. Their findings showed seven factors affect search
tactics selections which consist of search task types, work task types, search skills, familiarity with topic, search phases, search session length, and system types.

There are few studies on identifying users’ SST on the social environment on the Internet. Jeon and Rieh (Jeon and Rieh, 2015) investigated SST on a social Q&A service (Yahoo! Answers) by interviewing 78 participants and analysing their 406 questions posted on Yahoo! Answers over one week. Aligned with Bates’ definition of SST (Bates, 1979), they identified five search strategies (question formulation strategies) and fifteen search tactics (question formulation tactics) classified into two different dimensions of answer quantity and answer quality.

Using talk-aloud protocol and video capture, Evans et al. (Evans et al., 2010) investigated the search behaviour of eight subjects on social resources (e.g. calls or emails to friends, social network, or Q&A sites), and non-social online resources (e.g. search engines). Their findings on SST showed six behavioural patterns in the search process: targeted asking, network asking, checking for replies, searching, thinking, and other. However, the first three search strategies (targeted asking, network asking, checking for replies) are not relevant in non-online social resources.

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Tactic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Answer-Quantity Oriented</td>
<td>Attract the attention of potential answerers</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Lower barriers for potential answerers</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Answer-Quality Oriented</td>
<td>Contextualize a question</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Narrow down options</td>
<td>Provide main characteristics/aspects of what the asker is looking for</td>
</tr>
<tr>
<td></td>
<td>Explain the focus that the asker is looking for</td>
</tr>
<tr>
<td></td>
<td>Indicate the type of information the asker wants</td>
</tr>
<tr>
<td></td>
<td>Describe what is not an option for the asker</td>
</tr>
<tr>
<td>Target a specific audience</td>
<td>Use jargon in a question</td>
</tr>
<tr>
<td></td>
<td>Put a title with main ideas in a question section</td>
</tr>
</tbody>
</table>

Figure 2.2. Jeon and Rich’s findings on Question-Formulation Strategies and Tactics (Jeon and Rieh, 2015).
The targeted asking strategy referred to a situation when users targeted specific friends to ask for information one-on-one through email or instant messaging or telephone conversations. The network asking strategy referred to a situation when users posted questions on social media sites (e.g. Twitter) or on a social Q&A service (e.g. Yahoo! Answers). The checking for replies strategy referred to a situation when users checked to see whether they receive any responses and it only occurs if users were involved in either network or targeted asking strategy. The searching strategy referred to a situation when users used the search function of social networking or social Q&A sites. The thinking strategy referred to a situation when users contemplated an answer or synthesized information they had discovered. The other strategy referred to a situation when users socialized with friends or the researchers.

Reviewing the literature on information SST indicates that different studies employed different data collection methods to identify SST including experiments, Web and transaction logs, survey, interviews, observation, and verbal protocols (Aula et al., 2005; Choo et al., 2000; Fidel et al., 1999; Hawk and Wang, 1999; Hert and Marchionini, 1998; Hölscher and Strube, 2000; Hsieh-Yee, 1998; Navarro-Prieto et al., 1999). Several studies also examined search strategies, tactics and behaviour in natural settings (Choo et al., 2000; Kafai and Bates, 1997; Large et al., 1999)

This subsection explored the concept of SST, mapped the concept of SST onto the concept of information search behaviour and then examined the literature on the identification of SST. The related work on the identification of SST included the literature on SST in online systems (e.g. database), Web, and social environments and resources was discussed. Moreover, this subsection covered the literature on SST within specific type of users (e.g. novice, and expert users) and specific contexts (e.g. temporal, and collaborative search) in the Web. Finally, this subsection also showed that there are studies that investigated the factors which have an impact on SST. Therefore, while prior work has identified SST in online
electronic environments (e.g. databases), Web, and social environments (e.g. Yahoo! Answers), and also investigated factors influence SST, little work has examined SST in the context of the social media. Moreover, there is no study conducted to explore journalists’ SST and its determinants on social media which show a gap in the literature to be studied. After searching information through employing SST, users apply different relevance criteria to judge the relevancy of information which satisfies their information needs. Therefore, the next subsection discusses the concept of relevance judgement criteria and prior studies in this regard.

2.2.3 Relevance Judgement Criteria

Since the 1970s, a general trend is to regard relevance as a subjective (user-based) concept in contrast to the objective (system-based) one during the 1950s and 1960s (Borlund, 2003; Ingwersen and Järvelin, 2005; Mizzaro, 1997; Saracevic, 1997; Schamber, 1994). However, before the 1970s there were a few studies such as Gull’s study (Gull, 1956), which indicated that users’ relevance judgements are subjective. Swanson explains the subjective concept of relevance as: “the relevance to a request of any book, journal article, document, or other piece of information (loosely referred to here as a "document") has often been defined by the response of the requester. That is, whatever the requester says is relevant is taken to be relevant; the requester is the final arbiter, it is argued, because an information-retrieval system exists only to serve its users. Relevance so defined is subjective; it is a mental experience.” (Swanson, 1986).

The objective approach (system-driven) uses algorithmic topicality to judge relevance and it is context free (objective), while, the subjective approach (user-oriented) considers relevance to be a subjective individualized mental experience that involves cognitive restructuring (Swanson, 1986). Saracevic also provides a similar explanation with regard to system-driven (objective) and user-oriented (subjective) relevance judgement “Users derive relevance based
on a relation between a given context and information or information objects as given. Systems create relevance based on a query as given and algorithmic processes that connect queries and information or information objects in the system.” (Saracevic, 2016).

Therefore, although these two approaches are different in nature, they also indicate different degrees of intellectual involvement (Borlund, 2003). These two approaches were regarded as two main classes of relevance (Borlund, 2003): 1) system-based relevance (objective relevance); and 2) user-based relevance (subjective relevance).

More than two decades ago Saracevic (Saracevic, 1996) distinguished five types of relevance which he regards them as manifestations of relevance. More recently, he (Saracevic, 2016) proposed the same types of relevance based on the work of Saracevic (Saracevic, 1997, 2007), Cosijn and Ingwersen (Cosijn and Ingwersen, 2000), Borlund (Borlund, 2003), Ingwersen and Järvelin (Ingwersen and Järvelin, 2005), Cosijn (Cosijn, 2010), and Belkin (Belkin, 2016). They are 1) System or algorithmic relevance which refers to the relation between a query (terms) and information objects retrieved by a given algorithm; 2) Topical relevance which is associated with subject aboutness criterion; 3) Cognitive relevance or pertinence which describes the relation between the user’s cognitive state of knowledge, and the information objects retrieved; 4) Usefulness or situational relevance which depends on the user’s interpretation of the situation, task, or problem; and 5) Affective relevance which is based on the user’s goals, intentions, motivations, and emotions.

With regards to the type of topical relevance, Borlund (Borlund, 2003) differentiates between subjective types and algorithmic types of topical relevance and regards the subjective type as “intellectual topicality”. Then she classified the last four types of relevance (except the first one) proposed by Saracevic (Saracevic, 1996, 2016) into the class of user-based relevance (subjective relevance). She also argues that the types of relevance within the class of user-based relevance (subjective relevance) as a generic concept may “refer to the aboutness,
usefulness, usability, or utility of information objects in relation to the fulfilment of goals, interests, work tasks, or problematic situations intrinsic to the user.” (Borlund, 2003).

The subjective characterization of relevance makes the concept of relevance multidimensional, dynamic and context dependent and refers to “the various degrees of intellectual interpretations carried out” by individual (Borlund, 2003), or in other words, “relevance is not stated, but implied” (Saracevic, 2007); it shows how different users perceive and assess the relevance of information differently and how this relevance changes over time and as the context changes for the same user (Tang and Solomon, 1998).

On the other hand, the concept of relevance (subjective relevance) is inextricably intertwined with users’ information needs. Borlund (Borlund, 2003) conceptualizes relevance as the relationship between the user’s perceptions of the usefulness of a retrieved information object, and user’s information need. Therefore, an information object is relevant to a user if it satisfies users’ information needs at the particular time and place.

Saracevic (Saracevic, 2016) argues that the concept of relevance is “the basic notion underlying any and all IR systems” and the main aim of all researches in information retrieval (IR) systems is to improve the relevance of the retrieved results to the query posed. Similarly, Garcia-Molina et al. (Garcia-Molina et al., 2011) argue that the aim is to give users only information that is of relevance and interest, at the right place and time, however, they conclude that one of the essential problems is how to identify information objects which satisfy a user’s information need.

Subjective relevance has been also called psychological relevance (Harter, 1992), pertinence (Belkin and Vickery, 1985; Howard, 1994), and situational relevance (Barry, 1994; Bruce, 1994; Hjørland and Christensen, 2002; Park, 1997; Saracevic, 1975; Wilson, 1973).

As the relevance of perceived information objects is judged by various criteria, the following looks at the past work in this regard.
Although the concept of relevance is conceptualized as the relationship between perceived information objects and information needs, relevance judgement criteria discuss the parameters which an individual employs to assess the relevance of a perceived information object in relation to the information need. Schamber et al. (Schamber et al., 1990) argue for the significance of relevance criteria studies and propose that “an understanding of relevance criteria, or the reasons underlying relevance judgment, as observed from the user’s perspective, may contribute to a more complete and useful understanding of the dimensions of relevance.”

Many studies have been conducted to explore the criteria employed by users to judge the relevance of perceived information in different contexts; e.g., weather information users using different information sources (Schamber, 1991), bibliographic citation by academic users (Park, 1993), students and faculty using online free search (Barry, 1994), undergraduate students searching on a virtual library (Fitzgerald and Galloway, 2001), Web search (Google) users (Toms et al., 2005), healthcare professionals searching for medical images (Shahram Sedghi et al., 2012), evaluating answers in a social Q&A site (Yahoo! Answers) (Kim et al., 2007; Kim and Oh, 2009), searching images on Web (A Hamid and Thom, 2010; Hamid et al., 2016), searching videos (Yang, 2005), etc.

Barry (Barry, 1994) and Schamber (Schamber, 1991) conducted two different and independent, empirical studies of the criteria which users employ in judging the relevance of documents. Barry (Barry, 1994) identified twenty three relevance criteria classified into seven groups, and Schamber (Schamber, 1991) identified thirty two relevance criteria, which consist of ten summary-level categories of relevance criteria and twenty two detailed relevance criteria. Later, they (Barry and Schamber, 1998) compared and contrasted the results of their two empirical studies. Their comparative study showed a considerable overlap of criteria employed by the users of the two studies to judge the relevance of documents.
They categorized the common criteria for both studies into ten groups. Their findings (Barry and Schamber, 1998) convey that two different group of users (academic users and weather information users) in different contexts used noticeably common relevance criteria. Moreover, their findings showed that not only utility, pertinence, and motivational relevance are important to users, but also criteria relating to the quality (e.g. accuracy, and tangibility) and the cost (e.g. availability and accessibility) of the documents.

However, Hertzum et al. (Hertzum et al., 2002) argued that criteria related to the quality and the cost of documents are not directly concerned with the user’s information need, and accordingly, “they do not fit into the definition of relevance as a relation between a corpus of documents and different aspects of an information need”. Consequently, they concluded that users are concerned with other factors besides relevance.

Vakkari and Hakala (Vakkari and Hakala, 2000) incorporated the study of relevance criteria in their longitudinal study of students’ information seeking and searching behaviour during an academic project based on the framework developed by Kuhlthau (Kuhlthau, 1993). Their findings showed that as the user’s mental model changes, the relevance criteria applied change as well. In other words, the user’s relevance criteria change as the user’s information need change and develop. Moreover, complex information needs might consist of several sub-information needs which accordingly require different relevance criteria.

Considering sub-information needs, and their precedence, which are represented by different relevance criteria, may explain the complexity of the relevance judgement process. The degree of relevance (Borlund, 2003) (e.g., relevant, partially relevant, not relevant) and the weight given to different criteria (Saracevic, 2016) are other aspects of relevance judgment which add more complexity to this process.
There are also studies which aim to investigate relevance criteria employed by users in the Web environment (Crystal and Greenberg, 2006; Hamid et al., 2016; Taylor, 2012; Toms et al., 2005; Watson, 2014; Xu and Chen, 2006).

Toms et al. (Toms et al., 2005) used the types of relevance proposed by Saracevic (Saracevic, 1996, 2016) to study the relevance criteria employed by the general public in judging the relevance of results retrieved by a Web search engine. Toms et al. required 48 participants (29 women and 19 men) to complete four search tasks in four subject domains (one from each of the four subject domains). For each search task, participants completed four steps 1) pre-search questionnaire, 2) conducting the search, 3) post-search questionnaire, and 4) semi-structured interview. They identified eleven relevance criteria and mapped them onto the types of relevance proposed by Saracevic (Saracevic, 1996).

On the basis of Grice's theory of communication (Grice, 1989), Xu and Chen (Xu and Chen, 2006) suggested five main relevance criteria: novelty, reliability, topicality, understandability, and scope. Then, they tested their hypothesis by conducting a semi-controlled survey. They recruited 132 undergraduate and graduate students to do a Web search. The participants were given four search tasks and asked them to select one which interests them most. A monitoring program was also used to capture the browsing history and the time spent on each Webpage. The participants’ Web searches resulted in 262 documents to investigate relevance judgment criteria employed. They found that novelty and topicality were the two most important criteria to judge the relevance of document, followed by reliability and understandability.

Crystal and Greenberg (Crystal and Greenberg, 2006) recruited twelve participants (nine females and three males) from the local community and university to study relevance criteria used by health information users during Web searches. The participants were professionals and students with different domain knowledge backgrounds. Participants were asked to use a
search engine and then highlight any terms of interest for each document in the first page of search results. After evaluating the results, participants were interviewed using a think-aloud protocol. Using content analysis of the data collected, Crystal and Greenberg found that the most frequently identified criteria were topical ones, but these did not constitute even a majority of identified criteria. Also, their findings imply that Web users’ relevance judgement is complex and multifaceted, drawing on a range of document and locations criteria.

Taylor (Taylor, 2012), in a quantitative study of the information search behaviour of the millennial generation on the Web environment (80 university undergraduate students born between 1982 and 2000), identified ten relevance criteria which changed most as the student moved through the search process. Taylor based his research on the search stage model suggested by Wilson (Wilson, 1999) which developed from the information behaviour model of Ellis (Ellis, 1993) and the search process model of Kuhlthau (Kuhlthau, 1993). He also used a subset of relevance criteria identified in prior studies by Barry (Barry, 1994), Barry and Schamber (Barry and Schamber, 1998), and Cool et al. (Cool et al., 1993) to study users’ relevance criteria judgement. His findings on relevance criteria showed that users tended to choose the amount of information, recency, and depth as criteria more in the earlier search phases than in later phases.

Using grounded theory methodology, Watson (Watson, 2014) conducted an exploratory study to identify secondary students’ relevance judgement criteria which had a strong emphasis on the use of the Internet. He collected data from thirty-seven participants using one or more of these data collection methods: interviews, journals, think-aloud protocol, questionnaires, and video screen captures. His findings showed that Wikipedia and Google were appealing and used most often. Also, students used titles, summaries (snippets), and connectedness to topic as main criteria to judge the relevance of information.
There are few studies which aim to identify relevance criteria employed by users on social Q&A environment on the Internet (Kim et al., 2007; Kim and Oh, 2009). Other studies in the context of relevance judgement and social Q&A environment aimed to examine a specific relevance criterion such as credibility (Jeon and Rieh, 2013; Kim, 2012), or quality (Oh et al., 2012).

Using content analysis, Kim et al. (Kim et al., 2007) studied the criteria employed by users to select the best answers in Yahoo! Answers. They collected and analysed 456 samples of comments along with the question asked and the best answer selected from Yahoo Answers!. Twenty four criteria were identified and classified into seven categories: socio-emotional value, cognitive value, content value, extrinsic value, information source value, utility, and general statement.

In a similar effort, Kim and Oh (Kim and Oh, 2009) collected 2,140 comments from Yahoo Answers!, and employed content analysis method to identify twenty three criteria subsumed under six classes: socioemotional, cognitive, content, information sources, utility, and extrinsic. Their findings showed that the criteria used in social Q&A environment have significant overlap with the criteria discovered in other relevance studies conducted in different contexts, however, the class of socio-emotional criteria dominate other class of criteria which reflect the social aspect of this environment.

When it comes to the context of journalism, there are not many studies on relevance judgment criteria. Markkula and Sormunen (Markkula and Sormunen, 1998, 2000) studied journalists’ relevance judgment criteria in the context of a digital photo archive in Aamulehti news media, one of the largest daily newspapers in Finland. Through a field study, Markkula and Sormunen observed and interviewed eight journalists who conducted twenty illustration tasks to find photos in the Aamulehti digital photo archive. Their findings indicated that the relevance criteria employed by journalists when seeking photos on the Aamulehti digital
photo archive can be classified under four categories: 1) topical attributes 2) technical attributes 3) contextual attributes 4) visual attributes. Journalists of this study mainly relied on the caption text related to the photos in judging the topical relevance of the photos. Also, technically quality, cost of the photo, publication date, the article type, and article style were the factors used by journalists to judge the technical, contextual, and visual relevance of the photos. Moreover, Markkula and Sormunen observed that although the topical criteria were used mainly in the first phase of selection, the visual criteria were used in the last phase of photos selection after the selected photos were found to be topically, technically and contextually acceptable. Additionally, the criteria and their weights were observed to depend on the work situation (Markkula and Sormunen, 1998).

Hung et al. (Hung et al., 2005) investigated relevance criteria used by ten undergraduate students from journalism and media studies when searching images on the AccuNet/AP Photo Archive database system. The participants were given three types of search task (specific, general, and subjective) based on Shatford’s image analysis (Shatford, 1986). Completing each search task was followed by an interview describing the relevance criteria employed and answering a Likert seven-point scale questionnaire to indicate the usefulness of text representations in judging the relevance of images. Then content analysis and quantitative methods were employed to analyse the interviews and questionnaires. Hung et al.’s (Hung et al., 2005) findings showed that journalist students employed several different criteria to judge the relevance of the images in completing three types of search tasks. They were: preference, posture, facial, familiarity, context, impression, feature, appearance, action, aesthetic, text, were typicality, and emotion. Also, typicality, aesthetic, and emotion criteria were observed to be most common across all three search tasks, however, typicality was identified as the most recurring relevance criterion in this study; “Typicality is a criterion that can exhibit universal representation of an object in a photo“ (Hung et al., 2005).
There are also studies which aimed to investigate the factors which have an impact on users’ relevance judgement; e.g. the impact of topic familiarity on the relevance criteria employed (Wen et al., 2006), the impact of knowledge, confidence, and interest in relevance judgement (Ruthven et al., 2007), the effects of task and topical knowledge in judging the relevance of websites (Lee and Pang, 2017), the impact of information task type and document genre on perceptions of usefulness (Freund, 2013), and the impact of foreign language and task scenario on relevance judgement (Hansen and Karlgren, 2005).

Reviewing the literature on identifying user’s relevance criteria shows that data collection methods used in different studies to elicit the criteria employed in judging the relevance of perceived information include interview, observation, survey, thinking aloud protocol, field study, experiments, comments analysis etc. (Barry, 1994; Crystal and Greenberg, 2006; Kim and Oh, 2009; Schamber, 1991; Shahram Sedghi et al., 2012; Toms et al., 2005; Vakkari and Hakala, 2000; Watson, 2014)

Other techniques employed to study relevance judgement include relevance feedback (Kelly, 2005; Ruthven et al., 2003), eye-tracking (Balatsoukas and Ruthven, 2012; Gwizdka, 2014), and brain imaging (Allegretti et al., 2015; Eugster et al., 2014), however, none of these approaches aimed at identifying the relevance criteria employed by users.

This subsection explored the concept of relevance judgement, then employed the concept of subjective relevance judgement to examine the past work on relevance judgement criteria. Reviewing the literature on relevance judgement criteria covered relevance judgement criteria studies in different context including online systems, web, social environment, and journalism. Moreover, this subsection showed that there are studies examined the factors which have an impact on relevance judgement.

Barry and Schamber’s studies (Barry, 1994; Barry and Schamber, 1998; Schamber, 1991) indicate that relevance criteria and the significance of a particular criterion is context
dependent and might change during time. Therefore, while past work has identified relevance judgement criteria in different contexts including online systems, web, social environments, and journalism and also investigated factors influence relevance judgement, little work has examined relevance judgement criteria in the context of the social media or journalism. Furthermore, there is no study conducted to investigate journalists’ relevance judgement criteria and its determinants in the context of social media which show a gap in the literature to be studied.

Many researchers have tried to depict their findings on users’ information seeking behaviour in form of models. The next sections discuss some of the highly cited information seeking models followed by the significance of considering context in ISB studies.

2.3 Models of Information Seeking Behaviour

Models are simplified representations of reality. Models describe important concepts (variables) and depict their relationships, often as a graphic or through a diagram. Models may develop into a theory, however, as they describe a phenomenon of interest within a chosen context, and so are often more specific than theories.

Many information seeking behaviour models have been developed and proposed. However, they are different from each other based on their context, scope, structure, objective, etc. Some of the models are proposed to be general (e.g. Dervin’s gap-bridging and Wilson’s information seeking models) while the others are context-specific (e.g. Bystrom and Jarvelin’s work-task information need and seeking model). Case (Case, 2012) argues that, there are dozens of examples of information seeking behaviour models which never quite work, due to the complexity of the models, combining different models with different levels of abstraction and ignoring the intention of the original authors.

This section discusses some of the information seeking behaviour models which have an impact on ISB or IR studies. For example, time and space in Dervin’s model indicate the
dynamic nature of information needs, and Wilsons’ models show that information needs are formed in a context, etc.

2.3.1 Dervin’s Sense-making model

Dervin (Dervin, 1992, 1998, 2005) explains the origins of information needs by employing the concept of sense-making. Her description of sense-making describes how an individual infers and interprets information to use for her/his own information related decisions. She refers to information need as an urge to make sense of a current situation when an individual encounters a knowledge gap. Dervin’s sense-making model uses a gap-bridging metaphor to demonstrate how an individual seeking for information makes sense of the current situation and moves forwards to reach the goal. Then information seeking starts to bridge the gap in which the user makes moves, informed by information, at a particular point in time and space to obtain the desired outcome. Each new move, which happens in a particular situation and connected with a specific context, requires another step of gap-bridging. Communication is essential to the gap-bridging process to acquire desired information. In Dervin’s sense-making model, seeking information makes sense of the current situation.
2.3.2 Wilson’s Information-seeking Behaviour Models

A series of models in information seeking behaviour were developed by Wilson (Wilson, 1999, 1981, 1997, 2000b). He describes the trend as “evolution in information behaviour modelling”. One of his key models is “The information user and the universe of knowledge” which is shown in Figure 2.4. This model proposes three different aspects of information seeking: 1) the context of the user 2) the information system used 3) the information resources. All of these components occur within “universe of knowledge” that might be used directly by the user or the intermediary.
Wilson developed the concept of the context of the user, which may lead to a need for information by introducing a new model as shown in Figure 2.5. In this model which he names “Information needs and seeking”, Wilson classifies the context of the user into three groups: 1) personal 2) social role 3) environmental context. Also, he introduces three different type of needs that lead to information seeking behaviour: 1) physiological 2) affective 3) cognitive needs. This model implies that different types of needs (e.g. physiological, affective, cognitive needs) are bounded and formed in contexts leading to information seeking behaviour. However, he suggests that information need is not a helpful concept for research purposes because needs are internal mental states and in contrast to behaviour which is observable, needs are not.
Wilson then integrates the two models above and the related studies of other fields into a new general model of information seeking behaviour (Figure 2.6). He employs explicit theories from other fields to explain causal relationships in the model. He uses stress/coping theory from psychology to explain why some perceived needs bounded in contexts lead to information seeking, while the others do not. Based on stress/coping theory if the level of stress is not high enough, it may not activate seeking activities. He exploits risk/reward theory from consumer research and social learning theory from psychology to explain why some information sources are used more than others and why some users may pursue an aim successfully, while other users may not. In other words, the last two theories explain the effort of information seeking. As these three theories are employed to explain what prompts a user to seek for information, how and to what extent, Wilson labelled them as ‘activating mechanisms’. Wilson also introduces intervening variables such as psychological and demographic variables which influence the activating mechanisms. They may affect information seeking activities as barriers or they may be considered as support for information seeking activities.
Wilson’s new model also introduces a different type of information seeking behaviour: passive attention, passive search, active search, and ongoing search. There is also a feedback loop which implies that information processing and use are evaluated according to its needs and the process of seeking may start again if the need is not satisfied.

Wilson indicates that (Wilson, 2005) that his general model of information seeking behaviour has developed over time and Figure 2.5 is an elaboration of the box labelled “person in context” in Figure 2.6. However, Niedwiedzka (Niedźwiedzka, 2003) provides analyses and criticisms of Wilson’s general model of information seeking behaviour and suggests some amendments. Particularly, Niedwiedzka indicates that separation of ‘the context’ from the intervening variables and the person is not required because the person and the intervening variables are part of the context.
2.3.3 Ellis’s Descriptive Model

Ellis (David Ellis et al., 1993; David Ellis and Merete Haugan, 1997; Ellis, 1989, 1993, 2005) provides a descriptive model of information seeking activities based on his empirical studies of academic scientists (Ellis, 1993), then physicist and chemists (David Ellis et al., 1993), and later industrial engineers and scientists (David Ellis and Merete Haugan, 1997). Ellis’s model was developed based on a grounded theory methodology and provides a series of descriptive paragraphs rather than a diagram or chart. He also indicates that this descriptive model does not represent a fixed sequence of activities, and the sequence of activities might change and be iterative. Ellis’s model portrays eight types of activities to describe typical stages of research projects (research lifecycles):

- Starting: the initial stage of information seeking activities including identifying relevant sources
- Chaining: following chains of citations or other forms of links among resources
- Browsing: semi-directed search in different sources such as table of contents, abstracts and subject headings
- Differentiating: evaluating and filtering sources based on differences in their quality, origin of the sources, etc.
- Monitoring: staying abreast of developments in a particular realm of interest by regular following of key sources
- Extracting: systematic checking of a selected source to extract relevant materials
- Verifying: checking whether information is correct
- Ending: further searching for information at a project’s completion

As Ellis’ descriptive model developed from empirical studies, no causal factors are depicted in this model. Perhaps for that reason, Ellis introduces the model as a behavioural model rather than a process model. He emphasizes that this behavioural model does not address
cognitive or affective aspects of information seeking and his focus of the study was on behaviour rather than cognition because a behavioural method for user modelling would be more practical than cognitive methods in information retrieval (Ellis, 2005). Despite the applicability of Ellis’s model to various groups of researchers from different domains, Jarvelin and Wilson (Jarvelin and Wilson, 2003) criticize the model for not having clear causal factors that might explain information seeking behaviours directly.

Wilson (Wilson, 1999) provides a graphic process model of Ellis’ descriptive model (Figure 2.7). However, Figure 2.7 does not propose any order of seeking activities, as there is only one arrow to show that verifying stage is the penultimate activity in this process model.

Figure 2.7. Ellis’s descriptive model of information seeking depicted by T. D. Wilson (Wilson, 1999).

Ellis’ model has been extended by Meho and Tibbo (Meho and Tibbo, 2003) and by Bronstein (Bronstein, 2007) in the studies of social scientists and Jewish scholars respectively. Meho and Tibbo introduce new information seeking activities which are:

- Accessing: acquiring information objects;
- Networking: networking and retaining personal relationships with a broad range of people who have similar interest;
- Information managing: organizing information to make research process easier

Wang et al (Wang et al., 2007) employed Ellis’s model to study information seeking behaviour of academic researchers in the Internet age. Wang et al re-structure Ellis’s model
and introduces two categories to cover new developments in the digital era: 1) general information seeking activities for long-term research needs which consist of monitoring, browsing, managing, and archiving, and 2) task-based information seeking activities for the project lifecycle which are starting, searching, accessing, chaining, and ending.

2.3.4 Kuhlthau’s Information Search Process

Kuhlthau (Kuhlthau, 2004) developed a descriptive model of information search process based on longitudinal and empirical studies over two decades. The development of Kuhlthau’s model started with the qualitative methodology of adolescent and college students. Later Kuhlthau verified and refined the model by using quantitative methods of library users and then case studies. Based on learning theories, particularly personal construct theory of George Kelly (Kelly, 1963), Kuhlthau emphasizes that an information search process model addresses “intellectual access” (interpretation of information and ideas within sources) to information and ideas and depicts information seeking as a process of construction in a learning context in which users are required to move through the stages to accomplish a complex task. She provides a two-dimensional model to describe how users’ experiences and constructs change as they move through the stages of information search process. She investigates three aspects of users, namely, feelings (affective aspect), thoughts (cognitive aspect) and actions (physical aspects) in six stages of information searching process.

- **Initiation** - users become aware of knowledge gap or uncertainty. This stage is the origin of an information need and seeking for information.
- **Selection** - users identify and select topics of interest. At this stage, users feel optimistic about the process and assess the level of their personal interests in topics, the necessity of tasks, time allocated and availability of information.
- Exploration – feeling of confusion, doubt, uncertainty and frustration arise as users encounter inconsistent and incompatible information.

- Formulation – users’ focus is increased and doubt and uncertainty reduce as users’ knowledge and confident start to develop and the clarity of purpose is going to be achieved.

- Collection – at this stage, the effort is on gathering and collecting of relevant documents to the focused perspective and users become more interested, involved and confident.

- Presentation – the search process is completed and users are ready to put their learning into practice.

<table>
<thead>
<tr>
<th>Initiation</th>
<th>Selection</th>
<th>Exploration</th>
<th>Formulation</th>
<th>Collection</th>
<th>Presentation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feelings (affective)</td>
<td>Uncertainty</td>
<td>Optimism</td>
<td>Confusion/ frustration/doubt</td>
<td>Clarity</td>
<td>Sense of direction/confidence</td>
</tr>
<tr>
<td>Thoughts (cognitive)</td>
<td>Vague</td>
<td></td>
<td>Focused</td>
<td></td>
<td>Increased interest</td>
</tr>
<tr>
<td>Actions (physical)</td>
<td>Seeking relevant information</td>
<td>Exploring</td>
<td>Seeking pertinent information</td>
<td></td>
<td>Documenting</td>
</tr>
</tbody>
</table>

Figure 2.8. Kuhlthau’s Information Search Process (Kuhlthau, 2004).

Kuhlthau identifies different emotions that users encounter in the stages of information search process. She particularly emphasizes the role of uncertainty in motivating the search for information. Kuhlthau’s model is a pioneering effort that study emotions, cognitions and actions with an interplay of them that happen during information search process.

### 2.3.5 Bystrom and Javerlin’s Work Task Information Seeking Model

Bystrom and Jarvelin (Byström and Järvelin, 1995) develop a process model based on work of Mike et al (Mick et al., 1980) to demonstrate information need and information seeking in the real-life work context. This model implies that the information seeking process begins with the perceived tasks, which are either given to or detected by users. The user then
analyses the needs based on the factors depicted in the model (personal and situational factors) to determine what information is needed. Personal factors (e.g., experience, education), situational factors (e.g., time constraints) and the user’s personal style of seeking mediate both the analysis of information need and the actions taken by the user. The user plans for actions to satisfy the needs. Further, the user implements and executes the plan. Once a course of action has been selected and executed, the user takes the final step in the process to evaluate the results to determine if further information seeking is required which shown as a feedback loop in the model. The outcome of evaluation which is influenced by the user’s personal style of seeking is an input into the analysis of information need.

![Diagram of Work Task Information Seeking Model](image)

Figure 2.9. Bystrom and Javerlin’s Work Task Information Seeking Model (Byström and Järvelin, 1995).

This model indicates that how the complexity of tasks influences information seeking behaviour. Tasks are perceived as complex if the inputs, process, and outcomes cannot be a priori determined. In other words, users perceive tasks as complex ones if they do not have a mental model that enables them to decide what is required to be done or to assess information efficiently. Bystrom and Jarvelin demonstrate that as the complexity of tasks grows, the need for more complex information also increases. Thus, the effectiveness of information seeking has a tendency to decrease with complexity.
Information seeking behaviour does not occur in vacuum. Thus the next section describes the concept of context and the importance of considering context in ISB studies.

2.4 Context of Information Seeking Behaviour

Information seeking behaviour occurs in contexts which changing and dynamic. In other words, contexts describe user behaviours in real-time and make them meaningful. Most of information seeking behaviour models including, Darvin’s sense-making (Dervin, 1998), Wilson (Wilson, 1999), Bystrom and Javerlin’s work-task (Byström and Järvelin, 1995), Savlainen’s everyday life (Savolainen, 2009), Ellis’s behavioural model (Ellis, 1989), Kuhlthau (Kuhlthau, 2004) and Ingwersen’s cognitive model (Ingwersen and Järvelin, 2005) depict the concept of context as elements or contexts which underlie the models. However, despite of importance of the concept of context in information seeking behaviour, the term context seems elusive as also Dervin points out that “After an extended effort to review treatments of context, the only possible conclusion is that there is no term that is more often used, less often defined, and when defined, defined so variously as context” and “Context is something you swim in like a fish. You are in it. It is in you” (Dervin, 1997). Therefore, identifying context is vital to information seeking behaviour studies. Donald Case classified the literature into three kinds of information seeking context: 1) occupation 2) social role 3) demographics (Case, 2012). Yet, for example, Wilson’s model refers to demographic, psychological, environmental, etc. data as intervening variables and not contexts.

In the era of real-time information, journalists have shifted from using traditional information sources to using electronic and digital information system such as the web and social media to satisfy their information needs (Hermida et al., 2014; Hossain and Islam, 2012; Newman, 2009). Although there are studies on journalists’ information needs and information seeking behaviour, they are not specifically targeted at the context of social media.
As the context of this research is defined by journalists (users) and social media, past work on journalists’ information seeking behaviour is described in the next section followed by journalists’ use of social media.

2.5 Journalists’ Information Seeking Behaviour

Elihu Katz (Katz, 1989), attempts to define journalism in his article “journalists as scientists”. Katz’s premise is that journalism fits in with the model of applied science better than other models of professions like doctors and lawyers as journalists have implicit theories about people, society, and events, which might enable them to predict what will happen next. On the other hand, he explicitly clarifies that it would be irrational to accept that “journalists have abstract codified theories, reliable methods, and a procedure for testing the validity of propositions derived from theory.” Unlike other professions like doctors and lawyers who serve individual clients rather than larger groups, Katz defines society as the clients of journalists. He also conceives of the aim of journalism as publicity, not secrecy and explains that journalists’ true vocation is to publish, regardless of consequences.

Wolton (Wolton, 1989), mainly agrees with Katz’s hypothesis but he considers journalists more as sociologists or political scientists than applied scientists, due to the objective nature of science. However, Wolton points out that compared to sociologists, journalists must produce information on a timely basis, and they do not benefit from the luxury of distancing themselves from events. “Thus while journalists and scientists share many points in common in the realms of rationalization, interpretation of reality, and production of information, their task still differ as to subject matter and the rhythm of their work.”

Goren (Goren, 1989) has completely different opinion to Katz. He implies that, as opposed to scientists, journalists do not have explicit theories and methods and they are not held responsible for the veracity of what they report. Similarly, Roeh (Roeh, 1989) avoids
comparing journalists with scientists, indicating what they do is telling stories rather than reporting facts.

Zelizer (Zelizer, 1993) proposes viewing journalists as an “interpretative communities”. Similarly, Campbell’s research (Fiona Campbell, 1997) agrees with this concept. Campbell considers news as something that is actively constructed within a variety of constraints imposed by time, space, intended audience, and the news organization. Campbell discusses that news is a product of a process that is transformed from raw information for the intended readership. She indicates that there are four types of tacit rules pertaining to the different part of news process namely, evaluative, operational, constructional/interpretative, and editorial rules. The news process starts by approaching an event, then journalists evaluate a potential story from the event (evaluative rules), gather background information and facts about the event (operational rules), and then construct the news by interpreting the gathered facts and background information (constructional/interpretative rules). Finally, the organizational requirements must be considered and applied prior to publishing the news (editorial rules). She argues that among other professions, journalists seem to employ the easiest information seeking and gathering options due to the nature of news process and its constraints. However, she indicates that the intended readership influence on the news angle of the story and consequently the ways journalists look for information.

Fabritius (Fabritius, 1999) conducted a qualitative study of journalists’ information seeking behaviour. She employed triangulation methods for data gathering including observation, interviews, and diaries to gain a deeper understanding of the role of digital information in journalistic practices and how journalists utilize the new information technologies including electronic databases, CD-ROM files, internet resources and email.

She uses the concept of information seeking behaviour in her research based on Marchionni’s definition which refers to both information seeking and retrieval process (Marchionini, 1995).
Her findings show that studies of information seeking and retrieval should be considered in a broader context. The contextual factors which include journalistic culture (value and norms, activities), culture of the specific journalistic medium, a department’s culture (e.g. sports department), and journalistic work practice influence information seeking behaviour indirectly. On the other hand, journalistic news item processing (the process of preparing a piece of news) along with journalistic constraints including time constraints impose concrete requirements on journalists’ information seeking behaviour.

Attfield and Dowell’s findings (Simon Attfield and John Dowell, 2003) are based on interviews with journalists for the London Times. The aim of their study was to model information-related activities of news journalists (e.g. searching, reading, highlighting) and they employed grounded theory methodology to achieve their findings and reach conclusions. They also examined the constraints imposed by the requirements of the product journalists produce.

Their findings indicate that the journalistic research and writing process consists of three stages: initiation, preparation, and production. The initiation phase is started by establishing an angle, the deadline and the required word-count. Although the angle is a dominant constraint, establishing a good angle is itself constraint driven. A good angle lies at the intersection of the constraints of newsworthiness, originality, and correspondence. At the preparation phase, originality checking, developing a personal understanding and gathering potential content all lead to information seeking activity. Although the aim of each activity in the preparation phase is different, all (except “gather information”) merge into a single information seeking activity which Attfield and Dowell consider as poly-motivation.
Figure 2.10. The journalistic research and writing process (Simon Attfield and John Dowell, 2003).

Moreover, they studied the role of uncertainty in the work of newspaper journalists and they concluded that there is a link between uncertainty about what a journalist wants (journalist’s perception of information relevance) and uncertainty about what a journalist is going to produce.

There are also studies on the impact of the factors, which influence the use of the Internet by journalists. Williams and Nicholas (Williams and Nicholas, 1997) investigated on how internet impacted on the work of journalists almost two decades ago. They (David Nicholas et al., 2000; Nicholas and Williams, 1999) examined the impact of the Internet on journalists’ information seeking behaviour in the media organizations and also the factors which influence the use of the Internet by journalists. Their findings indicate that job role, gender, ease of access, age experience, education and training are the factors which influence the use of the Internet by journalists.

Although qualitative methodologies are well suited to study journalists’ information seeking behaviour, quantitative methodologies have also been applied using questionnaires (Ansari,
2011; Ansari and Zuberi, 2010; Anwar and Asghar, 2009; Anwar et al., 2004; Hossain and Islam, 2012; Singh and Sharma, 2013).

Anwar, Al-Ansari, and Abdullah’s research (Anwar et al., 2004), which was used questionnaires, indicates that journalists mainly seek for fact checking, general and background information. They prepared the questionnaire by examining previous literature, and four categories of information type in the questionnaire were given to journalists, namely, fact checking, general information, background information and ideas for future articles. In addition, their research indicates that lack of time is the journalists’ top ranking problem.

Anwar and Asghar’s study (Anwar and Asghar, 2009) is the replication of Anwar et al.’s research (Anwar et al., 2004), although their findings are slightly different from the original study. Ansari and Zuberi (Ansari and Zuberi, 2010) also employed questionnaires, however, they did not explain how the questionnaire was designed. Although Ansari and Zuberi’s study focuses on the source of information, it also covers the comparison of print with broadcast journalists. Their findings indicate that radio journalists search much less than newspaper journalists.

Their next research on journalists’ information needs (Ansari and Zuberi, 2012) indicates that due to the time constraint in journalism, journalists mainly seek selective information rather than exhaustive information. Their findings indicate that the use of the Internet has increased among journalists. Hossain and Islam’s findings (Hossain and Islam, 2012) are similar to Ansari and Zuberi (Ansari and Zuberi, 2010) and indicate that the Internet was the most used information source. Singh and Sharma’s study (Singh and Sharma, 2013) shows that journalists’ information needs cannot be satisfied with one type of information source and their information needs and purpose of use of information have an impact on the use of information sources.
Other studies try to understand what types of information (topics) journalists share on social media (especially Twitter) by examining a considerable number of tweets posted by journalists (Brautović et al., 2013; Lasorsa et al., 2012). However, examining the information types shared by journalists on social media does not reveal their information needs on social media because journalists share information on social media for different purposes which might not lead them to satisfy their information needs. There is also research on the questions asked or posted on social media by surveying people or examining the tweets posted to understand how the questions posted shape the answers or to explore what type of information needs can be satisfied on social media (Hasanain et al., 2016; Morris et al., 2010; Teevan et al., 2013). However, examining questions posted on social media can only reveal a part of journalists’ information needs on social media and the reason is asking questions on social media is only one of the search strategies and tactics employed to satisfy journalists’ information needs. Journalists employ different search strategies and tactics on social media to satisfy their information needs.

This section shows that there is a gap in the literature on journalists’ information seeking behaviour on social media. As this thesis investigates journalists’ information seeking behaviour in the context of social media, the next section discusses the related work on journalists’ social media uses. The studies on journalists’ social media uses are mainly conducted in the domain of journalism research.

### 2.6 Journalists’ Social Media Uses

Using social media for professional purposes is not confined to journalists. There are number of studies that show how scientists, politicians or other professions use social media (Bik and Goldstein, 2013; Cruz and Jamias, 2013; Grajales III et al., 2014; Grant et al., 2010; Larsson and Kalsnes, 2014; Priem et al., 2012; Rowlands et al., 2011; Shuai et al., 2012; Van Eperen
Journalists use social media for different purposes. Different studies employed different methods and methodologies to point out the different use of social media in journalism. The related works on journalists’ use of social media are classified into five (5) subsections: 1) verifying information 2) networking and communication 3) promoting and branding 4) publishing, broadcasting and disseminating information and 5) satisfying information needs.

2.6.1 Verifying information

Verification is the essence of journalism (Kovach and Rosenstiel, 2007). Using of social media in journalistic processes inevitably has caused a shift in the verification conventions (Canter, 2015). Due to the challenges which journalists encounter in verifying and validating information retrieved from social media, there are guidelines on verification of information retrieved from social media, such as the verification handbook by Silverman (Silverman, 2014).

Also, news media organisations have started to prescribe verification strategies for social media content such as the BBC Verification Hub (Turner, 2012). Moreover, several researchers have studied journalists’ verification strategies on social media (Brandtzaeg et al., 2016; Carrera Álvarez et al., 2012; Hermida, 2012b; Shapiro et al., 2013; Wiegand and Middleton, 2016) and there are different studies on developing verification tools to help journalists in information verification and validation on social media (Diakopoulos et al., 2012; Schifferes et al., 2014). For example, the SocialSense tool uses different metrics (number of tweets, the frequency of tweets, the number of re-tweets, the ratio of followers to followings, the number of followers, popularity, and verified by Twitter) to give an initial credibility score to social media contributors (Thurman et al., 2016).
However, there are various informal strategies of verification which have not been translated into standard rules or practices (Kovach and Rosenstiel, 2007). Also, Shapiro et al.’s findings (Shapiro et al., 2013) suggest that verification and information-gathering are interweaved. Different studies on verification strategies on social media implies that journalists use social media itself for verification purposes through different verification strategies; asking questions on social media platforms to receive confirmation and verification (Hasanain et al., 2016; Vis, 2013), using trusted sources and access to eyewitnesses and authenticating sources through social media platforms (Brandtzaeg et al., 2016), and going through contributors’ timelines and those of their followers (Carrera Álvarez et al., 2012).

2.6.2 Networking and Communication

Communication and networking is the inherent nature of journalism, and different studies show that journalists use social media for networking, communication and engaging with their audience (Brautović et al., 2013; Carrera Álvarez et al., 2012; Hasanain et al., 2016; Hedman and Djerf-Pierre, 2013; Tandoc Jr. and Vos, 2015). However, communication and networking on social media may have different purposes. Several studies point out different reasons which lead journalists to social media for communication and networking; to provide professional accountability and transparency (Lasorsa et al., 2012), to enhance inclusion performance (Nel and Westlund, 2013), to curate information related to specific stories (Bruns and Burgess, 2012), to make content more visible (Meraz and Papacharissi, 2013), to promote (Hedman and Djerf-Pierre, 2013) or to enable networked gatekeeping and construct social reality (Xu and Feng, 2014).

2.6.3 Promoting and Branding

Previous studies show that journalists may use social media as a promotional tool to drive traffic to their websites (Messner et al., 2011), for self-promotion (Brautović et al., 2013), promoting content (Hermida et al., 2012; Herrera-Damas and Hermida, 2014), personal and
corporate branding (Hedman and Djerf-Pierre, 2013), or the category of “promoting” indicated in the findings of Tandoc & Vos’ studies (Tandoc Jr. and Vos, 2015).

However, in Weaver and Willnat’s study (Weaver and Willnat, 2016), enhancing credibility and self-promotion are considered as the effect of using social media on journalists.

2.6.4 Publishing, Broadcasting, and Disseminating Information

Different studies agree on the point that social media is used by journalists for publishing, broadcasting and disseminating information, although it is described differently such as reporting, breaking news, distributing information, opining, sharing, and etc. (Brautović et al., 2013; Carrera Álvarez et al., 2012; Cozma and Chen, 2013; Hedman and Djerf-Pierre, 2013; Herrera-Damas and Hermida, 2014; Weaver and Willnat, 2016).

2.6.5 Satisfying Information Needs

Almost all studies on journalists’ use of social media indicate or point out that social media is a good source for journalists to seek and find information or in other words, to satisfy their information needs. It can be done in the form of asking questions on social media platforms, searching queries, using social media as RSS, etc. (Brautović et al., 2013; Cozma and Chen, 2013; Hasanain et al., 2016; Hedman and Djerf-Pierre, 2013; Hermida et al., 2014; Herrera-Damas and Hermida, 2014; Lariscy et al., 2009; Tandoc Jr. and Vos, 2015; Weaver and Willnat, 2016).

This section (journalists’ social media uses) shows that there are various studies conducted in the domain of journalism research to investigate how journalists use social media. Although this thesis classifies the related work on journalists’ social media uses into five main motivations introduced in five subsections, reviewing the literature on journalists’ social media uses (Section 2.6) shows that there is a gap in the literature about journalists’ social media uses in macro and micro levels, through the lens of information behaviour (IB) and information seeking behaviour (ISB) research. The macro level refers to examining the
motivations which lead journalists to use social media and the micro level refers to scrutinizing each motivation separately and then exploring how they are interrelated.

A review of the literature reveals that a holistic study of journalist’s information seeking and behaviour on social media has not been conducted. While Section 2.1 shows the role and importance of ISB in IR studies and Section 2.3 augments our understanding of ISB through discussing different ISB models, Section 2.5 shows that there is a gap in the literature on journalists’ information seeking behaviour on social media. Moreover, Section 2.2 demonstrates that although numerous studies have been conducted on the main derivatives (elements) of information seeking behaviour such as information needs (Subsection 2.2.1), search strategies and tactics (Subsection 2.2.2), and relevance judgement criteria (Subsection 2.2.3), only a few studies are in the context of journalists or social media. In particular, we could not find a study which examines journalists’ information needs, search strategies and tactics, and relevance judgement criteria in the context of social media. Furthermore, Section 2.6 shows that seeking information and satisfying information needs is one of the motivations for journalists to use social media and there is a need to explore journalists’ social media uses through the lens of IB and ISB research to have a better understanding of journalists’ information seeking and behaviour on social media.

Thus, we have little knowledge on journalists’ information needs and consequently their information seeking and behaviour on social media and the factors impact on them. This thesis helps to bridge this gap by exploring the different use of social media by journalists and investigating the motivations which lead journalists to exploit social media. Using social media to “satisfy information needs” leads this research to examine journalists’ information need types and their respective information seeking behaviour including information seeking, search strategies and tactics, and relevance judgement criteria, as well as the factors which influence them.
Chapter 3

3. Methodology

The chapter starts with an overview of the methodology used in this research. This is followed by the conceptual framework employed and then explaining the reason constructivist grounded theory as a qualitative methodology was selected to conduct this study. Then, the data collection process, and after that, the data analysis process are explained. This chapter concludes with the evaluation of this research.

3.1 Introduction

Much information seeking behaviour ISB research has taken a qualitative approach (Duncan and Holtslander, 2012; Shahram Sedghi et al., 2012; Simon Attfield and John Dowell, 2003). This research employed a constructivist form of grounded theory (Charmaz, 2014; Corbin and Strauss, 2014; Glaser and Strauss, 1999), which “assumes a relativist ontology (there are multiple realities), a subjectivist epistemology (knower and subject create understandings), and a naturalistic (in the natural world) set of methodological procedures.” (Denzin and Lincoln, 2005). Data is co-constructed during interaction and the researcher’s values, experiences, and ideas influence the research process (Bryant and Charmaz, 2010). The constructivist researcher is on a quest for meaning and understanding of the world and human interaction (Schwandt, 1994) and does not separate human behaviours from their context. Hence, findings are intersubjective and maintained through ongoing interaction (Blaikie, 2000). The credibility of findings is gained through making and demonstrating a transparent research process (Charmaz, 2006).
3.2 Conceptual Framework

In the light of existing empirical and theoretical studies on information seeking behaviour, information seeking behaviour as a generic term covers different research concepts and topics. For example, the concept of information need, search strategies and tactics, relevance judgement criteria, and influential factors can be inferred and elicited from many information seeking models including Dervin’s sense-making model (Dervin, 1998), and Bystrom and Jarvelin’s work-task information seeking model (Byström and Järvelin, 1995).

When information seeking behaviour is considered in the context of information systems (e.g. Figure 3.1), the concept of information need, search strategies and tactics, relevance judgement criteria, and influential factors can be seen also in the information retrieval interaction models (Bates, 1989; Ingwersen and Järvelin, 2005; Marchionini, 1995; Saracevic, 1997; Vakkari and Hakala, 2000; Xie, 2008).

Figure 3.1. General information seeking behaviour model in the context of information systems.
Considering social media as an information system, Figure 3.2 illustrates a conceptual model to explore journalists’ information seeking behaviour on social media used in this research.

This is an over-simplified conceptual model which demonstrates information seeking behaviour on social media at a moment in time, thus it is depicted in a linear form (i.e., there is no feedback loop to evaluate the outcomes and to decide if further information seeking is required). Part of journalists’ information needs lead them to social media. They employ different search strategies and tactics to find information and then they apply various criteria to judge the relevancy of information. Thus, the three main concepts of information need, search strategies and tactics, and relevance judgement criteria are investigated as a part of journalists’ information seeking behaviour on social media. Moreover, to have a higher degree of understanding of journalists’ information seeking behaviour on social media, the factors which influence on their information seeking behaviour are incorporated in the conceptual model as arrowheads and investigated in this study.

On the other hand, reviewing the literature (Chapter 2) showed that journalists use social media not only for seeking information and satisfying their information needs, but also for
As a result, Figure 3.3 is developed which includes Figure 3.2 and demonstrates a conceptual framework to explore journalists' information behaviour on social media. Therefore, this study uses Figure 3.3 as a conceptual framework to explore journalists' information behaviour in a macro level and then investigate journalists' information seeking behaviour in a micro level by using the conceptual framework depicted in Figure 3.2. The arrowheads in the Figures 3.2 and 3.3 represent the factors which influence on journalists’ information behaviour and consequently information seeking behaviour.

### 3.3 Grounded Theory

Although the evaluation and study of information retrieval (IR) systems have prescribed methods and methodologies, information seeking behaviour (ISB) studies do not have well-established methods and methodologies. Information seeking behaviour studies focus on users’ information needs, information seeking, information behaviours and experiences in this regard, including physical, cognitive and affective aspects. The inclusion of users and their information behaviour into ISB studies make this type of research, to some degree, a
behavioural science. As a result, there is no prescribed methodology and research design for information seeking behaviour studies as there is for other types of IR studies.

Moreover, the type of study which is derived from research questions have implications for the methodology which can be selected and employed to answer the research questions of a study. Qualitative research is most suitable when “the concepts pertaining to a given phenomenon have not been identified, or aren’t fully developed, or are poorly understood, and further exploration is necessary to increase understanding.” (Corbin and Strauss, 2014).

As information seeking behaviour studies focus exclusively on humans, their information needs and information behaviour, qualitative methodologies and research designs are well suited for this type of studies. Information and theories about such topics cannot generally be elicited using quantitative methods. “At its heart, qualitative research involves doing one’s utmost to map and explore the meaning of an area of human experience ... We can never achieve a complete ‘scientific’ understanding of the human world. The best we can do is to arrive at a truth that makes a difference that opens up new possibilities for understanding” (McLeod, 2001).

In ISB studies, researchers explore and investigate the users’ real information needs and their subsequent information seeking behaviour, within the specific context in which these needs arise without considering a specific type of IR system. Therefore, in order to explore and examine journalists’ information seeking behaviour on social media and answer the research questions in this regard, a qualitative research approach is employed, inspired by Grounded Theory (GT). The emphasis in this methodology is on constructing of theories and models inductively from empirical data.

Creswell (Creswell, 2008) defines grounded theory methodology as “a systematic, qualitative procedure used to generate a theory that explains, at a broad conceptual level, a process, an action, or an interaction about a substantive topic.” Hence, grounded theory methodology
typically is employed when theories in the existing literature fail to sufficiently explain the phenomenon under study (Leedy and Ormrod, 2005). Grounded theory is a suitable methodology to study human behaviour in different contexts (Wolcott, 1988). Many ISB researchers have employed this methodology to investigate and explore the information seeking behaviour (Duncan and Holtslander, 2012; Ellis, 1993; Fabritius, 1998; Foster, 2004; Meho and Tibbo, 2003; Shahram Sedghi et al., 2012; Simon Attfield and John Dowell, 2003). The selection of grounded theory methodology is thus driven by the aim of exploring and examining journalists’ information seeking behaviour on social media. This methodology is employed to best address the nature of the research questions. Generating a theory grounded in actual data inductively is what grounded theory is designed for, and hence, a grounded theory methodology is exploited for this study.

3.3.1 Constructivist

Dey (Dey, 1999) states that “there are probably as many versions of grounded theory as there are grounded theorists”, yet there are three main variations of grounded theory methodology, namely classic, evolved and constructivist grounded theory. Hence, it is important to address the differences to justify the variation used in this research. Although, Devadas et al. (Devadas et al., 2011) argue that the main variations of grounded theory are different “in terms of the paradigmatic dimensions, formulation of research questions, analysis procedures used, usage of literature, sampling procedures, and the procedures for validating the resultant theory”, the differences in these variations mainly are rooted in their ontological and epistemological positions, and they all follow the same concept; theory development journey in grounded theory methodology commences and concludes with the data. Strauss and Corbin (Strauss and Corbin, 1998) explain this journey as “Data collection, analysis, and eventual theory stand in close relationship to one another…the researcher begins with an area of study and allows the theory to emerge from the data...grounded
theories, because they are drawn from data, are likely to offer insight, enhance understanding, and provide a meaningful guide to action”.

Charmaz (Charmaz, 2014) considers the main versions of grounded theory as a “Constellation of Methods” and explains “grounded theory methodologists who present one version of the method share much in common with grounded theory proponents who propose another version, although we differ on foundational assumptions shaping our studies. We may have different standpoints and conceptual agendas yet we all begin with inductive logic, subject our data to rigorous comparative analysis, and aim to develop theoretical analyses…”

Initially, grounded theory has been developed by two sociologists, Barney Glaser & Anselm Strauss (Glaser and Strauss, 1967). After that, the founders and originators of this methodology split and introduced their own versions which have been named Glaser’s version (classic version) (Glaser, 1978, 1992) and Strauss’s version (evolved version) (Corbin and Strauss, 2014; Strauss and Corbin, 1998, 1990; Strauss, 1987) of grounded theory respectively.

Glaser remained consistent with the earlier version, the one he developed and published with Strauss; the discovery of truth that stems from data represents a “real” reality (Glaser, 1978). Considering this perspective, Glaser’s version of grounded theory can be regarded as an objectivist and positivist approach, with its assumptions of an objective, external reality and a neutral researcher who discovers data and theories (Charmaz, 2000). Although Charmaz (Charmaz, 2014) indicates that most of the basic principles of grounded theory came from Glaser, she criticizes Glaser and states: “Glaser imbued the method with dispassionate empiricism, rigorous codified methods, emphasis on emergent discoveries, and its somewhat ambiguous specialized language that echoes quantitative methods.”
Strauss and Corbin (Strauss and Corbin, 1998, 1990) did not address explicitly the paradigm of thought that supports their methodology in their main two grounded theory books, however, taking a literary-warrant approach on their work, it shows differing opinions on their ontological and epistemological positions (Charmaz, 2000). Nevertheless, they discussed the relationship of theory to truth and reality in a chapter of a book (Strauss and Corbin, 1994) which makes their position as relativist pragmatist; “theories are embedded ‘in history’ - historical epochs, eras and moments are to be taken into account in the creation, judgement, revision and reformulation of theories”. Also, Strauss and Corbin’s work shows different tones of language which places them between post-positivism and constructivism; the terms such as “recognizing bias” and “maintaining objectivity” when demonstrating the stance of the researcher with regard to participants and data (Mills et al., 2006). Charmaz (Charmaz, 2000) summarised Strauss and Corbin’s paradigm of thought as moving from positivism towards post-positivism; “Their position moves to post-positivism because they also propose giving voice to their respondents, representing them as accurately as possible, discovering acknowledging how respondents’ views of reality conflict with their own, and recognizing art as well as science in the analytic product and process.”

Although Strauss and Corbin (Strauss and Corbin, 1990) contend that they developed grounded theory further, Glaser (Glaser, 1992) refutes Strauss’s version of grounded theory and its procedures and argues that these prescribed procedures force data into theory and ignore theory emergence and discovery. However, Cooney (Cooney, 2010) argues that their main conflict is on verification; “the core of the conflict between Glaser and Strauss is whether verification should be an outcome of grounded theory analysis or not”. Also, Charmaz (Charmaz, 2006) contends that Strauss’s version of grounded theory moved this methodology towards a methodology of verification. Despite all criticism to Strauss’s version
of the grounded theory, Strauss and Corbin (Strauss and Corbin, 1998) promoted this methodology more towards an interpretive approach to generate theories.

In response to the prescribed procedures of Strauss’s version of grounded theory, and also considering a relativist ontology and a subjectivist epistemology (as opposed to positivist position of Glaser’s version), Charmaz (Charmaz, 2000), a student of Glaser and Strauss, introduced the constructivist version of grounded theory. Since 1990 Charmaz (Charmaz, 1990, 1995, 2000, 2004, 2005, 2006, 2008, 2014; K Charmaz, 1995; Kathy Charmaz, 2008) has worked on developing a constructivist version of grounded theory, which emphasizes flexible strategies, underscores the meaning participants attribute to situations and acknowledges the role of the researcher and participant in co-constructing data and theory (Creswell, 2011). She considers constructivist grounded theory as a 21st century form of the original grounded theory approach: “Constructivist grounded theory loosens the method from its positivist roots, moves it into the interpretive inquiry, and preserves and enhances its pragmatist heritage.” (Kathy Charmaz, 2008).

A constructivist paradigm “assumes a relativist ontology (there are multiple realities), a subjectivist epistemology (knower and subject create understandings), and a naturalistic (in the natural world) set of methodological procedures.” (Denzin and Lincoln, 2005). In terms of the paradigmatic dimensions, comparing the classic version of grounded theory with the constructivist one is similar to comparing positivism with interpretivism - ontological critical realism and relativism with epistemological subjectivism; the interpretivism paradigm assumes that researchers interpret their experiences through interaction with others. The classic version of grounded theory considers that there exists an external reality, data is discovered and researcher is objective, passive and neutral, whereas, the constructivist version considers that there are multiple realities, data is co-constructed during interaction.
and the researcher’s values, experiences and ideas influence the research process (Bryant and Charmaz, 2010).

Practically, differences between the classic and constructivist version of grounded theory are mostly concerned with the literature review and the researcher’s reflexivity. As data and theory are discovered based on classic grounded theory, Glaser (Glaser and Holton, 2004) contends that the use of a literature review at the beginning of the research is strongly opposed to grounded theory principles and it would impact on the researcher’s preconceptions and his/her ability to maintain objectivity in theory emergence and avoid forcing data and theory to fit the researcher’s preconceptions; “To undertake an extensive review of literature before the emergence of a core category violates the basic premise of GT—that being, the theory emerges from the data not from extant theory. It also runs the risk of clouding the researcher's ability to remain open to the emergence of a completely new core category that has not figured prominently in the research to date thereby thwarting the theoretical sensitivity.” (Glaser and Holton, 2004).

In contrast, as data and theory are constructed in constructivist grounded theory and the researcher’s presence and voice should be recognized and acknowledged throughout the research process (from the topic selection, to the research preparation, data collection, data analysis, and the rendering of the research findings), constructivist grounded theory considers the literature review as a way of sensitising researchers to the data (sensitising concepts), and as a tool in guiding data inquiry (Charmaz, 2014; Giles et al., 2013; Ramalho et al., 2015).

Thus, avoiding the researcher’s influential role in the research process is impossible in constructivist grounded theory and the researcher’s reflexivity is inherent in the research process as data and theory are considered co-constructed. The constructivist version of grounded theory closely aligned with qualitative research methodology acknowledges that research cannot be completely objective. Instead of endeavouring for objectivity, the
researcher reflects on his impact in the research process from developing the research questions and data co-construction to the interpretation and rendering the findings. Charmaz (Charmaz, 2014) argues that constructivist grounded theory approach rejects the premise of a neutral, and passive researcher and indicates that considering the research as constructed in lieu of the discovered promotes the development of researchers’ reflexivity on their decisions and actions; “We construct our grounded theories through our past and present involvements and interactions with people, perspectives, and research practices.” On the other hand, in classic grounded theory the researcher is considered as neutral and objective and separate from data and theory discovery. However, the influential role of the researcher has not been discussed in the classic approach.

Therefore, depending on the researcher’s ontological and epistemological consideration, and also the nature of the research, one of the grounded theory versions can be employed to guide the researcher through the research process. As the nature of this study is exploring information seeking behaviour of journalists on social media and also throughout the research process, and only one researcher has conducted the research (data collection, data analysis and rendering the research findings), the constructivist grounded theory perfectly suited to conducting this research, due to the use of interpretivist and constructivist paradigms in this version of grounded theory methodology. The emphasis on the researcher is especially important in this study because the researcher as an outsider (computer scientist) seeks the views of insiders (journalists) on their information seeking behaviour on social media context; interpretivism and constructivism try to attain learning the views of insiders in lieu of imposing the outsiders’ views on a phenomenon (Blaikie, 2007). The interpretivist and constructivist researcher is on a quest for meaning and understanding of the world and human interaction (Schwandt, 1994) and does not separate human behaviours from their context. Hence, meanings and understandings (findings) are intersubjective and maintained through
ongoing interaction (Blaikie, 2000) and the credibility of the findings is gained through making and demonstrating the research process transparent (Charmaz, 2006).

3.4 Data Collection

This study undertook an inductive exploration through twenty semi-structured face-to-face interviews with journalists based in Australia: eleven males, nine females, aged 20-53. One hundred and eighty one email contacts of journalists were obtained through their media organisations public website, their own websites, or their public Twitter accounts. The media organisations’ websites include “ABC”, “The Age”, “Herald Sun”, and “The Conversation”. Of one hundred and eighty one emails sent, twenty participants were recruited. It was ensured that all participants had a journalism degree and they had produced news for media organizations (including freelancers). An information sheet was shown prior to conducting the interview and a consent form signed.

On average, the length of each interview was 71 minutes. An interview guide was prepared from a literature review of information seeking behaviour research (Case, 2012) to cover major topics related to the study’s objective and refined over several pilot interviews to be adapted to the purpose of this research. Different techniques were used in developing the interview guide including the techniques suggested by Berg (Berg, 2000) and Bryman (Bryman, 2012).

The interview was used as it is reported to be the main tool for gathering data in grounded theory methodology (Charmaz, 2014) and it is a common data collection method among ISB researchers. However, the semi-structured one is used because this study wanted to have a framework of themes to be explored, as well as, substantial freedom to adjust the questions to participants’ responses and investigate far beyond respondents’ answers to the predetermined questions. All face-to-face interviews were conducted in either the journalists’ workplace or a

---

4 Ethics approval number: BSEHAPP 04-15.
coffee shop. Appendix C (Information sheet and consent form) explains the recruitment requirements and process. The following (Table 3.1) details the participants.

Table 3.1. Participants’ details.

<table>
<thead>
<tr>
<th>Current Occupation</th>
<th>Prior Experience</th>
<th>Sex</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freelancer, Academic Journalist</td>
<td>Reporter, Editor</td>
<td>Male</td>
</tr>
<tr>
<td>Freelancer, Reporter</td>
<td>Reporter</td>
<td>Female</td>
</tr>
<tr>
<td>Academic Journalist</td>
<td>Radio Journalist</td>
<td>Female</td>
</tr>
<tr>
<td>Student</td>
<td>Internship</td>
<td>Female</td>
</tr>
<tr>
<td>Reporter</td>
<td>Reporter</td>
<td>Female</td>
</tr>
<tr>
<td>Freelancer</td>
<td>Editor</td>
<td>Male</td>
</tr>
<tr>
<td>Reporte</td>
<td>Reporter</td>
<td>Male</td>
</tr>
<tr>
<td>TV Journalist</td>
<td>Freelancer, Reporter</td>
<td>Male</td>
</tr>
<tr>
<td>Freelancer</td>
<td>Reporter, Editor</td>
<td>Female</td>
</tr>
<tr>
<td>Reporter</td>
<td>Reporter</td>
<td>Male</td>
</tr>
<tr>
<td>Freelancer, Reporter</td>
<td>Reporter</td>
<td>Male</td>
</tr>
<tr>
<td>Editor, Reporter</td>
<td>Reporter</td>
<td>Female</td>
</tr>
<tr>
<td>Reporter</td>
<td>Reporter</td>
<td>Male</td>
</tr>
<tr>
<td>Reporter</td>
<td>Reporter</td>
<td>Female</td>
</tr>
<tr>
<td>Editor, Reporter</td>
<td>Reporter</td>
<td>Female</td>
</tr>
<tr>
<td>Academic Journalist</td>
<td>Reporter</td>
<td>Male</td>
</tr>
<tr>
<td>Academic Journalist</td>
<td>Reporter</td>
<td>Male</td>
</tr>
<tr>
<td>Academic Journalists</td>
<td>Reporter, Editor</td>
<td>Male</td>
</tr>
<tr>
<td>Editor, Reporter</td>
<td>Reporter</td>
<td>Female</td>
</tr>
<tr>
<td>Photojournalist</td>
<td>Reporter</td>
<td>Male</td>
</tr>
</tbody>
</table>

Typically, the interview session began with the researcher prompting the participants to explain the reason they use social media, what type of social media platform they use, and then steering the discussion towards their information seeking behaviour on social media. Recordings were transcribed for further analysis.

In addition to the interviews, observations of students attending journalism modules\(^5\) were made (Semester 1 and 2, 2015) to better understanding information seeking behaviours. In one module, students were taught, hands on, to use social media platforms in their journalistic tasks.

\(^5\)“Understanding Journalism” and “Journalism Technologies”, part of a Bachelor of communication (Journalism) at RMIT University.
3.5 Data analysis

Using grounded theory methodology (Charmaz, 2014; Corbin and Strauss, 2014; Glaser and Strauss, 1999), NVivo software was used to facilitate the coding process. The interview transcripts were coded, the codes were formed into concepts⁶ and grouped into categories⁷, which are reported in this study. In addition, on several occasions, the audio files recorded from the interviews were coded by the help of NVivo software before coding the transcriptions.

The concept of theoretical sampling guides the process of data collection helping the researcher to decide what data to collect next to explicate the categories emerged. Theoretical sampling differs from initial sampling in grounded theory. For initial sampling, the researcher establishes sampling criteria for people, cases, situations, etc. before conducting his research. This must be done to find relevant material for the research (e.g. the sampling criteria for this research is professional journalists who use social media in their profession). “Initial sampling in grounded theory is where you start, whereas theoretical sampling directs you where to go.” (Charmaz, 2006).

Grounded theory is cyclic in nature and does not have distinct phases of data collection, analysis, and theory construction. The data collection process should be continued until theoretical saturation is reached. In other words, data collection and analysis are interweaved and progressed in tandem. Saturation was reached after seventeen intensive face-to-face interviews. However, the data collection process was continued to ensure that saturation had occurred. Therefore, after seventeen interviews which led to saturation, three more interviews were conducted to ensure that saturation has taken place. Thus, totally twenty participants were involved.

---

⁶ Collections of codes of similar content that allows the data to be grouped
⁷ Broad groups of similar concepts that are used to generate a theory
Using constructive grounded theory (Charmaz, 2014), the two main coding phases were employed during data analysis;

1. Initial coding phase: breaking data into discrete parts and scrutinizing fragments for their analytic import and making sense of data collected.

2. Focused coding phase: sifting, sorting, synthesizing, analysing, and conceptualizing a large amount of data to develop the most salient categories; this phase enabled the researcher to categorize the collected data incisively and completely.
The initial coding phase was started as soon as the first piece of data was available. Also, memo-writing was used from the beginning of the research as it helped the researcher to reflect his analytic thought and views on the data collected through interviews and observation, and on the research process. Fragments of data collected were scrutinized through line by line, segment by segment, and incident by incident coding, and comparative methods; the researcher of the study interacted with the data and ask many different questions of them. It helped the researcher to establish analytic distinctions by comparing data to find similarities and differences. Codes were created by scrutinizing the collected data and defining what can be seen in the data. Through the initial coding phase, the researcher began

Figure 3.4. Grounded Theory Methodology (Charmaz, 2014).
to generate the bones of the analysis and make sense of the data, however, the researcher remained open to all theoretical directions. Therefore, the initial codes were provisional, comparative, and grounded in the data. The researcher progressively followed up on codes to check whether they fit the data or more data were needed to explore and fill out theses codes or even reworded them to improve their fit with data.

The initial coding phase enabled the researcher to see possible directions to take the analysis, while focused coding gave the researcher indications about which one to take. Although moving from initial codes to focused codes is not a linear process, focused coding was used to identify and develop significant codes and test them with a large set of data. Through studying, analysing, and comparing the initial codes, the researcher selected significant codes or created codes that includes several initial codes. The researcher decided which codes make the most analytic sense to categorize the collected data incisively and completely. These codes emerged from the frequency of the initial code or their significance over other codes. These codes were used to sort, examine, integrate, analyse, and conceptualize a large amount of data. The focused coding phase engaged the researcher further into the comparative process. The researcher compared codes with codes and analysed them to identify the ones that may be promising tentative categories. The researcher recognized the connections between categories and related categories to subcategories through their dimensions and properties. Focused coding led the researcher to the conceptual and theoretical categories. Categories in this study are not mutually exclusive and exhaustive, in contrast to qualitative content analysis, where categories must be mutually exclusive and exhaustive.

It also should be mentioned that although the description of the data analysis procedures appears to be a linear process in writing, the actual research process was not a linear process. The following tables (Table 3.2 and 3.3) demonstrate how the focused code for the categories of “People” and “Events Driven Information” are constructed from the data collected to
encompass numerous initial codes. These tables are only a simple sample of how to move from data to the focused code and they do not include all initial codes and does not show the complexity of research process carried out.
Table 3.2. From data (transcripts) to a focused code (Example 1).

<table>
<thead>
<tr>
<th>Data collected</th>
<th>Initial codes</th>
<th>Focused code</th>
</tr>
</thead>
<tbody>
<tr>
<td>“I found it useful for crowdsourcing”</td>
<td>Crowdsourcing</td>
<td></td>
</tr>
<tr>
<td>“To Find sources (human) for stories.”</td>
<td>Find sources</td>
<td></td>
</tr>
<tr>
<td>“it can be very useful to find maybe an activist group or maybe a group who are working on a certain topic or protesting a certain issue or whatever”</td>
<td>Finding specific group of people</td>
<td></td>
</tr>
<tr>
<td>“It can be very useful to find good contacts”</td>
<td>Finding contacts</td>
<td>People</td>
</tr>
<tr>
<td>“You can get much more sense of a person is like. Often very private people suddenly have a tweet that just talk about stuff as if they talk to a friend and that is really fascinating to look at and give you insights about the person’s character.”</td>
<td>Finding other aspects of a person’s personalities</td>
<td></td>
</tr>
<tr>
<td>“looking for a particular person with expertise on particular field”</td>
<td>Finding experts</td>
<td></td>
</tr>
<tr>
<td>“I needed to find more information about a shooting victim”</td>
<td>Finding personal background information</td>
<td></td>
</tr>
</tbody>
</table>
Table 3.3. From data (transcripts) to a focused code (Example 2).

<table>
<thead>
<tr>
<th>Data collected</th>
<th>Initial codes</th>
<th>Focused code</th>
</tr>
</thead>
<tbody>
<tr>
<td>“It is easier way to put a message out there, like a lot of celebrities share information or announcement about the latest event or activity or maybe they released a new book”</td>
<td>Finding information about authorities, celebrities, etc.’s announcements</td>
<td></td>
</tr>
<tr>
<td>“It’s useful in election campaigns when you can see what they’re doing in the local communities. And if it’s an individual, we can go and look at what they’ve done, especially candidates”</td>
<td>Finding information about election campaigns</td>
<td></td>
</tr>
<tr>
<td>“When an emergency’s happened…. as I mentioned, in Egypt, during breaking news situations, it would be really useful.”</td>
<td>Finding information about emergency events</td>
<td>Events Driven Information</td>
</tr>
<tr>
<td>“When we have natural disasters and things like that, bushfires, floods, we often get a lot of immediate reactions, or initial information, or early pictures, early video and footage, or it can be the source that we initially see that something’s happened.”</td>
<td>Finding information about natural disasters</td>
<td></td>
</tr>
<tr>
<td>“For example, any major sales that happened over the weekend, I would go on, for example, real estate agencies Facebook page like Hocking Stuart, Biggin &amp;Scott, Hodges…and hope the same for Twitter because they might have posted them on Facebook”</td>
<td>Finding information about sales</td>
<td></td>
</tr>
</tbody>
</table>
3.6 Evaluation

When it comes to the evaluation, there is no consensus among qualitative researchers about a set of evaluation criteria, however, many qualitative researchers prefer not to use the terms reliability and validity when discussing qualitative studies as these terms were originated from quantitative studies and have many quantitative implications (Corbin and Strauss, 2014).

On the other hand, the qualitative researchers, who employed reliability and validity for qualitative studies, conceptualized them as trustworthiness, and rigor in qualitative research (Golafshani, 2003). For example, Silverman and Marvasti (Silverman and Marvasti, 2008) defined validity as “another word for truth” and proposed five strategies to increase the validity of findings.

Therefore, the terms such as credibility, truthfulness, rigor, integrity, and trustworthiness are more preferable to be used in the evaluation of qualitative research, because these terms are aligned with the nature of qualitative studies which has both scientific and creative (artistic) aspects (Corbin and Strauss, 2014; Seale, 2002; Whittemore et al., 2001). “Elegant and innovative thinking can be balanced with reasonable claims, presentation of evidence, and the critical application of methods” (Whittemore et al., 2001).

In the constructivist version of grounded theory, Charmaz offers four criteria for evaluating findings (Charmaz, 2014): 1) credibility, 2) originality, 3) resonance, and 4) usefulness. However, her suggestions for evaluation of the findings require self-evaluation during and after the research process. Thus, in addition to Charmaz’s self-evaluation criteria, the following techniques (Creswell, 2013; Lincoln and Guba, 1985) were employed for validity and reliability of findings of this study; particularly the researcher used “peer debriefing”, “member checking”, “thick, rich description”, and ”prolonged engagement” strategies. Specifically, “peer debriefing” was conducted by a group of multidisciplinary researchers
who met fortnightly to discuss research progress. The group of multidisciplinary researchers consisted of three senior IR researchers and four PhD candidates who joined the meetings from three different continents (America, Asia, and Oceania). The outcome of initial coding were shared among the group to be reviewed, discussed, and assessed.
Chapter 4

4. Journalists’ Social Media Uses (Journalists’ Information Behaviour on Social Media)

This chapter examines the first research question and details the findings of journalists’ social media uses, which provides a bigger context to examine journalists’ information seeking behaviour on social media. Journalists’ social media uses can be also regarded as journalists’ information behaviour on social media.

There are many different social media platforms, however, the analysis of the findings show that Twitter and Facebook were the most used by journalists due to their popularity and user engagement; “...They’ll (people) get into Periscope and Kneecap, whatever, the live video streaming, and Instagram, and whatever the thing is of the day. I really don’t bother so much with the new fancy, you know, whatever the popular thing of the day is. Twitter and Facebook are the main ones because it’s got the established user base and I find it useful.” Hence, all of evidence and examples used to explain the findings are related to Twitter or Facebook platforms unless it is indicated otherwise.

It was found that journalists used social media for six main purposes or motivations: 1) Promoting and branding; 2) Verifying information; 3) Networking and communication; 4) Publishing, broadcasting and disseminating information; 5) Satisfying other types of journalists’ needs; 6) Satisfying information needs.
These findings argue that although social media was used for six distinct main purposes, in some occasions, a single action (behaviour) was carried out to achieve two or more purposes (motivations) simultaneously. This phenomenon shows that an observable journalist’s action (behaviour) on social media might have multiple purposes (motivations) which only reside in a journalist’s mind and thus must be inferred and elicited. Therefore, there might be an overlap between the observable actions or behaviours, but it does not signify an overlap among the motivations and purposes, although they might be interrelated. This phenomenon becomes more complicated when an observable action (behaviour) is equivalent to a purpose (motivation), and at the same time, it is used to achieve other purposes (motivations). For example, Section 4.3 (Networking and Communication) describes that one of the purposes (motivations) that journalists use social media is to network and communicate with others. At the same time, networking and communication with others can be regarded as an observable action (behaviour) which can represent other purposes (motivations). Therefore, the reasons which journalists network and communicate on social media are explained in this section.
The same thing occurs in Section 4.4 (Publishing, broadcasting and disseminating information).

On the other hand, Section 4.2 (Verifying Information) describes that one of the purposes (motivations) that journalists use social media is to verify information, and because there is no equivalent action (behaviour) to this purpose (motivation) on social media, verification strategies which journalists employed on social media are explained in this section. Similarly, there is no equivalent observable action (behaviour) to the purpose (motivation) of using social media for promoting and branding (Section 4.1). Thus, Section 4.3 (Networking and Communication) and Section 4.4 (Publishing, broadcasting and disseminating information) describe how the purpose (motivation) of promoting and branding is fulfilled through the “networking and communication” and “publishing, broadcasting and disseminating information”.

Finally, of these six purposes (motivations) of using social media, “satisfying information needs” (Section 4.6) is the main motivation of this study, also regarded as “information seeking behaviour” in this study. Hence, the next chapter (Chapter 5) examines journalists’ information seeking behaviour on social media triggered by journalists’ information needs.

4.1 Promoting and Branding

Promoting and branding is one the reasons that journalists use social media; “If I want to support my professions, social media is a great way for me to self-promote my work, myself, and my personal brand.”, or “It takes me a long time to build those followers and it requires a lot of effort to do so.”

However, it was reported that freelance journalists are more involved in self-promoting and personal branding than journalists who are attached to a media organization: “I’m taking a different direction in my work anyway, so I’m less focused on promoting myself. So I use it less than I used to. I used to engage a lot more (when I was a freelance journalist).” One of
the reasons might be due to the fact that journalists who work for a media organization are promoted through their workplace as their identities are attached to the organizations they work for; “Self-promotion via my job because that’s where my identity is... I guess you are attached to your job and people don’t separate it. I’ve got the blue verified tick, the blue verified tick means we are identified with our work place... We get that through our work, so that also sort of shows who you are that you’re, I guess, someone important or someone that’s reliable.”

Moreover, the analysis of the findings indicates that journalists use social media to create a new identity. Due to the interrelating of personal and journalistic use of social media, it is important how journalists portray themselves on social media because it has a direct impact on their own personal and professional life (several journalists have been dismissed due to sharing their personal viewpoints on social media.) In other words, they create a new identity on social media, regardless of their identity in personal and professional life; “you cannot divorce your personal and professional anymore. But it does mean you need to be very careful in how you depict your personal and professional life, so I have particular rules, for how I interact, because it is really important that you do not disrespect your partner, you do not disrespect your workplace on social media”.

4.2 Verifying Information

Verification is an essential activity and process in journalism, not only because it is considered as one of the fundamental principles of journalism “I think it’s sometimes important to realize that, yes we want to be first, but it’s more important to be right” but also because it helps to maintain and promote reputation of journalists and the media organization which the journalists work for “During the early days of the Syrian uprising in 2011, a lot of news organizations got caught out, this happened in other ones as well, but particularly in Syria, because there were no journalists in the country or very few that could get anywhere
near where things were happening.”, “It still happens, it hasn’t stopped happening that news organizations report something that they see on social media and it turns out to be absolutely false.”, or “Plenty people in journalism have gotten in trouble relying on the police as a single source. So yes I understand that there is an imbedded authority in that information came from the police and that would make you click on it, saying that this is what the police have said has happened, but that’s just the starting point for the research. That’s not the whole information.”

It was also reported that the verification of information obtained from social media is not a separate process and it starts as soon as journalists seek information on social media and it continues throughout the information seeking process; “Probably as soon as you decide that it’s interesting, at that point, verification begins.”, “For the most part, it’s integrated into the process that I’ve automatically narrowed it down and by what I’m following on Twitter, or who I’m following on Facebook…”, or “I have to do a lot more of the checking of the credibility at the time of the sourcing of the information rather than afterwards.” Still, verifying information obtained from social media is one of the main challenges which journalists have been encountering; “The biggest challenge is just verification”. And this could be one of the reasons that there are still journalists who prefer not to use social media as an information source; “Because we know social media is very hard to track, it is very hard to assess if the story is real or not, so I would call it reluctant adapters of social media and I am one of the reluctant ones.

One of the main challenges is that social media accounts can be created easily and anyone is able to have one (or more), therefore vetting information or verifying the source of information is very difficult and must be done rigorously; “There’s a lot of really spammy, robot Twitter accounts, or Twitter accounts that are set up just as trolling accounts, all sorts of different things that are out there, so you’ve got to be careful.”, or “Obviously, anyone can
start a Twitter account and that means that you do have to be extremely careful about vetting the information or finding out who the piece of information is coming from.”

On the other hand, the area and genre of journalism are one of the influential factors in the level of difficulty of verifying information on Twitter. For example, journalists who write about politics may find easier to verify information on Twitter than journalists who write about crimes “It’s harder, when you’re writing about crime, to verify what you’re getting on social media, because you won’t necessarily have another contact for those people other than their social media accounts, whereas if the Prime Minister tweets about something, you’ve got all the people in the Prime Minister’s office who you can speak to try and verify what’s been said. And I suppose the other thing is that they are more trusted social media profiles than somebody who might know someone who may have been killed in a shooting. You can be a fair bit more confidence publish a story based on what the social media posts of someone who is a politician, as opposed to somebody who could know someone who may be the victim of a crime. So I think that’s kind of the main thing that you’ve got to have in the back of your mind that generally, all this stuff is what you suspect, it may even be likely or extremely likely, but it’s not fact.”

Nevertheless, social media is used as one of the peripheral validation tools for journalists. Although it is not still one of the primary tools for verification, it helps journalists to verify information or sources in different scenarios “I would not rely on it 100% as an information validation tool. So we are trying to do our best to check numerous sources to verify the information that we collect, social media has become one of those avenues but it is not the primary one and for some stories, you may not even need to use it at all or go to it as your first choice, because perhaps it is not as relevant as say, speaking with an expert directly, or going to historical archive or whichever other sources you might be using.”

The following discusses the findings of this study on the strategies journalists employ to
verify information through using social media.

1) Using different type of social media platforms in conjunction

This strategy of verification is defined as using several different social media platforms such as Twitter, Facebook, Instagram, LinkedIn, etc. together to cross-check and authenticate the information or the source “use the right platform, and then probably just investing time into looking at that information and then cross referencing it with other platforms as well.”, “If I am finding a source, I will look to see if I can find them somewhere else online”, “if I did want an expert on nuclear physics, again, I’d look on LinkedIn ... I’ll probably use Twitter, follow their profiles to see whether they were using it or not.”, “You would check a number of accounts. So check their LinkedIn, their Facebook, their Twitter, etc. ... assuming they do have some sort of online persons, then you normally can crosscheck.”, or “I use Instagram, Facebook or Twitter to verify who people are and to see who is active in that area. So the

Figure 4.2. Verification strategies employed through using social media.
usage of the three (Instagram, Twitter and Facebook), those particular three for me is quite fluid and unconscious.”

Specifically, one of the participants asked for a feature in social media to authenticate the identity of a person through different social media platforms “The one big thing is the problem with identifying who is talking to you, who is giving you the information and maybe there’s a way that you can have a function within the program that looks across various social media platforms and tries to help you identify someone.

2) Passing the buck

This strategy is defined as using the information obtained from social media and then clearly stating that it is from social media or it is from the X source on social media “Stories more and more are saying, you know, "Madonna said on Twitter", "posted on Instagram..." That’s gospel, you can pretty much say that that is correct.”, “You just say, it is unconfirmed from twitter”, “We’d have the presenter say: “Unconfirmed reports from social media indicate that something is up in Damascus,” or “These images haven’t been verified, but they purport to show...” You actually, in the language of the reporting that you use to make it clear to the audience that we think that this is what is going on to the best information that we have.”, “The worst case scenario is you say, “The ABC said, reported this.” You never say, “Yup, this is true.””, or “If Tony Abbott tweeted something ... if he tweets right now: “Joe Hockey has resigned as Treasurer” you would probably publish ...: “Tony Abbott has used social media to announce the resignation of Joe Hockey. Mr Abbott tweeted at 10:45 today that Mr Hockey had resigned as Treasurer effective immediately,” and then you might do a quote of the tweet and then you might just write: “More to come,””

3) Trusted sources

This strategy is defined as receiving information through the trusted sources on social media. One of the approaches is following trusted sources on social media to receive the information
“If it’s from Twitter, unless it’s from a really trusted source, like one of our own journalists that’s a correspondent reporting via Twitter, or maybe it’s a BBC journalist or someone from an organization that you put a lot of faith on, you have to be very careful.”, I just follow trusted sources. I would not trust someone unless I knew them. There are too many hoaxes and too many other things out there.”, “Probably not as much verification as much as more trusting in them... I verify people more than I verify information.”, “I guess there’s only a small percentage of people who would post something on social media that you would trust them so much that you would then re-publish that without verifying it independently.”

Nevertheless, not all journalists follow a limited number of people as trusted sources. A quick observation on journalists’ Twitter accounts shows that in some cases the number of people whom they are following is more than their followers (e.g. three participants of this study). Therefore, there are situations (e.g. bushfire) in which some journalists consider verified (blue verified tick badge) and official profiles as trusted sources; “Talking about reliable sources on social media like, for example, in Australia, and many other countries, in the US as well, but particularly in Australia, the police in different states, New South Wales, Queensland, and Victoria, are very good with social media.”.

4) The source’s profile

This verification strategy is defined as examining the information for its veracity against the source’s profile who posted that piece of information “Where does the information come from? Is this a real person with a real name? Is this person tweeting for a long time? Does it make sense for that person to be saying what they are saying?”, There are work practices that we try to use, like I said, verify the identities, see if you can figure out if it’s from a location, is it in the right time period...”, or “Is this the first photo they’ve ever posted? Is it really the right photo? ... You find out why the person posted it. What was their motivation for posting this photo? They happened to be there at the time?”
5) Social media users’ involvement

This verification approach is defined as examining what social media users say or think about the information which is under the investigation by the journalist through their posts or comments on social media. The higher social media users’ involvement (users’ interactions) increase the confidence in the information which is under investigation by the journalist. “The crowdsourcing of information being able to verify that sort of information in particular events – how many people are saying it”, “If I talk to Netflix and they say: “We’re not having an outage right now,” and then I check on Twitter, and a hundred people are saying: “Netflix ain’t working,” then I know Netflix is lying to me.”, or “If someone is sharing a post, I can see by the comments, the user comments, what people are saying. So if someone is disagreeing with the statistics or something about that article, I will know what the general public thinks about that, and that will shape my opinion as well...” Also it was reported that the number of interactions (shares, likes, and comments) facilitates the using of this verification strategy as it shows the weight of social media users’ involvement “From the number of interactions as well, so re-tweets and shares and likes as well, I can gather how valid it is by what other people think before, you know, putting my own opinion into it.”, “Because at the bottom of that it says how many shares and favorites that specific tweet has. If it’s got a substantial amount of interactions with it, I will add that to my blog post”, or “If someone says: “Oh, Netflix is down,” but no one else does, then that person has probably just got a problem with their Internet connection. It’s not probably happening. But if everyone’s talking about it, then it’s more likely to be a real thing, so that’s one verification, how many people are talking about this and how widespread is it?”
6) Communication

This verification strategy is defined as communicating with the source or other sources publicly (public posts) or privately (direct messaging) through social media to double-check the information. Asking questions on social media also comes under this verification strategy. “I would contact with source to follow up with them, verify what they said, and they may elaborate on it.”, “I’d probably contact the person and send a message to double check that it is what is says it is.”, “I make a direct approach and say hi @ whatever his/her name is. My name is [X] ... I am doing story on ... could you keep in touch with me.”, “I start connecting with possible sources for a story that I am working on”, “I’d contact other sources to see if there’s any truth to it.”, or “If the Prime Minister was in Bourke Street, and someone said they were there, and they saw the Prime Minister arguing with someone, I’d need to check that through his media people”.

4.3 Networking and Communication

Social media is also used to connect with other people, network, establish conversations, enrich arguments, etc. Therefore the concept of networking and communication explained in this section denotes the networking and communication which involves two or more people (journalists and social media users). “Sometimes I just login to twitter and I might see someone, sharing something funny or interesting and I just respond to it, just to show that hey I am listening, I am still on this platform, I am also going to share an idea with you or support your argument if I feel I do. Just as a way to stay connected, it is kind of networking and I guess that is why they call it social networking for some of the platforms.”

However, it was also reported that there are unsatisfactory experiences through communicating on social media “Sometimes you have to argue with idiots, but that’s part of it. You’ve got to take the good with the bad. The fact that it lets me reach interesting people and useful people is the flipside of that. The downside is that you then sometimes have to
argue with idiots.”

The following discusses different ways or reasons journalists use social media for networking and communication.

1) Social leisure

This refers to the situation when journalists use social media as a means of communication and networking to satisfy their personal needs (e.g. curiosity, interest) “I think the thing is that if you send a tweet and someone replies to it, it is quite memorable, unless you are somebody who has millions of followers”, “For me, I really like that the conversation is always flowing and continues... “, “[Twitter is] the most useful social media tool, it is a great way to join a conversation ... connect with people who might have some interest to you and it is a quite nice tool to be able to tailor to your own areas of interest.”. “So twitter is not just for tweeting or re-tweeting what have been done before but also for establishing conversations.”, “it can also be used to just have fun with it and be part of something that is
going on the social media platform.”, or “I was interested in it [Twitter] because I am interested in communication”.

Journalists also communicate and network to contribute to a conversation or argument, or to support other people of their interest “It is sort of like twitter give you the sense that you feel slightly more empowered that you can make difference... You feel like you are having some kind of dialog with the rest of the world which may or may not be the case. So I use the platform to contribute to a debate.”, “Make sure that the people who are either important to you from a personal perspective or professional perspective that you interact with them on twitter that might be just by replying to their post so contributing to a conversation they have.”, or “Supporting other freelance journalists that I know, a part of networking I suppose”

2) Branding & promotion

This refers to the situation when journalists use social media as a means of communication and networking to brand and promote themselves on social media. Specially, networking and communication help journalists to build and increase their audience “I use it in a social context as well to connect with people, to build an audience.”, or “It is not only a great way to find people that you want to connect with but also it is building and growing your audience. If you are showing interest in your audience as much as they are showing in you, it is going to be reciprocated and it does take lots of effort.”

It was also reported that interacting and engaging with the audience is essential for audience building and self-promotion “Just have a chat with some of my followers. I think for a medium like twitter it is really important to constantly have a presence there.” Communication and networking to build an audience and to self-promote is more common among freelance journalists than journalists who work for a media organization “For me because I do not have a lot of followers, I am keen, I am aware that building a brand as a
journalist is really important and to build followers is a good thing because down the track, those followers could end up helping me earn income. So when I get responses I take them seriously and I interact with people because interaction with followers and with anybody that replies to a tweet is important.”

3) Satisfying information needs

Communication and networking is also used as a search strategy and tactic to satisfy journalists’ information needs “Because you are writing a story about that topic, so you want to speak to people who might talk to you either for background information about story.”, “He sent a message on Facebook and then he found someone who was actually supportive of kite flying in Afghanistan and he was able to interview them as a result of direct message through Facebook page, or “To me Social media is like those special friends whom I met once a week, once a month, individually or in groups very frequently, so they become my source for stories”.

4) Verification

Communication (two ways) is also used as an approach to verify information. For example, one of the ways is to post questions publicly or privately through direct messaging on social media to receive confirmation “I would want them to contact the police liaison and ask for confirmation, ask for more details and depending on the type of story they may ask for information from different types of people.”

4.4 Publishing, Broadcasting, and Disseminating Information

Sharing information is one of the inherent features of social media and journalists use social media to publish, broadcast, and disseminate information “It is such a great tool, really great content to share like stories”, “It is a platform that you can share ideas, opinions and for me, I like to be part of that...”, “I primarily use Twitter as a work thing, again, to publicize the work that I do. So whenever I write a story for [Deleted to protect identity], for example, I
put a link up on Twitter which my followers will see and sometimes they get re-tweeted by people and sometimes, it’s the re-tweets that are more valuable, because you might have people who follow you who are particularly influential in the area that you’re trying to reach.”, or “I write a lot of stuff about copyright and piracy, and I’ve got a couple of people who are very interested in that. So when they re-tweet it, a lot of people read it because they follow that person because they’re interested in it. So I find Twitter’s kind of good because it lets you find avenues to reach other people.”

The following discusses the reasons journalists use social media to publish, broadcast, and disseminate information.

Figure 4.4. The reasons social media was used for publishing, broadcasting, and disseminating.

1) Breaking news

This refers to the situation when journalists publish or broadcast information on social media to distribute breaking news “twitter is great for breaking news. For instance, it might be breaking news for a fire at a factory in Melbourne. Perhaps only I have that much
information right now. The story is still developing or because it might take a little while to get something published online. “, or “When I was in Egypt and reporting in the field, I’d be out often at the site of, say a riot or an election or anything that was happening in the field, again, this is for breaking news…”

Journalists use social media to break the news because it is faster, easier, and more accessible than other journalistic publishing platforms such as online website or newspaper “Twitter is instant and that means you can capture the audience, share that news straight away.”, or “It is also kind of quick and easy broadcasting platform, I found it a lot more fast-free than other social media platforms personally.” Using hashtags help journalists to make their breaking news more reachable “If it’s a breaking news event or something of importance straight away, I would often release a breaking news tweet with various hashtags, maybe breaking news hashtags, or maybe Egypt, Cairo, whatever the topic is, you’d put it out straight away. Or maybe you saw a policeman beat up a protestor or something like this…

2) Branding & promotion

This refers to the situation when journalists disseminate and share information on social media for branding and promoting purposes “It is a great platform for me to be able to share the content that I am creating directly with the audience that I build myself; it is about self-promotion for my own brand as a journalist, because I do freelance work.”, “I use it to promote my own work and I primarily do it with Twitter. So I post links to my stories or retweet stories that I have published online.”

As discussed in “Promoting and Branding” (Section 4.1), creating a new identity is part of the promoting and branding process and sharing specific information might contribute to this aim “Sometimes I share fun things, because I want to show a little bit of personality, I do not want to show always a serious character.”, or “If I find an article that I think is well written or covers a really important issue I will share it”
Another aspect of branding and promotion through disseminating and sharing information is to provide traffic to journalists’ personal website or the website of the media organizations’ journalists work for “I will put stuff up either because it’s something I wrote, and I want people to know about it, and I want to bring in traffic, and I want to start a conversation that’ll hopefully bring more traffic, and that’s a value add that I offer to my editors if I can bring in readers.“, or “I sell words to editors, and in return, they expect some traffic to sell ads to pay me, so if I re-tweet a story and help boost the traffic for the story, then the editor looks at the numbers and goes: “Well, gee, [Deleted to protect identity]’s story was good, that did really well.” The editor might not know how much of it came from me or how much of it came from whomever else, but the more traffic I bring in to an editor, the better value I deliver, so when an editor is short of money, who are they going to go with? The guy who brings 10,000 hits or the guy who brings ten hits? So it’s like I said, a value added service that just makes me that more useful.”

3) Receiving Feedback

This refers to the situation when journalists publish and disseminate their written stories or news on social media to receive feedback from the audience “I guess I just want them to feel like they can speak directly to me about a story, because they might have other ideas of where the story goes from there or they might have questions about something that I wasn’t able to put in there that I can kind of say: “Yes, I did actually know about that, but I ran out of space in the article,” so to communicate both ways, so they can kind of speak to me about what they liked or didn’t like about the article but also so I can speak to them and say: “Yeah, I understand your views.”

It was reported that receiving feedback on a story might contribute to developing the story further, or even finding sources through this process. In other words, it is used as a search tactic which might help journalists to satisfy their information needs “You can put something
out there and in return, receive feedback from the audience that might help supporting the work what you are doing, maybe even help the story grow. It is a very interesting process, they could even become your source.”

Moreover, publishing stories on social media to receive feedback helps journalists to interact with the audience and consequently forge a relationship with them. Through this process, story ideas are generated which contribute to journalists’ subsequent stories “What’s really useful about Twitter is that it lets you have a real time interaction with readers as well. So you write something and then people say: “Oh, did you know about this? Did you know about that?” And you can also forge relationships with people who are specialists in areas who you would have never met in real life. So they might read something and they’ll send a private message and say: “Oh, you need to ring this guy.” Or, “Did you know about this?” So I don’t go to it actively looking for story ideas, but it can generate story ideas as people come back to me, or I can learn more from it and then the next story will be better from the feedback I got.”

4.5 Satisfying Other Types of Journalists’ Needs

Journalists do not use social media for journalistic work solely. They also use social media for other purposes including social leisure, entertainment, satisfying curiosity etc. which are covered under this category “I do not see it solely as an information platform. It fulfils numerous needs for me... it can also be used to just have fun with it and be part of something that is going on the social media platform.”, “I use it to browse to satisfy my curiosity and interest”, “For me, it [social media] meets a lot of personal requirements; professional, social, leisure, entertainment.”, “Sometimes the thing that comes to me to go on social media and initiate some research or information finding might stem from personal interest”, “I suppose because I am inquisitive myself and it [social media] helps you to stay in tune with what people are talking about. So to some degree, yes, it does satisfy my need for finding
information but it is not only my source and it also fills up my other needs…”, or “Instagram is much more relaxing, just looking at pictures and sometimes you can disappear down the rabbit hole. You can find somebody’s feed that takes you to totally different world and because it is visual, it is so immediate. It is almost like escapism and also it comes with curiosity.”

Social leisure, entertainment, satisfying curiosity etc. may not be considered as journalistic work and activities, however, it was found such activities influence journalistic work directly. Finding story ideas is an exemplar of using social media other than for journalistic work directly. One of the interviewees indicated that story ideas come to him when he has no intention of looking for story ideas on social media “Story ideas happen when you come across… you do not really sit at the desk and say I need to find a story idea. They come to you because you are doing other stuff”. Also, in some scenarios classifying the journalistic and non-journalistic use of social media are impossible as the journalistic and personal use of social media is inextricably intertwined “Journalistic work related and personal use of social media are closely interrelated. Social media is also about you, and we are increasingly becoming a brand”.

4.6 Satisfying Information Needs

Satisfying information needs is one of the main reasons journalists use social media and it also triggers journalists’ information seeking behaviour on social media which is the main motivation of this research “One of the main reasons I go for it is, as I said before, news breaks first there so rather than searching what I want, I can look on my feed on something like Twitter or Facebook even my news feed is filled with people and groups that I follow so for example, I follow ABC news and BBC and things like that so everything on my homepage is right there.”
Therefore, next chapter (Chapter 5) examines different aspects of journalists’ information seeking behaviour in the context of social media.
Chapter 5

5. Journalists’ Information Seeking Behaviour on Social media

This chapter examines research questions 2, 3, 4, and 5, which covers journalists’ information seeking behaviour on social media. It investigates what type of journalists’ information needs (information need types) are satisfied on social media, what search strategies and tactics are employed, what type of questions journalists post on social media (taxonomy of question types), and journalists’ relevance judgement criteria on social media. Journalists cannot accomplish their responsibilities without information and thus are highly motivated information seekers and information providers. Any changes in their information seeking behaviour can influence the information produced by them for the other information seeking communities (David Nicholas and Helen Martin, 1997).

One of the main factors which influence journalists’ information seeking behaviour is tight deadlines. Journalists tend to use information sources that are easily and quickly accessible to satisfy their information needs due to time constraints in news construction. The rapid changes in technologies lead to providing new possibilities of seeking, finding, and accessing information. It enables journalists to access information that they may not previously have enjoyed before.

Social media is one of the information sources that can help journalists find unfiltered user-generated content easily and quickly as if they obtain the information via word of mouth, through face to face or telephone interview. Social media eliminates time and space constraints which enable journalists to satisfy their information need in real time. Although other platforms such as email have this feature, what makes social media unique is empowering a wide audience to produce and provide information.
Examining the category of “Satisfying Information Needs” led an exploration of journalists’ information seeking behaviour on social media which includes: 1) what type of journalists’ information needs (information need types) were satisfied on social media, 2) what search strategies and tactics journalists employed on social media 3) what relevance criteria journalists employed to judge the relevancy of information.

Figure 5.1 depicts the big picture and covers different elements of journalists’ information seeking behaviour on social media which the rest of this chapter is going to examine. Journalists use social media for different purposes one of which is to satisfy their information needs (examining journalists’ information need types). Journalists employ different search strategies and tactics to satisfy their information needs on social media (examining journalists’ search strategies and tactics) and finally, journalists use different criteria to judge the relevance of information found (examining journalists’ relevance judgement criteria).
As different types of information need lead journalists to social media, the next section (5.1) explains journalists’ information need types on social media.

### 5.1 Journalists’ Information Need Types on Social Media

In this section, the types of information needs which led journalists to social media and the role of social media in satisfying their information needs are examined. The qualitative analysis of interview transcripts suggests the following information needs types: 1) Real time information 2) Opinion and anecdotal evidence 3) Facts and knowledge 4) Events driven information 5) People (sources, contacts, experts, etc.) 6) User generated content (spats, photos, videos, etc.), and 7) Serendipity

#### 5.1.1 Real Time Information

Journalists always seek first-hand information on their subjects of interests to scoop their rivals. Social media is one of the places which news breaks first, therefore it is imperative for journalists to get updated real time on the subjects of their interests on social media, including

![Information Need Types diagram](image-url)
that coming from websites, sources, or people of their interests “Usually the first place they might share is on their social media account, so that can be the most effective way to get up-to-date information than looking elsewhere. Often social media is updated first, because it is faster, and people have more control over it.”

Therefore, finding real time information is one of the main information need types that leads journalists to use social media. Almost all journalists mentioned the importance of social media when it came to finding real time information on a topic “Social media is a little bit like a social seismograph. It’ll tell you in real time what is happening.”

In response to the question of “Is there any information that you can only find through social media?” one of the interviewees said: “Yeah, what’s happening right now, what’s happening in the last 60 seconds? You’re not going to find that on Google.” She continued, “Twitter was the thing that gave me the answer at 1 o’clock in the morning because so much is plugged into it. So, yeah, that’s where I would search for keywords or information about, what people are saying about it right now.”

5.1.2 Opinions and Anecdotal Evidence

Opinion and experience based information were classified into one group of information need type as everybody experiences (directly or indirectly) something in a different way and then they express and articulate those experiences in form of their opinions on social media.

Social media has changed the concept of interviewing people to receive their opinions on a topic. Journalists now are able to seek people’s opinions on a topic by conducting a search or posting a question on social media. Polling people on social media was viewed as fast and reliable “The old days were like the Vox Pop, you go outside the station and you talk to ten people and get their opinion. Now, via the hashtag, you can search people’s comments, and a grab of their Twitter is on the story.” Moreover, journalists were able to find people’s opinions beyond their inside information and followers; ”You can put it out there, people re-
“tweet it and it goes out and maybe something will come back to you.” Social media was also reported to be a place to find anecdotal evidence, although they may not be concrete evidences, it helps journalists to learn what happened.

Finding people’s opinions contributes to different stages of journalism and news processes, ranging from evaluating and writing a story to developing a written story; “We have already written an article on a particular topic and we want either support or challenge that idea with opinions and things that people are already talking about on social media at the moment and we can insert that into the story.”

Public conversations on social media were found to not only equip journalists with people’s opinions but also to help journalists ‘connect the dots’ and comprehend people’s interaction with and influence over each other. Finding opinions was not only confined to the public, as journalists were also interested in expert opinions.

5.1.3 Facts and Knowledge

Facts and knowledge based information are classified into one group of information type as a fact is “a piece of information that is known to be true” and knowledge is “the information, skills, and understanding that somebody has gained through learning or experience”8 or in other words, knowledge is what somebody knows.

As social media consists of people (users) and the information produced by people (users), the content of social media can be deemed as people’s opinions and knowledge. On the other hand, reporting facts is one of the main responsibilities of journalists. However, one of the interviewees stated: “You have to decipher what might be fact from opinion or fiction. That can become very difficult.”

One of the scenarios that journalists seek facts on social media are investigative journalism stories. One of the interviewees explained: “There’s an [DELETED TO PROTECT

---

8 Longman Contemporary Dictionary
IDENTITY] Investigation Twitter account that we would use to say: ‘Hey, do you have information on a certain government agency that we might be looking at?’ Something like that. It might be something that we’re trying to solicit whistle-blowers with, potentially or sources, so you can actively encourage people via social media to potentially tell you something anonymously or contribute to a story that isn’t already on the air.”

However, social media is not a secure and safe place where someone can contribute his/her knowledge to a story anonymously and the interviewee failed to provide more information and practical examples on how social media helps journalists to solicit whistle-blowers to contribute a story anonymously. Practically, as indicated by other journalists, whistle-blowers tend to use encryption tools to communicate with journalists.

Another example of seeking facts is looking for information background. Journalists of this study tended to use the direct message or ‘@’ features of Twitter or Facebook when they ask questions to find facts. These social media features helped journalists to address a person(s) directly who have information: “If I tweet something, I can’t guarantee that every person that can answer my question is reading my tweet, I can’t guarantee that. But with Twitter, there are ways of writing tweets, whereas if you want to write a direct tweet to a person, you write their ‘@’ name first so they will see it, they’ll get an alert. I can send a direct message.”

However, there are journalists who were reluctant to use social media to find facts on its own; “... Facts are facts, they’re right or they’re wrong. Something happened or it didn’t happen. So just because it’s on Facebook or Twitter doesn’t mean you can just take information off it...I do not take any fact that I find on social media....So, I am sure there could be challenges if you find something quite inflammatory and then maybe you cannot verify it through any other sources. That is quite challenging part of using social media.”
5.1.4 Events Driven Information

Event driven information was a broad ranging type identified from interviewees, including authorities, celebrities, etc., announcements on social media, protest, riot, elections, and natural disasters such as flood, earthquake and bushfire. They stated that some news organizations have a team of people just to monitor the social media pages (including those of authorities) for new events or announcements. One of the interviewees indicated that different resources were assigned to monitor different social media sources for the happenings depending on their perceived value; “Depending on the source, it can be extremely valuable... So your resources at your disposal, whether it’s human resources or where it’s funding for a certain story or assignment or travel budgets or whatever might push you to use social media more or less.”

Interviewees said they use social media to find happenings in three different ways: proactive, seeing a story on social media and then deciding to follow it; reactive, using social media to find information about a story that is already happened; or a mixture of both approaches. Story type influenced which approach was used. For example, the reactive approach was more common for crime related events, but for political events, a proactive approach was more common.

5.1.5 People (Sources, Contacts, Experts, etc.)

As users and user-generated content are underlying elements of social media, interviewees viewed social media also a form of a database of people; “To me, it’s a database, they’re not friends, and I don’t even know a lot of them. They’re people that I find may benefit and I may benefit, so it’s a database of people.”

Considering social media as a database of people implies that it is a suitable place for journalists to find an individual or a group of people. One of the interviewees indicated that one of the reasons he uses social media to find a person is to learn about other aspects of the
person’s characteristics and personalities; “You can get much more sense of a person is like. I think people including myself tend to post so many different states of mind that some of the truth of the person, personality leak out into the public… very private people suddenly have a tweet that just talks about stuff as if they talk to a friend and that is really fascinating to look at and give you insights about the person’s character.”

Moreover, journalists reported using social media to find people’s interests on a topic or a subject because social media was described as enabling journalists to learn about people’s interests on a subject by its inherent features.

Although the purposes of seeking people on social media varied from task to task or journalist to journalist, the analysis of interview transcripts suggested that social media is one of the main information sources for seeking people or information about people.

Depending on the task, journalists employed different search strategies and tactics to find a target person or people. If the journalist had good information, then searching by name and then refining by location was a successful approach; “Sometimes it can be as specific as you putting in a name and looking for the person that matches that name, so like, for example, there can be hundreds of Tom Smiths on there, so you’re going to find the Tom Smith that relates to that shooting in Brunswick.”

However, sometimes seeking people was a complicated process. This situation especially happened when journalists did not know whom they seek. In this case, a combination of different approaches was used. Building a web of information about who somebody is was one approach; “I find, a lot easier, and it’s a lot of easier to build a bit of the web about who somebody is. So when I’m searching on Facebook, if I know something has happened either at a certain place, like a suburb, or at a certain location, like a school, a good way to sort of start, I guess, is seeing people that have checked in at that place or liked that place. So basically, you just would punch in, say, Richmond, into Facebook, and then a lot of the time
it’ll say: “3,000 people have checked into Richmond,” and so I’ll go onto that and then open new tabs of those people, and I’ll sort of see if they actually live in Richmond and you basically just keep building, building, building, building this sort of web, and, eventually, you’ll get someone who you’ll be fairly certain either knows the victim or was around at the time the crime was committed and then you’ll either contact them on Facebook or find another way of contacting them, but you’re basically looking for stuff like who they’re mutual friends are.”

However, the way a journalist seeks for a person or a group of people depends on the amount of information she/he has about a person or target; “How targeted can vary depending on how much information you’ve got before you go to social media.”

In some scenarios, interviewees stated they solicited information from people by putting out calls on social media. In this case, journalists seek for people completely in a different way; they attempt to attract people with information on a topic. One of the interviewees provided an example of attracting whistle-blowers by putting out calls on social media, however, he failed to explain how practical the example of putting out calls for whistle-blowers is “We also would put out calls for people who might have information on a topic... You might be soliciting whistle-blowers, so you are looking for a different kind of thing, so you’d be engaging with the platform in a different way then. Instead of just searching, you’d be asking questions, you’d be trying to find people.”

One of the main challenges in seeking and finding a person was verification. A social media account may not reflect the owner’s real name. Moreover, individuals can create many accounts that further complicates the process “The one big thing is the problem with identifying who is talking to you, who is giving you the information.”

However, interviewees employed a few techniques to verify social media account holders. One of the simple approaches was to check the name of social media account holder on
different social media platforms “I use Instagram, Twitter and Facebook to verify who people are and to see who is active in that area. So the usage of the three (Instagram, Twitter and Facebook), those particular three for me is quite fluid and unconscious.” It was also reported that it would be helpful if there was a built-in feature in social media to check the identity of a person on different social media platforms.

Finding photos of a person on social media is another approach which help journalists to identify and verify a person on social media “It [social media] can be quite good for throwing out a picture of a person so you might identify who they are if you are looking for a contact because people often for some reasons have a picture that is themselves and recognizable and that is public.”

Another way was checking the verified blue badge provided by social media platforms. The social media accounts which have the blue badge are verified by the social media platform. However, all social media account holders are not able to request for this feature. This feature is currently available for “highly sought users in music, acting, fashion, government, politics, religion, journalism, media, sports, business and other key interest areas.”

5.1.6 User Generated Content (Spats, Photos, Videos, etc.)

There are situations (mainly breaking news or emergencies) where no reporter is available to physically cover an event. Interviewees reported wanting to use content generated from the public, including photos or video or even people’s reactions to an event “User generated photos or video of an event that’s happened that day but maybe you can’t get a reporter to straight away…”

One of the interviewees (a freelancer) indicated that she could not afford to have a cameraman for a story and consequently she had to find user-generated photos for her stories on social media “You might not be able to afford a cameraman for a story or there might not

https://support.twitter.com/articles/119135
be one available within the given time frame, so you’ll try and source images via social media rather than getting them shot by the cameraman from that channel or the photographer for the newspaper or whatever.”

Using such content helped journalists to receive the public’s reaction, pictures, video and footage on an event. Instagram and YouTube were two additional social media platforms (besides Twitter and Facebook) which satisfy journalists’ information needs when it comes to users’ photos and videos. Verifying such content was reported to be challenging.

Writing stories on social media arguments or spats was another example of this user generated information need type. One interviewee stated “I do recall doing a story once about chefs who had a quarrel and their fight was still visible on twitter. That was public. So that became a news story.”

5.1.7 Serendipity

The interviews revealed that journalists regularly used social media for leisure, entertainment, satisfying curiosity etc. Such activities influenced journalistic work directly. One interviewee indicated that story ideas come to him on social media serendipitously, another stated: “Journalistic work related and personal use of social media are closely interrelated”.

Section 5.1 identified that seven types of information need lead journalists to social media. However, journalists employed various search strategies and tactics to satisfy their information needs on social media. Hence, the next section explains the search strategies and tactics employed by journalists to start their information seeking on social media. In other words, the next section (5.2) examines the search strategies and tactics which journalists employed to start their information seeking.

5.2 Journalists’ Search Strategies and Tactics on Social Media

When information needs lead journalists to social media, they employ different search strategies and tactics (SST) to satisfy their information needs. However, as opposed to web
IR systems (e.g. Google), seeking information on social media does not start only with posing queries or asking questions. Journalists show different search behaviours when they start seeking information on social media.

This section examines the search strategies and tactics which journalists employ to start their information seeking process on social media. Also it should be noted that combining these techniques enables journalists to have very complex search behaviour on social media for some search tasks: “The types of searching you do can vary a lot from that very specific entire name search to that very broad “I’m looking for anyone in this suburb, because all I know is that a crime or something interesting has happened in that suburb.”

The findings of this study suggest the following search strategies and tactics (SST) employed by journalists to start their search on social media: 1) Following, 2) Monitoring, 3) Entering queries, 4) Using external tools, 5) Checking the “Trends”, 6) Browsing/ Scanning/ Scrolling, 7) Posting news stories, 8) Networking and communication, and 9) Asking questions

Figure 5.3. Journalists’ Search Tactics & Strategies on Social.

The findings of this study suggest the following search strategies and tactics (SST) employed by journalists to start their search on social media: 1) Following, 2) Monitoring, 3) Entering queries, 4) Using external tools, 5) Checking the “Trends”, 6) Browsing/ Scanning/ Scrolling, 7) Posting news stories, 8) Networking and communication, and 9) Asking questions
These findings indicate that not only these SST help journalists to satisfy their information needs actively, but also some of them help journalists’ information needs to be satisfied passively; “Either you can go search for it or it comes to you. So there are different ways you can use it. You can search or you just follow what’s there and it comes to you that way.”

5.2.1 Following

This SST refers to the situation when journalists start the search process by following a social media account(s) or group(s) to satisfy their information needs. The tactic enables journalists to receive information posted by others in their own social media feed “I’m not just going to follow people who agree with my politics, I applied and asked to join a whole lot of groups, they were radical racists, anti-free speech, anti-Islam groups because I want to understand how they think.”, Or “By following political leaders and journalists in Canberra on my Twitter account, I might have it quicker.”

This approach is also considered as an information gatherer or information filtering mechanism “I use some people on Twitter as news gatherers for me, as filters. I might want to know what’s happening about in a certain area, I don’t want to follow every damn thing that happens in that area, so I follow someone on Twitter who does because they’re going to occasionally throw up things that are going to be of interest to me.”, or “You can use people around you as filters and then follow them, so you don’t have to follow everything too closely, you can just keep an eye on a few key people who you know will talk about something of interest.”

Creating lists or subscribing to the lists created by others (in Twitter) was another approach employed by journalists as part of their “following” search tactic “I follow 9,000 people, but I can’t follow those people, so you form lists. So the people I rely on in certain fields, they’re in my lists. So if I’m going to look for politics, I’ve got that list; media, that list; food... I can just get a brief summary of what’s happening by going to the lists, so it’s a matter of
organizing. And there’s also lists on Facebook. Say you’re interested in politics, you can add political parties or politicians to that list.”, “Create a list of all these people within Bendigo who had some relevance. And one of the first things I do every day is I just look at that list and I see what everyone was talking about. Facebook, similar thing...”, or “I have lists set up and so I have one specifically of key people in the small business area.”

5.2.2 Monitoring

This SST refers to the situation when journalists start the search process by monitoring specific sources or targets on social media (social media accounts) to satisfy their information needs “One of the things that we’ll do in the newsroom is, as a team of people, some senior producers and more junior producers, somebody will be assigned to watch the Queensland Police Facebook page, for example, because that is the often the first place they release information.”, or “We might assign a person to watch on a given a story... we will assign somebody to be watching, making sure that they’re across that. So, again, depending on the source, it can be extremely valuable.”

5.2.3 Entering queries/ keywords/ hashtags

This SST refers to the situation when journalists start the search process by inputting queries, keywords, names or hashtags to the search box provided by the social media platforms. This search tactic is similar to the search tactic used for the most web IR systems such as Google “Twitter has a search function on the front page, at the top. Absolutely, I use that. Same with Facebook, I use the search function... You can also search via topics, hashtags, keywords and things like that. So there might be #MartinPlace, it might be #SydneySiege.”, “If I am looking for a conversation that already taken place on twitter, I search by keywords or hashtags”, or “I just may search climate change environment and bring up the tweets and see who is talking about it and then click on the users who are talking about it and they may have a lot of knowledge in that area and I can find them in that way.”
Although the analysis of the findings show that searching hashtags is common among journalists and searching hashtags on social media platforms not only enables journalists to receive latest updates on specific subjects or topics beyond their inside information but also equip them with people’s opinion on a particular topic or subject “I find searching for hashtags is really, really helpful.”, “You’d try and figure out what hashtag people are using, maybe it’s the hashtag we’ve been promoting on the TV channel, maybe it’s something else. You can look around and see that there might be three or four of them, so you’d search for these popular hashtags.”, or “If I’m really concerned about a specific issue or curious, I can search a specific hashtag and see what people are saying about that and what the latest updates about that specific issue are.”, there are journalists who are reluctant to search hashtags “You can leave the hashtag off and search for the word, and you’ll still find the hashtag. Whereas you can’t trust people to always use the hashtag properly. So if I put “#Netflix,” I won’t find people who are talking about Netflix but didn’t bother to use the hashtag, but if I just put “Netflix,” I will find people who used the hashtag and people who didn’t, so I don’t really bother so much with hashtags.”

This tactic was also used to find the information or source in the specific locality by entering the location name in the search box “For example, I am on Nepal right now. I would do a search on the word “Nepal” and I would try to find someone there who I knew already.”, “I will just be searching for a keyword mostly, so I’ll be putting in a keyword that relates to what the particular event was, so “extremism” or “shooting” or whatever, or I’ll put in the place, so where it was, you know, Footscray, or Richmond, or both, and I’ll go through Twitter and put that”, or “a lot of the time, the groups would have “Melbourne” in it. So it’s just as easy for me to type “Melbourne single parents” and options would come up.”

It should be mentioned that although after conducting the search (mainly on Twitter or Facebook) through entering queries, keywords, or hashtags, social media users can access to
“Advanced search” or “Search/Results filters” to narrow down the search results, the analysis of the findings show that most journalists do not benefit from these features of social media platforms “There is an Advanced Search function on Twitter, and I don’t know how it breaks down, actually. I haven’t seen it for a while. Does it give you time brackets?”, or “I’ve probably played around with it [advanced search], but I’ve never really needed to that much”

### 5.2.4 Using external tools

This SST refers to the situation when journalists start the search process by using external tools to satisfy their information needs on social media “How I start a search? I use Tweetdeck and I look at the search bar on the left and I input the clearest explanation of what I’m looking for.”, or “The TweetDeck platform is very useful because you can set up columns on Twitter that you lay to monitor certain hashtags, or monitor certain users, or monitor… You kind of create various filters that you can see lots of, you might be able to see five or six of them or ten of them on the screen at any given time. I know platforms like Hootsuite let you curate a bit more as well… Tools like that, app based tools give you more power to filter and sort and view different topics or follow different events or different aspects of an event, perhaps. So that sort of stuff is very useful.”

The analysis of the findings shows that TweetDeck and Hootsuite external tools were most used by journalists “I use TweetDeck and Hootsuite which is social management tool where you can basically manage multiple social media platforms all in the one program, they are usually web based programs.”, or “Tweetdeck and Hootsuite where you can have all your social media on one big platform.”

### 5.2.5 Checking the Trends

This SST refers to the situation when journalists start the search process by checking the “Trends/Trending” provided by the social media platforms “I will look at what trends are. So,
on twitter there is a function that refreshes itself multiple times a day based on what people are talking about, so the most popular conversation is pop-up as what it is called trendy and you can narrow that down to your location so often I have mine set on to what is trendy in Melbourne, because I am interested in what is going on in the city that I am working and covering.”, “I definitely look to social media for trends and the things that people are talking about which then they may shape what I am writing or creating content-wise.”

However, depending on the type of journalist, employing this search tactic might not be very useful “A lot of the time, crime doesn’t trend, just because there’s other stuff going on, it’s usually a very local thing, crime. So it’s not going to have people in Perth, for example, talking about a shooting in Melbourne most of the time.”

5.2.6 Browsing/Scanning/Scrolling

This SST refers to the situation when journalists start the search process by browsing, scanning, or scrolling through social media “On social media, one of the main reasons I go for it is, as I said before, news breaks first there so rather than searching what I want, I can look at my feed on something like Twitter or Facebook which is filled with people and groups...“

One of the features reported which makes social media a competitive updating tool is having all information in one page. This feature enables journalists to employ browsing/scanning/scrolling search tactic “You can kind of use Twitter, Facebook, and so on as an RSS tool to monitor feeds from websites... so everything on my homepage is right there for me, I just scroll though, and I can see the latest updates whereas if I was on Google I’d have to individually search...”

This search tactic is also used along with other search tactics explained frequently “You might have to go to all their separate Facebook pages, see that people have liked the Hell’s Angels are also from Footscray, and then you’ll have scroll through all theirs to see if they
have ever checked in at a club house in Footscray”, or “There’s a lot of scanning going on because with the hashtag, and there are so many people on Twitter, and the information is unfathomable, you just need to see what you need and you’ll know what you need when you see it, so you go for that. We don’t have all day to keep looking; we’ve got to move fast.”

5.2.7 Posting news stories

This SST refers to the situation when journalists start the search process by sharing news stories with readers on social media. This tactic allows journalists to receive feedback directly on the stories they published which consequently help them to develop their stories further. “Even on Twitter, when I’ve written stories, people will read my story and tweet me other details I may not know about. So they will follow up with other information that might lead to another story, or it just may lead to more understanding and more knowledge of the topic. It’s quite interesting that people you don’t know existed can come to you with information.”

5.2.8 Networking and Communication

This SST refers to the situation when journalists start their search process through communication channels (privately or publicly) and networking platforms provided by social media. “During the Gallipoli Centenary, I had someone over in Turkey who I knew, just from Twitter, I have never met him in person. He said to me that one of the Dawn Service’s children was going to be banned because of a security concern. So he tweeted that, and I re-tweeted it saying news on the ground, just re-tweeting what he said… I reported it to the news desk …and they passed it on to the relevant journalists to check out”

Communication is an integral part of journalism activities. One of the reasons that compel journalists to communicate is satisfying their information needs and social media equips journalists with a new communication channel and networking platform to accomplish this aim. “The difference today, compared to traditional media, 21 years ago, is that you have got two ways conversation happening with audience instantly”. 
As pointed out in the “People” subsection (Subsection 5.1.5), social media also can be deemed as a database of people. Each account on a social media platform represents an individual, organization, etc. In other words, if somebody is on social media it means that he/she has at least one account. Having database of people (contacts) enables journalists to have direct access to inside information by communicating with the people who may benefit them on their stories “With twitter, it is very much a case of actually just getting in touch with the contacts, you want to have access directly into a network of people that have specific shared interests.”

Social media allows journalists to find, access, and communicate with people (contacts) regardless of their location and time zone with ease “It is very good for international contacts, when you work across timelines and date you can find and communicate with an expert in another time zone and really good expert and you would be amazed by his actually on social media.”

Another way that communication helped journalists to satisfy their information need was contributing to a debate or conversation. Starting or contributing to a conversation or a debate was described as a method that generated leads.

Therefore, networking and communicating with readers and social media users help journalists not only to forge a relationship with them, but also to satisfy their information needs, generate story ideas and leads, and develop stories.

5.2.9 Asking questions

This SST refers to the situation when journalists start their search process by asking questions on social media platforms to satisfy their information needs. Although journalists must use communication channels provided by social media platforms to benefit from this search tactic, the “asking question” search tactic is different from the “networking and communication” research tactic in a way that journalists express their information needs
explicitly through asking questions in the “asking question” search tactic “Through Facebook or Twitter, I can put out there, "Does anybody know a family that fits that criteria?" I might find it, whereas before, you can’t go into the Bourke Street Mall with a loud speaker and shout out: "Does anyone know any family?" You can’t do that.”

Although the asking question on social media also may be deemed as a way of communication, it can be also considered as a search tactic and strategy. Both of these purposes help journalists to satisfy their information needs.

Moreover, it was reported using hashtags are helpful in the “asking question” search tactic.

Figure 5.4. Nested model of posting question on social media.

“Hashtags are very important, especially in politics. There’s Spring Street hashtag, federal politics is OzPol. So by putting those hashtags, not only do my followers see it, but everyone around Australia or the world who’s following that hashtag will see it, so you maximize your presence by doing that. That’s a way of more people seeing it, is through the hashtag, very important.”
As in the “asking question” tactic journalists are able to articulate their information needs explicitly, then the questions asked by journalists on social media platforms can be analysed to gain more insight into the types of question they ask on social media and consequently their information needs. Therefore, the following examines the question types asked by journalists on social media.

The qualitative analysis of interview transcripts suggests the following taxonomy of question types which journalists tend to ask on social media platforms: 1) Finding opinions, 2) Finding sources, 3) Finding facts, 4) Enriching debates or conversations, and 5) Verifying information.

These findings indicate that asking questions on social media platforms is not only used as a search tactic and strategy to satisfy journalists’ information needs but also it is used as a strategy to communicate with the readers and verify information.

Of taxonomy of question types, finding opinion, finding sources and finding facts are considered as question types that satisfy journalists’ information needs. Enriching
conversations or debates question type not only helps journalists to find story ideas or enhances the written stories (satisfy information needs) but also it is employed to communicate with the readers and also to fulfil journalists’ curiosities and interests. Journalists also exploit posting questions on social media platforms to verify information.

5.2.9.1 Finding Opinions

Finding the opinion of people on social media is the most recurring theme among other question types emerged from analysis of interview transcripts. As one of the participants considers posting questions on twitter as a way to find anecdotal evidence “Twitter is more anecdotal evidence, I suppose.” he continues “Twitter is the equivalent of interviewing people walking past, saying: ‘Dude, did you see anything? Do you know what happened?’ Now, they’re not the official source, but they’ll give you some ideas on what happened until they come around“.

Another participant expresses a similar idea; he provides a concrete example and concludes that posting questions on social media is similar to polling or surveying people. In other words, social media allows journalists to ask questions publicly to receive people’s opinions on a topic “I think I was doing a piece for a gaming magazine on how to build an arcade machine out of a raspberry pie and some old bits and pieces, and I think I said something on Twitter like: ‘Hey people, how do you play your retro arcade games? Like, if you want to play Space Invaders and Pacman, how do you do it?’ So it’s almost like a bit of a poll, a bit of a survey, and then people say: ‘I use this software, I use that software.’ And then it gives you a few starting point.”

Another example that shows journalists tend to post questions to find about audience’s opinion is at Q&A TV show (an Australian talk show)“It tends to happen more on shows like Q&A, panel shows that have a deliberate function of audience participation, or attempt to
have a deliberate audience participation function. It has the tweets that show up on the bottom of the screen as the show is progressing...

Posting questions to find opinions is not only limited to explore the general opinion on a topic or an event but also it is also used to find out about experts’ opinion on a topic “I was writing on fashion and just wanted to see what are going to be key trends in fashion for autumn and I thought what the good way for me to start is. I might stop asking some fashion experts, so I sent tweet to my fashion followers and I just asked them the question what do you think is going to be the main trends for autumn and each one of them have got back to me with the response or prediction of what they thought is going to be.”

Hashtags are one of the Twitter features used by journalists to promote their questions when they want to find out about people’s opinion as it helps their questions go beyond their followers “Just say there’s a protest outside Parliament, and I can’t be there. On Twitter, I’m sure there’ll be photos of that protest, there’ll be people hashtagging Spring Street, which is the political hashtag, or hashtagging the name of the cause. I’m pretty sure I can find people that are there. Then, I can send a tweet and say: “Would you be able to comment?” I could do it that way, without even being there.”

5.2.9.2 Finding Sources

Finding sources on Twitter is the second most recurring theme in the taxonomy emerged from analysis of interview transcripts. The number of occurrences (the number of references) coded under this category is almost same with the “Finding Opinions” question type. So it can be considered at the same level with the “Finding Opinion” question type. The reason for this is inherent in the nature of social media; social media is composed of people and the information shared by them “That story came directly from social media, and I was thinking that actually could be a good story, talked to my editor about it and in fact when I needed to find people who also doing what this woman was doing with her doll making, doll painting...
because she was in Tasmania, I was looking for people who did that here in Melbourne... so they put out a call on their Facebook/twitter page, a sort of a notice, and within minute people were emailing me. So I can see how powerful it can be... They left a message on their social media site and said that there is a journalist in Melbourne doing a story about this. Does anyone make their own dolls who want to speak to him? And I got emails and contacts at the end. That was great”, or

“We were working on a topic on a story about gambling in the Vietnamese community in Sydney, in Western Sydney, and we were looking for people that were talking about being caught up in bad situations because of gambling addiction, and we did use Twitter and Facebook to find groups of people, support groups. We did find someone via Twitter who talked about, something, I can’t remember exactly what we found, but we did find someone via Twitter that we ended up using a source. In the same instance, we also would put out calls for people who might have information on a topic.”

Typically, using the “asking questions” search tactic to find sources on social media was regarded as “call-out” “If I wanted to get an average person, you know, for example, if there’s a story on penalty rights and the changes to weekend wages. And I wanted to speak to just an average person who worked in a hospitality, then I would go to Facebook. And I put out a callout on the Bendigo Advertiser Facebook account saying “hey. Who’s going to be impacted by this?”, “We callout on a post like “what do you think of this?” or “how else affect you?” And if someone responds to your question, then all of a sudden, they’re signalling themselves out.”, “If I hear something about a story I might put a callout on social media like Twitter saying, “Does anyone have any experience with the basic search work?” to see if I can find anyone else who can sort of back up that story”, or “Sometimes you get people who actually interact with the question. You know, like as we callout on a post like “what do you think of this?””
The re-tweeting feature in Twitter plays an important role in finding a source. It was reported that when journalists look for sources by posting questions their followers re-tweet the message and it helps to find what they are looking for “I can put a post which I’ve already done and then my friends share that post. So mine’s gone to 16,500 people, theirs could go to another thousand people. So it just keeps spreading, they can keep sharing the post to try and find out”

5.2.9.3 Finding Facts

It can be tricky to evaluate and analyse a question and then categorize it under the taxonomy without having enough context. This is especially more difficult for the “Finding facts” and “Finding opinions” question types. A question can be categorised under the “Finding opinions” question type and the same question can be categorised under the “Finding facts” in a different context. For example, if a journalist asks someone (e.g. via Twitter) in authority “How old is the guy who was arrested?” the question can be categorized under “Finding facts” because journalists expect to receive facts from people in positions of authority. However, if the same question is asked publicly (on Twitter) to receive general responses, it can be categorised under “Finding opinions”, because the question has an implicit meaning of “How old do you think the guy who was arrested is?” and consequently responses to the journalists’ question consists of people’s opinions on the age of person who was arrested and the analysis of the interview transcripts shows that journalists do not take the people’s opinions or responses at face value. To avoid this ambiguity, only questions with proper context have been taken into consideration.

It was reported that fact based questions on social media platforms are mainly associated with looking for information background on a topic or subject.
5.2.9.4 Verifying Information

Asking questions on social media was also used as a verification strategy. Passing the buck, evaluating the social media users’ responses along with their weight, and receiving responses from trusted sources are the verification strategies which can be used when journalists post questions on social media for verification purposes.

5.2.9.5 Enriching Debates or Conversations

The analysis of the interview transcripts shows that journalists also ask questions on social media to enrich debates or conversations. Journalists might start a debate or contribute to an ongoing debate or conversation happening on social media. Enriching debates benefits journalists in different ways; it enables journalists not only to find story ideas, generate leads and satisfy their information needs, but also to communicate with others and satisfy their personal needs such as curiosity and interest.

Section 5.2 identified that journalists employ nine search strategies and tactics to start their search process and satisfy their information needs on social media. After seeking information through employing search strategies and tactics, journalists apply different relevance criteria to judge the relevance of information which satisfies their information needs. Therefore, the next section (5.3) explains the relevance judgement criteria employed by journalists to judge the relevance of information.

5.3 Journalists’ Categories of Relevance Judgement Criteria

In order to evaluate whether an information retrieval system satisfies users’ information needs, we should first understand what relevance criteria are employed by users to judge the relevance of information in a specific context.

After finding information on social media, journalists judge the relevance of perceived information objects in relation to their information needs via various criteria. This section
explains the relevance judgement criteria used by journalists to evaluate the relevance of information in relation to their information needs on social media.

The findings suggest six categories of criteria: 1) Information, 2) Source, 3) Journalism Value & Training, 4) Journalist, 5) News Piece/Story, and 6) Social Media Users.

Figure 5.6. Nested model of relevance judgement criteria.
The following explains the categories of relevance judgement criteria by considering that some of the categories might have overlapping relevance criteria with another category. For example, the interest criterion not only is used by journalists to judge the extent to which the perceived information is interesting but also it is used as a factor to judge the newsworthiness of information.

### 5.3.1 Information

The category of information relevance criteria refers to the criteria related to the information (text, image, and video) found on social media. This is not to suggest that these criteria are inherent to information on social media although, they can be considered as the attributes of information on social media itself. For example, different journalists might encounter the same information on social media and draw different conclusions as to the importance of information. Figure 5.8 shows the category of information relevance judgement criteria.
<table>
<thead>
<tr>
<th>Category</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Importance</td>
<td>The extent to which information seems important to journalists or journalists assess that it is important to readers.</td>
</tr>
<tr>
<td>Interest</td>
<td>The extent to which information arouses journalists’ interest or journalists assess that it arouses readers’ interest.</td>
</tr>
<tr>
<td>Unusualness</td>
<td>The extent to which information is unusual.</td>
</tr>
<tr>
<td>Usefulness</td>
<td>The extent to which information is useful.</td>
</tr>
<tr>
<td>Popularity</td>
<td>The extent to which information is popular.</td>
</tr>
<tr>
<td>Authenticity/Accuracy/Credibility</td>
<td>The extent to which information is accurate, true or believed to be accurate or true.</td>
</tr>
<tr>
<td>Verifiability</td>
<td>The extent to which information is verifiable.</td>
</tr>
<tr>
<td>Time and location</td>
<td>The extent to which information is according to the time and the location considered.</td>
</tr>
<tr>
<td>Quality</td>
<td>The extent to which information is seen as quality information and covers different aspects of the quality of information.</td>
</tr>
<tr>
<td>Topicality</td>
<td>The extent to which information relates to the search keywords implied.</td>
</tr>
</tbody>
</table>

Figure 5.8. Category of information relevance judgement criteria.
1) Importance

This criterion is defined as the extent to which information seems important to journalists or journalists assess that it is important to readers. Examples of responses coded for importance criterion include “The main concern is, “would this be something that is interesting or important for the readers to know that?””, “It’s a mix between what is popular and what I think is potentially important and useful for all of them to know.”, “Is this something that I feel is important to discuss…”, and “You’re naturally curious, you’re naturally sceptical, you have a sense of what is important to people, but you can also develop that as a journalist.”

However, it was reported that some important information does not receive much attention from readers on social media due to it not being interesting enough and it is the role of editors to dictate what information is important for readers to know and what information is not “There’s something really important that needs to be noted though because some important stories, like some political stories, are really dry, and you know not many people are going to read it. But you have to write it anyway because they’re important and they should be read by everyone... that’s why you have editors overseeing what journalists do because they say yeah, I think that’s worth writing [or] I don’t think that’s worth writing.”

2) Interest

This criterion is defined as the extent to which information arouses journalists’ interest or journalists assess that it arouses readers’ interest. Journalists used different terms to describe how information attracted their interest and made them select and use the information. The terms include but are not limited to “a hook”, “interesting”, “colourful”, “engaging”, “intriguing”, “striking”, etc.

The interest criterion was reported as one of the most important criteria by several participants
“It has to be interesting. I think that’s the one overriding factor of from it all... if it’s not interesting... I’m not going to go for it”, “My number one concern is will the story be interesting for the readers”, or “There’s so much information out there, the role of the journalist is to get the interesting information... if it’s not interesting, I’m not going to touch it.”

This criterion is also used by journalists to judge whether the information found is interesting enough to attract readers’ attention and make them engaged or not. This implies that journalists select the information which not only attracts their interest but also their reader’s interest “Because I know that I’m writing an article about a particular subject and I know that some of my readers might be interested in that particular subject. Because I have a particular interest in the particular issue”. This indicates that journalists also need to judge what information can attract their readers’ interest at the same time.

In response to the question “how do you judge whether it is interesting to your readers?”, it was reported that knowing your readers and experience are determining factors “The older you get and the longer you are writing for a particular audience, you become better knowing what that particular audience will want, what they will be interested in. You get better at that all the time because you get feedback from them.” however, it was also reported that if you as a journalists think something is interesting, then your readers might think the same way “I think you have to trust yourself that you think something is interesting, probably, other people will as well.”

3) Unusualness

This criterion is defined as the extent to which information is unusual. Although there is a degree of overlap between unusualness and interest criteria, they are different criteria “It’s interesting in a specific way. Stories about celebrities are interesting because people like
celebrity stories. Stories about a man biting a dog are interesting because it’s rare. They’re not exactly the same thing but they overlap.”

Journalists used different terms including “uniqueness”, “never seen before”, “never thought before”, etc. in describing when they were looking for unusual and odd information “Things that you would never otherwise have thought of... So I think like if something was unusual and it popped up on social media, like... I was like “hey no one’s written about that. That’s unusual. I wouldn’t have thought of that, had I not seen this on social media. So I went for it.”, or “It doesn’t mean that they’ll be unique stories, and by unique, I mean odd or not usual. The classic case in journalism is that a dog bites a man. That’s common and happens all the time. But if a man bites a dog, that’s a story. Because that’s an unusual odd, thing.”

One of the participants provided a concrete example of using unusualness criterion in selecting and using the information on social media “The actual Twitter message [was], “This property in Preston [was] sold for $1.45 million dollars after forty five minutes.” Forty five minutes is a bit unusual for an auction. Usually, it goes for like fifteen to twenty. So I thought, “Okay, this could be a story.””

4) Usefulness

This criterion is defined as the extent to which information is useful. Examples of responses coded for usefulness criterion include “I’ll see something that my friends have shared on Facebook and I think that’s actually relevant to me work wise or something in a group that I’m in. So something from my personal network I think could be useful professionally.”, “as a journalist, you have a responsibility to inform, it needs to be informative”, “I have to work out who I think is the most useful person for my purpose. So I think it depends on the sort of information I need to be asking about. If my topic is about the construction of hot air balloons, I’ll speak to the engineers first. If I’m writing about how popular they are as a tourist attraction, I’ll talk to the owner of the business.”, “If we know that video is useful, we
would probably watch it”, or “[it] would be how useful the information itself is – if it’s detailed if it’s prompting me to go to another site, and so on and so forth.”

5) Popularity

This criterion is defined as the extent to which information is popular. Usually the popularity of information on social media is judged based on participation of social media users and some social media platforms like Twitter, Facebook, and YouTube facilitate this process by providing “Trending” feature “on twitter there is a function that refresh itself multiple times a day based on what people are talking about, so the most popular conversation is pop-up as what it is called trendy and you can narrow that down to your location so often I have mine set on to what is trendy in Melbourne, because I am interested in what is going on in the city that I am working and covering”, or “I look at trending topics. I don’t do this daily anymore, but as a journalist, I used to just go search for what people are talking about.”

In addition to the “Trending” feature, journalists use different ways to judge the popularity of information, such as checking the number of “share, “comments”, or “like” given to a piece of information on social media “I also judge based on being able to see what stories readers have liked in the past.”, looking for most popular hashtag “Search based on the topic, and then you start to look through the results and, like I said, there might be #MartinPlace, or you can search Martin, just as a word, with no hashtag, so it might look for the name Martin. So then you might see a tweet that someone says: “I’m in Martin Place and there’s police everywhere,” and then they might say: “#Sydney.” So you can then, just by looking at the results, you can start to see which tags people might be using as the most popular ones and start to narrow down your search based on that.”, or look at the number of social media users which are in a social media groups “Going back to Facebook again, like if I type in “single mothers,” the group would come up. I don’t think I have any other criteria that I could really have because there are only like three or four groups. I do look at the number,
going back to that I don’t know if this helpful to you or not, but in terms of... if I do have a few groups like if I have ten groups, I will look at how many people are in the group. So that gives me... that way I can validate how popular that group is.”

It was also reported that looking for popular information might lead to writing a newsworthy story “I don’t go: “Ok, most people are looking for this, therefore I’m going to write a story about this,” but I’ll say: “Ok, most people are looking for this, maybe that’s the newsworthy angle. I should look into that further.”

6) Authenticity/Accuracy/Credibility

These criteria refer to the extent to which information is accurate, true or believed to be accurate or true. Although the notion of the credibility and accuracy of information are not identical in meaning, the analysis of the findings suggests that these criteria are used interchangeably or together with each other “it’s always the same, it’s always about credibility, the accuracy.”, “I understand it to be the things that I’m using when I’m searching. So it would be credibility, it would be accuracy, it would be relevancy.”, or “There might be different prominence on them [information on social media] but it’s the same things. It’s all credibility, accuracy, newsworthiness”.

Judging the accuracy or the credibility of information on social media is challenging for journalists due to time constraints. However, they might employ different approaches to judge the accuracy or the credibility of information during their information seeking process. One of the approaches is to rely on other news media outlets. “But had it been like CNN, New York Times and the Economist that published a picture, then we’ll probably’ve been like, “oh, okay. They’ve also done a fact checking process so we’re pretty sure that we’ll be safe in publishing this.””
Another approach is to rely on the number of people saying the same things on social media “we ignore what people say. But if seven people saying the same thing, probably it gives you a think. And then if it’s a journalist tweeting, then you know it’s probably accurate.”

When it comes to pictorial information, it was reported that its clarity might help journalists to judge its credibility “I think that’s why clarity is very important to me because if I searched for its credibility and I see whether I can trust.”

The other ways of checking credibility are related to the characteristics of sources, and they are explained in the section of source related relevance judgement criteria.

7) Verifiability

This criterion is defined as the extent to which information is verifiable. Although verification of information is a critical stage in journalism, journalists tend to select the information on social media which takes less effort to verify ”We’re very time-poor, you don’t have a lot of time to crosscheck information...”. Specifically, in response to the question of “What are the first three important factors that come to your mind when you want to select information?” one of the participants mentioned “...how easy, it’s going to be to verify that information and how quick it’s going to be.”

It was also reported that visual information (e.g. images) is an instant source of verification and plays an important role to help journalists in selecting information in some circumstance (e.g. disaster) “Images are what you need, and that is an instant source of verification as well. I mean if someone takes a picture of a building that’s fallen down on earthquake or a house has caught fire, you know that they’re there. They’re not making that up.”

The verifiability criterion might be used in relation to the authenticity/accuracy/credibility criteria explained previously “You kind of leave it up to the journalists to use their own common sense. And then you would be the final check to sure that it’s an accurate reflection.”
Examples of responses coded for verifiability include “Someone may share a piece of information on Facebook or twitter, like a photo or a video or something like that. Now I want to know if the video is authentic or the photo is authentic”, or “For a particular story, we call it the expert voice… Can I find them on LinkedIn? If I can, what’s their employment history? I’m looking to verify the credibility or authority of that person in a particular way. You want to make sure they’re an expert, not someone who presents themselves as an expert.”

8) Time and location

These criteria are defined as the extent to which information is according to the time and the location considered by journalists. The results of the analysis indicate that these two criteria are usually used together “You might use a hashtag and a geolocation, then start searching within a certain time bracket to see if something popped up on Twitter that indicates something new, because obviously, that’s what we’re looking for, for new information for the audience.”

There are times that only one of them is required. Examples of responses coded for the locality of information are “I am interested in Surfboards, I am going to do a search for surfboard in the 50 KM around here. Because I am doing a story on Melbourne surfboards”, “Regional [information is important] because I’m trying to write about Australia.”, or “Because a lot of what I write is for the Age for Melbourne, so it’s very Melbourne-centric.”

and regarding the time of information “If you’re looking at the timestamps on things, so you’ve seen that this person has posted two hours after an incident happened: “RIP Micky,” that they must be pretty close if they knew that they died only two hours after it had happened.”

One of the aspects of time is its currency or timelessness. This aspect is used by journalists in the context of social media frequently as social media is a source of real-time information “if
it’s something that just happened, I’ll be looking at the time stamp, the currency of the information. Especially if it’s a breaking news story, I need to know that this information came recently, not from 2 weeks ago. Ideally, something posted in the last few minutes on Twitter. Twitter is a much more immediate source for this type of stuff.”

9) Quality

This criterion is defined as the extent to which information is seen as quality information – spelling and grammar, content (e.g. well composed), completeness, clarity and presentation – are all judged. “This is well-written, this is quality content, and it is relevant to the topic.”, “Someone could write the most well thought out and well written response.”, “Is it from a news outlet or person and probably that the information is well-written.”, “How they’re expressing themselves?”, or “The way they present themselves online or social media”

Although, spelling and grammar are important for some journalists - “not the quality of the information, just the spelling and the punctuation, and the grammar. Is this just something that someone’s bashed out off the top of their head, or are they articulate? Useful information tends to be expressed articulately” or “you just look down the list and go: ‘Well that guy can’t spell, that guy can’t spell, that guy can’t spell,’ and so you get good at filtering quick.” – this aspect of the quality of information is not a determining factor on social media for some other journalists “The things like spelling and punctuation, it is social media so you don’t rule someone out when people misspell things over time. You wouldn’t rule someone out but if someone has no grasp of grammar, maybe you’ll be less inclined to go with them as oppose to someone who’s written out their response concise and considered way”

It was reported that the quality information is easy to recognize “The majority of them, to be honest, are very... they aren’t very substantive. They just... people just write in whatever comes to their mind... it’s pretty obvious. Like someone that’s just saying whatever comes to their mind as opposed to someone who is thinking and has put in a considered response”,
however, the length of responses might help journalists to identify quality information sometimes and it was regarded as “considered response” “I guess it’d be things like the length of response. I’m just scanning through ... then there’s one which is two paragraphs. Straight away, I’m going to go that one because that person is obviously got a more considered response...”, or “That really narrows it down because the majority are rants or they’re one word answers or obviously someone has just written in the first thing that comes to their mind and I guess it’s quite easy to filter through a considered response.”

The completeness and coverage of information are another aspect of the quality addressed “It has been made complete. There maybe a few tweets in a row about a certain topic. And in that case, I would collate all of them”, or “I think if it was incomplete and I needed to know more, I would contact the person that completed it. I’d try and send a message.” One of the reasons journalists look for the completeness is to make the verification process easier “if something is more comprehensive, it’s going to be easier to verify.” However, it was reported that it can be difficult to assess the completeness of information in some social media platforms such as Twitter “With Twitter, I can’t tell clearly the completeness of the information just from the tweet.”

When it comes to visual information (e.g. images), the quality criterion was an important factor in selecting photos and using them in the story, or for the verification purpose “If it’s pictorial or video, then the first thing is some informatics, and then good quality, if we can verify that it’s from a tornado or an earthquake.”, or “it was our job as a journalist to select the photo that best fitted the story. And in that case, quality was the overriding factor.”

10) Topicality

This criterion is defined as the extent to which information relates to search keywords. As journalists employ different search strategies and tactics to satisfy their information needs on social media including, using queries, asking question, browsing, etc. looking for keywords
in the information on social media is an approach to judge the topical relevance of information “If I put in keywords, if the same keywords pop up. I guess that’s like the google search, the best matches. Topical relevance, it’s done in google in a particular way, the best matches for your peak criteria. In Facebook, for example, I’ll have to see where those leads are. I have to identify for myself that those keywords are in there.”, or “I have narrowed down my search criteria. So I’m not searching for the for the “dog” when I’m trying to find that story “dog, cat, tree in Melbourne””

Looking for information on social media is not limited to putting keywords into the search box. Journalists also ask questions on social media and evaluate responses based on different criteria including the topical criterion “The first thing would be to determine if it’s of the right subject, of the topic.”, or “[whether] they are actually responding to the question”

The topical criterion is also used to judge relevance when journalists employ browsing, monitoring, etc. search strategies and tactics to satisfy their information needs on social media. In this case, they have some keywords in their mind to assess the topical relevance “I guess it’s like when you read an academic article, they have all the key words- see in my mind I have generated all of the keywords that are always of interest to me and help me create the criteria- it’s part of the selection, decision-making process… So I click on it if I see these key words, things of interest…”

This criterion is also useful in evaluating the relevance of information when journalists look for people by having a piece of information about them such as name, surname, back ground information, etc. “I suppose you try and look for people that are close as possible to the victim. So if it’s someone who has got the same surname as the victim, they’re probably related. If someone, when you go through the victim’s page, you can see that they’re always tagged in with that person, so they’re always doing stuff with person, you can assume that
they’re pretty close.”, or “If you’re to find somebody who flies hot air balloons you can find them on LinkedIn, it’s very easy to do that”.

### 5.3.2 Source

The category of source relevance criteria refers to the criteria related to the source of information found on social media. “It’s always about the source, is the source accurate? Nothing has changed, nothing will ever change in journalism. Is the source reliable and accurate?” Figure 5.9 shows the category of source relevance judgement criteria.

<table>
<thead>
<tr>
<th>Authority/Officiality</th>
<th>The extent to which the source is authoritative or in the position of authority</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fame (Celebrity)/Reputation</td>
<td>The extent to which the source is famous or reputable</td>
</tr>
<tr>
<td>Verification badge</td>
<td>Whether the source has the verification badge provided by social media platforms (e.g. Twitter) on his/her social media account or not</td>
</tr>
<tr>
<td>Locality</td>
<td>The extent to which the source is located near the location considered and implied by journalists</td>
</tr>
<tr>
<td>Expediency of the response</td>
<td>The extent to which the source responds quickly on social media</td>
</tr>
<tr>
<td>Credibility/Trustworthiness/Validity</td>
<td>The extent to which the source is credible, trustworthy, or valid</td>
</tr>
</tbody>
</table>

Figure 5.9. Category of source relevance judgement criteria.
1) Authority/Officality

This criterion is defined as the extent to which the source is authoritative or in the position of authority. The authority criterion refers to both the official position and the subject authority of sources “I’d find out who’s tweeting about those issues, where they’re pointing to, and then I’d probably follow all the leads and try to find authoritative sources for information, whether it’s a government report or there’s a good quality research.”, or “[The main criteria] will be the authority, who has shared it. And I don’t mean individuals but media organizations because most of my social media is around media organizations. I don’t follow friends. I do follow journalists, I follow newspapers, broadcasters from around the world. I’ll look first at who’s produced the information.”

This criterion is largely used when journalists want to receive updates on an event including disaster, emergency, etc. “When I was in Chile in 2014, there was a 8.3 magnitude earthquake. And that happened in the north and we were based in Santiago and, we would follow the government accounts to get the factual stuff. And then we would just keep an eye on everyday people to get a bit more colour and some stories as well.”, or “If there’s a fire coming through, then you might follow like the RFS (Rural Fire Service) or the CFA (Country Fire Authority) for updates.”

It was reported that at the time of emergency using the authority criterion helps journalists to reports news easily by just passing the buck “I can basically just say “according to the police” or “according to this person. You can publish those things easily”, or “I can go: “well, the police said...” you know? Everything is peaceful and nice in Fiji.” Using authorities and officials’ statements in reporting news at the time of emergency or happenings enable journalists to not be responsible for what they are reporting. Instead, journalists can make officials responsible for what they are stating “then if people get angry because we’re wrong ... at least we can say that: “well, it’s... it’s the police. What do you expect?”
However, not all journalists rely only on authorities’ statements for information and facts “I understand that there is an imbedded authority in that information came from the police and that would make you click on it, saying that this is what the police have said has happened, but that’s just the starting point for the research. That’s not the whole information.”

One of the ways journalists identify authorities, officials, or authoritative sources on social media is the verification badge on their social media accounts provided by the social media platforms including Twitter, Facebook, and YouTube “If they got that verified tick that always helps. Like you know, what Donald Trump, what his official account is? So you know, certain people have the verification tick. So that helps.”

When journalists look for an authority on a subject (authoritative source), looking at sources’ bio or work history helps journalists in their relevance judgments “someone who is a good source in a particular field will probably mention something about that field in their bio.”, “I would go back to LinkedIn to see their work history. I would go to something like news bank to make sure that they’ve been quoted in stories before and that they are that person. Yes, I might look at their Twitter account. I mean that would probably be my second layer of doing it because it’s so easy to fake Twitter.”, or “If you’ve got two, three, four years’ experience of writing about Lebanon and hezbaala and its proximity to Israel, then I’m going to say this person has the authority and a genuine interest in the region and this is something they’re involved in.”

2) Fame (Celebrity)/Reputation

This criterion is defined as the extent to which the source is famous or reputable. Examples of responses coded include “alright that is a relevant player that is a high-profile person.” Therefore, I think it’s going to be relevant so do something on that. Whereas if it’s someone that less about audience would have heard of, it’s not going to be as relevant. So I wouldn’t use it.”, or “It’s dependent on the context if there are legal issues involved if it’s someone
famous or someone unknown. There’s a whole variety of factors that determine how you will approach it.”

Although the fame criterion play an important role in some particular news stories “News now is purely based on celebrities’ Instagram account and what they did what they were wearing and where they were...”, it was reported that journalists do not “simply report things because a famous person said it, but sometimes it’s more interesting than a normal person saying the same thing.”

3) Verification badge

This criterion is defined as whether the source has the verification badge provided by social media platforms (e.g. Twitter) on his/her social media account or not. Examples of responses coded for verification badge include “On the average, someone with a blue tick next to their name or a group of people with a blue tick, they’re more likely to give me good information”, “I look for blue ticks next to people’s names and things like that...”, “I love those sources that would have a blue tick next to them on Twitter.”, “I look on their blue ticks... So I know who is real and who is not real.”, or, “If a particularly big story happens, we might do a story on this, how people reacted on social media. In that occasion, we would be looking for people who are known, people who are verified on Twitter would obviously be a good source of like... they’re valuable source of people who want to hear their opinions.”

4) Locality

This criterion is defined as the extent to which the source is located near the location considered and implied by journalists. Examples of responses coded for locality include “I’m looking for information that’s from someone in Australia, generally.”, “I wanted them to be in Victoria.”, “I wanted to find somebody who lives in this specific locality.”, “Sometimes I asked questions on Twitter and someone has replied from the UK and it’s not useful for me.”, “I tried to find somebody who is an expert in the region and they have written books.”, or “If
I wanted that somebody who has a particular job title, then LinkedIn will ask you to search for that job title in Melbourne.”

5) Expediency of the response

This criterion refers to the extent to which the source responds quickly on social media. Examples of responses coded for Expediency of the response include “I guess the most important thing is like in the quickness of their response a lot of the time because you’re under so much time pressure. Often times it’s the first person to get back to you”, or “So the timeliness of their response, definitely that’s the overriding one because you’re under so much time pressure. Often, social media is a way to go to a sort of quick fix. So I need someone now, so I go social media”

6) Credibility/Trustworthiness/Validity

These criteria are defined as the extent to which the source is credible, trustworthy, or valid. The analysis of the findings shows that the credibility of the source is one of the significant criteria used by journalists in judging and selecting sources and information as it might help journalists to save a lot of time in verifying the information acquired “Breaking news again is about using credible news sources…. Media outlets bank off each other. You only need to read the newspaper and you read “sources say” or “the New York Times says.”... SO, it’s who do they trust? Who does The Age trust when they’re not on the ground? Again, this is a 24 hours news cycle, so you’re not waiting until tomorrow you’re going online and you’re reading The Age website which is just mimicking the associated press because the associated press is the only ones that are on the ground. I look for those sites and the social media handles that I trust, the BBC worldwide are pretty spot on, the associated press, the New York Times.”

However, journalists use different approaches and factors in judging the extent to which the source is credible, trustworthy, or valid. “The source, the credibility of the source obviously is
crucial. That takes shape by how you weight credibility. Is it the blue tick, is it the size of the organization that you’re taking the information from, is it someone you personally trust?”

The following discusses how the credibility of sources was evaluated and judged by journalists on social media. I have to do a lot more of the checking of the credibility at the time of the sourcing of the information rather than afterwards.

a) Celebrity/Reputation

Celebrity and reputation of a source was regarded as a factor in judging the extent to which the source is credible. “I’d take information from reputable media outlets before I take government information.”, “If someone has a lot of followers, then I’d probably go: okay, that’s [credible] and if it turns out to be a celebrity or something...”, “If a person is notable and they’re tweeting about an event, you are more likely to believe it...”, “So if there was an expert that works for Victoria University as opposed to an expert who works for Harvard University, I think my students would choose the person working for Harvard. It’s probably a little bit more credible.”, “You should be as a journalist. Be more trusting of a source if it’s something like the BBC or ABC. But something that’s from some newspaper that you’ve never heard of before and doesn’t sound quite right then you should be very wary to use as a source.”, or “It might come from reputable journalists or academics on Twitter and use it to release work or issue breaking news statements. So it can be, depending on who you’re following, and what the sources are, it can be an incredibly reliable resource.”

However, it was also reported that “For all journalists, I think most of the times, they’re going to get for colourful quotes over reputation.”

b) Locality

One of the ways used to assess the credibility of a source was to check the locality of the source. It was reported that checking the locality of the source is useful when journalists look for a local source to cover and report an event and helps journalists to judge how credible the
source is for what s/he is saying “I would search again, look at their history but also, and look at their location.”, or “Someone could write the most well thought out and well written response. But if they’re from Queensland, you’re going to go with the local.”

However, as explained in the category of “information” related criteria, the locality of the source is also used as a criterion to judge the relevancy of the source (the relevancy of information) “It’s just as easy for me to type “Melbourne single parents” and options would come up. If I’m looking for a specific person on Facebook to contact, I would use the filter [location filter].”

c) Number of followers/Type of followers

The number of followers and the type of followers a source has on social media are an indication used to judge the credibility of the source “I would definitely see who he’s following and who are following him and how many followers he has.”, “Sometimes, just by seeing who’s following that academic, can show you how often they speak in the media.”, “If I checked they have a low follow account, if I haven’t heard of them, and they have tweeted about a subject, I won’t value that as much or use it.”, or “I guess there are things like the amount of followers they have.”

d) Profile Picture

Sometimes profile picture of a source on social media used to judge the credibility of the source “If it’s just a Twitter like a blank profiles picture, it doesn’t make that person look credible at all. And even when I’m looking for at Twitter for story ideas, I would definitely want to see the picture of that person there because [it is] more likely to be a real person.”

However, having a profile picture is not an important factor for all journalists in judging the credibility of the source “I understand that people of a certain generation, older, my generation, are still wary of putting a photo up. It doesn’t mean that they aren’t a legitimate expert in a particular area. I might think maybe they’re an older person who doesn’t like
putting up a profile picture, a photo of themselves. I won’t discount them straightaway because of that.”, or “[having a profile picture] doesn’t really matter too much to me as to whether there like I’d click and I’ll see what they have been tweeting”.

e) History

History of a source refers to the content shared by the source on social media (e.g. Tweet and Facebook posts) and it is used as a clue to judge the credibility of the source “I’ll look at the person’s social media profile. I’ll search them on twitter, I’ll search them on Facebook to see if they’ve posted anything like the sort of things they’ve posted there. Are they really living in the area that they say they live in? Have they posted information about this subject in the past?”, “You take a look at their social media feed. Have they posted from this area before?”, “You look at the things they have posted, the types of things they posted…”, “I guess I wanted someone who had a connection with the injured. So I searched for words and people would come up and they’d be a guy who provided first aid to someone and posted about it.”, or “If I’m using LinkedIn to find them, I’ll take a look at the different jobs that they’ve had. I’ll go back in their history”.

Moreover, it was also reported that sometimes the period of time that the source is active on social media needs also to be considered. “I’ll look into the depth of how long they’ve been tweeting or using social media or I would look to see whether they link to a particular website.”

f) Prior knowledge

Prior knowledge refers to the situation that journalists judge the credibility of a source, based on their prior knowledge of the source “It would be kind of built upon your own knowledge of who is credible.”

It implies that this situation only happens when journalists know the source beforehand “Looking for names that you recognize and they are credible.”, “People who I trust who
have done it before will point you in the right direction.”, “If it comes from a source that you trust, a media liaison that you have a history with, that may be fine.”, “If I interview someone as an expert in a particular field and ... They can’t back things up with data or solid evidence or point me to good primary sources, then I would no longer view them as an authority or credible source for that information.”, “They’re people I met and therefore trust. Their information may carry as much weight or more weight than a government source. Because a government source may just be trying to cover up what they’re doing. So, I can take citizen information provided that I probably met and know them. “, or “I’m going to rely on the right politicians or other journalists, people who I know I can trust... I know them personally like I know them from my work, from press conference, through meetings. People who I actually physically know, I’ve shaken their hands”

g) Verification badge

Sometimes journalists check the verification badge of the source provided by the social media platforms (e.g. Twitter, Facebook) to assess the credibility of the source “It depends on where the results are coming from. If they’re people with a verified tick, I know that they are a trusted source, people I’ve got to know on Twitter who I think are reliable.”, “There is more credibility to a blue tick than there is to no blue tick.”, or “If it’s from someone verified or well known, you can trust it.”

However, assessing whether the social media account holder (the source) is authentic might be different from assessing whether what the social media account holder says is credible “You want to make sure that’s the person they say they are; that’s one thing. And then what they say; that is another thing.” Therefore, not all journalists agree that checking the verification badge of the source can be used as an approach to assess the credibility of the source “Personally, I don’t say the blue tick can say, “Okay, this person is credible.” Because that’s not what the blue tick is. Blue tick is just to say that X is X on Twitter and that
you’re not somebody else.”, or “The credibility of that person isn’t based on the [blue] tick that they have. I want to validate and verify what they’ve told me afterwards.”

h) Authority/Officiality

The officiality and authority of the source are used to assess the credibility or trustworthiness of the source “I trusted that because it was from an official club source that it would be accurate information.”, “I found one of the official team accounts was tweeting some of that so I knew that that was credible”, “Trustworthy, that would be based on whether it’s from an official or just from some persons”, “The source is about people, so I look at the person who twitted a message, if the person has authority or credibility I will choose that person as a source for my story”, or “If the Prime Minister’s Twitter and Facebook page said he was in the Bourke Street Mall for an announcement, I would believe that because it’s a credible source. If someone else I don’t know who could be a fake person said that, I can’t trust it”.

Despite the fact that the officiality and authority of the source are used in judging the credibility of the source, and also it was reported that there a link between authority and credibility “I’d look where it was from. It was from an official government site or a department site, I would be more inclined to trust it”, or “The authorities certainly have links into their credibility. So I think the link here is if they are authoritative then that would increase their credibility.” There are journalists that make a distinction between authority and credibility criteria “Authoritative would be the, generally, the links they have with organizations or a particular group. Whereas credibility is probably based on more on their personal experience, background, track record, issues like that.”, “I wouldn’t say he [Donald Trump] is credible at all…I think it’s a great example of how a particular job role doesn’t bring credibility. I mean it’s quite obvious.”, “The perfect example is Trump. He has authority as president of the United States, but his Tweets have no credibility.”, “I respect that they have the authority to speak about these things, but I still want to test what they
say.”, or “He [Donald Trump] is credible because he speaks on behalf of the US government, obviously. Is he credible in terms of reputation? What he says is true and accurate; I think that’s very questionable…”

5.3.3 Journalism Value and Training

The category of journalism value and training relevance criteria refers to the criteria considered as values in journalism and gained or influenced through training in journalism. “Just based on journalistic training…”, “I apply all the training and all the analysis and all the filters…”, “It would be my feeling from my training as a journalist…”, or “In terms of the values of journalism as information that is in the public interest, that’s a skill set of filtration and understanding the world…”

Figure 5.10 shows the category of journalism value and training relevance judgement criteria.

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Originality</td>
<td>The extent to which information is original to the journalist</td>
</tr>
<tr>
<td>Impact</td>
<td>The extent to which information has an impact on the readers</td>
</tr>
<tr>
<td>Newsworthiness</td>
<td>The extent to which information is newsworthy</td>
</tr>
</tbody>
</table>

Figure 5.10. Category of journalism value and training relevance judgement criteria.

1) Originality

This criterion is defined as the extent to which information is original to the journalist. The terms “finding new angle”, “finding exclusive information”, and “finding breaking news” are also used to describe the originality of information “news is about new things, we do not write histories, we write stories.”
The originality of news is considered as an important factor in journalism as every journalist wants to break a story or news first “It’s very important in news as a journalist to break the story first as you know. And we try to get an exclusive on stories as well.”

Originality was also described as finding new angle “The originality would be if it’s written from a different news angle than what I’ve been reading before.”, or “I would see what their angle was to see if I could still write my story”. Exclusive was defined as “Exclusive just means I have this story, no one else has this story” and it was reported that nothing is exclusive on social media, although it might lead journalists to different directions and equip them with new angles “on Twitter, nothing is exclusive, so you can’t think it’s exclusive, but it could lead you in another direction.”, or “Sometimes, we ask a real estate agent to share a story with us. And if they do set a record, tell us first, not publish it. But a lot of times, they go on Facebook and they go on Twitter and they say, “We have just sold a property for $20 million dollars, a record for Melbourne.” Then it’s out there and it’s up for grabs.”

Moreover, it was reported that it is hard to find an original information on social media because 1) Most journalists follow each other on social media to receive information “A lot of us just following each other. You have to do a lot more work when you do original stories. I do not think that you can get a lot of originality. I do not think most of us do original stories. We just follow each other.” 2) Most journalists cover and report the same things on social media “Twitter is just filled with journalists and public relations people. It is very easy to get sucked in to just all reporting exactly the same things. So, you have to leave the social media behind and go to the real people if you want to do original stories.” 3) Most journalists look at information from the same angle “Most journalists look for stories on twitter and all the journalists get the same stories because they all look at twitter in the same way.”
However, journalists use different approaches in assessing the originality of information; one of them is checking what other media organizations/outlets have published “you’re basically assessing by looking at what other places have reported, so you haven’t been able to see anybody else report that”

Apart from all difficulties in finding original information on social media, an experienced journalist knows how to make news “a good journalist can make a story out of just about anything. So to answer that question, it’s what sort of media or outlet, what sort of angle do you want, how do you want to twist this around. I think it probably comes to the experience of the journalist in knowing basically what news is.”

Therefore, originality as a relevance judgement criterion is not only used by journalists to select the information but also it is used as a criterion not to use the information “I’m just searching to see if the story that I’m looking into has been written about before” or “the whole point of searching for information is to find out what else is there”.

2) Impact

This criterion is defined as the extent to which information has an impact on the readers “It’s something that’s very hard to summarize because it comes with years of experience. Even people who are editors, trying to explain to a new journalist, would be very difficult. But I guess something that has a broad impact.”

One of the participants provided an example and said if he saw a tweet like “I don’t think there is enough regulation in the Council area to control the height of the apartments being built”, he would consider the tweet as a relevant information because “That’s a real concern and it affects a lot of people. So something like that, you’d investigate further…”

It was reported that not only the scope of impact but also the duration of impact is important to be considered “How many people does it affect? Does this thing only affect a street, with like a street of people and no one else anywhere would care about it? If you think a lot of
people would actually care about this issue and this particular issue is actually has a long
lasting impact. Those are just two of the criteria.”

Moreover, the emotional aspect of the impact was also used to assess the relevance of
information on social media “It comes down to like what image carries the most emotional
impact, whether it’s like ... So if you can see people running in fear from a collapsed
building, that’s the image, if you can see maybe burned out teddy bear in a house that’s
fallen over. That will emotionally reach people. So I guess, yeah, people and emotions.”,

“What you’re looking for is that nice human story. So like a dad who used to play for the
team and he’s there with his three daughters and they’re all wearing his old jersey... a
picture that brings the colour of the crowd in that instance... and that would be something
that adds to the everyday person’s story.”, or “Does that carry emotional impact, who a lot
resonates with people, does that tell the story?”

3) Newsworthiness

This criterion is defined as the extent to which information is newsworthy. The analysis of
the findings shows that this criterion is one of the major criteria used by journalists in judging
the relevancy of information “In journalism, we work on the basis of what we call “News
values”. So I use all the information based on the news values.”, or “That gets back to the old
school news values.”

The newsworthiness of information covers the six news values which are proximity,
prominence, timeliness, impact, conflict, and human interest in journalism. Therefore,
literally, this criterion covers six relevance criteria in itself. One of the participants who was
an academic journalist explained “We talk about the 6 news values in journalism. Things like
proximity, how close it happens to you. How closely this affects your life. Celebrity, as in how
well-known the person is who is making the news or the news related to the issue. Drama,
how dramatic it is, how much conflict there is. And uniqueness, like the unusual nature of the information.”

However, practically journalists judge and evaluate the newsworthiness of information on social media differently “Journalism is not like the science that you practice. It is not scientific, we would like to think that is scientific but it is not. “, while one described the newsworthiness of information as “Newsworthiness to me is: is this of interest to the people who read our website? Is this something that’s going to drive traffic to us? That’s always a factor. Is this something that I feel is important to discuss, I suppose. So it’s importance, relevance, and timeliness as well.” the other one explained that “the newsworthiness would be how relevant is the information you’re getting? So is it particularly relevant because you know that that person was a bikie and you managed to find a photo of that person in Hells Angels bars, for example. That would make it a particularly newsworthy image that you’d be able to get on social media, because, yeah, we’ve heard that person is a bikie, but we haven’t been able to confirm it.”

Therefore, the newsworthiness of information on social media is something that could be debated “When you go to journalism school and university, which I did at UTS, you go through what is classified as newsworthy and there are all these criteria like I have to tick these boxes. But when you actually really start working in the field in the job, everything kind of knows set criteria in your mind.”

The following discusses how the newsworthiness of information was evaluated and judged by journalists on social media.

a) Originality

The originality of information was seen as a factor to judge the newsworthiness of information “The newsworthiness; is it a new phenomenon, a new event, something that we didn’t know before? These are the sort of things that would be running through my mind.”
b) Timelessness
The currency of information was seen as a factor to evaluate the newsworthiness of information “There are basics to consider something as newsworthiness. For example, something that is happening right now.”, or “Looking for images would probably going to be a more recent image. So I’m looking for timeliness, newsworthiness.”

c) Interest
The information is newsworthy if it catches journalists or if journalists assess that it catches readers’ attention. While sometimes the emphasis is on reader’s interest “number one, it’s got to be something that’s quite newsworthy and it’s going to grab people’s attention... So the criteria [is] it’s got to be dramatic, got to grab people’s attention.” the level of journalists’ interest is also considered as a way to evaluate the newsworthiness of information “Is it interesting? Does it interest me? That’s probably my first criteria for anything, does it interest me? Because I write about technology, and I am kind of ahead of the curve compared to the average person in terms of technology... So I use myself as a bit of a litmus test: am I interested in this? Because if I’m interested in this, then that means other people are starting to become interested in it, so it’s a good thing to write about. If I’m already bored as hell with this, then other people are probably starting to get bored as hell with it as well. So that’s the first thing. Would I want to read this story? Am I interested in it? Does it excite me?”

d) Editorial values
There are occasions that newsworthiness of information is evaluated based on the editorial values of news media organization “News organizations have different editorial values. Like, the ABC and the Daily Telegraph have different editorial values, but they’re still working on the basis of news value and newsworthiness. So there are different things that go into that, but yeah, it’s pretty much the same.”

e) Impact
The information is newsworthy if it impacts on people’s life “That’s why it’s newsworthy because when you think down the line, it’s kind of like almost playing chess or the domino effect. You think, “Okay, the eventual impact might be the neighbourhood changing, which would affect everyone in that neighbourhood.” It’s not just the people living in the upper society.”

f) Experience

It was reported that journalistic experience plays an important role in evaluating the newsworthiness of information “over time, you become experienced to know whether... It’s the way your brain is wired. Over time, in this job, it’s what we do, we assess, there’s a thing called news value...”, or “Through experience, you have this natural sense of judgment...”

Having journalistic experience was also regarded as “having a nose for news” “A lot of journalists think on the basis of gut feelings, we have concept like “to have nose for news”, “having a good news judgement” “I guess as a journalist, you have to have good news judgment.”, and “through experience, you have this natural sense of judgment”, “journalistic gut feeling”; “it’s a bit of a journalistic gut feeling”, or “journalistic instinct” “That becomes an instinct for the journalist. You usually have it before you become a journalist. You’re naturally curious, you’re naturally sceptical.”

One of the participants explained a particular case, in which a story was covered by a news media outlet, she found it and decided to cover and report it again due to her “news judgement” “it comes down a lot to news judgment... it showed that someone tried to smuggle cocaine in. And it was like a large amount, more than a kilo, I think. So I thought, “Wow. This is quite interesting [that] someone who flew from Russia who smuggled a huge amount of cocaine...this would definitely be a story that our reader would want to read.” So what I did was I found the original press release because that’s where it came from. And then
I wrote it in my own way and then publish that and it was on the Age website like half an hour later.”

g) Social media users

The number of social media users talking about a topic was used as a factor to assess the newsworthiness of information on social media “You have to see if there is a need or demand for that particular topic or area of interest to determine whether it is newsworthiness. In social media, you can often determine that before you might write a piece because people are already talking about it.,” “If you see 100 of people are talking about specific niche topic, then there is level of newsworthiness in that because there is an audience out there that is interested in knowing more about that.,” or “If I need to decide whether or not something is newsworthy, then what I find on Twitter might tell me that. If I can find other people talking about it, then it’s more likely, like I said: “This is not just me, this is happening to other people. It might be worth following up on.””

h) Authority/Officiality

It was reported that in some occasions the authority of source is used as a factor to judge the newsworthiness of information “Clearly other people tweet that same stuff that Trump does, but they’re general member of the community and they don’t have a responsibility to be circumspect in what they say. But when the president says something that can be construed as wild or incorrect, that becomes newsworthy. Not just because there is authority behind it. But one can argue that some of the things that he tweets have no authority underneath them at all.”, “I follow what the minsters say on twitter because that can feed into a story if they comment on some policy change. I search those men out and see what they say”, or “But not because of the value or the truthfulness of the information of what he’s tweeting but because the president tells lies. That’s the newsworthiness...”
5.3.4 Journalist

The category of journalist relevance criteria refers to the criteria which pertain to journalists. It should be noted that journalists were the participants of this study, and therefore the information selected are relevant based on their judgments via employing different criteria. In other words, it can be concluded that all the criteria explained in this section pertain to the users of this study.

However, this category only covers the criteria which can be related to journalists’ intellectual state of mind on the information perceived, including beliefs, experiences, knowledge, etc. “I think that is about more my belief or about my journalistic ideologies at this.”

Figure 5.11 shows the category of journalist relevance judgement criteria.

<table>
<thead>
<tr>
<th>Prior experience and knowledge</th>
<th>The extent to which journalist judge the relevancy of information based on their prior experience and knowledge</th>
</tr>
</thead>
<tbody>
<tr>
<td>Updating state of mind</td>
<td>The extent to which information updates journalists’ state of mind</td>
</tr>
</tbody>
</table>

Figure 5.11. Category of journalist relevance judgement criteria.

1) Prior experience and knowledge

This criterion is defined as the extent to which journalists judge the relevance of information based on their prior experience and knowledge. Gaining more experience and knowledge on a particular topic helps journalists to judge the relevance of information to a higher extent. “That’s really based on the experience of covering a subject. For example, one of the subjects I have covered is taxation, so overtime, I’ve come to know that area well and I’ve also come to know what resonates with our readers. Often if I write a story, then there’ll be others who’d come forward to me and say “I have a tweet, this” or come to my Facebook
and send me messages or email me directly that “You should follow up on these aspects”. Based on my own experience, I’ll know whether that’s a good issue to follow up or not.”, or “If I’m a journalist who has a special area, we call it a ground, you might be an economics writer, you might be a sports writer, you might be a social issues writer, over time I would develop a certain amount of expertise in that area. So, I would have some fundamental information about that subject that I can use... that also allows me to judge the value of the information of they’re giving back to me.”

It was reported that due to the subjective nature of some relevance criteria (e.g. importance, and interest) journalists’ prior experience contribute to judging the relevancy of information “That’s where I was saying like, a journalist will have to use some sort of their own experience in judging things as well.”

This criterion is also used when journalists look for people on social media “One of them I knew the person. I’ve met him before and he’s a well-known chef. So I thought that was my factor in. I knew that that was him. The other person, I didn’t know. But again, on his, I guess, Facebook, I could tell from his post that he owned the business.”, “If we know this is the person we’re looking for, we usually just take that and imbed it into the story.”, or “It’s a matter of going down and seeing if I recognize any of the names already.”

2) Updating state of mind

This criterion is defined as the extent to which information updates journalists’ state of mind. This criterion is used both for updating the state of mind on a specific topic and general topics. Examples of responses coded for updating the state of mind include “...So I went to Channel 10’s Twitter feed, I scrolled down again for a few minutes, I didn’t see anything that showed that they did a more recent date from the story. And [I] thought, okay, well, that’s the story I had in mind and what I had in mind would be an update because I didn’t want to replicate what they’ve covered.”, “I just wanted to, if I had a story in mind and I wanted to
do an update... I just wanted to see if they’ve done any...I scrolled down and I couldn’t see anything that was relevant, which had an updated interview with her...”, “For me, I just scroll though, and I can see the latest updates...”, or “Twitter gives you a little update of how many things have changed.”

Searching specific hashtags, creating a lists of relevant sources (on Twitter), and following relevant sources are used as search strategies and tactics which facilitate evaluating the relevance of information based on the updating state of mind criterion “I can search a specific hashtag and see what people are saying about that and what the latest updates about that specific issue are.”, “Create a list of all these people within Bendigo who had some relevance. And one of the first things I do every day is I just look at that list and I see what everyone was talking about.”, or “I have those columns up in Tweetdeck and simply based on the fact that we’re already following them, we have already distinguished that they are of some worth.”

5.3.5 News Piece/Story

The category of news piece/story relevance criteria refers to the criteria related to the news piece or the news story undertaken by a journalist. Figure 5.12 shows the category of news piece/story relevance judgement criteria.

<table>
<thead>
<tr>
<th>Enriching the news story</th>
<th>The extent to which information enrich the news story</th>
</tr>
</thead>
<tbody>
<tr>
<td>Providing balanced/different views</td>
<td>The extent to which information provides balanced or different views to the news story</td>
</tr>
<tr>
<td>Fitting with the news story</td>
<td>The extent to which information is fitting with the news story</td>
</tr>
</tbody>
</table>

Figure 5.12. Category of news piece/story relevance judgement criteria.
1) **Enriching the news story**

This criterion is defined as the extent to which information enriches the news story. Examples of responses coded for the enriching the news story criterion include “*Do they represent a new voice to the discussion?*, “*Does this add to the story? Does it take the story in another angle? Can it enhance the story?*, “*I think beyond more than anything, it has to add something.*, “*I can embed tweets, so sometimes I embed tweets that I think say something, add something to my own story.*, “*Journalists also like to add context to what they’re writing... Social media is used more frequently for things that are more recent.*, or “*If the story is mentioning what people are saying on social media, it’s often good to add some of the actual examples of it.*”

2) **Providing balanced/different views**

This criterion is defined as the extent to which information provides balanced or different views to the news story “*Part of journalism is finding an opposing point of view on an issue. You can find one expert in the field and you can quote them but then you can find another expert in the same field who says the opposite thing.*”

Examples of responses coded for the providing balanced/different views criterion include “*...But then you might say, however, not everyone was of that opinion so you’d be looking for that contrary point view...And the reason that was selected was that it provided an opposing, a contrary position as well.*, “*What we wanted was a diversity of experience from different students...I just wanted students from public school and private schools, catholic schools just to make sure there’s that mix. That’s something I think about quite a bit to make sure there’s that mix.*, “*So it’s just a matter of choosing the ones you think are the most interesting or perhaps offer different views*, “*...And then you think, “Okay, to balance that point, who would I approach to give me an opposite opinion?” And you think, “Okay, is there a resident group in this area? Yes, Glen Eira Residents’ Group.*”, or “*If you’re covering on a news
basis, you know from history where the Patriots Front is, you know their Facebook page, their website. As soon as they say, “June 25 we’re having a march” you write that they’re having a march. You look for the organizer. You know who that is then you look for the anti-fascist group who are opposed to that group so they’ll have a march on the same day in the hope that they can upset them. Then you go and contact the Victoria police.”

3) Fitting with the news story

This criterion is defined as the extent to which information is fitting with the news story. Examples of responses coded for the fitting with the news story include “The story on weekend wages written in the Bendigo Advertiser, the person needs to work. They might have a great opinion, but if they don’t work in hospitality, then they’re not relevant to the story.”, “It was our job as journalist to select the photo that best fitted the story.”, “I used Pinterest to find some people in Melbourne who had cute looking caravans that look good for a story.”, “When it comes to crime anyway, about how relevant that is to your story..., if you couldn’t find a photo of that guy wearing his Hell’s Angels colours, but you found someone out there [on social media] saying: “I’m going to miss Scott on our ride this weekend,” you’re not going to put that up...but what you might do is say: “Well, that person has made that post. Let’s go to their profile and see what those photos are...”, or “If there are three that shell out, I would contact all three and ask them all about their story and then go with the one that’s most suitable for my story.”

5.3.6 Social Media Users

The category of social media users refers to the criteria pertaining to social media users used in judging the relevance of information. Social media platforms consist of information and their users, and therefore, the criteria pertaining to social media users are used largely in evaluating the relevance of information. They are also used not only to assess the credibility, popularity, and newsworthiness of information (explained in previous sub-sections), but also
to help journalists in verification of information; “If everyone’s talking about it, then it’s more likely to be a real thing, so that’s one verification, how many people are talking about this and how widespread it is.”

Figure 5.13 shows the category of social media users relevance judgement criteria.

<table>
<thead>
<tr>
<th>Number of people talking about a subject</th>
<th>The extent to which information is discussed by social media users</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of interactions (Like, share, comments)</td>
<td>The extent to which information is shared, liked, or commented by social media users</td>
</tr>
</tbody>
</table>

Figure 5.13. Category of relevance judgement criteria related to social media users.

1) **Number of people talking about a subject**

This criterion is defined as the extent to which information is discussed by social media users “it’s enough to say: “Alright, there’s people talking about this, I’m going to follow it up.”, “I might put that into Twitter to see if there are people talking about it”, or “We saw that a lot of people were talking about that on Twitter. There was quite reaction, so how we can leverage of that conversation and create a story around that.”

The “trending” feature of social media platforms helps journalists to monitor the topics that are being talked by considerable social media users at a given time and it is used as a factor or tool to assess different aspects of the relevancy of information “It shows them what’s trending at various times so it’s a tool for journalists”, it is not a useful tool or factor for all journalists “I don’t tend to watch that [trending topics] so much. By the time that it was trending, everyone would know about it anyway, so it’s no longer a lead anymore, it’s just a general piece of news.”
2) Number of interactions (Like, share, comments)

This criterion is defined as the extent to which information is shared, liked, or commented by social media users “I guess straightaway, you’d be looking at how widely it was shared, and liked, and commented... So that’s a great indicator straightaway.”, or “Just reading through them and seeing what they’re saying and I guess mainly the interaction rates with it is how I personally look at it.”

Journalists also benefit from the “top tweet” feature of Twitter social media platform, when one of their relevance criteria is the number of interaction of social media users “[Twitter has] the automatic thing is for them that they rank things, like the top tweets...That automatically does some of the work for me.”, or “On Twitter when you search there are two categories: there is a category that says "Top" and a category that says "All"...If I'm searching for top tweets it’ll be tweets that are by newspaper companies or tweets that have been interacted with a lot and re-tweeted and shared a lot...”

The findings of Section 5.3 show that each criterion should be considered in its own category. For example, under the category of information relevance criteria (subsection 5.3.1), there is a relevance criterion named “Time & Location”, and there is a similar relevance criterion under the category of the source relevance criteria (subsection 5.3.2) named “Locality”, however, these two relevance criteria were employed differently. The former was used to judge the relevance of the time and location of information and the latter was employed to judge the relevance of the locality of a source.

Moreover, there are two relevance criteria explained in more detail. There are “Credibility/Trustworthiness/ Validity” under the category of source relevance criteria and “Newsworthiness” under the category of journalism value and training relevance criteria. Under these two criteria, there are factors employed by journalists to judge and evaluate the credibility, trustworthiness, or validity of the source or the newsworthiness of information.
The name of these factors might be same or similar to the other criteria explained. For example, examining the category of source relevance criteria, there is a “Verification badge” relevance criterion and there is a “Verification badge” factor under the “Credibility/Trustworthiness/ Validity” criterion. This denotes that not only “Verification badge” was used as a criterion to judge the relevancy of the source, but also it was used as a factor to judge and evaluate the credibility, trustworthiness, or validity of the source.

Chapter 4 and Chapter 5 examined journalists’ information behaviour and journalists’ information seeking behaviour on social media respectively. These two chapters shed light on how journalists use social media and seek information to satisfy their information needs on social media, however, they do not explain how journalists’ social media uses (journalists’ information behaviour) and information seeking behaviour might be affected by different factors. Hence, the next chapter (Chapter 6) examines the factors which have an impact on journalists’ information behaviour and their information seeking behaviour on social media.
Chapter 6

6. Influential Factors

This chapter examines research question 6 and investigates the influential factors on journalists’ social media uses (journalists’ information behaviour on social media) and their seeking behaviour.

Studying and analysing factors which influence social media uses by journalists not only enables us to understand and interpret journalists’ information seeking behaviour on social media better but also it helps us to develop IR systems which can satisfy journalists’ information needs and other needs (e.g. verification, communication, etc.) on social media to a higher quality.

Figure 6.1. Journalists’ information behaviour on social media are influenced by different factors.
Although influential factors on journalists’ information seeking behaviour and their uses of social media vary, the analysis of the interview transcripts proposes the following categories of influential factors on use of social media by journalists:

1) Personal related factors
2) Workplace related factors
3) Information need type related factors
4) Surveillance related factors
5) Social media platforms related factors

The study on the influential factors suggests that the influential factors do not remain the same and their impacts on journalists’ information seeking behaviour and social media uses may change over time. For example, the findings of this study show that the category of “surveillance related characteristics” has become one of the pivotal factors in influencing the ways journalists use or seek information on social media after Edward Snowden’s revelations on social media mass surveillance. However, the level of impacts of these factors can vary.
from context to context, situation to situation, journalists to journalists, etc. and due to nature
of this study, the findings cannot quantify the level of impacts of these factors.

The categories of influential factors indicate that these factors not only influence on
journalists’ information needs directly or indirectly which consequently have impacts on
journalists’ information seeking behaviour, but also influence on journalists’ use of social
media.

6.1 Personal related factors

This category covers a wide range of factors pertaining to journalist themselves. It ranges
from personal characteristics to the city and culture of society where a journalist lives and
works. The following list journalist related characteristics factors which impact on the ways
journalists use social media, their information needs and consequently their information
seeking behaviour.

- Personal characteristics
  - Age group /Attitude towards social media /Cultural background of journalist /
    Technology background / Training background / Level of adaptability / Level of
    consciousness
  - Being a freelancer or working for an organization
  - City and culture of society where a journalist lives and works
  - Type of device used (e.g. smart phone, tablet, laptop and PC)
  - Pack mentality
  - Interplay between personal life & journalistic work

Personal characteristics include factors, which are intrinsic to the journalist. For example, the
age group of journalists plays an important role in the frequency of using social media. One
of the interviewees whose age group is between 50 – 60 years old stated “I am sure you can
find somebody who is 19 years old, he or she is twitting every 5 minutes. I am still in the
process of transition between the old system and the new system.”
Also, age group has an impact on journalists’ attitude towards social media “Older journalists or more senior journalists are untrusting of social media or online content, as they should be in many ways, and that has been a barrier to getting the multimedia online journalism field going.”

Being a freelancer or working for an organization is a factor which impacts on the degree to which a journalist use social media to promote him/herself. One of the interviewees who had experience of being a freelancer and an employee in a news media organization stated “I’m taking a different direction in my work anyway, so I’m less focused on promoting myself as a freelance journalist. So I use it less than I used to.”

Also being a freelancer does not impose strict restrictions on what a journalist is talking about on social media, in comparison to situations in which a journalist works for an organization and his/her utterances must be aligned to organization’s mission, vision and goals “I am a freelancer, so I do not have to worry about the publication that I write for or what I say in twitter, effecting them. I am a self-employed.”

The city and the culture of the society where a journalist lives and works is another factor which influences using social media. One of the participants indicates that in segregated societies, due to the culture of these societies, journalists do not tend to use their faces in their profile photos.

The device type is another factor which influences the ways journalist use social media, not only due to the screen size of devices but also due to the features of every device type and the features social media platforms provide for each device type “It’s a lot harder on the phone or even on an iPad than it is on a desktop where you’ve got two big screens to have dozens of tabs open to trawl through people’s Facebook things, so it’s a much more fitting process than on the phone if you’ve actually got a laptop or a desktop that you can rely on, so that is a factor.”
Usually, it is very hard for a journalist to distance themselves from what the pack is doing (pack journalism). Sometimes a journalist decides to work on a story only because other journalists are doing so “So you are going to write a story about this, I will do it same. This is an interesting process, usually, you go back to the same sources... Because in reality, we are a pack mentality, we follow the same, the same story, the same people, and the same editors.” None of the journalists who participated in this study had a separate account for their journalistic work and personal purposes. Therefore, social media is not used separately for personal and professional purposes; journalistic work and personal purposes of social media use interlink and have interplay on each other. Due to the inextricable connection between the personal and professional use of social media, it was reported that social media leads journalists to become a brand on social media “social media is about you. And we are increasingly becoming a brand. So if people know me or look things up, they know that I am a journalist, and academic, but also I am a mother/father, and a wife/husband, and also quite active in my local community.” In other words, they create a new identity on social media, regardless of their real identity in personal and professional life. Therefore it is important how journalists portray themselves in social media, not only because they may damage their brand but also because they may damage their own personal and professional life “You cannot divorce your personal and professional anymore. But it does mean you need to be very careful in how you portray your personal life, so I have particular rules, for how student and I interact because it is really important that you do not disrespect your partner, you do not disrespect your workplace on social media.”

6.2 Workplace related factors

Workplace related characteristics include factors which are originate from a journalists’ workplace. Deadlines, organizational and editorial values, journalists’ roles and positions, type of stories a journalist is working on (politics, crimes, sports, etc.), type of journalists,
size and reputation of organization, etc. are factors which have an impact on journalists’ use of social media and their information seeking behaviour.

It was reported that deadlines are one of the main challenges in journalism. Deadlines not only influence on journalists’ information seeking behaviour but also have an impact on publishing news on social media as it means that the likelihood of errors increases. “The biggest constraint is time because in the journalism you always work towards deadlines. So the way that it influences my use of social media is that I have to often produce search results quickly and maybe do not have as much time to filter through or find the best quality tweet or video.”

However, the accuracy of news is one of the main responsibilities of journalists and they have to balance the accuracy against the speed of publishing news “There are more deadlines now because of online, there’s constantly deadlines, so you need to be fast, but you need to be accurate.”

Freelance journalists have more flexibility when it comes to deadlines, yet they have almost similar situations with non-freelance journalists “It doesn’t constrain your job because you don’t have an editor looking over your shoulder saying: ‘You spend too much time on this story. You’ve got to be doing something else.’ but when you’re a freelancer, you have to be that editor. You have to be that voice over your own shoulder saying: “Dude, it’s time to move on because you’ve got ten stories to write this weekend. This is number three.”

Journalist types (e.g. freelancer, investigative journalist, etc.) have an impact on the degree to which each factor is used. For example, freelance journalists may use social media to promote their work more than other types of journalists as they are independent and they do not get any support from media organizations “...you have to maintain, you kind of almost have to market yourself, basically. You have to be pushing your own good reports to create a social media following...”
Some news organizations have policies which compel journalists to have social media accounts and how to use their social accounts aligned with news organizations’ values and policies “All the news agencies force you to use social media now. It is part of the job and if you do not use it, you are considered a dinosaur. So using it as a tool to create stories is much faster.”

6.3 Information need type related factors

Each information need type and its related characteristics influence journalists’ information seeking behaviour. In particular, the participants of our study referred to event information need type and its two characteristics: event type and event location.

The location where an event takes place can be an influential factor. One of the interviewees indicated that for example people respond and react to happenings on social media in big cities more than small cities because the number of people use social media in big cities are more than small city.s which consequently impacts journalist’s uses of social media “If a crime happened right now [here in Melbourne], you’d know it because it’d be on Twitter. But when you’re in [a small city around Melbourne], you wouldn’t know necessarily whether, for example, there had been a car crash down the main street, because people wouldn’t be putting it up online straight away, there wouldn’t be photos of it, so it was a lot of harder to get things confirmed.”

The type of an event (e.g. criminal, political, sporting, etc.) have their own characteristics, which compel journalists to use and seek information about them in different ways “If you were reporting on, say, state politics, you would follow a lot of MPs, and you might see a tweet like: “About to go into the party room”, and you think: “Oh, what’s that about?” There’s a bit of difference in I think crime is a bit of an island in the way that we use social media.”
6.4 Surveillance related factors

One of the main challenges in journalism and specifically investigative journalism is dealing with surveillance. Surveillance not only hinders journalists’ ability to perform their work but also jeopardizes the security and safety of sources who trust journalists to keep their correspondence private and confidential. Journalists can’t seek and retrieve information freely if they can’t trust that their communications and use of social media are confidential and safe.

“Some external factors are related to surveillance. I do not want to have my history left behind. I do not want to be seen that I have been trying to contact the Islamic State. So there are external factors that are related to national security sometimes or reputations. It is an interesting stuff really, for example, you are investigating a story and you want to go that site, but then you think if you want to go to the site, I may be caught.”

Developing new technologies leads to developing new surveillance tools and when it comes to social media, Edward Snowden’s revelations have influenced drastically on the ways journalists use and seek information on social media. “The surveillance thing is a big one, and that’s only fairly new, the last two years really that we know what’s really happening....It’s not a mystery anymore, particularly thanks to people like Edward Snowden and organizations like WikiLeaks...We have laws in this country now that the government’s going to capture metadata and that’s a big deal for journalists because it can reveal all sorts of things about who you’re talking to on a sensitive story.”

Mass surveillance has produced a destructive impact on journalism (Bauman et al., 2014; Lyon, 2015), as journalists do not feel they can communicate with their source, use and seek information on social media safely and securely, mainly because journalists have ethical responsibilities and also the professional necessity to protect their sources, and mass surveillance on social media impacts journalists doing their work “You can never be 100%
sure that your communications platform isn’t being monitored or decrypted, but I certainly tried to keep across which platforms we knew weren’t encrypted.”

Mass surveillance is not only endangering sources but also it can target privacy, safety and reputation of journalists “So there are external factors that belong to the real world, free internet, privacy, reputation and also safety and security of journalists.”

6.5 Social media platforms related factors

Different social media platforms have different features and characteristics. These features influence directly and indirectly the ways journalists use social media and their information seeking behaviour. Moreover, any change or update on these platforms creates an impact on journalists’ information seeking behaviour and their use of social media. For example, one of the features of Twitter is the 140 characters limit which compels users to be concise about what they are posting. “Because it’s only 140 characters, it’s not actually that time consuming to just run your eye down. You’ve only usually got to read the first two or three words to bag an idea of whether it’s anything to do with what you’re interested in. Whereas going through Facebook posts would take a lot longer because the thing might be buried somewhere in the middle.” Similarly the advanced search feature of Twitter equips users with different options to narrow down their search results. The “Moments” feature of Twitter released in October 2015 is an example of a change or an update on a social media platform which consequently has influenced in the way of social media uses and seeking information. On the other hand, Facebook does not limit users with characters limits or it does not equip users with the advanced search page.

These different features lead journalists to use each platform in different ways and for different purposes. The features of social media platforms play a pivotal role in journalists’ information seeking behaviour. One of the interviewees explained how he has exploited Facebook and Twitter in different ways: “By the very nature, obviously Twitter only allows
very short updates or sequences of very short updates, so in a fast paced breaking news situation, maybe for audience responses to a topic, you might, on a show, you might invite the audience to contribute a question or an opinion or something. So it’s really useful for that. Obviously, it only allows 140 characters, so you can’t really explain very much with it. And then Facebook, again, obviously you can provide much longer updates, you can put more content up, you can put video and photos up more easily, so it tends to allow for more depth, I suppose. It’s a bit more difficult to access because it’s not an open platform like Twitter is. If I have a Twitter account, unless I hide account, you can see it, and unless I hide my tweets, you can see them open on the Internet, whereas Facebook is a much more closed system, unless your settings are set to everyone, I have to be your friend to see what’s on your page.” One of the participants indicated that due to different features provided by Facebook and Twitter, users’ interaction is quite different on these two platforms (Facebook and Twitter). Twitter is like having a conversation with somebody and people tend to be quite personal on Twitter when they are talking. They feel like they are talking to the presenter of the show or the journalist who has written a story “You have a much more immediate reaction and very short responses … somebody might add a very short opinion… “People tend to be quite personal on Twitter when they’re talking to.” whereas Facebook is like sending a letter to somebody “People respond in the comments, and sometimes, they respond at great length, almost like letters to the editor in the format. They have something they really want to say and they might write a few hundred words or the maximum you can fit in one of those Facebook replies to write it.” The features of social media platforms also have direct impacts on information needs, the search strategies and tactics employed, and relevance judgement criteria used by journalists to satisfy their information needs. For example in Twitter and Facebook, journalists are able to post questions and receive responses. Hence, posting questions can be considered as one of
the search strategies and tactics employed by journalists on these two platforms to satisfy their information needs. Also, the number of journalists’ followers (or friends in Facebook) has an impact on asking questions on these two platforms. One of the participants explained that because he has more followers on Facebook compared to the number of his followers in Twitter, he would rather ask questions on Facebook than Twitter; “On Twitter that’s not really effective for me because I don’t have that many followers, but on Facebook I have asked questions here and there so what are people’s thoughts on this and that so if I wanted to gain perspective of other people’s opinions I would go to Facebook.”

Other popular social media platforms like Instagram, YouTube and LinkedIn are used differently. Instagram, YouTube and LinkedIn are mainly used for finding photos, videos and people respectively. The features of these platforms also have an impact on journalists’ information seeking behaviour.
Chapter 7

7. Discussion

This chapter discusses the major findings of the study. This chapter begins with a discussion on the relation between social media uses and the concept of information behaviour. Then, it discusses the findings on journalists’ social media uses followed by the findings on journalists’ information seeking behaviour on social media. The findings on journalists’ information seeking behaviour consist of journalists’ information need types, search strategies and tactics, and categories of relevance judgement criteria on social media covered in sections 7.3, 7.4, and 7.5 respectively. This chapter concludes with a discussion on the findings of the factors, which influence journalists’ information seeking and behaviour.

7.1 Social Media Uses and Information Behaviour on Social Media

This study was novel in that it was one of the first qualitative studies of information seeking and behaviour of journalists on social media, including their information needs, seeking behaviour, search strategies and tactics, relevance judgement criteria, and its determinants. Moreover, this study explored the different use of social media, which expand the past work in this regard.
From the perspective of information seeking behaviour in context (Kelly, 2009), this study examined journalists’ information seeking behaviour on social media. Aligned with Wilson’s nested model (Wilson, 1999), shown in Figure 7.1, the findings of this study propose that journalists’ use of social media is equivalent to journalists’ information behaviour in the context of social media which encompasses their information seeking behaviour as well, and can be coalesced into six categories: 1) Promoting, and branding; 2) Verifying information; 3) Networking and communication; 4) Publishing, broadcasting and disseminating information; 5) Satisfying other types of journalists’ needs; 6) Satisfying information needs.

Likewise, Case (Case, 2012) contends that “in recent years the label of ‘information behaviour’ has firmly established itself as a covering term for a broader range of information-related phenomena, many of which topics are receiving fresh attention. It is a term whose time has come.” Accordingly, the advent of the world wide web and then social media have changed our view of information behaviour and the term of “information behaviour” has been developed and adapted to portray a broad range of relevant human behaviours dealing with information.

The findings of this research showed that journalists not only use social media for satisfying their information needs but also for the other purposes. Moreover, the findings indicated that
in some scenarios classifying journalistic and non-journalistic use of social media are impossible as the journalistic and personal use of social media is inextricably intertwined. In addition, the findings on journalists’ social media uses indicated that occasionally a single observable journalistic action (behaviour) on social media might have multiple purposes (motivations). For example, journalists might send a message on a social media platform for communication, disseminating information and promoting themselves simultaneously. In other words, the intentions and motivations of journalists, which reside in journalists’ mind and are not observable, must be inferred and elicited through their observable behaviours or actions.

The findings of this study showed that journalists use social media for six different motivations or purposes. Although, there is not an equivalent and one-to-one observable behaviour or action for each of these motivations or purposes found in this study, sometimes an observable behaviour (action) might reflect the associated motivation (purpose), which in this case the observable behaviour (action) is equivalent to the motivation (purpose). For example, when journalists post something on a social media platform, their motivation or purpose might be publishing, broadcasting and disseminating information. In this example, posting something on social media platforms is considered as an observable behaviour (action) and it is equivalent to the motivation (purpose) of publishing, broadcasting and disseminating information.

However, there are times when an observable behaviour (action) is equivalent to a motivation (purpose) and it is used to carry out other motivations (purposes) simultaneously. For example, posting something on a social media platform as an observable behaviour and equivalent to the motivation of “publishing, broadcasting and disseminating information” might be used to fulfil other motivations (purposes) including, “networking and communication”, “promoting and branding”, and “satisfying information needs”
simultaneously. Therefore, there might be an overlap between the observable behaviours (actions), but it does not denote an overlap among the motivations (purposes), although they might be interconnected.

Considering that this study finds that journalists use social media for six different purposes (motivations) which are not associated to a one-to-one observable action (behaviour), and proposes that journalists’ social media uses can be considered as journalists’ information behaviour on social media, then it can be concluded that journalists’ information behaviour on social media consists of overt and covert information behaviour. The overt information behaviour is defined as observable information behaviour and covert information behaviour is defined as unobservable information behaviour.

On the other hand, the findings of this study also contend that on some occasions, journalists’ information behaviour might change from one form to another form during the course of using social media. In other words, a motivation or purpose which is considered as an information behaviour might lead to another motivation or purpose (information behaviour) unintentionally. For example, journalists might post something on a social media platform to fulfil the motivation and purpose of “publishing, broadcasting, and disseminating information”, and then this motivation and purpose change and lead to the motivation of “satisfying information needs”. This shows the dynamic nature of journalists’ information behaviour on social media and the need to elicit and infer their information behaviour in real time.

The new concepts observed in journalists’ information behaviour on social media and introduced by this study, expand the definition of information behaviour proposed by other researchers including Wilson, Case, and Given (Case, 2012; Case and Given, 2016; Wilson, 2000b). These new concepts provide new insights into human’s information behaviour in the
new era of information revolution and explosion and enhance our understanding of human’s information behaviour in new contexts enabled by information technologies.

The following are the definition of information behaviour proposed by Wilson, Case, and Given respectively (Case, 2012; Case and Given, 2016; Wilson, 2000b).

“Information Behaviour is the totality of human behaviour in relation to sources and channels of information, including both active and passive information seeking, and information use. Thus, it includes face to face communication with others, as well as the passive reception of information as in, for example, watching TV advertisements, without any intention to act on the information given.” (Wilson, 2000b).

“Information behaviour encompasses information seeking as well as the totality of other unintentional or serendipitous (passive) behaviours (such as glimpsing or encountering information), as well as purposive behaviours that do not involve seeking, such as actively avoiding information”. (Case, 2012; Case and Given, 2016)

7.2 Journalists’ Social Media Uses (Journalists’ Information Behaviour on Social Media)

The findings of this study on journalists’ social media uses support past work showing that journalists exploit social media for different purposes (Brautović et al., 2013; Carrera Álvarez et al., 2012; Cozma and Chen, 2013; Hasanain et al., 2016; Hedman and Djerf-Pierre, 2013; Hermida et al., 2014; Herrera-Damas and Hermida, 2014; Lariscy et al., 2009; Messner et al., 2011; Santana and Hopp, 2016; Tandoc Jr. and Vos, 2015; Weaver and Willnat, 2016). However, the findings of this study also introduced a new category of social media uses: “Satisfying other types of journalists’ needs”.

Table 7.1 demonstrates the mapping of the findings of this research on journalists’ social media uses to several other studies. The table shows that the findings of other studies can be mapped onto five (5) categories of social media uses proposed in this study. Also, Table 7.1
shows that the findings of this study propose a new category of social media uses “Satisfying other types of journalists’ needs”.

These studies are selected as an exemplar of studies which covered different purpose of using social media by journalists. These studies were conducted between 2012 and 2016 and employed different methodologies. The second row of this table shows the methodologies employed in each study. Among all studies shown in Table 7.1, only Tandoc Jr. and Vos (Tandoc Jr. and Vos, 2015) and this thesis derive the categories of journalists’ social media uses inductively from the data collected itself.
Table 7.1: Mapping the findings of journalists’ social media uses

<table>
<thead>
<tr>
<th>Findings of this study</th>
<th>(Carrera Álvarez et al., 2012)</th>
<th>(Brautović et al., 2013)</th>
<th>(Cozma and Chen, 2013)</th>
<th>(Hedman and Djerf-Pierre, 2013)</th>
<th>(Herrera-Damas and Hermida, 2014)</th>
<th>(Tandoc Jr. and Vos, 2015)¹⁰</th>
<th>(Weaver and Willnat, 2016)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grounded theory through interviews and observation</td>
<td>Quantitative approach through online survey</td>
<td>Content analysis of tweet messages</td>
<td>Content analysis of tweet messages</td>
<td>Quantitative approach through mail survey</td>
<td>Content analysis of tweet messages</td>
<td>Case studies through observation and interview</td>
<td>Quantitative approach through questionnaire</td>
</tr>
<tr>
<td>Publishing, broadcasting and disseminating information</td>
<td>Distributing information</td>
<td>Convey information</td>
<td>Breaking news</td>
<td>Sharing random observation</td>
<td>-</td>
<td>Reporting</td>
<td></td>
</tr>
<tr>
<td>Reporting and Breaking news</td>
<td>Reporting and Breaking news</td>
<td>Breaking news</td>
<td>Sharing random observation</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Promoting, branding and creating identity</td>
<td>-</td>
<td>Self-promotion</td>
<td>Posting personal information</td>
<td>Promoting and distributing own and others’ stories</td>
<td>Personal/organizational branding</td>
<td>Promoting the content</td>
<td>Promoting</td>
</tr>
<tr>
<td>Networking and communication</td>
<td>Engaging audience</td>
<td>Conversation/Discussion</td>
<td>Discussing current events</td>
<td>Networking</td>
<td>Getting feedback</td>
<td>Strengthening the contact</td>
<td>Interacting</td>
</tr>
<tr>
<td>Satisfying information needs</td>
<td>Looking for information</td>
<td>Seeking information</td>
<td>Asking questions</td>
<td>Finding sources/interviewees ideas/angles</td>
<td>Following ongoing discussion</td>
<td>Asking opinion/pose questions/personal cases/information</td>
<td>Monitoring</td>
</tr>
<tr>
<td>Contacting citizen sources</td>
<td>Surveying the environment and detect new trends</td>
<td>Getting new idea</td>
<td>Using as a RSS</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>Finding ideas/information/sources</td>
</tr>
<tr>
<td>Getting new idea</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>Checking for breaking news</td>
</tr>
<tr>
<td>Satisfying other types of journalists’ needs</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>Monitoring discussion</td>
</tr>
</tbody>
</table>

¹⁰ Only Tandoc Jr. and Vos (Tandoc Jr. and Vos, 2015) and this study derive the categories of journalists’ social media uses inductively from the data collected itself
¹¹ Hedman and Djerf-Pierre classified promoting and distributing stories into one group (Hedman and Djerf-Pierre, 2013)
¹² Promoting and enhancing credibility are considered as the perceived effect of social media on journalists in Weaver and Willnat’s findings (Weaver and Willnat, 2016)
7.2.1 Promoting and Branding

The findings of this study suggest that using social media for “networking and communication” and “publishing, broadcasting and disseminating information” have an impact on “promoting and branding”. In Chapter 4, it is explained that promoting and branding is one of the reasons that journalists use social media for “networking and communication” and “publishing, broadcasting and disseminating information”. Therefore, it can also be argued that “networking and communication” and “publishing, broadcasting and disseminating information” as overt information behaviours can be used to fulfil “promoting and branding” as a covert behaviour.

The findings of this study also suggest that social media was used to create a new identity as the journalistic and personal use of social media are intertwined and have an impact on each other. Marwick and Boyd (Marwick and boyd, 2010) also indicate the same concept; on social media “users maintain impressions by balancing personal/public information, avoiding certain topics and maintaining authenticity”.

This is in harmony with Hedman and Djerf-Pierre’s discussion on the impact of social media on journalists’ traditional professional identity and changing the journalists’ norms, values and practices (Hedman and Djerf-Pierre, 2013). Their discussion built on the literature argues that journalists’ activities on social media not only help them build a personal brand but also these activities become part of a corporate brand. Moreover, the findings of this study show that not only promoting, and branding increase journalists’ credibility (Hedman and Djerf-Pierre, 2013) or “market value” (Brems et al., 2016), but also it increases journalists’ serendipitous information behaviour and information encountering.
7.2.2 Verifying Information

The findings of this research showed that one of the motivations (purposes) that journalists use social media is “verifying information”. In other words, social media is used as a verification tool to help journalists in verifying information. Moreover, the findings contend that in most occasions, verifying information starts as soon as journalists start seeking information. This phenomenon might occur due to the inherent nature of the time constraint in journalism. Whether verifying information is carried out through a separate process or it is done along with seeking information on social media, the findings of this study showed that journalists employ different verification strategies on social media when they use social media as a verification tool.

Similarly, Kovach and Rosenstiel observed that there are various informal strategies of verification which have not been translated into standard rules or practices (Kovach and Rosenstiel, 2007). In addition, there are studies, which show that journalists use social media itself for verification purposes (Brandtzaeg et al., 2016; Carrera Álvarez et al., 2012; Hasanain et al., 2016; Vis, 2013).

The findings of this study showed that six verification strategies, which were employed by journalists, exploiting social media itself for verification purposes. Although, some of these verification strategies were observed in other studies, including “trusted source” (Brandtzaeg et al., 2016), “communication” (Vis, 2013), and “passing the buck” in the context of Internet and before the advent of social media (David Nicholas et al., 2000), this study introduces other new verification strategies employed by journalists; they are “using different type of social media platforms in conjunction”, “the source’s profile”, and “social media users’ involvement”.

With regard to the “communication” verification strategy, Vis (Vis, 2013) observed that journalist send a message on a social media platform and then add “Confirmation?” or “Is
this true?” for verification purposes. Using explicit verification statements such as “Confirmation?” in “communication” verification strategy makes verifying information as an overt behaviour.

However, the analysis of the findings of this study argues that adding verification statements to a message or asking questions on social media platforms are not the only way of using the “communication” verification strategy. Journalists might have normal communication on social media (in public or private) such as participating in a discussion happening or opening up a topic on social media to verify the information without revealing their covert information behaviour. This way of using “communication” verification strategy makes verifying information as a covert behaviour.

“Communication” verification strategy as an overt or cover behaviour can be explained by considering the fact that information behaviour consists of overt and covert information behaviour. Therefore, it can be argued that journalists might use “networking and communication” as an overt information behaviour (observable information behaviour) to fulfil the motivation (purpose) of “verifying information” as an overt or covert information behaviour (observable/unobservable information behaviour) depending on how “communication” verification strategy is used.

7.2.3 Networking and Communication

Networking and communication on social media can be considered as an overt information behaviour and consequently, it can be exploited by journalists to fulfil other covert and overt information behaviours.

The findings of this study show that networking and communication were used for four main reasons: 1) social leisure, 2) branding and promotion, 3) satisfying information needs, and 4) verification. Therefore, it can be argued that “networking and communication” as an overt information behaviour was exploited to fulfil other covert and overt information behaviours.
including 1) “satisfying other types of journalists’ needs”, 2) “promoting and branding”, 3) “satisfying information needs”, and 4) “verifying information” respectively.

With regard to “satisfying information needs”, networking and communication is considered as one of the search strategies and tactics used by journalists to find information on social media.

7.2.4 Publishing, Broadcasting, and Disseminating Information

Similar to “networking and communication”, “publishing, broadcasting, and disseminating information” can be considered as an overt information behaviour. The findings of this study showed that journalists publish, broadcast, and disseminate information on social media for three main reasons; 1) breaking news, 2) branding and promotion, and 3) receiving feedback. Therefore, it can be contended that “publishing, broadcasting, and disseminating information” as an overt information behaviour is used to fulfil other covert and overt behaviours including “promoting and branding”, “networking and communication”, and “satisfying information needs”.

7.2.5 Satisfying Other Types of Journalists’ Needs

In Chapter 4, it is explained that social leisure is one of the reasons that journalists use social media for “networking and communication”. Therefore, it can be contended that “networking and communication” as an overt behaviour can be used to fulfil “satisfying other types of journalists’ needs” as a covert behaviour.

Moreover, the analysis of the findings argues that “satisfying other types of journalists’ needs” might lead to “satisfying information needs”. This transition denotes that journalists’ use of social media for leisure, entertainment and curiosity (satisfying other types of journalists’ needs) directly impacts on journalistic work.
For example, journalists might use social media for leisure and they encounter story ideas for their journalistic work which can be considered as “satisfying information needs” as well. Alternatively, journalists might communicate with others on social media for pleasure which consequently impacts on their motivation of “promoting and branding” directly.

7.2.6 Satisfying Information Needs

The motivation of “satisfying information needs” leads to information seeking behaviour. Therefore, if “satisfying information needs” and “information seeking behaviour” are considered as the same information behaviour (referring to the same information behaviour), then it can be argued that this information behaviour (satisfying information needs) on social media can appear in both overt and covert forms. An example of overt information behaviour to satisfy information needs (information seeking behaviour) is to use the search functions of social media platforms. In regard to considering “satisfying information needs” as a covert behaviour, the “networking and communication” information behaviour can be used to fulfil “satisfying information needs” as a covert behaviour; for example, journalists might contribute to a conversation or raise a topic on social to satisfy their information needs.

Moreover, the analysis of the findings of this research indicates that the five other motivations (information behaviour) of using social media might help or lead to satisfying information need directly or indirectly.

The findings on journalists’ information seeking behaviour on social media which consists of information need types, search strategies and tactics, and relevance judgement criteria are discussed in Sections 7.3, 7.4, and 7.5 respectively.

7.3 Journalists’ Information need types on Social Media

There are studies (Brautović et al., 2013; Hedman and Djerf-Pierre, 2013; Hermida et al., 2014; Herrera-Damas and Hermida, 2014; Lariscy et al., 2009; Tandoc Jr. and Vos, 2015) which indicate that journalists use social media to find information, but they do not
investigate what type of information journalists seek on social media. Because, these studies are mainly considered as journalism studies and their main research focus is how journalists use social media.

Recently Hasanain et al. (Hasanain et al., 2016) described a taxonomy of question types posted by journalists on Twitter, which indicated that journalists ask questions on social media to find facts, opinions and information sources. However, the findings of this thesis showed that such question asking is only one of the search strategies and tactics used to satisfy information needs.

Therefore, this research is one of the first studies which investigate journalists’ information need types on social media. The findings of this study suggested seven information need types lead journalists to social media that expand the types found in previous work (Anwar et al., 2004); 1) Real time information 2) Opinion and anecdotal evidence 3) Facts and knowledge 4) Events driven in-formation 5) People (sources, contacts, experts, etc.) 6) User generated content (spats, photos, videos, etc.) 7) Serendipity.

Moreover, the findings indicated that journalists might employ different search strategies and tactics for different information need types on social media. In other words, types of information need might influence the way journalists seek information.

7.3.1 Real-Time Information

Social media specially Twitter and Facebook have been regarded as a real-time information network by different studies which enable real-time reporting (Hermida, 2010a; Hermida et al., 2014; Lazaroiu, 2014; Newman, 2009). However, from the opposite spectrum and from the perspective of information seeking behaviour, the findings of this study argue that real-time information also can be deemed as an information type, which leads journalists to social media to satisfy their real-time information needs. If the information is classified into real-time and non-real-time groups in the digital era, then social media is a paramount information
source to satisfy journalists’ real-time information needs. Before the rise of social media, journalists did not have the privilege to access this type of information easily. Due to inherent features of social media in providing real-time information, it was also considered as “social seismograph” by the participants of this study. Twitter exemplifies real-time information by prompting users with the question “What’s happening?”

7.3.2 Opinions and Anecdotal Evidence

Social media is full of opinion-based information (Hagemeier, 2012) and it is used by journalists to find opinion-based information (Hasanain et al., 2016; Herrera-Damas and Hermida, 2014). Social media can be used as a way to poll or survey people replacing the traditional mass surveys (Ceron et al., 2014) or as vox pop (Broersma and Graham, 2012). Also, based on sentiment and opinion analysis, social media can be used to predict election results (Burnap et al., 2016; Sang and Bos, 2012; Tumasjan et al., 2010), stock market (Bollen et al., 2011; Sul et al., 2016) and so on. Likewise, the findings of this study show that journalists use social media to interview, survey, poll, or seek people’s opinion on a subject. Furthermore, the analysis of the findings contend that seeking people’s opinion on social media not only satisfy journalists’ information needs in this regard but also, help them to connect the dots’ and comprehend people’s interaction with and influence over each other.

7.3.3 Facts and Knowledge

Journalistic ethics and norms are associated with objectivity (Cunningham, 2003) and the main role of journalists is to provide accurate and objective reporting (McQuail, 2010). Although objectivity in journalism is an ever-evolving and slippery notion (Muñoz-Torres, 2012) and differs in different cultural, regional and political settings (Donsbach and Klett, 1993), it is closely intertwined with reporting facts, as objectivity is defined as “the view that one can and should separate facts from values” (Cohen-Almagor, 2008). However, when it
comes to social media, the findings of this study argue that it can be difficult to decipher what might be fact from opinion on social media.

Although there are studies which their concern is fact-checking of claims and statements made on social media (Castillo et al., 2011; Coddington et al., 2014; Gupta et al., 2014; Lawrence et al., 2014), the findings of this research argue that finding facts on social media is not limited to claims, statements, or quotes. The findings of this study contend that finding facts on social media cover a broader spectrum including the facts about individuals (e.g. name, age, education, relationships, etc.), background facts, geographical facts, and so on.

However, there are journalists who are reluctant to use social media on its own to satisfy this type of their information needs. One of the reasons that satisfying this type of information need on social media are not popular among all journalists is due to the fact that verification of information is very challenging. However, they employ different search strategies and tactics to satisfy this type of their information needs on social media.

### 7.3.4 Events Driven Information

Social media has been used to detect and even predict diverse range of events including disasters (Crooks et al., 2013; Imran et al., 2013; Potts et al., 2011; Sakaki et al., 2010), crimes (Gerber, 2014), diseases (Kim et al., 2013), sports (Corney et al., 2014). Also, there are forays into identifying events in general (Dou et al., 2012) or developing a tool for visualizing events (McMinn et al., 2014) on social media. Although these studies are not in the realm of journalism, they clearly confirm the findings of this study that social media is a rich source for journalists to satisfy their diverse range of events driven information. In the realm of journalism, the findings of this study showed that social media is used to satisfy a wide range of journalists’ events driven information needs including authorities, celebrities, etc. announcements, disasters, crimes, riots, political events and so on.
7.3.5 People (Sources, Contacts, Experts, etc.)

Past studies indicate that journalists use social media to find sources including authorities, eyewitnesses, and experts (Diakopoulos et al., 2012; Hasanain et al., 2016) which are classified under “People” information need type in this study. This study expands these findings by showing that depends on their journalistic tasks, journalists are also interested in finding aspects of individuals’ characteristics and personalities (getting insight about somebody's character), and relevant information about individuals including their photos, interests, connections, etc. Also, the findings of this study argue that sometimes journalists do not know whom they seek for and they employ a mixture of search strategies and tactics to find their unknown targets.

7.3.6 User Generated Content Information

Other types of information need, which lead journalists to use social media, are coalesced in this category. For example, the findings of this study show that journalists use social media to satisfy their information need when they need a photo for a story they work on.

7.3.7 Serendipity

Previous studies (Anwar and Asghar, 2009; Anwar et al., 2004) indicate that journalists look for “ideas for future articles” consciously and purposely, or that journalists’ information seeking started with the assignment of work (Simon Attfield and John Dowell, 2003). The findings of this study show that identifying story ideas on social media is mainly a serendipitous process, an effect previously observed (Foster and Ford, 2003). These findings are in harmony with Nicholas and Martin (David Nicholas and Helen Martin, 1997) which suggests that sometimes journalists do not know what they look for and also the notion that information needs can be both conscious and unconscious (Green, 1990).
7.4 Journalists’ Search Strategies and Tactics on social Media

This study employed the concept of search strategies and tactics (SST) to explore how journalists start seeking information on social media. In other words, although this study is considered as one of the first to investigate journalists’ SST on social media, this study did not consider the concept of “search tactics” and “search strategies” defined by Bates (Bates, 1979) separately, as the main aim of this research was to explore the ways journalists start their search as part of their search behaviour on social media. Therefore, based on classifying the studies concerning SST by Xie and Joo (Xie and Joo, 2012), the findings of this research on journalists’ SST on social media can be considered as the identification of SST when journalists start seeking information on social media.

Aligned with Savolainen’s conceptual analysis on SST (Savolainen, 2016), the findings of this study argue that journalists’ SST can be conceptualized as patterns in a stream of behaviour and also as plans ahead of the actions. Moreover, the findings of this study contend that the SST employed by journalists to start seeking information on social media can be considered as the active, passive, overt, or covert SST depending on how they help journalists to search information and satisfy their information needs and also how they prompt journalists to express their information needs. A search tactic and strategy is considered as active if it enables journalists to seek information on social media actively. If it enables journalists to encounter information which leads them to satisfy their information needs, it is considered as passive. On the other hand, a search tactic and strategy is considered as overt if it enables journalists to express their information needs explicitly and overtly, otherwise, it is considered as covert. As the concept of “search strategies and tactics” are mapped onto the concept of “search behaviour”, then it can be argued that “search behaviour” on social media can be considered as active, passive, overt, or covert.
The overt and covert SST also can be explained by considering the discussion taken place in Subsection 7.2.6 and the relation between “search strategies and tactics” and “search behaviour” described in Subsection 2.2.2. Considering that “search behaviour” is a subset of “information seeking behaviour” called “satisfying information needs” in this study, and, “satisfying information need” can be appeared as both overt and covert information behaviours, then it can be argued that based on the parent – child relation in object oriented analysis design and inheriting the same attributes ("satisfying information need" is considered as parent and “search strategies and tactics” is considered as child), the SST employed to satisfy information needs as an overt information behaviour, are considered as the overt ones and the SST employed to satisfy information needs as a covert information behaviour, are considered as the covert ones.

For example, the “entering queries” search tactic and strategy which compel journalists to exploit the search function of social media platforms and “asking questions” search tactic and strategy can be considered as active and overt SST, because it requires that actively journalists start seeking information on social media through expressing their information needs explicitly and overtly. On the other hand, “following” search tactic and strategy can be deemed as a passive and covert search tactic and strategy because using this search tactic and strategy enable journalists to satisfy their information needs passively (it enables journalists to encounter information) and covertly (it does not allow journalists to express their information needs explicitly). An example of an active and covert search tactic and strategy would be contributing to a conversation without exposing information needs explicitly and overtly.

The findings of this study showed that journalists employed nine SST to commence searching information on social media, as opposed to a web IR system (e.g. Google) where seeking information mainly starts by entering queries. This is the reason that most SST studies on
web IR system concern query formulation and reformulation SST (Aula, 2003; Bendersky et al., 2012; Huang and Efthimiadis, 2009; Jansen et al., 2007, 2009; Rieh and Xie, 2001, 2006). As this study only aimed to explore the SST employed by journalists when they start their search on social media, this study did not cover query formulation and reformulation tactics and strategies employed by journalists when they use “entering query” search tactic and strategy on social media. However, this study observed that exploiting the “advanced search” feature of the search function in social media platforms was not prevalent among journalists. The “Asking questions” search tactic and strategy employed by journalists on social media in this study was observed also in the studies concerning SST on social Q&A environment such as “Yahoo! Answers” (Evans et al., 2010; Jeon and Rieh, 2015). The “Asking questions” search tactic and strategy is considered as an overt and active search tactic and strategy and consequently led this research into exploring the types of question journalists ask on social media. The findings of this study showed that the questions asked by journalists on social media can coalesce into five (5) groups and it indicated that asking questions on social media is not only used as a search tactic and strategy to help journalists satisfy their information needs, but also it is used as a verification strategy and also as a way to communicate with the readers. These information behaviours can be explained and justified by the phenomenon named as covert and overt information behaviour and discussed in Sections 7.1 and 7.2.

Some of the SST identified in this study, were observed by other researchers in different contexts (Bates, 1979; Catledge and Pitkow, 1995; Evans et al., 2010; Jeon and Rieh, 2015; Ondrusek et al., 2017; Rieh and Xie, 2001, 2006; Smith, 2012; Thatcher, 2006). They are monitoring, browsing/scanning/scrolling, entering queries, and asking questions. However, there are SST identified only in this study. They are: following, using external tools, posting news stories, checking the trends, and networking and communication. These findings imply
that some SST are context-dependent and they are only available in a specific context such as social media.

Considering the discussion occurred in Sections 7.1 and 7.2, the phenomenon called covert and overt information behaviour can be exploited here to explain the “networking and communication” and “posting news stories” search tactic and strategies.

In Subsection 7.2.3, it was discussed that “networking and communication” is one of the motivations that journalists use social media and it can be considered as an overt information behaviour to fulfil other covert information behaviours including “satisfying information needs”. Therefore, when “networking and communication” is used by journalists to satisfy their information needs, it can be considered as one of their SST.

Similarly, in Subsection 7.2.4, it was discussed that one of the reasons journalists use social media for “publishing, broadcasting, and disseminating information” is “receiving feedback”. Therefore, when journalists share news stories on social media to receive feedback and satisfy their information needs, “posting news stories” can be considered as one of their SST.

**7.5 Journalists’ Categories of Relevance Judgement Criteria**

This research employed the concept of subjective relevance (Borlund, 2003; Ingwersen and Järvelin, 2005; Saracevic, 2016) to explore the relevance criteria used by journalists to judge the relevancy of information on social media. This study is one of the first studies to investigate journalists’ relevance judgement criteria on social media and identified twenty six (26) relevance criteria coalesced into six (6) categories which contend the complexity, and multifaceted nature of journalists’ relevance judgement on social media as addressed in other studies of relevance judgement criteria (Borlund, 2003; Crystal and Greenberg, 2006; Tang and Solomon, 1998). The six (6) categories of relevance criteria denote that these relevance criteria are derived from six main different origins namely, information, source, journalism value & training, journalist, news piece/story, and social media users, however, these
categories of relevance criteria might be interrelated; for example there is a relevance criterion under the “information” relevance category named “interest”. Also, there is a factor named “interest” and used to judge the “newsworthiness” of information under the relevance category of “journalism value & training”.

Although some of the categories of relevance criteria (i.e. information, source, and journalist) identified in this study also observed in other studies (e.g. Barry, 1994; Barry and Schamber, 1998), the categories of journalism value & training, news piece/story, and social media users only were identified in this study. This signifies that relevance judgement criteria employed are context-dependent as indicated in other studies (e.g. Borlund, 2003; Tang and Solomon, 1998). It should be mentioned that journalists were the participants (users) of this study and consequently, the category of “journalist” was referred mainly as the category of “user(s)” in other studies (e.g. Barry, 1994; Barry and Schamber, 1998).

Moreover, comparing the criteria in a specific category of relevance criteria which also was observed in other studies (e.g. Barry, 1994; Barry and Schamber, 1998) such as the “information” category of relevance criteria indicates that not only the categories of relevance criteria, but also the criteria derived from, are very context-dependent. For example the “popularity” criterion under the category of “information” relevance criteria might be only meaningful and employed in the context of social media in comparison to the context of Web environment. This is the reason that the “popularity” criterion was not observed in the studies of relevance criteria in the Web environment.

On the other hand, the “topicality” criterion was regarded as one of the most important criteria in the studies of relevance criteria in the context of Web environment (Xu and Chen, 2006), however, the analysis of findings in this study does not suggest that the “topicality” criterion is one of the most important criteria used in the context of social media. The reason might be due to the fact that this study found that journalists employed nine different search
strategies and tactics to start their search on social media and only one of the search strategies and tactics benefit from search functions of social media platforms (“entering queries”) which is mainly associated with the “topicality” criterion. However, the findings of this study showed that the “topicality” criterion was also used with other search strategies and tactics including “asking questions”, and “browsing”. Therefore, it can be argued that the concept of subjective relevance which exploits different relevance criteria to judge the relevancy of information is intertwined not only with the concept of information needs but also with the concept of search strategies and tactics in the context of social media. In other words, the findings of this study contend that the concept of information needs, search strategies and tactics, and relevance criteria judgements are closely interrelated in the context of social media.

Finally, there are criteria such as time constraints considered as relevance judgment criteria in some studies including Barry’s study (Barry, 1994), however, this research considered them as influential factors on information behaviour and information seeking behaviour discussed in the next subsection.

### 7.6 Influential Factors

There are studies, which indicate information behaviour and information seeking behaviour occur in a context and there are factors, which have an impact on them (Byström and Järvelin, 1995; Dervin, 1992; Foster, 2004; Savolainen, 1995; Wilson, 1997, 2000b). When it comes to journalism, Campbell (Fiona Campbell, 1997) and, Attfield and Dowell (Simon Attfield and John Dowell, 2003) indicate that there are journalistic constraints including deadlines and word-counts, which have an impact on journalists’ information seeking behaviour. Also, Fabritius’ study (Fabritius, 1999) indicate that there are contextual factors which influence journalists’ information seeking behaviour.
In this study, the term “influential factors” was employed to encompass the terms used in other information seeking and behaviour studies; “situational factors” (Byström and Järvelin, 1995; Dervin, 1992; Savolainen, 1995), “intervening variables” (Wilson, 1999), “pragmatic factors or constraints” (Fiona Campbell, 1997; Simon Attfield and John Dowell, 2003), and etc.

When it comes to journalism and social media, the findings of this study subsumed influential factors, which have an impact on journalists’ information seeking and behaviour on social media, under five categories: 1) Personal-related factors, 2) Workplace related factors, 3) Information need type related factors, 4) Surveillance related factors, and 5) Social media platforms related factors.

These findings also suggest that the influential factors do not remain the same and their impacts on journalists’ information seeking and behaviour may change over time. For example, the category of “surveillance related factors” mainly has become one of the pivotal factors in influencing the ways journalists use or seek information on social media after Edward Snowden’s revelations on social media mass surveillance. However, the level of impacts of these factors can vary from context to context, situation to situation, journalists to journalists, etc. and due to nature of this study, the findings cannot quantify the level of impacts of these factors.

7.6.1 Personal-related factors

Personal factors (e.g., experience, attitude, and education), which influence information seeking behaviour, are demonstrated visibly in the Byström and Järvelin general model (Byström and Järvelin, 1995). Also, David Nicholas et al’s study shows that “Age experience” and “Education and training “factors influence use of the internet by journalists (David Nicholas et al., 2000). Furthermore, when it comes to social media, Brautović et al.’s (Brautović et al., 2013) and Opgenhaffen & Scheerlinck’s findings (Opgenhaffen and
Scheerlinck, 2014) indicate that the place where journalists live and journalists’ attitude towards social media have an impact on the use of social media respectively. The findings of this study argue that the category of personal related factors is not confined to journalists’ age, experience, attitude, and education etc. This category also covers other factors pertaining to a journalist itself. For example, the findings of this study showed that being a freelancer or working for an organization have an impact on journalists’ information behaviour. Similarly, Brems et al.’s study on journalists’ personal branding indicates that freelance and employed journalists brand themselves on social media differently (Brems et al., 2016).

Other factors included in this category are a culture of society where a journalist lives and works, type of device used (e.g. smart phone, tablet, laptop and PC), pack mentality, and the interplay between personal life & journalistic work.

7.6.2 Workplace related factors

Fabritius’s findings (Fabritius, 1999) show the influence of different “cultures” pertaining to journalists on their information seeking behaviour; the culture of the journalistic profession, the culture of a specific medium (e.g. newspaper), and the culture of a department within a medium (e.g. sports news). Also, her findings indicate that the daily routines and procedures together with the process of preparing a piece of news or other journalistic item have an impact on journalists’ information seeking behaviour. On the other hand, Campbell’s (Fiona Campbell, 1997), and Attfield and John Dowell’s study (Simon Attfield and John Dowell, 2003) indicate that there are journalistic constraints including deadlines, which influence journalists’ information seeking behaviour.

Although Fabritius’, Campbell’s, and Attfield and John Dowell’s study was before the rise of social media, the findings of this study support their findings and consider these influential factors under the category of workplace related factors which have an impact on journalists’
information behaviour on social media. Moreover, the findings of this study introduced other influential factors under the category of “workplace related factors” including journalists’ types, roles and positions and size and reputation of the media organization.

7.6.3 Information need type related factors

The findings of this study showed that type of information need and its relevant characteristics (e.g. location and type of an event) have an impact on journalists’ information seeking behaviour.

For example, journalists might follow and monitor authorities, politician and celebrities on social media for their announcements but they have to employ different search strategies and tactics to find crime related information. This implies that not only the type of journalists’ information needs influences on the way journalists seek for information on social media (their search strategies and tactics), but also, the characteristics of each information need type might have an impact on the search strategies and tactics they employ to satisfy their information needs on social media.

7.6.4 Surveillance related factors

After Edward Snowden’s revelations about mass surveillance, a number of books were published to cover the revelations and discuss the impact of them (Geist, 2015; Glenn Greenwald, 2014; Harding, 2014; Lyon, 2015). However, Lashmar’s study (Lashmar, 2016) is specifically on the impact of Snowden’s revelations on journalists and their confidential sources. His findings show that it was regarded by journalists as a most serious threat to the fourth estate model of journalism which has caused serious concern among journalists and has led them to have a paradigmatic shift in journalist–source relations.

When it comes to using social media, the findings of this study also show that Edward Snowden’s revelations on mass surveillance have an impact on journalists’ information seeking and behaviour. Particularly, the findings of this study indicated that it influences on
journalists’ communication and search strategies and tactics employed to satisfy their information needs on social media. For example, they may not use explicit queries to search for something on social media. This is in harmony with Nicholas and Martin’s discussion, which argue that due to confidentiality concerns, journalists “often provide vague and generalized descriptions of what they want.” (David Nicholas and Helen Martin, 1997).

7.6.5 Social media platforms related factors

Hughes et al.’s findings suggest that a preference for using a social media platform (e.g., Facebook or Twitter) is connected with differences in users’ personality (Hughes et al., 2012). Similarly, Petrocchi et al.’s findings argue that people who use only Facebook (mono-users) differ in their personality characteristics from people who use both Facebook and Twitter social media platforms (Petrocchi et al., 2015).

The findings of this study suggest that workplace related factors dominate journalists’ personality characteristics in choosing social media platforms. For example, some media organizations compel journalists to use specific social media platforms regardless of journalists’ personality.

Also, Miller and Melton’s study shows that users have different behaviour on different social media platforms (Miller and Melton, 2015). There are also studies on journalists’ use of social media which indicate that journalists might show different behaviour on different social media platforms (Ju et al., 2014; Santana and Hopp, 2016; Skogerbø and Krumsvik, 2015).

Similarly, the findings of this study show that journalists’ information behaviour is different on different social media platforms. Yet, the findings of this study show that different features and characteristics of each social media platform lead journalists to have different information behaviour. Therefore, this study considers features and characteristics of social media platforms as influential factors on journalists’ information behaviour.
Chapter 8

8. Conclusions

Due to the advent of the Internet, web, and social media, data and information are growing exponentially and consequently, satisfying human’s information needs – part of satisfying human essential needs in the 21st century – has become a growing area of interest in many disciplines including information retrieval (IR) and information seeking behaviour (ISB). Despite the fact that this research was one of the first studies of information seeking behaviour of journalists on social media, the most significant contribution of this research was to study users’ (journalists) information seeking behaviour on social media in a bigger context called information behaviour (IB) along with its influential factors; this research explored users’ information seeking behaviour as part of their information behaviour and argued that to have a better understanding of users’ information seeking behaviour, users’ information behaviour must be taken into consideration. Furthermore, this study examined the factors which have an impact on journalists’ IB and ISB and contended that to satisfy journalists’ information needs and other needs (e.g. verification, communication, etc.) on social media to a higher quality, influential factors must be taken into consideration in real time.

Studying journalists’ information behaviour on social media enabled this research to expand the past work in this regard which their research focuses were mainly on journalists’ social media uses. Moreover, this research expanded the definition of the information behaviour by introducing the concept of overt and covert information behaviour and then argued that other journalists’ information behaviours on social might lead to journalists’ information seeking behaviour which denoted how journalists’ information behaviours are interrelated on social media.
Considering information seeking behaviour (ISB) as part of information behaviour (IB), the central goal of this study was to explore journalists’ information seeking behaviour on social media. The central goal of this research was accomplished through exploiting grounded theory methodology, interviewing twenty journalists and observations of students attending journalism modules.

To explore journalists’ information seeking behaviour on social media, this research studied three main components of information seeking behaviour specifically; information needs, search strategies and tactics, and relevance judgement criteria. The findings of these three components reflected the dynamic nature of journalists’ information seeking behaviour on social media.

The most significant findings of journalists’ information seeking behaviour on social media include introducing journalists’ information need types, journalists’ search strategies and tactics, and journalists’ relevance judgement criteria on social media. These findings denoted that journalists’ information seeking on social media not only is conscious and purpose but also serendipitous and unconscious. Moreover, it was argued that certain types of information needs lead journalists to social media, and consequently, journalists’ search strategies and tactics and journalists’ relevance judgement criteria are context-dependent.

The findings of journalists’ search strategies and tactics on social media contended that journalists’ search behaviour on social media consists of active, passive, overt, and covert search behaviour. The findings of journalists’ search strategies and tactics on social media further demonstrated that “asking questions” search tactic and strategy as an active and overt search behaviour is not only used to satisfy journalists’ information need but also it is used to satisfy other journalists’ information behaviour such as “verifying information” and “networking and communication”. 

201
The findings of journalists’ relevance judgement criteria on social media argued the complexity, and multifaceted nature of journalists’ relevance judgement on social media and concluded that journalists’ relevance judgment criteria not only are intertwined with journalists’ information needs but also with journalists’ search strategies and tactics.

Finally, this research showed that studying users’ information seeking behaviour (ISB) in a bigger context called information behaviour (IB) is not enough to satisfy users’ real information needs without considering the factors which have an impact on them. Users’ information seeking behaviour is dynamic in nature and hence, the factors that influence users’ information seeking and behaviour must also be taken into consideration in real time.

This perspective and the findings of this study are of paramount contribution to satisfying users’ real information needs and the understanding of their information seeking behaviour.

Overall, the findings of this study not only contributed to information retrieval (IR), information behaviour (IB), and information seeking behaviour (ISB) studies but also to social media and journalism studies. However, considering the nature of the methodology used in this research (grounded theory), and the fact that this study was considered as an exploratory study, it is expected that similar studies will be conducted for the purpose of generalizing of the findings.

The work of this research can also be expanded to help us have a better understanding of “information implantation” mechanism and concept; if an information retrieval (IR) system can be developed which is able to read users’ mind and satisfy their real information needs, it is also possible to implant data and information in users’ mind, change users’ information needs, and consequently manipulate users’ realities. However, the concept of human intelligence also must be revisited as the intellectual interpretation of implanted information perceived by individuals are different.
Journalists’ Information Seeking And Behaviour on Social Media

PhD candidate:
Omid Aghili
APPENDIX B. Completion Seminar Transcript

Slide 1:
Thank you for coming to my presentation. This presentation is probably my last presentations to talk about my research project which has been only supervised by Prof. Mark Sanderson so far. Therefore, I would like to formally thank Mark for his advice.
Also, I would like to thank James Harland who joined the supervisory team last month due to the SGR requirements and also he played the role of the independent in my first and second milestone seminar.
Finally, I think I should mention that I have been doing my PhD for three years and it has been one of the strangest three years of my lifetime so far which I have regarded it as “torturing” sometimes…
The aim of this exploratory research is to learn about Journalists’ Information Seeking Behaviour on Social Media

Slide 2: Evolution of Information Technology
Before talking on my project, I will give you some background
Technologies change human’s live and consequently their behaviour. From the advent of the Internet, to the advent of Web, and then Search Engines, and now Social Media …

Slide 3: Data Never Sleeps
So, it is quite obvious that we have moved from the age of information scarcity to the age of information abundance

Slide 4: The Importance of Information Need
And looking for information has become an integral part of human’s activities which triggered by “information need”

Slide 5: Challenge of Information Seeking
However, when information needs lead us to seek information we are facing different challenges…
In the ocean of information, one of the challenges is how we should address what we are looking for

Slide 6: Intellectual Access
This challenge is mainly considered as “Intellectual Access” and it is about interpreting and translating information and ideas within sources

Slide 7: Aim of Information Retrieval Systems
However, what is the ultimate goal of IR system? The answer is satisfying user’s information needs.
Slide 8 – Focus on the user

So understanding users’ information behaviour and their information needs are crucial to the success of IR systems. And Maybe that is the reason Google’s first philosophy and belief as the leading search engine is “Focus on the user and all else will follow.”

Slide 9: General Information Retrieval Model

Information needs lead users to interact with an information system or information retrieval system and then use the information. From the moment users feel a need for information to the moment users use information, users are engaged in different kind of behaviours, actions and activities which are considered information seeking behaviour.

Slide 10: Web Information Retrieval Model

When that model comes to Webs, we have search engines as IR systems. Users’ information need lead them to pose queries by text or voice and then the search engines show results to satisfy users’ queries… as we see in this model, users query represents users’ information needs… however, a question may be raised here: can queries reflect users’ real information needs? The obvious answer is no

Slide 11: Ideal Information Retrieval System

Therefore, IR systems must predict, infer and interpret the queries which user enter at the IR systems, change them to user’s real information need and then retrieve and display results which fulfil users’ expectations and needs. In other words, IR system must be able to read users’ mind. Because users expect that the IR system infer what they enter as a query to what they are looking for

Slide 12: Chaos Theory & Human Behaviour

Reading people’s mind might bring this question into picture… Is human behaviour a chaotic system?

Although according to most anthropologists the answer is, yes. When it comes to the field of IR, the answer is no. because as opposed to anthropologists, IR systems have to predict users' behaviour less than a fraction of second and users must not wait for a long time to receive answers from IR systems.

Slide 13: Software Engineering Process Model

If we look at IS or IR system as a software, then software development starts with requirement elicitation. Users' requirements must be elicited and analysed first then start developing a software. The software or the final product must satisfy users’ requirements elicited in the first phase.

Slide 14: Information Seeking Behaviour in Context

Similarly, the information retrieval research continuum provided by Kelly also indicates the same concept. On one side we have “human” and on the other side, we have “system”. To deliver an IR system which satisfies users’ information need we need to understand their information behaviour in the context first
Slide 15: Information Seeking Behaviour

Information seeking behaviour is a subset of human behaviour and cover different topics including Information needs, Information seeking, Search strategies and tactics, Relevance judgment Criteria, etc.

Slide 16: Context of Information Seeking Behaviour

Contexts describe user behaviour in real-time and signify them. Information seeking behaviour in context research realm informs the design and evaluation of IR systems at interface and system levels.

Slide 17: Journalists' Information Seeking Behaviour on Social Media

This research project is considered as ISB research which is classified under IR research area. The context of this research is defined mainly by two elements 1) journalists 2) social media. So the aim of this research is to explore journalists’ information seeking behaviour on social media.

As you see in this slide, there is a hole in the intersection of this three areas in the literature which this research is going to cover.

In other words, I am claiming that this research is the first study which covers this area.

Slide 18: Why social media? Why journalists?

Information seeking is an essential element in the journalistic work.

Social media is becoming one of the primary sources for journalists to satisfy their information needs.

Social media is used widely by journalists in the professional contexts in comparison to other professionals.

Slide 19: Social Media Information Retrieval Model

How do users seek information on social media? Do we have any models?

Slide 20: Literature review

So considering that this research is on the right end of IR continuum, what does the literature tell us?

Slide 21: Taylor

Taylor’s information need model indicates that users’ real information needs are different from the queries posed on an Information retrieval system.

Slide 22: Belkin

When users’ knowledge is inadequate they do not have the ability to solve a problematic situation.
Slide 23: Berry picking

Users’ thought and information need do not remain same and consequently, the queries change during the course of the search. Because queries represent users’ thought and information needs

Slide 24: Elli’s Model

There is not a fixed sequence of activities and the order of actions might change and be iterative. As you can see, there is only one arrowhead in this model

Slide 25: Kuhlthuha

This model indicates that not only users’ thought and action but also users’ feeling change during the course of the search. I should emphasize again that the goal of IR system is to satisfy users’ information needs and satisfaction come from feeling, not thoughts

Slide 26: Wilson

Wilson’s information need indicates that information needs form in a context…

Slide 27: Vakkari and Hakala’s

This model shows that information needs and Relevance criteria change as the person’s mental model changes. So if we are able to change users ‘mental model, we are able to change users’ information needs and relevance criteria

Slide 28: Bystrom and Javerlin’s

There are factors which influence ISB…

Slide 29: Wang’s Relevance Criteria

There are different relevance criteria used during information seeking process …

Slide 30: Saracevic’s

IR system and users should learn about each other …

Slide 31 – The journalistic research and writing process Model

Journalistic information seeking is influenced by journalistic characteristics

Slide 32: Fabritius

Journalistic information seeking occurs should be investigated in a broader context…

Slide 33: In Summary …

- They represent different aspects of the overall problem
- They are complementary, rather than competing
- Information seeking is dynamic and non-linear
Slide 34: What has this research been achieved?

We have already considerable knowledge on information needs and other aspects of information seeking behaviour but what if we delimit the context of the study to journalists and social media? This is where this research start…

Slide 35: Research Questions

So what are the research questions that this presentation is going to answer? The first research question aims to provide a broader context by exploring journalists’ social media uses and the rest of research questions cover the main elements of ISB... information needs, search tactics & strategies, relevance judgement criteria, and influential factors.

Slide 36: Big picture

This model covers the research questions raised in the previous slides...journalists interact with social media for different purposes... one of the aims they use social media is to satisfy their information need... they employ different search strategies and tactics to satisfy their information needs on social media... they use different criteria to judge the relevancy of information found and they are influenced by different factors...

Slide 37: What are the findings?

Slide 38: Twitter & Facebook

The findings showed that Twitter and Facebook were the most used by journalists due to their popularity and user engagement

Slide 39: RQ1) Why/How do journalists use social media?

I start with the research question why do journalists use social media?

Slide 40: Motivations of Social Media Uses

6 six main reasons were identified Why journalists use social media... 1) Satisfying information needs 2) Publishing, broadcasting and disseminating information 3) Promoting, branding and creating identity 4) Helping in the verification and validation process 5) Networking and communication 6) Satisfying other types of journalists’ needs including social leisure, entertainment, curiosity, etc.

The rest of research questions are designed to explore journalists’ information seeking behaviour which you can see in this slide as “satisfying information need” in black color.

This slide shows that Social media not only is a source of information for journalists, but also used for other journalistic purposes.

Journalistic and non-journalistic use of social media are closely intertwined.

Slide 41: Mapping of findings

This slide shows the mapping of the findings of this research on journalists’ social media uses onto several other studies... the second row is the methodology used in each study...The table shows that the findings of other studies can be mapped onto five (5) categories of social media uses proposed in this study and this study propose a new category…
Slide 42: Mapping Wilson’s model of information behaviour

This slide shows the mapping of Wilson’s model of information behaviour onto journalists’ information behaviour on social media…

Journalists’ search strategies & tactics can be mapped onto information search behaviour, satisfying information needs on social media can be mapped onto information seeking behaviour, and finally, journalists’ use of social media can be mapped onto information behaviour.

So we can conclude that journalists’ use of social media is equivalent to journalists’ information behaviour in the context of social media, however, the concept of “information behaviour” should be re-defined to encompass all categories of social media uses.

Slide 43: What do these findings tell us?

I covered this slide…

Slide 44: RQ2) What type of journalists’ information needs can be satisfied on social media?

Slide 45: A Closer Look

Journalists have different information needs, however, some of their information needs lead them to use social media to be satisfied.

Slide 46: Journalists’ Information Need Types on Social Media

This study identified seven categories of information needs which lead journalists to social media: 1) Real time information 2) Opinion and anecdotal evidence 3) Facts and knowledge 4) Events driven information 5) People (sources, contacts, experts, etc.) 6) Others (spats, photos, videos, etc.) 7) serendipity

Slide 47: What do these findings tell us?

- Identifying story ideas on social media is mainly a serendipitous process.
- Seeking information is not necessarily a purposive activity. Journalists seek and find information when they have no intention of looking for information on social media.
- Sometimes journalists do not know what they look for which implies that information needs can be both conscious and unconscious.

Slide 48: RQ3) What search tactics and strategies do journalists use on social media (How do journalists start the search on social media)?

Also, two sub research questions were examined under this research question.

1) What type of questions do journalists ask on social media?

2) How do journalists exploit inherent features of social media to satisfy their information needs?
Slide 49: A Closer Look

Journalists use different search strategies and tactics to satisfy their information needs on social media. One of them is asking questions on social media platforms.

Slide 50: Journalists’ Search Tactics & Strategies on Social Media

This slide shows that as opposed to Web IR systems, seeking information on social media is not limited to posing queries or asking questions. Journalists show different behaviours when they seek information on social media. Also combining these techniques lead to very complex search behaviour on social media for some search tasks...

Slide 51: Journalists’ Taxonomy of Question Types on Social Media

This slide is related to sub RQ1. We can see in this slide that, only finding opinion, finding source and finding facts are considered as question types that satisfy journalists’ information needs. So we can conclude that Asking questions on social media platforms is not only used as search strategies and tactics to satisfy journalists’ information needs, but also it is used for other purposes.

Slide 52: Social Media a Versatile Tool to Satisfy Journalists’ Information Needs

This slide is related to sub RQ2. One of the ways to look at social media is to consider it as a tool to facilitate and streamline journalistic processes, activities and needs. Social media is used as a versatile tool (with its inherent qualities and features) to satisfy journalists’ information needs in three main ways

Slide 53: What do these findings tell us?

I covered this slide…

Slide 54: RQ4) What relevance criteria do journalists employ to judge the relevancy of information on social media?

Slide 55: A Closer Look

After finding information on social media through employing different search tactics & strategies, journalists judge the relevancy of perceived information objects in relation to their information need via various criteria

Slide 56: Relevance Judgement Criteria

6 categories of relevance judgement criteria were found and they show that

1) Mapping relevance judgement criteria to information need is almost impossible

2) Relevance judgement criteria employed by journalists on social media is not only limited to information and the source of information related criteria

Slide 57: What do these findings tell us?

This slide was covered…

Slide 58: RQ5) What influential factors do influence on journalists’ information seeking behaviour on social media?
Slide 59: A Closer Look

This slide shows journalist’s use of social media and also their information seeking behaviour in the context of social media which have been covered in previous slides are influenced by different factors ….

Slide 60: Influential Factors on Journalists’ Information Behaviour

Studying the factors that influence journalists’ social media uses enables us to understand any change in their information seeking behaviour better. This study classified the factors which influence journalists’ information seeking behaviour into 6 categories.

Slide 61: What do these findings tell us?

- Influential factors do not remain the same and their impacts on journalists’ information seeking behaviour and social media uses may change during the time
- The level of impacts of the influential factors can vary from context to context, situation to situation, journalists to journalists, etc.

Slide 62: How is the research conducted?

Slide 63:

Researchers need to think through the philosophical worldview assumption that they bring to the study, the research design that is related to this worldview, and the specific methods or procedures of research that translate the approach into practice.

Slide 64:

This study is a qualitative research which used constructivism as a research paradigm, grounded theory as a research design and followed grounded theory methodology for data collections, analysis, and validation.

Slide 65: Qualitative Research

Qualitative research is considered an inductive approach which starts with data collection and put an emphasis on the generation of theories

Slide 66: Constructivism

Constructivist believe that individuals develop subjective meanings of their experiences.

Every individual constructs reality through his/her sense which is usually called empirical reality or the reality which is constructed based on experiencing something through your sense. This constructed reality might be different from actual reality… that’s why Theories about a real phenomenon might change, but that does not change actual reality.

Our construction of reality influences our actions and behaviours, so, if we want to predict and understand user behaviour, the first thing we need to understand is what user construct in his mind… a fan, snake, tree, etc.

Slide 67: Grounded Theory
Grounded theory (GT) is a systematic methodology involving the construction of theory through the analysis of data. A theory grounded or rooted in the original data themselves

**Slide 68: Before Data Collection**

Preparing Interview guide, running pilot study, and applying for ethics application were done before starting data collection

**Slide 69: Data Collection – Interview**

Two data collection method was employed. 1) Semi structured interview. 20 journalists were recruited and interviewed. The average length of each interview was seventy one (71) minutes

**Slide 70: Participants’ details**

It was ensured that all journalists worked for a media organization or have a journalism degree…

**Slide 71: Data Collection – Observation**

The second data collection method used is observation. Observation of Journalists students’ activities attending journalism modules was done in two different semesters.

**Slide 72: Data Analysis**

In grounded theory methodology, data analysis is cyclic in nature and does not have distinct phases of data collection, analysis, and theory construction. However, there are two main phase of coding 1) initial and 2) focused coding.

*Initial Coding* is breaking down qualitative data into discrete parts, closely examining them, and comparing them for similarities and differences. The goal of Initial Coding, particularly for grounded theory studies, is “to remain open to all possible theoretical directions indicated by your readings of the data”

Focused coding searches for most frequent or significant codes to develop the most salient categories in the data corpus… require decisions about which initial codes make the most analytic sense…

Through coding, concepts, categories, and theories are constructed.

**Slide 73: Data Analysis**

In grounded theory, there are different concepts that help the researcher in data analysis… for example, Theoretical sampling, saturation, and so on

Also for this study, NViVo software was used to facilitate the coding process.

**Slide 74: From Data to a Focused Code**

This slide shows how the focused code for the category of “People” is constructed from the data collected to encompass different initial codes. This slide is only a simple sample and does not show the real research process carried out
Slide 75: Future work

There are many areas can be investigated in the information seeking behaviour research realm, however, here I am just going to present two of them.

Slide 76: How is information seeking behaviour influenced by the intelligence of information seeker?

The first one is… To investigate this research question, first, we should explore the concept of intelligence. For example, intelligence is the number of academic papers, a person can produce, or the number of times a person shows himself/herself to you in same or different places per day, or IQ or EI?? Or maybe, none of them, as our own intelligence has a very poor understanding of what intelligence is

Slide 77: Intelligence

Whatever it is, this term has been used in IR for a long time …

Different individuals see and experience the same thing differently… one of the reasons is due to their intelligence or intellectual level.

In other words, we can also say that Intellectual level is one of the reasons that every individual construct reality in a different way.

For example, if I have not met any members of the panel for my seminar presentation before, I might interpret differently and construct different reasons why they were chosen ….

Slide 78: How are a specific information need & information seeking behaviour implanted in information seekers’ mind?

The second one is…

I talked about the constructing reality in previous slides, and it is the reality constructed in every individual mind…. So what do I mean by implanted reality?

Implanted reality is the reality created for an individual based on determination of another machine, person or think tank.

So, if implanting realities in someone’s mind is possible, can we implant information needs, and relevance judgment criteria in someone’s mind to be able to satisfy his information needs easily? I emphasize here again that user’s mental model, his information needs, and relevance judgement criteria he uses are closely intertwined.

Slide 79: Filter Bubbles

It is not a very easy process as every individual has a different level of intelligence and experiences and the person who is subjected to the reality implantation might construct a reality different from the one supposed to be implanted.

For example, ELI constructs his own reality and could not accept the reality implanted by the search engine. He called his constructed reality as “Filter Bubbles”. For him, search engine results are insults to his intelligence…
In other words, he constructed reality differently and search engines could not satisfy him.

**Slide 80: How has your “reality” been constructed/implanted?**

It is not only limited to the algorithms… if you look at yourself you would notice that your reality is implanted and constructed beyond the algorithm… Two elements play important roles in constructing your reality. 1) Information 2) human surround you

So, have you thought how your “reality” has been constructed/implanted? Or have you ever thought about your role in constructing or implanting realities in other people’s mind? Do you feel responsible?

**Slide 81: Respect. Now. Always (Intelligence)**

Thank you.
APPENDIX C. Information Sheet and Consent Form

INVITATION TO PARTICIPATE IN A RESEARCH PROJECT

Project Title: Information Seeking Behaviour of Journalists on Social Media

Investigators:

- Omid Aghili  
  B.SE. M.SE.; currently studying PhD at RMIT University in the School of Computer Science.  
  E-mail: omid.aghili@rmit.edu.au

- Professor Mark Sanderson  
  B.Sc. Hons, Glasgow; PhD (Sci) Glasgow; Professor at RMIT University in the School of Computer Science.  
  Telephone: (03) 992 59675, E-mail: mark.sanderson@rmit.edu.au

Dear Participant,

You are invited to participate in a research project being conducted by RMIT University. Please read this sheet carefully and be confident that you understand its contents before deciding whether to participate. If you have any questions about the project, please ask one of the investigators.

Who is involved in this research project? Why is it being conducted?

This research is being conducted by Omid Aghili at the RMIT University. The purpose of this research project is to learn about how journalists seek for information on social media and the types of questions that journalists do or could seek to answer when using social media.

This research is being conducted as part of his doctoral thesis, in the School of Computer Science and Information Technology at RMIT University, Melbourne, Australia. This research is being conducted under the supervision of Professor Mark Sanderson and has received the approval of the RMIT Human Research Ethics Committee.

This project is part of a multi-center project funded by the Qatari Government under their National Priority Research Program (NPRP). Project partners are the University of
Maryland (UMD) and Qatar University (QU). The results of this study will help our project partners in US (University of Maryland) and Qatar (Qatar University) to build and evaluate a real-time question answering system that helps journalists find answers to their questions in social media.

**Why have you been approached?**

We are inviting you to participate in this research project because you have expertise in the use of social media in journalism. You have responded to an invitation by email or general advertisements to participate in this research. To gain a better understanding of how journalists seek for information on social media, we are seeking responses from journalists working in a different media organisation.

In case you are contacted via email, your email contact has been obtained through media organisation Website or your own public Website where you work for.

**What is the project about? What are the questions being addressed?**

To build a real-time question answering system that helps journalists find answers to their questions in social media, first, we need to understand how journalists seek for information on social media. Therefore, this research is defined and formed by studying journalists’ information seeking behaviour in social media.

The main aim of this project is to understand journalists’ information needs and information behaviours in social media that include how they assess the relevancy of information, how they avoid from unwanted information, how they validate and verify information, what kind of information they are seeking in social media, their search strategies and tactics, etc.

**If I agree to participate, what will I be required to do?**

The procedures involve an interview, which we expect to last about an hour (and certainly no more than two hours). We will begin by asking about your professional background and then we will ask you to envision questions that you might wish to answer using social media and to do so in the context of specific scenarios. The interviews will be recorded by a voice recorder and they will be transcribed by a professional transcriber. The interviews will be conducted wherever you feel comfortable.

You may be asked to use social media for observation purpose. If you agree, you will be given a scenario to do. The scenario is search tasks and activities on social media and you use a computer to complete the scenario. While you are doing the search tasks, your information seeking behaviour will be observed (Optional).

You may be asked to write a diary. If you agree, you will be asked to write your own activities on social media to fulfil work tasks. (Optional)

**What are the possible risks or disadvantages?**

There are no known risks to participating in this research other than the potential for breach of confidentiality, which we believe to be unlikely.
What are the benefits associated with participation?

There are no direct benefits from participating in this research. We hope that, in the future, other people might benefit from this study through our improved understanding of what new technologies might be built to help journalists answer questions from social media.

What will happen to the information I provide?

Any potential loss of confidentiality will be minimized by identifying you using only a participant identifier, storing project materials only on password protected computers, storing consent forms in a locked filing cabinet.

We will share de-identified data (using participant identifiers but no name or contact information) with participants in our project at Qatar University (Qatar) and University of Maryland (USA), and they will store that data on password-protected computers. If we write a report or article about this research project, your identity will be protected to the maximum extent possible. Your information may be shared with representatives of the RMIT University or governmental authorities if you or someone else is in danger or if we are required to do so by law.

The research data will be kept securely at RMIT for a period of 5 years after publication.

What are my rights as a participant?

Your participation in this research is completely voluntary. You may choose not to take part at all. If you decide to participate in this research, you may stop participating at any time. If you decide not to participate in this study or if you stop participating at any time, you will not be penalized or lose any benefits to which you otherwise qualify.

If you decide to stop taking part in the study, if you have questions, concerns, or complaints, or if you need to report an injury related to the research, please contact the investigator.

- The right to have the results from the study on request
- The right to have the data collected in the course of the research on request
- The right to withdraw from participation at any time
- The right to request that any recording cease
- The right to have any unprocessed data withdrawn and destroyed, provided it can be reliably identified, and provided that so doing does not increase the risk for the participant.
- The right to have any questions answered at any time.
Whom should I contact if I have any questions?

If you have any questions or you would like more information please call or email Omid Aghili:
Telephone: (03) 9925 2348
E-mail: omid.aghili@rmit.edu.au

Yours sincerely

Omid Aghili                    Mark Sanderson

If you have any concerns about your participation in this project, which you do not wish to discuss with the researchers, then you can contact the Ethics Officer, Research Integrity, Governance and Systems, RMIT University, GPO Box 2476V VIC 3001. Tel: (03) 9925 2251 or email human.ethics@rmit.edu.au

Consent Form

1. I have had the project explained to me, and I have read the information sheet

2. I agree to participate in the research project as described

3. I agree:
   - to undertake the tests or procedures outlined (Optional)
   - to be interviewed
   - that my voice will be audio recorded

4. I acknowledge that:
   (a) I understand that my participation is voluntary and that I am free to withdraw from the project at any time and to withdraw any unprocessed data previously supplied (unless follow-up is needed for safety).
   (b) The project is for the purpose of research. It may not be of direct benefit to me.
   (c) The privacy of the personal information I provide will be safeguarded and only disclosed where I have consented to the disclosure or as required by law.
   (d) The security of the research data will be protected during and after completion of the study. The data collected during the study may be published, and a report of the project outcomes will be provided to RMIT University as a part of a PhD thesis. Any information which will identify me will not be used.

Participant: __________________________ Date: ________________

(Signature)
APPENDIX D. Interview Guide

Ask them to talk about their background and work experience that might be related to our research.

Ask them to talk about how, when and why they use social media.

Ask them to talk about what type of social media they use more.

Ask them to talk about the ways of validation and verification that they employ to obtain information from social media.

Ask them to talk about the criteria they use to assess the relevancy of information obtained from social media.

Ask them to talk about their search strategies and tactics on social media.

Ask them to talk about how they avoid unwanted information from social media.

Ask them to talk about how they seek information, use and evaluate the information on social media.

We are interested in what kinds of capabilities journalists might want in a system that could help them find things in social media at the time that they are happening.

We want to think about all of these information-seeking behaviours in the context of specific scenarios. Ask them to provide an example in a specific scenario.

Ask for any final comments about things they think we should consider in our research.
APPENDIX E. Sample of Interview Transcript

Q01) Could you please talk about your background and work experience that might be related to our research?

I’ve worked as a journalist since 2006, so eight or nine years I’ve been working in the industry. I finished my undergraduate in [Deleted to protect identity] then started to freelance after that, and so I’ve worked mostly as a freelancer through that time with some longer contracts. I’ve worked for [Deleted to protect identity], I was based in [Deleted to protect identity] with a big focus on multimedia content, digital content, photography and video reporting, and content that could be used across different platforms, that kind of thing.

Q02) Could you please talk about how, when and why you use social media?

There’s a few different times or ways I would use social media as a journalist. I guess, not necessarily in any order of importance, but as a freelancer, you have to maintain, you kind of almost have to market yourself, basically. You have to be pushing your own good reports to create a social media following in many ways as a freelancer. So you use it like that, you use it to let people know about the work that you’ve been doing, but that’s sort of aside from the journalism itself. In a journalistic capacity, it’s very useful for research, particularly, for example, during the uprisings in Egypt or in the Middle East generally, but particularly in Cairo, where a lot of the activists, or people who would organize protests or be involved in protests or other newsworthy events that would happen in Egypt during that time, we were very well connected to social media. Egypt has a really good mobile internet infrastructure, so a lot of people are really active on it. So for example, if something was happening in the city, say there was a big protest or a riot of some kind or a big police crackdown, or maybe some activists were being arrested in the night or something that was often very newsworthy, one of the best places to find about where and when things would be happening or things would be changing was on Twitter, for example. So if myself and other photographers or video journalists or whatever would be out in the streets would be covering, for example, when President Morsi was overthrown in 2013, we’d be out on the streets, and you’re trying to figure out where things are happening across this very big city of Cairo, which is a very chaotic place, aside from direct contact that you’d have with your contacts in the activist circles or maybe in the Muslim Brotherhood, or whatever, whichever party is involved in what’s happening, they might call you directly and say: “Hey, there’s a protest beginning at this mosque or at this street,” you’d watch Twitter. And you’d follow a certain number of people on Twitter who would be always tweeting about a protest or a police crackdown or this or that, and if you saw it on Twitter, protestors gathering in Tahrir Square, or protestors have started gathering in the Presidential Palace or whatever, you should go there. So it’s very useful in that regard. And then also to find sources for stories. So less breaking news, maybe you’re working on a longer story, you’re doing an investigative piece or something, a feature piece maybe. So Twitter is almost like a news feed, whereas Facebook tends to organize more around social groupings and social networks or groups of interest, so it can be very useful to find maybe an activist group or maybe a group who are working on a certain
topic or protesting a certain issue or whatever. It can be very useful to find good contacts. You look up on Facebook the group that’s representing maybe Sudanese Asylum Seekers in Egypt or something like this, you can find some good contacts through that. So yeah, it has a lot of uses for journalists, social media, generally, and in my experience.

Q02.1) So the things that you mentioned were self-promotion, getting news from activists on Twitter, finding sources. Have you ever got any story ideas from Twitter?

Definitely, and I think increasingly. As I mentioned before we started recording, up until 2014, I was working more in a reporting capacity, reporting in multimedia producing in the field. Also with my work at ABC from 2009 to 2011, I was working with an online investigations unit that existed at that time, so we were doing a lot of recording. Now I produce a show, so I work in the newsroom here at Melbourne as an international newsroom, and we produce a show called The World that goes to air at 10pm on News 24, and then I work also on a show that goes to Asia that’s a half an hour international news show, that doesn’t play here in Australia, it just plays various networks in Asia. And the number of stories that we have, that we put in the show on any given weekly basis that have some kind of basis in social media, maybe it’s the source for the story, maybe the vision that comes from the story might be sourced from social media or user generated source, so it’s a huge part of the news world right now, massive.

Q02.2) Is there any specific category that you can think of that you can make use of social media?

In terms of story topics? If there’s a story about any youth issue, for example, it’s always massively useful. It’s kind of an obvious demographic thing, but it is a big factor. When an emergency’s happened, so maybe during a flood, or, as I mentioned, in Egypt, during breaking news situations, it would be really useful. But here in Australia, when we have natural disasters and things like that, bushfires, floods, we often get a lot of immediate reactions, or initial information, or early pictures, early video and footage, or it can be the source that we initially see that something’s happened. Obviously, anyone can start a Twitter account and that means that you do have to be extremely careful about vetting the information or finding out who the piece of information is coming from. But it might come from reputable journalists or academics on Twitter and use it to release work or issue breaking news statements. So it can be, depending on who you’re following, and what the sources are, it can be an incredibly reliable resource. It just depends on who, particularly with breaking news, it’s very, very useful.

Q03) Do you report breaking news based on the information you get from social media or do you report breaking news on Twitter?

Both. So at the ABC, we, for example, when I was in Egypt and reporting in the field, I’d be out often at the site of, say a riot or an election or anything that was happening in the field, again, this is for breaking news, less so for a feature story, because you’d probably work on that and keep it to yourself essentially until you publish, so you’re not trying to release the information straight away. But if it’s a breaking news event or something of importance
straight away, I would often release a breaking news tweet with various hashtags, maybe breaking news hashtags, or maybe Egypt, Cairo, whatever the topic is, you’d put it out straight away. Or maybe you saw a policeman beat up a protestor or something like this…

Q03.1) If you work for an organization, and you report breaking news earlier than, for example, published in a newspaper or on TV, does it make sense? Are you allowed to do that?

Yeah, there is, absolutely. So, for example, talking about the work I do at the ABC, so mostly in the newsroom in, like I said, a senior producer role, the focus is on, it’s what we call digital first now, so getting it out as soon as possible. So that may involve working on a 24 hour news channel, we’re live all the time essentially as soon as something important comes in, we verify it and then we put it out, maybe it’s a breaking news strap on the television. But on social media, it will do it straight away as well, so as soon as we can verify the information to the best of our ability, we’ll put it out. So there’s no prejudice over television or print. Print is very slow in today’s times. So there’s no prejudice of how it goes out. The focus is getting it out as quickly as possible once we know what we’re talking about.

Q03.2) Have you ever had the experience of getting breaking news from Twitter and then reporting it?

Absolutely, that’s one where you have to be very careful, though. In your research, I’m sure you’ve seen it, countless examples of news organizations being called out for reporting something that goes breaking, some piece of information that they’ve pulled from Twitter and it turns out that it’s false, or incorrect, or misleading, or anything. So, as I mentioned earlier, you’ve got this issue with what the source is. In the traditional news sense, you had news wires, like Reuters and associated press and they tick over, in the newsroom, we have software that we watch that brings all these sources together and they tick over a little bit like Twitter, you have these headlines. Some of them are labelled red for very important, or orange, or yellow, or no label at all, and that’s a little bit like Twitter. But, ok, it’s Reuters, if that comes through, if some kind of breaking news thing comes through on Reuters, unless it sounds really outlandish or outrageous, we would put a lot of trust in that organization. We might wait for the associated press to confirm, we might check if the BBC has something on it as well. We’ll try and get two sources on something. But if it’s a news wire, to an extent, there’s a lot of trust placed in them, and we may report it straight away. If it’s from Twitter, unless it’s from a really trusted source, like one of our own journalists that’s a correspondent reporting via Twitter, or maybe it’s a BBC journalist or someone from an organization that you put a lot of faith on, you have to be very careful. So, again, it might be a source, like in Egypt, again, as I mentioned, I would follow a lot of people who I did put a lot of trust into, I’d spent time with activists who I had got to know. But they’re still activists, and they have a different agenda to journalists, so you do have to be very careful. You might see them tweet something, and then if I knew them, I might call them and say: “Look, I just saw you put this out on Twitter. Can you talk right now?” Try and get a bit more out of them, see if you can
maybe get a second source, it depends. But you do have to be extremely careful, I think. And it still happens, it hasn’t stopped happening that news organizations report something that they see on social media and it turns out to be absolutely false. Talking about reliable sources on social media like, for example, in Australia, and many other countries, in the US as well, but particularly in Australia, the police in different states, New South Wales, Queensland, and Victoria, are very good with social media. So in the context of bad bushfires in New South Wales or the Queensland floods that have happened over the last few years, one of the things that we’ll do in the newsroom is, as a team of people, some senior producers and more junior producers, somebody will be assigned to watch the Queensland Police Facebook page, for example, because that is the often the first place they release information.

Q03.3) So is there a group that works just with social media?

It’s not necessarily a group, but we might assign a person to watch on a given a story. If we know that the Queensland Police, for example, update their Facebook page quite quickly during that kind of situation, and that can be the first source for them to put information out, we will assign somebody to be watching, making sure that they’re across that. So, again, depending on the source, it can be extremely valuable.

Q04) What type of social media platform do you use more? (e.g. Twitter, Facebook, YouTube…)

Facebook and Twitter, definitely are the two most useful platforms. YouTube, to an extent, like if you might be looking for some video of an event or something that you can get, if we don’t have another piece of video to show something, we might be looking on there, but there’s lots of problems with verification and making sure it is what it says it is. So we do use it, but Twitter and Facebook for journalism, absolutely.

Q04.1) Because you are a multimedia journalist, do you also use Instagram?

Definitely reporting, yeah, I use Instagram. So what I was saying with Twitter and Facebook, if I was in the newsroom looking for sources, they would be the first two places I would go. Instagram can be really useful again to look for images of a breaking news event, potentially, but it’s sort of not used as much by people in that way, at least not yet. I think it’s become a lot more popular in the last year or two, so we might start to see that as a more common thing. If I’m working on an assignment or working on a story, a breaking news event, I’ll use Instagram to push out images. It wasn’t a journalistic piece of work, but I was working for an NGO in Nepal in February, and then we running a social media based campaign, and Instagram was a big part of that.

Q04.2) When do you use Twitter and when you do use Facebook?

By the very nature, obviously Twitter only allows very short updates or sequences of very short updates, so in a fast paced breaking news situation, maybe for audience responses to a topic, you might, on a show, you might invite the audience to contribute a question or an opinion or something. So it’s really useful for that. Obviously, it only allows 140 characters, so you can’t really explain very much with it. And then Facebook, again, obviously you can
provide much longer updates, you can put more content up, you can put video and photos up
more easily, so it tends to allow for more depth, I suppose. It’s a bit more difficult to access
because it’s not an open platform like Twitter is. If I have a Twitter account, unless I hide
account, you can see it, and unless I hide my tweets, you can see them open on the Internet,
whereas Facebook is a much more closed system, unless your settings are set to everyone, I
have to be your friend to see what’s on your page.

Q04.3) Or if you set up a page…

Yeah, that’s right. Sometimes it can be private, there’s settings that can limit what a person
who’s not part of that group can see. So it’s more limited, but it does tend to provide more
depth on a topic. Audience interaction is quite different on the two platforms. Obviously,
Twitter again, you have a much more immediate reaction and very short responses, lots of re-
tweets of things, maybe somebody might add a very short opinion, or sometimes they can be
quite rude on Twitter, people responding to things. People really get very encouraging on
Twitter. We might have an edition of the show that goes out and there’s a story that really
resonates with the people in the audience and they send tweets in to the presenter because the
presenter’s Twitter tag is up on the screen most of the time. Them saying: “Hey, great story
about Ebola was really touching, thanks for playing it,” so people tend to be quite personal on
Twitter when they’re talking to, they feel like they’re talking to the presenter of the show or
the journalist who’s written a story. Whereas again, on Facebook, for example, the ABC has
an ABC news page on Facebook, and we put up a lot of the stories that go to news online or
pieces of videos from the TV channel, for example, on the Facebook page, and people
respond in the comments, and sometimes, they respond at great length, almost like letters to
the editor in the format. They have something they really want to say and they might write a
few hundred words or the maximum you can fit in one of those Facebook replies to write it.
So, people take advantage of the construction of the platform itself in how they interact with
the journalist or the news organization itself.

Q05) How do you seek for information, use and evaluate the information on social
media?

Say something happens, I don’t know, like the Sydney siege that happened in December. I
wasn’t actually working that day, but hypothetically, I know that my colleagues would have
been looking on Twitter for people tweeting in the vicinity of that and talking about maybe an
office worker who was evacuated, or maybe they took a picture from their office of Martin
Place or something like this that happened a lot on that day. There’s a number of different
ways you can search on Twitter for things. You can search via location, some people have the
GPS function on their phone tagged to Twitter. Sometimes, inadvertently people are aware of
it, some are, some aren’t, but some tweets come tagged with a geolocation, so you can search
via that function. Instagram also allows you to do that, and that’s very useful. You can also
search via topics, hashtags, keywords and things like that. So there might be #MartinPlace, it
might be #SydneySiege. I can’t remember what the active tags were that day, but Lindt Café
might have been one of them.
Q05.1) But how do you know the name of the hashtag that you are looking for?

That’s a good question. It sort of evolves as the situation unfolds. At the beginning of a situation, there might be a number of different tags people are using, it might be Sydney Siege, and Martin Place, and Lindt Café, and Terrorists Sydney. There might be all these different things that people start putting in, because it’s kind of random, people start coming up with ideas. But then, after a pretty short amount of time, it normalizes, I suppose, and one or two of those hashtags might start becoming the dominant one that people use. I don’t know, there probably is research on this, I don’t know whether there’s any data on that to show whether that’s guided by, you know when a TV channel starts indicating what the hashtag should be, they’ll say: “Tweet your replies to #SydneySiege, and we’ll drop them on screen,” so that probably does guide it to an extent, but it seems to be guided by a normalization on the platform itself. Just as a casual observation, I suppose.

Q05.2) And what were you looking for specifically in that scenario?

You’re predominantly looking for, so if we were in the newsroom, and I was working on the TV show, and we were live to air as it was happening, we’d be looking for a few different things. You’d be looking for audience responses, you’d be looking for human reactions to the situation, so again, it might be an office worker being evacuated: “Oh, we’ve just been evacuated. Something’s happening.” It might be the first tweets of a topic. It might be looking for, I can’t remember what time it happened, but say the Sydney siege became an actual situation, I think he locked himself in the building around midday or 11:30 in the morning or something like this, you might start looking at 11:45, ten past eleven, did someone tweet from inside the café? Is there something available that expands the story? There might be something very revealing in that time period, so you might use a hashtag and a geolocation, then start searching within a certain time bracket to see if something popped up on Twitter that indicates something new, because obviously that’s what we’re looking for, for new information for the audience. And again, it’s very difficult in that type of situation to verify where that information is coming from, so you might make a decision, I would refer up, my executive producer, my senior producer, if there’s someone above me working on the show as well, we’d make a decision on whether it was worth putting that on air, maybe we’re not 100% sure that it’s definitely from someone inside the café, so you’ve got to be really careful. A really good example, I think, is this Texas shooting that happened in the last few days in the cartoon convention. So these two guys drove into the car park and started firing and were shot by a police officer who was on duty. Not long after that, that situation happened around lunchtime in Australia, I think, because I started my shift that day at 5pm, so by the time I got into the news room, it was quite a developed news story. But some journalists in the US found that a few hours before, or maybe a half hour before, one of the alleged gunmen had tweeted that this was going to happen, they were going to do something, they were going to go and perform an act, hopefully blessed by Allah, it was something to that nature in one of these tweets. So again, obviously nobody was watching this guy’s Twitter account to do anything about it but in hindsight, you look back: “Oh, there’s an indication that this guy was planning something.” He was a nobody before, but now he is not a nobody. There are all sorts of things that you can be looking for. I think
primarily it’s audience response in a situation that’s already occurring, in a situation as it breaks, it might be the initial tweet.

Q05.3) Do you enter keywords in the search box on Twitter to find information?

Yeah, so Twitter has a search function on the front page, at the top. Absolutely, I use that. Same with Facebook, I use the search function. The search function is a bit more complicated on Facebook, it tends to give you results that are based around people and groups and pages rather than around topics, like a hashtag, but they’re both very useful for that kind of thing. Same with YouTube and Instagram use hashtags. Instagram is much more active with geolocation as well, but yeah, hashtags. So the search functions on the website are really useful.

Q05.4) So in this specific scenario that you mentioned, in Texas or in Sydney, when you were looking for information, did you search on the edit box or based on the hashtag?

You’d use a combination. The first thing I’d do would probably be to search the hashtag, you’d try and figure out what hashtag people are using, maybe it’s the hashtag we’ve been promoting on the TV channel, maybe it’s something else. You can look around and see that there might be three or four of them, so you’d search for these popular hashtags.

Q05.5) How do you search them?

On the search function on Twitter, you literally write in “#MartinPlace,” and it’ll search for that topic area.

Q05.6) When you want to find, for example, a hashtag related to that event, do you search based on the topic?

Search based on the topic, and then you start to look through the results and, like I said, there might be #MartinPlace, or you can search Martin, just as a word, with no hashtag, so it might look for the name Martin. So then you might see a tweet that someone says: “I’m in Martin Place and there’s police everywhere,” and then they might say: “#Sydney.” So you can then, just by looking at the results, you can start to see which tags people might be using as the most popular ones and start to narrow down your search based on that. So it’s a bit of deciphering what people are saying in a few hours into a situation. That situation went on for 18 hours or something like that. It’s very obvious which hashtags people are using and much easier to find. But in a breaking news situation, there’s a bit of figuring out to do.

Q06) Have you ever used Advanced Search on Twitter?

Yes. Not recently, because I haven’t sat on that sort of task on a breaking news event for a while, but there is an Advanced Search function on Twitter, and I don’t know how it breaks down, actually. I haven’t seen it for a while. Does it give you time brackets?
Q06.1) Based on the time, based on the person, based on the location, based on the exact word you want, or which word you don’t want to be in the phrase…

The more you can narrow it down, the better. But, as you know, with doing a search in a library for journal articles, you want to throw the net wide. You don’t want to narrow it down too much, but then also, you don’t want thousands and thousands of results. You can’t search through them, so you have to use the parameters of the search function to find a box of results and then narrow down from there, I guess.

Q07) What kind of information needs do lead you to seek information on social media?

Good question, and that very much depends on the type of story. So, we’ve explored breaking news quite a bit already. A breaking news situation, definitely we will have people in the newsroom watching, actively looking on social media for various things that we’ve talked about already, that might be tweets, images, video. If I was working on an investigative story, for example, or we working on a feature where we had some time and we were doing a lot more research before anything was published or put to air, you may use it to try and find people that are talking about a topic. I remember once, a few years ago, at the ABC, we were working on a topic on a story about gambling in the Vietnamese community in Sydney, in Western Sydney, and we were looking for people that were talking about being caught up in bad situations because of gambling addiction, and we did use Twitter and Facebook to find groups of people, support groups, for example, on Facebook. We did find someone via Twitter who talked about, something, I can’t remember exactly what we found, but we did find someone via Twitter that we ended up using as a source. In the same instance, we also would put out calls for people who might have information on a topic. I don’t think it’s very active anymore, it still exists, I think, but it’s not very active, there’s an ABC Investigations Twitter account that we would use to say: “Hey, do you have information on a certain government agency that we might be looking at?” Something like that. It might be something that we’re trying to solicit whistleblowers with, potentially, or sources, so you can actively encourage people via social media to potentially tell you something anonymously or contribute to a story that isn’t already on the air. And that’s something that happens quite a bit. For example, now, the Guardian has a secure drop box that they have set up. I don’t know how they’ve done it or what kind of encryption they’re using, but from what appears to be an encrypted that people, whistleblowers, like Edward Snowden, for example, could use to drop sensitive government files in if they felt the need to let the press know about it or something that’s happening. News organizations are increasingly engaging with the audience on that sort of level and facilitating them to contribute to reporting on topics. So, the Guardian website, you wouldn’t call it social media, but as a facilitation device.

Q07.1) You mentioned Edward Snowden, the whistleblower. Has his revelations influenced the journalistic work?

I have two answers to that question. In today’s world, we know what’s happening. It’s not a mystery anymore, particularly thanks to people like Edward Snowden and organizations like WikiLeaks. We know what is happening. We have laws in this country now that the
government’s going to capture metadata and that’s a big deal for journalists, because it can reveal all sorts of things about who you’re talking to on a sensitive story. So it absolutely affects journalistic work, a degree to which the journalistic community and news organizations at large are really engaging with that and really dealing with what that means for journalism and for source security, protecting the people that come to use with information, and protecting journalists themselves. We don’t have the same laws that protect journalists in Australia as they do in the US. Journalists in Australia can be locked up for reporting certain things.

Q07.2) Does he influence your work specifically? Your use of social media?

I don’t think it has, at least not in terms of daily news. I’m not working on any investigative sections at the moment, so I couldn’t tell you whether the investigative sections at the ABC, which is probably where it should affect what they’re doing, have engaged with the possibility of exposing their sources via electronic communication and via soliciting electronic communication from whistleblowers. Whether they’ve engaged with the possibility of landing their sources in a lot of trouble, I don’t know, because I’m not working on that stuff. I have my suspicions, but I wouldn’t want to make them public. But you can see that other news organizations have started, like I said, the Guardian have set up an encrypted drop box system. I don’t know if the ABC has done that or not, but some news organizations have obviously responded to the revelations of the Edward Snowden leaks and said: “We need to deal with this.” A lot of news organizations haven’t. But in my work, because I work on a more daily news function at the moment, it hasn’t affected what we do so much. People put so much out there these days anyway publicly that they didn’t do ten years ago, just take Twitter and Facebook as examples, and the capacity that we have now as news organizations to source, to pull information off of social media that didn’t exist ten years ago, five years ago even, really. People are putting a lot of things online that they wouldn’t have done so before, so you could probably say that people at large are putting themselves at risk.

Q08) Have you ever asked a question for your audience to get their opinion?

Yeah, that happens. That happens more with, for example, with that investigative unit that I worked with, we did do that. We’ve started looking into corruption in the Australia Post, hypothetically, do you know anything, specifically looking for a certain person, group who might have information. It tends to happen more on shows like Q&A, panel shows that have a deliberate function of audience participation, or attempt to have a deliberate audience participation function. And you would’ve seen Q&A on the ABC, it has the tweets that show up on the bottom of the screen as the show is progressing. That’s not very well incorporated, in my opinion, in how the show, how the panel talks about things. Those tweets tend to show up for the audience to see, but the people on the panel don’t seem to see that, so they don’t tend to respond to that. They do ask questions that have come in from Twitter sometimes, but it’s a bit rare. It does happen on the news programs that I work on that the presenters are on Twitter, and people are watching for breaking news events, or they might be looking for,
people will tag them in a tweet, Beverley O’Connor is one of the presenters that I work with at the ABC: “@BevOConnor, have you seen this situation that’s just happened in Papua New Guinea,” or something. All sorts of things they can say, and so they might notice that while we’re on air and then read it out. That’s a bit rare, because it tends to be, again, like I was saying with a breaking news event, we look for audience views on a topic or witness accounts or things like that. That sort of situation would be useful. But you’ve just got to be really careful what you put to air from Twitter. So again, our presenter on air, anyone who really knows, is quite good and really knows what they’re doing will be pretty careful to read tweets on air that have just hit their account, unless you know who it’s from, it might be like: “Oh, ok. The BBC correspondent has just tweeted this,” that’s a reliable source. But some guy with a random Twitter account with seven followers, his Twitter account has been active for two months, and you have no idea who that is, so you have to be very careful.

Q08.1) Twitter is a public platform and sometimes, as a journalist, your sources rely on you. So you cannot just communicate with your sources through Twitter, right?

No, I can’t think of a situation where I would do that, particularly on a sensitive story. It’s hard enough now for sources, particularly a government whistleblower, for example, or someone who’s talking about having committed a crime or something like that. It’s hard enough to keep people’s identities private now as it is. With the Internet and the way digital technology works, you’ve got to be very careful.

Q09) When do you know that you have enough information?

There’s no single point you reach where you’re like: “Oh, it’s done.” On a story you’re working on, if the story is done and finished and you don’t look for, some stories create a sequence of reaction stories that you’ll do over the next week or so, the next few days, you’d look for social media reactions if you were doing a reaction story to a breaking news story. I don’t think there’s any one point for that. I think when the story becomes not newsworthy anymore would be when you’d stop looking. But again, like I’ve been saying, I think social media is very useful in breaking news situations, depending on the sources, how you treat the reliability of the information, and then as the story becomes older, it becomes less useful, just because of the nature the way a story is reported, it becomes a slower story. Like the Nepal earthquake. Immediately, you’re trying to get as much information as possible in because you might not know much, and then we’re still reporting on that and it’s happened and that story will be a valid story for a long time, for the next few months. But the reporting now is a lot more featurey, the correspondents are talking to one or two people at a time rather than getting across the immediate situation in that story. You tend to look for less social media stuff in that slower news format than you do in a daily breaking news situation.

Q10) What kind of activities do you do in social media?

While I’m working, while I’m producing, while I’m working on the show, if I’m in the newsroom, I’ll have my software, which is where I think we put the shows together and we get Reuters and AP and stuff, our feeds for the news wires and ABC wires come in, and I’ll look at those every now and then to see if any of the stories that are in my bulletin have
changed, I need to update them before I go to air, or if a new story has arrived, or if it’s some breaking news of some kind. I’ll do the same with Twitter. I have Twitter open in one of my browser windows and I jump across it every now and then and read around and look at my feed a bit. For example, Christine Milne, the Greens party leader, resigned today and she announced her resignation on Twitter, so that was the first place, the news was broken from her Twitter account, and then she released a press release, and then she talked to the media. The senator who is planning to run for the leadership, that also came out on Twitter. So by following political leaders and journalists in Canberra on my Twitter account, I might have it quicker, I probably will have it quicker by keeping a Twitter window open in my browser than I will via even the ABC’s internal wire service. So it’s very important to me, following people who you know are going to be probably reliable sources on a topic and then sort of treat it like a news wire now, a different level of reliability but treat it like a news wire.

**Q10.1** So you browse, you search, you re-tweet, you tweet, you screen?

That’s right. It’s one of those things, the process of working on a show. The half hour version of the show that we work on that goes to Asia takes about three hours to put together. During the process of that show, I’m building a rundown and doing the technical parts of putting the way the software creates video items and scripts and whatnot, so there’s all of that. And then there’s also the editorial aspect of making sure the news of the day is in there in the right order and up to date. So I’m bouncing around different windows watching the news come in, and that can be fun too.

**Q11** Do you use social media just to satisfy your information needs, or do you refer to it for other purposes as well?

I’m personally less active on social media now than I was a year ago because I’m not a freelancer, as such, anymore, and I’m not working in a way where I’m not really promoting my own work right now, because I work for the ABC and my role doesn’t require it. I’m taking a different direction in my work anyway, so I’m less focused on promoting myself as a freelance journalist. So I use it less than I used to. I used to engage a lot more, partly because I was sourcing information all the time. Part of my daily routine in Cairo would be get up and get a coffee and read some news, look at Twitter and try and keep across the very dynamic political situation in Egypt at that time with reliable sources. That’s how I treated Twitter. But I’d engage, I’d re-tweet or reply to people, that sort of thing. I don’t really do that so much now. I treat it as a news wire rather than something to interact with as much.

**Q11.1** So when you use Twitter, not as a freelance journalist, but for an organization, do you use it in a different way?

Yeah, I’m not as interactive. I don’t really reply to people or ask them questions or chat to them. People chat on Twitter, back and forward. I don’t really do that.

**Q11.2** So does the position of the journalist influence the way that they use social media?
Personally, for me, it does. I noticed that, at the ABC we have staff correspondents, people who are reporting in the field. They, depending on the correspondent, tend to more actively engage with people on Twitter. And that can be very useful. Our correspondent in Indonesia, George Roberts, during the recent Bali Nine story, would be reporting the story and often, the first place that the ABC audience would have access to the latest details on that story would be directly from his Twitter account. So I think that if you’re in the field and you’re reporting, in just a professional aspect, you’re a source, essentially. You’re the first point that any information would come from, and as a good journalist, you’re hopefully a reliable source, so people would want to follow you or engage with you, and a chance to be very interactive. I know correspondents that reply to people that criticize them on Twitter directly and push back, or maybe they engage in arguments, or maybe a bit of banter or whatever. Some of them don’t do that. For me, personally, I’m just less inclined to spend a lot of time on social media when I’m not at work. I guess my research for the PhD I’m working on doesn’t require me to spend a lot of time on social media. It may, actually, as I start to data collect a bit more, but at the moment, it doesn’t. So just on a personal aspect, I use it when I’m in the newsroom doing my job with the ABC and then I don’t tend to pay too much attention to it outside of it.

Q12) What are the ways of validation and verification that you employ to obtain information from social media?

That’s about trying to verify someone’s identity. So, for example, maybe you follow the BBC Middle East editor. That guy, he tweets something about Egypt, probably going to be on the money, you might want to check that out. But if the BBC Middle East editor is in Egypt on a reporting trip, and he tweets something about Egypt, it’s probably pretty newsworthy and probably pretty right. So I would classify that as a highly reliable source. Or if a leading academic on a topic tweets something that’s newsworthy, an opinion maybe, or maybe the UN Human Rights Commission issues a tweet about Australia’s treatment of refugees, that’s a source, we know who that is, that’s an official account. But if you’re getting information from an audience member or someone, again, going back to the Martin Place example, some office worker who is getting evacuated, and their Twitter account has 30 followers, and it’s been around for six months, and the picture maybe doesn’t even have a face on it. There’a lot of really spammy, robot Twitter accounts, or Twitter accounts that are set up just as trolling accounts, all sorts of different things that are out there, so you’ve got to be careful. Say their name on their Twitter account is Joseph Smith, and the Twitter account says that they’re an office manager at Westpac during the day and likes to take care of his kids on the weekend, but it’s only got 30 followers, you’re like: “Ehh.” So maybe you’ll Google that and maybe you can find a LinkedIn page, and you can see that they link up: “Okay, there is a LinkedIn page for Joseph Smith, office manager at Westpac. So that sort of links up.” Maybe there’s a partly opened Facebook page where you can, you really have to try and verify whether somebody is who they say they are. That would be the first step. And then I guess maybe the geolocation helps to figure out if they were in the right place, maybe there’s no geolocation. Other things like images. During the early days of the Syrian uprising in 2011, a lot of news organizations got caught out, this happened in other ones as well, but particularly
in Syria, because there were no journalists in the country, or very few that could get anywhere near where things were happening. A lot of news organizations got caught out publishing images or video of maybe soldiers shooting at protestors, or maybe a still image of bodies of protestors lying on the ground or something, a government massacre of some kind. There was one in particular which the ABC got caught out with, where there was a series of bodies on the floor wrapped in shrouds, saying these are protestors that have been killed by the Syrian army, soldiers firing at a group of protestors in Damascus or something. The image got tweeted out, they put it on the TV, and then it turned out that it was an image from Lebanon, the Israeli bombing raid on Lebanon in 2006 or something, and it was civilians being killed, but in an Israeli bombing raid in Lebanon, not by Syrian soldiers in Damascus. So verifying images like that can be really hard, especially if someone doesn’t speak Arabic or read Arabic and can’t read the script that’s on the wall. I think somebody from the audience replied and said that actually says the name of the suburb on the wall, or something like that, in Beirut. You have to be extremely careful. It is very difficult to verify.

Q12.1) So is there no specific strategy to verify or validate information?

No. Like I said, there’s work practices that we try to use, like I said, verify the identities, see if you can figure out if it’s from a location, is it in the right time period… You come up with a likelihood of whether or not it’s reliable and work from what you feel is the likelihood of it being reliable. There are organizations like Storyful, which has fairly recently been bought by News Corp, in the last 12 to 18 months, which basically runs a service which news organizations can subscribe to and their job, or the service they provide is verifying social media content. So it might be a video out of Syria, it might be a citizen journalist somewhere, a country where there aren’t any journalists on the ground, and their service is to try and verify that person’s identity and make sure they’re a reliable source and then they’d basically sell that content to another news organization.

Q13) So if, for example, there is a breaking news story, and you cannot verify or validate the source, what do you do?

You make a decision on, like I said, on the likelihood of whether that’s valid and it might be that you and someone senior or you might be producing it, there are days when I’m producing the show and I’ve got to make a decision on it. I might work with the presenter to get a decision. If it’s really dodgy, I’d always get someone who’s a bit, because there are people above me in the chain of editorial seniority, to chip in and be like: “What are we going to do with this?” If it’s a bit dodgy, but you still think it’s probably right, you would just phrase it that way on the program. We’d have the presenter say: “Unconfirmed reports from social media indicate that something is up in Damascus,” or: “These images haven’t been verified, but they purport to show…” You actually, in the language of the reporting that you use to make it clear to the audience that we think that this is what is going on to the best information that we have. But even then, you would only do that if you were pretty sure that it’s valid. If something’s wrong with it, like the other day actually, with Baltimore, the uprising riots in Baltimore these past two weeks. This wasn’t a work situation, just someone I know on Facebook put a picture of a protest with a view of a long street, very tall apartment
buildings, full to the horizon of people protesting and a line of riot police right at the bottom of the street with a truck, and I took one look at it and I was like: “That’s Istanbul, that’s not Baltimore.” I mean, I’ve never been to Baltimore, but I know that that’s a Turkish riot truck because I’ve seen them. So a friend of mine had shared this on Facebook saying: “This is Baltimore,” and I’m like: “That’s Istanbul.” So maybe if someone in the newsroom has regional, cultural, situational knowledge that can help decipher a situation, language skills, or they’ve been to a place that they’ve reported on that topic, there’s all sorts of ways that you can try and figure out if something’s legit, but it’s a mixed bag. It’s an open platform, anyone can be on it, so you’ve got to treat it very carefully.

Q14) What criteria do you use to assess the relevancy of information obtained from social media?

The most obvious is that you just read the tweets, you read the results. Say, you might come up with 4,000 results. That’s too many to read, but you might come up with 50, so you’d have a good look at a few of them. It’s obvious that one of the tweets might be about the incident, one of the tweets might be about Kanye West. There are certain things that are very obvious. Then, as it starts to narrow down, and again, the newer and more unique a situation is, the easier it is to see what’s relevant. The Sydney siege, in the early hours of that, not many people would be tweeting about it. As it went on, that situation incites reactions from the audience who will get very emotional or angry about it. People have opinions. As the situation develops, the opinions become very dominant. People telling you that the Islamic State are taking over Australia and saying all sorts of crazy things, obviously you’re not going to put that on the news, so you have to decipher what might be fact from opinion or fiction. That can become very difficult. And a hashtag search, for example, as the situation becomes more of a trending topic, a bigger topic on Twitter, the more people are involved, might result in thousands of results coming up really quickly. There were situations during the Arab Spring when you’d put, which one was it, it might have been in Cairo when the first uprising was happening in Tahrir Square in January 2011. I remember putting “#Tahrir” into Twitter and literally hundreds of results every few seconds, Twitter gives you a little update of how many things have changed. Hundreds and hundreds per minute, thousands per minute would be screening, and you can’t sort through that. So there are certain situations where it’s extremely difficult to, on a deadline, decipher what’s happening on Twitter.

Q15) How do you evaluate the originality of the information obtained?

Again, you’re sort of dealing with the question of who the person is, what the source is. Say it’s a reliable source, say it’s someone you put trust in. It might be an academic on a topic, it might be a correspondent you know is legit, it might be a Guardian news editor for London, something like that. I don’t know, it’s a good question. The originality, in some ways, it’s obvious, because if a topic has been reported already, and it’s big, it’ll be everywhere. If a topic hasn’t been reported already, and someone starts reporting it, it’s usually quite obvious who the first person is, unless it’s a news event which gets picked up very quickly by a lot of people, and in which case, it doesn’t really matter, because then you have got a really massive amount of sources to deal with, you’ve just got to make sure that everyone else isn’t
getting it wrong, because there are situations where everyone picks up on everybody else’s information and sometimes that information is incorrect, so you’ve got to make sure that everyone isn’t getting it wrong, if you can. But in terms of originality, that’s almost the way as a PhD researcher would treat originality. You’re writing a thesis and working on a thesis at the moment. Somebody could publish a thesis on the very topic you’re working on or the very topic that I’m working on in six months’ time, which means you would have to push the argument forward again. It’s a bit like that. If you’re working on an investigative report, and somebody scoops you on a story, you can still publish it, but you haven’t got the first, it’s not your story anymore, it’s out there, so you might have to drop it, you might have to work on pushing the story forward, you might have to work on a few different ways of responding to that. But the originality thing, it’s a tough question. On a big news story, there’s no news organization that wouldn’t report that the Bali Nine two had been executed because someone else had reported it first. There are news organizations that will slap themselves on the back and be very happy that their journalist got their story ten seconds before the other guy on Twitter. But less and less these days, unless it’s talking about investigative reporting, which is quite a different animal, that’s less and less a thing, because news gets out so quickly and people pick up on it so quickly and re-report that it’s not as common, unless it’s a story that’s unique to that news organization.

Q16) How do you evaluate the newsworthiness of the information obtained?

News organizations have different editorial values. Like, the ABC and the Daily Telegraph have different editorial values, but they’re still working on the basis of news value and newsworthiness. So there’s different things that go into that, but yeah, it’s pretty much the same.

Q17) Could you please talk about your search tactics and strategies on social media?

If we’re going to talk about strategy, geolocation is a big one, if it’s enabled on that person’s device. Time of the tweet or the piece. Is it in the relevant time? Is it too late? Is it too early? Depending on what it says, if you’re looking to verify something’s authenticity, if the way that someone has written sounds like they’ve witnessed an event that’s just happened but it’s two hours after the event, then it’s probably not that, but if it’s five minutes after the event… So you want to just kind of look at the time. You search via topics, like we said, hashtags, or open topics, just a word without the hashtag. And that’s probably it. I guess if you’re looking for a specific topic, you might look for certain users, you might look for certain users, you might look for certain kind of user, you might be looking for journalists, you might be looking for academics, you might be looking for activists. So who the person is. Particularly if it’s news, specifically, you’re really looking for topics, the time and the location, and you try to narrow it down via those criteria.

Q18) How do you avoid unwanted information from social media?

It’s difficult to do. You really are trying to just filter it out. And again, the bigger a topic becomes, the harder it is, because if it’s a topic that’s trending on Twitter, it’ll be harder to decipher or pull apart because there’s more tweets. How you avoid unwanted information, it really becomes kind of manual at that point. You can use those various criteria to narrow
down the area, you know, hashtags, time, geolocation, all these different things. But yeah, you’ve really got to start reading through them and then seeing what’s there. Again, the different sources, like the different users, and if you have an earlier understanding on who might be reliable on a certain topic or not, then you can use that too. But to avoid unwanted information, that’s not something I think a computer search algorithm at this point can really help you do. As a journalist, one of the things you’re trying to do is sort information, you’re trying to use the editorial understanding you have to putting on what the organization needs. So you work for the ABC, you have a certain editorial outlook and rules that you run by, and you’ve got to kind of assess it. So that’s when it gets quite difficult.

Q19) Do you use any tools to facilitate your use of social media?

Yeah. Like, for example, TweetDeck has been incorporated by Twitter now, and they own it, but the TweetDeck platform is very useful because you can set up columns on Twitter that you lay to monitor certain hashtags, or monitor certain users, or monitor… You kind of create various filters that you can see lots of, you might be able to see five or six of them or ten of them on the screen at any given time. I know platforms like Hootsuite let you curate a bit more as well. So as opposed to the web interface that shows in your browser when you log into Twitter. Tools like that, app based tools give you more power to filter and sort and view different topics or follow different events or different aspects of an event, perhaps. So that sort of stuff is very useful. Other tools, there’s other aspects of it as well. Say you found some footage on YouTube that you want to use in the news broadcast that you figured out is worth using and that it’s okay, you use Keepvid or one of those websites that allows you to rip the video out of YouTube and download it in mp4 video format that can you put into your editing software. So there’s other things like that as well.

Q20) Are there any external factors that may influence the way you look for information in social media? For example, the organization culture, journalism work practice, department culture?

Over the last ten years, but probably less than that, last five years or so, there’s been a much more widespread acceptance of the value of social media content among journalists but at the same time, certain practices have become embedded. So practices around verifying information. I think older journalists or more senior journalists are untrusting of social media or online content, as they should be in many ways, and that has been a barrier to getting the multimedia online journalism field going. It is becoming more accepted and embedded in the process, but in terms of how the institutional cultures or how external factors are affecting, the surveillance thing is a big one, and that’s only fairly new, the last two years really that we know what’s really happening. It’s been a factor before that, like I said, I think off tape when I was in the Middle East working Egypt, working with activists, trying to get stuff out of countries like Syria and Libya and we would be very careful with, as we were saying off tape, you can never be 100% sure that your communications platform isn’t being monitored or decrypted, but I certainly tried to keep across which platforms we knew weren’t encrypted.
Ly message is encrypted, for example, whereas Whatsapp is not. So you would never chat to
a source in a sensitive way on Whatsapp, you might initiate a conversation on a popular
platform like Whatsapp or Facebook, but then you would transport that conversation over to a
chat method that you knew was protected. There’s one in-browser plug-in for Chrome called
Cryptocat which allows you to privately encrypt a conversation with an encryption key that is
individual to that conversation. So there’s various formats that we’d try to use to talk to
people, that you knew were in a country or maybe they were a Muslim Brotherhood member
in Egypt after the brotherhood had been declared a terrorist organization. You initiate that
conversation in a local platform, everybody’s going to get in a whole lot of shit, so you’ve
got to be really careful in those situations. So surveillance is a big factor. So if a tool had an
encryption function, then obviously things change, but if it had some kind of encryption
function that you understood was reliable to an extent, then that would be really useful. Other
external factors, I don’t know. Organizational culture, that sort of depends on the
organization. Some organizations, the Guardian, the New York Times, I think der Spiegel to an
extent, are much more forward leaning in the way that they engage with data journalism,
for example. Other organizations, like the ABC and the BBC are much larger, bureaucratic
structures and they do, in my experience, the ABC is a lot slower, for example, to move
forward on these kinds of topics, or any new topic really, any new practice. So there are
institutional barriers to do new things, that doesn’t necessarily mean it’s bad, but it’s just a
factor. Those are probably the biggest ones that I can think of.

Q21) There are some pragmatic constrains in journalism activities, like time, space,
readership and the requirements of news organizations. How these constraints may
influence your use of social media?

Time’s a big one. So if you’re on a really tight deadline, maybe you’re working in a
newsroom on a 24 hour continuous news service of some kind online or on TV, and the next
news update is in two minutes time and you have to get something into the next news update,
you have a very, very short time to work with, changing a script for a newsreader to read or
getting a breaking news strap on the television or whatever it is, so obviously you’re
extremely constrained in that respect. Other contexts, you might have more time, you might
be working on a story and have a four week lead time, so that would be a totally different
context. But in terms of social media, in tight deadline situation, and like I said, when I was
out in the field, I’d be reporting on a story, “Chaotic situation in Cairo,” for example, Twitter
would be really useful to get to a story quickly as it changed. The riot might happen in one
area of the city and then half an hour later or two hours later, it’s happening in a different area
of the city. So to follow the story, you had certain sources on Twitter which was really useful.
Another big one is resources, the economic aspect. Does the channel or news organization
that you’re working with have the resources to let you, you know, if you’re in the newsroom
to put a producer just on social media watch, just watching Twitter and seeing if something
comes up, they might have to do four tasks instead of just that one or two tasks. So your
resources at your disposal, whether it’s human resources or where it’s funding for a certain
story or assignment or travel budgets or whatever might push you to use social media more or
less. You might not be able to afford a cameraman for a story or there might not be one
available within the given time frame, so you’ll try and source images via social media rather than getting them shot by the cameraman from that channel or the photographer for the newspaper or whatever. So there’s a lot of factors that come into it. Social media is cheap, it’s quite quick to use. If you can verify a source, you can have information from it extremely quickly. So in situations where you’ve got tight deadlines or a limited budget or a limited time frame, that sort of stops you going out of the news room to collect a piece of information that becomes useful, but it comes with those problems about veracity of the information and verifying sources.

Q22) What challenges and pitfalls do you face currently using social media?

The biggest one is just verification, keeping the information, knowing that what you’re putting out to the audience as part of a story is what you say it is, or is what the source says it is. That’s the biggest one. Other things, I mean, you know, the surveillance aspect and source security. That is also a big problem, that’s sort of a different track. But in terms of breaking news or daily news, a newsroom sort of situation, knowing that your source is who they say they are and knowing that the information that they’re giving you via Twitter or Facebook or whatever is, you can say that it’s correct, or you can even put it on the TV with a warning attributing it, saying: “This is from social media. We’re not sure if it’s been verified.” You still have to be pretty sure in that situation. That’s the biggest problem.

Q23) What kinds of capabilities you might want in a system that could help you find things in social media?

Like we talked about earlier, things like Hootsuite and Tweetdeck do that give you multiple tabs open that you can compare searches, you can have multiple hashtags being collated and that sort of thing at once.

Q23.1) Is TweetDeck just for filtering?

Yeah, TweetDeck is really filtering based on all those parameters we’ve talked about. The one, at least, unless I may be overlooking things, but, for me at least, that I can think of, the one big thing is the problem with identifying who is talking to you, who is giving you the information and maybe there’s a way that you can have a function within the program that looks across various social media platforms and tries to help you identify someone. Like you were saying before, this person might be tweeting something, and their Twitter account might say that they’re someone from Westpac, but that might not be correct, so you go and you look on Google and you see that they have a LinkedIn page or that they have a Facebook page. Maybe there’s a way that there’s a quick search function that can help you try and identify whether somebody is who they say they are. But I don’t know whether that would be possible, or, even in some regards, legal, because of privacy laws. That probably is the biggest issue, identify who is talking to you.
Q23.2) So does that mean verifying your source?

Yeah.

Q23.3) Is it similar to fact checking?

Fact checking is similar, it’s a little different. Fact checking is more like, say you tell me something, and you say to me: “20 people have just been killed in a bomb at Flinders Street Station.” Fact checking would be me checking that 20 people have been killed. Or that the bomb happened at Flinders Street Station. Verifying the source would be me checking who you are and whether you’re likely to be lying to me or not. That’s probably the difference, really. So if you’re the ABC Victorian political correspondent, you’re probably going to be a pretty good source, and hopefully you will have checked your facts already, and if you’re the Victorian police Facebook page, you’re an excellent source and that would be one of the places I would try and check that fact. But if you’re just someone who’s walking by, passing by, a witness that’s just tweeted that they saw 20 bodies, you’d want to check that that’s actually correct. They might have seen 20 bodies, but there might be 50 people dead, or they might have seen five bodies and overreacted.

Q24) Could you think about when you recently needed information? What information or type of information did you need?

Again, it depends on the situation. If you’re working in a newsroom, which is daily, you’re working on a TV show for that day, which is kind of what I do at the moment, you’re more likely to be looking for eye witness accounts of something or audience responses to something and things like that. Maybe user generated photos or video of an event that’s happened that day but maybe you can’t get a reporter to straight away. By the time you can get a reporter to something, that’s your source, not Twitter stuff. That becomes a secondary source. You might add a bit of it into a story if it’s really, really dramatic, but it’s probably not going to be that useful. And if you’re working on a slower story, a feature or something investigative, whatever that’s going to take a while to put together, you have to be looking for a different kind of thing. You might be soliciting responses, you might be soliciting whistleblowers, so you are looking for a different kind of thing, so you’d be engaging with the platform in a different way then. Instead of just searching, you’d be asking questions, you’d be trying to find people.

Q24.1) Were you satisfied with the outcomes? How did you use the information?

I can’t think of a single story I’ve worked on where social media use has been the biggest factor in the success or not of the story. It’s always sort of a supplementary thing.

Q24.2) So is social media always a supplementary thing?

Yeah, mostly, unless it’s just the first few minutes of a breaking story or something like that, and if you’re reporting it based solely on social media then there’s probably something wrong because you’re either not getting someone out to the story, or you’re not checking the facts via a second method. I’d be very suspicious if someone came to me with a story idea that was based solely on facts that they got on social media, I’d be like: “This isn’t a story yet,” unless
it was really compelling or it was just about something very specific happening on a social media platform. You kind of need real world stuff to make news, to make good journalism. Does that answer the question? I’m not sure if that answers the question. Satisfied with the outcome… Yeah, I’ve often been quite satisfied with what we’ve been able to get from social media, or interactions with the audience that I’ve gotten or my ability to decipher a chaotic situation as a reporter in the field. It’s often been very helpful, but it’s an addition to your journalistic tool kit. It’s another piece of that, it’s not by itself.

Q25) What type of information is hardest for you to obtain? Why?

I think, like any journalistic work, the hardest kind of information to obtain is related to topics that people don’t want you to find about. The Australian government is very secretive about its dealing with asylum seekers, particularly people coming in on boats, increasingly so, and now it’s become a militarized affair. I think that in terms of journalistic uses of social media, in my experience, it’s not different from social media to the real world that the most difficult information to find out, often the newsworthy, is the stuff that people are trying to keep behind closed doors and that is often related to something that’s unsavory. It might be a corporation, it might be a government, it might be an individual, they’re trying to keep something secret.

Q25.1) So if I want to ask why, is it because, people are not willing to give information? And they are mainly organizations, like governments?

Yeah. And in that situation, you’re even less likely to find it on social media, unless it’s somebody coming to you with information that is designed to be kept secret, a whistleblower of some kind. I think that situation, I think social media doesn’t differ from the real world in that scenario.

Q26) What type of information is easiest for you to obtain?

Opinion, in general, so it might be audience responses to a story, opinions on a political topic or something like that, and then also probably equal to that, in a breaking news situation, if something is happening in a well populated area, like something happens in downtown city, the siege, for example, there’s going to be, quite quickly, a lot of pictures, images, and video on social media that might be really useful in a news situation if you can figure out they are what they say they are. So yeah, definitely really useful in that regard.

Q27) Is social media the news media outlet of the future?

I think it’s probably the outlet of today. If you look at how audiences, and this is always changing quite rapidly, particularly in the last few years, how audiences consume news now. There was a Pew institution research report that came out some time in the last year or two, I think probably in the last eighteen months that indicated how people were consuming news stories on websites on the New York Times and the ABC. They don’t go to the homepage anymore, they tend to go directly to the story page, and they tend to be directed there from a social media site. So now people, overall, it’s like a generalization, are clicking on a news story link in the feed of their Facebook page. So I might share a news story, and two or three of my friends might click on it. They’ll skip the New York Times front page entirely and go entirely to the story about whatever story it is. So I think it’s already, and a lot of news
organizations are still playing catch up with this one, it’s already where the audience is, particularly increasing on mobile devices rather than desktop or laptop computers as well, and it’s where we are now and so it’s only going to become more prevalent.

Q28) What is the social media effect?

Unfortunately, I think it’s part of the, I mean there’s a perceived societal change towards a shorter attention span, and there’s data on that as well. Online, people don’t watch videos that are as long, or they won’t stay on a video longer than two or three minutes, that kind of thing. So social media is part of that, Twitter is a short, descriptive medium. So I think it is a social trend, it appears to be a social trend that people are going away from news, they’re going towards more personalized interpretation of the world which isn’t reliant on what the ABC tells them, it’s reliant on what’s on their Facebook feed. It’s pretty well documented these days.

Q29) How social media affect the way journalists receive, gather and distribute news?

In terms of receiving data, it’s definitely becoming a prevalent source. People are talking about how Twitter is the source now. I don’t know if I’d agree with that on every, I think it’s more complicated than that, but it’s certainly, I mean I’ve referred to it a million times probably since we started talking an hour and a half ago, but it’s a huge, valuable resource for journalists but a very hard one to work with at times. But in terms of releasing information as well, I think the speed with which you can get something out on social media and the audience reach of big platforms like Twitter and Facebook is unbeatable. It’s where everyone is right now.

Q30) Does journalism still matter?

Yeah, absolutely. Of course I’m biased on that, but whether or not, I don’t think that it has the same impact that it once had, but it does still matter. Four Corners on the ABC ran a story on Monday night about how migrant workers in Australian on what’s called a 471 visa or a 417 visa, so basically backpackers, migrants who come for a year and stay and it’s a working holiday type visa. One of the conditions of that visa in certain things is that someone goes and works on an agricultural farm or whatever for three months. There’s a massive, widespread abuse of people working on those farms, and Four Corners ran a story about how some people are being paid less than half of the award wage, how some people are being sexually abused to get them an extension of their visa. There’s all sorts of crazy things that are happening that are illegal. The next day, the Victorian State government came out and said that they started an inquiry into that problem. So yeah, journalism still matters. It has an effect.

Q31) Who is the journalist of the future?

That’s a good one. A few years ago, I think it was a more dominant narrative than it is now that journalism was on its way out and that citizen journalism was the new thing, that that would be the future, that people with blogs and mobile phones, and Twitter accounts would be reporting the world around them and that’s how we would filter the world. Journalism isn’t an ability to use a keyboard to write up a story or a camera to shoot a picture, it’s an ability to use an editorial structure. That’s the skill, and I think we’ve seen that increasingly,
and I think that it’s not come full circle, but it has come around in that news organizations, now, even though journalists are being laid off in huge numbers, that that skill set of understanding what is important information and what isn’t important information, what information is in the public interest, what information is likely to help the newspaper sell newspapers. It’s a bit of a different one, again, but certainly in terms of the values of journalism as information that is in the public interest, that’s a skill set of filtration and understanding the world. So I think that journalists are still the journalists of the future, I just think that news organizations have to get way more up to speed with how they’re engaging with the audience, because the audience isn’t buying the newspaper anymore or watching the 7pm news bulletin; they’re doing different things.

**Q31.1) The term “citizen journalist” was invented after social media…**

I think that citizen journalism has its place, if we define citizen journalism as non-professional journalists putting content that they’ve made onto an online platform, and it’s obviously very contextual, but citizen journalists’ content is used widely during breaking news events. It was used in a huge way during the Arab Spring when professional journalists weren’t able to access people in certain countries or whatnot, because governments don’t let them in or it’s too risky. That has its own problems, like verifying what the information is. If a BBC reporter with 20 years’ experience is in Damascus reporting on a crackdown against protestors, that’s a good source. If a protestor tells you that they’re in Damascus, tells you that they’re reporting on a crackdown on protestors in Damascus, that’s a different kind of source. That can be really valuable information, but the process of figuring out whether it’s true and how true it is or how accurate it is, the veracity of the information, that’s very difficult. So that’s the line. We’re not going to stop seeing people put things on Instagram and Twitter when they see things happen in the world around them, but we’re still going to have a problem with figuring out whether it’s true.

**Q32) What is journalism in the age of social media?**

I think it’s curation and filtration. Eye witness sources, like that example I just used with the BBC reporter in Damascus, that’s still really important, because you know that that person is using 20 years of experience and an editorial framework to tell you what they’re seeing, because they’ll know what’s newsworthy about that situation and they might, if they’re a reporter with a specialization in the Middle East, they’ll probably be pretty well across things like the Geneva Conventions and what a war crime looks like, if they see one. So that might be a really good source. A citizen journalist probably doesn’t have any of that understanding or experience or very little of it, so it’s a different kind of source. I don’t know if that really answered the question. Yeah, I think curation, and that’s how I see my role, when I’m producing the show, because I’m not a field reporter now, I’m producing, you’re kind of curating. You’ve got half an hour of space.

**Q32.1) Your current position is producer?**

Yeah, so I put together a program, 30 minute or 1 hour, depends on the night, but I work with a team of people to put together one 30 minute program and one 1 hour program, and I think what we’re doing, in many ways, is curating the world, because now, we have such an overwhelming supply of information. There are nights where we have a 1 hour news program
and there are things that are important that we can’t fit into the program or we can only fit them in a 30 second piece rather than getting in an expert to interview. At the beginning of the shift every day, we have an editorial meeting and we discuss between the five or ten of us, there’ll be about ten people really working on the show that day. What’s going to be on the show? What’s the top story? Why is it the top story? Should something else be the top story? Last week, we had a situation where the Bali Nine execution was imminent and the earthquake in Kathmandu had just happened, and we had two very big stories, and there was a problem figuring out which one was the biggest story. So it’s a process of curating the world for the audience.

**Q33) Do you think the concept of breaking news has been changed?**

I think breaking news has become a bigger part of the process. I think inside the newsroom, the emphasis on breaking news is big. If something happens and we don’t get it onto the TV, if we’re on air, it’s our timeslot, if we don’t get it into the show as soon as possible, then that’s seen as a bad thing. So I think the emphasis within a news organization, the emphasis on getting breaking news out as it happens very high, but I don’t know whether the concept of it has really changed. I think there’s just, as far as priority goes, it’s very high now.

**Q34) What is the role of sharing information in journalism? (except sharing with the readership)**

That depends. That’s a real news organization culture. In the freelance community, unless you’re working on a story that’s really sensitive and it’s going to be a big scoop, and you’re kind of keeping it to yourself, people are very open sharing information about logistical questions or a phone number for someone in a certain organization, like human rights, or government department, things like that. Contacts, or safety information, security information. If someone realizes that an area has become unsafe to travel through because of a kidnapping risk or something along those lines, then it’s shared very actively and very quickly. And actually, social media is used in the freelance community in a big way on that, there are Facebook pages – I didn’t mention this earlier, I should have – that’s another big thing for journalists. Particularly freelancers. There are communities on Facebook and other platforms where we all share information about, or maybe an e-mail list about what…

**Q34.1) But are you all competing with each other at the same time?**

Yeah, you’re also competing. But within the freelance community, particularly, like in the Middle East, there’s a lot of camaraderie because you’re up against it, there’s a real sense of helping each other out because you the odds are really stacked against you, the governments don’t want you there, the people you’re reporting on don’t want you there, the risks are high… But inside other organizations that I’ve worked in, people can be a lot more secretive and less willing to share information. So it depends on the context of the group or the culture around it, I guess.

**Q35) How has social media changed the news?**

It’s definitely really impacted news. I can’t think of a news broadcast now or a newspaper with an online presence, which all of them should have or do have, that doesn’t incorporate social media in some regard, whether it’s audience comment, or, like using social media
inside posts, like BuzzFeed News, for example. A lot of places do this now, but BuzzFeed was one of the first places to do it, where you have a reporter writing a story, and there might be two paragraphs of the story, and then they might to refer to a tweet someone has made, maybe it’s an important person or maybe it’s an eye witness, just an average person on the street, and the tweet will be embedded in the page, and then they might use an Instagram picture from the event and embed it in the page. So it’s part of the reporting cycle now, you can’t separate it.

Q36) Has it affected your habits?

Personally, absolutely. When you ordered lunch, I checked Facebook. It’s everywhere now. I communicate with my friends and people around me and the world around me are using lots of different platforms.

Q37) Does social media help make a journalist’s job better and easier?

I don’t think it necessarily makes it easier. There’s probably a perception that it makes it easier, because it’s right in front of you. But we’ve talked about this, it has its own pitfalls, so you’ve got to be very careful. I think it’s another tool we use. I think, as journalists, talking broadly, we don’t always use it as well it should be used, like anything, you have to be very careful with it. Sometimes, we’re not as careful as we should be.

Q38) Do you prefer to have different search interface for finding information on social media or an integrated interface with google?

Yeah, integrated interface. The less tabbing you’ve got to do between different things, the better, I think. The less programs you’ve got open, the better.

Q39) So if Google can find every information from Twitter and Facebook, you’d prefer to use it?

Google is obviously the dominant search engine that everyone uses. I can’t think of a time that I’ve used another search engine other than Google recently before, instead of just web results.

Q40) When do you use Google for finding information and when do you use social media?

In a professional context, I often use Google as a news wire, like Google News. So if I’m producing a story and I want to check that it’s correct, I might search for the story and look for the BBC version of the story or the New York Times version of the story, to make sure I’m getting it right, and read a few other stories. But in the terms of the way that we’ve been talking about social media, which I guess is largely about breaking news, I don’t really use it for that. It’s not that useful for that.

Q41) Do you have any final comments about things you think we should consider in our research?

No, not really. There’s nothing I can think of that I want to add. I really think that there is space in journalism, the news industry, whatever you want to call it, for tools that really help journalists to engage with social media in a critical way more effectively. In some respects, a
lot of journalists don’t have very good social media training or awareness, but a lot do, increasingly, but also, like all these things that we’ve been talking about verifying sources, figuring out where and when something’s happened. Maybe there’s a function of a search engine that can, I don’t even know if this information is available, but look at, you know how we were talking about geolocation? Is there a way to look at the IP address that something was posted from, then the IP bounces back so there’s a Twitter account or whatever account that’s purporting to be from Damascus, but then the IP address puts: “In Prague,” and you’re like: “Ok, that’s not right.”
References


with an application to Italy and France”, New Media & Society, Vol. 16 No. 2, pp. 340–358.


Dervin, B. (1992), “From the mind’s eye of the user: The sense-making qualitative-quantitative methodology”, Qualitative Research in Information Management, Libraries Unlimited.


256


McLeod, J. (2001), *Qualitative Research in Counselling and Psychotherapy*, SAGE.


